NORTH LAKE TRAIL PHASE 3
CORRIDOR PLANNING STUDY REPORT

NORTH LAKE TRAIL

FPID # 441626-1

April 2019

Florida Department of Transportation
District Five
719 South Woodland Boulevard
DeLand, FL 32720-6834

CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. REPORT PURPOSE

This report documents the analysis of the proposed alternatives and planned future engineering for the North Lake Trail Phase 3 Corridor from County Road 450 (C.R. 450) / Bulldog Lane in Umatilla to State Road 40 (S.R. 40). There is an existing 10-foot sidewalk between Bulldog Lane and East Collins Street, so the trail alternatives will begin at Collins Street and S.R. 40. These alternatives were evaluated by performing a review of existing conditions, technical standards, and an evaluation matrix. This report provides analyses for the study area alternatives with next steps for the public involvement and future reports.

2. INTRODUCTION

2.1. PROJECT DESCRIPTION

The Florida Department of Transportation (FDOT) District Five is conducting a Corridor Planning Study to assess alternative alignments for a multi-use trail from C.R. 450 in the City of Umatilla to S.R. 40. The corridor is anticipated to follow S.R. 19, though potential alternative paths will also be evaluated. The 19-mile study area includes Eastern Marion County and Northern Lake County. The purpose of the study is to:

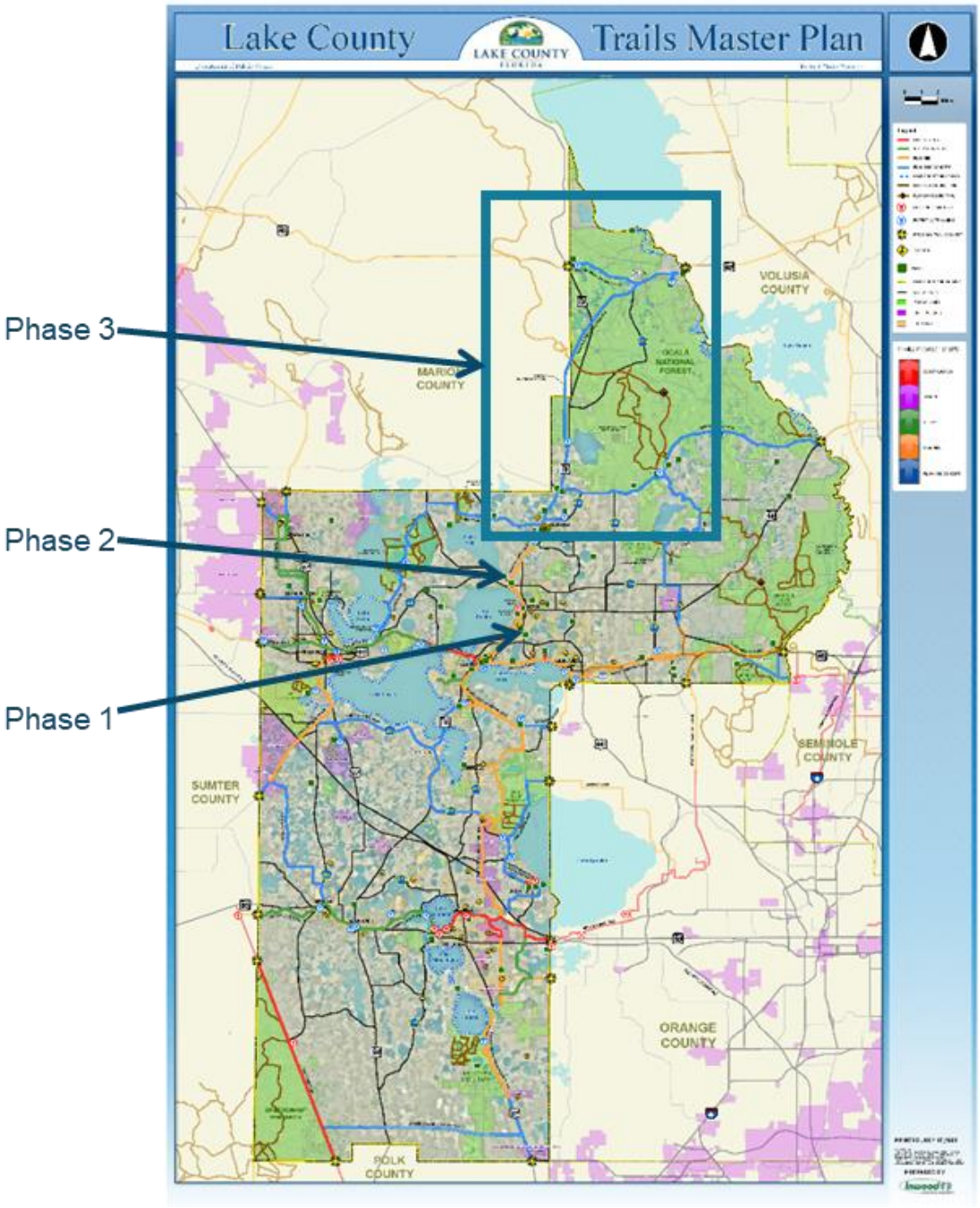
- Identify reasonable alternatives to carry forward to a preferred trail alignment; and
- Establish a long-term plan to guide the development of the multi-use trail corridor which balances land use and transportation planning.

The North Lake Trail was first established in 2008 with the development of the North Lake Trail Phase 1 which begins at the Tavares Station Trailhead, and connects a five-mile shared-use path to the City of Eustis. This was the first step in the overall completion of a 29-mile trail which will cross through various communities along S.R. 19 and C.R. 445, and will serve as the “Gateway to the Ocala National Forest.” Phase 2 of the trail is planned to begin just north of Ferran Park in Eustis and ends in the City of Umatilla. This section is anticipated to also occupy the inactive CSX railroad right of way until it reaches C.R. 450. At C.R. 450 the trail will cross S.R. 19 to the east side of the road to connect with an existing ten foot sidewalk, and then continue north, within City of Umatilla owned right of way, until reaching Bulldog Lane. The North Lake Trail Phase 3 Corridor Planning Study analyzes alternatives to identify a preferred multi-use trail alignment from C.R. 450 to S.R. 40, connecting up to two counties over approximately 19 miles. The potential trail corridor will create a new pathway for Florida residents and visitors to experience Central Florida. Figure 1 provides an overview of the three phases to complete North Lake Trail.

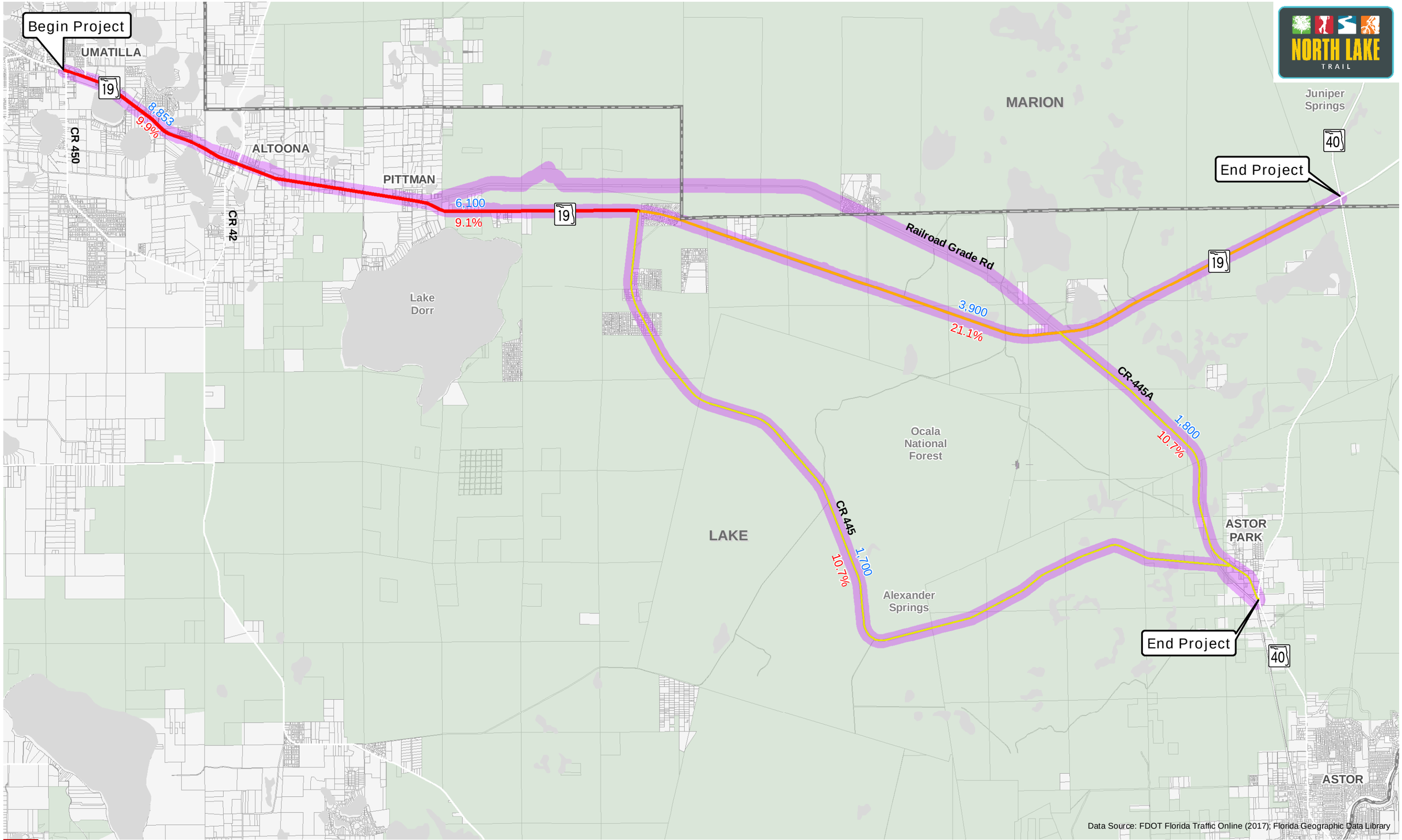
2.2. STUDY AREA DESCRIPTION

The North Lake Trail Phase 3 begins at C.R. 450 and ends at S.R. 40 either at S.R. 19 or near Astor Park in Marion and Lake Counties. The study area includes the area surrounding S.R. 19, CSX Railroad, C.R. 445, and C.R. 445A. The study area intersects the City of Umatilla and the local communities of Altoona, Pittman, and Astor Park as shown in Figure 2.

Figure 1 | North Lake Trail Overview



Source: Lake County Trails Master Plan



Project Location and Annual Average Daily Traffic (AADT) North Lake Trail Corridor Planning Study
Figure 2

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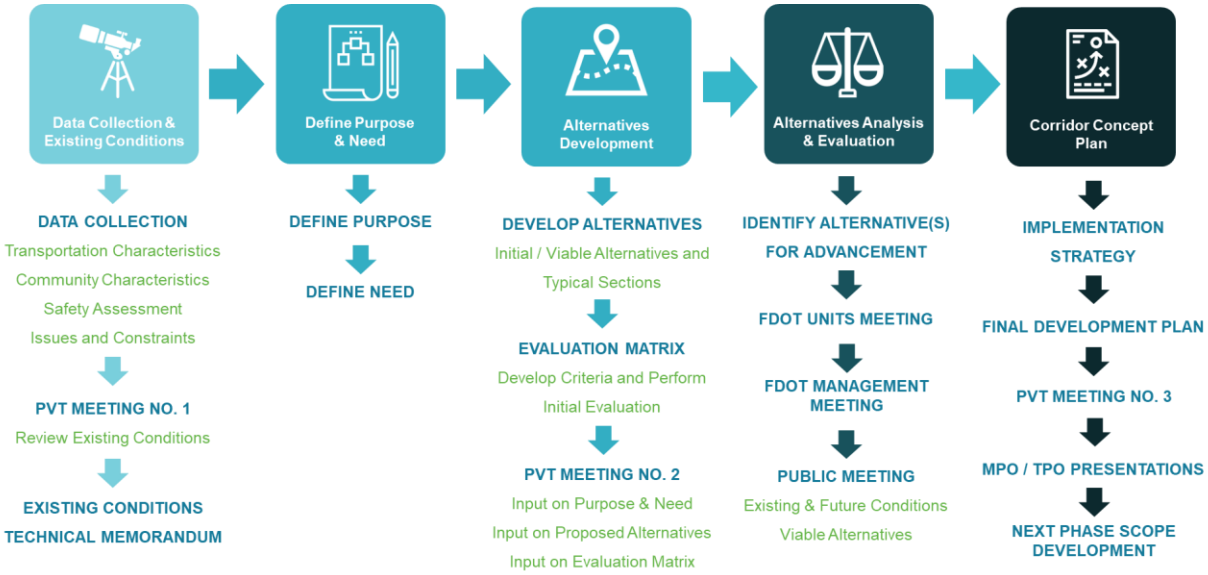
2.3. STUDY APPROACH

The study approach involved five steps including data collection and review of existing conditions, defining the purpose and need, development of alternatives, alternatives analysis and evaluation, and development of the corridor concept plan. Activities included in each step are shown in Figure 3. The study is currently in the corridor concept plan step which is documented in this report.

Figure 3 | Study Approach



*PVT = Project Visioning Team

Source: HDR Inc.

3. PURPOSE AND NEED

3.1. PURPOSE

The purpose of this project is to provide a safe, comfortable, and accessible paved facility for bicyclists, pedestrians, and other non-motorized users of all ages and abilities between C.R. 450 and S.R. 40. The project will also connect gaps within the regional trail network.

3.2. NEED FOR IMPROVEMENT

The needs for this project stem from two primary factors, which include:

- Gaps in regional trail network; and a
- Lack of safe, comfortable, and accessible pedestrian and bicycle facilities.

Gaps in Regional Trail Network

The North Lake Trail Phase 3 would fill the trail network gap between North Lake Trail Phase 2 (Umatilla) and the S.R. 40 Black Bear Trail / Heart of Florida Loop. The Heart of Florida Loop is a network of trails encompassing 250 miles of paved trails in ten Central Florida counties. The North Lake Trail Phase 3 would also provide connections to several of the Ocala National Forest's hiking, bicycle, equestrian, and motorized use trails and the Florida National Scenic Trail. The Florida National Scenic Trail is a 1,300 mile, non-motorized recreation trail that spans nearly the entire state of Florida.

Lack of Safe, Comfortable, and Accessible Pedestrian and Bicycle Facilities

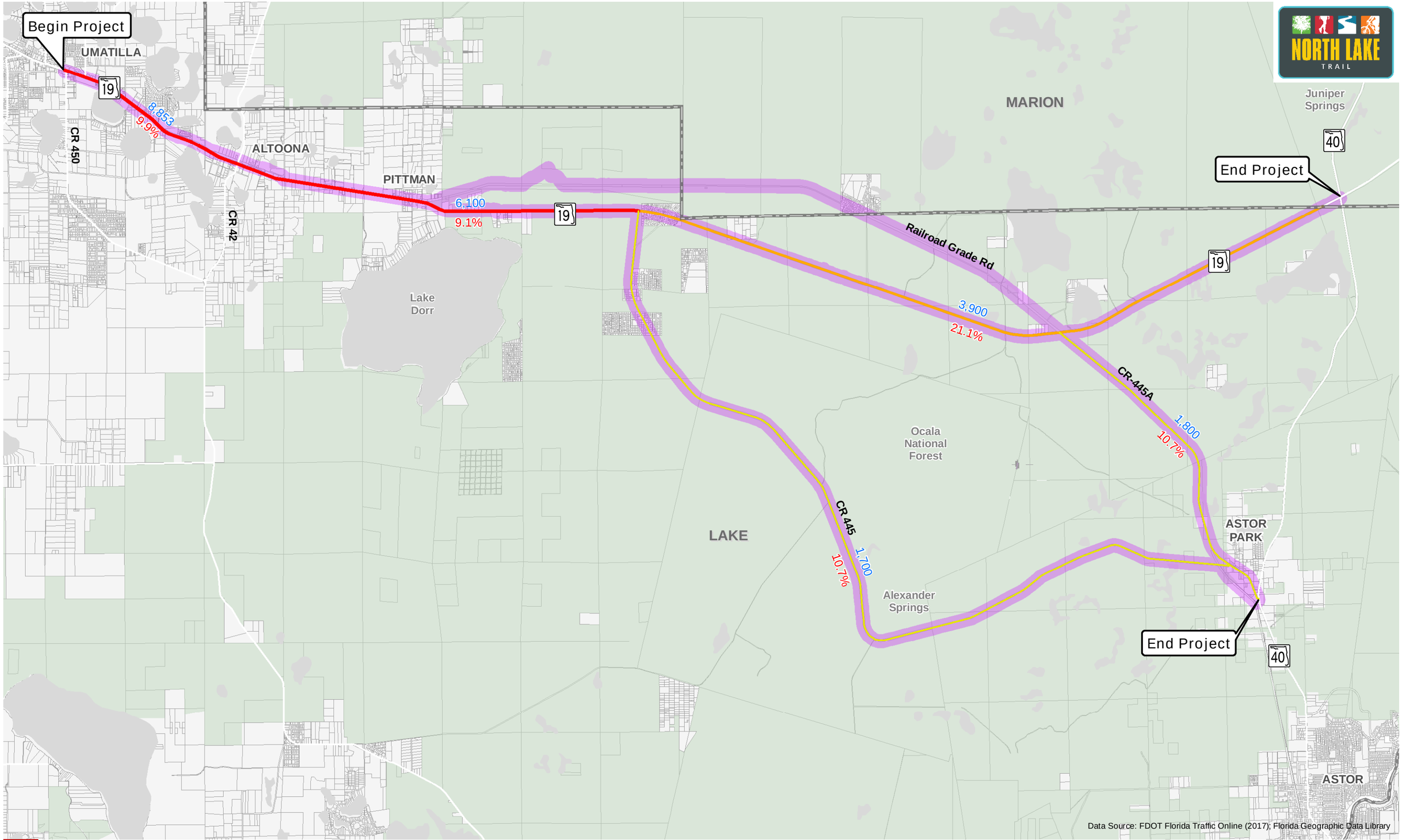
Approximately fourteen percent (14%) of the study area households do not own a vehicle. These households are dependent upon bicycle and pedestrian facilities to travel between destinations. There are no dedicated bicycle lanes or pedestrian facilities along C.R. 445, C.R. 445A, Railroad Grade Road, or S.R. 19 outside of Umatilla. These corridors are predominantly 55 mile per hour (mph) roadways with ten percent (10%) to twenty-one percent (21%) truck traffic. Bicyclists and pedestrians currently utilize the existing paved or unpaved shoulders or share the road with motorized vehicles. Of the bicycle and pedestrian facilities that are present on connecting roadways, there are limited Americans with Disabilities Act (ADA) compliant connections between residences, community features, and conservation areas.

4. TRAFFIC

4.1. EXISTING YEAR VOLUMES AND LEVEL OF SERVICE (LOS)

The S.R. 19 corridor is a two lane minor arterial in a rural area. The S.R. 19 corridor traffic characteristics can be broken into various segments. The first is from C.R. 450 to Bent Tree Road, where Average Annual Daily Traffic (AADT) was approximately 8,850 vehicles in 2017, as shown in Figure 4. This means on the average day, the road segment experienced this amount of vehicle traffic in both directions of travel combined. The segment of S.R. 19 from Bent Tree Road to C.R. 445 experienced an AADT of approximately 6,100. Lastly, the segment from C.R. 445 to S.R. 40 experienced an AADT of approximately 3,900. Truck and heavy vehicle traffic ranges from 9.1% to 10.7% of all vehicle traffic within the area.

Pedestrian counts on S.R. 19 are available for the intersection of S.R. 19 with C.R. 450. The pedestrian counts at C.R. 450 are for a combined eight hours on a Thursday in September 2014. During this data collection effort, 46 pedestrians crossed east-west along C.R. 450, and 17 pedestrians were observed crossing north-south along S.R. 19. There were 63 total pedestrians observed at S.R. 19 and C.R. 450, and sightings were higher generally in the early afternoon. No bicycle counts have been conducted along the corridor, however cyclists were observed along S.R. 19 during field reviews.



Annual Average Daily Traffic (AADT)

North Lake Trail Corridor Planning Study

Figure 4

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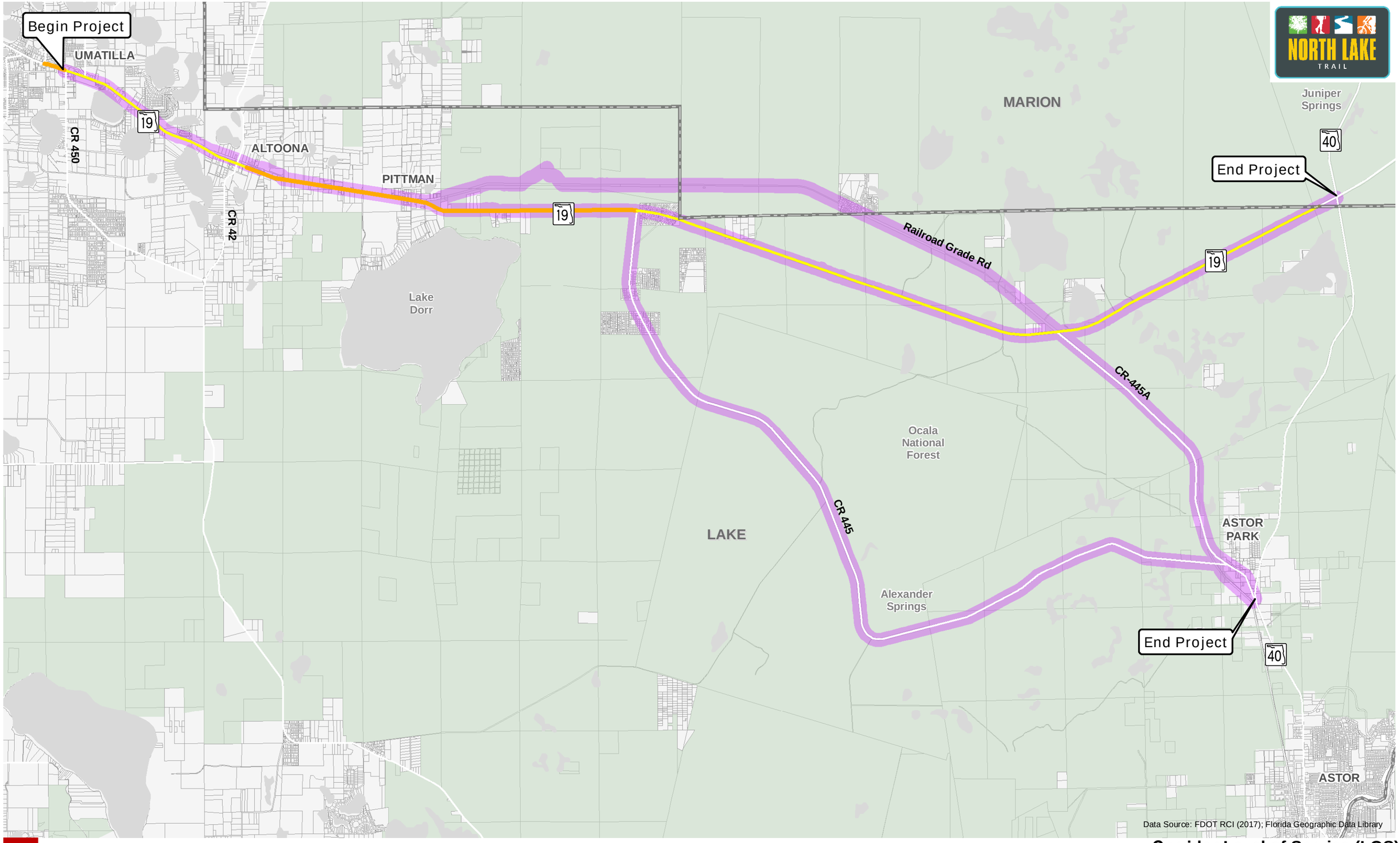
Level of Service (LOS) measures the travel delay of vehicles and provides a “grade” based on the delay. As shown in Figure 5, an “A” grade represents free flowing traffic, while “F” is considered failing and highly congested. The LOS for S.R. 19 were obtained from the FDOT Roadway Characteristics Inventory (RCI). In 2017, the LOS varies between LOS B and LOS C from C.R. 450 to S.R. 40, as illustrated in Figure 6.

Figure 5 | Level of Service Examples

Source: HDR Inc.



Corridor Level of Service (LOS)
North Lake Trail Corridor Planning Study
Figure 6

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5. ALTERNATIVE ANALYSIS AND DEVELOPMENT

5.1. NO ACTION ALTERNATIVE

The No Action Alternative would result in no changes being made to the existing S.R. 19 study area. Under the No Action Alternative, S.R. 19 would remain as it exists today, and there would not be any bicycle nor pedestrian facilities developed. Bicyclists and pedestrians would continue to utilize the existing paved or unpaved shoulders of S.R. 19 to travel adjacent to vehicular traffic.

The primary advantage of the No Action Alternative is that there would be no environmental impacts from construction in conservation areas within the U.S. Department of Agriculture (USDA) Forest Service. It does not require any capital, or expenditure of state/federal funds, and does not necessitate the acquisition of additional land or mitigation.

The disadvantages of the No Action Alternative are significant when compared to the Build Alternatives. Disadvantages of the No Action Alternative include:

- Safety concerns with potential conflicts between high-speed vehicular traffic and pedestrians/cyclists traveling within close proximity;
- Lack of safe, comfortable, and accessible pedestrian and bicycle facilities within the area; and
- No connection between communities along the S.R. 19 corridor.

The No Action Alternative provides baseline information by which other project alternatives may be compared throughout the alternative selection process, which are further described in Section 5.5. The No Action Alternative will be carried forward throughout the project process, but could be eliminated because it does not fulfill the study's purpose and need.

5.2. TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATION AND MULTI-MODAL ALTERNATIVES

Transportation Systems Management and Operations (TSM&O) alternatives are comprised of various improvement options and are usually generated to achieve the maximum use and energy efficiency of the existing facility. TSM&O alternatives include activities designed to optimize the performance and utilization of the existing infrastructure through implementation of systems, services, and projects to preserve the capacity and improve security, safety, and reliability of the roadway system.

Each of the proposed trail alternatives, as described in Section 5.5, are focused on providing safe, comfortable, and accessible bicycle and pedestrian facilities between East Collins Street to S.R. 40. The proposed improvements constitute a TSM&O initiative. The proposed improvements also include multi-modal components, as each build alternative analyzes a corridor for bicyclists and pedestrians to travel between destinations within the study area, and ties into existing transit routes where present.

5.3. DESIGN CRITERIA

The design of the S.R. 19 North Lake Trail needs to follow all proper design elements for a trail with consideration given to the local area. Table 1 supplies the design guidance required for trail width, cross slope, grading, clearance, geometric restrictions, and offset from the vehicular travel way. All design standards are sourced from the 2018 Florida Department of Transportation Design Manual (FDM), which sets forth geometric and other design criteria, as well as procedures, for FDOT projects.

Table 1 | Design Criteria

DESIGN ELEMENT	CRITERIA		SOURCE
Widths			
Two-Directional Shared Use Path			FDM, Section 224.4
Range	10-14 ft		
Standard	12 ft		
Sun Trail Network Facilities			
Less than 12 ft	Chief Planner's Approval Required		
Sun Trail Network Facilities N/A			
Limited R/W	10 ft		
Constrained Conditions	8 ft		
	*Consider accommodation of emergency and maintenance vehicles/management of steep grades when selecting width of path. *FHWA's Shared Use Path Level of Service Calculator may be used as a guide in determining appropriate width.		
Cross Slopes			
Maximum Cross Slope (ADA Requirements)	2%		FDM, Section 224.5
Changing Slope Direction of Path	Use 75 ft distance to transition from -2% to 2% OR 2% to -2% *Consider potential for ponding water		
Longitudinal Grades			
Maximum Grade (ADA Requirements)	5%		FDM, Section 224.6
Ramp	> 5%		
Max Ramp Slope	8.33% with a maximum rise of 30 inches with a level landing at least 60 inches in length		
Ramp Maximum Grade	Grade (%)	Length (ft)	FDM, Table 224.6.1,
	6	800	

Table 1 | Design Criteria

DESIGN ELEMENT	CRITERIA		SOURCE
	7	400	*Refer to FDM 224.11 for controls on grade changes
	8	300	
	9	200	
	10	100	
	+11	50	
	1) When using a longer grade, consider adding 4 to 6 ft of additional width to path to allow a bicyclist to dismount and walk their bicycle. 2) Clear Distances and sight distances should be adjusted to accommodate longer grades.		
Horizontal Clearance			
Adjacent to both sides of path	4 ft *including placement of signs		FDM, Section 224.7
Max Slope adjacent to both sides of path	1:6		
Graded Area Width	2 ft		
Restricted Conditions (bridge abutments, sign posts, fencing, railing)	Within 4ft of the edge of pavement; not less than 2 ft		
Vertical Clearance			
Bottom of lowest edge of an overhead obstruction to any portion of path under obstruction	10 ft		FDM, Section 224.8, *FDM 260.6 for bridge structure minimum clearance
Overhead Signs/ Other obstructions under constrained conditions	8 ft		
Accommodation of equestrians/maintenance and emergency vehicles; Underpasses and tunnels; SUN Trail	12 ft		
	*Existing elements that provide a minimum 8 ft vertical clearance are not required to be corrected to the clearances listed above.		

Table 1 | Design Criteria

DESIGN ELEMENT	CRITERIA	SOURCE
Design Speed		
Longitudinal Grade ≤4%	18 mph	FDM, Section 224.9
Longitudinal Grade > 4%	30 mph	
Minimum Radii		
Horizontal Curves	Design Speed / Cross Slope / Minimum Radius 18 mph / 2% / 74 ft 18 mph / -2% / 86 ft 30 mph / 2% / 261 ft 30 mph / -2% / 316 ft *For paths with two-way traffic use minimum radius given for cross slope of -2%	FDM, Table 224.10.1
Stopping Sight Distance		
Flat Grades	Design Speed / Grade 18 mph / 134 30 mph / Use 18 mph Values *Stopping Sight Distance based on an object height of 0.0 ft and eye height of 4.5 ft. *More information on calculating minimum stopping sight distances may be found in the AASHTO *Guide for the Development of Bicycle Facilities, 2012.*	FDM, Table 224.10.2
Vertical Alignment		
When S>L	$L = 2S\frac{900}{A}$	FDM, Section 224.11
When S<L	$L = \frac{AS^2}{900}$	
	L =Min. Length of Vertical Curve (ft.) A =Algebraic Grade Difference (%) S =Stopping Sight Distance (ft.)	
Separation from Roadway		
Flush Shoulder w/speeds ≤ 45 mph	Edge of path at least 5 ft from edge of paved shoulder	FDM,

Table 1 | Design Criteria

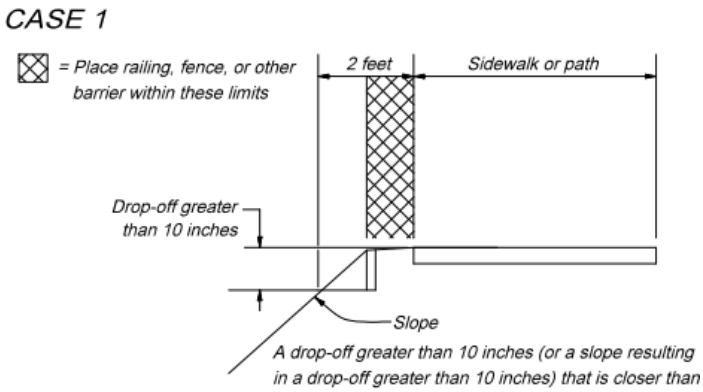
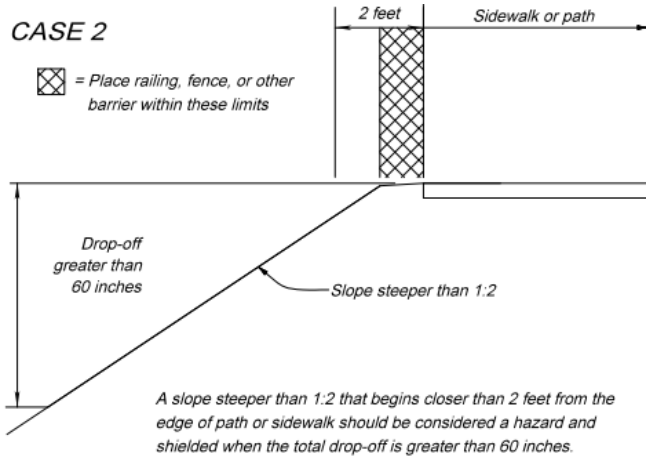
DESIGN ELEMENT	CRITERIA	SOURCE
Curbed Roadways w/speeds ≤ 45 mph	Edge of path at least 4 ft from back of curb w/consideration of roadside obstructions (e.g. signs, light poles)	Section 224.12
Roadways w/speeds ≥ 50 mph	Edge of path at least 5 ft from shoulder break	
Drop-off Hazards		
Shielding Severity Condition 1		FDM, Figure 224.15.1
Shielding Severity Condition 2		

Table 1 | Design Criteria

DESIGN ELEMENT	CRITERIA	SOURCE
Shielding for Severity Conditions other than Cases 1 or 2	1) The engineer should consult the District Bicycle/Pedestrian Coordinator or Trail Coordinator regarding pedestrian and cyclist traffic and their routes. 2) Installing fencing or railings are two ways to shield the drop-offs. Fencing is generally intended for use in rural areas along paths and trails. Railing is generally intended for urbanized areas, locations attaching to bridge rail or along concrete walkways. Pedestrian/Bicycle Railings *(Standard Plans, Index 515 Series)* are adequate for shielding all drop-offs but are generally intended for use on drop-offs greater than 60 inches. Pipe Guiderail *(Standard Plans, Index 515-070 and 515-080)* is adequate for shielding drop-offs which are 60 inches or less. 3) Along continuous sections where the drop-off varies above and below the 60-inch threshold, for uniformity the engineer may consider using only one of the railing types adequate for shielding all drop-offs. 4) Railing or fencing near intersections or driveways could obstruct the driver's line of sight. To reduce the need for railings, as a sidewalk or shared use path approaches an intersection, consider extending cross drains and side drains to minimize drop-offs. 5) The installation of fencing, railing, or pipe guardrail presents a hazard in and of itself. Evaluate whether or not the installation of these devices present a greater risk than the drop-off or other condition it is intended to shield.	FDM, Section 224.15

Table 1 | Design Criteria

DESIGN ELEMENT	CRITERIA	SOURCE
Drainage	Environmental Resource Permit (ERP) should be obtained if trail construction impacts are not exempt or above the permit thresholds for the water quantity, water quality, and wetlands. Storm water Pollution Prevention Plan (SWPPP) should be developed and submitted.	SJRWMD FDM, Drainage Design Guide National Pollutant Discharge Elimination System (NPDES)

5.4. BUILD ALTERNATIVES

There are three alternatives proposed for this trail on S.R. 19. All three alternatives begin at the intersection of C.R. 450 and S.R. 19 in the City of Umatilla, as shown in Figure 2.

Alternative A begins at C.R. 450, and travels north on the eastern side of SR 19. Alternative A crosses to the western side of S.R. 19 at Beach Street and continues north. Upon reaching W Altoona Road, a dirt road parallel to the west SR 19, the path then continues north along the western side of W Altoona Road. The path then crosses Lake Daisy Drive, crossing over to the east side of W Altoona Road and when reaching S.R. 19, turns north on the western side of the road. The path continues on the western side of S.R. 19 until terminating at S.R. 40.

Alternative B follows a similar path as Alternative A, until reaching C.R. 445. At C.R. 445, the trail crosses from the west side of S.R. 19 to the east, and follows C.R. 445 on the north/west side of the road. The trail crosses Alexander Springs Creek and continues until reaching C.R. 445A. Once at C.R. 445A, the path crosses to the southern/eastern side of C.R. 445A, continuing north until reaching S.R. 40.

Alternative C also begins at C.R. 450, following the Alternative A alignment until reaching C.R. 445A. Upon reaching C.R. 445A, the trail alternative then proceeds to follow C.R. 445A until reaching the intersection it shares with S.R. 40. The path of the trail would ultimately end at the intersection of C.R. 445A and S.R. 40.

Appendix A contains an overview presentation with the alternatives overlaid on aerial imagery. Concept plans for each alternative are contained in Appendix B.

5.4.1. TYPICAL SECTIONS

The build alternatives consist of four typical sections, which are shown in Figure 7 through Figure 11. The typical sections were designed to accommodate constrained and unconstrained right-of-way locations. The sections of S.R. 40 that are not separated from adjacent land by a physical barrier (i.e. fence or wall) are classified as non-constrained areas. Constrained areas are separated from adjacent land by a physical barrier and limit the possibility of easements to accommodate drainage modifications.

Figure 7 | Typical Section 1 – Trail within Existing Right of Way / Easements

Figure 8 | Typical Section 2 – Trail in Separate Easement

Figure 9 | Typical Section 3 – Constrained Areas

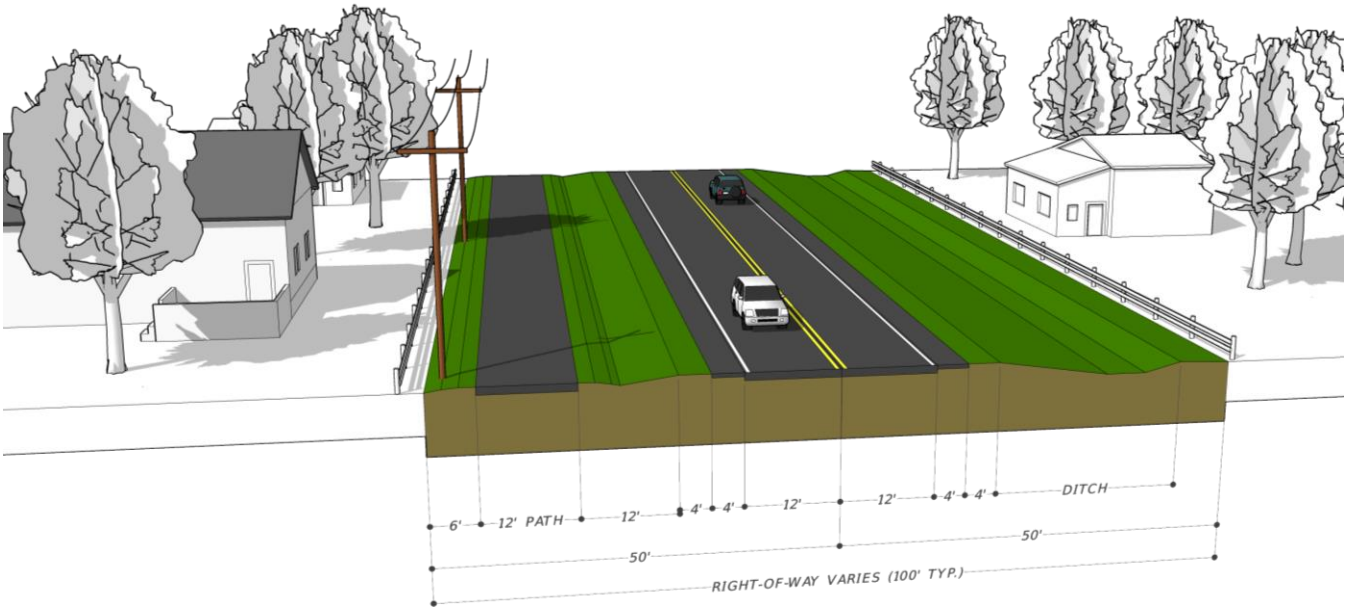


Figure 10 | Typical Section 4A – Very Constrained with Shoulder Gutter

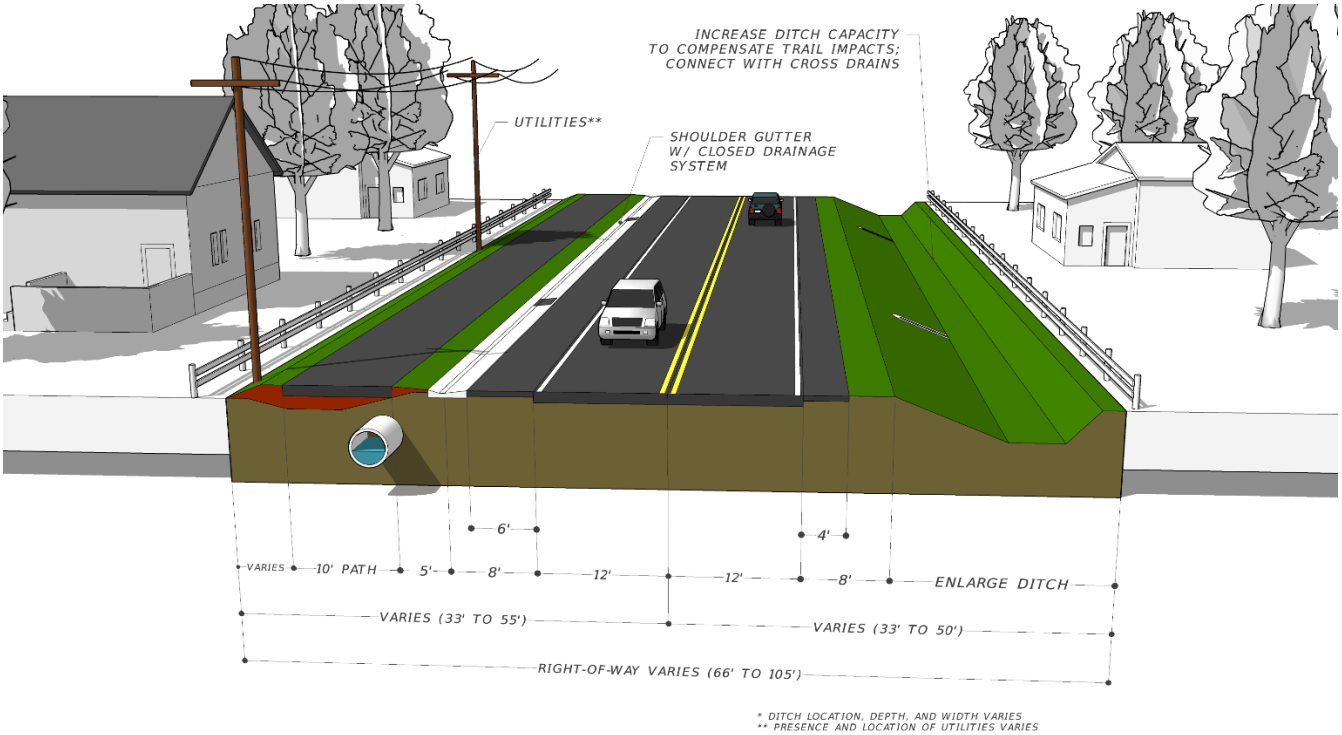
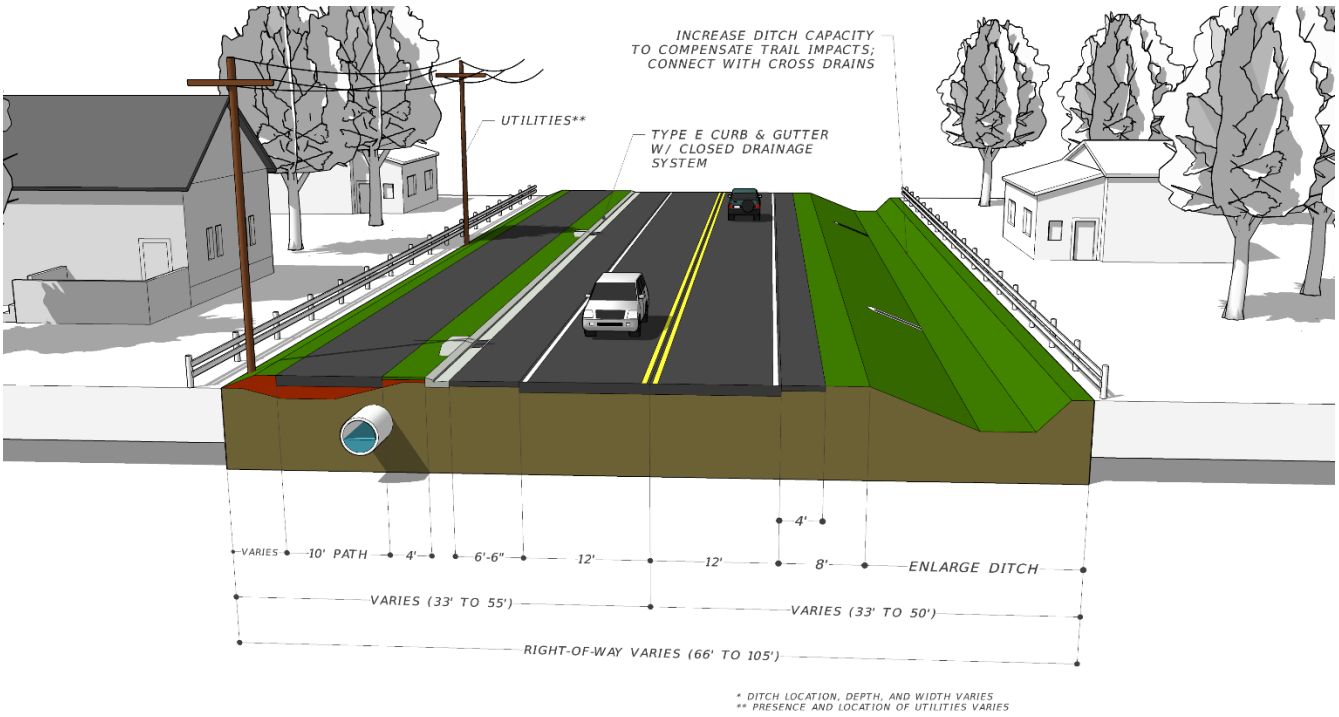


Figure 11 | Typical Section 4B – Very Constrained with Curb and Gutter



5.5. INITIAL ALTERNATIVES COMPARISON AND MATRIX

The themes for the evaluation criteria were developed based on the study's goals and objectives for the North Lake Trail Phase 3 Corridor that runs from East Collins Street in Umatilla to S.R. 40. These criteria address socioeconomic characteristics, cultural and natural resources, physical characteristics, trail experience, traffic operations and safety, and project cost estimates to evaluate the build alternatives. In addition, the criterion examine the qualitative factors such as community support and the continual support from maintaining municipalities. The following comparative evaluation examines each criterion and summarizes the assessment conducted for each alternative. The evaluation process used this assessment to determine recommended corridors to be carried forward to the next phase of the project.

5.5.1. SOCIAL & ECONOMIC EVALUATION

5.5.1.1. Consistency with Local Plans

A review of local transportation plans was performed to demonstrate the consistency of this project with regional and local transportation planning efforts. A summary of the project's consistency is provided below in Table 2, and the full analysis is documented in the *North Lake Trail Corridor Planning Study: Existing Conditions Report*. The consistency with local plans is the same for each alternative.

Table 2 | Consistency with Local Plans

Agency	Applicable Standard	Consistent with Project	Source
Lake County	Consider increasing the number of miles of off-street bicycle and pedestrian trails Trail is also included on the Future Land Use Map series	Yes	*Lake County Comprehensive Plan: Planning Horizon 2030*, p. 273 https://www.lakecountyfl.gov/pdfs/2025/2030_comp_plan.pdf
Lake County	Policy 1-5.1.3 Rural Protection Area Principles: Designation of scenic rural roadways and trails	Yes	*Lake County Comprehensive Plan: Planning Horizon 2030*, p. 113 https://www.lakecountyfl.gov/pdfs/2025/2030_comp_plan.pdf
Lake County	Policy 1-7.6.2 Reduction of Emissions from the Transportation Sector Require bikeways, trails, and pedestrian paths, wherever practical and appropriate, to provide alternatives to motor vehicles	Yes	*Lake County Comprehensive Plan: Planning Horizon 2030*, p.136 https://www.lakecountyfl.gov/pdfs/2025/2030_comp_plan.pdf

Table 2 | Consistency with Local Plans

Agency	Applicable Standard	Consistent with Project	Source
Lake County	Policy III-2.3.6 Create Open Areas within Springsheds Create open areas through the connection of trails, amongst other amenities to form a greenway system	Yes	*Lake County Comprehensive Plan: Planning Horizon 2030*, p.229 https://www.lakecountyfl.gov/pdfs/2025/2030_comp_plan.pdf
Lake County	Policy VI-1.9.8 Trails Program Lake County shall work towards expanding and improving its trails program by working with other entities to implement the *Lake County Trails Master Plan* of September 2008, or its successor document	Yes	*Lake County Comprehensive Plan: Planning Horizon 2030*, p.290 https://www.lakecountyfl.gov/pdfs/2025/2030_comp_plan.pdf
Lake County	Policy VIII-1.5.1 Enhance Bicycle and Pedestrian Mobility Provide Bike Lanes and Sidewalks on collectors and arterials in urban settings. Evaluate need to expand facilities. Consider increasing number of off street trails based on master plan. Enhance and provide trails to connect to other facilities such as schools.	Yes	*Lake County Comprehensive Plan: Planning Horizon 2030*, p.303 https://www.lakecountyfl.gov/pdfs/2025/2030_comp_plan.pdf
Lake County	*Trails Master Plan* (2008) Develop a cohesive county wide trail system that will connect people and places through a regional network	Yes	*Lake County Trails Master Plan,* 2008, p. 1-1 https://www.lakecountyfl.gov/pdfs/parks/masterplan/trails.pdf
Lake~Sumter Metropolitan Planning Organization	Identifies corridor of S.R. 19 as being part of a planned trail	Yes	*Lake~Sumter Metropolitan Planning Organization Long Range Transportation Plan 2035,* p. 47 http://www.lakesumtermpo.com/pdfs/2035/long_range_transportation_plan_executive_summary.pdf

Table 2 | Consistency with Local Plans

Agency	Applicable Standard	Consistent with Project	Source
City of Umatilla	Support for the application to the FDOT Work Program for North Lake Trail Phase 3	Yes	*City of Umatilla Letter of Support – North Lake Trail Phase 3*, 2015, p. 1 http://umatillafl.org/Pages/UmatillaFL_CouncilAgendas/2015/03172015/TAB03a.pdf

The *Lake County Comprehensive Plan Planning Horizon 2030* (2018) recommends adding non-invasive amenities to scenic roads, which includes a portion of S.R. 19. These amenities include sidewalks and bicycle paths. The *Lake County Trails Master Plan* (2018) adopted all three build alternatives.

Importantly, the *City of Umatilla Comprehensive Plan* (2014), under the conservation element, calls for promoting public access to lakes through the use of pedestrian paths, trails, walkways, and other viable means. The *City of Umatilla Comprehensive Plan* identifies the North Lake Trail Phase 2, planned to run along S.R. 19 from Bulldog Way in Umatilla to Ferran Park in Eustis, as being in the conceptual planning stages for northern Umatilla, and in the planned stages for southern Umatilla. The City of Umatilla submitted an FDOT Project Information Application Form in January 2015 to include the North Lake Trail Phase 3 in the FDOT Work Program. The proposal requested a study to develop the North Lake Trail Phase 3 from C.R. 450 in Umatilla to S.R. 40 and intersect with the planned Black Bear Scenic Trail.

Upon review of local transportation plans, Lake~Sumter Metropolitan Planning Organization (Lake~Sumter MPO) and the City of Umatilla identified potential funding for the North Lake Trail Phase 3. Although there is no direct reference to the North Lake Trail Phase 3 project, $38,000,000 has been reserved for all trail projects in the Lake~Sumter MPO 2035 Long Range Transportation Plan.

North Lake Trail Phase 3 was not included within the following referenced documents:

- Marion County Comprehensive Plan 2035
- Lake~Sumter MPO Transportation Improvement Plan 2017/18-2021/22
- Marion County Comprehensive Plan 2035
- Ocala/Marion TPO 2035 Bicycle and Pedestrian Master Plan
- Ocala/Marion TPO Long Range Transportation Plan 2040
- Ocala/Marion TPO Transportation Improvement Plan 2017/18-2021/22

5.5.1.2. Maintaining Agencies & Community Support

It is essential for Public Involvement efforts to derive cooperative relationships between the community and all project stakeholders. The North Lake Trail Corridor study area has a

population of approximately 1,580 people and over 640 households based on the 2016 American Community Survey (ACS). Support for the North Lake Trail Phase 3 Corridor by the community within the study area is analyzed for each alternative based on degree of support (low/medium/high) in Table 3. The degrees of support were determined based on feedback and discussion from stakeholders and community representatives during the three Project Visioning Team meetings which are further described in Section 6.1 and in the *Public Involvement Plan*.

Support from the maintaining agencies is an integral component to the success of a trail alternative. Lake and Marion Counties have each supported the North Lake Trail Phase 3 Project, and will enter discussions with both FDOT and the USDA Forest Service to finalize maintenance agreements for the preferred alternative in the design phase. Their support for each alternative is also shown in Table 3.

Table 3 | Maintaining Agencies & Community Support

	Alternative A	Alternative B	Alternative C
Maintaining Agencies	Medium	High	Medium
Community Support	Medium	High	Medium

5.5.1.3. Property Impacts

The total number of parcels and acreage of impacts within the study area are identified in Table 4 for each alternative. No relocations are anticipated with any of the alternatives. The government-owned parcels include Federal forest land, city-owned land, and county-owned land. The private parcel is part of CSX abandoned railroad. As the alignments are refined in future phases, there is potential to eliminate some or all of the impacts to public/government-owned parcels outside of the right of way.

Table 4 | Potential Property Impact(s)

	Alternative A	Alternative B	Alternative C
Total Parcel Impact(s)	12	17	12
Private	1	1	1
Public / Government-Owned	11	16	11
Total Acres of Impact(s)	13.1	19	13.1
Private	0.3	0.3	0.3
Public / Government-Owned	12.8	18.7	12.8

5.5.2. SOCIAL RESOURCES

The community services and social resources within the study area are displayed in the *Existing Conditions Report, Figure 28*, available under separate cover. A synopsis of the resources present within 500 feet of each alternative is shown in Table 5. Direct impacts to social resources will not result from the project. The potential connectivity to social and cultural resources is similar for each alternative. Considering resources within 500 feet each of the alternatives, Alternative A has one additional connection compared to Alternatives B and C.

Table 5 | Summary of Social Resources within 500-feet of each Alternative

	Alternative A	Alternative B	Alternative C
Parks / Recreational Facilities	4	4	3
Schools	1	1	1
Churches / Religious Institutions	3	3	3
Fire and Police	3	2	3
Medical and Emergency Operation Facilities	0	0	0
Other Public Buildings and Facilities	2	2	2
Other Significant Locations	0	0	0
Total	13	12	12

5.5.3. CULTURAL RESOURCES EVALUATION

5.5.3.1. Historic and Archaeological Resources

Section 106 of the National Historic Preservation Act (NHPA) requires that historic and archaeological resources be considered in project planning for federally funded or permitted projects. Cultural resources or historic properties, which include “prehistoric or historic districts, sites, buildings, structures, or objects included in, or eligible for inclusion in the National Register of Historic Places (NRHP)”, have been identified within the study area using the Florida Division of Historic Resources Florida Master Site File. Obtained through the Florida Geographic Data Library (FGDL), these sites are shown in *Existing Conditions Report, Figure 27* and summarized in the *Existing Conditions Report, Table 10*.

A comparison of the historic or archaeological resources within 200 feet of each trail alternative are summarized in Table 6.

.

Table 6 | Cultural Resources Alternatives Comparison

	Alternative A	Alternative B	Alternative C
State Historic Preservation Office Structures *Number / Eligible or Potentially Eligible for listing in NRHP*	48 / 2	46 / 2	48 / 2
State Historic Preservation Office Bridges *Number / Eligible or Potentially Eligible for listing in NRHP*	0 / 0	0 / 0	0 / 0
State Historic Preservation Office Cemeteries *Number / Eligible or Potentially Eligible for listing in NRHP*	0 / 0	1 / 1	0 / 0
State Historic Preservation Office Sites *Number / Eligible or Potentially Eligible for listing in NRHP*	0 / 0	0 / 0	0 / 0
Total *Number / Eligible or Potentially Eligible for listing in NRHP*	48 / 2	47 / 3	48 / 2

5.5.3.2. Section 4(f) Resources

Section 4(f) refers to a portion of the Department of Transportation Act of 1966, now known as 23 U.S.C. § 138 and 49 U.S.C. § 303, which "governs the use of publicly owned parks, recreation areas, wildlife and waterfowl refuges, and public or private historic sites for U.S. DOT transportation projects." These resources are typically referred to as Section 4(f) resources or properties (*FDOT PD&E Manual 2019)*.

The North Lake Trail Phase 3 is anticipated to have Section 4(f) impacts, due to the proximity of each of the trail alternatives to the Ocala National Forest (USDA Forest Service). Historic sites are also located within a quarter mile of each trail alternative, as noted in Section 5.5.3.1, which may incur *de minimis* impacts to the properties.

5.5.3.3. Recreation Areas

There are several public parks, boat ramps, and conservation lands located within 0.25 mile the study area, as listed below:

- Umatilla Veterans Park; 40924 State Road 19, Umatilla, FL 32784
- McTureous Memorial Park; 42106 State Road 19, Altoona, FL 32702
- Lake Beakman Boat Ramp; State Road 19, Altoona, FL 32702
- Alexander Springs Creek Bridge Canoe Launch; County Road 445
- Ocala National Forest (USDA Forest Service)

Each alternative has four potential connections to recreation areas as summarized in Table 7.

Table 7 | Recreation Area Connections Alternatives Comparison

	Alternative A	Alternative B	Alternative C
Recreation Areas	• Umatilla Veterans Park • McTureous Memorial Park • Lake Beakman Boat Ramp • Ocala National Forest	• Umatilla Veterans Park • McTureous Memorial Park • Alexander Springs Creek Bridge Canoe Launch • Ocala National Forest	• Umatilla Veterans Park • McTureous Memorial Park • Lake Beakman Boat Ramp • Ocala National Forest
Total Connections	4	4	4

5.5.4. NATURAL RESOURCES EVALUATION

5.5.4.1. Wetlands

Wetlands are protected under Executive Order 11990, "Protection of Wetlands". Wetland impacts were analyzed using geographic information system (GIS) geospatial analysis. Wetland locations were identified in the study area using National Wetlands Inventory (NWI) data shown in *Existing Conditions Report SR 19, Figure 22.* Table 8 identifies the potential acreage of impact each alternative has on existing wetlands.

Table 8 | Wetland Impacts

	Alternative A	Alternative B	Alternative C
Acreage of Potential Wetland Impacts	0.3	1.4	0.5

Direct wetland impacts can be minimized through use of a gravity wall or similar drainage modification, and through use of boardwalks. Indirect impacts include introduction of potential pollutants, increased runoff, a higher probability of ponding, and fluctuating water level elevations as a result of the trail improvements. The severity of each impact should be considered. Any indirect impact should comply and align with any applicable ordinances or proposed conservation or developmental plans set forth by the St. Johns Water Management District, particularly in regards to the Ocklawaha and St. Johns basins.

5.5.4.2. Floodplains

Protection of floodplains is required by Executive Order 11988, "Floodplain Management", USDOT Order 5650.2, "Floodplain Management and Protection," and Federal-Aid Policy Guide 23 CFR 650A. Floodplain analyses were performed in GIS using Federal Emergency

Management Agency flood hazard data. A comparison of the floodplain impacts resulting from each trail alternative are summarized in Table 9. The floodplains are designated as Zone A, which indicates a 100-year flood elevation is not determined.

Table 9 | Floodplain Impacts

	Alternative A	Alternative B	Alternative C
Acreage of Potential Floodplain Impacts	3.4	3.8	3.8

Sections of boardwalk or similar structure can be utilized in locations over floodplains to mitigate impacts.

5.5.4.3. Outstanding Florida Waters / Aquatic Preserves

The study has no involvement with Florida's aquatic preserves. Five water bodies within the study area have been classified by the U.S. Environmental Protection Agency (EPA) as Outstanding Florida Waters:

- Juniper Creek
- Alexander Springs Creek
- Lake Dexter
- Lake Dorr
- Lake Norris

While impacts are not anticipated, Alternative B has a medium risk of impacting Outstanding Florida Waters due to a potential separate pedestrian bridge crossing Alexander Springs Creek (pylons on either side of Alexander Springs Creek with a free-span bridge over the water).

5.5.4.4. Wildlife and Habitat

Conservation lands within the Ocala National Forest create a higher potential for occurrence of protected wildlife and plant species found in the study area. Lake Dexter is an aquatic area that is classified as a critical habitat for the West Indian Manatee. Information regarding the primary wildlife and plant species referenced in the *Existing Conditions Report SR 19* were determined through utilizing the Florida Geographic Data Library and their protection status was obtained from the Florida Fish & Wildlife Conservation Commission and the EPA. Additionally, consultation areas were identified within the project limits for the following species:

- Lake Wales Ridge Plants (entire study area)
- Red cockaded woodpecker (entire study area)
- Sand skink (entire study area, excluding alternatives east of Forest Road 71)
- Florida scrub-jay (entire study area)
- Snail kite (entire study area)

In addition, bald eagles are listed as a federally managed species by the Bald and Golden Eagle Protection Act. A nest is located near Alexander Springs approximately 0.15 miles north of C.R. 445. No direct impacts to the nesting site are anticipated. Table 10 and Table 11 provide a list of wildlife species with a potential for occurrence in the study area.

Table 10 | Wildlife in Study Area

Wildlife Species Common Name	Scientific Name	Federal or State Listing	Protection Status
Bald eagle	*Haliaeetus leucocephalus*	Federal	Managed
Berner's microcaddisfly	*Hydroptila berneri*	-	-
Blue purse-web spider	*Sphodros abboti*	-	-
Dense hydrobe snail	*Aphaostracon pycnum*	-	-
Eastern diamondback rattlesnake	*Crotalus adamanteus*	-	-
Eastern indigo snake	*Drymarchon couperi*	Both	Threatened
Everglade snail kite	*Rostrhamus sociabilis*	Both	Endangered
Florida black bear	*Ursus americanus floridanus*	-	-
Florida pine snake	*Pituophis melanoleucus*	State	Threatened
Florida scrub lizard	*Sceloporus woodi*	-	-
Florida scrub-jay	*Aphelocoma coerulescens*	Both	Threatened
Floridian finger-net caddisfly	*Chimarra florida*	-	-
Gopher tortoise	*Gopherus polyphemus*	State	Threatened
Little-entrance oxyethiran microcaddisfly	*Oxyethira janella*	-	-
Long-tailed weasel	*Mustela frenata*	-	-
Pescador's bottle-cased caddisfly	*Oxyethira pescadori*	-	-
Rasmussen's neotrichia caddisfly	*Neotrichia rasmusseni*	-	-
Red-cockaded Woodpecker	*Picoides borealis*	Both	Endangered
Rosemary grasshopper	*Schistocerca ceratiola*	-	-
Sand skink	*Neoseps reynoldsi*	Federal	Threatened
Short-tailed snake	*Lampropeltis extenuata*	-	-
Striped newt	*Notophthalmus perstriatus*	Federal	Managed
Tavares white miller caddisfly	*Nectopsyche tavara*	-	-
Wakulla springs vari-colored microcaddisfly	*Hydroptila wakulla*	-	-
West Indian manatee	*Trichechus manatus*	Federal	Threatened
Wood stork	*Mycteria americana*	Both	Threatened

Table 11 | Plant Species in Study Area

Plant Species	Scientific Name	Federal or State Listing	Protection Status
Britton's beargrass	*Nolina brittoniana*	Federal	Endangered
Florida bonamia	*Bonamia grandiflora*	Federal	Threatened
Giant orchid	*Grammatophyllum speciosum*	State	Threatened
Hartwrightia	*Hartwrightia*	State	Threatened
Lewton's polygala	*Polygala lewtonii*	Federal	Endangered
Longspurred mint	*Dicerandra cornutissima*	Federal	Endangered
Papery whitlow-wort	*Paronychia chartacea*	Federal	Threatened
Pigeon wings	*Clitoria ternatea*	Federal	Threatened
Pygmy fringe-tree	*Chionanthus pygmaeus*	Federal	Endangered
Scrub plum	*Prunus geniculata*	Federal	Endangered
Scrub wild buckwheat	*Eriogonum longifolium*	Federal	Threatened
Wide-leaf warea	*Warea amplexifolia*	Federal	Endangered

Due to the trail alternatives' proximity to the Ocala National Forest, additional coordination with the USDA Forest Service will be needed to minimize impacts to wildlife and habitat. Direct impacts to protected species are not known at this time. The alternatives evaluated in this report are proposed to utilize the existing right of way (already cleared / disturbed lands) where possible, and to locate the trail immediately adjacent to disturbed lands (alongside the cleared right of way) where right of way is limited. This approach is designed to minimize new habitat segmentation impacts. Therefore, the potential for habitat segmentation is low for each alternative.

5.5.4.5. Coastal Zone Consistency / Coastal Barrier Resources

According to, and administrated by the National Oceanic and Atmospheric Administration, the National Coastal Zone Management Program is a voluntary partnership between the federal government and coastal states and territories that works to address some of today's more pressing coastal issues. Neither Lake nor Marion Counties are subject to the National Coastal Zone Management program.

5.5.5. PHYSICAL CHARACTERISTICS EVALUATION

5.5.5.1. Air Quality

Lake and Marion Counties are currently designated as being in attainment for the following Clear Air Act National Ambient Air Quality Standards (NAAQS): ozone, nitrogen oxide,

particulate matter (2.5 microns in size and ten microns in size), sulfur dioxide, carbon monoxide, and lead.

5.5.5.2. Noise

There are no expected adverse noise impacts to the study area. Noise mitigation efforts are not anticipated.

5.5.5.3. Potential Contamination

Contamination sites were identified using EPA and Florida Department of Environmental Protection databases. The *Existing Conditions Report SR 19, Table 8* summarizes the known types of contamination sites and *Figure* 27 identifies the site locations. Ten of the locations listed in the study area are pending or active petroleum cleanup locations. Using this information, the degree of risk (low/medium/high) was determined based on the known criteria for each alternative. All alternatives were determined to have a low potential for contamination because they are not expected to have direct impacts to any contaminated facilities. A comparison of the potential contamination impacts within 500-ft of each trail alternative are summarized in Table 12.

Table 12 | Potential Contamination Impacts

	Alternative A	Alternative B	Alternative C
Risk of Impact to Contamination Sites (within 500 ft)	4	4	4

5.5.5.4. Utilities

Several utilities are located within the North Lake Trail Phase 3 Corridor and are summarized in *Existing Conditions Report SR 19, Table 4*. The number of utilities impacted by each alternative has not yet been determined; therefore, utilities are not included in the evaluation matrix.

5.5.5.5. Drainage Considerations

Proposed drainage conditions will be similar for all alternatives. Drainage modifications are discussed for the two types of right-of-way conditions: constrained and non-constrained.

5.5.5.5.1. Non-Constrained Drainage Modifications

The existing right-of-way in these areas along the S.R. 19, C.R. 445, and C.R. 445A alignments are sufficiently wide to minimize the need for adjacent easements. When identifying potential easements, the presence of utilities and varying existence of roadside ditches should be considered. With or without easements, considerations should be made in regards to maintaining existing flow patterns.

Strategies for preventing offsite impacts from the trail improvements include the use of gravity wall or establishing a raised vegetative bank at the outer edge of the trail. These barriers will help channel the trail runoff via sheet flow towards the new or existing linear ditch and minimize direct flow offsite. To maintain existing offsite flow patterns towards the roadway, the embankment would become flush with the wetland or existing surface elevation and the offsite sheet flow may continue unimpeded across the trail towards the ditch. Ideally, these flow pattern accommodations should primarily use sheet flow to avoid erosion and ponding issues. New or modified existing roadside ditches adjacent to the trail should be installed to maintain the overall existing flow pattern. Any existing side drains and cross drains should be extended, and new structures installed in conjunction with ditch modifications. All these modification should accommodate the additional runoff resulting from the trail surface.

5.5.5.5.2. Constrained Drainage Modifications

Areas with a very constrained right-of-way may have an existing ditch and utilities present along the proposed trail alignment. These existing ditches will most likely need to be filled and stabilized for the trail construction. This will alter the sheet flow pattern from the roadway to the original ditch. To mitigate this altered flow pattern the installation of a curb and gutter for low speed sections of S.R. 19, C.R. 445, and C.R. 445A, and shoulder gutters for high speed sections can collect the trail runoff and the existing roadway runoff. These gutter systems may connect to a closed drainage system with cross drains, diverting flow to the opposite existing roadside ditch. That existing ditch may require modification to accommodate the increased runoff volume. Alternatively, if the water table permits, French drains may be utilized.

5.5.5.5.3. Culvert modifications

In order to accommodate a trail along the each of the roadway alignments, the crossing culverts under the existing road are anticipated to be extended. In locations where culverts cannot be extended, a new culvert will be installed for the trail itself at the existing culvert location. Within the study area, major culverts are located at Blackwater Creek and Ninemile Creek. The trail will also cross over the bridge present over Alexandra Springs Creek along C.R. 445, no modification is anticipated at the bridge crossing to accommodate the trail.

5.5.5.6. Structures

One potential bridge crossing is the C.R. 445 Bridge over Alexander Springs Creek (Bridge No. 114047) built in 1959. A review provided by the National Register of Historic Places (NRHP) indicated the bridge was exempt from Section 106 evaluation under the 2012 Program Comment for Common Post-1945 Concrete and Steel Bridges. Alternative B would cross this structure or cross Alexander Springs Creek with a new pedestrian bridge structure adjacent to the existing structure.

The existing bridge typical section consists of two approximately 10.5-foot travel lanes and 1.5-foot outside shoulders with a curb and concrete traffic railing on both sides. The overall bridge width is 30 feet.

5.5.5.7. Hunting Areas

Hunting grounds provide access to trail users and wildlife but has the potential for conflict between the two. It is important to understand the compatibility of hunting grounds and how it may interact with the North Lake Trail Phase 3 Corridor. The impact of the trail (low/medium/high) on existing hunting grounds adjacent to the trail are identified for each alternative in the Trail Evaluation Matrix. For all alternatives, the impact to existing hunting grounds is considered low because the trail is visibly separated and not intended to lead users into hunting areas.

Dog hunting (casting and catching from the easement area) is permitted within the Ocala Wildlife Management Area, and occurs along the entirety of S.R. 40, S.R. 19, C.R. 445A, C.R. 445, C.R. 42, and all roads within the Pipeline Unit of the Ocala Wildlife Management Area. The North Central Florida Dog Hunters Association was invited to the public meeting; however, no representatives attended.

5.5.5.8. Forest Operations

Ocala National Forest permits logging on property. The forest may incur additional liability and/or expenses under a build conditions to ensure safe logging operations for the logging teams and trail users. Ocala National Forest conducts logging directly adjacent to State and County paved roads and builds temporary clay roads to connect to the paved roads; which may occur at any location along S.R. 40, C.R. 445, C.R. 445A, and S.R. 19 as long as the selected road provides safe ingress and egress.

Logging operations within the Ocala National Forest are anticipated to necessitate trail crossings, and USDA Forest Service noted that the trucks are loaded up to 90,000 lbs. Potential conflicts may arise between logging operations and trail users. Trail guards and/or law enforcement would be needed to prevent these conflicts, which can last up to two weeks at a time. Trail users may create disruptions to the commercial logging operations (i.e. vandalism of logging equipment). Logging contractors have additional liability, as they are held liable for any potential injuries of visitors within the work area (visitors would include trail users).

There are currently nine logging purchasers who work with the Ocala National Forest. The USDA Forest Service recommended including representatives from each of these companies as project stakeholders. Logging companies were invited to the public hearing; however, no representatives attended.

The Paisley Woods area is not logged. See Appendix A for the location of Paisley Woods area in relation to the proposed trail.

USDA Forest Service indicated that fire along the trail corridor would create a maximum heat exposure of 3,000 BTU (British Thermal Unit) per square foot. Fire from controlled burns may run up to the trail edge. Lake County recommended placing concrete curbs on the edges of the asphalt to protect the asphalt from melting.

The impact of the trail alternatives to forest operations is expected to be low because the trail will be visible and within the right-of-way.

5.5.6. TRAIL EXPERIENCE

5.5.6.1. Intersections/Midblock Crossings

The potential number of intersections/midblock crossings observed from the study are identified for each alternative in Table 13.

Table 13 | Intersection and Midblock Crossings

	Alternative A	Alternative B	Alternative C
Crossings at Non-Signalized/Midblock	0 / 1	3 / 0	1 / 1
Crossings at Signalized Intersections	1	1	2
Street/Driveway Crossings	35 / 66	32 / 59	38 / 82

5.5.6.2. Connections to Other Trails

Within the study area there are several well-known existing/planned trails. *Existing Conditions Report SR 19, Figure 21* illustrates existing trails within the study area. The *Existing Conditions Report SR 19, Appendix F* provides a detailed map of the existing trails in the study area. The existing/planned trails in the study area include:

- Florida National Scenic Trail,
- Black Bear Trail,
- Timucan Trail,
- Ocala Adventure Trail,
- Wandering Wiregrass Trail,
- Baptist Loop Horse Riding Trail,
- Paisley Woods Bicycle Trail,
- Heart of Florida Loop,
- Alexander Springs Run,
- Lake Wekiva Trail,
- South Lake Trail Phase IIIB, and
- South Lake Trail Phase IV.

All alternatives would connect to the proposed S.R. 40 Black Bear Trail.

Alternatives A and C can potentially connect to the existing Baptist Loop Horse Riding Trail and the Florida National Scenic Trail.

Alternative B can potentially connect to the existing Baptist Loop Horse Riding Trail, Florida National Scenic Trail, Alexander Springs Run, and Timucan Trail. Table 14 shows the trail connections by alternative.

Table 14 | Existing Trail Connections

	Alternative A	Alternative B	Alternative C
Baptist Loop Horse Riding Trail *(Equestrian)*	Yes	Yes	Yes
Florida National Scenic Trail	Yes	Yes	Yes
Alexander Springs Run	No	Yes	No
Timucan Trail	No	Yes	No
Total Trail / Hiking/Biking Connections	2 / 1	4 / 3	2 / 1

5.5.6.3. Nearby Households and Businesses

Any household within a 0.25 mile radius from the North Lake Trail Phase 3 Corridor is accounted for and used to identify the number of nearby households for each alternative. The potential number of nearby households and businesses observed from the study are identified for each alternative in Table 15.

Table 15 | Nearby Households and Businesses

	Alternative A	Alternative B	Alternative C
Nearby Households within 0.5 miles	645	723	715

5.5.7. TRAFFIC OPERATIONS AND SAFETY

5.5.7.1. Adjacent Roadway Traffic Volume

S.R. 19 corridor traffic characteristics can be broken into several segments. The adjacent AADT for each segment of each alternative is shown in Table 16. The Trail Evaluation Matrix provides the weighted average AADT on the North Lake Trail Phase 3 Corridor for each alternative based on these segments.

Table 16 | Roadway Traffic

	Alternative A	Alternative B	Alternative C
Adjacent Roadway Traffic Volume (AADT) Weighted Average	**5499**	**4011**	**4980**
S.R. 19 from East Collins Street to C.R. 445	7477	7477	7477

	Alternative A	Alternative B	Alternative C
S.R. 19 from C.R. 445 to S.R. 40	3900		
C.R. 445 from S.R. 19 to S.R. 40		1700	
S.R. 19 from C.R. 445 to C.R. 455A			3900
C.R. 445A from S.R. 19 to S.R. 40			1800

5.5.7.2. Adjacent Roadway Speed Limit

The North Lake Trail Phase 3 Corridor posted speed limits for each alternative varies depending on the segment of the roadway. Speeds posted by roadway segment are shown in Table 17. These speeds are used to analyze the adjacent roadway speed limit for each alternative shown in the Trail Evaluation Matrix. The adjacent speed limits and weighted speed limits for each alternative are shown below in Table 17.

Table 17 | Speed Limit

	Alternative A	Alternative B	Alternative C
Bulldog Lane to Bulldog Way, Along SR 19	40	40	40
Bulldog Way to Keene Road, Along SR 19	55	55	55
Keene Road to Demko Road, Along SR 19	40	40	40
Demko Road To SR 40, Along SR 19	55		
Demko Road To CR 445, Along SR 19		55	55
SR 19 To CR 445A, Along CR 445		55	
Demko Road to CR 445A, Along SR 19			55
SR 19 to CR 445, Along CR 445A			55
CR 445A / CR 445 to SR 40, Along CR 445A		45	45

5.5.7.3. Trail Offset from Roadway

An appropriate trail offset from the roadway can prevent crashes on the North Lake Trail Phase 3 Corridor. Trail offset (reported in feet) is identified for each alternative in Table 18.

Table 18 | Trail Offset

	Alternative A	Alternative B	Alternative C
Trail Offset from Roadway ***(Average Offset in Feet from Edge of Travel)***	38 feet	49 feet	34 feet

5.5.8. COST ESTIMATIONS

The estimated cost for design and construction for Alternative A is $23.4 million and for Alternatives B and C it is $27.3 million. The construction cost estimate was prepared using FDOT's Long Range Estimating (LRE) system and FDOT cost per mile. A copy of the LRE is included in Appendix C. Design and CEI costs were estimated as 15 percent of the construction cost. Utility relocation, wetland mitigation, and right-of-way costs will be determined during the PD&E phase. Cost estimates are shown for each alternative in Table 19**Error! Reference source not found.**.

Table 19 | Construction Cost Estimates

	Alternative A	Alternative B	Alternative C
Construction Cost*	$18 Million	$21 Million	$21 Million
Design - 15%	$2.7 Million	$3.15 Million	$3.15 Million
CEI - 15%	$2.7 Million	$3.15 Million	$3.15 Million
Total	$23.4 Million	$27.3 Million	$27.3 Million

*does not include costs for right of way, environmental mitigation, utility relocation, project unknowns

5.5.9. TRAIL EVALUATION MATRIX

The Trail Evaluation Matrix in Table 20 summarizes the impacts from the three alternatives outlined in this report. The preferable option for each category is highlighted for criteria where the alternatives differ.

Table 20 | Trail Alternatives Evaluation Matrix

Evaluation Criteria	Trail Project Alternatives		
	Alternative A	Alternative B	Alternative C
Social & Economic			
Community Support *(Low/Medium/High)*	Medium	High	Medium
Consistent with Local Plans *(Yes/No)*	Yes	Yes	Yes
Support from Maintaining Agencies *(Low/Medium/High)*	Medium	High	Medium
Connections to Community Facilities *(Number of features within 0.5 mile radius)*	13	12	12
Cultural			
Risk of Impact to Archaeological Sites *(Low/Medium/High)*	Low	Low	Low
Risk of Impact to Historical Sites *(Low/Medium/High)*	Low	Low	Low
Right of Way Impact			
Private Parcels Impacted *(Number of Parcels)*	1	1	1
Acres of New Right of Way / Easements *(Acreage of Impacts)*	13.1	19.0	13.1
Number of Property Owners *(Government Owned / Privately Owned)*	3 / 1	4 / 1	3 / 1
Natural			
Wetland Impacts *(Acreage of Impacts)*	0.3	1.4	0.5
Habitat Fragmentation Risk *(Low/Medium/High)*	Low	Low	Low
Floodplain Impacts *(Acreage of Impacts)*	3.4	3.8	3.8
Risk to Bald Eagle Nesting Sites *(number of known sites within 1,000 feet)*	0	1	0
Risk to Outstanding Florida Waters / Aquatic Preserves	Low	Medium	Low

Table 20 | Trail Alternatives Evaluation Matrix

Evaluation Criteria	Trail Project Alternatives		
	Alternative A	Alternative B	Alternative C
(number of known sites within 1,000 feet)			
Physical			
Risk to Impact Contamination Sites *(Known sites within 500 feet)*	4	4	4
Level of Utility Impacts *(Low/Medium/High)*	Low	Low	Low
Potential Bridge Crossings *(Number of New Bridge Structures)*	0	1	0
Hunting Area Risk *(Low/Medium/High)*	Low	Low	Low
Forest Area Risk *(Low/Medium/High)*	Low	Low	Low
Level of Drainage Swale Impacts *(Low/Medium/High)*	Medium	Medium	Medium
Noise *(Low/Medium/High)*	Low	Low	Low
Air Quality *(Low/Medium/High)*	Low	Low	Low
Trail Experience			
Crossings at Non-Signalized/Midblock Crossing *(Number of Crossings)*	0/1	3/1	1/1
Crossings at Signalized Intersections	1	1	2
Street/Driveway Crossings *(Number of Crossings)*	101	91	120
Connections to Other Hiking/Biking Trails *(Number of Connections within 0.25 mile radius)*	1	3	1
Nearby Households *(Number of Households within 0.5 mile radius)*	645	723	715
Population *(Total Population within 0.5 mile radius)*	1,583	1,774	1,813
Traffic and Safety			
Adjacent Roadway Traffic Volume *(Average Annual Daily Traffic in Vehicles per Day)*	5,500	4000	4,980
Adjacent Roadway Posted Speed Range / Weighted Average Speed Limit *(AADT, MPH)*	45 to 55 / 54	45 to 55 / 53	45 to 55 / 53

Table 20 | Trail Alternatives Evaluation Matrix

Evaluation Criteria	Trail Project Alternatives		
	Alternative A	**Alternative B**	**Alternative C**
Trail Offset from Roadway ***(Average Offset in Feet from Edge of Travel)***	38	49	34
Estimated Cost			
Construction	$18 Million	$21 Million	$21 Million
Total Estimated Cost (includes construction, design and CEI)	$23.4 Million	$27.3 Million	$27.3 Million

5.6. SELECTED ALTERNATIVE(S) DESCRIPTION

After considering input from the public and stakeholder engagement, and considering engineering, environmental, and constructability factors, all three alternatives have been selected to move forward for further consideration. Next steps are described in Section 7.0.

5.6.1. PEL QUESTIONNAIRE

Federal Highway Administration's Planning and Environmental Linkage (PEL) Questionnaire is intended to ensure that planning information and decisions are properly documented to be consistent with the National Environmental Policy Act (NEPA). FDOT's Efficient Transportation Decision Making (ETDM) process is considered an equivalent approach to the FHWA's Planning and Environmental Linkage (PEL) Questionnaire. If the project progresses to a Project Development and Environment Study, then FDOT's ETDM will be utilized.

6. PUBLIC INVOLVEMENT

The public engagement process utilized to develop the recommended project alternative was comprised of three primary outreach strategies: 1) Project Visioning Team meetings, 2) Agency and Stakeholder meetings, and 3) Public meetings. As further described below, the level of public engagement methods, as well as detailed meeting summaries, can be found in the North Lake Trail Public Involvement Plan.

6.1. PROJECT VISIONING TEAM

To assist the project team in the development and assessment of potential alternatives, a Project Visioning Team (PVT) was assembled. The PVT is comprised of community leaders, business owners, agency representatives, and more. The first PVT meeting was on May 22, 2018, the second was held on September 6, 2018, and the third was held on February 14, 2019. The role of the PVT is to provide input on the trail concepts and developments, recommend alternatives to be advanced for further study, and share local knowledge and history. Further information regarding each PVT meeting is below:

6.1.1. PROJECT VISIONING TEAM MEETING #1

The purpose of the first PVT meeting held on May 22, 2018 was to provide an overview of the North Lake Trail Project Development and Environment (PD&E) process and to obtain information regarding their ideas for a preferred alternative and insight on what the project team should consider in design. Discussions on existing geometric conditions included right of way variations, drainage elements, and utility locations helped the project team better understand the issues facing the construction of the corridor. The maintenance of the proposed trail was also discussed. PVT members disclosed that the Ocala National Forest was open to the idea of obtaining a permit within their jurisdiction with some requirements of the trail being met. Both involved counties, Marion County and Lake County expressed openness to discussions on trail maintenance as well. Further topics covered during the first PVT meeting included clarification on the procedure for developing the trail alignment, and any potential obstacles faced with developing alternatives given the available existing data and local knowledge shared.

6.1.2. PROJECT VISIONING TEAM MEETING #2

The purpose of the second PVT meeting held on September 6, 2018 was to provide refined alternatives with corresponding evaluations. PVT members discussed the evaluation criteria and supplemented the study team's research with local knowledge, particularly of hunting, logging, controlled burns, and concerns over mid-block crossings. Members also discussed more specific impacts to different cultural resources, and expressed opinions on the different alternatives and their connections to other local features. The PVT Team Meeting #2 resulted in changing the three alternative corridors from following Railroad Grade Road to their current routes. The final project logo was also revealed with revisions being suggested and implemented to the logo.

6.1.3. PROJECT VISIONING TEAM MEETING #3

The purpose of the third PVT meeting held on February 14, 2019 was to provide refined alternatives based on discussion from PVT #2, alternatives evaluations, and outcomes of the

public meeting. PVT members discussed trail connections to local resources, accommodations for trail users, and landscaping. Members also discussed next steps for the project.

6.2. AGENCY / STAKEHOLDER MEETINGS

Several agency and stakeholder meetings were also held throughout the course of the study. The meetings with each agency are outlined by date in Table 21 Detailed summaries of each are included as attachments to the S.R. 19 North Lake Trail Phase 3 Public Involvement Plan.

Table 21 | Agency & Stakeholder Meeting Occurrences

Date	Organization
3/19/2018	St Johns River Utility
3/19/2018	U.S. Forest Service
5/9/2018	Florida Forest Service
3/13/2019	River to Sea Transportation Planning Organization (TPO) Bicycle and Pedestrian Advisory Committee
3/25/2019	U.S. Forest Service
3/25/2019	Florida Forest Service
3/27/2019	River to Sea TPO Governing Board
4/10/2019	Lake~Sumter Metropolitan Planning Organization (MPO) Community Advisory Board
4/10/2019	Lake~Sumter MPO Technical Advisory Committee
4/24/2019	Lake~Sumter MPO Governing Board

6.3. PUBLIC MEETING

The public meeting was held on January 24, 2019. Notification for the public meeting was mailed to over 2,200 properties within the North Lake Trail as well as the Black Bear Trail project corridors and e-mailed to interested citizens and stakeholders. Notification was also provided to applicable governmental agencies and elected and appointed officials, as outlined within the Public Involvement Plan, available under separate cover. On January 3, 2019, the public meeting advertisement was published in the *Ocala Star-Banner*, *North Lake Outpost*, and *Daytona Beach News-Journal*. Additionally, to assure extensive outreach to low-income areas, public notifications were posted or made available at the following locations.

Lake George State Forest
5458 US Highway 17
De Leon Springs, FL 32130

US Post Office
1680 Railroad Avenue
Barberville, FL 32180

Pioneer Settlement for the Creative Arts
1776 Lightfoot Lane
Barberville, FL 32105

US Post Office
24433 State Road 40
Astor, FL 32102

Astor Chamber of Commerce & **St. Johns River Utility**
23939 State Road 40
Astor, FL 32102

US Post Office
15997 State Road 40
Silver Springs, FL 34488

Over 90 interested parties attended the public meeting. The public meeting was organized as an open house with a continuous looping PowerPoint presentation in a separate room. The purpose of the meeting was to present information regarding the three potential alternatives; an evaluation of these alternatives; and a preliminary evaluation of potential impacts resulting from each alternative.

7. NEXT STEPS

The North Lake Trail Phase 3 Corridor Project will be placed on hold following this report until funding becomes available for a PD&E study, or until a local agency picks up the project. Due to the existing roadway network using an easement from the Ocala National Forest, the project must comply with NEPA even if nonfederal funds are used. The PD&E process will need to address the requirements of the U.S. Forest Service.

8. APPENDICES

Appendix A: Overview Presentation

Appendix B: Selected Alternatives Concept Plans

Appendix C: Long Range Estimates

Appendix A: Overview Presentation

North Lake Trail Phase 3
Corridor Planning Study

Financial Project ID (FPID) No. 441626-1

Management Meeting | November 26, 2018

Meeting Agenda

01 Background

02 Existing Conditions

03 Study Alternatives

04 Alternatives Evaluation

05 Next Steps

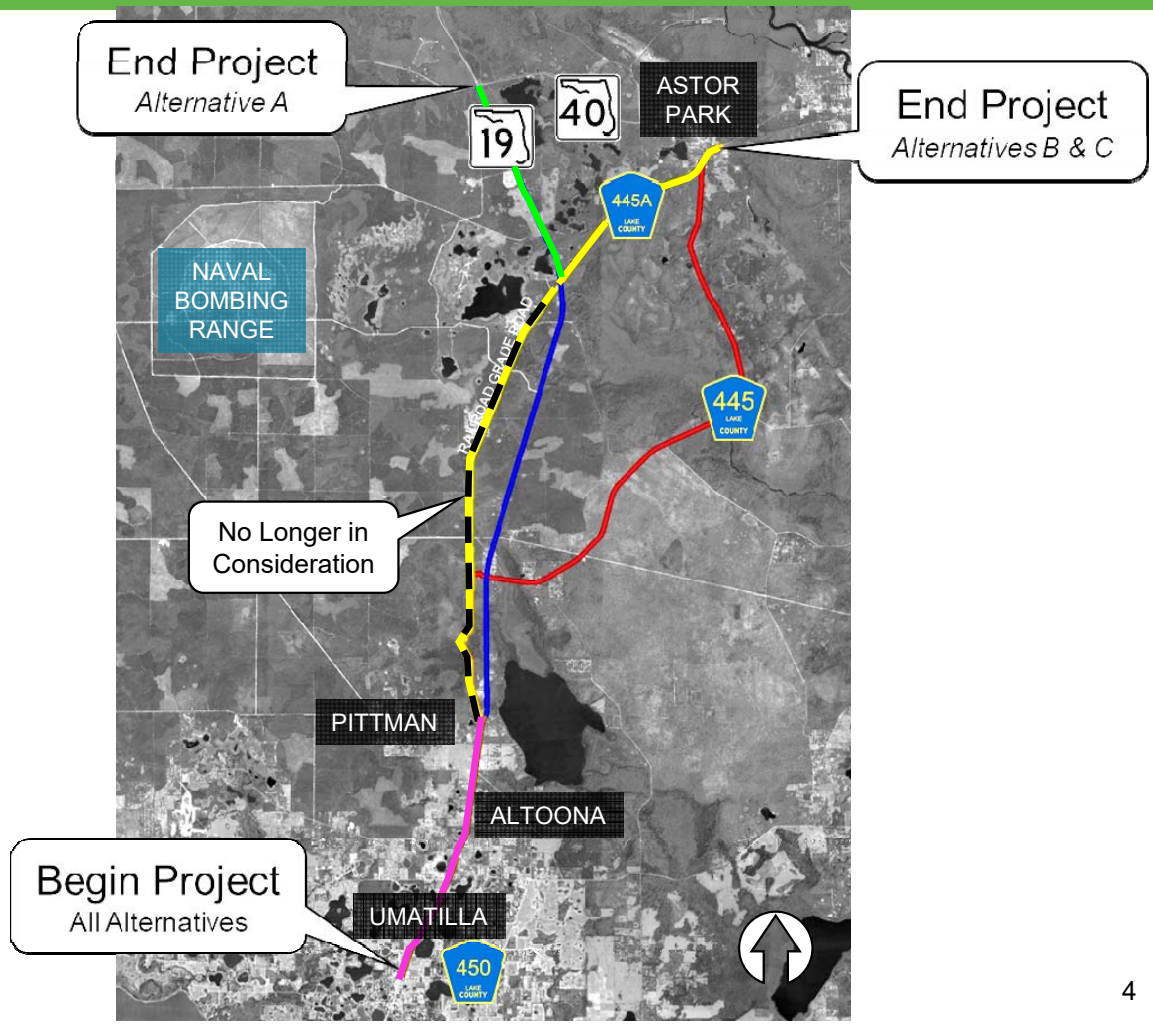
01

Background

North Lake Trail Phase 3

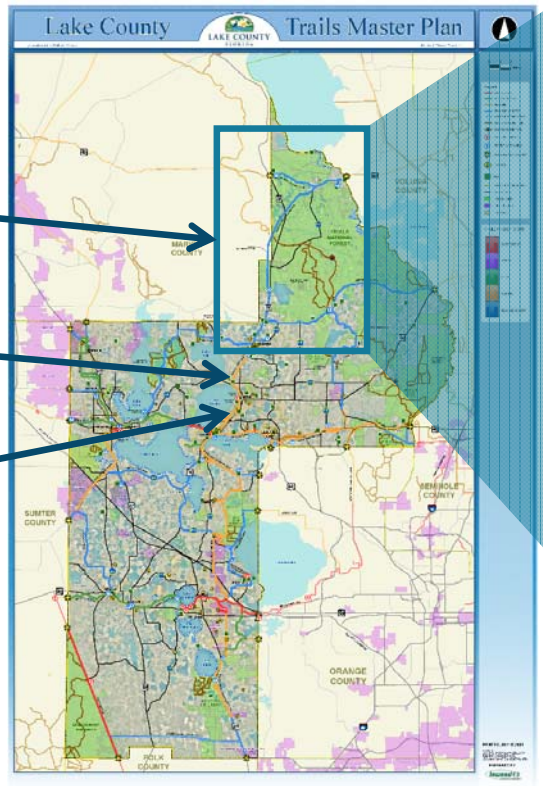
Study Area / Limits

- County Road (C.R.) 450 to State Road (S.R.) 40
- Umatilla, Altoona, Pittman
- Rural Communities
- Ocala National Forest



Context

- Lake County Trails Master Plan



Scope of Study / Project Purpose & Need

- Scope
  - Identify and evaluate alternatives that can be carried forward to the project development and environment (PD&E) study phase
- Purpose
  - Provide a **safe**, **comfortable**, and **accessible** paved facility for bicyclists, pedestrians, and other non-motorized users of **all ages and abilities** between C.R. 450 and S.R. 40.
- Need
  - Gap in regional trail network
  - Lack of safe, comfortable, and accessible pedestrian and bicycle facilities

Approach / Schedule

Jan '18 – May '18

Data Collection & Existing Conditions

- ✓ **DATA COLLECTION**
- ✓ Transportation Characteristics
- ✓ Community Characteristics
- ✓ Safety Assessment
- ✓ Issues and Constraints
- ✓ **PVT MEETING NO. 1**
- ✓ Review Existing Conditions
- ✓ **EXISTING CONDITIONS TECHNICAL MEMORANDUM**

May '18 – June '18

Define Purpose & Need

- ✓ **DEFINE PURPOSE**
- ✓ **DEFINE NEED**

June '18 – Oct '18

Alternatives Development

- ✓ **DEVELOP ALTERNATIVES**
- ✓ Initial / Viable Alternatives and Typical Sections
- ✓ **EVALUATION MATRIX**
- ✓ Develop Criteria and Perform Initial Evaluation
- ✓ **PVT MEETING NO. 2**
- ✓ Input on Purpose & Need
- ✓ Input on Proposed Alternatives
- ✓ Input on Evaluation Matrix

Oct '18 – Jan '19

Alternatives Analysis & Evaluation

- ✓ **IDENTIFY ALTERNATIVE(S) FOR ADVANCEMENT**
- ✓ **FDOT UNITS MEETING**
- **FDOT MANAGEMENT MEETING**
- **PUBLIC MEETING**
- ✓ Existing & Future Conditions
- ✓ Viable Alternatives

Jan '19 – March '19

Corridor Concept Plan

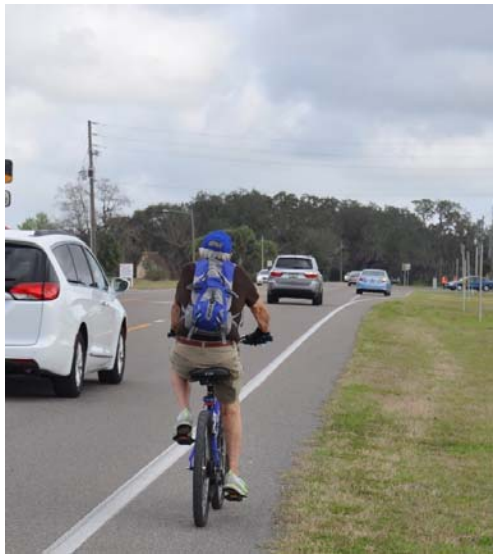
- **IMPLEMENTATION STRATEGY**
- **FINAL DEVELOPMENT PLAN**
- **PVT MEETING NO. 3**
- **MPO / TPO PRESENTATIONS**
- **NEXT PHASE SCOPE DEVELOPMENT**

02

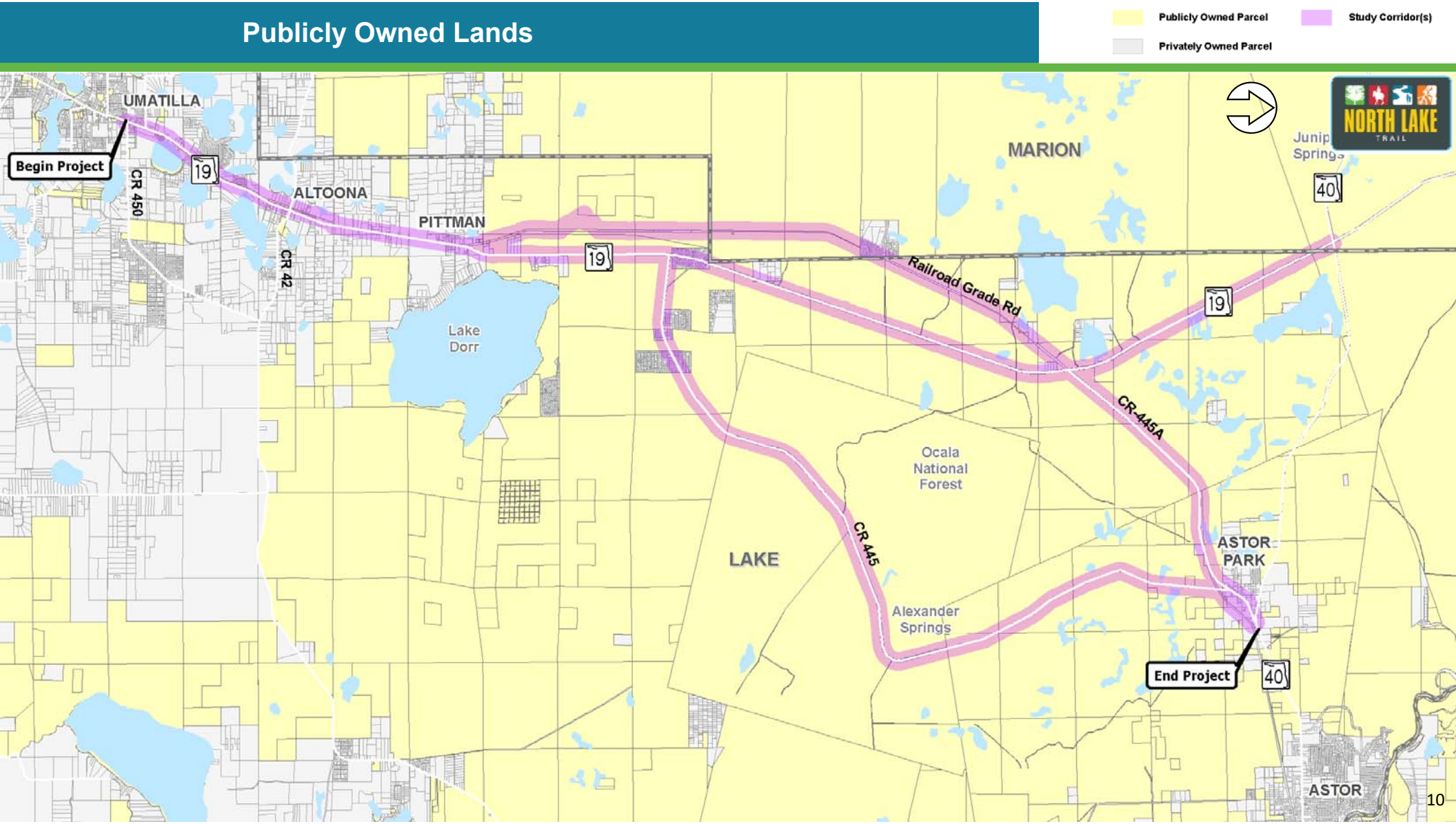
Existing Conditions

North Lake Trail Phase 3

Study Area Context

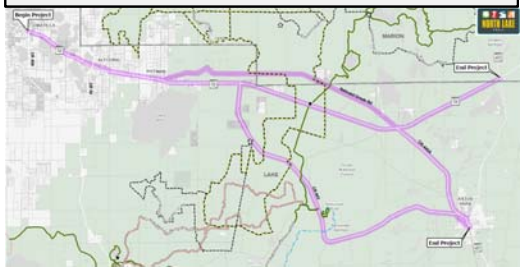


Publicly Owned Lands



Existing Conditions Maps

Existing Trails



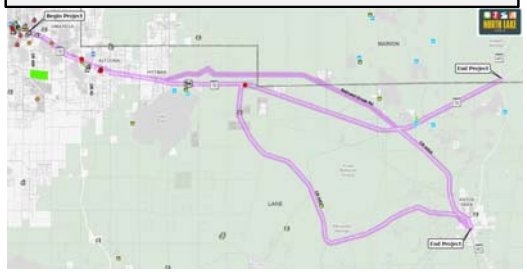
Speed Limit

Critical Habitats

Future Land Use

Historic Places

Social Resources



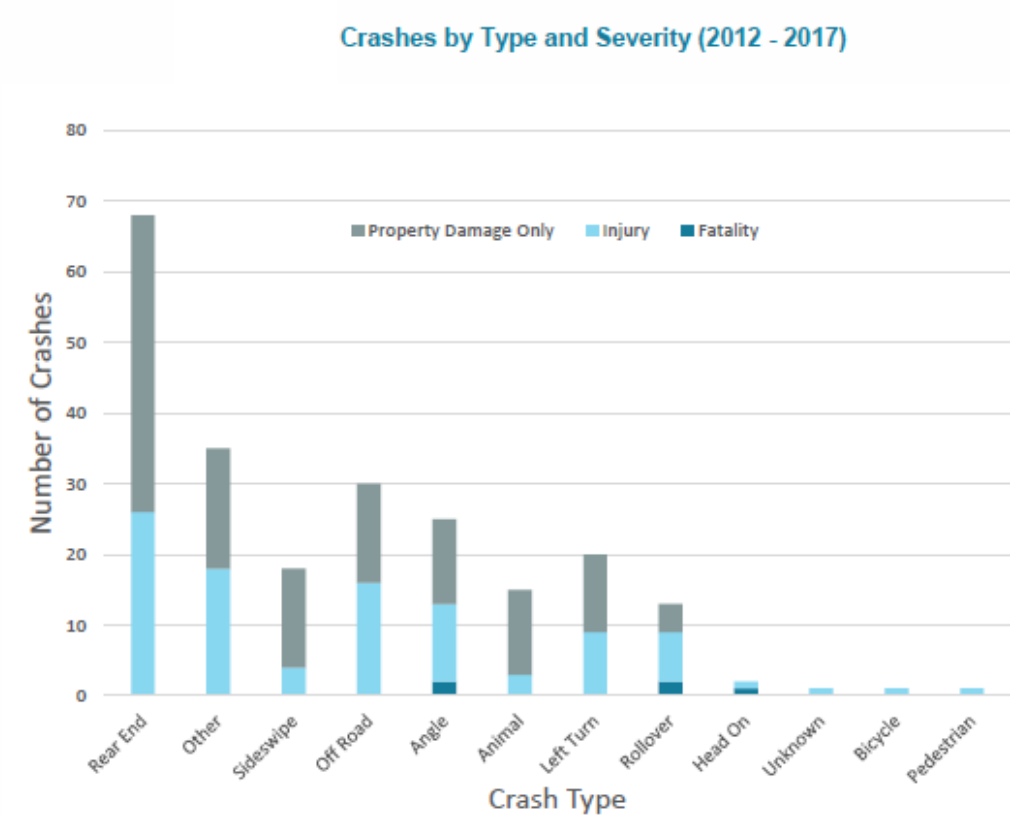
Wetlands & Floodplains

Annual Average Daily Traffic (AADT)

Crash Heat Map

Crash Statistics

Source: Signal Four Analytics



Source: Signal Four Analytics

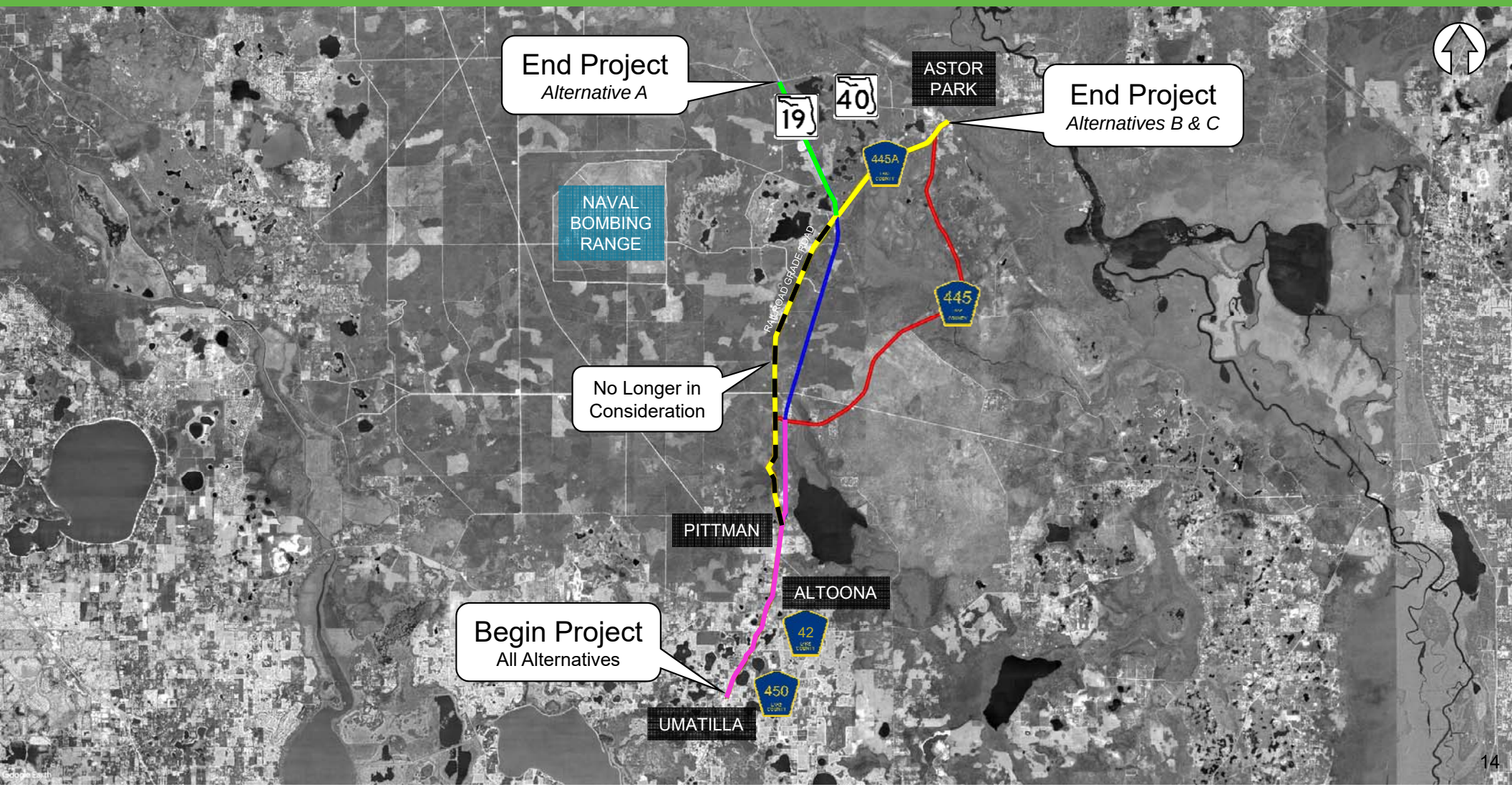
Note: July 2012 – June 2017

03

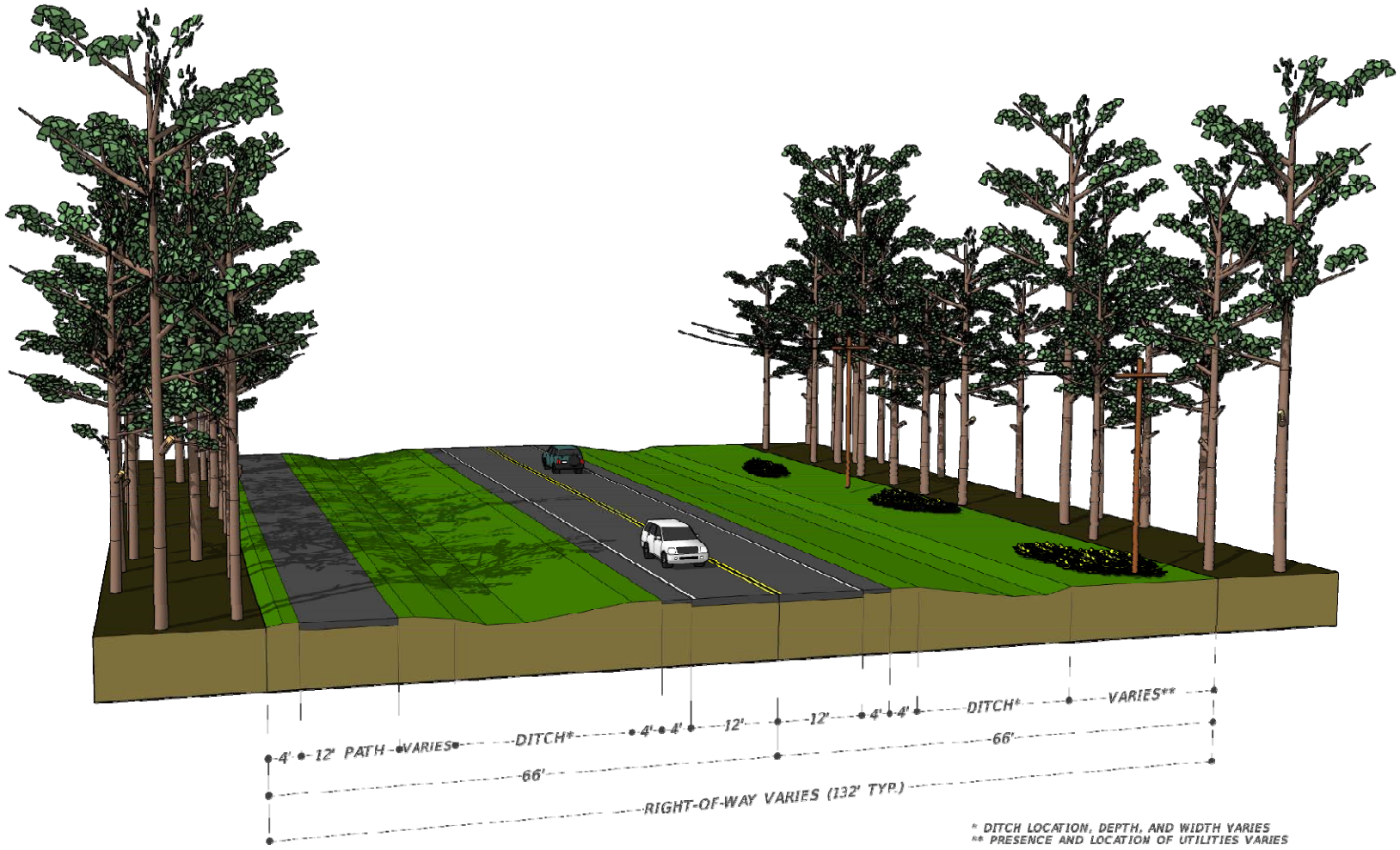
Study Alternatives

North Lake Trail Phase 3

Overview of Alternatives

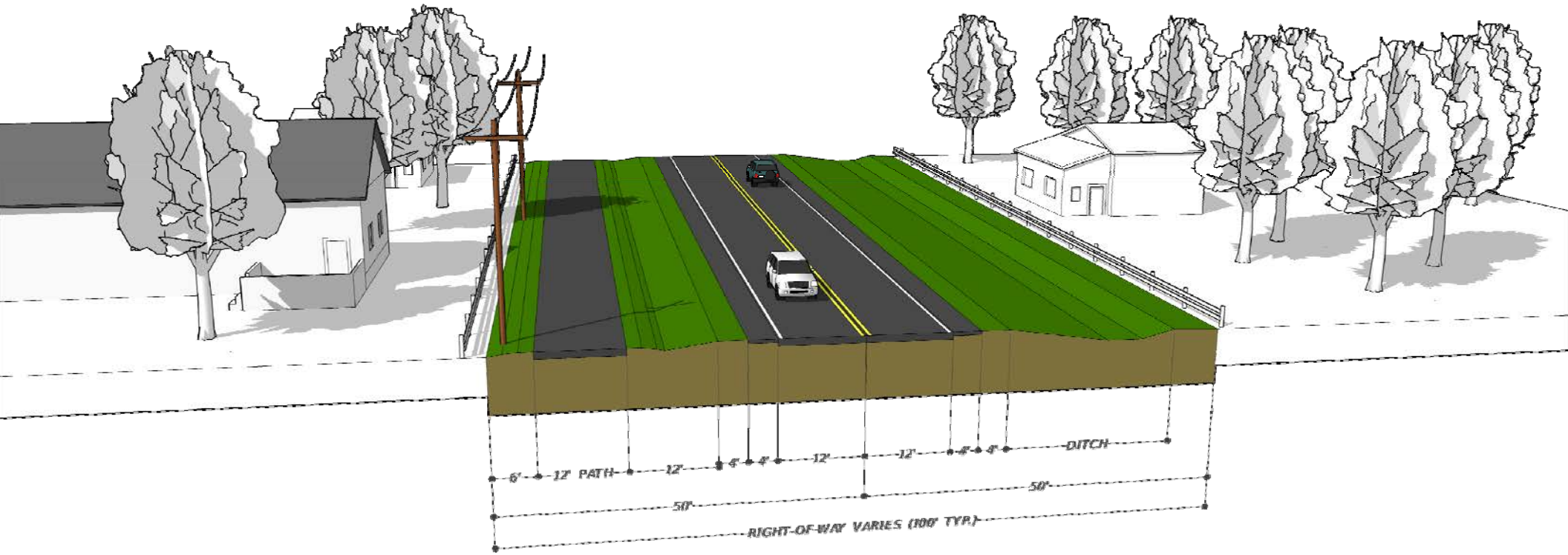


Example Typical Section No. 1 –
Trail within Existing Right of Way (ROW) / Easements

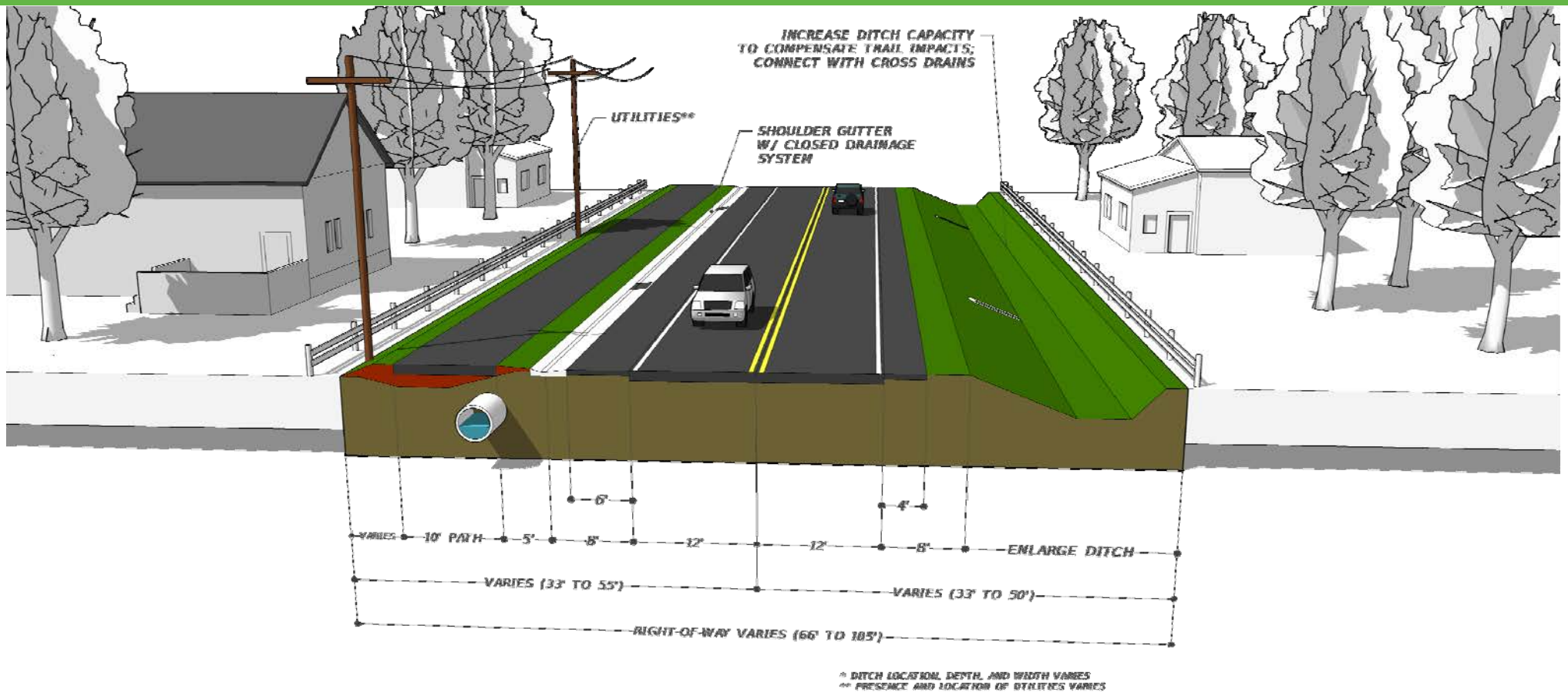


Example Typical Section No. 2 – Trail in Separate Easement

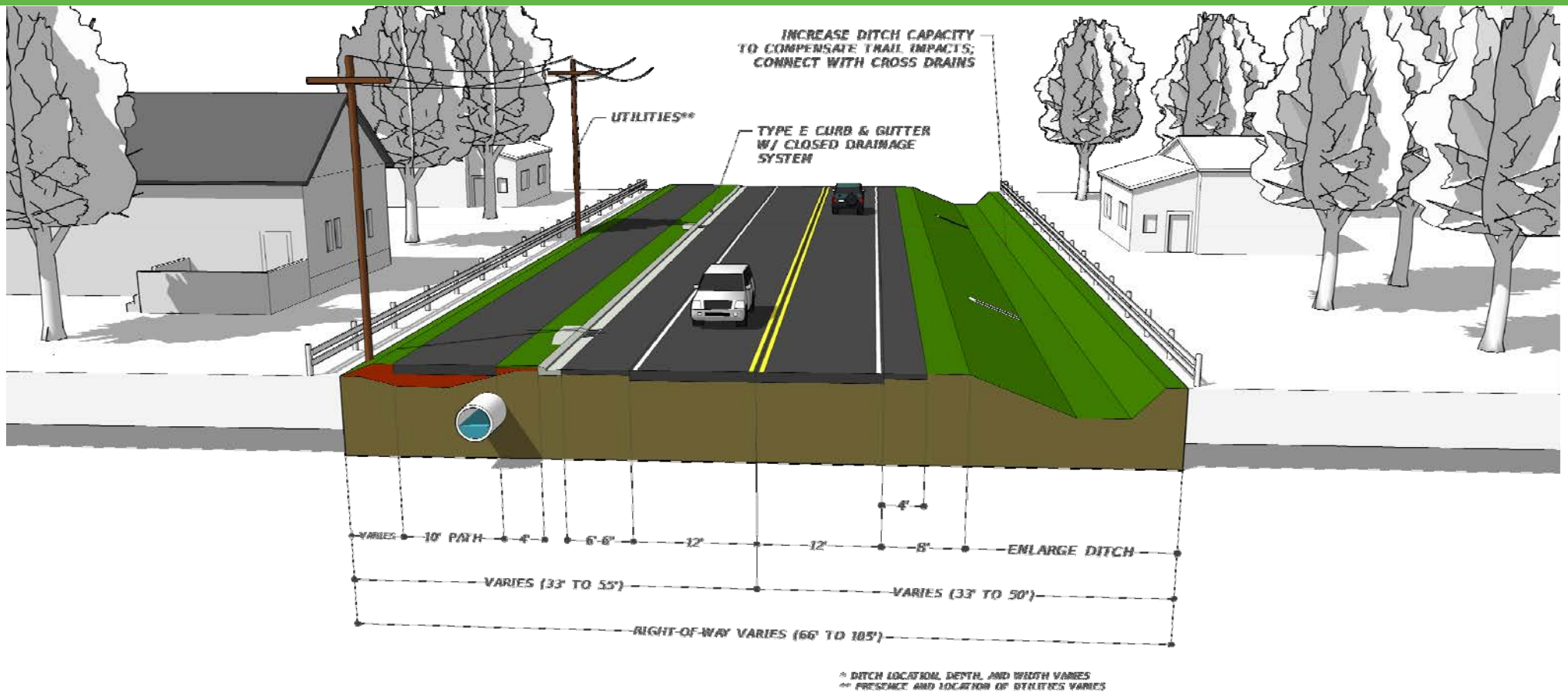
Example Typical Section No. 3 – Constrained Areas



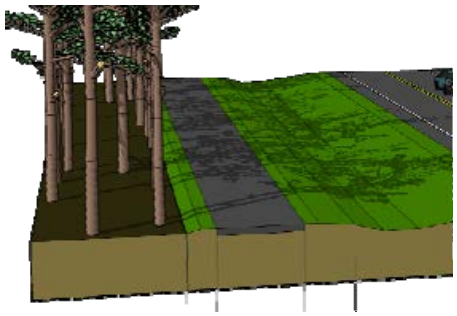
Example Typical Section No. 4A – Very Constrained w/ Shoulder Gutter



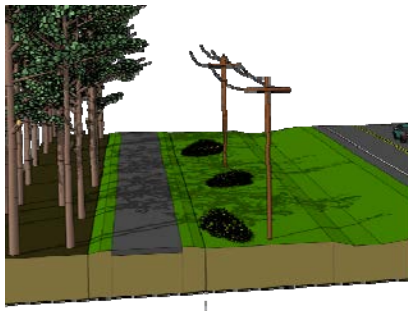
Example Typical Section No. 4B – Very Constrained w/ Curb & Gutter



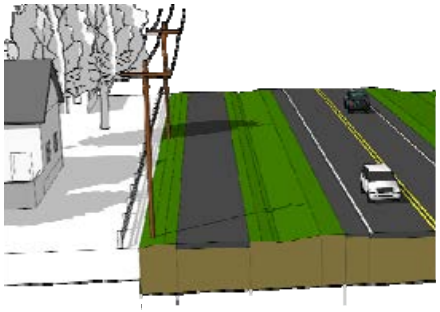
Overview of Alternatives



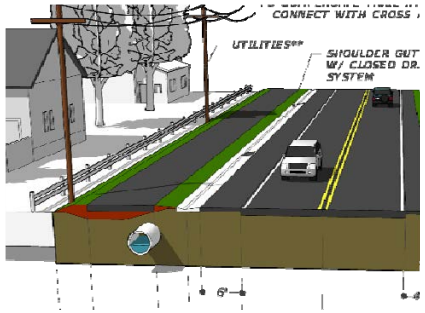
1 Trail within Existing Right of Way (ROW) / Easements



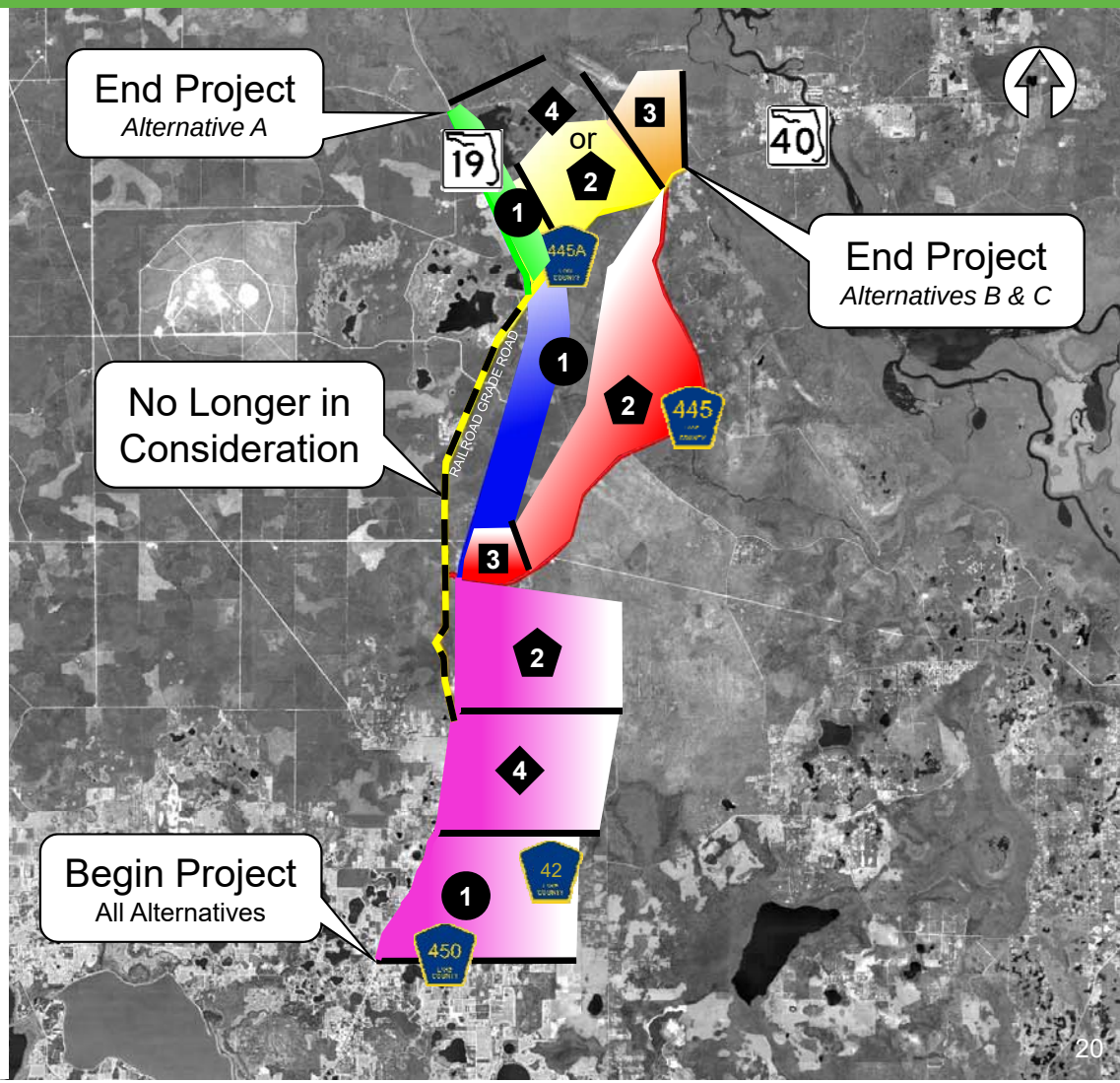
2 Trail in Separate Easement



3 Constrained Areas



4 Very Constrained Areas



Overview of Alternatives

A-B-C A-C A B C No Longer in Consideration

Overview of Alternatives

A-B-C A-C A B C No Longer in Consideration

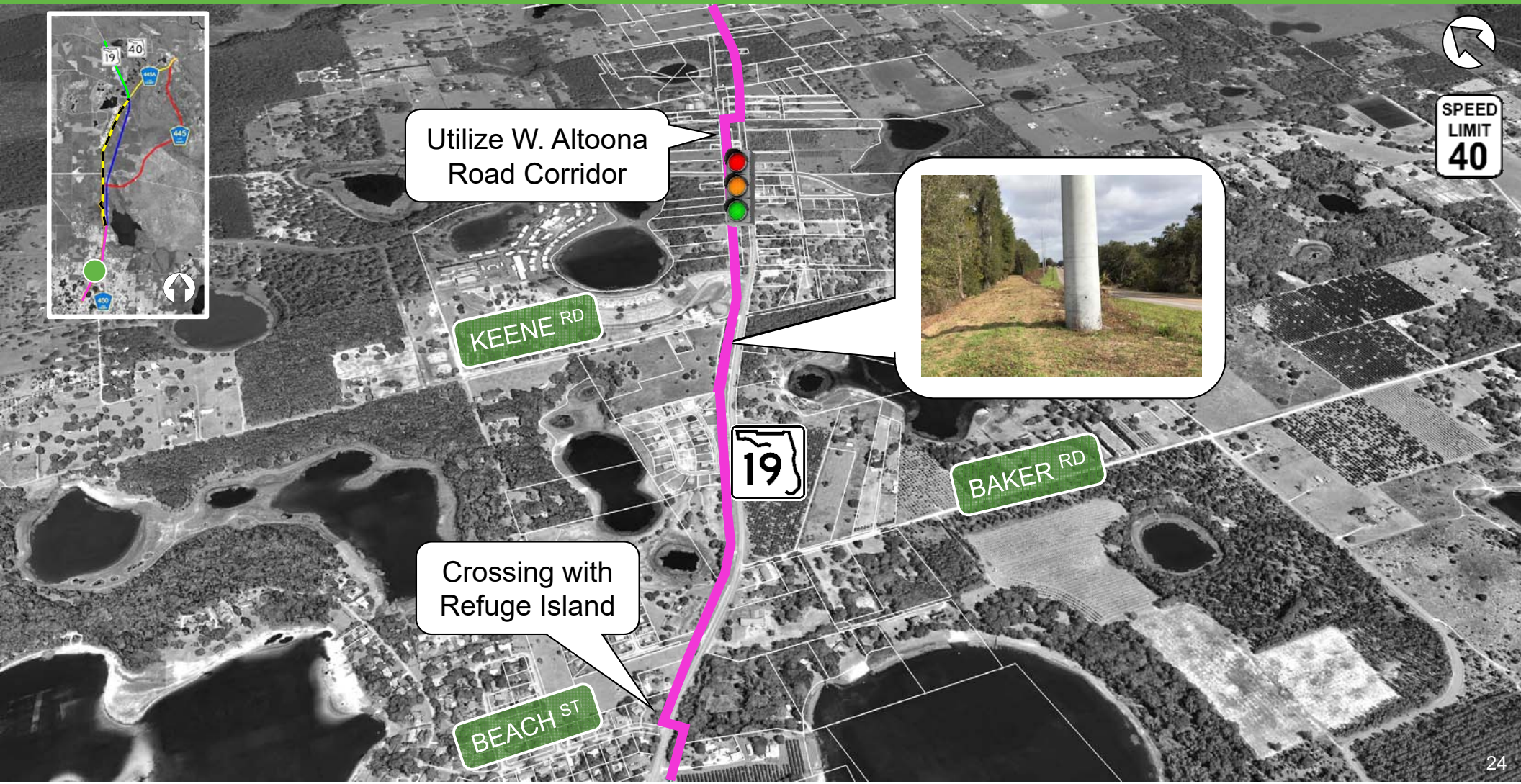
Conceptual Midblock Crossing – Alternative A & B

Stopping Sight Distance Method (FT)				
45 MPH	50 MPH	55 MPH	60 MPH	65 MPH
360	425	495	570	645

Pedestrian Critical Gap Method (FT) *Florida Manual on Uniform Traffic Studies - Chapter 8 – Gap Studies*					
Crossing Method	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH
Two Stage Crossing	537	597	657	717	776
Single Stage Crossing	877	974	1072	1169	1267

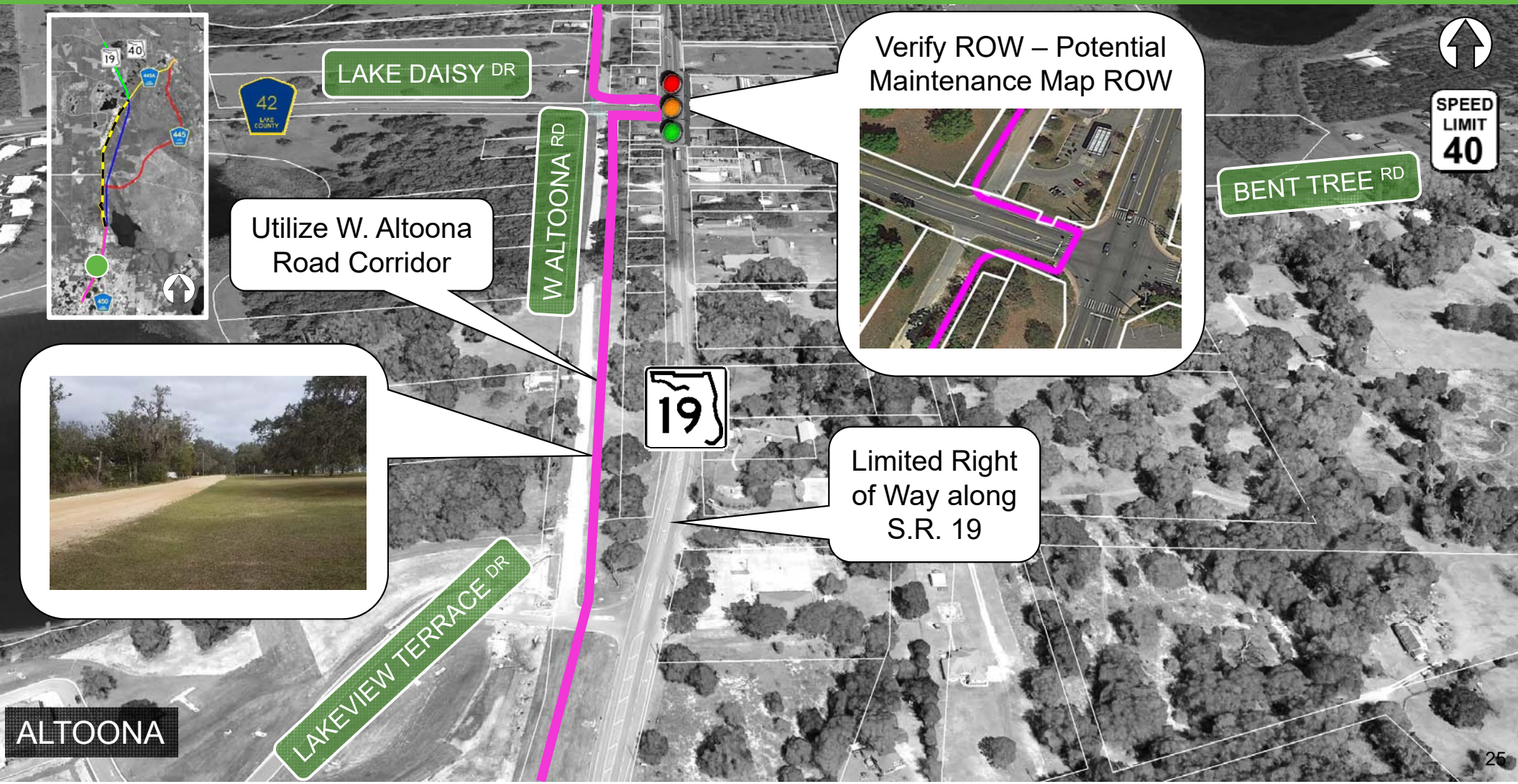
Overview of Alternatives

A-B-C A-C A B C No Longer in Consideration



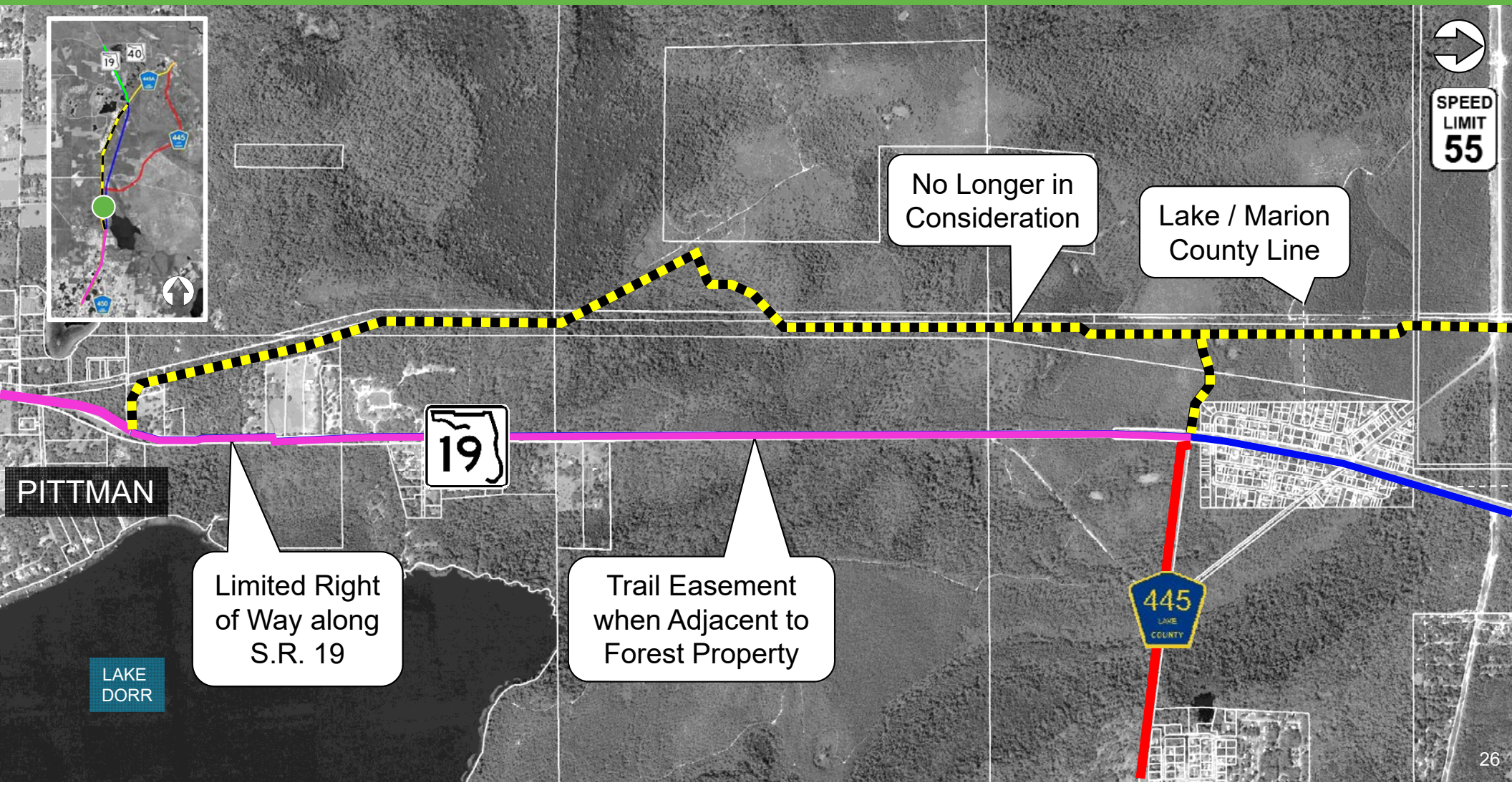
Overview of Alternatives

A-B-C A-C A B C No Longer in Consideration

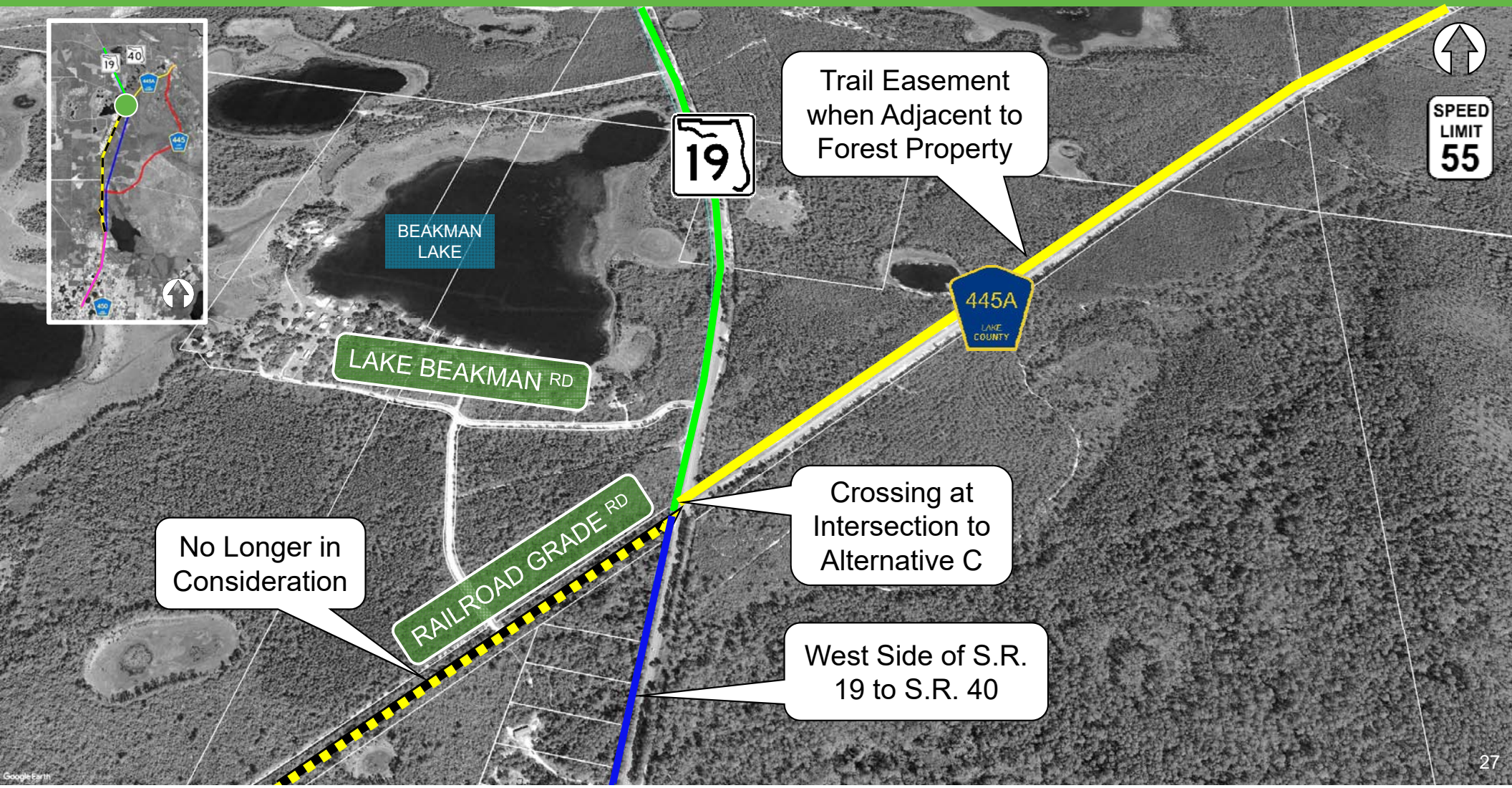


Overview of Alternatives

A-B-C A-C A B C No Longer in Consideration



Overview of Alternatives



Overview of Alternatives

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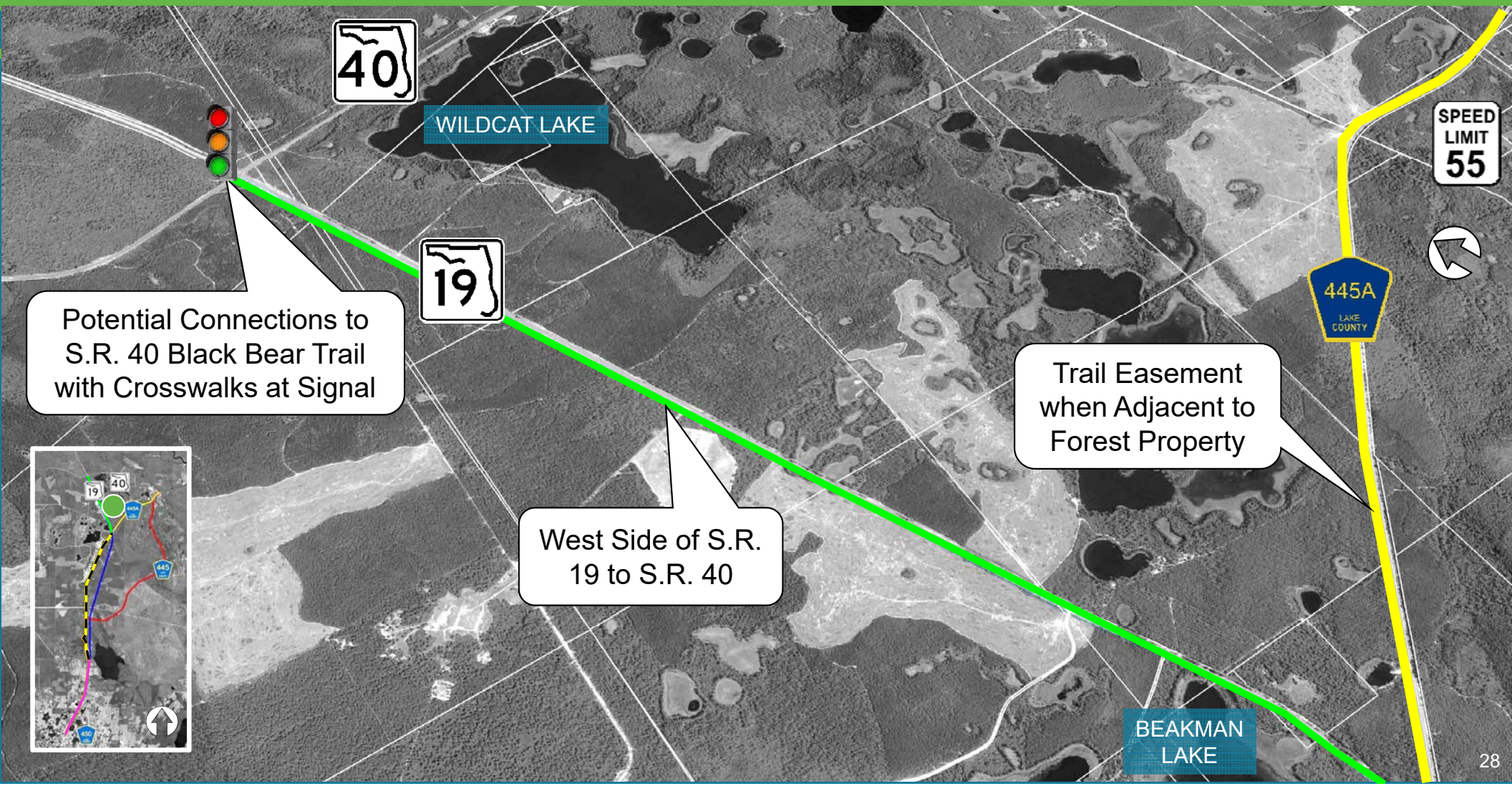

Overview of Alternatives

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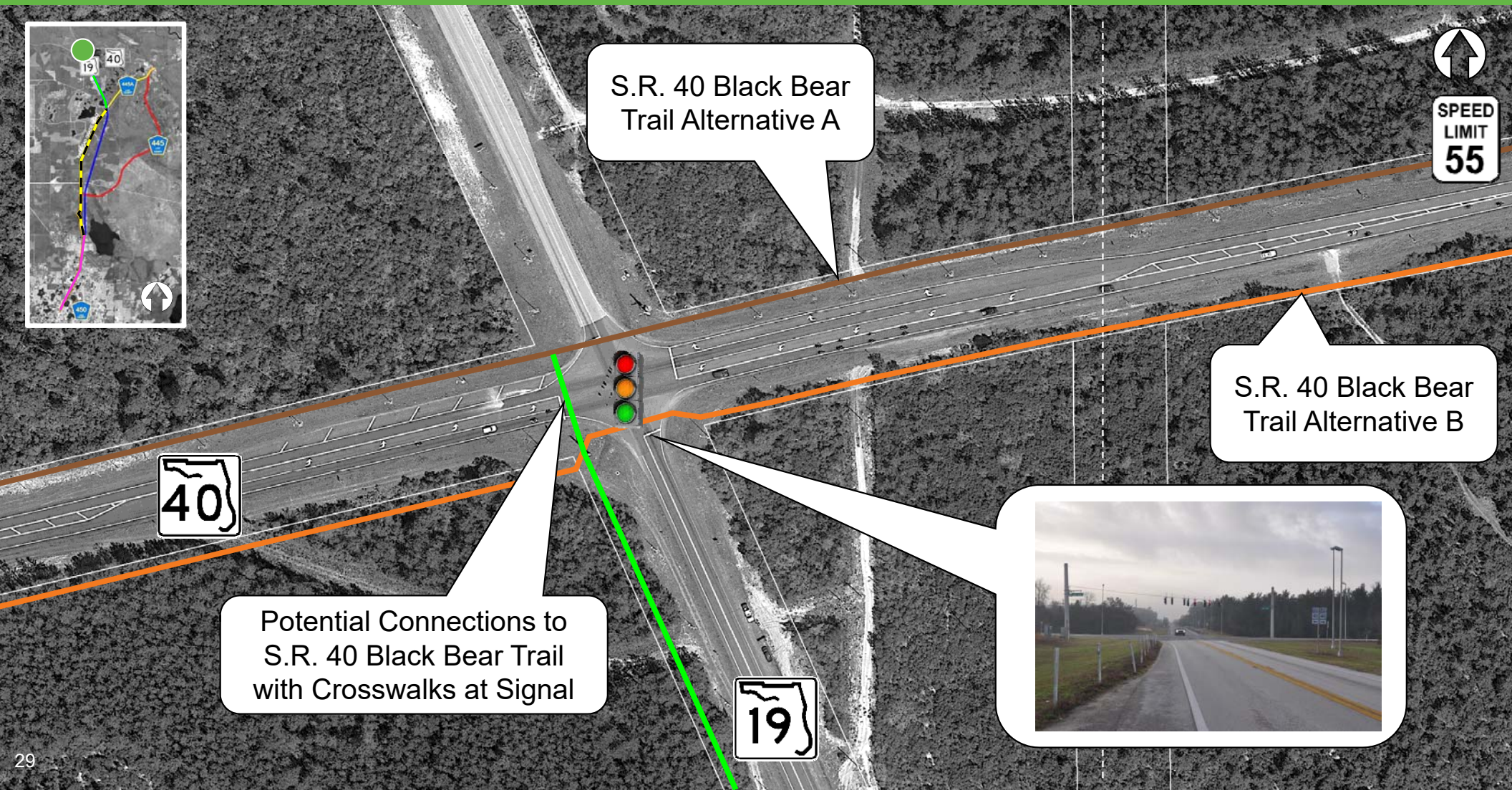
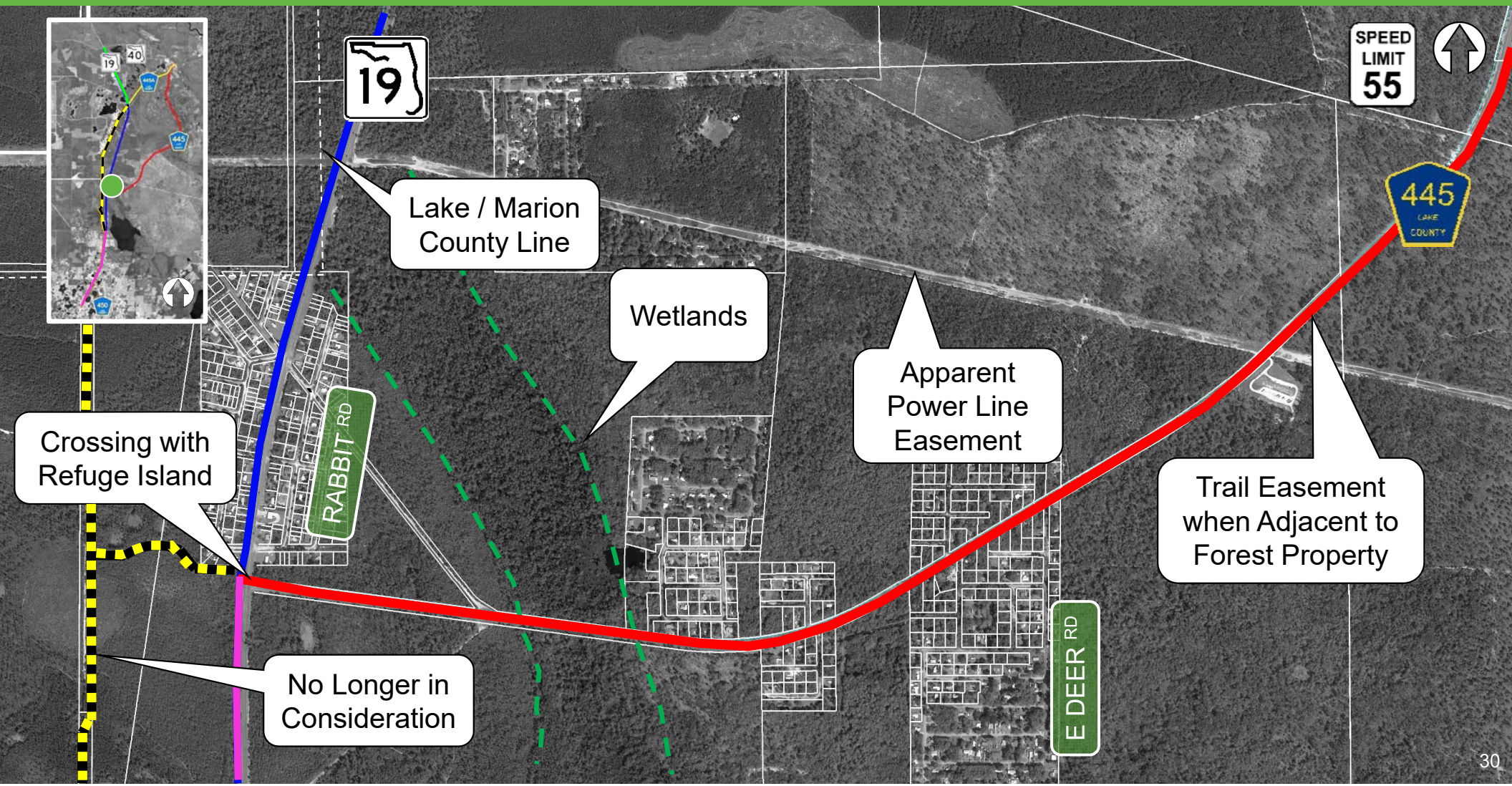


Overview of Alternatives

A-B-C A-C A B C No Longer in Consideration



Conceptual Midblock Crossing - Alternative B Only

Stopping Sight Distance Method (FT)

45 MPH	50 MPH	55 MPH	60 MPH	65 MPH
360	425	495	570	645

Pedestrian Critical Gap Method (FT)

Florida Manual on Uniform Traffic Studies - Chapter 8 – Gap Studies

Crossing Method	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH
Two Stage Crossing	764	849	933	1018	1103
Single Stage Crossing	1103	1226	1348	1471	1593

Overview of Alternatives

A-B-C A-C A B C No Longer in Consideration

Known Nesting Area for Red Cockaded Woodpecker

Known Bald Eagle Nesting Site

660 feet

Trail Easement when Adjacent to Forest Property

Connection to Alexander Springs

Overview of Alternatives

A-B-C A-C A B C No Longer in Consideration

ASTOR PARK

SUNSET DR

PARK RD

BUCKHORN RD

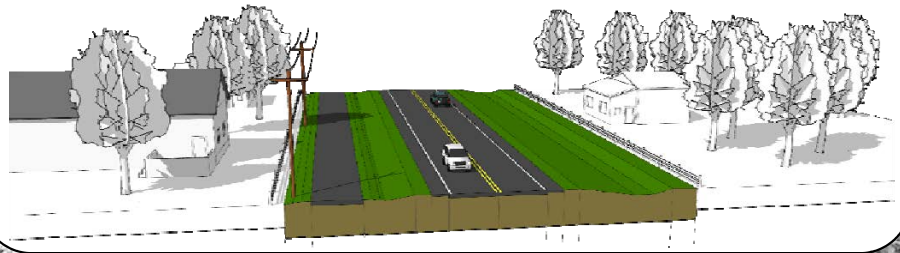
SCHIMMERHORN LAKE

445A LAKE COUNTY

445 LAKE COUNTY

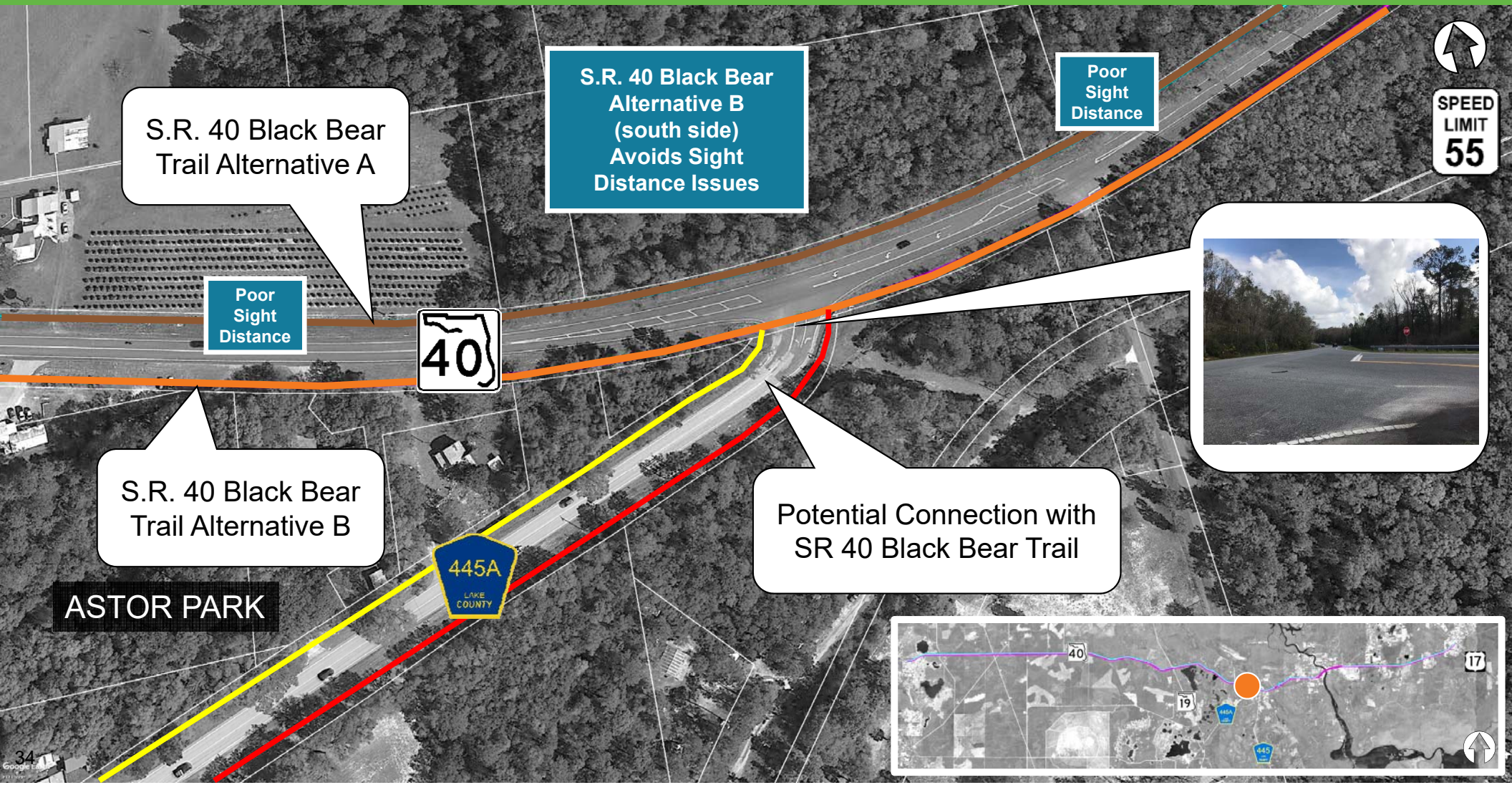
SPEED LIMIT 55

End Project
Alternatives B & C



Overview of Alternatives

A-B-C A-C A B C No Longer in Consideration



04

Alternatives Evaluation

North Lake Trail Phase 3

Evaluation Factors

Trail Experience

- Intersections/Midblock Crossings
- Connections To Other Trails
- Nearby Households And Businesses

Natural

- Wetland/Floodplain Impacts
- Wildlife And Habitat
- Outstanding Florida Waters

Physical

- Utility/Drainage
- Air Quality
- Noise
- Potential Contamination
- Structures
- Hunting Areas
- Forest Operations

Cultural

- Historical/Archaeological Site Resources
- Section 4(f)
- Recreation Areas

Social And Economic

- Consistency With Local Plans
- Nearby Community Features

Traffic And Safety

- Adjacent Roadway Volume
- Adjacent Roadway Speed Limit
- Trail Offset From Roadway

Right Of Way Impact

- Acreage Of Impacts
- Number Of Parcels
- Parcel Owners (Public Vs Private)

Cost

Draft Evaluation Matrix - Highlights

Evaluation Criteria	Alternative A *(S.R. 19)*	Alternative B *(C.R. 445)*	Alternative C *(C.R. 445A)*
Proximity to Hiking / Biking Trails *(Number of Trails within 0.5 miles)*	1	3	1
Potential Bridge Crossings *(Number of New Bridge Crossings)*	0	1	0
Connects to Alexander Springs *(Yes or No)*	No	Yes	No
Trail Route between Umatilla and Astor *(Distance in miles)*	24.6	21.9	20.3
Adjacent Roadway Traffic Volume *(Weighted Average of Annual Daily Traffic)*	5,500	4,000	4,980
Crossings at Non-signalized / Midblock Locations *(Number of Crossings across S.R. 19, C.R. 445, or C.R. 445A)*	0 / 1	3 / 1	1 / 1
Number of Parcels *Government Owned / Privately Owned*	11* / 1** * All Federal Forest ** CSX along Abandoned Railroad	16* / 1** * All Federal Forest ** CSX along Abandoned Railroad	11* / 1** * All Federal Forest ** CSX along Abandoned Railroad
Maintaining Agency Support *(Low / Medium / High)*	Medium	High	Medium
Preliminary Construction Cost *Based on Preliminary LRE*	$18 Million	$21 Million	$21 Million

05

Next Steps

North Lake Trail Phase 3

Approach / Schedule

Funding

PD&E

Not Yet Funded

Design

Not yet funded

Right-of-Way Purchase

Not yet funded

Construction

Not yet funded

Contact Us!

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Judy.Pizzo@dot.state.fl.us
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FDOT Consultant Project Manager
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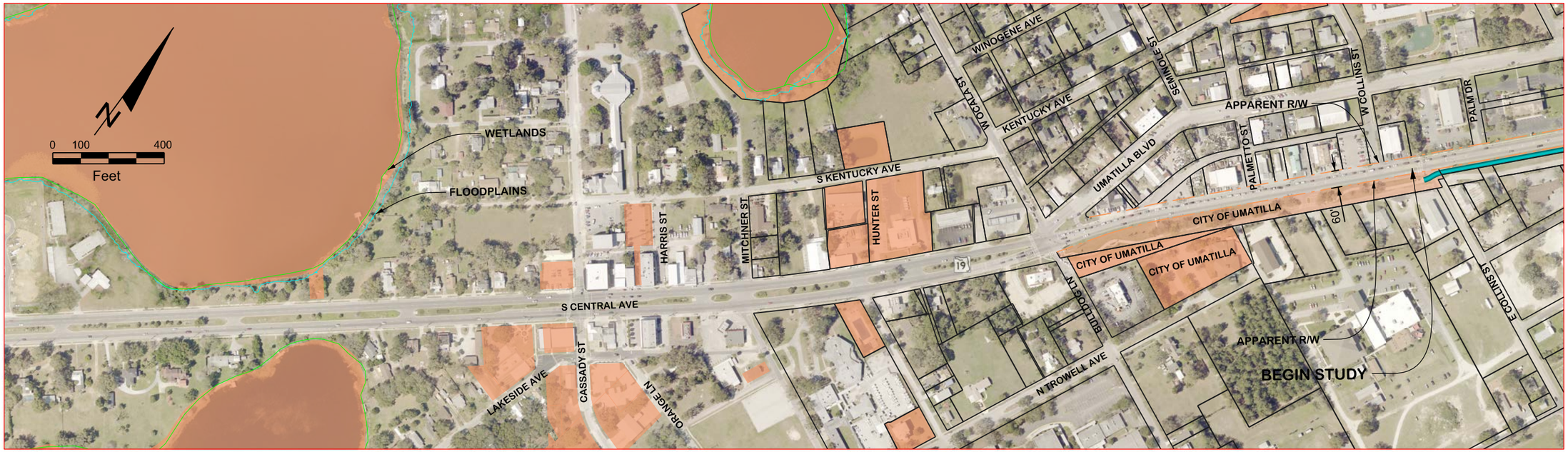
Appendix B: Selected Alternatives Concept Plans

Alternative A



	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

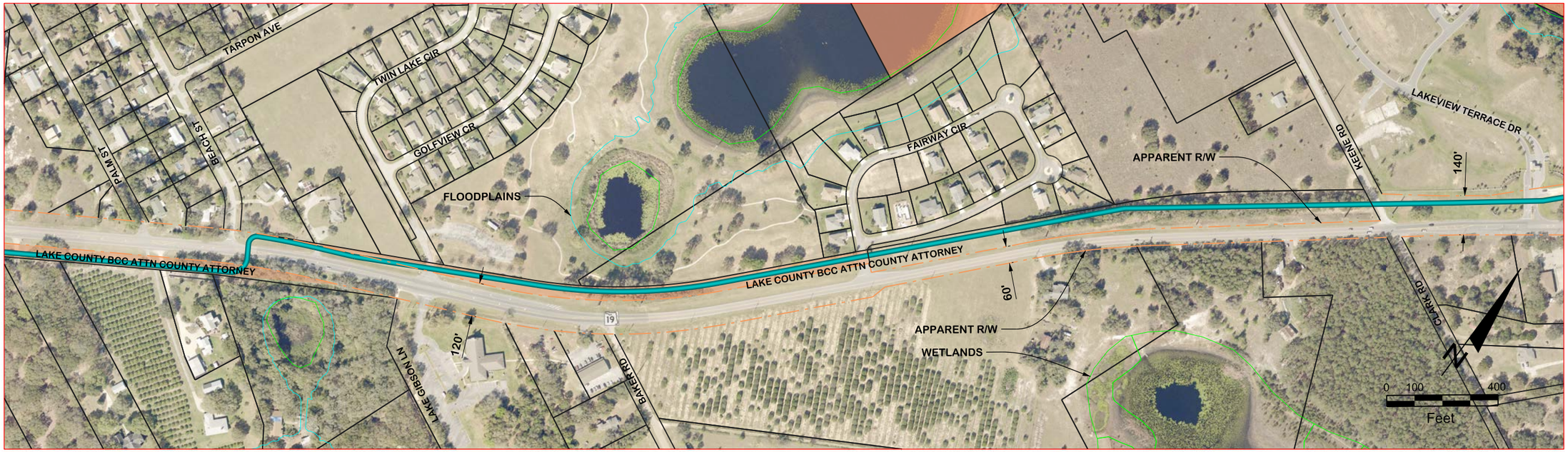
SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

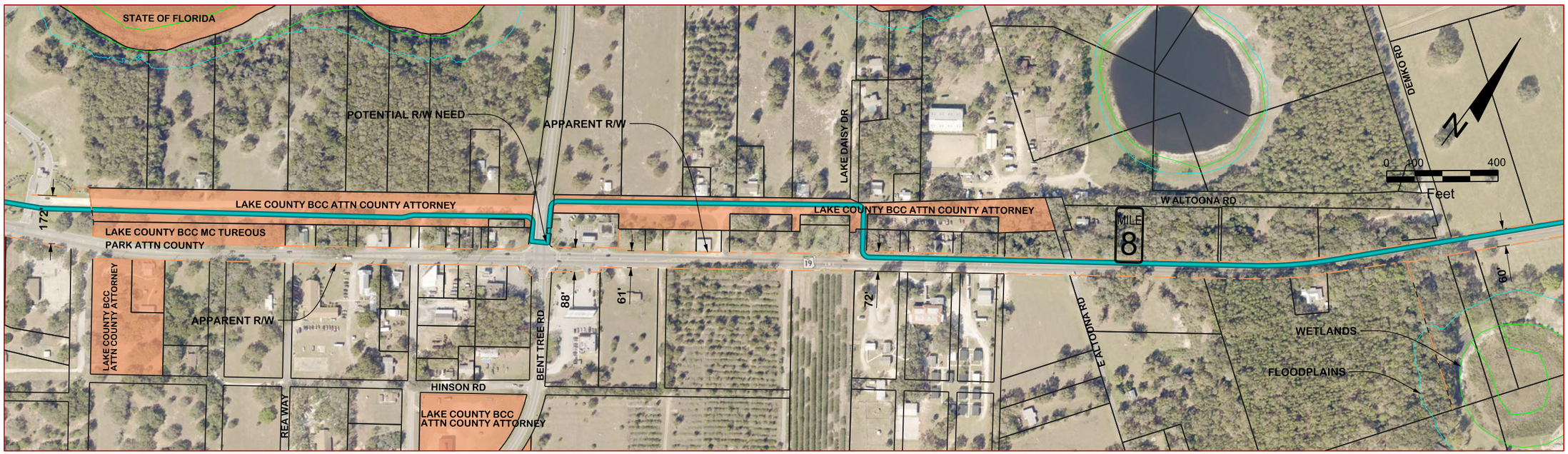
LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$





	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL

CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

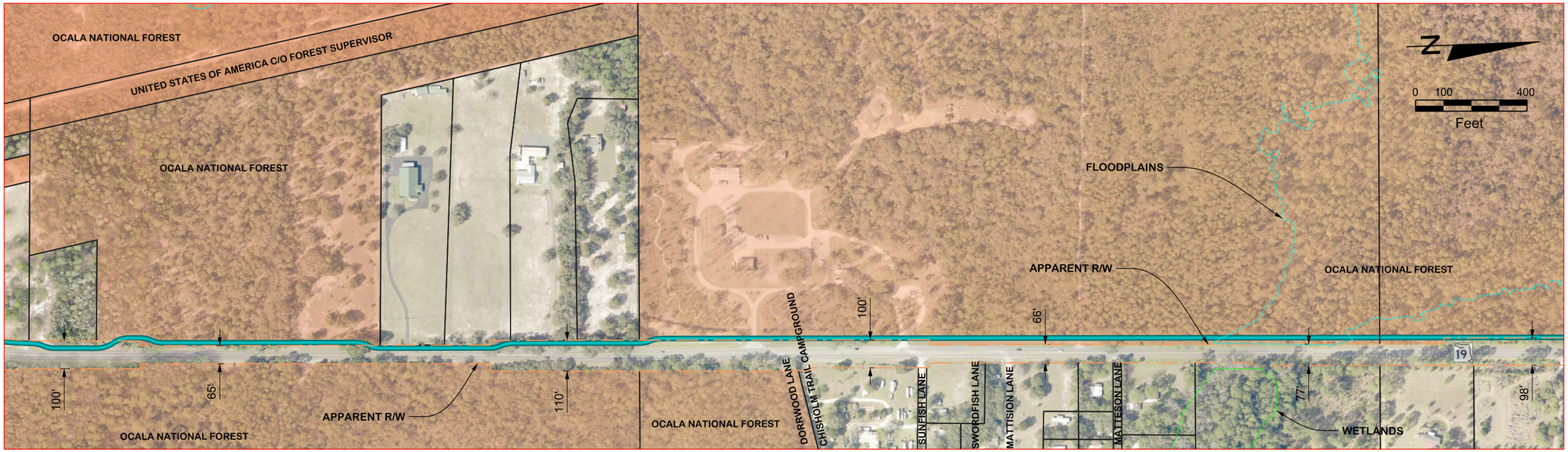
SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

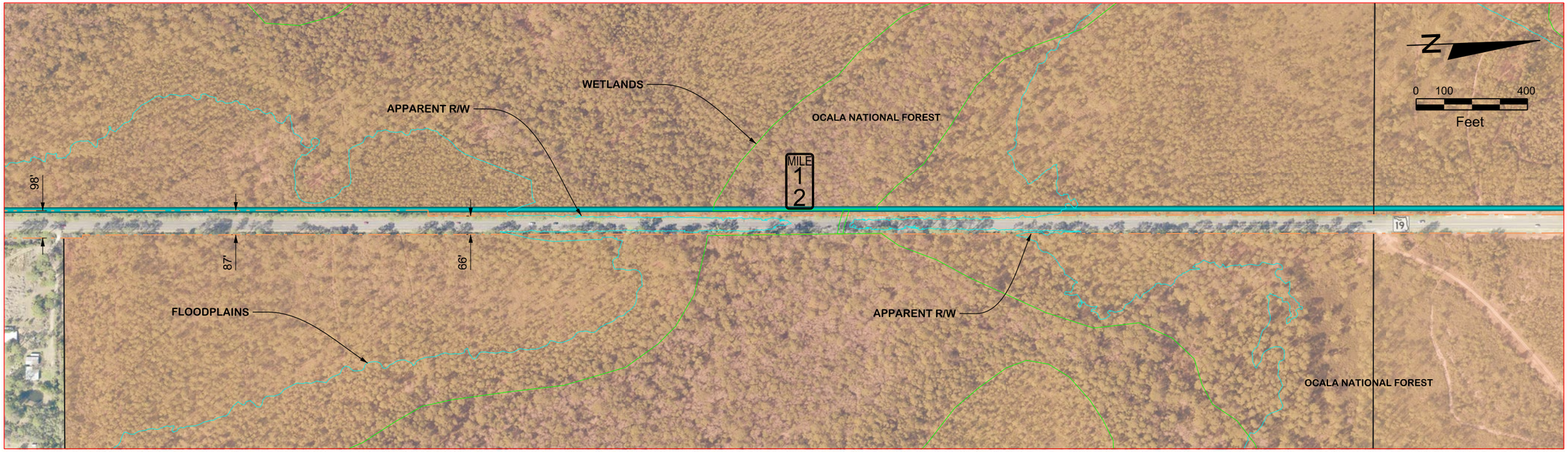
LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$





	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL

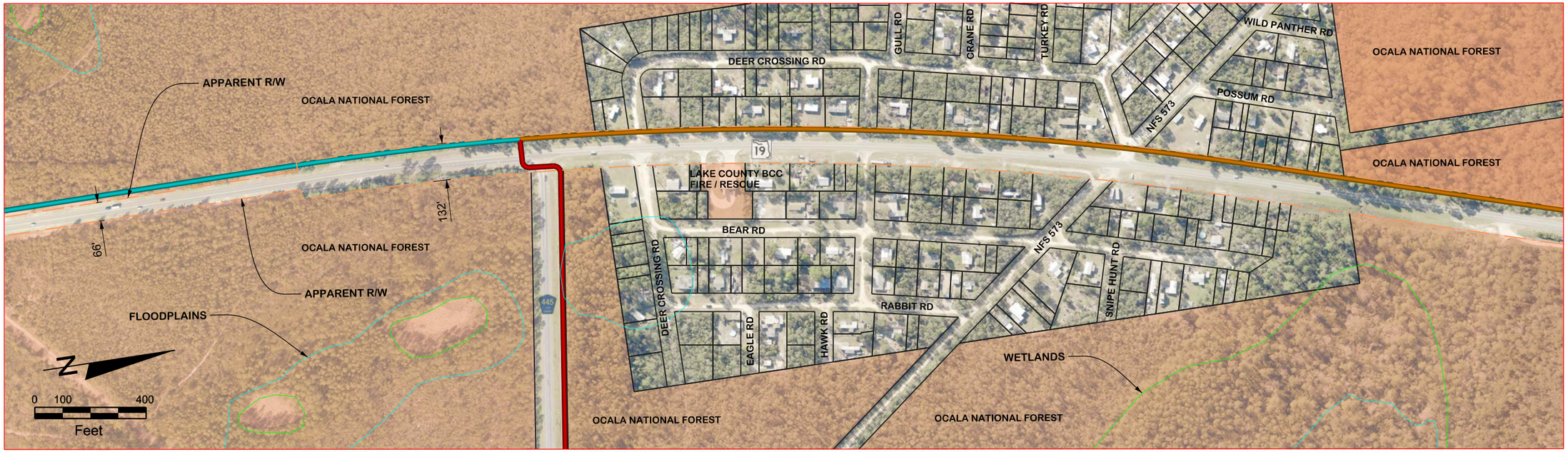
CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$



	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

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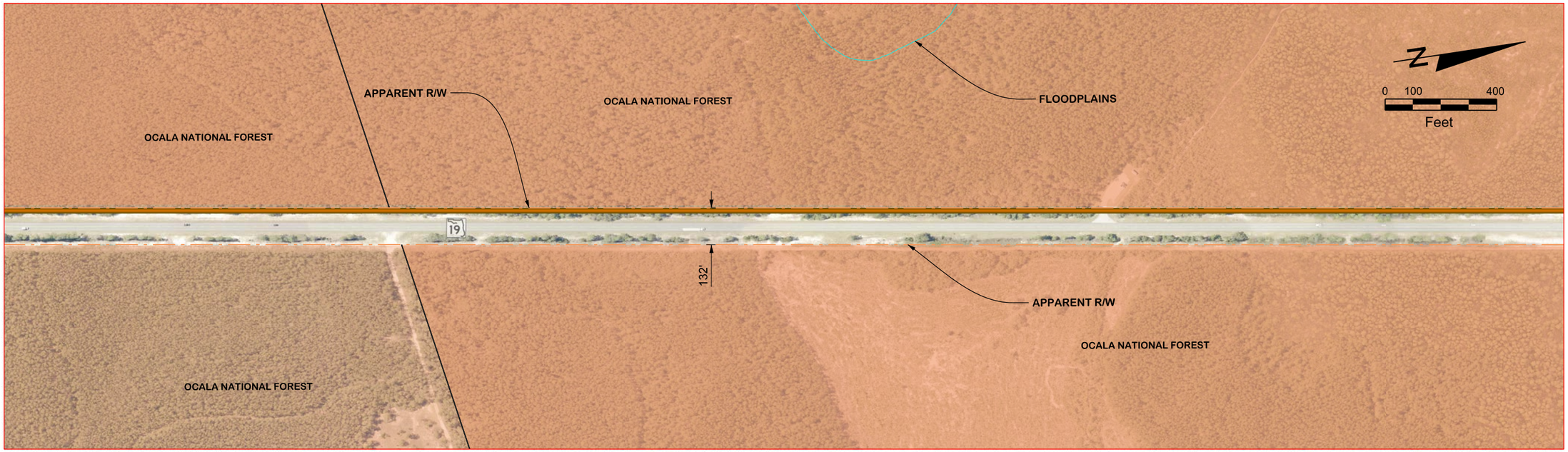

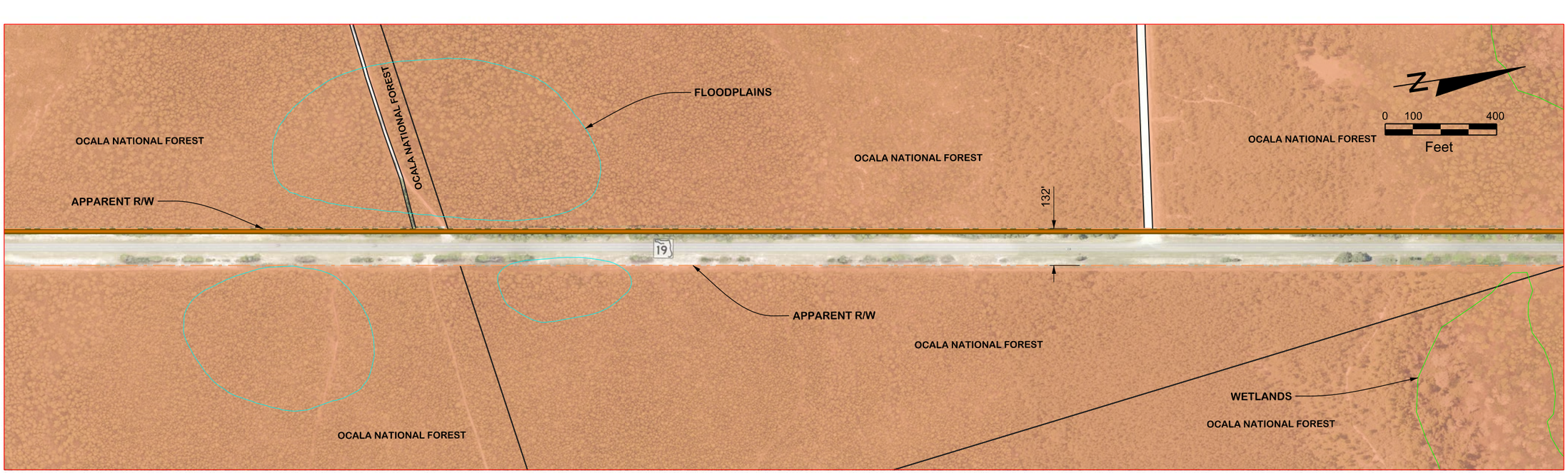

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
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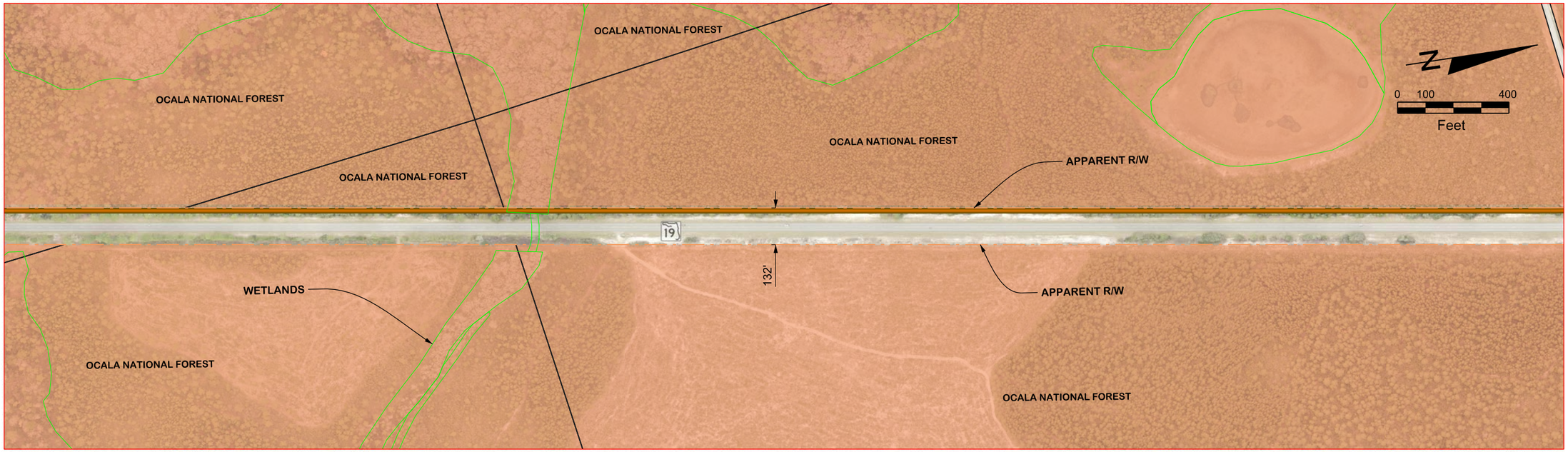
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$



	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

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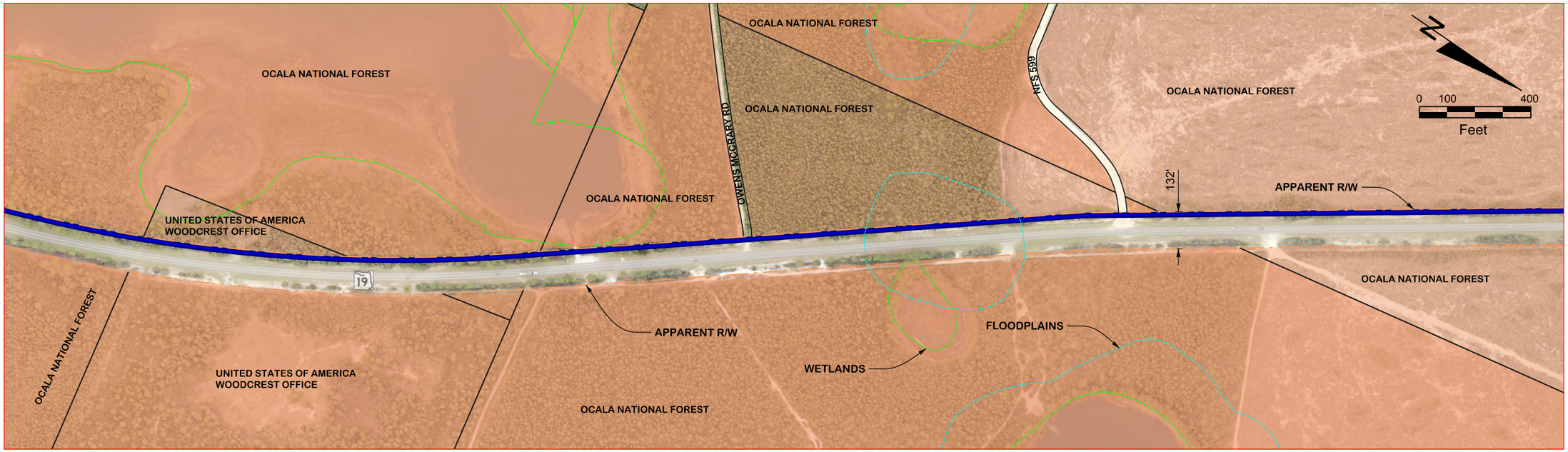

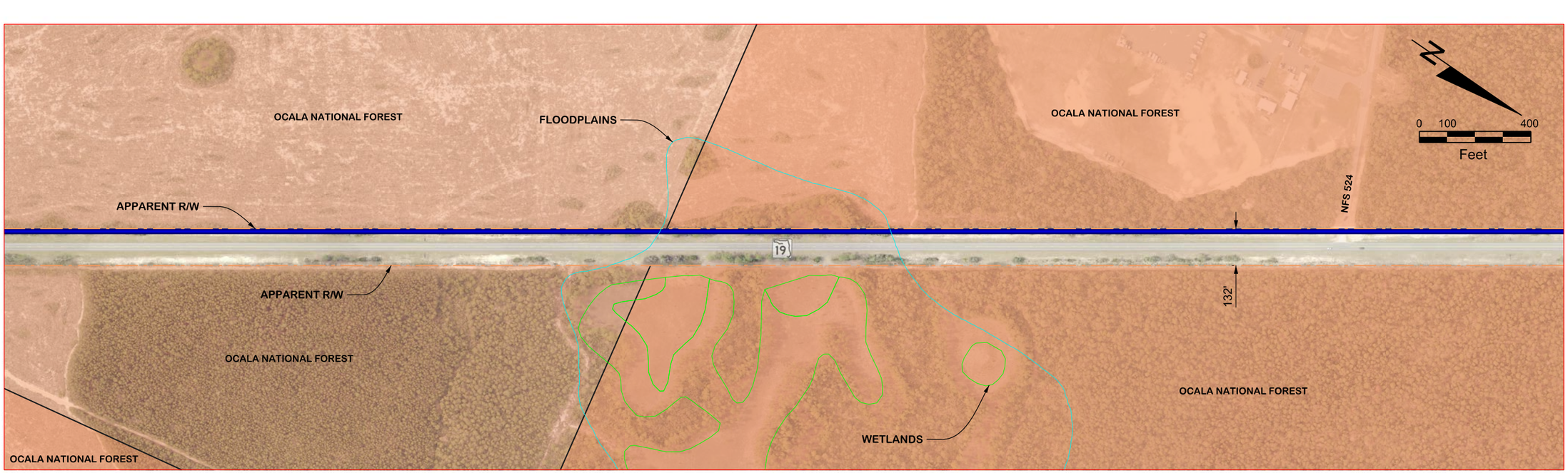

DESCRIPTION	DATE		DESCRIPTION
FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843			FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

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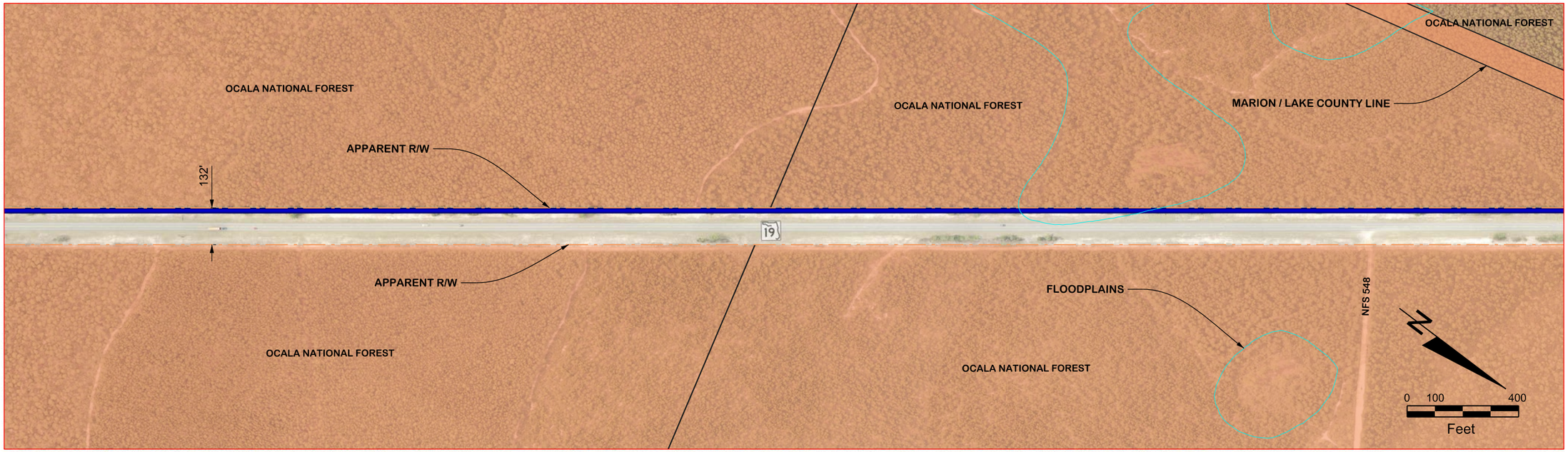
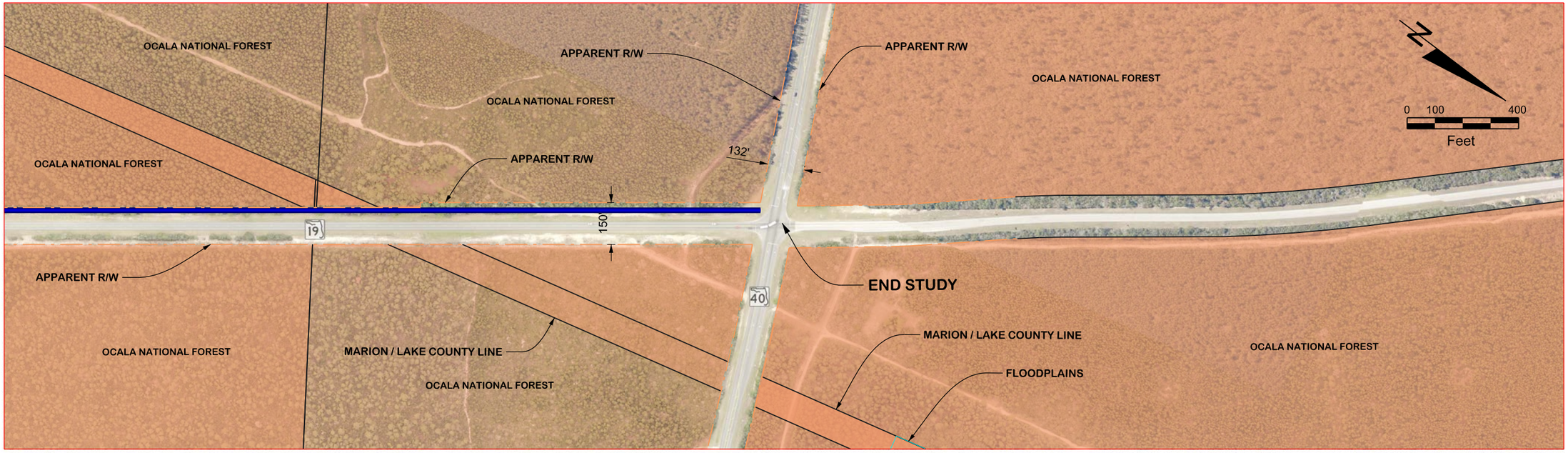




DESCRIPTION	DATE		DESCRIPTION
FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

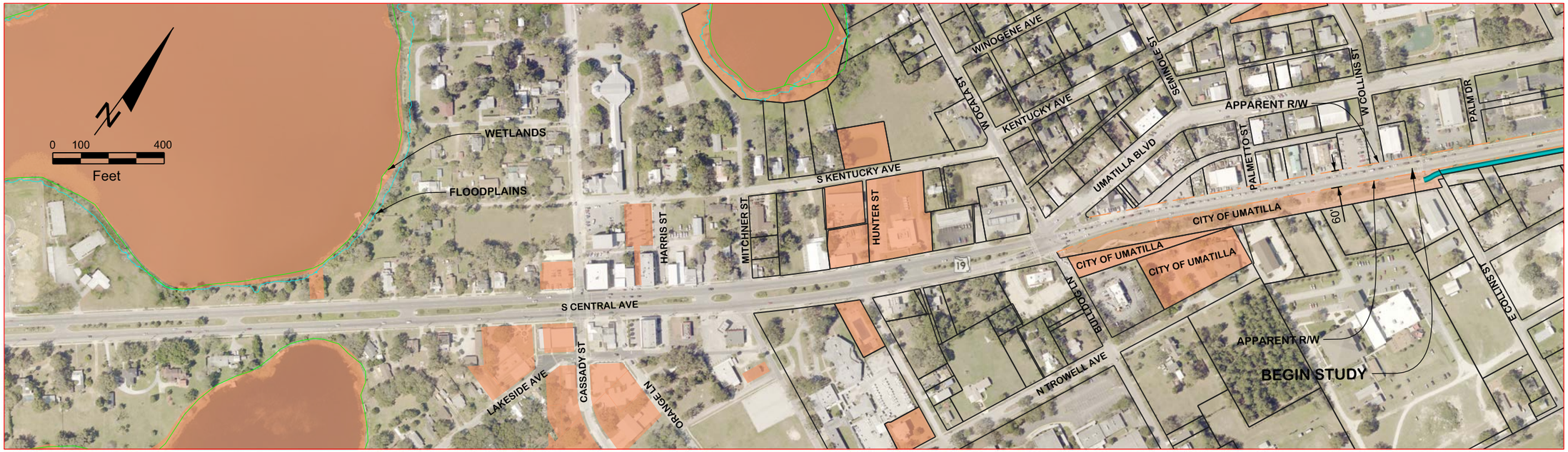
LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

Alternative B



	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

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- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

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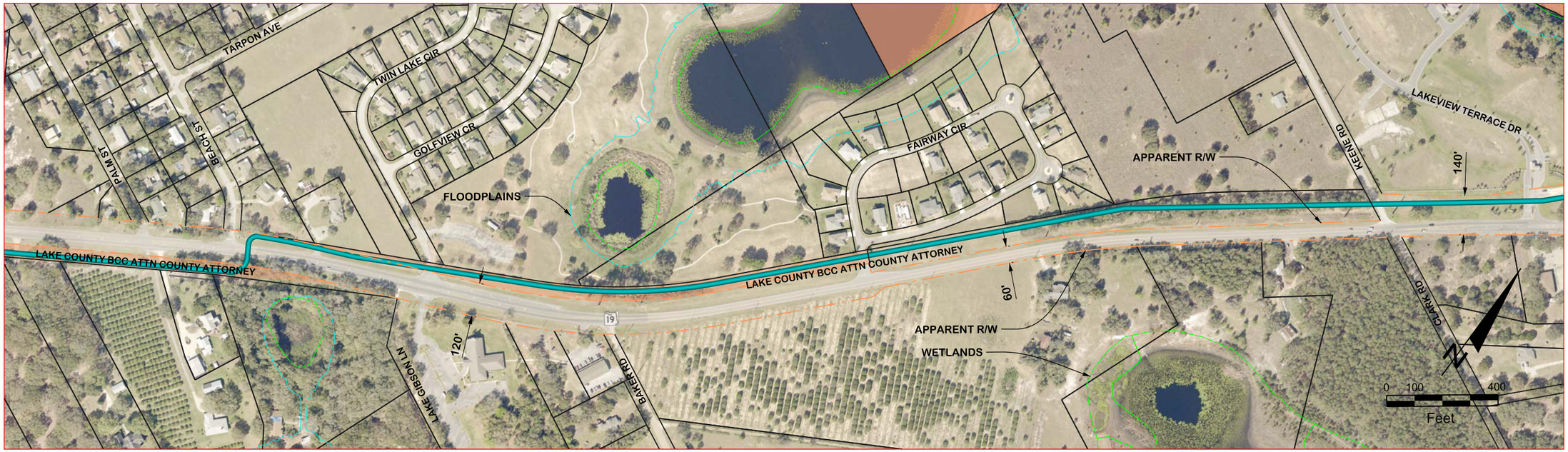

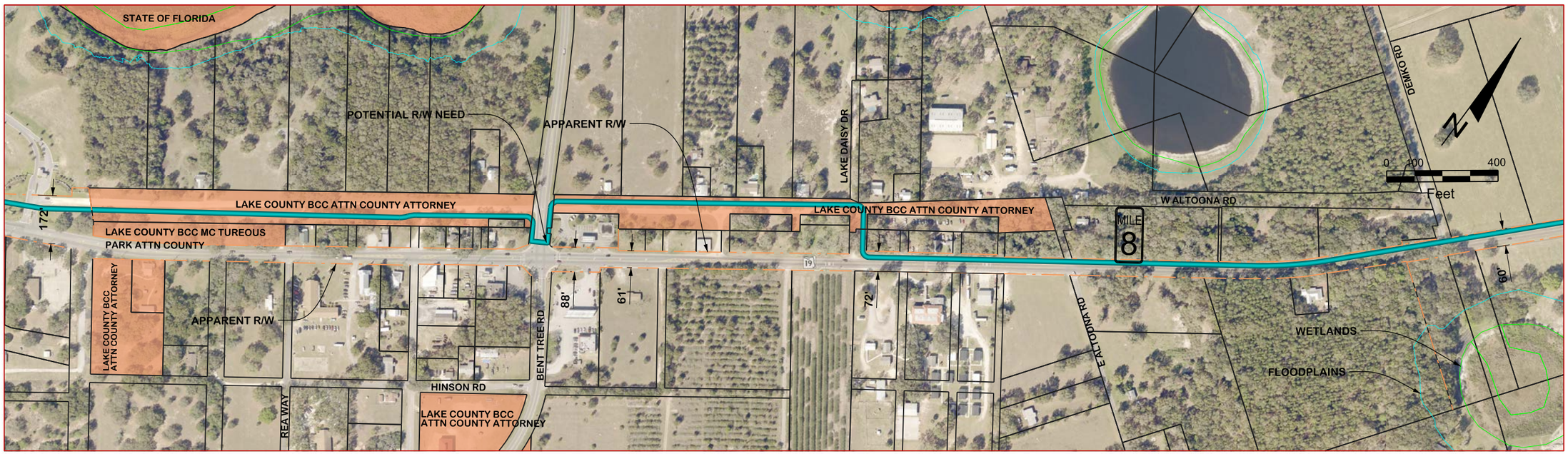

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL

CORRIDOR PLANNING STUDY

LEGEND

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- TRAIL ALTERNATIVE A-C

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	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

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- TRAIL ALTERNATIVE A-C

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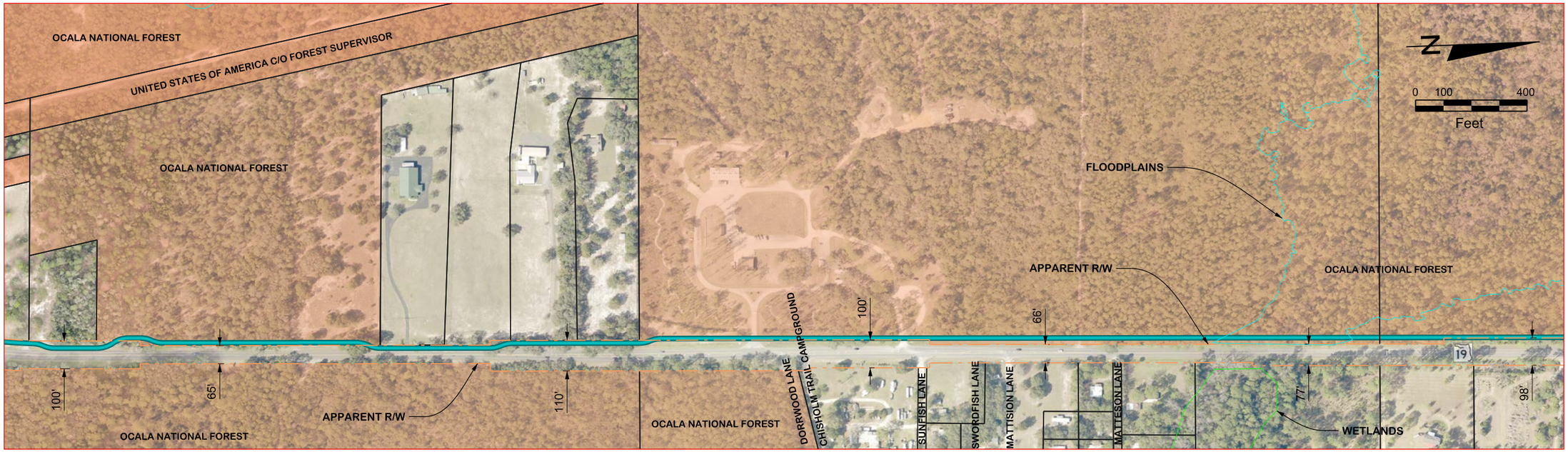

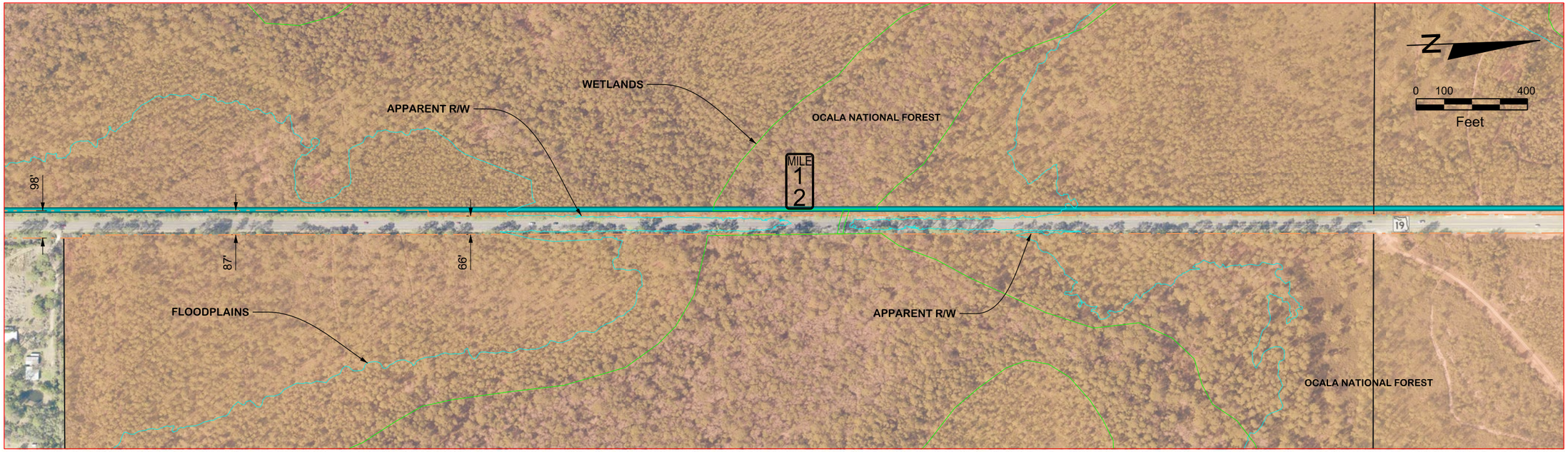

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL

CORRIDOR PLANNING STUDY

LEGEND

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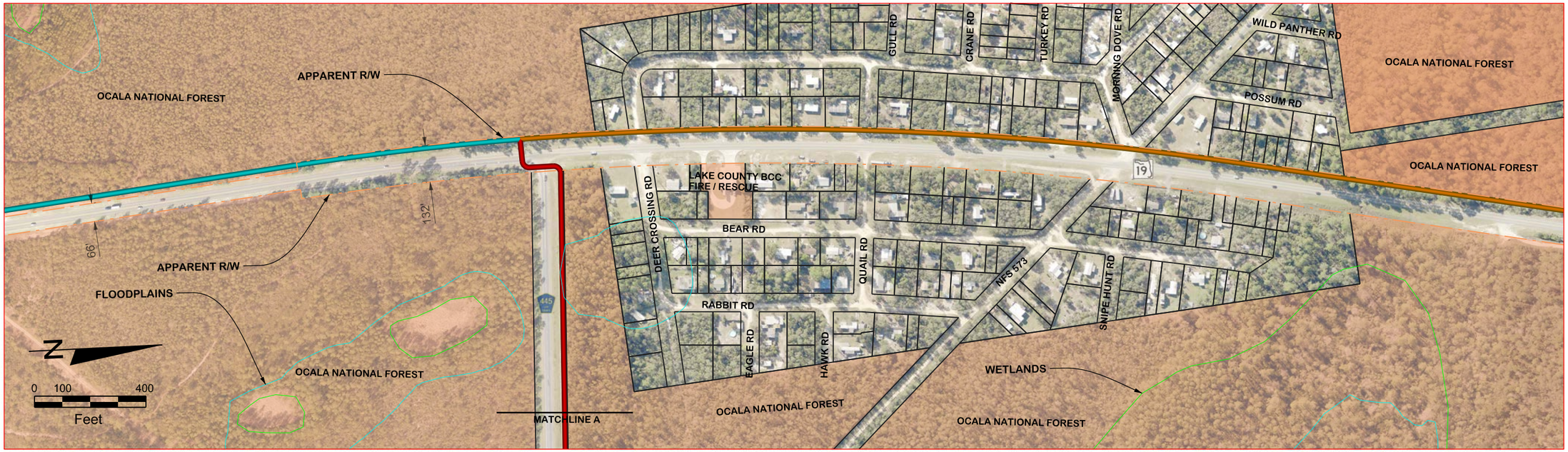

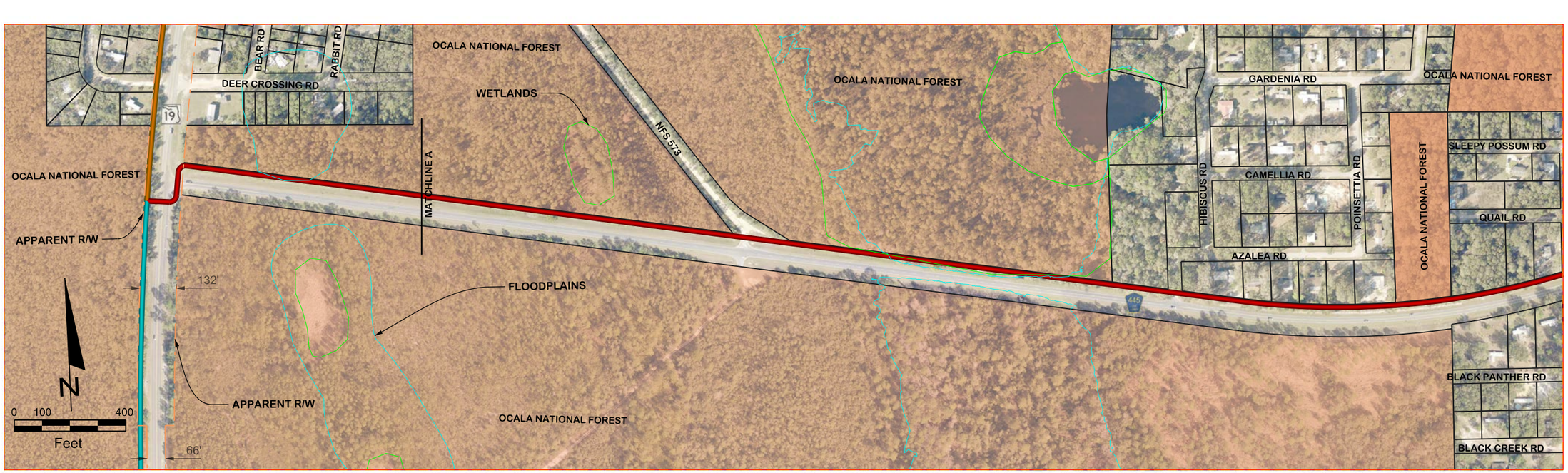

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL

CORRIDOR PLANNING STUDY

LEGEND

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SHEET NO.

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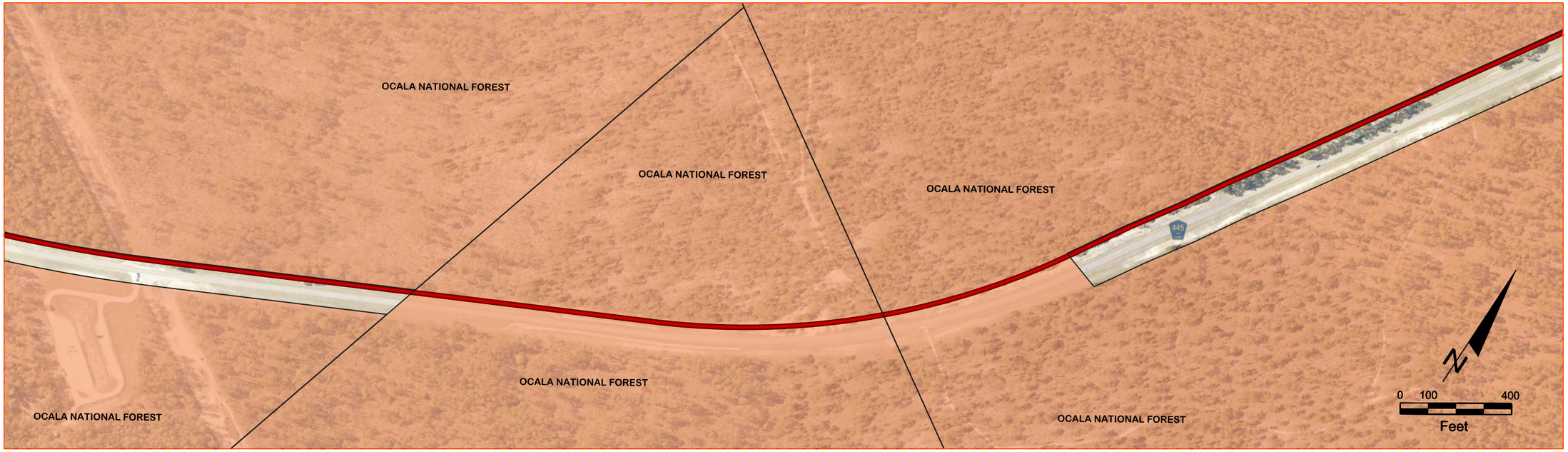

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

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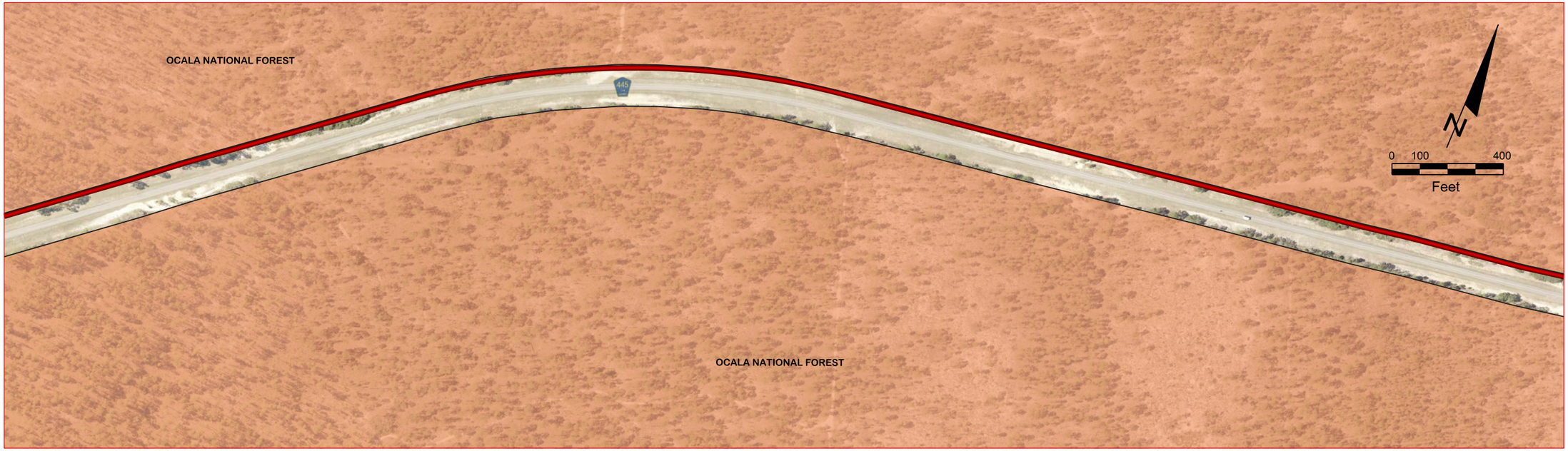

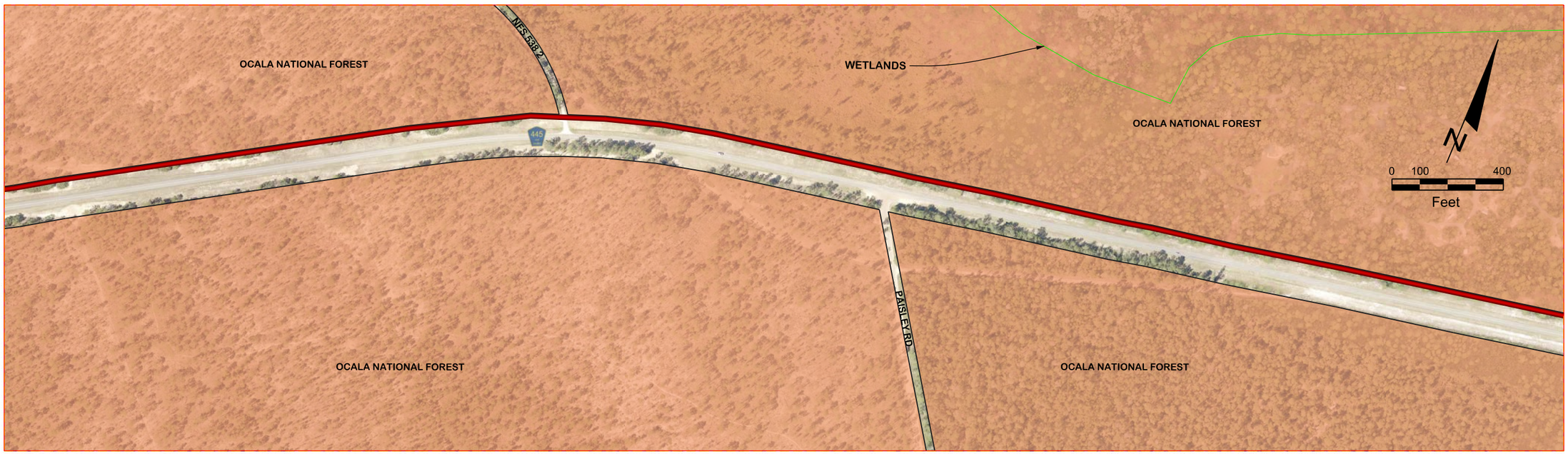

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
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- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

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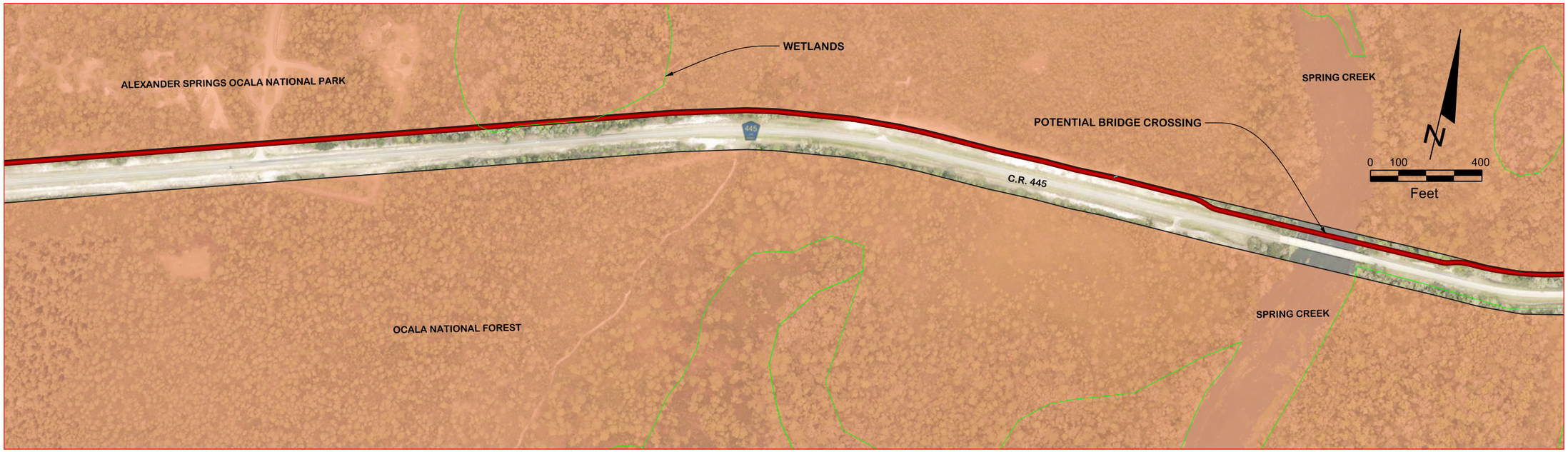

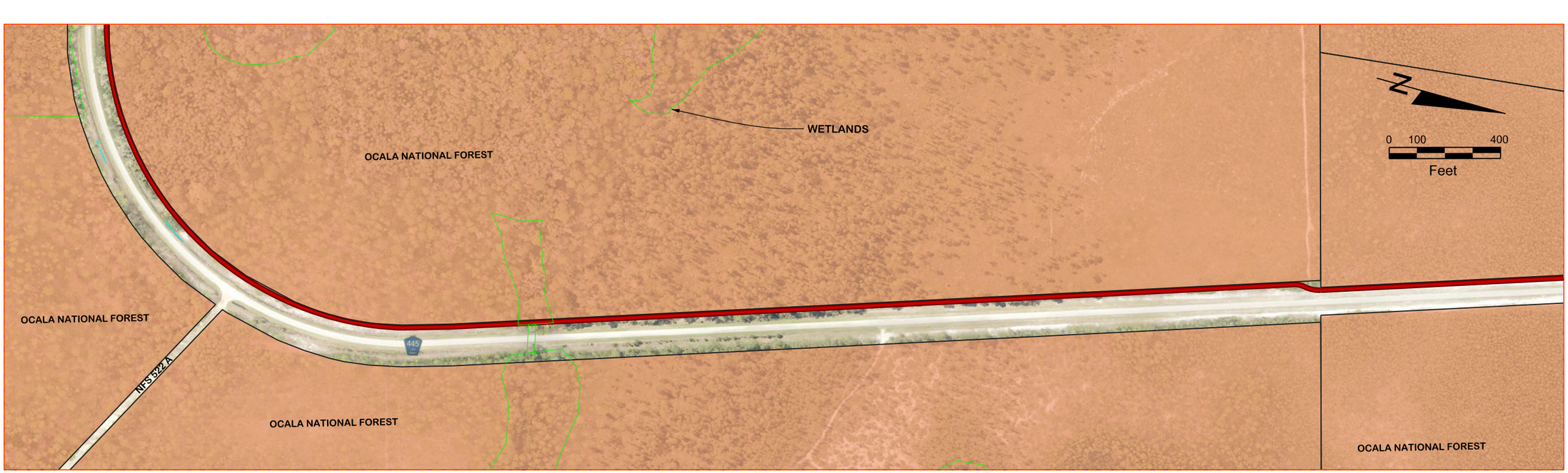

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

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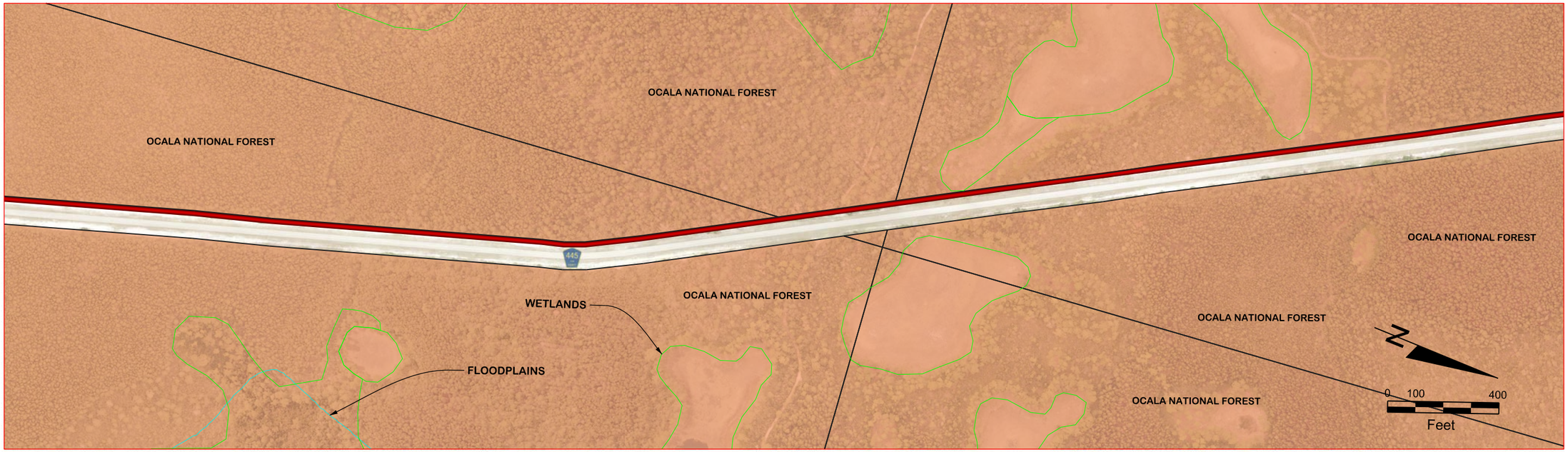

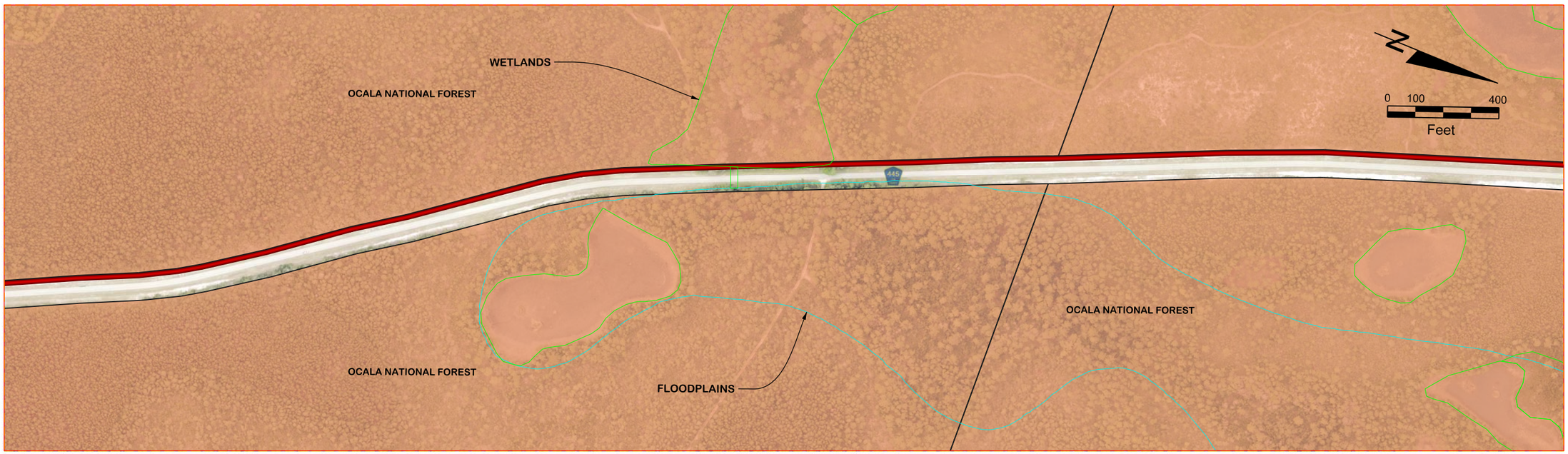

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

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- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

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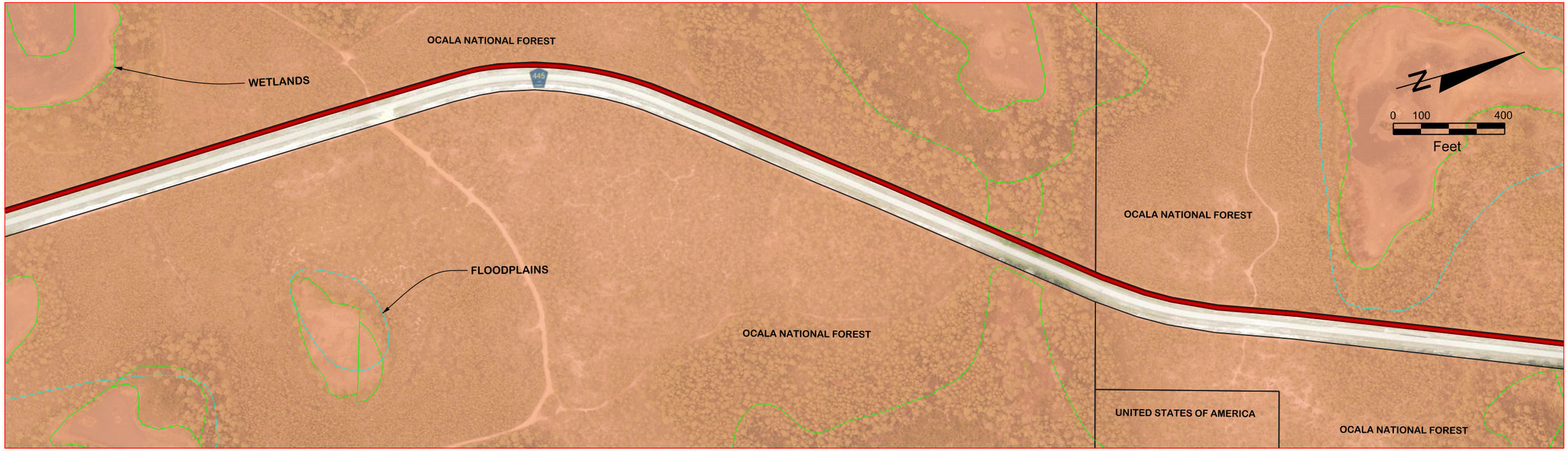

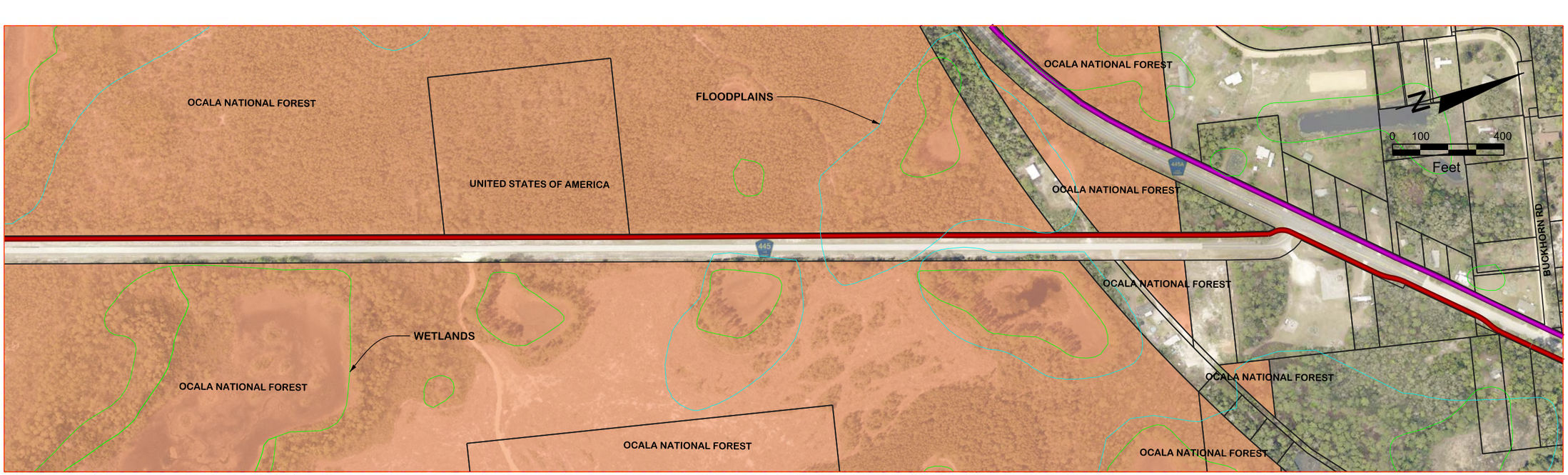

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
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- TRAIL ALTERNATIVE A-C

SHEET NO.

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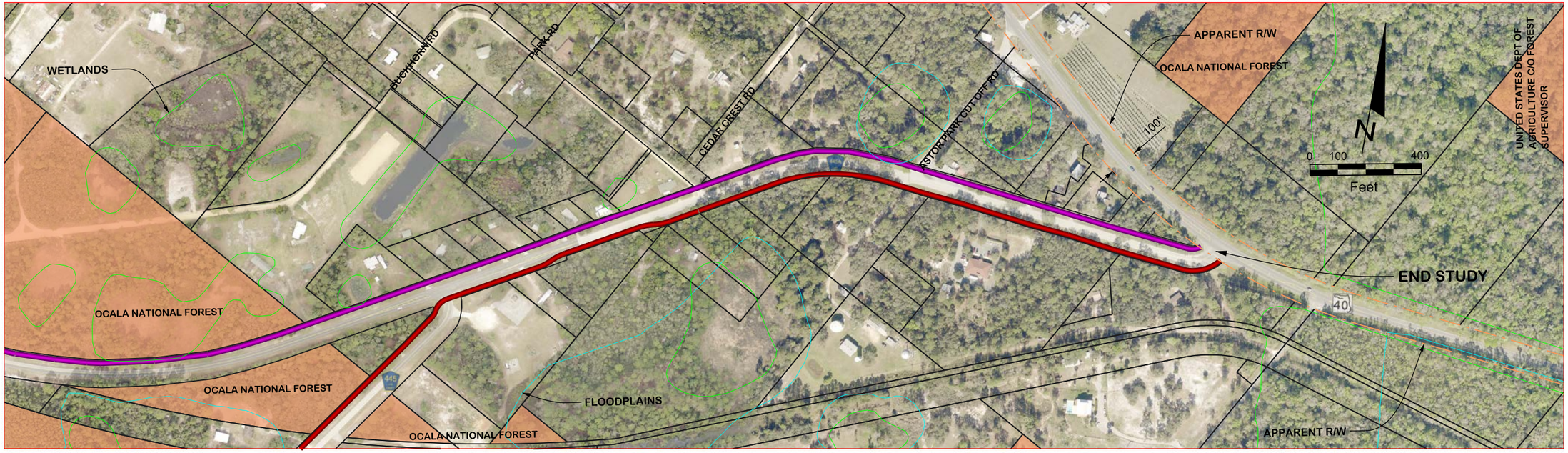


	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

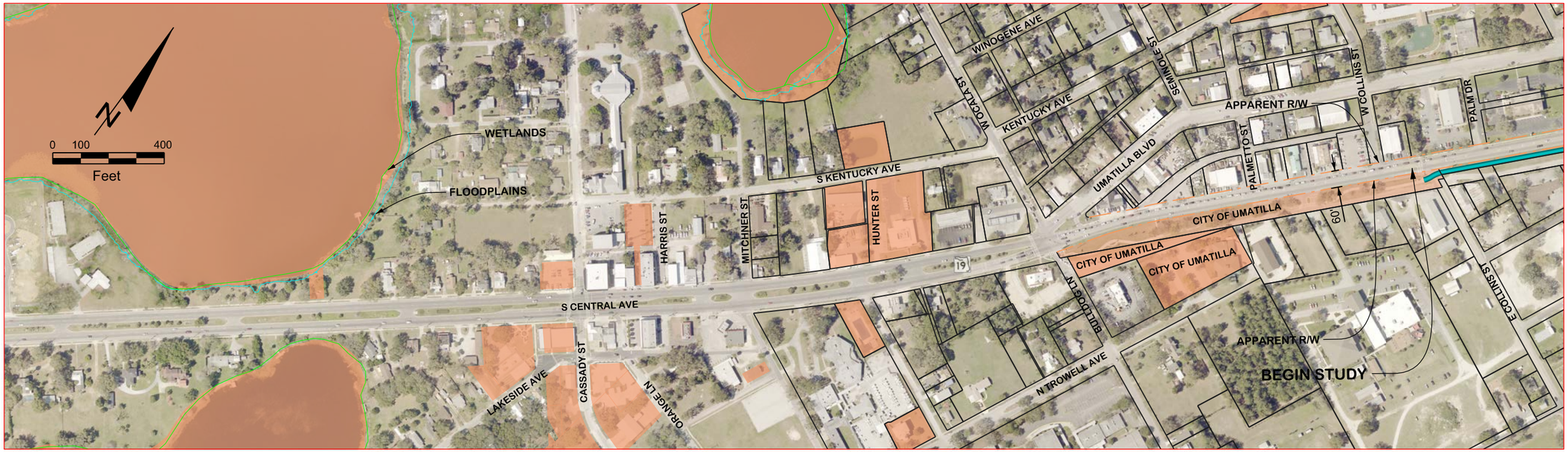
LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

Alternative C



	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

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- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

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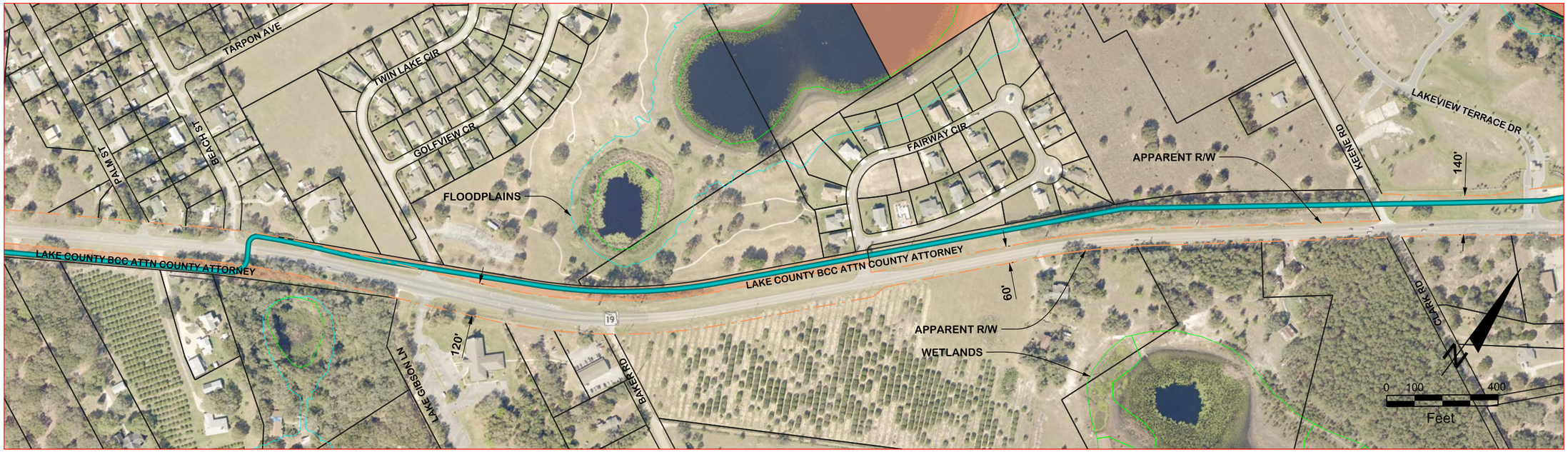

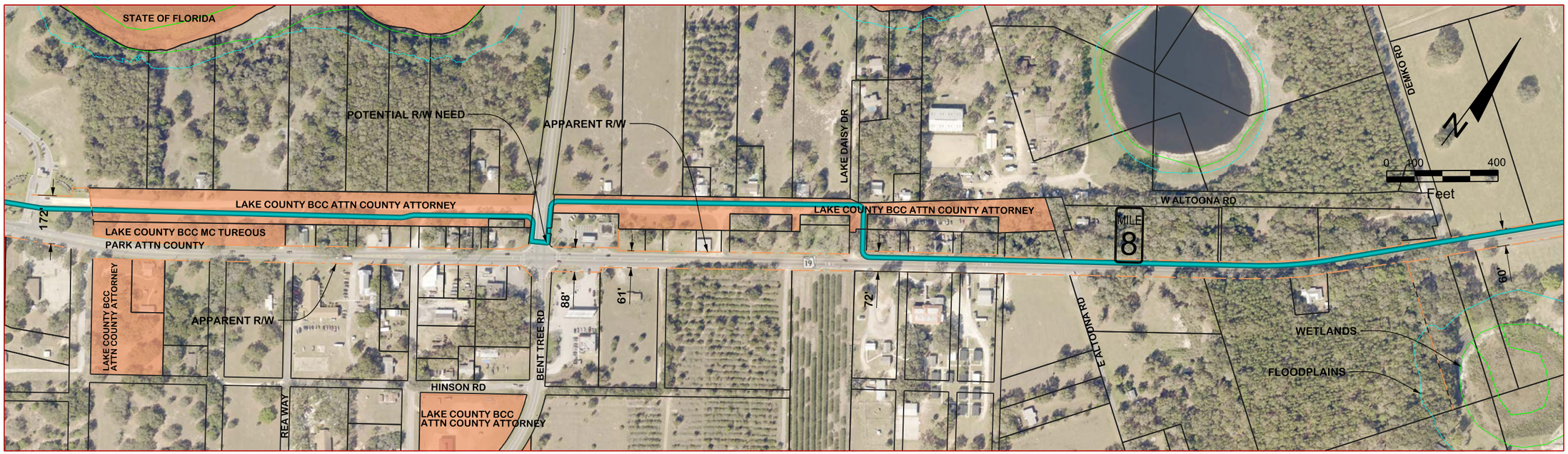

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL

CORRIDOR PLANNING STUDY

LEGEND

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FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

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- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

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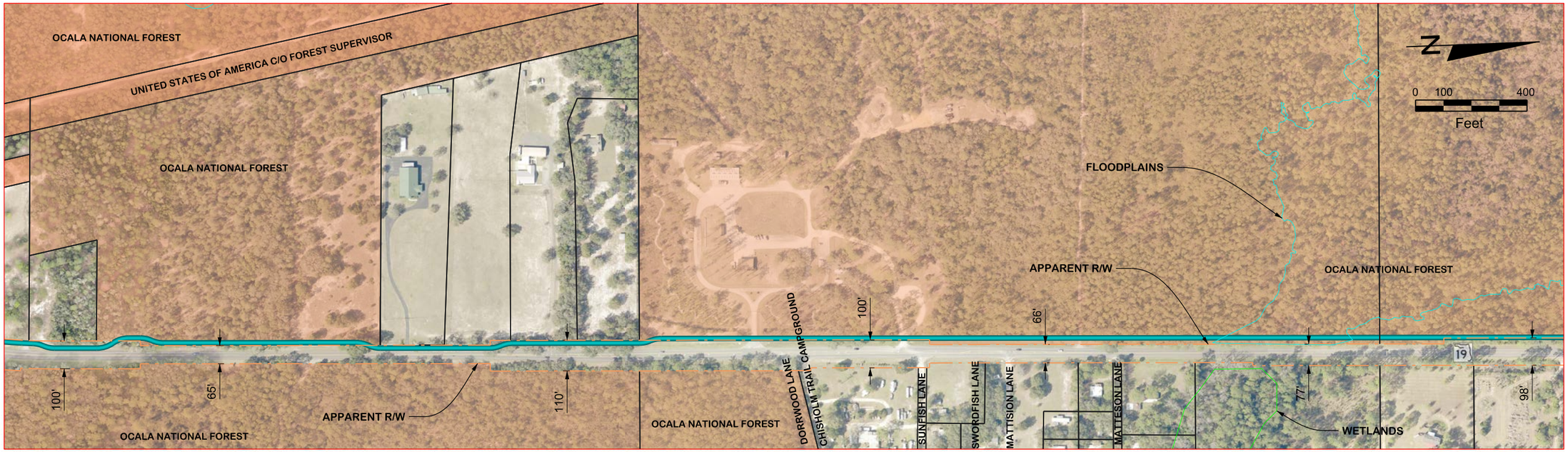

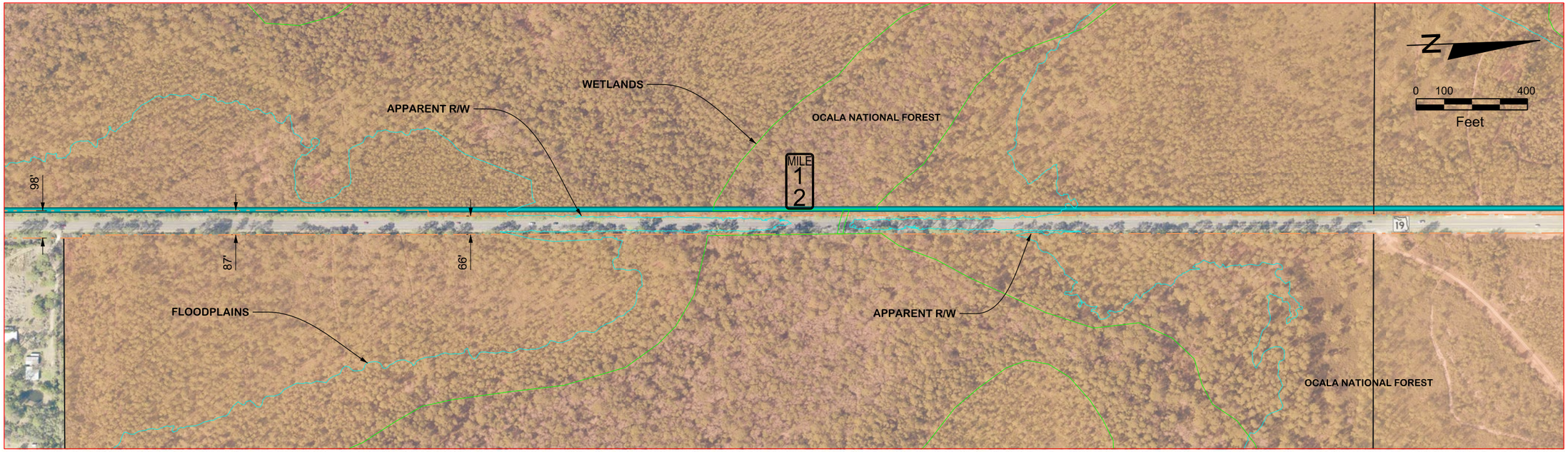

	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL

CORRIDOR PLANNING STUDY

LEGEND

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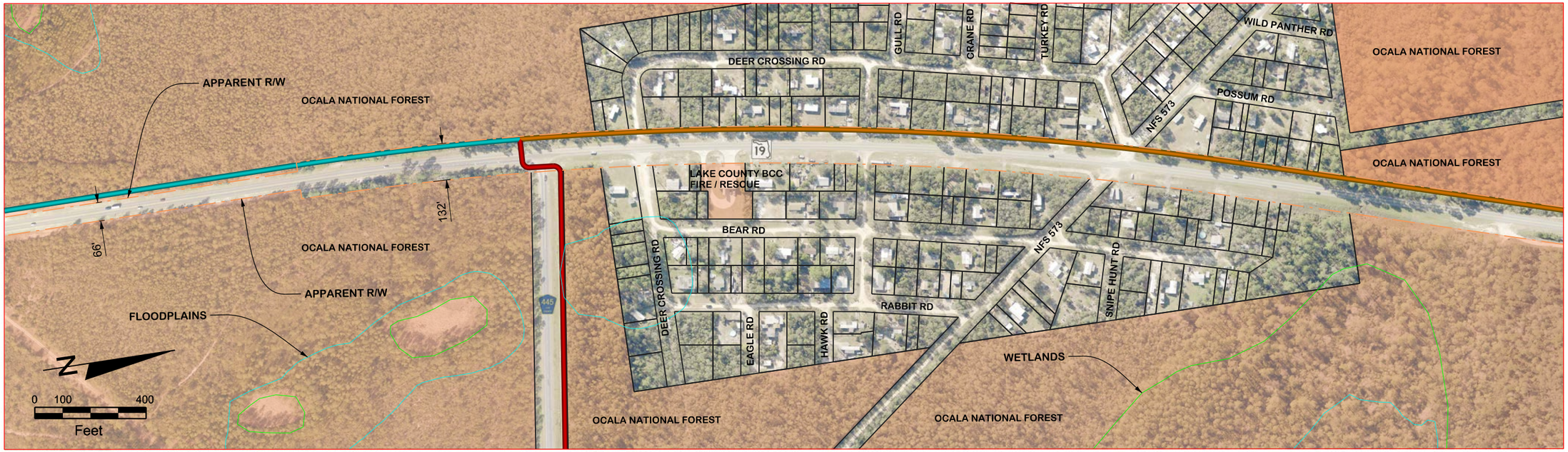

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FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

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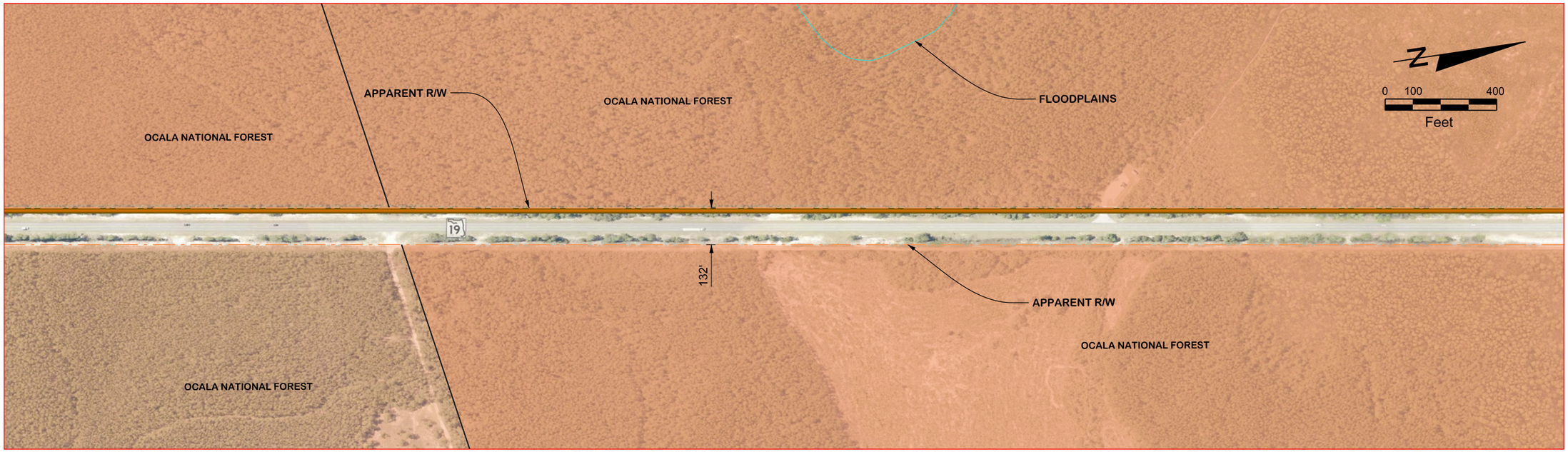

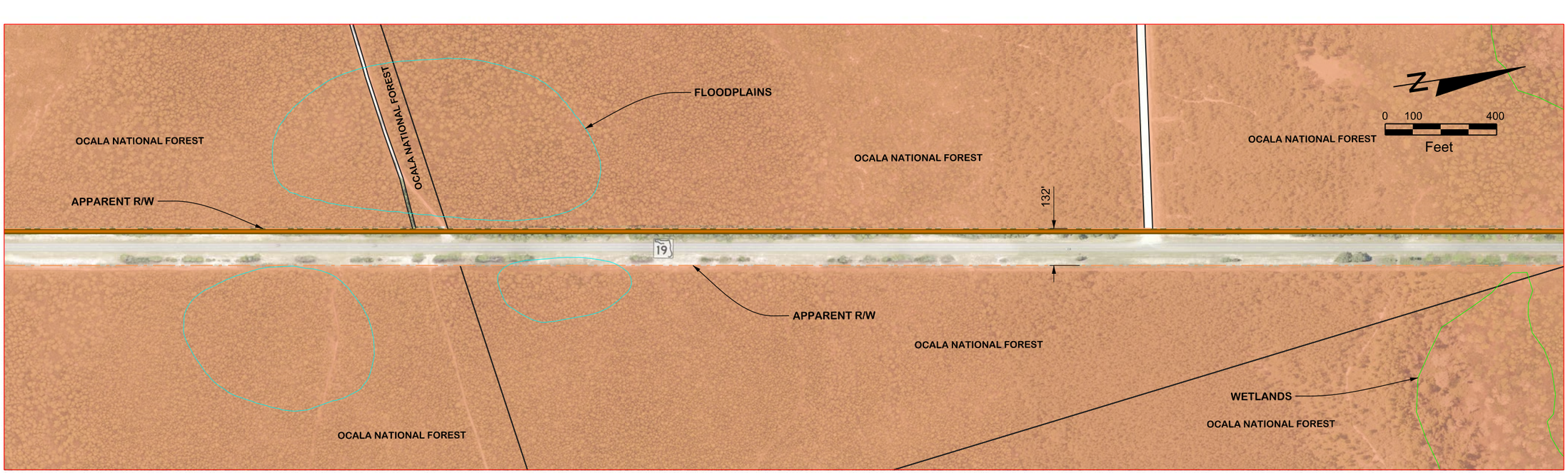

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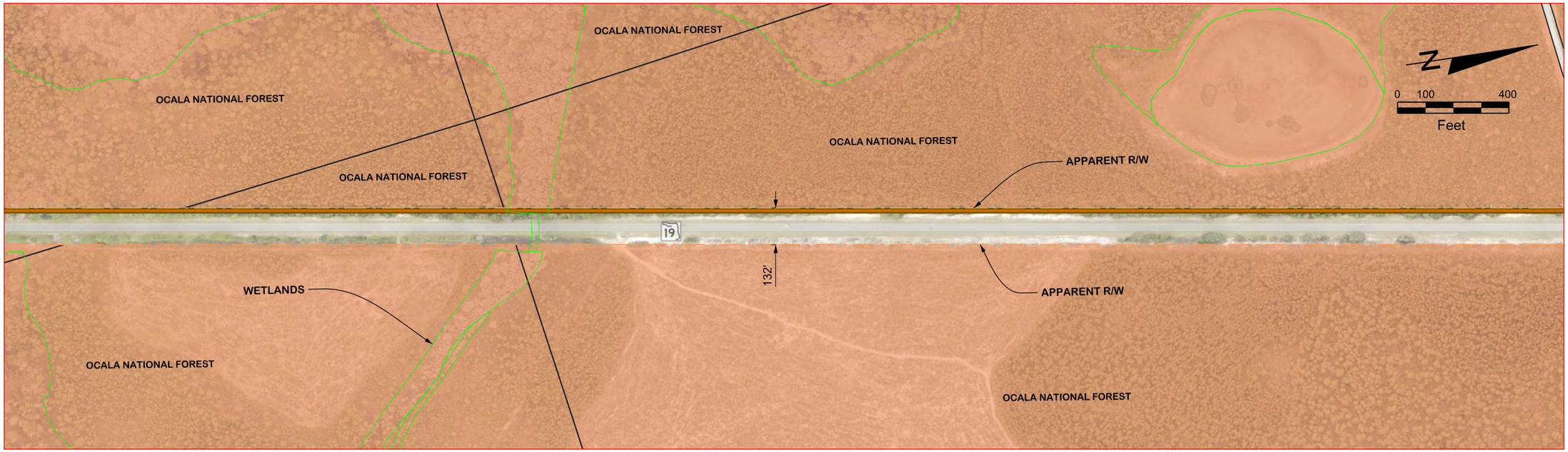
SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$



	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

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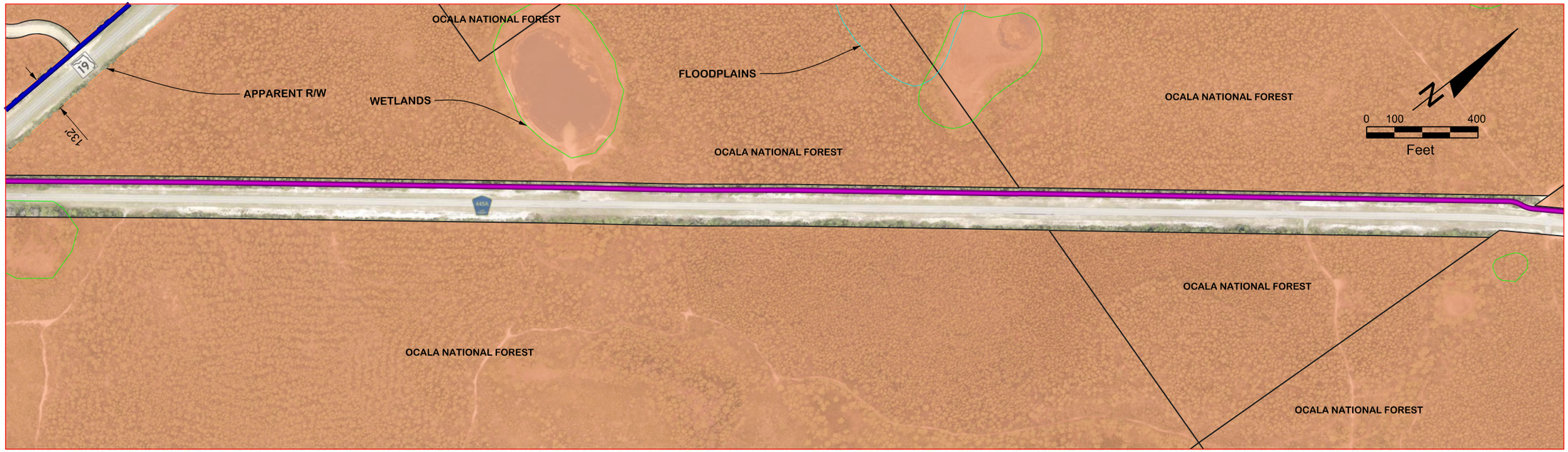
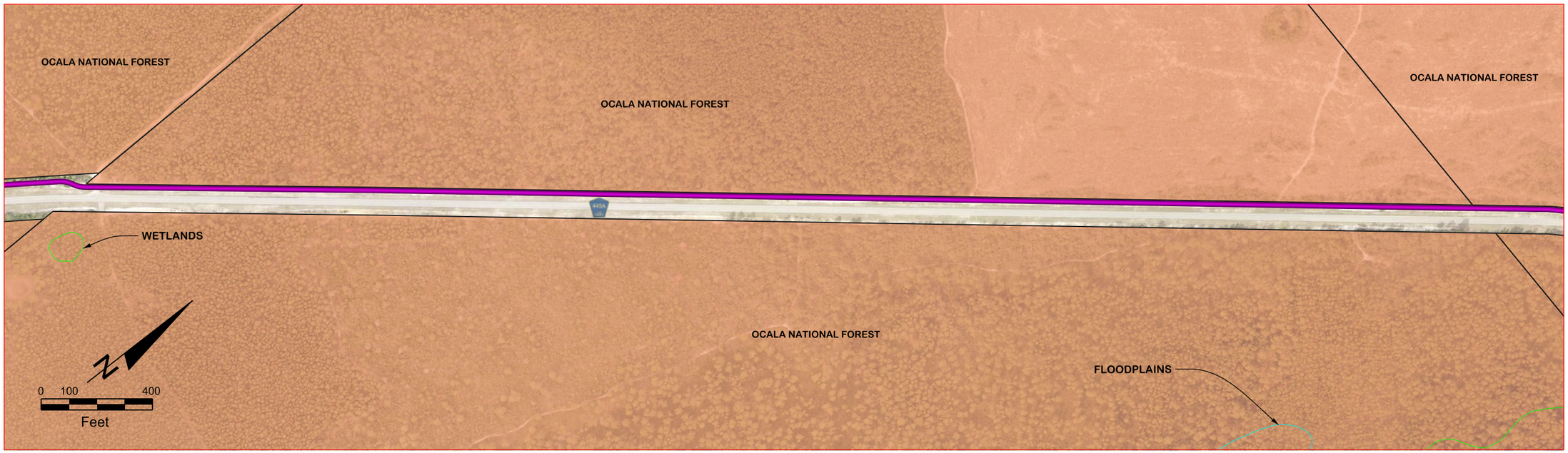




	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

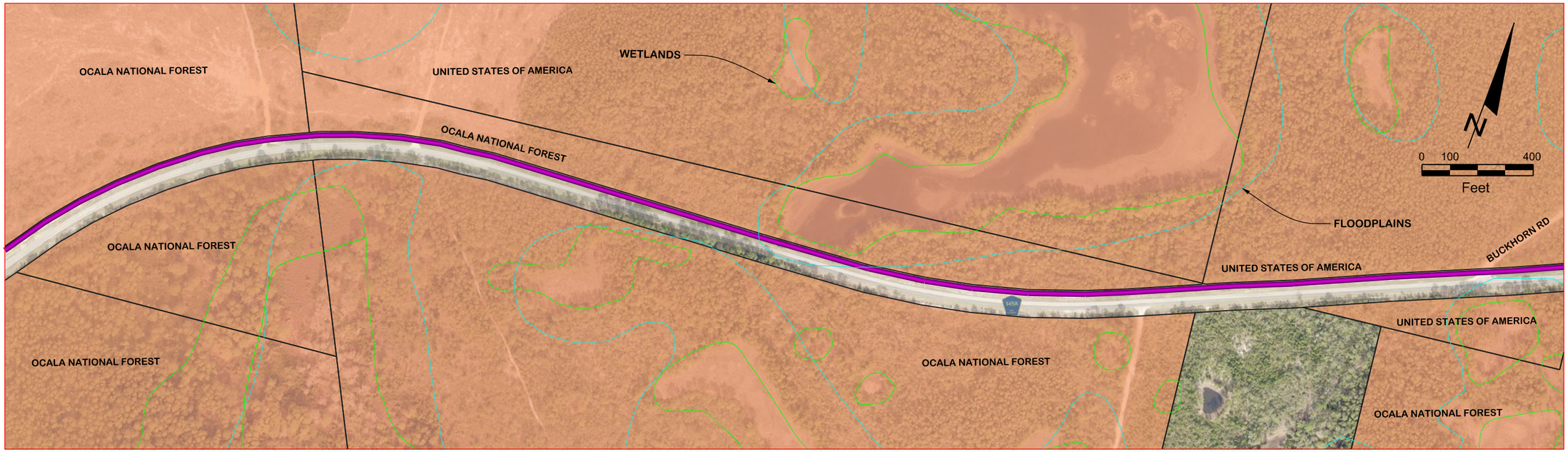
SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

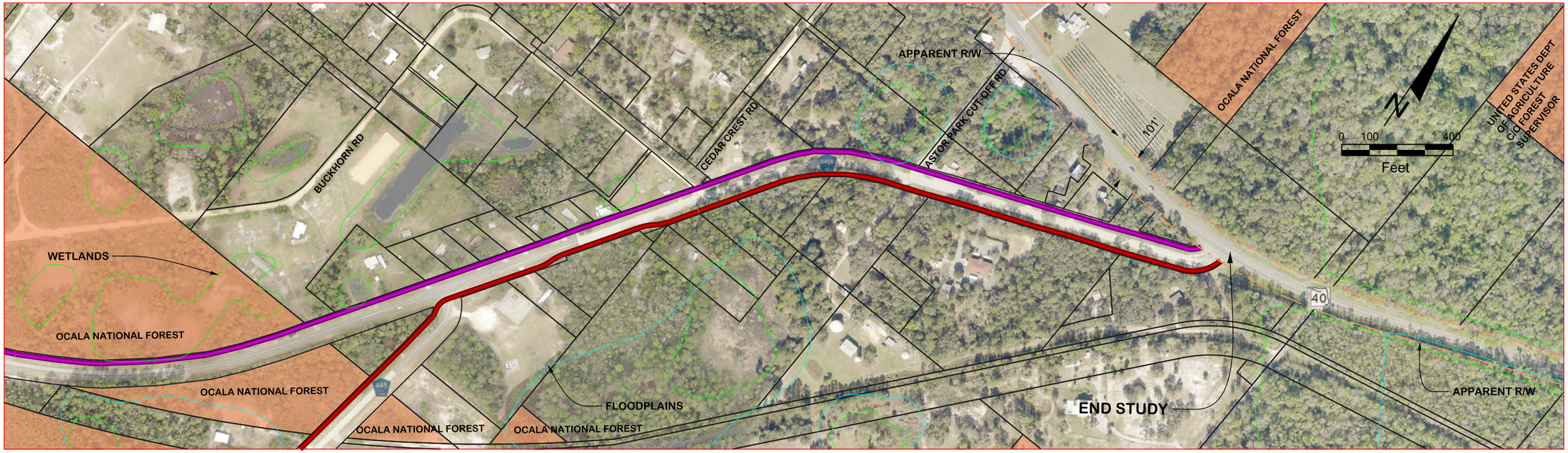
LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$





	DESCRIPTION	DATE		DESCRIPTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT FIVE 719 SOUTH WOODLAND BOULEVARD DELAND, FL 32720-6843		NORTH LAKE TRAIL	FPID #441626-1

SR 19 NORTH LAKE TRAIL
CORRIDOR PLANNING STUDY

LEGEND

- TRAIL ALTERNATIVE A
- TRAIL ALTERNATIVE B
- TRAIL ALTERNATIVE C
- TRAIL ALTERNATIVE A-B-C
- TRAIL ALTERNATIVE A-C

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

Appendix C: Long Range Estimates

Date: 11/21/2018 12:08:01 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: NLT019-1-52-01 **Letting Date:** 01/2099

Description: North Lake Trail Phase 3 on SR 19

District: 05 **County:** 11 LAKE **Market Area:** 07 **Units:** English
Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 25.000 MI

Project Manager:

Version 1-P Project Grand Total **$14,645,322.19**
Description: North Lake Trail Phase 3 on SR 19

Sequence: 1 NUR - New Construction, Undivided, Rural **Net Length:** 17.000 MI
89,760 LF

Description:

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	15.00 / 15.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	17.000
Top of Structural Course For Begin Section	103.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	61.82	AC	$9,315.71	$575,897.19
120-6	EMBANKMENT	265,623.11	CY	$8.93	$2,372,014.37
	Earthwork Component Total				$2,947,911.56

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	6.00 / 6.00
Structural Spread Rate	165
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Extended Amount

			Unit Price	
160-4	TYPE B STABILIZATION	159,573.33 SY	$4.82	$769,143.45
285-701	OPTIONAL BASE,BASE GROUP 01	126,262.40 SY	$9.22	$1,164,139.33
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	9,873.60 TN	$117.59	$1,161,036.62

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	0
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	1

Roadway Component Total $3,094,319.40

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	2.00 / 2.00
Total Outside Shoulder Perf. Turf Width L/R	2.00 / 2.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	39,893.33	SY	$1.88	$74,999.46

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-6	SHOULDER GUTTER- CONCRETE	12,144.00	LF	$47.97	$582,547.68

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	233,376.00	LF	$1.39	$324,392.64
104-11	FLOATING TURBIDITY BARRIER	4,250.00	LF	$9.77	$41,522.50
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	4,250.00	LF	$6.25	$26,562.50
104-15	SOIL TRACKING PREVENTION DEVICE	17.00	EA	$2,987.89	$50,794.13
107-1	LITTER REMOVAL	206.04	AC	$18.67	$3,846.77
107-2	MOWING	206.04	AC	$49.76	$10,252.55

Shoulder Component Total $1,114,918.23

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	306.00	CY	$1,188.40	$363,650.40
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	26,000.00	LF	$71.70	$1,864,200.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	2,856.00	LF	$118.74	$339,121.44
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	680.00	EA	$1,395.75	$949,110.00
570-1-1	PERFORMANCE TURF	11,968.00	SY	$1.88	$22,499.84

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-701	INLETS, GUTTER, TYPE S, <10'	132.00	EA	$3,598.62	$475,017.84
430-174-218	PIPE CULV, OPT MATL, OTHER, 18"SD	5,280.00	LF	$74.30	$392,304.00

Drainage Component Total $4,405,903.52

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	34.00	AS	$262.72	$8,932.48
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	340.00	AS	$912.34	$310,195.60
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	34.00	AS	$2,986.88	$101,553.92

Signing Component Total $420,682.00

Sequence 1 Total $11,983,734.71

Date: 11/21/2018 12:08:02 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: NLT019-1-52-01 **Letting Date:** 01/2099

Description: North Lake Trail Phase 3 on SR 19

District: 05 **County:** 11 LAKE **Market Area:** 07 **Units:** English
Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 25.000 MI

Project Manager:

Version 1-P Project Grand Total **$14,645,322.19**
Description: North Lake Trail Phase 3 on SR 19

Project Sequences Subtotal **$11,983,734.71**

102-1	Maintenance of Traffic	10.00 %	$1,198,373.47
101-1	Mobilization	10.00 %	$1,318,210.82

Project Sequences Total **$14,500,319.00**

Project Unknowns	0.00 %	$0.00
Design/Build	0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$145,003.19	$145,003.19

Project Non-Bid Subtotal **$145,003.19**

Version 1-P Project Grand Total **$14,645,322.19**

Date: 11/21/2018 12:06:50 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: NLT445-1-52-01 **Letting Date:** 01/2099

Description: North Lake Trail Phase 3 Alternative CR 445

District: 05 **County:** 11 LAKE **Market Area:** 07 **Units:** English

Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 23.000 MI

Project Manager:

Version 1-P Project Grand Total **$17,079,827.19**

Description: North Lake Trail Phase 3 Alternative along CR 445

Sequence: 1 NUR - New Construction, Undivided, Rural **Net Length:** 19.500 MI
102,960 LF

Description:

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	15.00 / 15.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	19.500
Top of Structural Course For Begin Section	103.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	70.91	AC	$9,315.71	$660,577.00
120-6	EMBANKMENT	304,685.33	CY	$8.93	$2,720,840.00
	Earthwork Component Total				$3,381,416.99

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	6.00 / 6.00
Structural Spread Rate	165
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Extended Amount

			Unit Price	
160-4	TYPE B STABILIZATION	183,040.00 SY	$4.82	$882,252.80
285-701	OPTIONAL BASE,BASE GROUP 01	144,830.40 SY	$9.22	$1,335,336.29
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	11,325.60 TN	$117.59	$1,331,777.30

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	0
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Roadway Component Total $3,549,366.39

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	2.00 / 2.00
Total Outside Shoulder Perf. Turf Width L/R	2.00 / 2.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	45,760.00	SY	$1.88	$86,028.80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-6	SHOULDER GUTTER- CONCRETE	12,144.00	LF	$47.97	$582,547.68

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	267,696.00	LF	$1.39	$372,097.44
104-11	FLOATING TURBIDITY BARRIER	4,875.00	LF	$9.77	$47,628.75
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	4,875.00	LF	$6.25	$30,468.75
104-15	SOIL TRACKING PREVENTION DEVICE	20.00	EA	$2,987.89	$59,757.80
107-1	LITTER REMOVAL	236.34	AC	$18.67	$4,412.47
107-2	MOWING	236.34	AC	$49.76	$11,760.28

Shoulder Component Total $1,194,701.97

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	351.00	CY	$1,188.40	$417,128.40
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	15,600.00	LF	$71.70	$1,118,520.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	3,280.00	LF	$118.74	$389,467.20
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	780.00	EA	$1,395.75	$1,088,685.00
570-1-1	PERFORMANCE TURF	13,728.00	SY	$1.88	$25,808.64

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-701	INLETS, GUTTER, TYPE S, <10'	65.00	EA	$3,598.62	$233,910.30
430-174-118	PIPE CULV, OPT MATL, ROUND,18"SD	2,600.00	LF	$73.15	$190,190.00
	Drainage Component Total				$3,463,709.54

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	39.00	AS	$262.72	$10,246.08
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	390.00	AS	$912.34	$355,812.60
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	39.00	AS	$2,986.88	$116,488.32
	Signing Component Total				$482,547.00

BRIDGES COMPONENT

Bridge NLT445

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	400.00
Width (LF)	24.00
Type	Low Level, Widen
Cost Factor	1.25
Structure No.	
Removal of Existing Structures area	4,000.00
Default Cost per SF	$145.00
Factored Cost per SF	$181.25
Final Cost per SF	**$184.54**
Basic Bridge Cost	**$1,740,000.00**
Description	NEW BRIDGE OVER ALEXANDER CREEK. ASSUMED EXTRA COSTS FOR ENVIRONMENTALLY SENSITIVE AREA.

Bridge Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-3	REMOVAL OF EXISTING STRUCTURES/BRIDGES	4,000.00 SF	$37.07	$148,280.00
400-2-10	CONC CLASS II, APPROACH SLABS	53.33 CY	$422.24	$22,518.06
415-1-9	REINF STEEL- APPROACH SLABS	9,332.75 LB	$0.97	$9,052.77
	Bridge NLT445 Total			$1,919,850.83
	Bridges Component Total			$1,919,850.83
Sequence 1 Total				$13,991,592.72

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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: NLT445-1-52-01 **Letting Date:** 01/2099

Description: North Lake Trail Phase 3 Alternative CR 445

District: 05 **County:** 11 LAKE **Market Area:** 07 **Units:** English

Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 23.000 MI

Project Manager:

Version 1-P Project Grand Total **$17,079,827.19**

Description: North Lake Trail Phase 3 Alternative along CR 445

Project Sequences Subtotal					**$13,991,592.72**
102-1	Maintenance of Traffic	10.00 %			$1,399,159.27
101-1	Mobilization	10.00 %			$1,539,075.20
Project Sequences Total					**$16,929,827.19**
Project Unknowns		0.00 %			$0.00
Design/Build		0.00 %			$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$150,000.00	$150,000.00
Project Non-Bid Subtotal					**$150,000.00**
Version 1-P Project Grand Total					**$17,079,827.19**

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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: NLT44A-1-52-01 **Letting Date:** 01/2099

Description: Alternative along SR 19 to CR 445A

District: 05 **County:** 11 LAKE **Market Area:** 07 **Units:** English

Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 17.200 MI

Project Manager:

Version 1-P Project Grand Total **$16,407,100.98**

Description: Alternative along SR 19 to CR 445A

Sequence: 1 NUR - New Construction, Undivided, Rural **Net Length:** 17.200 MI
90,816 LF

Description:

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	15.00 / 15.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	17.200
Top of Structural Course For Begin Section	103.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	62.55 AC	$9,315.71	$582,697.66
120-6	EMBANKMENT	268,748.09 CY	$8.93	$2,399,920.44
	Earthwork Component Total			$2,982,618.10

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	6.00 / 6.00
Structural Spread Rate	165
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Extended Amount

				Unit Price	
160-4	TYPE B STABILIZATION	161,450.67	SY	$4.82	$778,192.23
285-701	OPTIONAL BASE,BASE GROUP 01	127,747.84	SY	$9.22	$1,177,835.08
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	9,989.76	TN	$117.59	$1,174,695.88

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	0
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Roadway Component Total $3,130,723.19

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	2.00 / 2.00
Total Outside Shoulder Perf. Turf Width L/R	2.00 / 2.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	40,362.67	SY	$1.88	$75,881.82

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-6	SHOULDER GUTTER- CONCRETE	24,000.00	LF	$47.97	$1,151,280.00

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	236,121.60	LF	$1.39	$328,209.02
104-11	FLOATING TURBIDITY BARRIER	4,300.00	LF	$9.77	$42,011.00
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	4,300.00	LF	$6.25	$26,875.00
104-15	SOIL TRACKING PREVENTION DEVICE	18.00	EA	$2,987.89	$53,782.02
107-1	LITTER REMOVAL	208.46	AC	$18.67	$3,891.95
107-2	MOWING	208.46	AC	$49.76	$10,372.97

Shoulder Component Total $1,692,303.78

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	309.60	CY	$1,188.40	$367,928.64
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	38,000.00	LF	$71.70	$2,724,600.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	2,896.00	LF	$118.74	$343,871.04
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	688.00	EA	$1,395.75	$960,276.00
570-1-1	PERFORMANCE TURF	12,108.80	SY	$1.88	$22,764.54

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-701	INLETS, GUTTER, TYPE S, <10'	120.00	EA	$3,598.62	$431,834.40
430-174-118	PIPE CULV, OPT MATL, ROUND,18"SD	4,800.00	LF	$73.15	$351,120.00

Drainage Component Total $5,202,394.62

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	35.00	AS	$262.72	$9,195.20
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	344.00	AS	$912.34	$313,844.96
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	35.00	AS	$2,986.88	$104,540.80

Signing Component Total $427,580.96

Sequence 1 Total $13,435,620.65

Date: 11/21/2018 12:18:11 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: NLT44A-1-52-01 **Letting Date:** 01/2099

Description: Alternative along SR 19 to CR 445A

District: 05 **County:** 11 LAKE **Market Area:** 07 **Units:** English
Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 17.200 MI

Project Manager:

Version 1-P Project Grand Total **$16,407,100.98**
Description: Alternative along SR 19 to CR 445A

Project Sequences Subtotal			**$13,435,620.65**
102-1	Maintenance of Traffic	10.00 %	$1,343,562.06
101-1	Mobilization	10.00 %	$1,477,918.27
Project Sequences Total			**$16,257,100.98**
Project Unknowns		0.00 %	$0.00
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$150,000.00	$150,000.00
Project Non-Bid Subtotal					**$150,000.00**
Version 1-P Project Grand Total					**$16,407,100.98**