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DRAFT PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation

District Florida's Turnpike Enterprise

Project Development and Environment (PD&E) Study

Widening Florida's Turnpike Mainline (SR 91)

Limits of Project: North of SR 60 to South of Clay Whaley Road

Osceola County, Florida

Financial Management Number: 423374-3-22-01

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Table of Contents

1	PROJECT SUMMARY	1
1.1	Project Description.....	2
1.2	Purpose & Need	2
1.2.1	Capacity.....	2
1.2.2	Transportation Demand	2
1.2.3	Roadway Deficiencies.....	3
1.2.4	Consistency with Planning Documents	3
1.3	Commitments.....	3
1.4	Alternatives Analysis Summary.....	4
1.5	Description of Preferred Alternative.....	4
1.6	List of Technical Documents.....	8
2	EXISTING CONDITIONS	9
2.1	Previous Planning Studies	10
2.2	Existing Roadway Conditions.....	10
2.2.1	Roadway Typical Sections	10
2.2.2	Roadway Functional and Context Classifications.....	10
2.2.3	Access Management Classification.....	11
2.2.4	Right-of-Way	11
2.2.5	Adjacent Land Use	12
2.2.6	Pavement Type & Condition.....	12
2.2.7	Existing Design and Posted Speed	13
2.2.8	Horizontal Alignment	13
2.2.9	Vertical Alignment	13
2.2.10	Multi-modal Facilities	18
2.2.11	Interchanges/Cross Streets.....	18
2.2.12	Physical or Operational Restrictions	18
2.2.13	Traffic Data	18
2.2.14	Roadway Operational Conditions.....	22
2.2.14.1	Existing Freeway Segment Analysis	22

2.2.15	Managed Lanes	26
2.2.16	Crash Data	26
2.2.16.1	Crash Data Analysis.....	26
2.2.16.2	Mainline Crashes	30
2.2.16.3	Canoe Creek Service Area Crashes	30
2.2.16.4	Bicycle/Pedestrian-Related	30
2.2.17	Railroad Crossings.....	31
2.2.18	Drainage	31
2.2.19	Lighting	36
2.2.20	Utilities	36
2.2.21	Soils and Geotechnical Data	40
2.2.22	Aesthetics Features	47
2.2.23	Traffic Signs	47
2.2.24	Noise Walls and Perimeter Walls	48
2.2.25	Intelligent Transportation Systems (ITS)/Transportation System Management and Operations (TSM&O) Features.....	48
2.3	Existing Bridges and Structures	50
2.4	Existing Environmental Features.....	56
2.4.1	Socio-Economic.....	56
2.4.1.1	Communities and Populations	56
2.4.1.2	Community Facilities and Emergency Services.....	57
2.4.2	Cultural Resources	58
2.4.3	Natural Resources	62
2.4.3.1	Public and Other Conservation Lands.....	62
2.4.3.2	Protected Species and Habitat.....	63
2.4.3.3	Wetlands and Other Surface Waters.....	66
2.4.3.4	Water Resources	67
2.4.4	Physical Resources	68
2.4.4.1	Noise	68
2.4.4.2	Air Quality	68
2.4.4.3	Contamination.....	68
3	FUTURE CONDITIONS	69

3.1	Transportation Plan Review	69
3.2	Future Land Use	71
3.3	Traffic Forecasts	72
3.4	Freeway Mainline Operations Analysis.....	74
4	DESIGN CONTROLS & CRITERIA	78
4.1	Design Controls	78
4.2	Design Criteria	78
5	ALTERNATIVES ANALYSIS	86
5.1	No-Action (No-Build) Alternative.....	86
5.1.1	No-Action (No-Build) Design Year 2050	86
5.2	Transportation Systems Management and Operations (TSM&O) Alternative	86
5.3	Build Alternative	87
5.3.1	Mainline Typical Section Analysis.....	87
5.3.1.1	Rural Segment.....	87
5.3.1.2	Urban Segment.....	89
5.3.2	Build Alternative Operational Analysis	91
5.4	Comparative Alternatives Evaluation.....	96
5.4.1	Value Engineering.....	96
5.5	Selection of the Preferred Alternative	97
6	AGENCY COORDINATION & PUBLIC INVOLVEMENT.....	98
6.1	Agency Coordination.....	98
6.2	Public Involvement.....	99
6.3	Alternatives Public Information Meeting	99
6.4	Public Hearing	100
7	PREFERRED ALTERNATIVE	101
7.1	Engineering Details of the Preferred Alternative	101
7.1.1	Typical Sections.....	101
7.1.2	Access Management	103
7.1.3	Right-of-Way	103
7.1.4	Horizontal and Vertical Geometry.....	103

7.1.5	Design Variations and Design Exceptions	104
7.1.6	Tolled Projects	107
7.1.7	Intelligent Transportation System and TSM&O Strategies	108
7.1.7.1	Long Term Deployment Strategies	114
7.1.8	Landscape	115
7.1.9	Lighting	115
7.1.10	Wildlife Crossings	116
7.1.11	Permits	116
7.1.12	Drainage and Stormwater Management Facilities	117
7.1.13	Floodplain Analysis	118
7.1.14	Bridge and Structure Analysis	118
7.1.15	Transportation Management Plan	123
7.1.16	Constructability	128
7.1.17	Construction Impacts	131
7.1.18	Special Features	131
7.1.19	Utilities	132
7.1.20	Project Costs	134
7.2	Summary of Environmental Impacts	134
7.2.1	Future Land Use	134
7.2.2	Section 4(f)	134
7.2.3	Cultural Resources	134
7.2.4	Wetlands	135
7.2.5	Protected Species and Habitat	136
7.2.6	Essential Fish Habitat	137
7.2.7	Highway Traffic Noise	137
7.2.8	Contamination	138

List of Figures

Figure 1-1 Project Location Map	1
Figure 1-2 Rural Typical Section 1	5
Figure 1-3 Rural Typical Section 2	6
Figure 1-4 Urban Typical Section	7
Figure 2-1 Project Location Map	9

Figure 2-2 Existing Typical Section	10
Figure 2-3 Existing Year (2024) AADTs	21
Figure 2-4 Crash Density (2019 – 2023)	28
Figure 2-5 Fatal Crashes	29
Figure 3-1 Southport Connector/Northeast Connector Expressway Project Area	70
Figure 3-2 Osceola County Planned Future Network and Land Uses.....	71
Figure 5-1 Rural Typical Section 1	88
Figure 5-2 Rural Typical Section 2	88
Figure 5-3 Urban Typical Section 1	89
Figure 5-4 Urban Typical Section 2	90
Figure 5-5 Urban Typical Section 3	91
Figure 7-1 Rural Segment Typical Section 1	101
Figure 7-2 Rural Typical Section 2	102
Figure 7-3 Urban Typical Section	103
Figure 7-4 Florida's Turnpike Mainline (SR 91) Conceptual TTCP	125
Figure 7-5 Florida's Turnpike Mainline (SR 91) Bridge TTCP Phasing	127
Figure 7-6 Proposed Construction Segments.....	130

List of Tables

Table 1-1 Cost Estimate	7
Table 2-1 Freeway Interchange Spacing Requirements	11
Table 2-2 Existing ROW	11
Table 2-3 Pavement Condition Forecast 2025.....	12
Table 2-4 Side Street's Existing Design and Posted Speed Limits.....	13
Table 2-5 Horizontal Alignment.....	15
Table 2-6 Vertical Alignment	16
Table 2-7 2024 AADT and Directional Design Hour Volumes	20
Table 2-8 2024 AM Peak Hour Freeway Mainline Traffic Operations	23
Table 2-9 2024 PM Peak Hour Freeway Mainline Traffic Operations.....	24
Table 2-10 2024 Non-Typical Peak Hour Freeway Mainline Traffic Operations.....	25
Table 2-11 Number of Crashes and Crash Severity by Year	26
Table 2-12 Number of Crashes by Location by Year.....	26

Table 2-13 Summary of Existing Basin Data	32
Table 2-14 Existing Utility Agencies Owners.....	37
Table 2-15 Summary of NRCS Soil Survey Units – Osceola County	40
Table 2-16 Summary of Boring Groundwater Levels	46
Table 2-17 Overhead Signage within the Study Area	47
Table 2-18 Existing Bridge Structures	52
Table 2-19 Existing Culverts.....	53
Table 2-20 Demographic Summary	57
Table 2-21 Community Facilities and Emergency Services near the Study Area	58
Table 2-22 Cultural Resource Surveys Previously Conducted within the FMSF Search Area	59
Table 2-23 Cultural Resources Previously Recorded within the FMSF Search Area.....	61
Table 2-24 Federally and State Listed Species with Potential to Occur in the Study Area	64
Table 2-25 Existing Wells within 1,000ft of Right-of-Way	68
Table 2-26 Potential Contamination Site Summary	69
Table 3-1 Base, Opening, and Horizon.....	72
Table 3-2 2050 Annual Average Daily Traffic and Directional Design Hour Volumes.....	73
Table 3-3 2050 No-Action AM Design Hour Freeway Mainline Traffic Operation	75
Table 3-4 2050 No-Action PM Design Hour Freeway Mainline Traffic Operation	76
Table 3-5 2050 No-Action Non-Typical Peak Hour Freeway Mainline Traffic Operation	77
Table 4-1 Geometric Design Criteria	78
Table 4-2 Drainage Design Criteria	84
Table 5-1 Evaluation of TSM&O Alternatives	87
Table 5-2 2050 Build AM Design Hour Freeway Mainline Traffic Operation	93
Table 5-3 2050 Build PM Design Hour Freeway Mainline Operation	94
Table 5-4 2050 Build Non-Typical Peak Hour Freeway Mainline Traffic Operation	95
Table 5-5 Comparative Matrix	96
Table 5-6 Summary of Value Engineering Recommendations	97
Table 7-1 Design Variation – Vertical Curve Length.....	105
Table 7-2 Overhead Signage Disposition	109
Table 7-3 Application TSM&O Strategies and Recommendations	112
Table 7-4 Anticipated Permits for the Preferred Alternative.....	117
Table 7-5 Proposed Bridge Improvements	118
Table 7-6 prestressed Slab Bridge Cost Analysis	120

Table 7-7 Proposed Median Crossover Locations	131
Table 7-8 Utility Impacts and Relocation Costs.....	133
Table 7-9 Cost Estimate	134
Table 7-10 Federal and State Listed Species with Effect Determination	136
Table 7-11 Noise Barrier Evaluation Summary	138
Table 7-12 Potential Contamination Site Summary	138

List of Appendices

- Appendix A: Existing and Future Land Use
- Appendix B: Poor Pavement Condition
- Appendix C: NRCS Soil Survey Maps
- Appendix D: Muck Limits Aerial Maps
- Appendix E: ETDM Advance Notification and Programming Summary Report
- Appendix F: Typical Section Package

1 PROJECT SUMMARY

Florida's Turnpike Enterprise (Enterprise), part of the Florida Department of Transportation (FDOT), is conducting a Project Development and Environment (PD&E) Study to evaluate widening of Florida's Turnpike Mainline (SR 91), Roadway #92470000, in Osceola County. The project limits extend from north of State Road (SR) 60/Yeehaw Junction at Mile Post (MP) 193.5 to south of Clay Whaley Road (formerly Kissimmee Park Road) at MP 238.5, approximately 45 miles, as shown in **Figure 1-1**. The study traverses a rural segment, from north of SR 60 (MP 193.5) to the Osceola County Urban Growth Boundary line, which is just north of the Canoe Creek Service Plaza (MP 229.53 to MP 230.83). North of the service plaza, the project area transitions into an urban segment. This Preliminary Engineering Report (PER) documents the project's purpose and need, the alternatives developed and evaluated, the selection of the preferred alternative, and the preliminary design analysis for the preferred alternative.



Figure 1-1 Project Location Map

1.1 Project Description

The limits of this project extend from north of SR 60/Yeehaw Junction (MP 193.5) to south of Clay Whaley Road (MP 238.5) in Osceola County. The Canoe Creek Service Plaza is located between MP 229.53 to MP 230.83. Within the project limits, Florida's Turnpike Mainline (SR 91) is a four (4)-lane divided limited-access toll facility. The existing roadway typical section includes two 12-foot travel lanes in each direction, 12-foot outside shoulders and a 40-foot median. The inside shoulders are generally eight (8) feet (4-foot paved). Existing canals and/or ditches run along one or both sides of the road for much of the project. The existing right of way (ROW) is 400-feet except at the two bifurcated sections (where northbound and southbound traffic split into separate paths for a short distance) and the Canoe Creek Service Plaza area of the corridor where sections widen.

This project involves capacity improvements up to eight (8) lanes along Florida's Turnpike Mainline (SR 91) from north of SR 60/Yeehaw Junction (MP 193.5) to south of Clay Whaley Road (MP 238.5) in Osceola County, a distance of approximately 45 miles.

1.2 Purpose & Need

The purpose of this project is to increase capacity, meet existing and future travel demands, and address roadway deficiencies for the segment of Florida's Turnpike Mainline (SR 91) from north of SR 60/Yeehaw Junction (MP 193.5) to south of Clay Whaley Road (MP 238.5). The evaluation of new interchanges along this segment of Florida's Turnpike Mainline (SR 91) is being conducted under a separate concept study.

1.2.1 Capacity

Travel demand on Florida's Turnpike Mainline (SR 91) has increased significantly in the past and is expected to increase in the future. According to the *Florida's Turnpike Enterprise Traffic Trends Report*, July 2022, the years from 2011 to 2021 (with the exception of 2019-2020, due to COVID-19) showed an annual increase in traffic volumes, as measured by Annual Average Daily Traffic (AADT) along this segment of SR 91. This section of the Turnpike is experiencing 0.5 percent annual growth. In the *Florida's Turnpike Enterprise 2022 Traffic Engineer's Annual Report*, at MP 236 (Three Lakes Plaza) within the study limits, AADT increased 20.8 percent from 29,300 AADT in Fiscal Year (FY) 2021 to 35,400 AADT in FY 2022. Additionally, forecasted traffic data show the need to widen Florida's Turnpike Mainline (SR 91) within the project limits to six (6) lanes by year 2035 to maintain acceptable levels of service (LOS).

1.2.2 Transportation Demand

Florida's Turnpike Mainline (SR 91) serves regional and local trips, particularly for commuters traveling to/from residential and employment centers and is a critical component of transportation networks. Additionally, Florida's Turnpike Mainline (SR 91) is a designated evacuation route by the Florida Division of Emergency Management (FDEM) and a designated Strategic Intermodal System (SIS) Corridor. The expansion of the project segment will improve hurricane evacuation and emergency response times. Due to population growth and increasing transportation demand

in the surrounding area, the Enterprise is currently widening Florida's Turnpike Mainline (SR 91) from Clay Whaley Road to US 192 and constructing the new Nolte Road Interchange (FPID 441224-4-52-01) which will replace the partial interchange being removed at Clay Whaley Road (FPID 441224-2-52-01), both located at the northern limits of this PD&E Study. A Diverging Diamond Interchange (DDI) will be constructed at Nolte Road (MP 241). These projects are bundled and currently under construction.

1.2.3 Roadway Deficiencies

Much of the existing corridor reflects the original construction of this segment of Florida's Turnpike in the late 1960's. Design standards have evolved since that time, which allows this project to address deficiencies and adhere to current design standards. This includes consideration of horizontal and vertical geometrics, clear zone requirements, and shoulder width. Various locations have substandard outside shoulder width and inside shoulder width. There are multiple culverts and farm crossing structures built in the early 1960's that have cracks, scaling, spalling and siltation deficiencies.

1.2.4 Consistency with Planning Documents

The project is listed in the State Transportation Improvement Plan (STIP) with PD&E funding only, primarily in FY 2025. The project is not currently listed in the FY 2025/2026-2029/30 MetroPlan Orlando Transportation Improvement Program (TIP), which was adopted in July 2024. Only the PD&E phase is listed in the MetroPlan Orlando 2045 Metropolitan Transportation Plan - Cost Feasible Plan, adopted December 2020 and revised on December 14, 2022. Final design, ROW, and construction phases are listed as unfunded needs. Additional coordination will take place to ensure planning consistency by including this project in the relevant planning documents.

1.3 Commitments

The Enterprise commits to implementing the following measures during the final design, permitting and construction phases of this project:

- The most recent version of the USFWS Standard Protection Measures for the Eastern Indigo Snake will be utilized during construction.
- The Enterprise will provide mitigation for impacts to wood stork Suitable Foraging Habitat within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank.
- A survey will be conducted for Audubon's crested caracara per USFWS protocol during the design phase.
- The need for a Florida grasshopper sparrow survey will be reviewed during the design phase.
- A survey will be conducted for the Florida bonneted bat within the limits of construction activities. If any signs of the Florida bonneted bat are observed (e.g., tree cavities, new

potential man-made roosting habitat), the Enterprise is committed to coordinating with USFWS regarding the most updated relocation protocols for the Florida bonneted bat.

- The Enterprise will continue to evaluate the inclusion of wildlife crossings and/or habitat connectivity enhancements during design phase.
- The Enterprise will require contractors to remove garbage daily from the construction site or use bear proof containers for securing of food and other debris from the project work area to prevent these items from becoming an attractant for the Florida black bear (*Ursus americanus floridanus*). Any interaction with nuisance bears will be reported to the FWC Wildlife Alert hotline 888-404-FWCC (3922).
- If the Monarch butterfly (*Danaus plexippus*) is listed by USFWS as Threatened or Endangered and the project may affect the species, the Enterprise commits to re-initiating consultation with USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.
- If the Tricolored bat (*Perimyotis subflavus*) is listed by USFWS as Threatened or Endangered and the project may affect the species, the Enterprise commits to re-initiating consultation with USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.

Commitments above are under review. This report and the associated Project Commitment Record will be updated to document any commitments made during the study.

1.4 Alternatives Analysis Summary

The following alternatives were evaluated during the study:

- **“No-Action” Alternative:** The “No-Action” Alternative maintains the existing conditions with no improvements and serves as a baseline for comparison against other alternatives. The “No-Action” Alternative will remain under consideration throughout the PD&E Study and includes already planned and programmed projects as discussed in **Chapter 5**.
- **Transportation Systems Management and Operations (TSM&O):** Transportation Systems Management and Operations (TSM&O) alternatives are low-cost, high-impact strategies that optimize the performance of corridors. TSM&O solutions alone would not address the purpose and needs of the project.
- **Build Alternatives:** The build alternatives consist of widening the Florida's Turnpike Mainline (SR 91) from four (4) to six (6) lanes in the rural segment and four (4) to eight (8) lanes in the urban segment. The study evaluated multiple typical sections including widening the existing roadway to the outside as well as full reconstruction.

1.5 Description of Preferred Alternative

The Preferred Alternative consists of two typical sections for the rural segment and one typical section for the urban segment. All the typical sections consist of 12-foot travel lanes and 12-foot

inside and outside shoulders. The rural segment widens Florida's Turnpike Mainline (SR 91) from four (4) to six (6) lanes while the urban segment widens Florida's Turnpike Mainline (SR 91) from four (4) to eight (8) lanes. The Preferred Alternative has a design speed of 70 miles per hour (mph) and will be constructed within the existing ROW width.

Rural Segment

The first typical section for the rural segment consists of widening to the outside and maintaining the existing 40-foot median with guardrail. This is consistent with the typical section recommended for the segment south of the project limits (FPID 423374-2-22-01) and maximizes the existing pavement as shown in **Figure 1-2**. This typical section will be used in the following sections:

- MP 193.78 to MP 202.75
- MP 204.17 to MP 206.42
- MP 207.46 to MP 212.79
- MP 217.66 to MP 220.50
- MP 221.75 to MP 223.29

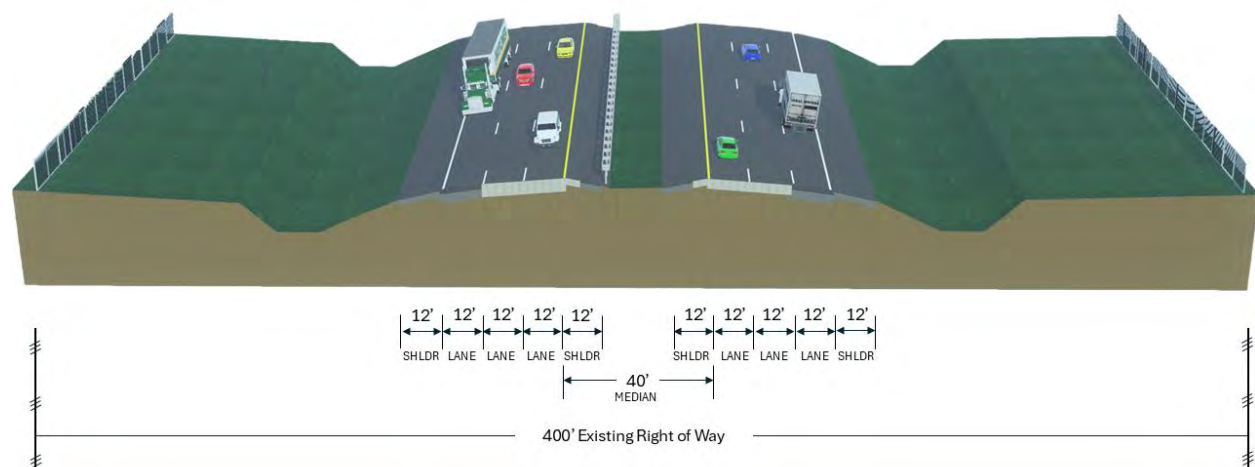


Figure 1-2 Rural Typical Section 1

The second typical section for the rural segment consists of reconstructing the existing Florida's Turnpike Mainline (SR 91) to provide six (6) lanes. This typical section (**Figure 1-3**) shifts the alignment to the east approximately 37-feet and raises the roadway profile to provide appropriate base clearance above the seasonal high ground water table (SHGWT). This approach addresses ongoing maintenance issues and the frequency of needed resurfacing. This typical section will be used in the following sections:

- MP 202.75 to MP 204.17
- MP 206.42 to MP 207.46
- MP 212.79 to MP 217.66

- MP 220.50 to MP 221.75
- MP 223.29 to MP 233.73

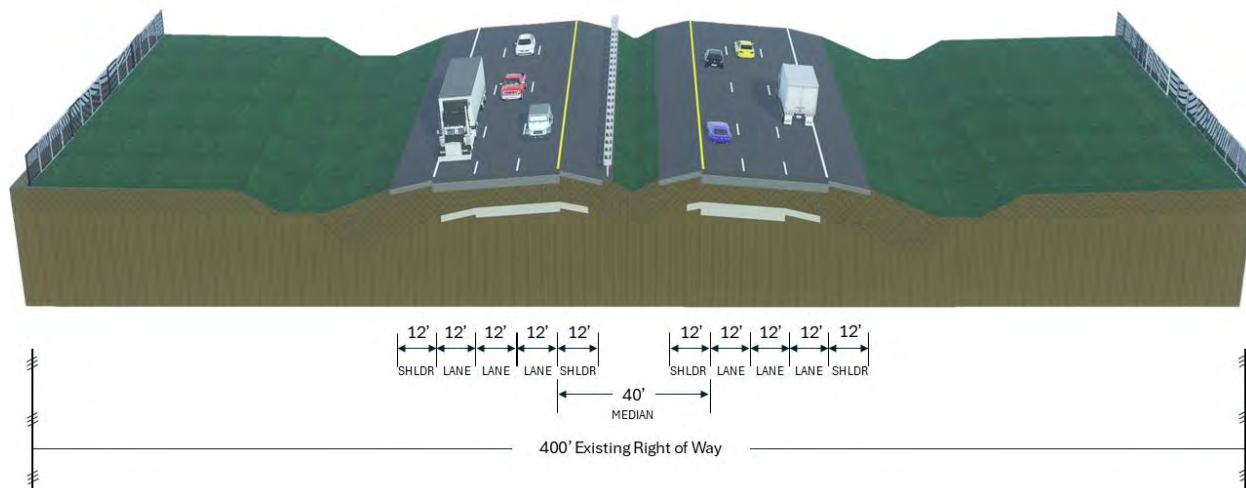


Figure 1-3 Rural Typical Section 2

Urban Segment

The typical section for the urban segment (from MP 233.73 to MP 239.03) consists of widening the Florida's Turnpike Mainline (SR 91) from four (4) to eight (8) lanes to the outside and widening the inside shoulder to 12-feet, resulting in a 26-foot median separated by median barrier wall as shown in **Figure 1-4**. The typical section matches the segment to the north, under construction as part of the widening of Florida's Turnpike Mainline (SR 91) from Clay Whaley Road to US 192 (FPID 441224-4-52-01).

This typical section raises the profile to address existing maintenance issues associated with the seasonal high ground water table (SHGWT) and shifts the alignment 30-feet where feasible to facilitate construction.

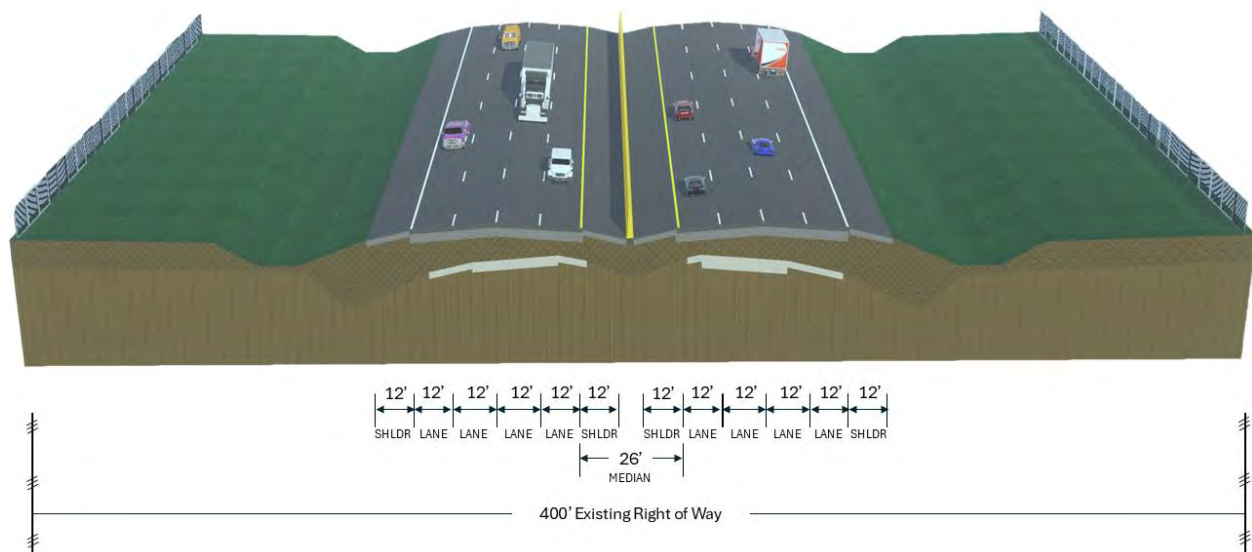


Figure 1-4 Urban Typical Section

Details regarding the typical sections at the bifurcated sections, including those at the location of the Canoe Creek Service Plaza between MP 229.53 to MP 230.83 can be found in **Chapter 7**.

Construction Cost

The Preferred Alternative can be constructed within the existing ROW. Cost estimates were prepared using FDOT's Long Range Estimate (LRE) system and summarized below in **Table 1-1**.

Table 1-1 Cost Estimate

	Cost
Construction	\$1,824,823,000
Contingency (15%)	\$273,724,000
Utility Relocations	\$1,000,000
SUB TOTAL	\$2,099,547,000
Design (15%)	\$314,933,000
CEI (15%)	\$314,933,000
TOTAL ESTIMATED PROJECT COST	\$2.73B

Wildlife crossings are not included in the LRE (to be evaluated further during design phase)

1.6 List of Technical Documents

The following is a list of all supplemental documents to this Preliminary Engineering Report.

Engineering Documents

- Pond Siting Report (PSR)
- Location Hydraulics Report (LHR)
- Bridge Hydraulics Evaluation Memo
- Bridge Analysis Report (BAR)
- Project Traffic Forecast Memorandum (PTFM)
- Model and Forecast Development Report
- Project Traffic Analysis Report (PTAR)
- Utility Assessment Package (UAP)
- TSM&O Strategies Technical Memorandum
- Concept of Operations
- Existing Geotechnical Conditions Technical Memorandum
- Cost Risk Assessment and Value Engineering Report
- Toll Siting Technical Memorandum

Environmental Documents

- State Environmental Impact Report (SEIR)
- Natural Resources Evaluation (NRE)
- Sociocultural Effects (SCE) Evaluation Memorandum
- Cultural Resource Assessment Survey (CRAS)
- Contamination Screening Evaluation Report (CSER)
- Noise Study Report (NSR)
- Water Quality Impact Evaluation (WQIE)

Public Involvement

- Public Involvement Plan (PIP)
- Public Involvement Summary

2 EXISTING CONDITIONS

Florida's Turnpike Mainline (SR 91) from MP 193.5 to MP 238.5 covers approximately 45 miles. There are no interchanges within the project limits. There are two segments where Florida's Turnpike Mainline (SR 91) splits into two separate paths for a short distance (bifurcated segments): one for northbound traffic and one for southbound traffic. These bifurcated segments are located from MP 215.80 to MP 216.84 and from MP 225.60 to MP 226.91. The Canoe Creek Service Plaza is located between MP 229.53 to MP 230.73. There are five (5) bridges that cross over Florida's Turnpike Mainline (SR 91): one (1) at US 441 (S. Kenansville Road), one (1) at Lake Marian Road, two (2) at CR 523 (S. Canoe Creek Road and N. Canoe Creek Road), and one (1) at Friars Cove Road.



Figure 2-1 Project Location Map

2.1 Previous Planning Studies

No previous studies were performed.

2.2 Existing Roadway Conditions

2.2.1 Roadway Typical Sections

The existing roadway typical section along the entire project segment generally includes two (2) 12-foot travel lanes in each direction, 12-foot outside shoulders and a 40-foot median. The inside shoulders are generally eight (8) feet (4-foot paved) with guardrail along the inside shoulder on the southbound side. Existing canals and/or ditches run along either the south or north sides or along both sides of the road for much of the project. The guardrail runs intermittently along the outside shoulder in both directions. The existing ROW is 400-feet except at the two bifurcated sections and the Canoe Creek Service Plaza area of the corridor where sections widen. There are no noise walls within the project limits. The existing typical section is shown in **Figure 2-2**.

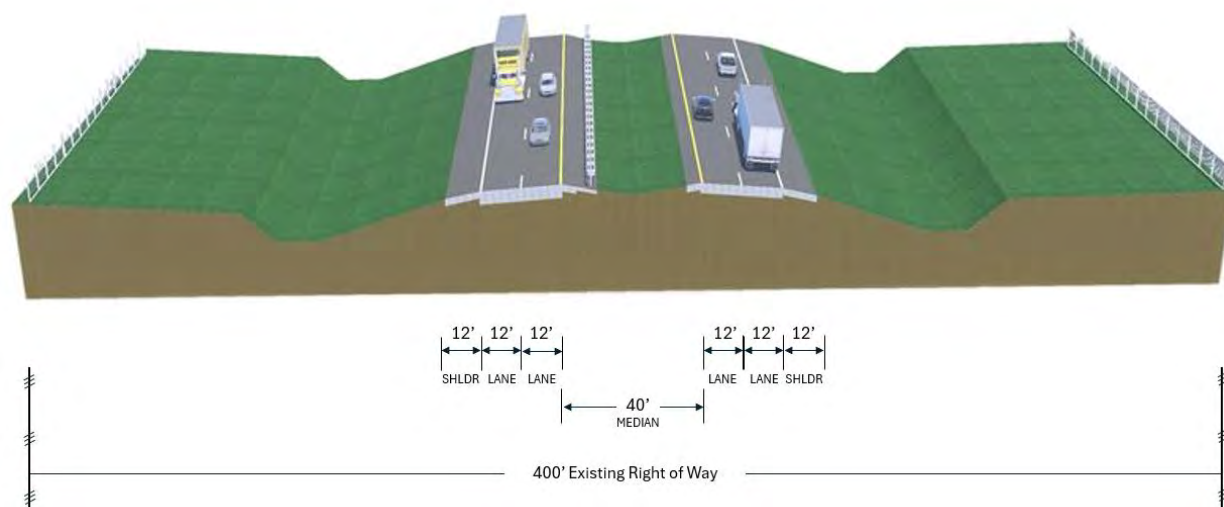


Figure 2-2 Existing Typical Section

2.2.2 Roadway Functional and Context Classifications

FDOT groups roadways on the State Highway System (SHS) into classes according to the character of service they provide in relation to the total roadway network. This segment of Florida's Turnpike Mainline (SR 91) is classified as a Rural Principal Arterial Expressway (from MP 193.5 to MP 235.87) and Urban Principal Arterial Expressway (from MP 235.87 to the end of the project limits at MP 238.5). It is a designated Hurricane Evacuation Route by FDEM and a designated Strategic Intermodal System (SIS) Corridor.

FDOT's context classification system describes the general characteristics of land use, development patterns, and roadway connectivity along a roadway, providing cues as to the types

of use and user groups that will likely utilize the roadway. FDOT will apply criteria and standards based on the context classification. Context classification is not applied to interstates and limited access facilities, as the function of the roadway is considered complete. Consequently, no context classification is assigned for Florida's Turnpike Mainline (SR 91).

2.2.3 Access Management Classification

Florida's Turnpike Mainline (SR 91) is a limited access facility, categorized as Access Management Class 1 with Freeway Interchange Spacing Requirements as shown in **Table 2-1**. There are no existing interchanges within the study limits. The evaluation of new interchanges along this segment of Florida's Turnpike Mainline (SR 91) is being conducted under a separate concept study. Access to the Canoe Creek Service Plaza for both northbound and southbound traffic is provided between MP 229.53 to MP 230.83, within the median of the Florida's Turnpike Mainline (SR 91).

Table 2-1 Freeway Interchange Spacing Requirements

Access Class	Area Type	Segment Location	Interchange Spacing (miles)
1	1	CBD & CBD Fringe for Cities in Urbanized Areas	1.0
	2	Existing Urbanized Areas Other Than Area Type	2.0
	3	Transitioning Urbanized Areas, and Urban Areas Other Than Area Type 1 or 2	3.0
	4	Rural Areas	6.0

FDM Table 201.4.1 Rule 14-97 – Freeway Interchange Spacing

2.2.4 Right-of-Way

Existing ROW information was obtained from available as-builts and ROW maps. The existing ROW width along the corridor is generally 400-feet and widens out at the two bifurcated sections and the Canoe Creek Service Plaza area of the corridor. The segments of the mainline where the existing ROW is greater than the typical 400-foot and the existing ROW at the side streets within the study area are summarized below.

Table 2-2 Existing ROW

Facility	Segment Limits		ROW (ft)
SR 91 (at the bifurcated segment)	MP 215.80	MP 216.84	400 - 810
SR 91 (at the bifurcated segment)	MP 225.60	MP 226.91	400 - 1040
SR 91 (at the Canoe Creek Service Plaza)	MP 229.53	MP 230.83	400 - 978
US 441	Within project limits		200
Lake Marian Road	Within project limits		66
S. Canoe Creek Road	Within project limits		100 - 200
N. Canoe Creek Road	Within project limits		100 - 235
Friars Cove Road	Within project limits		150 - 180

2.2.5 Adjacent Land Use

The project passes through approximately 45 miles of predominantly undeveloped agricultural and conservation lands, except for some rural residential development around S. Canoe Creek Road and high-density residential development north of Friars Cove Road and east of Florida's Turnpike Mainline (SR 91). Within the rural segment of the project (SR 60 to just north of the Canoe Creek Service Plaza), the surrounding land use is primarily agricultural or natural unimproved land. Within the urban segment (north of Canoe Creek Service Plaza to south of Clay Whaley Road), the surrounding land uses are primarily residential and agricultural. A total of 26 upland, ten (10) wetland and three (3) surface water land use types were mapped within the study area (lands within 300-feet of Florida's Turnpike Mainline existing ROW). Upland communities comprise approximately 4,738.75 acres (83.24 percent) of the study area and include residential, agriculture, undeveloped lands and infrastructure uses. Wetlands and surface waters comprise approximately 954.04 acres (16.76 percent) of the study area and include streams and waterways, canals, reservoirs, mixed wetland hardwoods, mixed shrub, cypress, hydric pineland, freshwater marsh and wet prairie habitats.

The land uses within and adjacent to the study area were defined by using the South Florida Water Management District (SFWMD) Florida Land Use, Cover, and Forms Classification System (FLUCFCS) Geographical Information System (GIS) data (2021-2023), and the St. Johns River Water Management District (SJRWMD) FLUCFCS GIS data (2020), and future categorized using the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper (accessed 2024). Aerial photography generally confirmed the SFWMD and SJRWMD land use mapping with no major adjustments or corrections. Figures contained in **Appendix A** provide information about each land use within the study area.

2.2.6 Pavement Type & Condition

According to the FDOT's Pavement Condition History and Forecast reports, the pavement is in generally good condition with most cracking and rideability scores above 7.6. Each section of pavement is rated for cracking and rideability on a 0-10 scale with 9 being the worst and 10 the best. Any crack rating of 6.4 or less is considered deficient pavement for speed limits greater than or equal to 50 MPH. **Table 2-3** summarizes the 2025 pavement conditions.

Table 2-3 Pavement Condition Forecast 2025

County	Roadway ID	BMP	EMP	Cracking	Ride
Osceola	92470000 R	190.6	198.6	9.5	8.0
	92470000 R	198.6	206.9	10.0	8.0
	92470000 R	206.9	208.5	9.5	7.9
	92470000 L	206.9	208.5	9.5	7.8
	92470000 L	198.6	206.9	10.0	8.1
	92470000 L	190.6	198.6	9.5	8.0
	92471000 R	208.5	216.9	9.5	7.8
	92471000 R	216.9	220.2	9.5	7.9

County	Roadway ID	BMP	EMP	Cracking	Ride
	92471000 R	220.2	227.1	9.5	7.9
	92471000 R	227.1	235.1	10.0	8.2
	92471000 R	235.1	236.0	10.0	8.0
	92471000 R	236.0	237.1	10.0	7.7
	92471000 R	237.1	238.8	10.0	8.3

Previous Pavement Coring Reports

Previous Pavement Survey Evaluation Reports (PSER) performed along this section of Florida's Turnpike Mainline (SR 91) were reviewed to evaluate areas where poor pavement was encountered. The locations showing poor pavement are summarized in **Appendix B**.

2.2.7 Existing Design and Posted Speed

The design speed along Florida's Turnpike Mainline (SR 91) within the limits of the study is 70 mph, based on available as-built data. The posted speed along the Turnpike mainline is 70 mph. The design speed for the ramps at the Canoe Creek Service Plaza were not found in available as-built data. The southbound exit ramp at the Canoe Creek Service Plaza has an advisory posted speed sign of 20 mph; the other three (3) ramps do not have any posted speed limit signs. **Table 2-4** summarizes the existing design and posted speed limits for the side streets within the study area.

Table 2-4 Side Street's Existing Design and Posted Speed Limits

Facility	Design Speed (mph)	Posted Speed (mph)
US 441	60	55
Lake Marian Road	40	NA
S. Canoe Creek Road	60	55
N. Canoe Creek Road	60	55
Friars Cove Road	40	35

NA denotes not found.

2.2.8 Horizontal Alignment

Existing horizontal curve data was obtained from available 1961 as-builts and summarized in **Table 2-5**. The contract number from the 1961 as-built plans is shown as the source for the data as FPID numbers were not in use at the time. Existing curves not meeting the current FDOT Design Manual (FDM) and American Association of State Highway and Transportation Officials (AASHTO) criteria were highlighted in the table in red font. The design speed for the ramps at the Canoe Creek Service Plaza were not found in available as-built data.

2.2.9 Vertical Alignment

Existing vertical alignment data was obtained from available 1961 as-builts and summarized in **Table 2-6**. The contract number from the 1961 as-built plans is shown as the source for the data

as FPID numbers were not in use at the time. The existing vertical alignment is generally flat throughout the project limits, with minor changes in grade and elevation. These changes in vertical grades occur at existing culverts and bridges. Existing curves not meeting the current FDM criteria are highlighted in the table in red font.

Table 2-5 Horizontal Alignment

PI Station *	PC Station*	PT Station*	Design Speed (MPH)	Radius (feet)	Curve Length (ft)			Superelevation			As Built Plan Source of Data
					Existing	FDOT Minimum	AASHTO Minimum	Existing	FDOT Minimum	AASHTO Minimum	
2130+42.19	2107+36.48	2151+20.67	70	5,729.58	4,384.19	1,050	1,050	0.03	0.037	0.037	Contract No. 9.1
2618+05.44	2579+71.97	2653+70.69	70	11,459.16	7,398.72	1,050	1,050	RC	RC	RC	Contract No. 9.3
2808+61.09	2787+12.94	2829+01.09	70	7,639.44	7639.44	1,050	1,050	0.02	0.028	0.037	Contract No. 9.3
2939+15.61	2933+66.61	2944+63.77	70	11,459.16	1,097.16	1,050	1,050	RC	RC	RC	Contract No. 9.4
3129+17.35	3117+30.76	3140+95.54	70	11,459.16	1,186.60	1,050	1,050	RC	RC	RC	Contract No. 9.4
4+50.93	0+00.00	9+00.00	70	5,729.58	900.00	1,050	1,050	0.03	0.037	0.037	Contract No. 10.1
32+00.00	26+47.04	37+52.96	70	5,729.58	1,105.92	1,050	1,050	0.03	0.037	0.037	Contract No. 10.1
35+88.01	29+88.01	41+88.01	70	5,729.58	1,200	1,050	1,050	0.03	0.037	0.037	Contract No. 10.1
52+39.40	49+11.44	55+67.36	70	5,729.58	655.92	1,050	1,050	0.03	0.037	0.037	Contract No. 10.1
54+69.50	50+94.50	58+44.50	70	5,729.58	750	1,050	1,050	0.03	0.037	0.037	Contract No. 10.1
3478+94.20	3464+05.17	3493+18.78	70	5,729.58	2913.61	1,050	1,050	0.03	0.037	0.037	Contract No. 10.1
3577+30.60	3566+69.83	3587+67.61	70	5,729.58	2097.78	1,050	1,050	0.03	0.037	0.037	Contract No. 10.2
5+51.70	0+00.00	11+00.00	70	5,729.58	1,100.00	1,050	1,050	0.03	0.037	0.037	Contract No. 10.2
30+95.09	19+81.37	41+81.37	70	5,729.58	2,200.00	1,050	1,050	0.03	0.037	0.037	Contract No. 10.2
5+51.70	0+00.00	11+00.00	70	5,729.58	1,100.00	1,050	1,050	0.03	0.037	0.037	Contract No. 10.2
30+95.09	19+81.37	41+81.37	70	5,729.58	2,200.00	1,050	1,050	0.03	0.037	0.037	Contract No. 10.2
56+14.44	50+62.74	61+62.74	70	5,729.58	1,100.00	1,050	1,050	0.03	0.037	0.037	Contract No. 10.2
56+14.44	50+62.74	61+62.74	70	5,729.58	1,100.00	1,050	1,050	0.03	0.037	0.037	Contract No. 10.2
7+64.68	0+00.00	15+20.37	70	5,729.58	1,520.37	1,050	1,050	0.03	0.037	0.037	Contract No. 10.3
4034+76.46	4019+19.36	4049+60.11	70	5,729.58	3,040.75	1,050	1,050	0.03	0.037	0.037	Contract No. 10.3
65+26.22	57+45.51	72+90.88	70	5729.58	1,520.37	1,050	1,050	0.03	0.037	0.037	Contract No. 10.3
4281+77.26	4276+22.09	4287+28.98	70	5729.58	1,106.89	1,050	1,050	0.03	0.037	0.037	Contract No. 10.4
4480+13.88	4461+89.01	4497+22.34	70	5729.58	3,533.33	1,050	1,050	0.03	0.037	0.037	Contract No. 10.5
RAMP A (Northbound Exit Ramp at Canoe Creek Service Plaza)											
22+04.10	21+00.64	23+06.14	*	716.20	205.50						Contract No. 10.3
24+09.13	23+06.14	25+09.94	*	572.96	203.80						Contract No. 10.3
RAMP C (Northbound Entrance Ramp at Canoe Creek Service Plaza)											
47+11.65	44+91.70	49+29.68	*	1,909.86	437.98						Contract No. 10.3
51+49.63	49+29.68	53+67.66	*	1,909.86	437.98						Contract No. 10.3
RAMP B (Southbound Entrance Ramp at Canoe Creek Service Plaza)											
22+10.99	19+25.56	24+92.23	*	1,909.86	566.67						Contract No. 10.3
26+33.23	24+92.23	27+72.83	*	1,145.92	280.60						Contract No. 10.3
31+82.17	27+72.83	35+88.40	*	3,819.72	815.57						Contract No. 10.3
RAMP D (Southbound Exit Ramp at Canoe Creek Service Plaza)											
42+16.72	38+24.61	46+06.09	*	3,819.72	781.48						Contract No. 10.3

PI Station *	PC Station*	PT Station*	Design Speed (MPH)	Radius (feet)	Curve Length (ft)			Superelevation			As Built Plan Source of Data
					Existing	FDOT Minimum	AASHTO Minimum	Existing	FDOT Minimum	AASHTO Minimum	
47+80.88	46+06.09	49+54.70	*	1,909.86	348.61						Contract No. 10.3
50+54.96	49+54.70	51+54.70	*	1,145.92	2,000						Contract No. 10.3

* Design Speed not found in available as-built data.

Table 2-6 Vertical Alignment

Design		Existing Vertical Curve						Curve	K-Value Criteria		As-Built Plan
PVI* Station	Speed (MPH)	Type	G1 %	G2 %	A %	Length (feet)	K-Value	Length Criteria	FDM	AASHTO	Source of Data
2167+00.00	70	Sag	0.20	1.80	1.60	400	250	800	206	181	Contract No. 9.1
2175+00.00	70	Crest	1.80	-1.60	3.40	1200	353	1,000	506	247	Contract No. 9.1
2183+00.00	70	Sag	-1.60	0.00	1.60	400	250	800	206	181	Contract No. 9.1
2256+00.00	70	Crest	+0.20	-0.20	0.40	400	1000	1,000	506	247	Contract No. 9.2
2324+00.00	70	Sag	0.00	2.067	2.067	400	193	800	206	181	Contract No. 9.2
2333+00.00	70	Crest	2.067	-1.90	3.967	1400	353	1000	506	247	Contract No. 9.2
2342+00.00	70	Sag	-1.90	-0.10	1.80	400	222	800	206	181	Contract No. 9.2
2378+00.00	70	Crest	+0.20	-0.20	0.40	600	1500	1000	506	247	Contract No. 9.2
2483+50.00	70	Sag	0.10	1.60	1.50	400	267	800	206	181	Contract No. 9.2
2490+86.00	70	Crest	1.60	-1.60	3.20	1100	343	1000	506	247	Contract No. 9.2
2498+75.00	70	Sag	-1.60	0.10	1.70	400	235	800	206	181	Contract No. 9.2
2611+50.00	70	Sag	0.00	1.00	1.00	400	400	800	206	181	Contract No. 9.3
2617+00.00	70	Crest	1.00	-1.00	2.00	700	350	1000	506	247	Contract No. 9.3
2622+50.00	70	Sag	-1.00	-0.10	0.90	400	444	800	206	181	Contract No. 9.3
2673+50.00	70	Sag	0.00	2.00	2.00	400	200	800	206	181	Contract No. 9.3
2683+00.00	70	Crest	2.00	-2.10	4.10	1500	366	1000	506	247	Contract No. 9.3
2692+50.00	70	Sag	-2.10	-0.10	2.0	400	200	800	206	181	Contract No. 9.3
3024+00.00	70	Sag	0.00	1.80	1.80	400	222	800	206	181	Contract No. 9.4
3033+00.00	70	Crest	1.80	-1.80	3.60	1200	333	1000	506	247	Contract No. 9.4
3042+00.00	70	Sag	-1.80	-0.48	1.32	400	303	800	206	181	Contract No. 9.4
3242+00.00	70	Sag	0.00	1.82	1.82	400	220	800	206	181	Contract No. 10.1
3252+00.00	70	Crest	1.82	-1.80	3.62	1300	359	1000	506	247	Contract No. 10.1
3261+00.00	70	Sag	-1.82	0.00	1.82	400	220	800	206	181	Contract No. 10.1
3367+00.00	70	Sag	0.10	1.76	1.66	400	241	800	206	181	Contract No. 10.1
3376+00.00	70	Crest	1.76	-1.56	3.32	1300	391	1000	506	247	Contract No. 10.1
3385+00.00	70	Sag	-1.56	0.10	1.66	400	241	800	206	181	Contract No. 10.1
3439+00.00	70	Crest	0.20	-0.20	0.40	400	1000	1000	506	247	Contract No. 10.1
3536+50.00	70	Sag	0.00	1.20	1.20	400	333	800	206	181	Contract No. 10.2

Design		Existing Vertical Curve						Curve	K-Value Criteria		As-Built Plan
PVI* Station	Speed (MPH)	Type	G1 %	G2 %	A %	Length (feet)	K-Value	Length Criteria	FDM	AASHTO	Source of Data
3545+00.00	70	Crest	1.20	-1.20	2.40	1000	417	1000	506	247	Contract No. 10.2
3554+00.00	70	Sag	-1.20	0.00	1.20	400	333	800	206	181	Contract No. 10.2
3736+00.00	70	Sag	-0.10	1.80	1.90	400	210	800	206	181	Contract No. 10.2
3745+00.00	70	Crest	1.80	-1.79	3.59	1300	362	1000	506	247	Contract No. 10.2
3755+50.00	70	Sag	-1.79	-0.10	1.69	400	237	800	206	181	Contract No. 10.2
3890+00.00	70	Sag	0.00	1.50	1.50	400	267	800	206	181	Contract No. 10.2
3900+00.00	70	Crest	1.50	-1.60	3.10	1200	387	1000	506	247	Contract No. 10.2
3910+87.50	70	Sag	-1.60	0.00	1.60	400	250	800	206	181	Contract No. 10.2
3958+00.00	70	Sag	0.00	1.40	1.40	400	286	800	206	181	Contract No. 10.3
3965+00.00	70	Crest	1.40	-1.40	2.80	1000	357	1000	506	247	Contract No. 10.3
3972+35.71	70	Sag	-1.40	0.00	1.40	400	286	800	206	181	Contract No. 10.3
4132+50.00	70	Sag	0.10	1.60	1.50	400	267	800	206	181	Contract No. 10.3
4140+20.00	70	Crest	1.60	-1.536	3.136	1100	350	1000	506	247	Contract No. 10.3
4147+70.00	70	Sag	-1.536	0.00	1.536	400	260	800	206	181	Contract No. 10.3
4241+00.00	70	Sag	0.00	1.80	1.80	400	222	800	206	181	Contract No. 10.4
4250+00.00	70	Crest	1.80	-1.52	3.32	1300	391	1000	506	247	Contract No. 10.4
4261+00.00	70	Sag	-1.52	0.00	1.52	400	263	800	206	181	Contract No. 10.4
4422+00.00	70	Sag	0.00	1.81	1.81	400	221	800	206	181	Contract No. 10.4
4431+00.00	70	Crest	1.81	-1.675	3.485	1300	373	1000	506	247	Contract No. 10.4
4439+50.00	70	Sag	-1.675	0.20	1.875	400	213	800	206	181	Contract No. 10.4

Red denotes not meeting the current standard

2.2.10 Multi-modal Facilities

Within the 500-foot study area buffer there are no Transportation Disadvantaged Service Provide Areas and no bus transit routes. There are two existing recreational trails (Three Lakes North Hiking Trail, crosses the Mainline within the Three Lakes Wildlife management Area (TLWMA) at MP 215.3, and CR 523 Trail follows CR 523 and crosses the Mainline at MP 229.5 as the Three Lakes Wildlife Management Area to Old Canoe Creek Road Connector), one private aviation transportation facility (Flying S Ranch Airstrip) east of the Mainline ROW, and two hiking trail priorities (2018-2022)/multi-use trails opportunities outside the Mainline ROW. The latter includes a segment of the Florida National Scenic Trail corridor (CR 523 Connector- Road Walk) and Three Lakes North (Orange).

2.2.11 Interchanges/Cross Streets

There are no existing interchanges within the study limits. The closest interchanges are located outside of the study limits. The existing Yeehaw Junction/US 441/SR 60 interchange is located south of the study limits at MP 193. This interchange is currently being evaluated in PD&E (FPID 423374-2) extending from MP 152 to MP 193 and expected completion in Summer 2025. The Enterprise is currently widening Florida's Turnpike Mainline (SR 91) from Clay Whaley Road to US 192 and constructing the new Nolte Road Interchange (FPIDs 441224-4-52-01) which will replace the partial interchange being removed at Clay Whaley Road (FPID 441224-2-52-01), both located at the northern limits of this PD&E Study. A Diverging Diamond Interchange (DDI) will be constructed at Nolte Road (MP 241). These projects are bundled and currently under construction.

2.2.12 Physical or Operational Restrictions

Florida's Turnpike Mainline (SR 91) is a tolled, limited access facility that is surrounded by agricultural and conservation land within the rural section and residential/commercial land and future development areas within the urban section. The adjacent conservation lands, namely the Three Lakes Wildlife Management Area, are considered sensitive habitat (See **Section 2.4.3.1**). Additionally, the project includes a network of ditches parallel to the Florida's Turnpike Mainline (SR 91) and a high seasonal water table.

2.2.13 Traffic Data

The Project Traffic Forecast Memorandum (PTFM) completed in November 2024 (found in the project file) outlines the methodology and analysis of the existing traffic operations, historical safety analysis and future traffic operations analysis for this PD&E Study. In 2023, Florida's Turnpike Mainline (SR 91) within the project limits had an AADT volume of 37,000 vehicles per day (vpd). The 2024 existing AADT and peak hour volumes for Florida's Turnpike Mainline (SR 91) were calculated based on the daily counts and the four highest consecutive 15-minute periods in the morning and evening. Seasonal and axle adjustment factors were applied to the data where necessary. Growth rates estimated from historical data were used where applicable. The data was then aggregated and balanced for continuity of flow and consistency. The existing

2024 AADT volumes, AM, PM and Non-typical peak hour volumes are summarized in **Table 2-7**. The existing year AADT volumes are presented in **Figure 2-3**.

Considering the project area's characteristics and its proximity to the Canoe Creek Service Plaza, maximum hourly traffic volumes were observed outside the typical commuter AM and PM peak periods on specific days. The non-typical peak reflects hours with heavy non-commuter traffic, which represents the highest hourly volumes in both the northbound and southbound directions. Traffic data was correlated from areas north and south of the project site to validate these non-commuter traffic patterns. To account for these variations, the existing traffic operations analysis includes the non-commuter peak periods. This approach ensures a more conservative analysis of the existing traffic conditions. The analysis of existing traffic operations is based on the following scenarios:

- AM peak
- Non-typical peak (hours representing maximum hourly traffic volumes and heavy non-commuter traffic)
- PM peak

This information will be updated once the Project Traffic Analysis Report (PTAR) becomes available

Table 2-7 2024 AADT and Directional Design Hour Volumes

Interchange	Turnpike Mainline (SR 91)	2024						
		AADT	AM - Peak Hr		Non Typical Peak Hour		PM - Peak Hr	
		Total	SB	NB	SB	NB	SB	NB
		60,200	1,060	2,190	2,940	3,390	2,250	2,130
241 - Clay Whaley Rd. / Nolte Road		25,200	420	1,640	690	1,550	1,170	680
236 - Three Lakes Toll Plaza		35,000	640	550	2,250	1,840	1,080	1,450
229 - Canoe Creek Service Area		400	70	130	340	260	150	190
		400	20	100	270	200	80	200
		35,000	590	520	2,180	1,780	1,010	1,460
193 - Yeehaw Junction (SR 60)		4,600	280	340	350	330	280	280
		6,200	190	220	370	370	240	370
		36,600	500	400	2,200	1,820	970	1,550

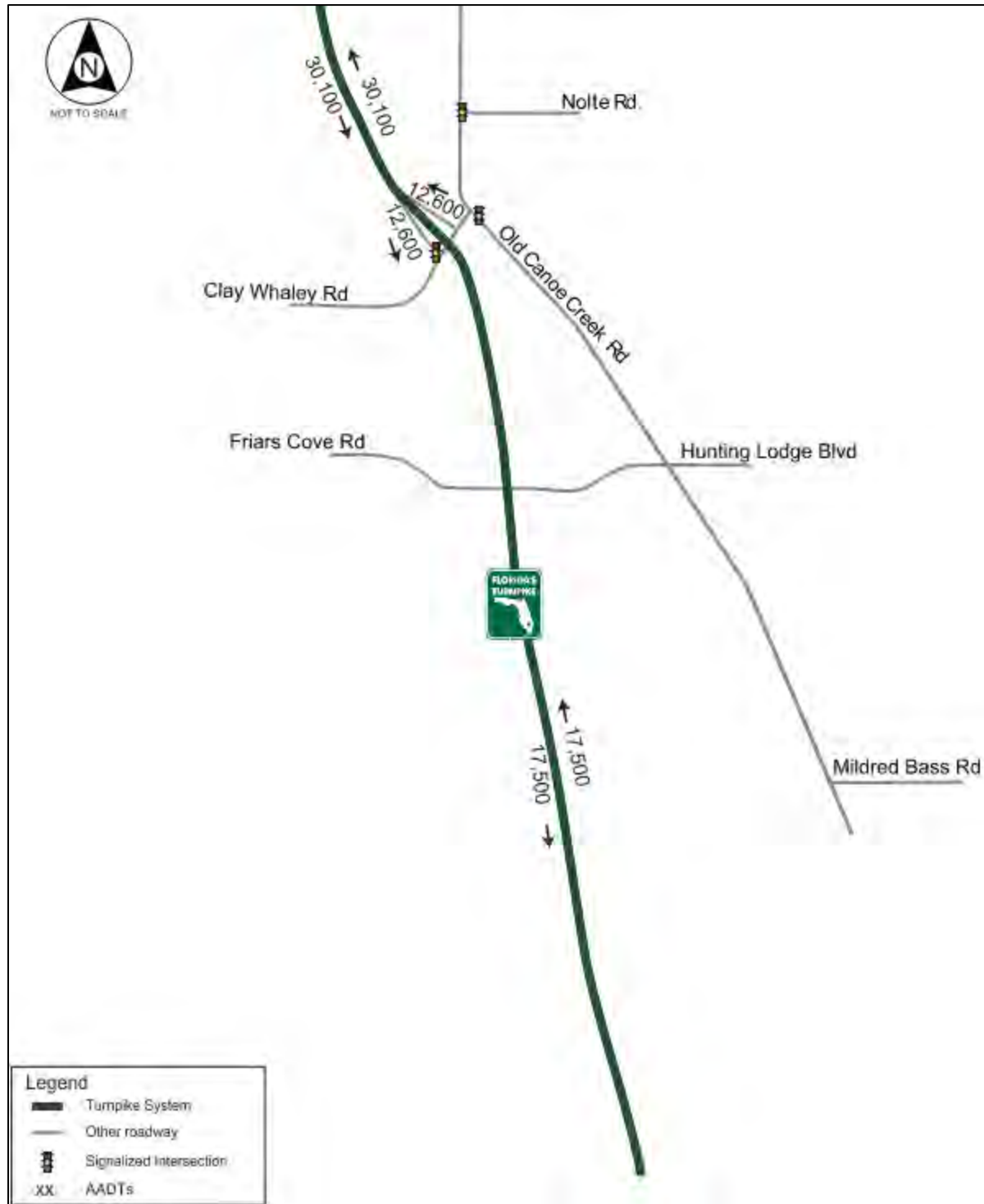


Figure 2-3 Existing Year (2024) AADTs

2.2.14 Roadway Operational Conditions

2.2.14.1 Existing Freeway Segment Analysis

The following section was summarized from the PTFM (found in the project file).

Project freeway segments (basic, weave, merge/diverge influence areas) were analyzed using the 2023 Highway Capacity Software (HCS) to identify level of service (LOS). The analysis was based on the FDOT Traffic Analysis Handbook 2021 and followed the Highway Capacity Manual 7th Edition (HCM7) methodologies. The HCM estimates LOS based on density, a function of flow rate (volumes) and travel speed, for uninterrupted flow facilities such as basic, merge and diverge, and weaving freeway segments. Density is measured in passenger cars per mile per lane (pcpmpl).

Signalized intersections will be evaluated using Synchro Version 12. Unlike the HCM, Synchro has additional procedures for estimating control delay, such as estimation of right turn on red and queue delay associated with starvation and spillback. Thus, Synchro is expected to yield more accurate results than HCM because of these additional refinements. Unsignalized intersections will be evaluated using HCS 2023 based on the HCM 7th Edition LOS and delay targets.

FDOT's Policy No. 000-525-006, LOS Targets for the State Highway System, states a LOS "D" target for the State Highway System during peak travel hours in urbanized areas and LOS "C" outside urbanized areas.

There are currently no interchanges within limits of Florida's Turnpike Mainline (SR 91) segments analyzed under the existing conditions traffic operations. The Canoe Creek Service Plaza on- and off-ramps are the only merge/diverge influence areas considered in the existing conditions traffic analysis. The LOS target for Florida's Turnpike Mainline (SR 91) during peak travel hours is LOS C (outside of urbanized areas), according to FDOT's Policy No. 000-525-006, LOS Targets for the State Highway System. All of Florida's Turnpike Mainline (SR 91) freeway segments in both directions currently operate at LOS C or better during both the AM and PM peak hours (see **Table 2-8** and **Table 2-9**). Additionally, the slip ramps to and from the service areas also operate at LOS B or better during the AM and PM peak hours. Traffic for the non-typical peak hours operate at LOS C or better along Florida's Turnpike Mainline (SR 91), including the merge and diverge freeway influence segments (see **Table 2-10**).

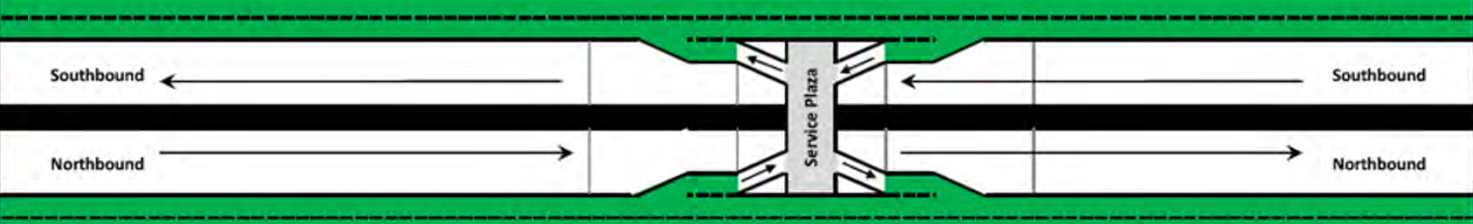
This information will be updated once the PTAR becomes available.

Table 2-8 2024 AM Peak Hour Freeway Mainline Traffic Operations

Segment Description	HCS Evaluation Results				
	MP 194 to MP 229 (North of SR 60 to South of Canoe Creek Service Plaza)		Between Service Plaza Ramps	MP 230.8 to MP 238.5 (North of Canoe Creek Service Plaza to South of Clay Whaley Road)	
Segment Type	Basic	Merge	Basic	Diverge	Basic
Segment Length (ft)	187,440	1,500	3,700	1,500	41,180
Mainline Volume (vph)	590		570		640
Ramp Volume (vph)	-	20	-	70	-
Speed (mph)	73.1	65.0	73.4	65.1	73.1
Density (pc/mpl)	4.7	6.6	4.5	4.4	5.1
LOS	A	A	A	A	A
Segment Description	MP 194 to MP 229 (North of SR 60 to South of Canoe Creek Service Plaza)		Between Service Plaza Ramps	MP 230.8 to MP 238.5 (North of Canoe Creek Service Plaza to South of Clay Whaley Road)	
Segment Type	Basic	Diverge	Basic	Merge	Basic
Segment Length (ft)	187,440	1,500	3,701	1,500	41,180
Mainline Volume (vph)	520		420		550
Ramp Volume (vph)	-	100	-	130	-
Speed (mph)	73.1	65.0	73.0	64.4	73.1
Density (pc/mpl)	4.2	4.7	3.4	5.1	4.4
LOS	A	A	A	A	A

Source: HCS 2023 Facility Module

Table 2-9 2024 PM Peak Hour Freeway Mainline Traffic Operations

Segment Description	HCS Evaluation Results				
	MP 194 to MP 229 (North of SR 60 to South of Canoe Creek Service Plaza)		Between Service Plaza Ramps	MP 230.8 to MP 238.5 (North of Canoe Creek Service Plaza to South of Clay Whaley Road)	
Segment Type	Basic	Merge	Basic	Diverge	Basic
Segment Length (ft)	187,440	1,500	3,700	1,500	41,180
Mainline Volume (vph)	1,010	-	930	-	1,080
Ramp Volume (vph)	-	80	-	150	-
Speed (mph)	73.2	64.4	72.9	58.9	73.1
Density (pcpmpl)	7.8	9.4	7.2	10.3	8.3
LOS	A	A	A	B	A
					
Segment Description	MP 194 to MP 229 (North of SR 60 to South of Canoe Creek Service Plaza)		Between Service Plaza Ramps	MP 230.8 to MP 238.5 (North of Canoe Creek Service Plaza to South of Clay Whaley Road)	
Segment Type	Basic	Diverge	Basic	Merge	Basic
Segment Length (ft)	187,440	1,500	3,701	1,500	41,180
Mainline Volume (vph)	1,460	-	1,260	-	1,450
Ramp Volume (vph)	-	200	-	190	-
Speed (mph)	73.1	58.8	72.9	64.0	73.1
Density (pcpmpl)	11.6	12.5	10.1	14.2	11.5
LOS	B	B	A	B	B

Source: HCS 2023 Facility Module

Table 2-10 2024 Non-Typical Peak Hour Freeway Mainline Traffic Operations

Segment Description	HCS Evaluation Results				
	MP 194 to MP 229 (North of SR 60 to South of Canoe Creek Service Plaza)		Between Service Plaza Ramps	MP 230.8 to MP 238.5 (North of Canoe Creek Service Plaza to South of Clay Whaley Road)	
Segment Type	Basic	Merge	Basic	Diverge	Basic
Segment Length (ft)	187,440	1,500	3,700	1,500	41,180
Mainline Volume (vph)	2,180	-	1,920	-	2,250
Ramp Volume (vph)	-	260	-	330	-
Speed (mph)	72.2	63.6	73.3	64.0	71.9
Density (pcpmpl)	17.7	21.5	15.4	20.6	18.3
LOS	B	C	B	C	C
LOS C or Better					
LOS D					
LOS E					
LOS F					
Segment Description	MP 194 to MP 229 (North of SR 60 to South of Canoe Creek Service Plaza)		Between Service Plaza Ramps	MP 230.8 to MP 238.5 (North of Canoe Creek Service Plaza to South of Clay Whaley Road)	
	Basic	Diverge	Basic	Merge	Basic
Segment Length (ft)	187,440	1,500	3,701	1,500	41,180
Mainline Volume (vph)	1,780	-	1,580	-	1,840
Ramp Volume (vph)	-	200	-	260	-
Speed (mph)	73.1	64.7	73.0	63.5	73.0
Density (pcpmpl)	14.3	15.9	12.7	17.2	14.8
LOS	B	B	B	B	B

Source: HCS 2023 Facility Module

2.2.15 Managed Lanes

There are no managed lanes within the limits of the project and none planned.

2.2.16 Crash Data

Crash data for Florida's Turnpike Mainline (SR 91) within the project limits were processed using the most recent five-year data Signal Four Analytics database, from 2019 through 2023. Raw crash data the detailed crash analysis is provided in the PTFM (found in the project file). Detailed crash reports (long/short forms) were reviewed to verify the accuracy of the information obtained from the database. Florida's Turnpike Mainline (SR 91) roadway sections are divided into 2-mile segments. The 2-mile segments are further evaluated by direction, to create a total of 23 segments each in the northbound and southbound direction. Additionally, crashes that occurred along the Canoe Creek Service Plaza at MP 229 are analyzed separately from the mainline segments.

2.2.16.1 Crash Data Analysis

A total of 1,325 crashes were reported within the project limits during the five-year study period from 2019 through 2023, as presented in **Table 2-11**. A total of 45 out of the overall crashes occurred along the Canoe Creek Service Plaza, as presented in **Table 2-12**. The crashes that occurred at the along the Service Plaza represent about 3.4% of the total crashes, while 96.6% of the crashes occurred on Florida's Turnpike Mainline (SR 91) within the project limits.

Table 2-11 Number of Crashes and Crash Severity by Year

Crash Severity	2019	2020	2021	2022	2023	Total	Percentage of Total Crashes
Fatality	4	3	3	5	1	16	1.2%
Injury	78	81	87	86	72	404	30.5%
Property Damage Only	234	144	180	198	149	905	68.3%
Total Crashes	316	228	270	289	222	1,325	100%

Table 2-12 Number of Crashes by Location by Year

Roadway Element	2019	2020	2021	2022	2023	Total	Percentage of Total Crashes
Florida's Turnpike Mainline (SR 91)	311	224	264	273	207	1,279	96.5%
Canoe Creek Service Plaza	5	4	6	16	15	46	3.5%
Total Crashes	316	228	270	289	222	1,325	100%

Figure 2-4 shows crash density within the project limits. There is a higher concentration of crashes at MP 236; the Three Lakes toll location, with approximately 8.6% of the total crashes during the five-year analysis period. It should be noted that the Three Lakes toll location had been converted to All Electronic Tolling (AET) and hence crashes associated with the previous cash lanes reduced substantially in 2023. Also, there is a higher concentration of crashes at MP 229, and the Canoe Creek Service Plaza, with approximately 6.3% of the total crashes, during the five-year analysis period. Detailed discussions of the crash patterns at MP 229, and MP 236 are provided in subsequent sections of this report.

The total crashes that occurred within the project limits during the analysis period resulted in injury (30.5%), property damage only (68.3%) and fatality (1.2%). A detailed description of crashes along the Mainline and the Service Plaza are provided in the following sections. Sixteen fatal crashes were reported during the five-year analysis period. **Figure 2-5** shows fatal crashes within the study area. The fatal crashes occurred at multiple locations on Florida's Turnpike Mainline (SR 91) within the project limits. Factors contributing to the fatal crashes are discussed in the sub-sections of this report. Crash data summary for mainline segments per direction and for the Service Plaza are also provided in the following sub-sections.

Detailed crash data tables and reports, and crash rate analysis are provided in the PTFM, under a separate cover.

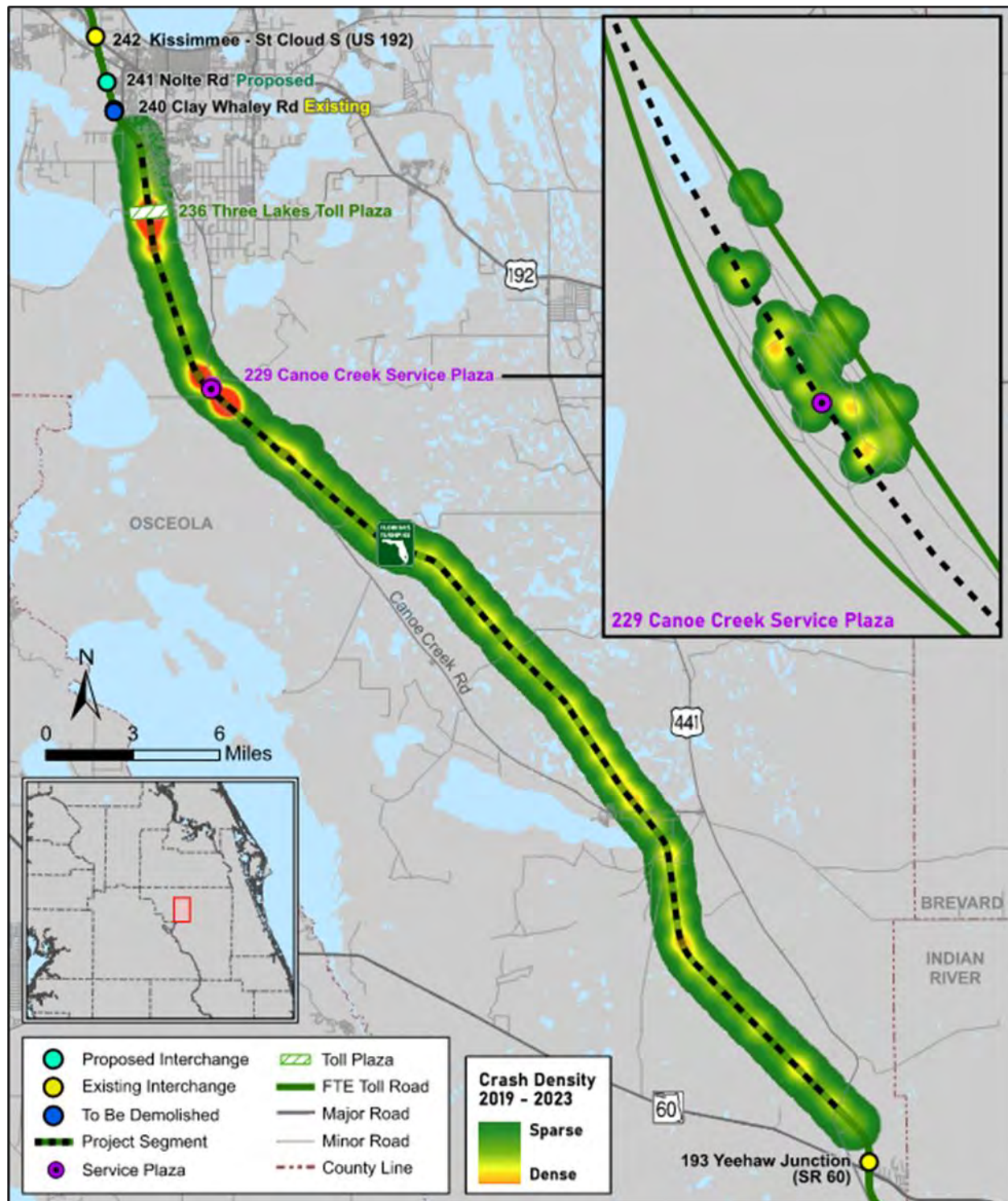


Figure 2-4 Crash Density (2019 – 2023)

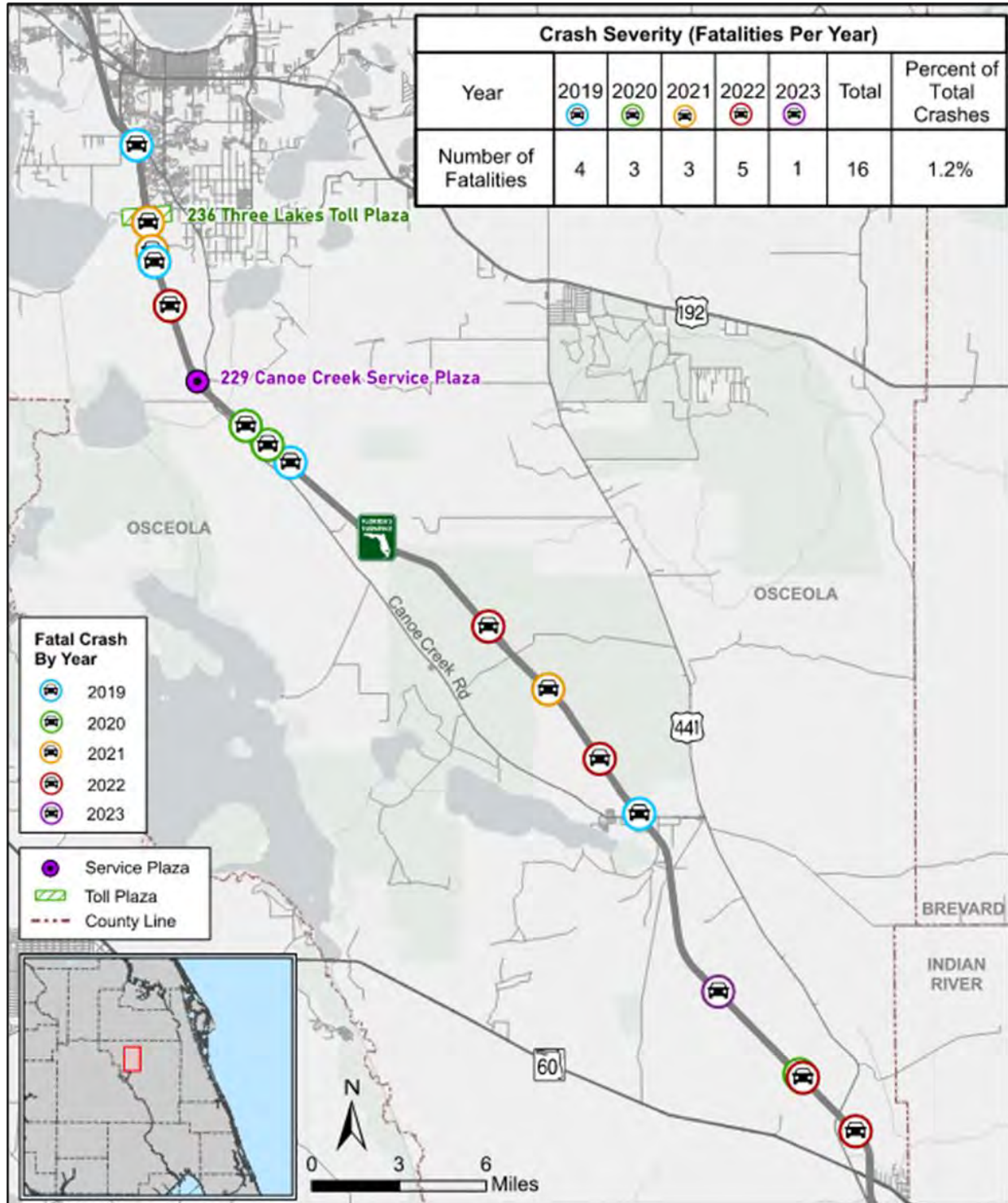


Figure 2-5 Fatal Crashes

2.2.16.2 Mainline Crashes

A total of 1,280 crashes were reported along Florida's Turnpike Mainline (SR 91) from north of SR 60 (MP 193.5) to south of Clay Whaley Road (MP 238.5) during the five-year analysis period from 2019 through 2023. The mainline crashes were mostly off-road (38.8%), rear-end (21.3%), sideswipe crashes (12.7%) and single vehicle crashes (11.1%). Most of the crashes resulted in property damage only (67.6%) and about 73% of the mainline crashes occurred in dry road surface condition while 64% during daytime. More crashes occurred on Sundays compared to the other days of the week. A total of 16 fatal crashes were reported on Florida's Turnpike Mainline (SR 91) within the project limits during the five-year study period.

Florida's Turnpike Mainline (SR 91) – Northbound Crash Statistics

There was a total of 726 crashes reported on Florida's Turnpike Mainline (SR 91) in the northbound direction during the five-year study period. The off-road crashes (41%) were predominant in the northbound direction. Rear-end crashes, sideswipe crashes and single vehicle crashes accounted for 19%, 13% and 11% of the total crashes respectively. Most of the crashes in the northbound direction occurred on dry road surface conditions. Approximately 59% of the crashes occurred during daylight conditions, while 30% occurred during dark conditions.

Florida's Turnpike Mainline (SR 91) – Southbound Crash Statistics

There was a total of 554 crashes reported on Florida's Turnpike Mainline (SR 91) southbound direction during the five-year study period. The off-road crashes (36.5%) were predominant in the southbound direction. Rear-end crashes, sideswipe crashes and single vehicle crashes accounted for 24.4%, 11.6% and 11.4% of the total crashes respectively. Most of the crashes in the southbound direction occurred on dry road surface conditions. Approximately 63% of the crashes occurred during daylight conditions, while 30% occurred during dark conditions. Property damage only crash type accounted for 72% of the total during the five-year analysis period. Property damage only crashes are predominant in both directions. Florida's Turnpike Mainline (SR 91) between MP 235 to 237 has a safety ratio greater than 1.0, in both directions.

2.2.16.3 Canoe Creek Service Area Crashes

A total of 45 crashes were reported within the vicinity of the Canoe Creek Service Plaza during the five-year analysis period from 2019 through 2023. Crashes involving parked vehicles (37.0%) and backed into vehicles (28.3%) were mostly predominant at the Canoe Creek Service Plaza and fuel station. Most of the crashes resulted in property damage only (87.0%) and occurred in dry road surface condition (87%) during daylight conditions (72%). Two rollover crashes were reported along Florida's Turnpike Mainline (SR 91) near the Service Plaza. Both rollover crashes were attributed to driver error and do not establish any correctable design-related factors. The rollover crashes resulted in injuries.

2.2.16.4 Bicycle/Pedestrian-Related

Eight (8) pedestrian crashes were reported within the study area. Seven (7) of the pedestrian crashes occurred at different locations along Florida's Turnpike Mainline (SR 91), while one (1)

occurred at the Canoe Creek Service Plaza parking lot. Two (2) of the pedestrian-related crashes resulted in fatalities. Details of the pedestrian-related crashes are provided in the PTFM, under a separate cover. No bicycle-related crash was reported in the study area during the analysis period.

2.2.17 Railroad Crossings

There are no railroad crossings within the project limits.

2.2.18 Drainage

The project limits are collocated within the SFWMD and SJRWMD. About 34.1 miles of the project limits (from MP 204.4 to MP 238.5) are in the SFWMD jurisdiction and about 9.75 miles (from MP 194.65 to MP 204.4) are in the St. Johns River Water Management District (SJRWMD) jurisdiction. The project area has been divided into 40 sub-basins as delineated in available Florida's Turnpike Mainline (SR 91) as-built plans and permits issued by SFWMD and SJRWMD as shown in **Table 2-13**. All basins are open basins and are divided into two categories: offsite basins (outside Florida's Turnpike Mainline [SR 91] ROW) and roadway basins [inside Florida's Turnpike Mainline (SR 91) ROW]. Offsite basins on both sides of Florida's Turnpike Mainline (SR 91) are generally connected by a cross drain(s) or a bridge culvert(s). Roadway basins are within Florida's Turnpike Mainline (SR 91) ROW. Runoff from the existing road surface and shoulders either drains to a median ditch or to roadside ditches along Florida's Turnpike Mainline (SR 91), within the ROW. Median ditches generally drain to roadside ditches or cross drains via ditch bottom inlets and pipe systems. All roadside ditches ultimately discharge to wetland areas, and canals via overland flow and cross drains. There are several existing permits along the project that include roadway improvements, safety upgrades, service plaza, residential development, borrow pits and agricultural improvements. Supporting data, summary of existing permits, exhibits, and additional details can be found in the Pond Siting Report (PSR) found in the project file.

Table 2-13 Summary of Existing Basin Data

Basin	From Station	To Station	Basin Area (ac)	Receiving Water Body ID (WBID)	Receiving Water Body Name	Water Body Classification	Existing Stormwater Management Facility	Water Quality Provided	Ultimate Outfall
R1	2118+00	2162+00	40.4	3133	Blue Cypress Creek	Class III, No Impairments	Roadside Ditches / Wetlands	None	Upper St. Johns River
R2	2162+00	2196+00	31.22		Blue Cypress Creek				
R3	2196+00	2257+00	56.01	3143	Lokosee Ditches	Class III, No Impairments	Roadside Ditches / Wetlands	None	Upper St. Johns River
R4	2257+00	2280+00	21.12		Lokosee Ditches				
R5	2280+00	2340+00	55.1		Lokosee Ditches				
R6	2340+00	2389+00	45		Lokosee Ditches				
R7	2389+00	2419+00	27.55		Lokosee Ditches				
R8	2419+00	2528+00	100.09	3137	Lokosee Ditches (North Segment)	Class III, No Impairments	Roadside Ditches / Wetlands	None	Upper St. Johns River
R9	2528+00	2601+00	67.03		Lokosee Ditches (North Segment)				
R10	2601+00	2670+00	63.36	3184A	Lake Marian Outlet	Class III, No Impairments	Roadside Ditches / Wetlands	None	Kissimmee River
R11	2670+00	2780+00	101.01		Lake Marian Outlet				
R12	2780+00	2834+00	49.59		Lake Marian Outlet				

Basin	From Station	To Station	Basin Area (ac)	Receiving Water Body ID (WBID)	Receiving Water Body Name	Water Body Classification	Existing Stormwater Management Facility	Water Quality Provided	Ultimate Outfall
R13	2834+00	2883+00	45		Lake Marian Outlet				
R14	2883+00	2900+00	15.61		Lake Marian Outlet				
R15	2900+00	2956+00	51.42		Lake Marian Outlet				
R16	2956+00	2995+00	35.81		Lake Marian Outlet				
R17	2995+00	3026+00	28.47		Lake Marian Outlet				
R18	3026+00	3083+00	52.34	3111	Tyson Creek	Class III, No Impairments	Roadside Ditches / Wetlands	None	Kissimmee River
R19	3083+00	3150+00	61.52		Tyson Creek				
R20	3150+00	3224+00	67.95		Tyson Creek				
R21	3224+00	3314+00	82.64	3183B1	Lake Kissimmee (Mid Drain)	Class III, No Impairments	Roadside Ditches / Wetlands	None	Kissimmee River
R22	3314+00	3398+00	77.13		Lake Kissimmee (Mid Drain)				
R23	3398+00	3457+00	54.18		Lake Kissimmee (Mid Drain)				
R24	3457+00	3514+00	52.34		Lake Kissimmee (Mid Drain)				

Basin	From Station	To Station	Basin Area (ac)	Receiving Water Body ID (WBID)	Receiving Water Body Name	Water Body Classification	Existing Stormwater Management Facility	Water Quality Provided	Ultimate Outfall
R25	3514+00	3584+00	64.28		Lake Kissimmee (Mid Drain)				
R26	3584+00	3664+00	73.46		Lake Kissimmee (Mid Drain)				
R27	3664+00	3745+00	74.38		Lake Kissimmee (Mid Drain)				
R28	3745+00	3795+00	45.91	3179	S-36A	Class III, No Impairments	Roadside Ditches / Wetlands	None	Kissimmee River
R29	3795+00	3900+00	96.42		S-36A				
R30	3900+00	3933+50	30.76		S-36A				
R31	3933+50	3993+00	54.64		S-36A				
R32	3993+00	4072+00	72.54	3181	Canoe Creek	Class III, No Impairments	Roadside Ditches / Wetlands	None	Kissimmee River
R33	4072+00	4138+00	60.61	3179	Kissimmee River	Class III, No Impairments		None	Kissimmee River
R34	4138+00	4189+00	46.83	3173C	Lake Tohopekaliga Drain (South Segment)	Class III, Impaired for Nutrients (Macrophytes)	Roadside Ditches / Wetlands	None	Kissimmee River
R35	4189+00	4250+00	56.01		Lake Tohopekaliga Drain (South Segment)				

Basin	From Station	To Station	Basin Area (ac)	Receiving Water Body ID (WBID)	Receiving Water Body Name	Water Body Classification	Existing Stormwater Management Facility	Water Quality Provided	Ultimate Outfall
R36	4250+00	4279+00	26.63		Lake Tohopekaliga Drain (South Segment)				
R37	4279+00	4349+00	64.28		Lake Tohopekaliga Drain (South Segment)				
R38	4349+00	4450+00	92.75		Lake Tohopekaliga Drain (South Segment)				
R39	4450+00	4508+00	53.26	3173B	St. Cloud Canal	Class III, No Impairments	Roadside Ditches / Wetlands	None	Kissimmee River
R40	4508+00	4534+00	23.88		St. Cloud Canal				

2.2.19 Lighting

There is no existing lighting within the mainline limits of the project. Ramp lighting is present along the outside shoulders at the Yeehaw Junction interchange entrance and exit ramps, and at the Canoe Creek Service Plaza. The typical light pole spacing at these two locations is approximately 200-feet.

2.2.20 Utilities

A Utility Assessment Package (UAP) (included in the project file) was prepared for this project and includes pertinent information concerning the location, size and characteristics of major utilities found within the proposed study limits.

The preliminary utility coordination and investigation effort was conducted through written and verbal communications with the existing utility owners. A Sunshine State 811 of Florida Design Ticket System listing of existing utility owners within the project limits was acquired. The Utility Agency Owners (UAO), known to operate utilities within the project corridor, are listed in **Table 2-14**.

For the report's preparation, utility owners were provided with aerial based utility plans depicting the widening of Florida's Turnpike Mainline (SR 91) from north of SR 60 to south of Clay Whaley Road. Using these aerial plans as a base map, each utility owner was asked to indicate their existing and proposed utilities as well as any easements that may affect their reimbursement rights for potential relocations of their facilities. In response, most utility owners replied via written communications. The utility owners provided the requested information concerning their facilities using either the utility plans or reference documentation (i.e., "As Built" or GIS maps). "Marked" Plans or reference documentation was received from the UAOs.

Table 2-14 Existing Utility Agencies Owners

Utility Agency	Mark-Ups Received	Utility Contact Name	Utility Contact Phone	Utility Existing Facilities Description
AT&T Enterprises	Yes	Greg Jacobson gtjacobson@att.com	813-342-0512	AT&T Transmission maintains existing fiber optic cable in 2-2 inch high-density polyethylene (HDPE) conduit with a 10-foot easement running through the center of Florida's Turnpike Mainline (SR 91) for the entire limits of the project.
AT&T Distribution	No	Ramin Asrabadi Ra2592@att.com	407-222-9497	(Non-Responsive)
Charter Communications	No	John Smith (Smitty) john.smith5@charter.com	407-448-5513	(Non-Responsive)
CenturyLink Local	Yes	Eric Walls ewalls@terratechllc.net	407-907-9284	CenturyLink Local has underground fiber and copper cables running parallel to the Florida's Turnpike Mainline (SR 91) and crossing under at various locations.
CenturyLink fka Level 3, Lumen	No	Xan Rypkema xan.rypkema@lumen.com	720-888-1089	(Non-Responsive)
Comcast	No	N/A cenflr-nfl_construction@comcast.com	N/A	(Non-Responsive)
Duke Energy Distribution	No	Mark Manner mark.manner@duke-energy.com	863-241-1663	(Non-Responsive)

Utility Agency	Mark-Ups Received	Utility Contact Name	Utility Contact Phone	Utility Existing Facilities Description
Duke Energy Transmission	Yes	Aric Rogers arogers@pike.com	813-909-1245	Duke Energy Transmission maintains multiple Overhead Electric lines (230 kV) running across near Station No. 58 with a 175-foot Duke Energy easement.
Duke Energy Fiber	No	Julian Jordan julian.jordan@duke-energy.com	727-820-5208	(Non-Responsive)
Orlando Utilities Commission (OUC) Communications	Yes	Jonathan Mejias jmejias@ouc.com	407-434-4426	Orlando Utilities Commission Communication maintains a fiber line that runs along the north side of Old Canoe Creek Road to Clay Whaley Road then down Kissimmee Park Road back to their main plant.
OUC Electric Distribution	Yes	Christopher Taylor Chris.taylor@ouc.com	321-436-6219	Chris.taylor@ouc.com
OUC Electric Transmission	No	Adonis Willis awillis@ouc.com	407-434-4134	Duke Energy Transmission maintains multiple Overhead Electric lines (230 kV) running across near Station No. 58 with a 175-foot Duke Energy easement.
OUC Water	No	Steve Grubbs sgrubbs@ouc.com	407-434-2560	(Non-Responsive)
Peace River Electric Coop	No	Jamie Harrison Jamie.harrison@preco.coop	863-781-1591	Jamie.harrison@preco.coop

Utility Agency	Mark-Ups Received	Utility Contact Name	Utility Contact Phone	Utility Existing Facilities Description
Toho Water Authority	Yes	Mike Pampoukis mpampokis@tohowater.com	407-944-5043	Toho Water Authority has an 18-inch DIP, 18-inch PVC, 8-inch HDPE and 6-inch PVC line running across Florida Turnpike Enterprise (SR 91) just east of Clay Whaley Road. Also, a 42-inch steel casing and 24-inch steel casing pipe even further east of Clay Whaley Road.

2.2.21 Soils and Geotechnical Data

The project alignment is depicted on the U.S. Geological Survey (USGS) Florida Quadrangle maps included in the Existing Geotechnical Conditions Technical Memorandum found in the project file. The USGS Quadrangle maps traverse relatively flat to moderately sloping topography with typical natural grades ranging from +55 to +82 ft along the project alignment. The alignment encounters creeks, borrow pits, railways, woodlands, swamps, wooded swamps, and submerged wooded swamps within the roadway widening limits. The Natural Resources Conservation Service (NRCS) soil units are summarized in **Table 2-15** below and shown on figures included in **Appendix C**.

Table 2-15 Summary of NRCS Soil Survey Units – Osceola County

Soil Unit No.	Map Unit Symbol and Soil Name	Depth (in)	Soil Description	AASHTO Soil Classification	Seasonal High Groundwater Depth Range (ft)	Hydrologic Group
4	Arents, 0 to 5 percent slopes	0 – 10	Gravelly sand	A-1-b, A-2-4, A-3	1.5 – 3.0	A
		10 - 60	Sand, fine sand	A-2-4, A-3		
5	Basinger fine sand, 0 to 2 percent slopes	0 – 18	Fine sand	A-3, A-2-4	+0.5 – 1.0	A/D
		18 – 36	Fine sand	A-2-4, A-3		
		36 – 80	Fine sand	A-3, A-2-4		
6	Basinger fine sand, depressional, 0 to 1 percent slopes	0 – 3	Fine sand	A-2-4	+2.0 – 1.0	A/D
		3 – 24	Fine sand	A-2-4, A-3		
		24 - 80	Fine sand	A-3		
9	Cassia fine sand, 0 to 2 percent slopes	0 - 5	Fine sand	A-3, A-2-4	1.5 – 3.5	A
		5 - 26	Fine sand	A-3, A-2-4		
		26 - 42	Loamy sand, sand, fine sand	A-2-4		
		42 - 80	Sand, fine sand	A-2-4, A-3		
11	EauGallie fine sand, 0 to 2 percent slopes	0 - 6	Fine sand	A-2-4, A-3	0.5 – 1.5	A/D
		6 - 23	Fine sand	A-3, A-2-4		
		23 - 47	Fine sand, sand	A-2-4, A-3		
		47 - 55	Fine sand, sand	A-2-4, A-3		

Soil Unit No.	Map Unit Symbol and Soil Name	Depth (in)	Soil Description	AASHTO Soil Classification	Seasonal High Groundwater Depth Range (ft)	Hydrologic Group
		55 - 80	Sandy clay loam, fine sandy loam	A-4, A-6, A-2-4		
15	Hontoon muck, frequently ponded, 0 to 1 percent slopes	0 - 5	Muck peat	A-8	+2.0 - 1.0	A/D
		5 - 65	Muck	A-8		
16	Immokalee fine sand, 0 to 2 percent slopes	0 - 54	Fine sand	A-3, A-2-4	0.5 - 1.5	B/D
		54 - 80	Fine sand, loamy fine sand, sand	A-2-4, A-3		
19	Malabar fine sand, 0 to 2 percent slopes	0 - 17	Fine sand	A-2-4, A-3	0.5 - 1.5	A/D
		17 - 42	Fine sand, sand	A-2-4, A-3		
		42 - 59	Fine sandy loam, sandy clay loam, sandy loam	A-2-4, A-6, A-4		
		59 - 80	Loamy fine sand, fine sand, sand	A-4, A-2-4		
22	Myakka fine sand, 0 to 2 percent slopes	0 - 6	Fine sand	A-2-4, A-3	0.5 - 1.5	A/D
		6 - 20	Fine sand, sand	A-3, A-2-4		
		20 - 36	Fine sand, sand	A-2-4, A-3		
		36 - 80	Fine sand, sand	A-3, A-2-4		
24	Narcoossee fine sand, 0 to 2 percent slopes	0 - 22	Fine sand	A-2-4	2.0 - 3.5	A
		22 - 26	Fine sand	A-2-4, A-3		
		26 - 80	Fine sand	A-2-4		
27	Ona fine sand, 0 to 2 percent slopes	0 - 4	Fine sand	A-2-4, A-3	0.5 - 1.5	B/D
		4 - 22	Fine sand, sand	A-2-4, A-3		
		22 - 80	Fine sand, sand	A-3, A-2-4		
28	Paola sand,	0 - 6	Sand	A-3	0.5 - 1.5	A

Soil Unit No.	Map Unit Symbol and Soil Name	Depth (in)	Soil Description	AASHTO Soil Classification	Seasonal High Groundwater Depth Range (ft)	Hydrologic Group
	0 to 5 percent slopes	6 - 55	Sand	A-3		
		55 - 80	Sand	A-3		
32	Placid fine sand, frequently ponded, 0 to 1 percent slopes	0 - 24	Fine sand	A-3, A-2-4	+2.0 - 1.0	A/D
		24 - 80	Fine sand, sand	A-2-4, A-3		
34	Pomello fine sand, 0 to 5 percent slopes	0 - 4	Fine sand	A-3	2.0 - 3.5	A
		4 - 47	Fine sand	A-3		
		47 - 58	Fine sand	A-2-4		
		58 - 65	Fine sand	A-3		
		65 - 80	Fine sand	A-3		
36	Pompano fine sand, 0 to 2 percent slopes	0 - 4	Fine sand	A-2-4, A-3	0.3 - 1.5	A/D
		4 - 80	Fine sand, sand	A-3, A-2-4		
37	Pompano fine sand, frequently ponded, 0 to 1 percent slopes	0 - 80	Fine sand	A-3, A-2-4	+2.0 - 1.0	A/D
39	Riviera fine sand, frequently ponded, 0 to 1 percent slopes	0 - 4	Fine sand	A-2-4, A-3	+2.0 - 1.0	A/D
		4 - 36	Fine sand, sand	A-2-4, A-3		
		36 - 42	Fine sandy loam, sandy clay loam	A-2-4, A-4, A-6		
		42 - 80	Sand, fine sand	A-3, A-2-4		
40	Samsula muck, frequently ponded, 0 to 1 percent slopes	0 - 24	Muck	A-8	+2.0 - 1.0	A/D
		24 - 35	Sand, fine sand	A-3, A-2-4		
		35 - 80	Sand, fine sand	A-2-4, A-3		
41	Satellite sand, 0 to 2 percent slopes	0 - 6	Sand	A-3	1.5 - 3.5	A
		6 - 13	Sand	A-3, A-2-4		
		13 - 80	Sand	A-3, A-2-4		

Soil Unit No.	Map Unit Symbol and Soil Name	Depth (in)	Soil Description	AASHTO Soil Classification	Seasonal High Groundwater Depth Range (ft)	Hydrologic Group
42	Smyrna fine sand, 0 to 2 percent slopes	0 – 4	Fine sand	A-3, A-2-4	0.5 – 1.5	A/D
		4 – 18	Fine sand, sand	A-3, A-2-4		
		18 – 49	Fine sand, sand	A-2-4, A-3		
		49 – 80	Fine sand, sand	A-3, A-2-4		
99	Water	---	---	---	---	---

Note: '---' indicates no information shown in the NRCS database

The NRCS soil survey depicts soils generally classified as very poorly to moderately well drained, nearly level, sandy soils. The NRCS predicts seasonal high groundwater levels for these soil types to generally range from 2.0-feet above the natural ground surface to 3.5-feet below the natural ground surface. Different types of muck have been identified throughout the project alignment as shown in **Table 2-15**. These types of muck are classified as a very poorly drained, nearly level, organic soil (PT) associated with freshwater drainageways, marshes and swamps. Organic soils are highly compressible and can have severe limitations for future development if left untreated. The NRCS predicts seasonal high groundwater levels for this soil type to generally range from 2.0-feet above the natural ground surface to 1.0-foot below the natural ground surface.

The sandy soils are generally suitable for roadway construction and are classified by FDOT as Select material. However, clay soils can impact the design and construction of the roadway; near-surface clay can perch groundwater, potentially causing premature deterioration of the pavement base. Shallow groundwater can impact roadway grades and stormwater pond site selection, design and construction, and these challenges will have to be addressed during design and construction.

Previous Geotechnical Report Data

Muck classified as A-8 in the AASHTO system has severe limitations for roadway construction, is generally unsuitable for embankment support and typically requires removal and replacement with engineered fill. The estimated areas of maximum muck depth are based on the geotechnical studies performed for the original design of SR 91 (Northern Extension Projects). The estimated depth of this surficial muck is generally from the ground surface to 5-feet below the ground surface. However, muck as deep as 16-feet was removed between Stations 2101+00 and 2119+00, and 14-feet between Stations 2296+00 and 2310+00. Estimated maximum muck depth limits can be found in **Appendix D**.

Potentiometric Surface

According to the data provided by the Florida Department of Environmental Protection (FDEP), Florida Geological Survey, 2023, the potentiometric surface of the Floridan Aquifer ranges from approximately +45 to +54 feet NGVD (+44 to +53 feet NAVD88). Since natural ground surface elevations in the study area are higher than the potentiometric surface, artesian flow conditions are not anticipated. In addition, the USGS Quadrangle map did not indicate any springs or flowing wells in the study area.

Subsurface Exploration

In addition to consulting published sources, twenty auger borings were conducted to evaluate subsurface conditions. In general, these auger borings encountered interchanging layers of fine sand to fine sand with silt to silty fine sand (Strata 1, 2, and 3) to boring termination depths of 10-feet below the existing ground surface. However, auger boring AB-18 encountered a surficial layer of mucky fine sand in stratum 4 (A-8) to a depth of 4.5-feet, underlain by fine sand to fine sand with silt to silty fine sand (Strata 1 and 3) to a boring termination depth of 10-feet. Based on the research performed and the auger boring results, surface muck does not appear to be prevalent in the roadway embankment. However, it is still possible for organic muck (A-8) soils to be present beyond 2H:1V control muck removal limits.

Groundwater Levels

Encountered groundwater levels at the roadway boring locations along the project alignment generally ranged from 2.0 to 7.3-feet below the existing ground surface (+48.7 to +75.0 feet NAVD88). Groundwater levels can vary seasonally and with changes in subsurface conditions between boring locations. Alterations in surface and/or subsurface drainage brought about by site development can also affect groundwater levels. Therefore, groundwater depths measured at different times or at different locations along the project alignment can be expected to vary from those measured during this investigation.

For the purposes of this report, estimated seasonal high groundwater levels are defined as groundwater levels that are anticipated at the end of the wet season of a "normal rainfall" year under current site conditions. A "normal rainfall" year is defined as a year in which rainfall quantity and distribution were at or near historical rainfall averages.

The preliminary estimated seasonal high groundwater levels for the roadway boring locations are estimated to range from 1.0 to 4.0 feet below the existing ground surface (+52.5 to +77.0 feet NAVD88) (See **Table 2-16.**) For the intended use of this PD&E Study, the estimated seasonal high groundwater levels should be treated as preliminary to aid in the line and grade evaluation of the rural and urban roadway segments from MP 193.5 to 238.5.

Regional Geology and Sinkhole Risk

Due to its prevalent geology, referred to as karst, Central Florida is prone to the formation of sinkholes, or large, circular depressions created by local subsidence of the ground surface. Based on our review of the US Geological Survey Map entitled "Recharge and Discharge Areas of the Floridan Aquifer in the St. Johns River Water Management District and Vicinity, Florida", 1984, the

study area traverses areas of generally no recharge to areas of moderate recharge. Therefore, the relative risk of sinkhole formation across the study area is low/moderate, as compared to the overall risk across Central Florida.

Table 2-16 Summary of Boring Groundwater Levels

Borehole ID	Station	Offset	Boring Depth (ft.)	Date of Boring	NRCS Soil Survey Soil Unit No.	NRCS Soil Survey Seasonal High Groundwater Depth Range (ft)	¹ Ground Surface Elevations (ft. NAVD88)	Encountered Groundwater Level (feet)	Estimated Seasonal High Water Table Depth (feet)	Enc. GWT Elevation (ft. NAVD88)	Estimated Seasonal High Elevation (ft. NAVD88)
AB-1	2115+42	77 LT	10	12/16/2024	37	+2.0 - 1.0	+56.0	7.3	3.5	+48.7	+52.5
AB-2	2207+96	74 LT	10	12/16/2024	32	+2.0 - 1.0	+62.1	6.5	4.0	+55.6	+58.1
AB-3	2287+19	68 LT	10	12/16/2024	24	2.0 - 3.5	+64.0	6.0	3.0	+58.0	+61.0
AB-4	2523+70	81 RT	10	12/16/2024	42	0.5 - 1.5	+69.0	3.2	1.5	+65.8	+67.5
AB-5	2737+93	66 LT	10	12/16/2024	42	0.5 - 1.5	+70.5	5.2	3.0	+65.3	+67.5
AB-6	2839+20	76 RT	10	12/16/2024	22	0.5 - 1.5	+69.5	4.6	2.5	+64.9	+67.0
AB-7	2871+10	76 LT	10	12/16/2024	42	0.5 - 1.5	+70.0	5.0	3.0	+65.0	+67.0
AB-8	2993+20	72 RT	10	12/16/2024	22	0.5 - 1.5	+70.0	4.5	3.0	+65.5	+67.0
AB-9	3071+93	74 LT	10	12/16/2024	6	+2.0 - 1.0	+69.5	3.5	1.0	+66.0	+68.5
AB-10	3154+09	78 RT	10	12/17/2024	42	0.5 - 1.5	+69.0	2.0	1.0	+67.0	+68.0
AB-11	3309+42	35 LT	10	12/16/2024	42	0.5 - 1.5	+75.0	2.9	1.0	+72.1	+74.0
AB-12	3396+00	81 RT	10	12/17/2024	42	0.5 - 1.5	+78.0	3.0	1.0	+75.0	+77.0
AB-13	3477+50	78 LT	10	12/16/2024	42	0.5 - 1.5	+77.5	3.9	1.5	+73.6	+76.0
AB-14	3720+10	73 RT	10	12/17/2024	11	0.5 - 1.5	+74.0	4.0	1.5	+70.0	+72.5
AB-15	3784+63	76 RT	10	12/17/2024	19	0.3 - 1.5	+69.9	3.0	1.0	+66.9	+68.9
AB-16	4033+60	70 LT	10	12/16/2024	42	0.5 - 1.5	+63.0	5.5	3.5	+57.5	+59.5
AB-17	4034+76	655 RT	10	12/17/2024	42	0.5 - 1.5	+62.0	2.5	1.0	+59.5	+61.0
AB-18	4321+35	72 LT	10	12/17/2024	32	+2.0 - 1.0	+64.0	5.5	3.0	+58.5	+61.0
AB-19	4396+84	77 RT	10	12/17/2024	5	+0.5 - 1.0	+63.0	4.0	2.0	+59.0	+61.0
AB-20	4508+92	61 LT	10	12/16/2024	42	0.5 - 1.5	+71.2	6.2	4.0	+65.0	+67.2
AB-20	4508+92	61 LT	10	12/16/2024	42	0.5 - 1.5	+71.2	6.2	4.0	+65.0	+67.2

2.2.22 Aesthetics Features

The study area is predominantly rural and comprised of undeveloped agricultural and conservation lands which comprise a natural viewshed. The Canoe Creek Service Plaza has undergone updates in the past that have given it a clean, streamlined appearance. The design incorporates natural tones and landscaping that evoke the Central Florida environment balancing natural vegetation with Palmettos, pines and native plantings. There are no known scenic vistas or views and no community focal points within the study area.

2.2.23 Traffic Signs

Within the study limits there are 344 single post signs, and 40 multi-post signs along Florida's Turnpike Mainline (SR 91). Additionally, there are two (2) overhead sign structures that are half-span, seven (7) overhead sign structures with Dynamic Message Signs (DMS) that are either full-span across both northbound and southbound lanes or span-only across the northbound or southbound lanes. There are also two cantilever structures with DMS at the northbound and southbound entrance to the Canoe Creek service plaza. There are 308 signs located on the shoulder and 76 signs located within the median. The location of the existing overhead signs within the limits of the project are listed in **Table 2-17** and shown in the Conceptual Signing and Pavement Marking, ITS and Lighting Plans (found in the project file).

Table 2-17 Overhead Signage within the Study Area

Location	Direction of Travel	Mile Post	Sign Type
Florida's Turnpike Mainline (SR 91)	SB	195.7	Overhead DMS (Half Span)
Florida's Turnpike Mainline (SR 91)	NB	208.1	Overhead DMS (Full Span)
Florida's Turnpike Mainline (SR 91)	SB	224.5	Overhead DMS (Full Span)
Florida's Turnpike Mainline (SR 91)	NB	227.6	Overhead DMS (Half Span)
Entrance to Service Plaza	NB	229.5	Overhead guide sign (Cantilever)
Entrance to Service Plaza	NB	230	Overhead DMS (Cantilever)
Entrance to Service Plaza	SB	230.3	Overhead DMS (Cantilever)
Entrance to Service Plaza	SB	230.5	Overhead guide sign (Cantilever)
Florida's Turnpike Mainline (SR 91)	SB	231	Overhead DMS (Full Span)
Florida's Turnpike Mainline (SR 91)	NB	235.5	Overhead DMS (Half Span)
Florida's Turnpike Mainline (SR 91)	SB	237.6	Overhead DMS (Half Span)

2.2.24 Noise Walls and Perimeter Walls

No noise wall exists within the study limits.

2.2.25 Intelligent Transportation Systems (ITS)/Transportation System Management and Operations (TSM&O) Features

The Enterprise has deployed an extensive Intelligent Transportation Systems (ITS) infrastructure throughout its entire network. The existing ITS within project limits is operated and maintained by the Enterprise. The ITS subsystems deployed along Florida's Turnpike Mainline (SR 91) communicate with the Enterprise's Transportation Management Centers (TMCs) located at their headquarters in Turkey Lake (Orlando) at MP 263 and the TMC at the Operations Center in Pompano Beach at MP 65A. The existing ITS consists of the following subsystems.

Communications

Throughout the project corridor, a 96-count Single-Mode (SM) Fiber Optic Cable (FOC) backbone is currently in place. Fiber drops to Local Hubs (LHUBs) typically consist of 12- and 24-count cables, consistent with current Enterprise standards. The FOC backbone also supports the tolling network, utilizing the red and black buffered tubes for tolling communications, with 48-count drop cables routed to All Electronic Toll (AET) sites.

Dynamic Message Signs (DMS)

There are 9 DMS signs located throughout the corridor (refer to **Table 2-17**), enabling TMC operators to disseminate real-time traffic information to motorists. These messages include alerts about poor weather conditions, incidents, travel times, and other critical operational updates. The DMS units vary in size and structural support type along the corridor. All displayed messages are verified by TMC operators using nearby Closed-Circuit Television (CCTV) cameras to ensure accuracy and situational relevance.

Closed Circuit Television (CCTV) Cameras

CCTV cameras are used to monitor roadways in support of incident detection, verification, and clearance. The Enterprise also uses these cameras to verify messages displayed DMS. There are 49 existing CCTV cameras positioned approximately every mile throughout the study corridor. These High-Definition (HD) cameras provide full coverage and feature Pan-Tilt-Zoom (PTZ) capability. TMC operators can view the live camera feeds from both the video wall at the TMCs and their individual workstations.

Vehicle Detection System

A total of 51 Microwave Vehicle Detection System (MVDS) sensors are installed approximately every half mile throughout the study corridor. These sensors monitor traffic operations and collect real-time traffic flow data, including volume, speed, and occupancy. This data is accessible to TMC operators at their workstations and supports critical traffic management functions such as incident detection, toll strategy determination, and archiving for planning purposes. To reduce the need for additional infrastructure, MVDS units are typically co-located on ITS CCTV poles.

Ten (10) Travel Time System Sites (TTS) - (Bluetooth (BT) and Automatic Vehicle Identification (AVI) sensors are placed at strategic locations to collect travel time data. This data is used to generate travel times that are displayed on the DMS. Similar to MVDS, BT AVI detectors are typically collocated on ITS infrastructure to minimize the amount of additional infrastructure required.

Road Weather Information System (RWIS)

RWIS are used to detect weather conditions that may need to be monitored by TMC staff and communicated to motorists through DMS. Four (4) RWIS sensors along the corridor are used to collect information such as atmospheric data, pavement conditions, and water levels. This data can also be used for long-term planning purposes by collecting pertinent data for roadways such as flood-prone areas that may need mitigation.

Wrong Way Vehicle Detection System (WWVDS)

There are two (2) WWVDS sites within the study limits located at the entrance ramps to the Canoe Creek Service Plaza. The WWVDS includes static Manual on Uniform Traffic Control Devices (MUTCD) signs, dynamic Light-Emitting Diode (LED) highlighted WRONG WAY signs, and vehicle detecting sensors that acts an effective countermeasure to wrong way drivers. When a vehicle traveling in the wrong way direction enters the ramp, the WWVDS activates the dynamic LED highlighted WRONG WAY signs to catch the attention of the errant motorist. The WWVDS send alerts to the Florida's Turnpike Enterprise Turkey Lake Service Plaza and Pompano Beach Service Plaza TMCs and in turn the TMCs notify other motorists and law enforcement of the wrong way event. These two sites are not impacted by the PD&E improvements, however it is recommended that they are upgraded from solar/wireless connection to a hardwired connection by accessing the existing adjacent DMS cabinet at each ramp.

Emergency Generators

The Enterprise has installed two permanent generator backup locations within the study area at MM 227.5 and MM 231.0. These generators are capable of supplying significant backup power due to their large fuel storage capacity, reducing the need for frequent refueling. Strategically connected at the panel boards of power distribution service points, they provide backup power to multiple ITS circuits and Local Hubs (LHUBs), eliminating the need for individual generators at each LHUB location.

Power Infrastructure

To provide power to the ITS devices within the project corridor, the Enterprise has installed extensive power infrastructure. This includes power service drops from power companies, meters, disconnects, transformers (stepping up the power to 480V or 600V depending on the site), service wires in dedicated conduits, Uninterruptible Power Supply (UPS) battery backups, and emergency generators. As some infrastructure is older within the project limits, not all ITS cabinets currently have UPS backup power capabilities. Also as mentioned previously, some circuits may have been stepped up to 600V, which is no longer acceptable per FDM section 233.3 which requires that

480V not be exceeded. Electrical gaps within the corridor will need to be further analyzed to identify new service points to feed the existing to remain and proposed ITS.

Highway Advisory Radio (HAR) System

The Enterprise operates a Highway Advisory Radio (HAR) system providing real-time, localized traveler information to motorists over low-power AM radio stations backed by a Highway Advisory Radio Transmitter (HART). This system is accessible via car radios and provides redundancy if cellular networks are congested or unavailable. Roadside signs with flashing amber lights known as Highway Advisory Radio Beacons (HARB), alert drivers to tune into the displayed AM station for traffic information. HAR systems within the project limits will be removed and equipment/components will be salvaged and returned to the Enterprise ITS maintenance yard.

2.3 Existing Bridges and Structures

There are twelve (12) existing bridge sites located within the project limits: seven (7) are Florida's Turnpike Mainline (SR 91) bridge sites that cross over various waterways and five (5) are overpasses where the existing roadway crosses over Florida's Turnpike Mainline (SR 91). The water crossings include two unnamed outfall canals, an unnamed drainage canal, Canoe Creek, Fanny Brass Creek, Gator Bay and WPA Canal. The overpass locations include US 441, Lake Marian Road/CR 523A, South Canoe Creek Road/CR 523, North Canoe Creek Road/CR 523, and Friars Cove Road. All bridges were built during the initial construction of the Florida's Turnpike Mainline (SR 91) between 1963 and 1964. The Florida's Turnpike Mainline (SR 91) bridges were widened in 1996 or 1998 to replace sub-standard bridge railings and provide additional shoulder width.

Almost all the existing mainline bridges consist of prestressed concrete flat slab units except for the bridges over Canoe Creek (Bridge Nos. 920067/920129), which utilizes AASHTO type beams as well as non-standard prestressed concrete beams that were added when the bridge was widened to maintain existing minimum vertical clearance. The overpass bridges consist of AASHTO type beams and include multi-column piers located within the existing median as well as along the existing outside edge of shoulders.

There are eighteen (18) box culverts, and twelve (12) bridge culverts located within the project limits that cross over various drainage ditches or canals. They were also built during the original construction of the mainline between 1963 or 1964 and widened in 1990. These structures consist of single, double or triple barrel concrete box culverts with headwalls located within the clear zone and protected with guardrail.

There are twelve (12) existing farm access culverts (cattle crossings) located within the project limits. They were built during the original construction of the mainline as well. They consist of single cell concrete box culverts. All but three have a Sufficiency Rating of 83.0 or higher, and all but two have a Health Index of 89.4 or higher. Inspection reports note some deterioration of the exterior headwalls, along the vertical joints between the wingwalls and the culvert, and at the interface of the median top slab and drain inlet riser, otherwise the structures are in good condition.

Existing structure plans and inspection reports were obtained to evaluate the conditions of the existing structures. The pertinent information is summarized in **Table 2-18** and **Table 2-19**.

Table 2-18 Existing Bridge Structures

Structure Number	Mile Post	Description	Load Rating Inventory (tons)	Health Index	Sufficiency Rating	Year Built/ Widened	Vertical Clearance (Plans) (ft)	Vertical Clearance (Inspection Report) (ft)	Overall Length (ft)	Number of Spans	Out to Out Bridge Width (ft)	Superstructure Type
920018	195.7	US 441 over SR 91	49.5	96.14	76.4	1963	16.25	16.40	200.0	4	34.083	AASHTO Type III Beams
920059	199.1	SR 91 SB over Outfall Canal	44.7	98.84	99.3	1963/1998	2.40	N/A	124.0	4	43.083	Flat Slab (Voided)
920126	199.1	SR 91 NB over Outfall Canal	44.7	97.87	99.3	1963/1998	2.40	N/A	124.0	4	43.083	Flat Slab (Voided)
920061	206.3	SR 91 SB over Drainage Canal	44.7	97.01	98.6	1963/1998	2.50	N/A	93.0	3	43.083	Flat Slab (Voided)
920127	206.3	SR 91 NB over Drainage Canal	44.7	98.60	98.6	1963/1998	2.50	N/A	93.0	3	43.083	Flat Slab (Voided)
920941	207.5	Lake Marian Road (CR 523A) over SR 91	40.3	96.47	65.9	1963	16.33	16.28	287.5	4	34.083	AASHTO Type III Beams
920025	208.4	S. Canoe Creek Road (CR 523) over SR 91	37.4	97.41	65.7	1964	16.25	16.20	242.0	4	34.083	AASHTO Type III Beams
920064	220.9	SR 91 SB over Outfall Canal & Renison Road	64.7	86.93	98.6	1964/1998	10.00	N/A	105.0	3	43.083	Flat Slab (Voided)
920128	220.9	SR 91 NB over Outfall Canal & Renison Road	64.7	94.45	98.6	1964/1998	10.00	N/A	105.0	3	43.083	Flat Slab (Voided)
920067	228.8	SR 91 SB over Canoe Creek	44.1	98.25	99.3	1964/1998	8.23	N/A	214.4	5	42.833	AASHTO Type II & Non-Standard PSC Beams
920129	228.8	SR 91 NB over Canoe Creek	44.1	99.01	99.3	1964/1998	8.23	N/A	214.4	5	42.833	AASHTO Type II & Non-Standard PSC Beams
920042	229.4	N. Canoe Creek Road (CR 523) over SR 91	40.5	98.83	74.5	1964	16.19	16.14	326.0	4	34.083	AASHTO Type III & IV Beams
920070	235.4	SR 91 SB over Fanny Brass Creek	64.1	92.87	98.6	1964/1998	2.09	N/A	78.0	3	43.083	Flat Slab (Voided)

Structure Number	Mile Post	Description	Load Rating Inventory (tons)	Health Index	Sufficiency Rating	Year Built/ Widened	Vertical Clearance (Plans) (ft)	Vertical Clearance (Inspection Report) (ft)	Overall Length (ft)	Number of Spans	Out to Out Bridge Width (ft)	Superstructure Type
920130	235.4	SR 91 NB over Fanny Brass Creek	64.1	93.09	98.6	1964/1998	2.09	N/A	78.0	3	43.083	Flat Slab (Voided)
920131	235.9	Friars Cove Road over SR 91	46.4	95.79	59.0 (FO)	1964	16.49	16.17	185.0	4	34.083	AASHTO Type II Beams
920072	237.1	SR 91 SB over Gator Bay	64.1	98.03	99.2	1964/1996	2.34	N/A	78.0	3	43.083	Flat Slab (Voided)
920132	237.1	SR 91 NB over Gator Bay	64.1	96.84	99.2	1964/1996	2.34	N/A	78.0	3	43.083	Flat Slab (Voided)
920073	238.1	SR 91 SB over WPA Canal	53.0	95.32	99.2	1964/1996	2.34	N/A	86.0	3	43.083	Flat Slab (Voided)
920133	238.1	SR 91 NB over WPA Canal	53.0	94.08	99.2	1964/1996	2.34	N/A	86.0	3	43.083	Flat Slab (Voided)

Table 2-19 Existing Culverts

Structure Number	Mile Post	Culvert Type	Facility Crossing	Year Built/ Year Widened	Culvert Length	Number of Cells	Cell Opening		Health Index	Sufficiency Rating	Latest Inspection Date
							Width	Height			
920058	194.0	Bridge Culvert	Outfall Canal	1963/1990	155.20	3	11.0	8.0	97.92	85	8/15/2023
92Q001	195.1	Farm Access	Cattle Crossing	1963	110.00	1	12.0	11.0	99.92	85	3/22/2022
92Q002	195.7	Box Culvert	Drainage Ditch	1963	124.00	1	8.0	5.0	99.13	85	4/29/2022
92Q003	196.9	Box Culvert	Drainage Ditch	1963/1990	150.10	2	6.0	8.0	99.95	85	6/14/2022
92Q004	197.4	Box Culvert	Cross-Drain	1963/1990	151.30	2	6.0	5.0	99.97	83	4/29/2022
92Q005	198.2	Farm Access	Cattle Crossing	1963	110.00	1	12.0	13.0	96.41	84	3/22/2022
92Q006	200.42	Box Culvert	Drainage Canal	1963/1990	150.78	2	7.0	5.0	34.79	72.6	1/9/2023
92Q007	201.05	Farm Access	Cattle Crossing	1963	110.00	1	10.0	10.0	97.84	83	1/28/2019
non-LNQC	202.64	Box Culvert	Cross-Drain	1963/1990	149.72	1	6.0	4.0	N/A	N/A	N/A

Structure Number	Mile Post	Culvert Type	Facility Crossing	Year Built/ Year Widened	Culvert Length	Number of Cells	Cell Opening		Health Index	Sufficiency Rating	Latest Inspection Date
							Width	Height			
920060	203.43	Bridge Culvert	Outfall Canal	1963	120.76	2	12.0	8.0	65.97	85	8/24/2023
92Q008	204.68	Farm Access	Cattle Crossing	1963	110.00	1	12.1	12.9	98.63	85	1/20/2021
920062	206.96	Bridge Culvert	Outfall Canal	1963/1990	153.62	3	10.0	7.0	65.03	81.4	9/28/2023
920076	208.2	Bridge Culvert	Outfall Canal	1963/1990	150.80	2	10.0	4.0	96.42	85	9/19/2023
920092	209.4	Bridge Culvert	Outfall Canal	1963/1990	152.00	2	10.0	4.0	90.56	85	8/28/2023
non-LNQC	210.1	Box Culvert	Drainage Ditch	1963/1990	149.90	1	6.0	4.0	N/A	N/A	N/A
92Q009	210.9	Box Culvert	Drainage Canal	1963/1990	149.40	1	12.0	4.0	99.29	70	1/9/2023
92Q010	211.3	Farm Access	Cattle Crossing	1963	110.00	1	12.0	13.0	89.41	72	1/28/2019
92Q011	212.8	Box Culvert	Drainage Ditch	1963/1990	151.80	1	10.0	4.0	94.95	85	1/20/2021
920080	214.1	Bridge Culvert	Outfall Canal	1963/1990	149.80	3	10.0	4.0	91.98	85	8/24/2023
92Q012	215.2	Box Culvert	Drainage Ditch	1963	140.50	1	9.0	3.0	90.89	85	2/23/2021
92Q013	215.3	Farm Access	Cattle Crossing / Williams Rd	1963	110.00	1	12.0	13.0	90.48	83	1/28/2019
920063	217	Bridge Culvert	Outfall Canal	1963/1990	150.00	3	12.0	3.0	98.27	83.1	8/24/2023
92Q014	217.7	Farm Access	Cattle Crossing	1963	110.00	1	12.0	10.0	89.89	85	1/20/2021
92Q015	218.9	Box Culvert	Drainage Ditch	1964/1990	149.80	1	6.0	4.0	99.80	83.8	1/9/2023
92Q016	220.0	Box Culvert	Cross-Drain	1964/1990	153.80	1	10.0	4.0	66.15	83	1/17/2019
92Q017	222.7	Box Culvert	Drainage Ditch	1963/1990	150.90	2	9.0	3.0	60.40	85	1/9/2023
920065	223.7	Bridge Culvert	Outfall Canal	1963/1990	149.90	3	9.0	4.0	36.58	73	8/24/2023
92Q018	224.7	Farm Access	Ranch Crossing	1963	110.00	1	12.0	13.0	66.26	70	1/9/2023
920066	225.5	Bridge Culvert	Outfall Canal	1964/1990	155.80	3	8.0	3.0	95.62	79.9	8/23/2023
non-LNQC	226.8	Box Culvert	Drainage Ditch	1964/1990	85.80	1	6.0	3.0	N/A	N/A	N/A
92Q019	227.2	Box Culvert	Canal	1964/1990	150.00	2	7.0	4.0	34.73	72	1/29/2019

Structure Number	Mile Post	Culvert Type	Facility Crossing	Year Built/ Year Widened	Culvert Length	Number of Cells	Cell Opening		Health Index	Sufficiency Rating	Latest Inspection Date
							Width	Height			
92Q020	227.6	Farm Access	Cattle Crossing	1964	110.00	1	12.0	13.0	83.61	74	1/20/2021
non-LNQC	227.9	Box Culvert	Drainage Ditch	1964/1990	150.00	1	7.0	4.0	N/A	N/A	N/A
92Q021	229.6	Box Culvert	Drainage Ditch	1964/1990	86.00	1	10.0	3.0	37.27	99.1	1/11/2023
92Q022	229.6	Box Culvert	Drainage Ditch	1964/1990	90.50	1	10.0	3.0	66.42	98	1/29/2019
92Q023	231.4	Box Culvert	Drainage Ditch	1964/1990	150.00	2	8.0	4.0	64.27	84	2/23/2021
92Q024	232.1	Farm Access	Friar's Cove Rd	1963	110.00	1	12.0	10.0	93.68	85	1/11/2023
920068	232.6	Bridge Culvert	Outfall Canal	1964/1990	150.00	3	8.0	3.0	40.74	85	9/21/2023
920069	233.7	Bridge Culvert	Outfall Canal	1964/1990	150.00	3	8.0	4.0	39.00	81	9/20/2023
92Q025	234.2	Farm Access	Cattle Crossing	1964	110.00	1	12.0	13.0	93.54	83	1/29/2019
920093	234.4	Bridge Culvert	Outfall Ditch	1964	138.00	2	10.0	6.0	67.23	84	8/28/2023
92Q026	237.6	Farm Access	Cattle Crossing	1963	110.00	1	12.0	10.0	91.00	85	1/21/2021

2.4 Existing Environmental Features

2.4.1 Socio-Economic

The project passes through approximately 45 miles of predominantly rural areas. Most of the corridor is comprised of agricultural and conservation lands with little to no social resources. There are low density rural residences around S. Canoe Creek Road (MP 208.5) and high-density residential developments north of Friars Cove Road on the east side of Florida's Turnpike Mainline (SR 91) at MP 235.8. The City of St. Cloud limits occur north of Friars Cove Road, which represents the only municipality within the study area.

A buffer of 500-feet was established from the existing ROW during the FDOT Environmental Screening Tool (EST) review to identify sociocultural resources for the project and surrounding area. Data includes Census Tract 438.02, Block Groups 1, 2 and 3, Census Tract 432.07, Block Groups 1 and 2, Census Tract 432.08, Block Group 2, and Census Tract 432.09, Block Group 1. The Sociocultural Data Report was generated through the EST and contains an analysis of community and demographic data.

2.4.1.1 Communities and Populations

The demographic data for the study area according to the U.S. Census Bureau 2017-2021 American Community Survey (ACS) five-year estimates is summarized in **Table 2-20** below. Census data for the City of St. Cloud and Osceola County according to the 2019-2023 ACS five-year estimates is also included in **Table 2-20** for comparison. The demographic data within the study area was compared to the city and county census block groups to identify unique communities along the corridor.

The demographics regarding age, race, ethnicity, and language within the study area are generally comparable to the City of St. Cloud and Osceola County, with several categories showing less than a two (2) percent difference; however, there are some demographics with differences. For instance, the proportion of White Alone populations within the study area is more than ten (10) percent higher than that of the city and 20 percent higher than that of the county. The percentage of minority populations within the study area is similar to the city (roughly 56.11% and 57.61%, respectively), but Osceola County shows a much higher percentage with 71.54%. Similarly, the percentage of Hispanic or Latinos within the study area and city are within one (1) percent of each other (45.35% and 44.75%, respectively), while the percentage in the county is almost ten (10) percent higher (55.02%). With respect to language, Limited English Proficiency (LEP) indicates the percentage of the population that speaks English less than very well. The study area, City of St. Cloud and Osceola County show the proportion of LEP ranges from 13.19% to 21.19%, therefore, the Enterprise has determined that translation services will be provided.

Regarding educational attainment, the study area, city and county all show a high percentage (between approximately 88-92%) of high-school graduates and a moderate percentage (between approximately 23-30%) same of college graduates (bachelor's degree or higher). Regarding households and income metrics, the study area shows the smallest proportion of households that are below the poverty level when compared to the city and county.

Table 2-20 Demographic Summary

Category	500-ft buffer*	St. Cloud	Osceola County
Total Geographic Area (sq. mi.)	12.717	28.916	1,506.376
Total Population	19,583	56,010	406,943
Age, Race, Ethnicity, Language			
Age 65+	14.04%	13.44%	13.39%
Percent Disabled Population	11.65%	11.00%	10.27%
White Alone	62.21%	52.02%	43.42%
Black or African American Alone	8.38%	6.57%	11.01%
American Indian or Alaska Native Alone	0.09%	0.30%	0.34%
Asian Alone	2.25%	1.51%	2.90%
Native Hawaiian and Other Pacific Islander Alone	0.00%	0.16%	0.06%
Some Other Race Alone	12.75%	19.31%	22.78%
Claimed 2 or More Races	14.32%	20.11%	19.50%
Hispanic or Latino of Any Race (Ethnicity)	45.35%	44.75%	55.02%
Minority (Race and Ethnicity)	56.11%	57.61%	71.54%
Limited English Proficiency	14.33%	13.19%	21.19%
Education Attainment			
High School Graduate or Higher	90.42%	91.71%	88.60%
Bachelor's Degree or Higher	23.39%	29.07%	28.26%
Household and Income			
Total Households	5,164	17,813	131,365
Average Persons per Household	3.47	3.02	3.08
Median Housing Value	\$244,800	\$331,800	\$317,600
Median Household Income	\$73,452	\$80,575	\$68,711
Households Below Poverty Level	7.26%	10.22%	12.51%

Data is sourced from the 2019-2023 American Community Survey five-year estimates unless otherwise indicated.

*Data is sourced from the 2017-2021 American Community Survey five-year estimates.

2.4.1.2 Community Facilities and Emergency Services

Community facilities include public and private places where community members can gather or frequent for goods or services. Examples of facilities that may be important to a community include, but are not limited to, parks, schools, hospitals, and civic centers. Emergency services are also important to a community as they provide critical assistance to its members. Examples of emergency services in a community include fire stations, police stations, and emergency medical providers. The Three Lakes Wildlife Management Area (TLWMA) is the only community facility within 500-feet of the project, and it provides several outdoor recreation activities. However, **Table 2-21** lists other community and emergency facilities located within approximately one mile of the study area.

Table 2-21 Community Facilities and Emergency Services near the Study Area

Facility Name	Location	Distance from Study Area
Fire Stations		
Osceola-Kenansville Station 57	1130 S. Canoe Creek Road, Kenansville, FL	1.17-mile east
St. Cloud Fire Dept. Station 32	3450 Old Canoe Creek Road, St. Cloud, FL	0.98-mile east
Parks and Recreation Facilities		
Three Lakes Wildlife Management Area	North of S. Canoe Creek Road to Renison Rd.	Within study area
Lonesome Camp Ranch Conservation Area	4257 North Canoe Creek Road, Kenansville, FL	0.74-mile east
Water Tower Park	3351 Pinetree Drive, St. Cloud, FL	0.80-mile east
Schools		
Canoe Creek K-8 / Charter School	3600 Canoe Creek Road, St. Cloud, FL	0.65-mile east
Community and Religious Facilities		
Kenansville Community Center	1178 S. Canoe Creek Road, Kenansville, FL	1.00-mile east
Kenansville Branch Library	1154 S. Canoe Creek Road, Kenansville, FL	1.00-mile east
Sunshine Quest Acres Assisted Living Facility	2910 Old Canoe Creek Road, St. Cloud, FL	0.10-mile north
The Church of Jesus Christ of Latter Day Saints	2821 Old Canoe Creek Road, St. Cloud, FL	0.25-mile east
First Missionary Baptist Church	760 S. Canoe Creek Road, Kenansville, FL	0.32-mile east
Jehovah's Witnesses Kingdom Halls	3383 Canoe Creek Road, St. Cloud, FL	0.71-mile east
Cornerstone Baptist Church	2925 Canoe Creek Road, St. Cloud, FL	0.91-mile east
Journey Bible Fellowship	3220 Old Canoe Creek Road, St. Cloud, FL	0.57-mile north

2.4.2 Cultural Resources

In accordance with the standards and guidelines described in Rule 1A-46, F.A.C., archival research was conducted to identify previously recorded archaeological and historical resources located within or near the area of potential effect (APE). Sources that were consulted include the Florida State Library and Archives, available local and regional libraries and repositories, Florida Memory, newspapers.com, the Florida Master Site File (FMSF), Certified Local Governments (CLGs) and local informants, if available, billiongraves.com and findagrave.com, among others.

According to the FMSF, 29 cultural resource surveys have been conducted within 0.5 mi (0.8 km) of the APE (refer to **Table 2-22**); 20 of these surveys overlap the APE (refer to the CRAS Report in the project file, Chapter 3, Figure 48 - Figure 61, *Surveys and Recorded Resources within 0.5-mile of the APE*). In addition, there are seven previously recorded archaeological sites, six historical bridges, six resource groups, six historical structures (including the National Register-listed Desert Inn [8OS00099]), and one unrecorded cemetery (Kenansville Cemetery) within the FMSF search area (refer to **Table 2-23**). Of these, all 6 previously recorded historical bridges (8OS03246-8OS03251), 5 linear resources (8OS01927, 8OS02548, 8OS02549, 8OS03274, and 8OS03485), 2 historical structures (8OS03544 and 8OS03545), and 1 archaeological site (8OS01882) are in the APE. A review of Osceola County property appraiser data identified eight structures of historic age within the APE (i.e., constructed in 1979 or earlier).

Much of the archaeological APE has been disturbed by roadway and drainage system construction, agricultural activities, and in the northern portion of the APE, urbanization throughout the 21st century. This suggests that intact strata are likely not present within the archaeological APE. Soils throughout over 97% of the archaeological APE are either somewhat poorly drained, or very poorly drained. However, a small portion of the APE (2.43%) contains moderately well drained or excessively drained soils, and wetlands, canals, creeks, and streams. Further, one archaeological site and three resource groups have been recorded within the archaeological APE.

Due to these environmental and cultural factors, the archaeological APE is considered to have low, moderate, and high archaeological probability (refer to the CRAS Report in the project file, Chapter 4, Figure 112 - Figure 125, *Proposed STPs Shown with Archaeological Probability*).

Table 2-22 Cultural Resource Surveys Previously Conducted within the FMSF Search Area

Survey No.	Title	Date
89	An Archaeological and Historical Survey of the 201 Facilities Plan Project, Kissimmee, St. Cloud, Osceola County	1977
4361	CRAS of the Proposed Improvements to SR 60 From Yeehaw Junction to SR 9 (I-95) in Osceola and Indian River Counties, Florida	1994
7022	A CRAS of the Deer Creek Subdivision, Osceola County, Florida	2002
7059	Archaeological and Historical Investigations within the Three Lakes Wildlife Management Area, Osceola County, Florida	2002
7540	TPK TP 237S	2000
7820	Proposed Cell Tower #TBD (Stevens Road), St. Cloud, Florida, Osceola County	2000
8390	CRAS of the Friar's Club Subdivision, Osceola County, Florida	2002
8913	CRAS of the Cypress Preserve Subdivision Project Area, Osceola County	2003

Survey No.	Title	Date
11026	CRAS, Whaley Tract, Osceola County, Florida	2004
11178	CRAS of a Proposed Pond Site in the Southwest Quadrant of the Intersection of Kissimmee Park Road and Florida's Turnpike, Osceola County, Florida	2005
11725	Cultural Resources Survey, Green Island, Osceola County, Florida	2005
13418	Cultural Resources Survey Larry Whaley Parcel, Osceola County, Florida	2006
14829	CRAS City of Destiny, Osceola County, Florida	2007
15393	CRAS of the Lucky L Ranch Tract Osceola County, Florida	2008
20406	Phase I CRAS, City of Destiny North DRI, Osceola County, Florida	2008
20783	CRAS of the Florida Southeast Connection Natural Gas Pipeline, Osceola, Polk, Okeechobee, St. Lucie and Martin Counties	2014
21108	CRAS of the Florida Southeast Connection Natural Gas Pipeline Supplemental Report 1 Follow-Up and Re-Route Surveys Polk, Okeechobee, St. Lucie and Martin Counties	2014
22218	CRAS of the Florida Southeast Connection Natural Gas Pipeline, Supplemental Report 2, Osceola, St. Lucie, and Polk Counties	2015
25649	CRAS of the Savanna Property, Osceola County, Florida	2018
26835	Phase I CRAS of the Canoe Creek Borrow Pit, Kenansville, Osceola County, Florida	2019
27161	CRAS for the SR 15 Improvements from Okeechobee County Line to SR 60, Osceola County, Florida	2020
27639	PD&E Study CRAS, Florida's Turnpike (SR 91) from South of Kissimmee Park Road to US 192 (M.P. 238.5 to M.P. 242.5) Osceola County, Florida	2020
28220	CRAS: Resurface & Safety Improvements SR 91 Mainline (MP 198.5 to 207.0)	2022
28424	CRAS, Green Island, Osceola County, Florida	2023
28603	CRAS, Canoe Creek Reserve, Osceola County, Florida	2023
29324	CRAS for the Districtwide Rumble Stripes Bundle 5E, Osceola County, Florida	2023
29777	CRAS SR 60 from the Turnpike to the Indian River County Line, Osceola County, Florida. FPID No.: 450623-1-52-01	2024

Survey No.	Title	Date
29795	Cultural Resource Assessment Survey of Turnpike Widening from SR 70 to SR 60, Osceola, Indian River, Okeechobee, and St. Lucie Counties, Florida	2024
29809	CRAS, State Road 91/Florida's Turnpike Truck Parking at Canoe Creek Service Plaza, Osceola County, Florida	2024

Shaded entries intersect the archaeological APE.

Table 2-23 Cultural Resources Previously Recorded within the FMSF Search Area

FMSF No.	Resource Name	Type	Period/Year Built	SHPO Evaluation
8OS00099	Desert Inn	Historical Structure	ca. 1924	NR-listed
8OS00020	Friars Cove	Archaeological site	Prehistoric with pottery	Ineligible
8OS01882	Three Lakes Logging Tram	Archaeological site	20 th century American	Not Evaluated
8OS03278	Lone Bull	Archaeological site	Prehistoric lacking pottery	Ineligible
8OS02369	Southeast Oak Hammock Homestead	Archaeological site	Prehistoric; American, 1821-present	Ineligible
8OS02374	Rufus Thomas Homestead	Archaeological site	Prehistoric with pottery; 1900-present	Ineligible
8OS02544	Noah Smith Homestead	Archaeological site	Belle Glade, 700 B.C.-A.D. 1700; 1900-present	Ineligible
8OS02545	Smithfield Hammock Homestead	Archaeological site	1900-present	Ineligible
8OS01927	Canoe Creek Road Ditch	Linear Resource	1900-present	Ineligible
8OS02548	Destiny North Canal I	Linear Resource	ca. 1944-1951	Ineligible
8OS02549	Destiny North Canal II	Linear Resource	ca. 1944-1951	Ineligible
8OS03001	State Road 15	Linear Resource	1900-present	Insufficient Information
8OS03274	State Road (SR) 60	Linear Resource	1900-present	Insufficient Information
8OS03485	Turnpike (Osceola)	Linear Resource	1900-present	Not Evaluated
8OS02906	3650 Friars Cove Road	Historical Structure	1925+	Ineligible

FMSF No.	Resource Name	Type	Period/Year Built	SHPO Evaluation
8OS02907	3650 Friars Cove Road - Shed	Historical Structure	1960	Ineligible
8OS03484	2687 E State Road 60	Historical Structure	ca. 1966	Ineligible
8OS03544	Canoe Creek Service Plaza, Building 1	Historical Structure	ca. 1963	Ineligible
8OS03545	Canoe Creek Service Plaza, Building 2	Historical Structure	ca. 1963	Eligible
8OS03246	FDOT Bridge No. 920059	Historical Bridge	ca. 1963	Ineligible
8OS03247	FDOT Bridge No. 920126	Historical Bridge	ca. 1963	Ineligible
8OS03248	FDOT Bridge No. 920060	Historical Bridge	ca. 1963	Ineligible
8OS03249	FDOT Bridge No. 920061	Historical Bridge	ca. 1963	Ineligible
8OS03250	FDOT Bridge No. 920127	Historical Bridge	ca. 1963	Ineligible
8OS03251	FDOT Bridge No. 920062	Historical Bridge	ca. 1963	Ineligible

Shaded entries intersect the APE.

2.4.3 Natural Resources

To identify existing natural resources surrounding the project, a study area was established to include the area within 300-feet of Florida's Turnpike Mainline (SR 91) existing right of way (ROW). The study area encompasses approximately 5,693 acres and extends from north of SR 60 (MP 193) to south of Clay Whaley Road (MP 238.5). The preliminary desktop analysis included a GIS database and literature review to identify wetlands and other surface waters, protected species, and essential fish habitat that have been documented within and adjacent to the study area. A Natural Resources Evaluation Report (NRE) will be prepared in accordance with Part 2, Chapter 9, Wetlands and Other Surface Waters, Chapter 16, Protected Species and Habitat, and Chapter 17, Essential Fish Habitat, of the FDOT PD&E Manual (effective July 31, 2024) and the current Natural Resources Evaluation Outline and Guidance.

2.4.3.1 Public and Other Conservation Lands

The Three Lakes Wildlife Management Area (TLWMA) is located on the east side of Florida's Turnpike Mainline (SR 91) between MP 209-213 and on both sides from MP 213-221. TLWMA is owned by the Board of Trustees of the Internal Improvement Trust Fund (TIITF) of the State of Florida and managed by the Florida Fish and Wildlife Conservation Commission (FWC). There

are multiple private conservation easements adjacent to the study corridor. The Lucky L Ranch Conservation Easement and Mitigation Bank is located on the west side of Florida's Turnpike Mainline (SR 91) between MP 211.5-213. It is under private ownership with the SFWMD as the conservation easement grantee. There are three conservation easements in addition to Lucky L Ranch, all of which are located within the Esprit residential development east of Florida's Turnpike Mainline (SR 91) (MP 237.0-238.0) and show SFWMD as the grantee.

Adams Ranch (MP 206), Osceola Pine Savannas (MP 208.5-214), and Big Bend Swamp/Holopaw Ranch (MP 221-222.5 and MP 227.5-229) are designated for future acquisition using Florida Forever Program funds. For additional information regarding public and other conservation lands, please refer to the NRE.

2.4.3.2 Protected Species and Habitat

Federal and state listed species with potential to occur in the study area were identified through the Efficient Transportation Decision Making (ETDM) process, as well as through desktop reviews of existing habitat, species ranges, dispersal ability, ecology, and spot checks during field reviews. Species-specific surveys were not conducted. Based on the evaluation and field reviews, it was determined that 25 listed animal species, 50 listed plant species, and two (2) species proposed for federal listing have the potential to occur within the study area, as depicted in **Table 2-24**.

The National Marine Fisheries Service (NMFS) confirmed during the ETDM coordination that the project will not directly or indirectly impact areas that support Essential Fish Habitat (EFH). Therefore, the project will have no involvement with EFH. Furthermore, the project occurs within the United States Fish and Wildlife Service (USFWS) consultation area for the Audubon's crested caracara, Everglade snail kite, Florida grasshopper sparrow, Florida scrub-jay, red-cockaded woodpecker, Florida bonneted bat, and Lake Wales Ridge plants. For detailed information regarding protected species and their habitat, including Enterprise commitments to be implemented during the final design and permitting, please refer to the NRE.

Critical Habitat

Based on the review of USFWS GIS data and literature, the study area falls within the boundaries of designated critical habitat for the Florida bonneted bat (Unit 1). Unit 1 encompasses 175,735 acres and overlaps with approximately 8.2 miles of the study area. The anticipated widening will increase footprint by 24-feet; therefore, the action area will be close to the limit of 0.01 percent of overlap with a critical habitat unit, as outlined in the USFWS *Florida Bonneted Bat Critical Habitat Consultation Key* (2024). The exact action area will be calculated during final design, but it is assumed that this area would include grassy roadway slopes and roadside ditches, accounting for less than 0.01 percent of the critical habitat unit.

Essential Fish Habitat

The National Marine Fisheries Service (NMFS) confirmed during the ETDM coordination that the project will not directly or indirectly impact areas that support Essential Fish Habitat (EFH). Therefore, the project will have no involvement with EFH.

Table 2-24 Federally and State Listed Species with Potential to Occur in the Study Area

Protected Species		Listing Status by Jurisdictional Agency	
Common Name	Scientific Name	USFWS/ NMFS	FWC/ FDACS
INVERTEBRATES			
Monarch butterfly	<i>Danaus plexippus</i>	PT	-
REPTILES			
American Alligator	<i>Alligator mississippiensis</i>	T (S/A)	T (S/A)
Eastern indigo snake	<i>Drymarchon couperi</i>	T	T
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	-	T
Gopher tortoise	<i>Gopherus polyphemus</i>	-	T
Sand skink	<i>Neoseps reynoldsi</i>	T	T
Blue-tailed mole skink	<i>Eumeces egregius lividus</i>	T	T
AMPHIBIANS			
Striped newt	<i>Notophthalmus perstriatus</i>	-	T
BIRDS			
Audubon's crested caracara	<i>Polyborus plancus</i>	T	T
Bald eagle*	<i>Haliaeetus leucocephalus</i>	BGEPA	-
Eastern black rail	<i>Laterallus jamaicensis jamaicensis</i>	T	T
Everglade snail kite	<i>Rostrhamus sociabilis plumbeus</i>	E	E
Florida burrowing owl	<i>Athene cunicularia</i>	-	T
Florida grasshopper sparrow	<i>Ammodramus savannarum</i>	E	E
Florida sandhill crane	<i>Grus canadensis</i>	-	T
Florida scrub-jay	<i>Aphelocoma coerulescens</i>	T	T
Little blue heron	<i>Egretta caerulea</i>	-	T
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	E
Roseate spoonbill	<i>Platalea ajaja</i>	-	T
Southeastern American kestrel	<i>Falco sparverius paulus</i>	-	T
Tricolored heron	<i>Egretta tricolor</i>	-	T
Wood stork	<i>Mycteria americana</i>	T	T
MAMMALS			
Florida black bear**	<i>Ursus americanus floridanus</i>	-	68A-4.009 FAC
Florida bonneted bat	<i>Eumops floridanus</i>	E	E
Florida panther	<i>Puma concolor coryi</i>	E	E
Southeastern beach mouse	<i>Peromyscus polionotus niveiventris</i>	T	T
Tricolored bat	<i>Perimyotis subflavus</i>	PE	-
PLANTS			
Beaked orchid	<i>Sacoila lanceolata</i>	-	T

Protected Species		Listing Status by Jurisdictional Agency	
Common Name	Scientific Name	USFWS/ NMFS	FWC/ FDACS
Blue-flowered butterwort	<i>Pinguicula caerulea</i>	-	T
Britton's beargrass	<i>Nolina brittoniana</i>	E	E
Cardinal flower	<i>Lobelia cardinalis</i>	-	T
Celestial lily	<i>Nemastylis floridana</i>	-	E
Chapman's sedge	<i>Carex chapmannii</i>	-	T
Clasping warea	<i>Warea amplexifolia</i>	E	E
Crested fringed orchid	<i>Platanthera cristata</i>	-	T
Curtiss' milkweed	<i>Asclepias curtissii</i>	-	E
Cutthroat grass	<i>Panicum abscissum</i>	-	E
Florida bonamia	<i>Bonamia grandiflora</i>	T	E
Garberia	<i>Garberia heterophylla</i>	-	T
Giant orchid	<i>Pteroglossaspis ecristata</i>	-	T
Giant wild pine	<i>Tillandsia utriculata</i>		E
Gypsy-spikes	<i>Platanthera flava</i>	-	T
Hooded pitcher-plant	<i>Sarracenia minor</i>	-	T
Inflated and reflexed wild pine	<i>Tillandsia balbisiana</i>	-	T
Lace-lip ladies' tresses	<i>Spiranthes laciniata</i>	-	T
Large-flowered rosemary	<i>Conradina grandiflora</i>	-	T
Little pearl-twist	<i>Spiranthes tuberosa</i>	-	T
Long-lip ladies' tresses	<i>Spiranthes longilabris</i>	-	T
Lewton's polygala	<i>Polygala lewtonii</i>	E	E
Many-flowered grass-pink	<i>Calopogon multiflorus</i>	-	T
Nodding pinweed	<i>Lechea cernua</i>	-	T
Papery willow wort	<i>Paronychia chartacea</i>	T	E
Piedmont joint grass	<i>Coelorachis tuberculosa</i>	-	T
Pigeon wing	<i>Clitoria fragrans</i>	T	E
Pine lily	<i>Lilium catesbaei</i>	-	T
Pinewoods bluestem	<i>Andropogon arctatus</i>	-	T
Pygmy fringe-tree	<i>Chionanthus pygmaeus</i>	E	E
Rose pogonia	<i>Pogonia ophioglossoides</i>	-	T
Sandlace	<i>Polygonella myriophylla</i>	E	E
Scrub bluestem	<i>Schizachyrium niveum</i>	-	E
Scrub buckwheat	<i>Eriogonum longifolium</i> Nutt. var. <i>gnaphalifolium</i> Gand.	T	E
Scrub lupine	<i>Lupinus aridorum</i>	E	E
Shell mound prickly-pear	<i>Opuntia stricta</i>	-	T
Simpson's stopper	<i>Myrcianthes fragrans</i>	-	T
Simpson's zephyr-lily	<i>Zephyranthes simpsonii</i>	-	T
Slender naiad	<i>Najas filifolia</i>	-	T
Snowy orchid	<i>Platanthera nivea</i>	-	T
Swamp plume polypody	<i>Polypodium ptilodon</i>	-	E
Threadroot orchid	<i>Harrisella porrecta</i>	-	T

Protected Species		Listing Status by Jurisdictional Agency	
Common Name	Scientific Name	USFWS/ NMFS	FWC/ FDACS
Toothed lattice-vein fern	<i>Thelypteris serrata</i>	-	E
Treat's zephyr-lily	<i>Zephyranthes treatiae</i>	-	T
White-fringed orchid	<i>Platanthera blephariglottis</i>	-	T
Yellow fringeless orchid	<i>Platanthera integra</i>	-	E
Yellow-flowered butterwort	<i>Pinguicula lutea</i>	-	T
Yellow-fringed orchid	<i>Platanthera ciliaris</i>	-	T

Definitions:

E = Endangered, T = Threatened, T(S/A) =Threatened due to Similarity of Appearance, C= Candidate Species, PE = Proposed Endangered, PT = Proposed Threatened, FXN = Endangered Non-essential Experimental Population in Florida

O = Observed from within of near the study area during the field review,

Low = Minimal suitable habitat present and no documented occurrences within or near the study area,

Moderate = Potentially suitable habitat present and/or documented occurrences near the study area,

High = Suitable habitat present and documented occurrences within the study area.

**Protected under the Bald and Golden Eagle Protection Act (BGEPA), Migratory Bird Treaty Act (MBTA), and Florida Administrative Code (FAC).*

***Removed from Florida's Endangered and Threatened Species List in 2012, but still protected under the FAC.*

Note: Please refer to the detailed evaluation within the NRE.

2.4.3.3 Wetlands and Other Surface Waters

The limits of wetlands and other surface waters were initially mapped using land use data from the SFWMD and SJRWMD, as well as the USFWS National Wetlands Inventory. This information was then supplemented with a review of GIS data, aerial photography, and LiDAR data. A formal wetland delineation will be conducted during subsequent project phases to determine precise areas of jurisdictional wetland impacts as well as the wetland type, quality, and functional assessment. Resources to estimate the limits of wetlands and other surface waters within the study area include:

- Current and historical aerial photography;
- SFWMD land use data (2023);
- SJRWMD land use data (2020);
- National Resources Conservation Service (NRCS) GIS data (2023);
- USFWS National Wetland Inventory (NWI) Mapper (accessed 2024); and
- Florida Geographic Information Office Peninsular LiDAR data (2020).

Wetland types mapped within the study area according to the SFWMD and SJRWMD FLUCFCS Codes include forested wetlands, namely, mixed wetland hardwoods (6170), mixed shrubs (6172), cypress (6210), cypress-domes/heads (6215), cypress-mixed hardwoods (6216), wet

pinelands hydric pine (6250), and wetland forested mixed (6300), as well as herbaceous wetlands, namely freshwater marshes/graminoid prairie marsh (6410), wet prairie (6430), and mixed scrub-shrub wetland (6460). Other surface waters include streams and waterways (5100), channelized waterways/canals (5120), and reservoirs (5300).

Natural waterbody crossings along Florida's Turnpike Mainline (SR 91) occur at the tributary to Cow Log Branch (MP 194), Parker Slough (MP 217), and Gator Bay Branch (MP 237.1). The C-34 Canal (Canoe Creek) and the WPA Canal, located at MP 228.8 and MP 238.1, respectively, are larger man-made canals that cross below Florida's Turnpike Mainline (SR 91). The C-34 Canal is managed by the SFWMD; however, it is subject to the regulatory jurisdiction of the USACE under Section 404 of the Clean Water Act.

There are several ditches and unnamed canals that intersect Florida's Turnpike Mainline (SR 91) and connect to surrounding wetland systems. In addition, borrow areas that function as man-made ditches parallel to most of Florida's Turnpike Mainline (SR 91). Lakes, reservoirs, and other collection areas occur throughout the study area, however, the only area where these features occur within the ROW is within the Canoe Creek Service Plaza bifurcated median. There are smaller ditches within the study area that are beyond the existing ROW and mostly associated with adjacent agricultural operations.

2.4.3.4 Water Resources

The project is underlain by the Surficial Aquifer System (SAS) and is within the Biscayne Aquifer Sole Source Aquifer (SSA) streamflow and recharge source zone. The project falls within the SFWMD and SJRWMD jurisdictional boundaries and will need to meet the applicable design criteria within the Environmental Resource Permit (ERP) Applicant's Handbooks for the respective water management districts. Portions of the project area are within the Upper St. Johns River Hydrologic Basin, requiring the project to comply with specific design criteria for this basin outlined in Section 13.1 of the SJRWMD ERP Applicant's Handbook, Volume II.

Most of the project is located within the Lake Okeechobee Basin Management Action Plan (BMAP) area. The project's southern terminus is located within the watershed for Blue Cypress Creek [WBID 3313], which is listed as not attaining water quality standards for phosphorus in accordance with the Impaired Waters Rule (Chapter 62-303, FAC) and Florida's Surface Water Quality Standards (Chapter 62-302, FAC). In addition, the central portion of the project is within the watershed for Lake Marian Outlet [WBID 3184A], Lake Kissimmee Mid Drain [WBID 3183B1], and Little Creek [WBID 3100], which are listed as not attaining water quality standards for phosphorus, dissolved oxygen and nitrogen, and dissolved oxygen and phosphorus, respectively. The northern project terminus is located within the watershed for Lake Tohopekaliga Drain South Segment [WBID 3173C], which is listed as not attaining water quality standards for macrophytes.

A review of public and private water supply wells on Florida Department of Environmental Protection's (FDEP's) Map Direct was conducted. Wells within 1,000-feet of Florida's Turnpike Mainline (SR 91) existing ROW are included in **Table 2-25** below.

Table 2-25 Existing Wells within 1,000ft of Right-of-Way

Well Name	Location (Approximate Mile Marker)	FL Unique Well ID	Well Type
Canoe Creek Service Plaza WELL #1	229	AAE4887	Public Water Supply / Non-transient Noncommunity
Canoe Creek Service Plaza WELL #2	229	AAE4888	Public Water Supply / Non-transient Noncommunity

Aquatic Preserves and Outstanding Florida Waters

The project is not located in an Aquatic Preserve. The project traverses the Three Lakes Prairie Lakes (MP 209 to MP 213.5), which is hydrologically connected to the Prairie Lakes State Preserve west of the project. Both the Three Lakes Prairie Lakes and the Prairie Lakes State Preserve are designated as Outstanding Florida Waters (OFW).

Navigable Waterways

The C-34 Canal (Canoe Creek) is part of the Central and Southern Florida Canals. The USACE Jacksonville District lists Canoe Creek as a navigable waterway under Section 10 of the Rivers and Harbors Act of 1899. The portion of Canoe Creek within the study area is not considered navigable due to construction of the presence of water control structures (spillways) on either side of Florida's Turnpike Mainline (SR 91). However, during the ETDM screening, the U.S. Coast Guard (USCG) commented that the project has no involvement with navigation. The proposed project may require authorization from the USACE under Section 14 of the Rivers and Harbors Act of 1899 and 33 U.S. Code § 408.

2.4.4 Physical Resources

2.4.4.1 Noise

This information will be updated once the Noise Study Report becomes available

2.4.4.2 Air Quality

The project is within an Air Quality Attainment Area. As such no further analyses are required. Airborne particulates will be controlled during construction with adherence to FDOT's Standard Specifications.

2.4.4.3 Contamination

To evaluate the existing contamination conditions, a study area was established to include a 500-foot radius from the project limits and outside of the right of way. Contamination risk ratings (CRRs) were assigned to potential contamination sites within the study area as shown in **Table 2-26**. The CRR system was developed by FDOT and incorporated four levels of risk: *No*, *Low*, *Medium* and *High*.

Table 2-26 Potential Contamination Site Summary

Site No.	Facility Name	Facility ID
1	FL Department of Transportation Yeehaw Toll MP 193 Turnpike	9500018; 9401968
2	FL Department of Transportation – Turnpike MP 194 Turnpike	8622660
3	Queen Transportation Spill MP 207 Turnpike	9800721
4	Sequoia Enterprises Ber 2010-71-43471Z FL Turnpike Southbound, MP 200	9812294
5	W P Hayman #1 Oil-Gas Well 27.790895°, -80.978600°	OG_31
6	Vidya Boodram and CO. 03-1I-3134 MP 202 Turnpike	9806548
7	Hillandale Farms Inc.; Cal-Maine Foods Inc. 4189 / 4201 North Canoe Creek Road	9602618; 9813526
8	H&H Sod Co. Inc. 4699 N Canoe Creek Road	8732837; SQG_140364
9	Halls Industries Inc. 6301 N Canoe Creek Road	8627079
10	FL Department of Transportation – Turnpike MP 229 Canoe Creek Service Plaza Gas Station	8622661
11	Cattle Pens	N/A
12	Historical Agriculture	N/A
13	Historical Railroads	N/A
14	Area of Arents	NRCS Soil Unit No. 4
15	Area of Pits	NRCS Soil Unit No. 31
16	Existing Bridge Structures	See Table 2-18

A Limited Contamination Screening Evaluation Report has been prepared. Sites 10, 13, and 16 listed above have been assigned a Medium Risk Rating, potentially requiring Level II Impact to Construction Assessment prior to property acquisition or construction associated with this project. There are no sites identified with a High-Risk Rating.

3 FUTURE CONDITIONS

3.1 Transportation Plan Review

Alongside this PD&E Study, the Central Florida Expressway Authority (CFX) is also conducting two PD&E studies for the proposed Southport Connector Expressway and Northeast Connector Expressway. The Southport Connector Expressway (SR 538) PD&E was initiated in 2020, while the Northeast Connector Expressway (SR 515) PD&E was initiated in Spring 2024. Both PD&E

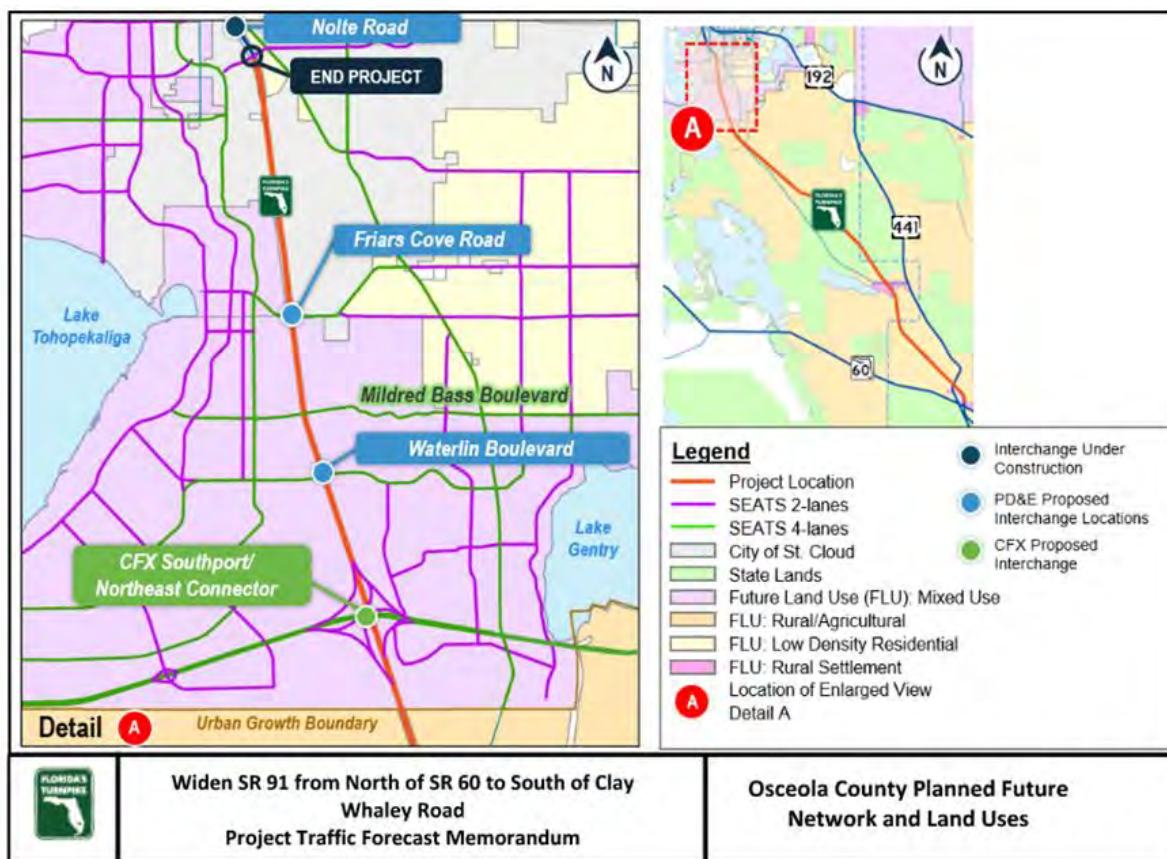
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Figure 3-1 Southport Connector/Northeast Connector Expressway Project Area

- FPID 423374-2: Florida's Turnpike Mainline (SR 91) Widening from north of SR 70 (MP 152) to north of Yeehaw Junction/US 441/SR 60 (MP 193.5), currently in PD&E phase.

- FPID 441224-3: Florida's Turnpike Mainline (SR 91) Widening from MP 238.2 to MP 239.4 and Partial Old Canoe Creek Interchange.
- FPID 441224-2 | 441224-4: Florida's Turnpike Mainline (SR 91) Widening from MP 239.4 to MP 242.5 and new Nolte Road Interchange Design Build, currently under construction.
- FPID 452574-1 - FDOT D5 SR 60 Widening from Prairie Lake Road to Florida's Turnpike Mainline (SR 91), currently in the PD&E phase.
- Projects approved by Osceola County and/or the City of St. Cloud within the Southeast Area Transportation Study (SEATS) area as shown in **Figure 3-2**.

This information will be updated once the Project Traffic Analysis Report (PTAR) becomes available.



Map produced by Enterprise PD&E Consultant (modified)

Data Sources: Future Land Use (FLU) data - Osceola County GIS data, SEATS future roadway network - Osceola County, State Lands - Florida Natural Areas Inventory (FNAI), Project location map - PD&E Consultant.

Figure 3-2 Osceola County Planned Future Network and Land Uses

3.2 Future Land Use

Osceola County future land use is divided by the Urban Growth Boundary (UGB), where lands south of the UGB are dominated by agricultural and conservation uses and north of the boundary

are mostly mixed-use and residential. Future land use within the unincorporated county is comprised of more than 65 percent rural/agricultural use, followed by nearly 17 percent mixed use, 14 percent conservation, and the remaining designated as rural settlements and commercial. The City of St. Cloud is governed by the City of St. Cloud Comprehensive Plan. In accordance with that comprehensive plan, the future land use within the City of St. Cloud is comprised of more than 50 percent residential use, followed by 13 percent public institutional uses, 13 percent rights-of-way and waterbodies, nine percent commercial uses, and the remaining land for industrial, office, parks and open spaces, and conservation. Within the study area, the City of St. Cloud land use is primarily comprised of residential and mixed-use. Future land use maps are shown in **Appendix A**.

3.3 Traffic Forecasts

The PTFM documents future traffic operations analysis for this PD&E Study (found in the project file). The traffic forecasting and operational analysis was based on the Base, Opening and Horizon years shown in **Table 3-1**.

Table 3-1 Base, Opening, and Horizon

Analysis Year	Forecast	Operations
Base	2019	2024
Opening	2030	2030
Horizon	2050	2050

The Central Florida Regional Planning Model – Florida's Turnpike Enterprise Version 7 (CFRPM-FTE V7) model was chosen to generate traffic forecasts for this study. The Enterprise updated and modified the original CFRPM 7 model to support this PD&E Study. The travel demand model development is detailed in the PTFM, found in the project file.

Project traffic forecasts were developed for the year models (2030 and 2050). The model AADT forecasts were adjusted using the methodologies from the National Cooperative Highway Research Program (NCHRP) 765 Methodology. Traffic volumes were calculated through interpolation and extrapolation, respectively, corresponding to the opening and design analysis years for the PD&E Study. Further adjustments were made based on growth rates and traffic factors (K and D) to ensure accuracy and reasonableness of the traffic volumes, and to achieve continuity of flow. Final profiles for future AADTs and Directional Design Hour Volumes (DDHV's) were then developed from the adjusted volumes.

Considering the project area's characteristics and its proximity to the Canoe Creek Service Plaza, maximum hourly traffic volumes were observed outside the typical commuter AM and PM peak periods during the existing traffic conditions. These variations were accounted for in the future year traffic development. The non-typical peak reflects hours with heavy non-commuter traffic,

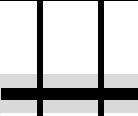
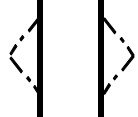
which represents the highest hourly volumes in both the northbound and southbound directions. To account for these variations, the future year traffic operations analysis includes the non-commuter peak periods. This approach ensures a more conservative analysis of the future traffic conditions. The analysis of the future traffic operations is based on the following scenarios:

- AM design hour
- Non-typical peak (hours representing maximum hourly traffic volumes and heavy non-commuter traffic)
- PM design hour

The mainline and ramps AADTs and the corresponding DDHVs for 2050 No-Action conditions are provided in **Table 3-2**. Non-typical peak hour volumes are also included for the design year (2050). The bold values represent the mainline volumes, and the non-bold values represent ramp volumes.

This information will be updated once the PTAR becomes available.

Table 3-2 2050 Annual Average Daily Traffic and Directional Design Hour Volumes

Location	Turnpike Mainline (SR 91)	AADT	2050					
			AM DDHV		Non-Typical Peak		PM DDHV	
			SB	NB	SB	NB	SB	NB
236 - Three Lakes Toll Plaza		87,200	2,850	4,250	5,320	4,310	4,250	2,850
233 - Southport Connector		34,600	1,510	2,290	910	610	2,290	1,510
		24,200	1,600	1,070	430	640	1,070	1,600
		76,800	2,940	3,030	4,840	4,340	3,030	2,940

Note: Values in **RED** indicate PEAK direction and values in **BLUE** indicate OFF-PEAK direction

3.4 Freeway Mainline Operations Analysis

The freeway segment performance results for the design year (2050) are summarized in **Table 3-3** through **Table 3-5** for AM and PM design hours and non-typical peak hours.

Design Year (2050) No-Action Conditions

For 2050 AM design hour, **Table 3-3** shows that the northbound traffic downstream of the Southport/Northeast Connector interchange is expected to experience LOS F conditions, while the mainline segments south of the Southport/Northeast Connector interchange are expected to operate at LOS D. In the southbound direction, all the mainline segments are projected to operate at LOS C or better.

For 2050 PM design hour, **Table 3-4** indicates that northbound mainline segments are projected to operate at LOS C or better. In the southbound direction, the mainline segments upstream of the Southport/Northeast Connector interchange are projected to operate at LOS F, while most of the mainline segments downstream of the Southport/Northeast Connector interchange are projected to operate at LOS D.

Design Year (2050) No-Action Conditions - Non-Typical Peak

In the northbound direction, all the mainline segments are projected to operate at LOS F except for the mainline segment in between the Southport/Northeast Connector interchange ramps which is projected to operate at LOS D. In the southbound direction, all the mainline segments are projected to operate at LOS F as shown in **Table 3-5**.

Table 3-3 2050 No-Action AM Design Hour Freeway Mainline Traffic Operation

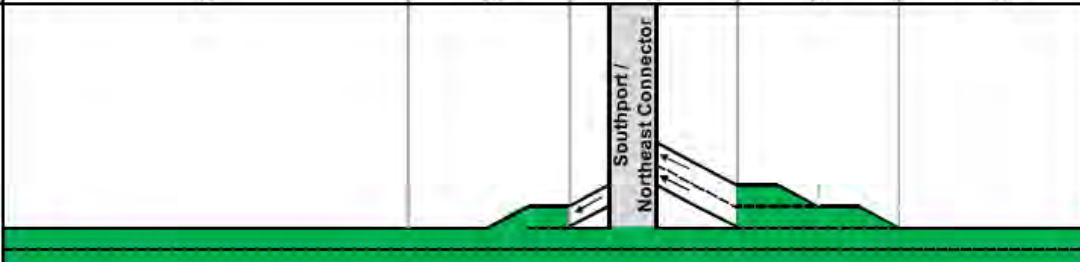
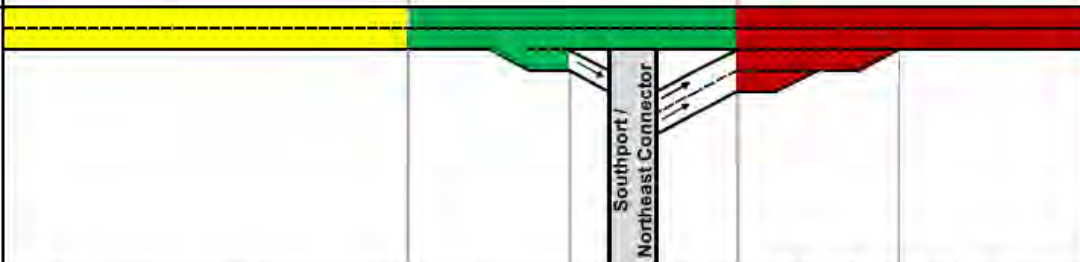
Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Merge	Basic	Diverge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	2,940	-	1,340	-	2,850
Ramp Volume (vph)	-	1,600	-	1,510	-
Speed (mph)	69.6	62.1	72.9	62.0	67.7
Density (pc/mpl)	24.3	26.1	10.5	18.9	24.2
LOS	C	C	A	B	C
					
LOS C or Better	Southbound				
LOS D					
LOS E					
LOS F	Northbound				
					
Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Diverge	Basic	Merge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	3,030	-	1,960	-	4,250
Ramp Volume (vph)	-	1,070	-	2,290	-
Speed (mph)	66.4	63.8	72.8	42.7	56.4
Density (pc/mpl)	26.2	27.9	15.5	32.3	38.4
LOS	D	C	B	F	F

Table 3-4 2050 No-Action PM Design Hour Freeway Mainline Traffic Operation

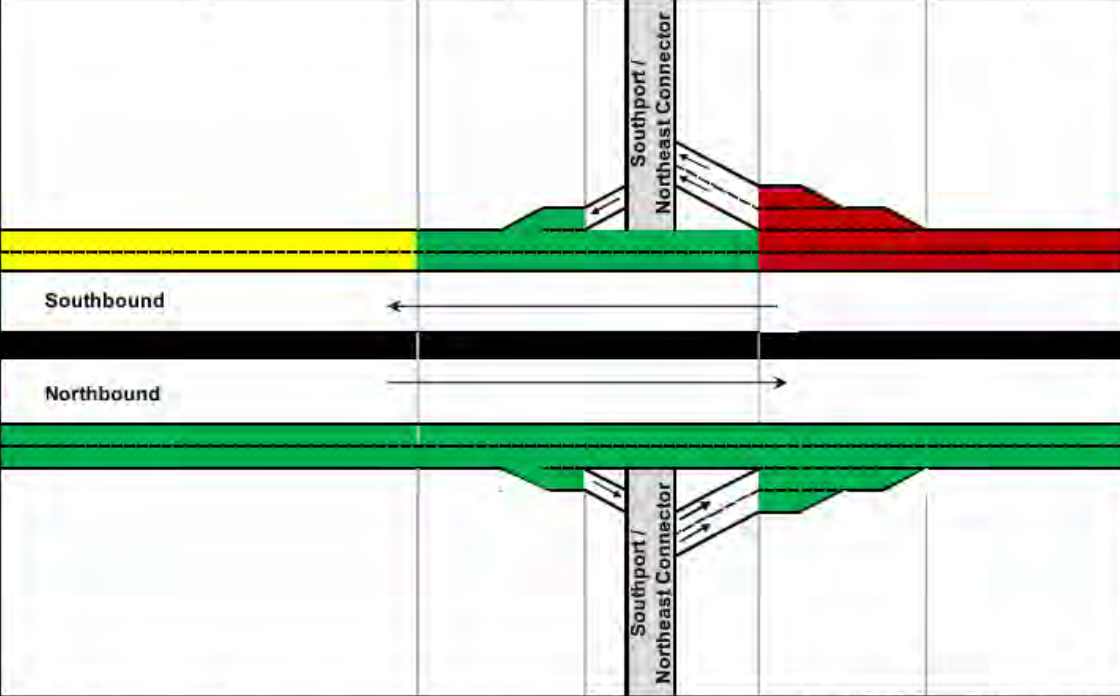
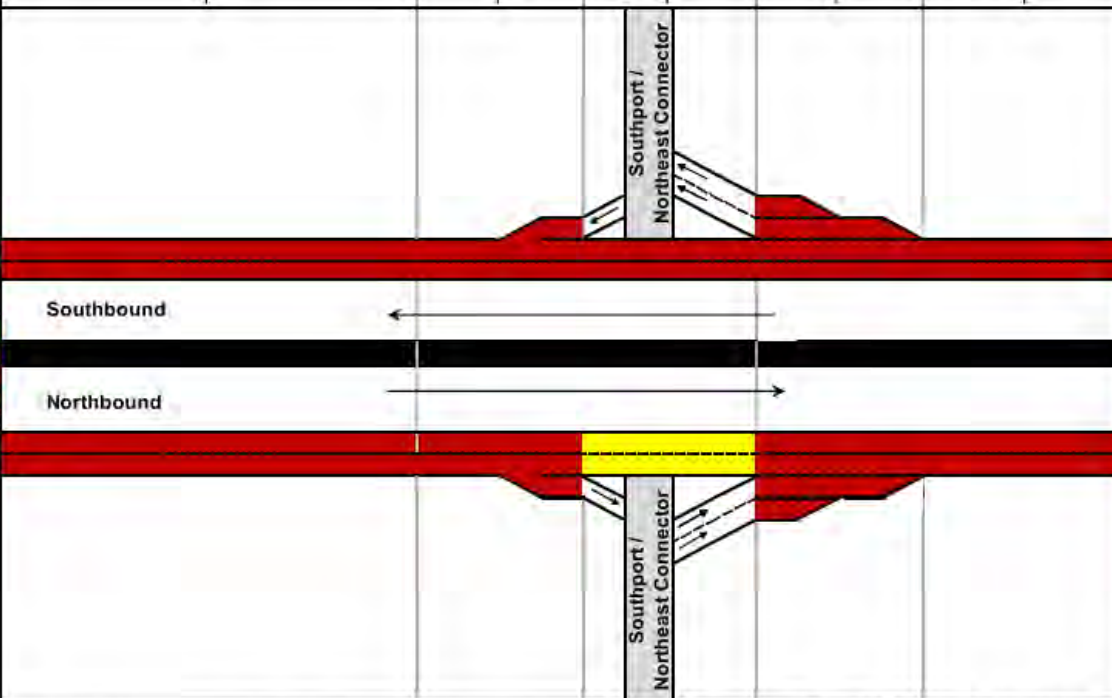
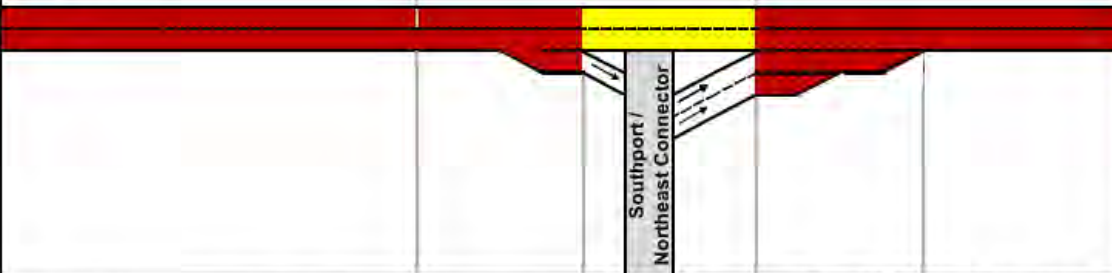
Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Merge	Basic	Diverge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	3,030	-	1,960	-	4,250
Ramp Volume (vph)	-	1,070	-	2,290	-
Speed (mph)	66.4	61.6	72.8	59.6	51.6
Density (pcpmpl)	26.2	27.4	15.5	30.7	45.0
LOS	D	C	B	F	F
					
LOS C or Better	Southbound				
LOS D					
LOS E					
LOS F	Northbound				
Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Diverge	Basic	Merge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	2,940	-	1,340	-	2,850
Ramp Volume (vph)	-	1,600	-	1,510	-
Speed (mph)	67.3	62.2	72.9	64.4	67.7
Density (pcpmpl)	25.1	27.0	10.5	20.4	24.2
LOS	C	C	A	C	C

Table 3-5 2050 No-Action Non-Typical Peak Hour Freeway Mainline Traffic Operation

Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Merge	Basic	Diverge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	4,840	-	4,410	-	5,320
Ramp Volume (vph)	-	430	-	910	-
Speed (mph)	56.5	39.5	28.2	63.8	51.6
Density (pcpmpl)	38.3	44.1	68.6	30.7	45.0
LOS	F	F	F	F	F
					
LOS C or Better	Southbound				
LOS D					
LOS E					
LOS F	Northbound				
					
Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Diverge	Basic	Merge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	4,340	-	3,700	-	4,310
Ramp Volume (vph)	-	640	-	610	-
Speed (mph)	51.6	65.2	61.6	39.5	56.4
Density (pcpmpl)	45.0	37.9	32.0	34.2	38.4
LOS	F	F	D	F	F

4 DESIGN CONTROLS & CRITERIA

4.1 Design Controls

Projects are designed based on established controls for the various elements of the project such as width of roadway, side slopes, horizontal and vertical alignment, drainage considerations and intersecting roads. Selection of the appropriate criteria and standards is influenced by traffic volume and composition, desired levels of service, functional classification, terrain features, roadside developments, environmental considerations and other individual characteristics. Design controls and criteria must be established prior to the formulation of design alternatives to ensure an adequate, safe, functional, and operational roadway. The controls and standards for state roadways are those specified by the FDOT Design Manual (FDM).

4.2 Design Criteria

The design criteria used for Florida's Turnpike Mainline (SR 91) are based on the FDM. **Table 4-1** shows the geometric design criteria. **Table 4-2** shows the drainage design criteria.

Table 4-1 Geometric Design Criteria

Design Element	Design Standard		Sources / Notes
Design Year	2050		Preliminary Project Traffic Forecast Memorandum
Roadway Classification			
SR 91	Urban & Rural Principal Arterial Expressway (SIS)		FDOT Straight Line Diagram
Side Streets:			
S Kenansville Rd. (US 441)	Rural Principal Arterial		FDOT Straight Line Diagram
Lake Marian Rd.	Rural Local		As Built 9.3
N & S Canoe Creek Rd. (CR 523)	Rural Principal Arterial		FPID 4417175201
Friars Cove Rd.	Urban General Local		
Interchange Type	NONE		
Interchange & Ramp Spacing	2.0 mile (Area type 2)		FDM Table 201.4.1
Min. distance from gore nose to adjacent ramp	On-On/Off-Off	1000 ft.	
	Off-On	500 ft.	
	Turning Roadways ft. (system interchange)	800 ft.	FDM Figure 211.12.1
	Turning Roadways (service interchange)	600 ft.	
	On-Off	Varies	

Design Element	Design Standard		Sources / Notes
Design Vehicle	WB-62FL (Geometric Design)		FDM Section 201.6
	WB-109D (Geometric Design)		
	HL-93 Design & FL-120 Permit Loa		
Design Speed			
SR 91	70 mph		FDM Table 201.5.1
Ramps			
Loops and Semi-Direct	30 mph		FDM Table 201.5.2
Outer Cloverleaf	35 mph		FDM Table 201.5.2
Intermediate Portions of Long Ramps	40 mph		FDM Table 201.5.2
Direct Connections	50 mph		FDM Table 201.5.2
S Kenansville Rd. (US 441)	60 mph		FDOT Straight Line Diagram
Lake Marian Rd.	40 mph		As Built 9.3
Canoe Creek Rd. (CR 523)	60 mph		FPID 4417175201
Friars Cove Rd.	35 mph		
Horizontal Alignment			
Maximum Deflections			
Flush Shoulder and Curbed Roadways Flush	2° 00' (DS ≤ 40 mph)		
Shoulder Roadways	0° 45' (DS ≥ 45 mph)		FDM Section 211.7.1
Curbed Roadways	1° 00' (DS ≥ 45 mph)		
High Speed Curbed Roadways	0° 45' (DS ≥ 50 mph)		FDM Section 210.8.1
Maximum Curvature			
SR 91	3°30'		FDM Table 210.9.1
Ramps	8°15' (DS = 50 mph)		
Side Streets:			
35 mph	17°45'		
40 mph	13 D 30 MIN		
60 mph	5°15'		
Length of Horizontal Curve	Desired	Minimum	
SR 91	2100 ft.	1050 ft.	FDM Table 211.7.1
Ramps:			
50 mph	1500 ft.	750 ft.	
25 mph	400 ft.	400 ft.	
Side Streets:			FDM Table 210.8.1
35 mph	525 ft.	400 ft.	
40 mph	600 ft.	400 ft.	
60 mph	900 ft.	400 ft.	

Design Element	Design Standard	Sources / Notes
Minimum Stopping Sight Distance		
SR 91	820 ft. (DS = 70 mph)(grade<=2%)	FDM Table 211.10.1
Ramps	425 ft. (DS = 50 mph)(grade<=2%)	FDM Table 211.10.2
	155 ft. (DS = 25 mph)(grade<=2%)	
Side Streets:		FDM Table 210.11.1
35 mph	250 ft. (grade <=2%)	
40 mph	305 ft. (grade <=2%)	
45 mph	360 ft. (grade <=2%)	
60 mph	570 ft. (grade <= 2%)	
Minimum Decision Sight Distance		
SR 91		
Urban	1445 ft.	AASHTO Table 3-3
Rural	780 ft.	
Ramps:		
50 mph	465 ft.	
30 mph	220 ft.	
Side Streets:		
35 mph	275 ft.	
40 mph	330 ft.	
45 mph	395 ft.	
60 mph	1280 ft.	
Minimum Intersection Sight Distance		See FDM Exhibits 212-4 to -6
Entrance Ramp Acceleration Lengths		
Single Lane (parallel)	580 ft. + 300 ft. taper	AASHTO Figure 10-72 & Table 10-4
Single Lane (taper)	70:1 Preferred, 50:1 Minimum	
Two-Lane	First lane drop, treat as single lane entrance with single lane taper. Second lane drop has an auxiliary lane taper and a tangent length that makes the total length 2500 ft. (including 300 ft. tapers).	AASHTO 10.9.6.6.5 & Figure 10-55
Exit Ramp Deceleration Lengths		
Single Lane	340 ft. + 250 ft. taper	AASHTO Figure 10-73
		AASHTO Table 10-6
Two-Lane	2,100 ft. (includes 2- 300 ft. taper)	AASHTO Figure 10-77 & FDM Figure 211.13.5

Design Element	Design Standard		Sources / Notes
Vertical Alignment			
Maximum Profile Grade			
SR 91	3%		FDM Table 211.9.1
Ramps	6%		
Side Streets:			
35 mph (Urban Collector)	9%		Florida Green Book Table 3-16
40 mph (Local Rural)	7%		
60 mph (Arterial Rural)	3%		
Maximum Change in Grade without Vertical Curve			
SR 91	0.20%		
Ramps	0.60%		
Side Streets:			
35 mph	0.90%		FDM Table 210.10.2
40 mph	0.80%		
60 mph	0.40%		
Minimum Grade (shoulder gutter, barrier wall)			
Minimum Distance Between VPIs	250 ft.		FDM Section 210.10.1.1
Minimum Grade	0.5% Desired, 0.3% Min.		FDM Section 211.9.1
SR 91 & Ramps	0.30%		FDM Section 210.10.1.1
Others			
Crest Vertical Curve	Min. K	Min. L	
SR 91	506	1,000 ft.*	FDM Tables 211.9.2 & 211.9.3
Ramps (DS = 50 mph)	136	300 ft.	
Side Streets:			
35 mph	29	105 ft.	Florida Green Book Table 3-18
40 mph	44	120 ft.	
60 mph	151 *1,800' within interchange	300 ft.	
Sag Vertical Curve	Min. K	Min. L	
SR 91	206	800 ft.	FDM Tables 211.9.2 & 211.9.3
Ramps (DS = 50 mph)	96	200 ft.	
Side Streets:			
35 mph	49	105 ft.	Florida Green Book Table 3-18
40 mph	64	120 ft.	
60 mph	136	300 ft.	

Design Element	Design Standard		Sources / Notes
Minimum Vertical Clearance			
Roadway over SR 91	16.5 ft.		FDM Table 260.6.1
SR 91 over Canal			FDM Section 260.8.1
Normal High Water	6 ft.		FDM Section 210.10.3
Design High Water	2 ft.		FDM Section 210.10.3
Maintenance Access	15 ft.		FDM Section 210.10.3
SR 91 Over Farm/Cattle Crossing	Varies		FDM Section 210.10.3
New Overhead Sign Structure	17.5 ft.		FDM Section 210.10.3
New DMS Sign Structure	19.5 ft.		FDM Section 210.10.3
Base Highwater Clearance	3 ft.		FDM Section 210.10.3
Cross Section			
Lane Widths			
SR 91	12 ft.		FDM 211.2
Ramps:			
1-Lane	15 ft.		FDM 211.2.1
2-Lane	24 ft.		
Side Streets:			
35 mph	11 ft.		FDM Table 210.2.1
40-45 mph	12 ft.		
60 mph	12 ft.		
Shoulder Widths	Inside	Outside	
	Paved / Full	Paved / Full	
SR 91	12 / 12	12 / 12	FDM Table 211.4.1
Ramps:			
1-Lane	2 / 6	4 / 6	
2-Lane	4 / 8	10 / 12	
Side Streets:	Flush Shldr.		
S Kenansville R. (US 441) & S Canoe Creek Rd. (CR 523)	4 / 8		Florida Green Book Table 3-21
Lake Marian Rd. & N Canoe Creek Rd. (CR 523)	2 / 4		Florida Green Book Table 3-21
	w/ Shldr. Gutter		
	8 / 15.5		FDM Table 211.4.1
Shoulder Width on Bridges	Inside	Outside	
SR 91	12 ft.	12 ft.	FDM Table 260.1.1
Ramps:			
1-Lane	6 ft.	6 ft.	
2-Lane	6 ft.	10 ft.	
Side Streets		10 ft.	

Design Element	Design Standard	Sources / Notes
Cross Slope		
Roadway 2-Lanes in Same Direction	2%	FDM Figure 210.2.1
Roadway Additional Lane (Same Direction)	3%	FDM Figure 211.2.1
Inside Shoulder	5% (6% if travel lanes slope inside)	FDM 210.4.1
Outside Shoulder	6%	
Bridge	2% (travel lane & shoulder)	FDM Section 260.4
Max. algebraic difference in cross slope	4% between through lanes	FDM Section 211.2.2
	5% between turning roadway terminals (DS >= 35 mph)	FDM Table 211.2.2
Shoulder Rocking	3% to 6% in tangent sections	FDM Section 211.4.2.1
Clear Zone Width		
SR 91	36 ft.	FDM Table 215.2.1
Ramps:		
1-Lane	14 ft.	
2-Lane	24 ft.	
Side Streets:	<i>curb & gutter</i>	FDM Table 215.2.2
35 mph	14 ft.	
40 mph	18 ft.	
60 mph	36 ft.	
Bridge Piers and Abutments Lateral Offset	<i>Greater of the following</i>	
Inside/Outside Travel Lane	16 ft.	FDM Table 215.2.2
Outside Auxiliary Lane	4 ft. from face of urb	
Inside Auxiliary Lane	6 ft. from edge of auxiliary lane	
Median Width		
SR 91	60 ft. (without barrier)	FDM Table 211.3.1
	26 ft. (w/ barrier)	
Side Streets:		
35 mph	15.5 ft.	FDM Table 210.3.1
40-45 mph	22 ft.	
60 mph	N/A	
Border Width		
SR 91	94 ft.	FDM 211.5
Ramps	94 ft.	
Side Streets:		
35-45 mph (Flush Shldr./Rural)	N/A	FDM Table 210.7.1
45 mph (Urban Curbed)	12 ft.	

Design Element	Design Standard			Sources / Notes
60 mph (Flush Shldr./Rural)	40 ft.			
Superelevation Transition Distribution	Standard	Minimum		
Tangent	80%	50%		FDM 210.9.1
Curve	20%	50%		
Superelevation Transition Slope Rates	e _{max}	Slope Rate	Min. L	
SR 91	10%	1:190	100 ft.	FDM Table 210.9.1
Ramps	10%	1:200	100 ft.	FDM Table 210.9.2
Side Streets:				FDM Table 210.9.3
35-40 mph	5%	1:100	50 ft.	
45 mph	5%	1:150	75 ft.	
60 mph	10%	1:225	100 ft.	
Minimum Length of Full Super within Horizontal Curve	200 ft (DS >= 50 mph)			FDM Section 210.9
	100 ft (DS <= 45 mph)			
Minimum Profile Grade where Travel lane(s) Cross Slope is < 1.5%	0.50%			FDM Section 210.9.1
Bike & Pedestrian Facilities				
Sidewalk Width	6 ft. minimum			FDM Table 222.1
Shared-Use Path Width	12 ft. preferred, 10 ft. minimum			FDM Section 224.4
Bicycle Lane Width	7 ft. (buffered)			FDM Section 223.2.1.1
Vertical Clerance Over Roadways	17.5 ft.			FDM Table 260.6.1

Table 4-2 Drainage Design Criteria

Design Element	Design Standard	Source / Notes
Cross Drain Design	Mainline Interstate - 50-year design frequency	FDOT Drainage Manual Section 4.3
DESIGN TAILWATER		
All Conditions	Varies based on outfall conditions	FDOT Drainage Manual Section 3.4
Time of Concentration (T _c)	Minimum T _c of 10 minutes	FDOT Drainage Manual Section 3.5.1
PIPE SLOPES		
Minimum Slopes	<i>Physical slope that will produce a velocity of at least 2.5 fps and no greater than 15 fps when the storm drain is flowing full.</i>	FDOT Drainage Manual Section 3.5.1
MANNING'S ROUGHNESS COEFFICIENTS		

Design Element	Design Standard	Source / Notes
Pipes	<i>n=0.012 (Concrete Box Culverts, Concrete Pipes, Spiral Rib Corrugated Pipes, PVC Pipes and Double wall Polyethylene Pipes), n = 0.020 (Helical Corrugated Pipes 12" to 24") n = 0.022 (Helical Corrugated Pipes 30" to 54") n=0.024 (Single wall Polyethylene Pipes, and Helical Corrugated Pipes 60" and larger)</i>	FDOT Drainage Manual Section 3.6.1
Asphalt (rough texture)	0.016 Asphalt Pavement	FDOT Drainage Design Guide Table B-2
GRADES		
Longitudinal Gutter Grade	Minimum longitudinal gutter grade is 0.3 percent.	FDOT Drainage Manual Section 3.8.1
SPREAD STANDARDS		
Limited Access / Design Speed > 55 mph	No Encroachment	FDOT Drainage Manual Table 3.6
PIPE SIZE AND LENGTH		
Trunklines and Laterals	18" minimum diameter	FDOT Drainage Manual Section 3.10.1
Length without maintenance access	18" pipe (300-feet); 24" to 36" pipe (400-feet); 42" and larger and all box culverts (500-feet)	
FREEBOARD		
Linear Treatment Swales	Minimum freeboard is 0.5-foot	FDOT Drainage Manual Section 5.4.4.2
Ponds	Minimum 1-foot freeboard is required above the maximum design stage of the pond	
Storm Drains	Minimum 1-foot below the theoretical gutter elevation (No Minor Losses) At the theoretical gutter elevation (Calculate Minor Losses)	FDOT Drainage Design Guide Section 6.5
STORMSEWER DESIGN CRITERIA		
Water Quality	ERP rule as set forth in Chapter 62-330, F.A.C.	SFWMD Applicants Handbook Vol II Section 4.1and 4.2
Discharge Limitations	Historic Discharges, Post ≤ Pre (10 yr Design Storm for Osceola County)	SFWMD Applicants Handbook Vol II Section 3.2

5 ALTERNATIVES ANALYSIS

5.1 No-Action (No-Build) Alternative

The No-Action Alternative (or No-Build) serves as the baseline, or benchmark against which the Build Alternative(s) are evaluated. The No-Action Alternative is defined as the alternative in which the proposed project activity would not take place. No improvements would be made to the existing facility. The No-Action Alternative remains under consideration throughout the PD&E Study. The advantages of the No-Action Alternative are that it requires no expenditure of public funds for design, ROW acquisition, construction or utility relocation. In addition, there would be no direct or indirect impacts to the environment and no sociocultural impacts. The disadvantages of the No-Action Alternative are that it does not alleviate congestion, traffic operations and safety deficiencies. If no improvements are made, these deficiencies will continue to deteriorate. Therefore, the No-Action Alternative does not satisfy the Purpose and Need for this project.

5.1.1 No-Action (No-Build) Design Year 2050

The No-Action Alternative was evaluated for the Design Year 2050. This analysis did not include any improvements along Florida's Turnpike Mainline (SR 91) within the study limits but included already programmed improvements summarized in **Section 3.1**. The No-Action Alternative traffic analysis is summarized in **Section 3.4**.

5.2 Transportation Systems Management and Operations (TSM&O) Alternative

The Transportation Systems Management and Operations (TSM&O) Alternative maximizes the efficiency of the current transportation system by implementing short-term strategies usually generated to alleviate specific congestion or safety concerns. The Enterprise has continually evaluated TSM&O strategies to upgrade their existing ITS infrastructure as well as implementation of new technology to enhance operations and safety. The *FTE TSM&O Strategic Plan* from May 2019 was used as a framework to evaluate focus areas and TSM&O strategies that are applicable to this project. These strategies were reviewed and analyzed in the *Transportation Systems Management and Operations (TSM&O) Strategies Technical Memorandum*, found in the project file.

While these strategies will provide some beneficial yet limited effects to enhance safety and operations, the TSM&O Alternative alone does not meet the Purpose and Need of this project because it will not result in substantial improvements to congestion, traffic operations or safety. TSM&O strategies will be integrated into the final solution. **Table 5-1** summarizes the strategies evaluated and viable options for implementation. These are consistent with several of the strategies evaluated in the PD&E Study to the south (FPID 423374-2). The options denoted as "viable" are included in the recommended TSM&O strategies in this study or cohesively inherent to the final solution.

Table 5-1 Evaluation of TSM&O Alternatives

TSM&O Alternative	Approach and Outcome	Viable
Freeway Management System (FMS) Improvements/Upgrades	- Continue to enhance ITS network coverage (CCTV, MVDS, DMS, etc.) and system upgrades for future expansion and resiliency (install 144 count fiber and power back-up). - This will improve incident management, traffic flow, reduce secondary crashes (safety) and enhance overall operation of the corridor. However, it does not provide additional future capacity.	Yes
Arterial Management – Improvements at Signalized Intersections	- Yeehaw Junction is the only adjacent intersection and is located south of this project (included under FPID 423374-2). - Active monitoring of the Yeehaw Junction – SB off ramp traffic queues for queue warning via DMS and readiness for CV will improve safety and congestion at the exit ramp, it does not address congestion related to future capacity needs.	Yes
Arterial Management – Parallel Facility Widening	- No major parallel arterial facilities exist within the study limits. - The alternative would not alleviate anticipated congestion along Florida's Turnpike Mainline (SR 91).	No
Improvements to signing, marking, and roadway lighting	- Signing, marking and roadway lighting improvements are inherent to the final solution and are not considered a stand-alone alternative. - These improvements are anticipated to improve safety and mobility but do not add additional capacity.	Yes

5.3 Build Alternative

The build alternative consists of widening Florida's Turnpike Mainline (SR 91) from four (4) to six (6) lanes in the rural segment and four (4) to eight (8) lanes in the urban segment. The study evaluated several typical sections for both the rural and urban segments of the project as discussed in **Section 5.3.1**. All typical sections include 12-foot lanes, 12-foot inside and outside shoulders and fit within the existing ROW.

5.3.1 Mainline Typical Section Analysis

5.3.1.1 Rural Segment

Rural Typical Section 1

This option mills and resurfaces the existing four lanes, widens to the outside to provide three lanes in each direction and maintains the existing 40-foot median with a guardrail. This is consistent with the typical section recommended for the segment south of the project limits (FPID 423374-2-22-01) and maximizes the existing pavement as shown in **Figure 5-1**. This typical section minimizes impacts to the existing drainage system and does not require the need for overbuild. The main disadvantage of this typical section is that it does not address the ongoing maintenance issues associated with the existing base clearance above the Seasonal High

Ground Water Table (SHGWT). This has resulted in base failure and flooding within the clear zone and has increased the frequency of resurfacing.

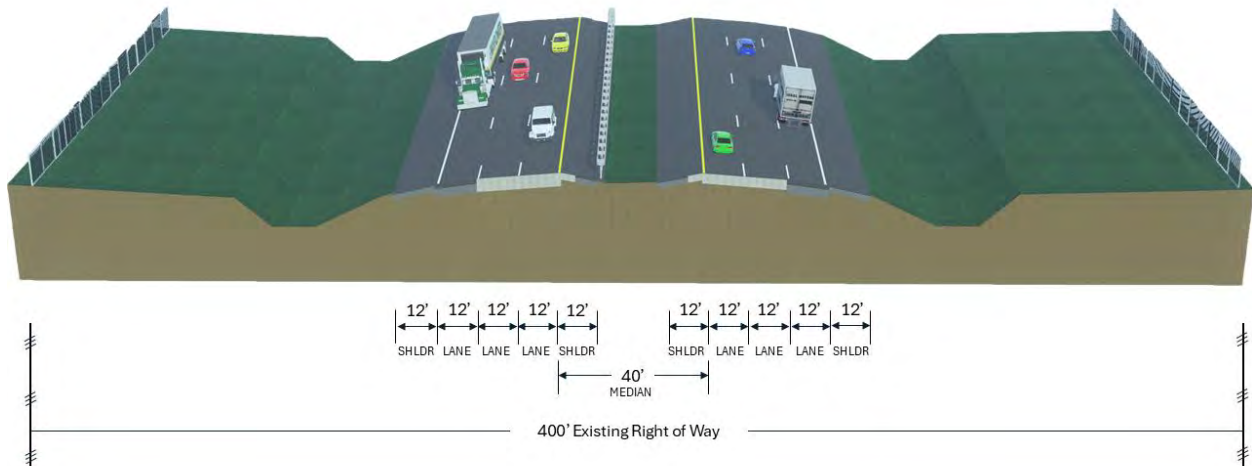


Figure 5-1 Rural Typical Section 1

Rural Typical Section 2

This option reconstructs the existing Florida's Turnpike Mainline (SR 91) to provide six lanes. This typical section (**Figure 5-2**) shifts the alignment to the east approximately 37-feet and raises the roadway profile to provide appropriate base clearance above the SHGWT. This approach addresses ongoing maintenance issues and the frequency of needed resurfacing. This typical section also simplifies the temporary traffic control required during construction by allowing traffic to be maintained on the existing facility while a portion of the new facility is constructed.

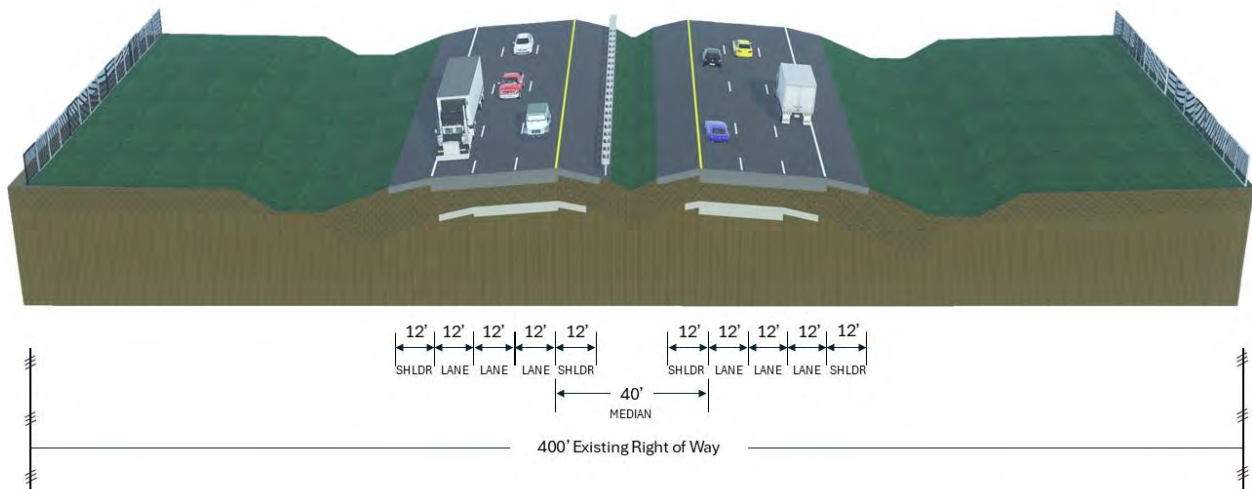


Figure 5-2 Rural Typical Section 2

Rural Typical Section Recommendation

After reviewing the options explored above, it was determined that a combination of both rural typical section options maximizes the advantages and minimizes the disadvantages associated with both typical sections. This approach limits full reconstruction to those areas where the profile will be raised to address the SHGWT and provides adequate base clearance which helps to preserve the future pavement life. Where there are no issues with existing base clearance, the mainline can be widened and the existing pavement can be preserved.

5.3.1.2 Urban Segment

Urban Typical Section 1

This option mills and resurfaces the existing four lanes, widens to the outside to provide four lanes in each direction and maintains the existing 40-foot median with a guardrail. This maximizes the existing pavement as shown in **Figure 5-3** and the open median drainage allows for flat longitudinal grades reducing earthwork. However, this option is not consistent with the typical section north of the project limits and currently under construction (FPID 441224-4-52-01). A variation is required for all lanes sloped in one direction which increases the risk for hydroplaning. This option does not address the maintenance issues associated with the SHGWT that has impacted the existing base and has contributed to flooding. The 40-ft median also increases bridge lengths for overpasses.

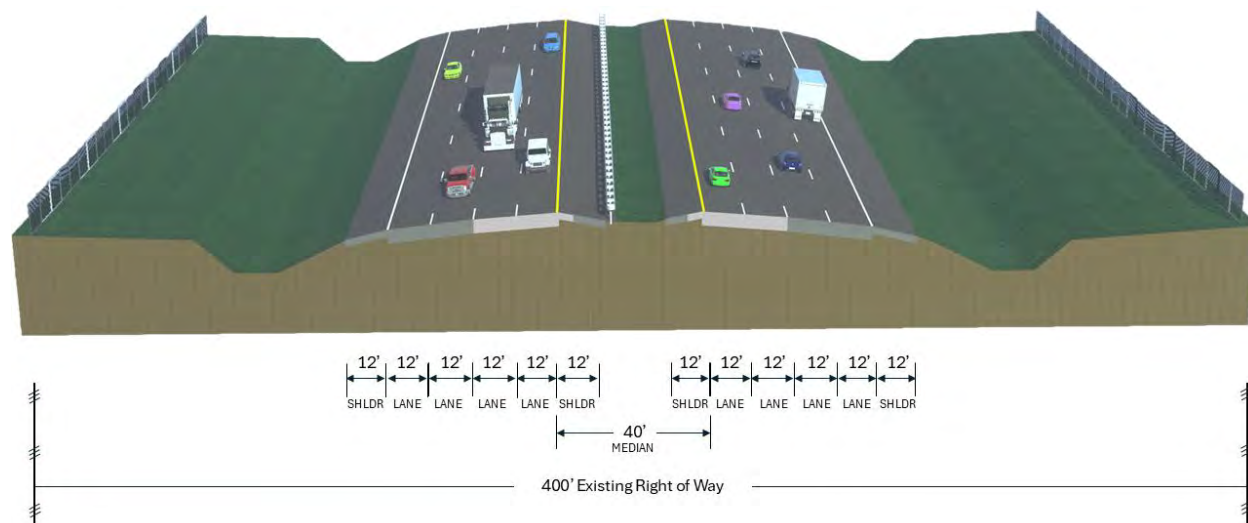


Figure 5-3 Urban Typical Section 1

Urban Typical Section 2

This option is similar to Urban Typical Section 1 but uses overbuild to raise the profile and break the cross slope across four lanes to address the hydroplaning risk. This option maximizes the existing pavement as shown in **Figure 5-4** and the open median drainage allows for flat longitudinal grades reducing earthwork. However, this option is not consistent with the typical section north of the project limits and currently under construction (FPID 441224-4-52-01) and requires additional drainage inlets. This option does not address the maintenance issues associated with the SHGWT that has impacted the existing base and has contributed to flooding. The 40-ft median also increases bridge lengths for overpasses.

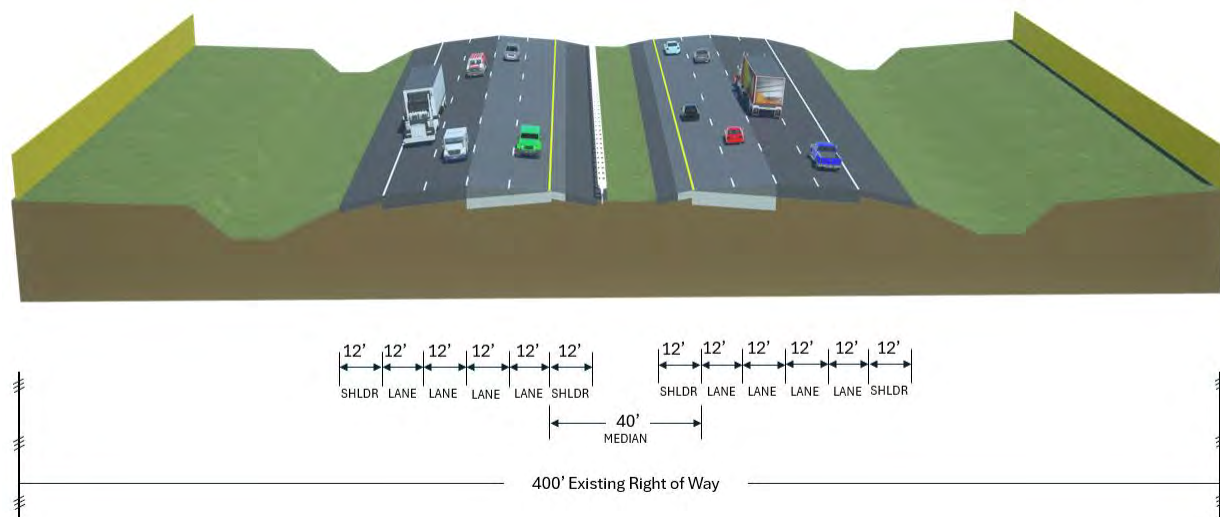


Figure 5-4 Urban Typical Section 2

Urban Typical Section 3

This option consists of reconstructing Florida's Turnpike Mainline (SR 91) to provide eight (8) travel lanes and shifts the alignment to the east approximately 30-feet where feasible to facilitate construction. This typical section closes the median, provides a barrier wall and installs new median drainage. This option also raises the profile to address SHGWT and maintenance issues. The typical section matches the segment to the north, under construction as part of the widening of Florida's Turnpike Mainline (SR 91) from Clay Whaley Road to US 192 (FPID 441224-4-52-01).

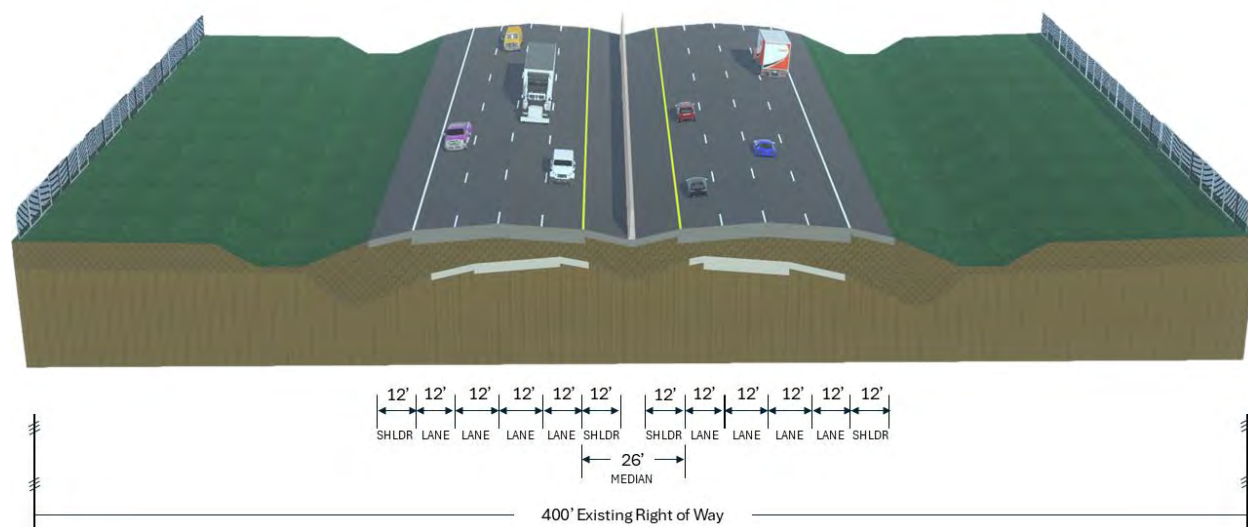


Figure 5-5 Urban Typical Section 3

Urban Typical Section Recommendation

After reviewing the options explored above, it was determined that Urban Typical Section 3 will provide the best option as it addresses existing deficiencies, and the SHGWT issue. This option is consistent with the project to the north, avoids a variation for cross slope and potential hydroplaning and the need for substantial overbuild.

5.3.2 Build Alternative Operational Analysis

The Build Alternative consists of two typical sections for the rural segment and one typical section for the urban segment as described in **Section 5.3.1**. All the typical sections provide 12-foot travel lanes and 12-foot inside and outside shoulders. The rural segment widens Florida's Turnpike Mainline (SR 91) from four (4) to six (6) lanes while the urban segment widens Florida's Turnpike Mainline (SR 91) from four (4) to eight (8) lanes. The Build Alternative was evaluated for the Design Year 2050.

Design Year (2050) Build Conditions

Improved traffic operations are expected under the 2050 Build conditions. All Florida's Turnpike Mainline (SR 91) segments in both the northbound and southbound directions are expected to operate at LOS C or better during the AM and PM design hours as shown in **Table 5-2** and **Table 5-3**. The improved traffic operations can be associated with the increased mainline capacity to be achieved by the mainline widening from two to three lanes in each direction in the rural segment, and from two to four lanes in each direction in the urban segment.

Design Year (2050) Build Conditions - Non-Typical Peak

Improved traffic operations are expected under the 2050 Build conditions, as well as the non-typical peak periods as shown in **Table 5-4**. Most of the Florida's Turnpike Mainline (SR 91)

segments in both the northbound and southbound directions are expected to operate at LOS C or better during the non- typical peak periods. The mainline segment south of the proposed Southport/Northeast Connector interchange and at the merge segment are projected to operate at LOS D.

Overall, the improved traffic operations observed under the Build conditions can be associated with the increased mainline capacity to be achieved by the mainline widening from two to three lanes in each direction in the rural segment, and from two (2) to four (4) lanes in each direction in the urban segment.

The Build Alternative traffic analysis will be updated once the PTAR becomes available.

Table 5-2 2050 Build AM Design Hour Freeway Mainline Traffic Operation

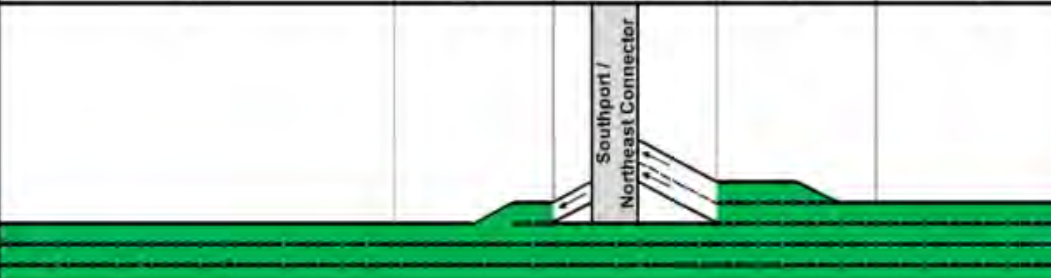
Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Merge	Basic	Major Diverge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	2,940	-	1,340	-	2,850
Ramp Volume (vph)	-	1,600	-	1,510	-
Speed (mph)	72.8	65.3	72.9	-	72.1
Density (pc/mpl)	15.5	21.3	7.0	13.7	11.3
LOS	B	C	A	B	B
					
LOS C or Better	Southbound				
LOS D					
LOS E					
LOS F	Northbound				
					
Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Diverge	Basic	Major Merge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	3,030	-	1,960	-	4,250
Ramp Volume (vph)	-	1,070	-	2,290	-
Speed (mph)	72.6	67.5	72.9	-	71.7
Density (pc/mpl)	16.0	18.9	10.3	Under Capacity	17.0
LOS	B	B	A		B

Table 5-3 2050 Build PM Design Hour Freeway Mainline Operation

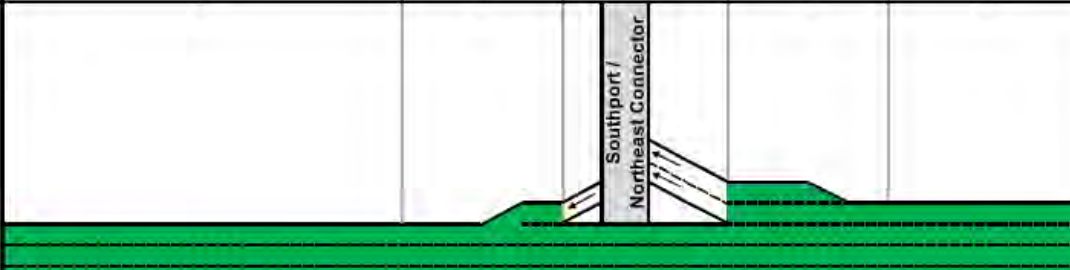
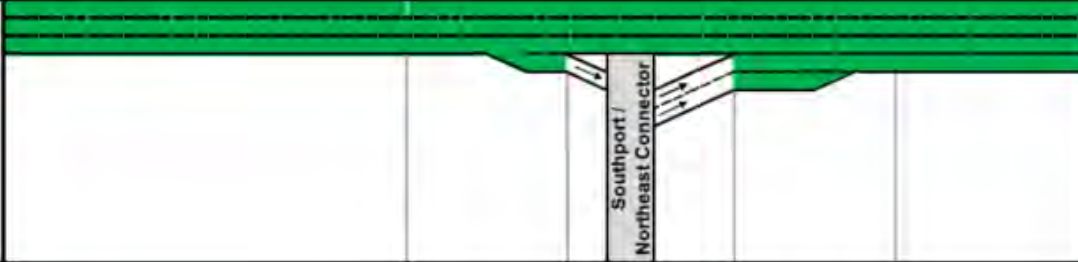
Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Merge	Basic	Major Diverge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	3,030	-	1,960	-	4,250
Ramp Volume (vph)	-	1,070	-	2,290	-
Speed (mph)	72.6	65.6	72.9	-	71.7
Density (pc/mpl)	16.0	20.3	10.3	20.5	17.0
LOS	B	C	A	C	B
					
LOS C or Better	Southbound				
LOS D					
LOS E					
LOS F	Northbound				
					
Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Diverge	Basic	Major Merge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	2,940	-	1,340	-	2,850
Ramp Volume (vph)	-	1,600	-	1,510	-
Speed (mph)	72.8	65.0	72.4	-	72.1
Density (pc/mpl)	15.5	20.0	7.1	Under Capacity	11.3
LOS	B	B	A	Under Capacity	B

Table 5-4 2050 Build Non-Typical Peak Hour Freeway Mainline Traffic Operation

Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Merge	Basic	Major Diverge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	4,840	-	4,410	-	5,320
Ramp Volume (vph)	-	430	-	910	-
Speed (mph)	64.2	63.4	67.3	-	69.2
Density (pc/mpl)	28.8	28.2	25.1	25.6	22.1
LOS	D	D	C	C	C
					
LOS C or Better	Southbound				
LOS D					
LOS E					
LOS F	Northbound				
					
Segment Description	South of Southport / Northeast Connector Interchange		Between Ramps	North of Southport / Northeast Connector Interchange	
Segment Type	Basic	Diverge	Basic	Major Merge	Basic
Segment Length (ft)	195,360	1,500	10,600	1,500	26,000
Mainline Volume (vph)	4,340	-	3,700	-	4,310
Ramp Volume (vph)	-	640	-	610	-
Speed (mph)	67.7	69.3	70.6	-	71.6
Density (pc/mpl)	24.5	24.4	20.1	Under Capacity	17.3
LOS	C	C	C		B

5.4 Comparative Alternatives Evaluation

An Alternatives Evaluation Matrix was prepared to compare the performance of the No-Action Alternative and the Build Alternative across a variety of engineering considerations, socio-economic and environmental impacts, project costs and stakeholder input as shown in **Table 5-5**.

Table 5-5 Comparative Matrix

Evaluation Criteria	Build Alternative	No-Action Alternative
Purpose and Need		
Meets Purpose and Need	Yes	No
Traffic Effectiveness		
Enhances Safety	Yes	No
Accommodates Travel Demand (Year 2025)	Yes	No
Improves Travel Time Reliability	Yes	No
Enhances Emergency Response and Evacuation	Yes	No
Potential Right-of-Way Impacts		
Right-of-Way Impacts (acres)	0	0
Number of Parcels Impacted	0	0
Relocations	0	0
Natural/Cultural/Physical Environmental Effects		
Public parks, recreation areas (acres)	0	0
Wetlands and other surface waters (acres)	12.16	0
Floodplains (acres)	38.52	0
Protected Species and Habitat	Low	Low
Potential Contamination Sites (Medium or High)	6	0
Potential Noise Barrier	Pending NSR	0
Estimates in 2025 Present Day Costs		
Construction	\$1.83B	\$0
Construction Engineering and Inspection (15%)	\$315M	\$0
Design (15%)	\$315M	\$0
Right-of-Way	\$0	\$0
Utilities	\$3.5M	\$0
Total Estimated Project Cost	\$2.73B	\$0

5.4.1 Value Engineering

A Cost Risk Assessment and Value Engineering (CRAVE) Study was conducted from April 29 to May 2, 2025. The primary objectives of the CRAVE study were as follows.

- Verify or improve on the various design concepts for the project.
- Identify high risk areas in delivering the project
- Improve the value of the project through innovative measures aimed at improving the performance while reducing costs of the project.

- Perform a cost risk assessment on both the baseline design and the CRAVE recommendations.

The CRAVE team generated 68 ideas for the project. These concepts were compared against the baseline developed by the project team. The concepts that resulted in improved performance were further developed by the CRAVE team and resulted in 14 VE recommendations. A summary of the recommendations is shown in **Table 5-6**. The Build Alternative was refined based on the accepted recommendations. These recommendations created a potential additional cost of approximately \$18.5 M. The CRAVE report can be found in the project file.

Table 5-6 Summary of Value Engineering Recommendations

VE Recommendation		Disposition
1	Adjust Median Width	Rejected
2	Advance Future Toll Site	Defer to Design
3	Adjust Typical Section to Improve MOT	Rejected
4	Reduce Unknown Geotechnical Risk	Defer to Design
5	Provide Emergency Access	Rejected
6	Adjust Alignment to Improve Geometry	Partially Accepted
7	Procure Rural Segments as Low-Bid Design-Build	Rejected
8	Construct Bridges to Accommodate 8 Lanes	Rejected
9	Replace Bridges Off Alignment	Rejected
10	Replace Box Culverts with Pipes	Accepted
11	Use Black Base instead of Raising Profile	Rejected
12	Replace all Structures in lieu of Widening	Defer to Design
13	Improve drainage profiles	Accepted
14	Segment Project by Direction instead of Mile Post	Rejected

5.5 Selection of the Preferred Alternative

Based on the results of the Alternatives Evaluation Matrix as discussed in **Section 5.4**, local stakeholder coordination meetings, and coordination with the Enterprise, the preferred alternative is the Build Alternative. The preferred alternative consists of two typical sections for the rural segment and one typical section for the urban segment. All the typical sections provide 12-foot travel lanes and 12-foot inside and outside shoulders. The rural segment widens Florida's Turnpike Mainline (SR 91) from four (4) to six (6) lanes while the urban segment widens Florida's Turnpike Mainline (SR 91) from four (4) to eight (8) lanes. This alternative meets the Purpose and Need of the project to increase capacity, enhance safety and emergency evacuation, and address roadway deficiencies while minimizing environmental and socio-economic impacts.

6 AGENCY COORDINATION & PUBLIC INVOLVEMENT

A Public Involvement Plan (PIP) was prepared as part of this PD&E Study. The purpose of the PIP is to assist in providing information and identifying methods to obtain input from concerned citizens, agencies, private groups (residential/business) and governmental entities. The overall goal of the Enterprise's engagement approach is to ensure that the study reflects the values and needs of the communities it is designed to benefit. The outreach activities and public involvement efforts are summarized below.

Chapter 6 will be updated to include additional outreach activities held through the end of the Study.

6.1 Agency Coordination

An Advance Notification Package was prepared and sent to the Florida State Clearinghouse on March 16, 2023, and then distributed to the appropriate state agencies for consistency review. The Advance Notification was also distributed to the appropriate local government offices, other non-state agencies and tribal nations. A copy of the Advance Notification Package is provided in **Appendix E**.

In addition, a Programming Screen Summary Report was published on June 13, 2023 for the this PD&E Study. The purpose of the Programming Screen Summary Report is to summarize the results of the ETAT Programming Screen review of the project; provide details concerning agency comments about potential effects to natural, cultural, and community resources; and provide additional documentation of activities related to the Programming Phase for the project. The report includes a chart that summarizes the degree of effect (DOE) assigned to social, economic, cultural, natural, and physical resources during the environmental screening. For this PD&E Study, a DOE of minimal to moderate was assigned for most topics. A copy of the Programming Screen Summary Report is provided in **Appendix E**.

Throughout the study, multiple meetings have been held with Osceola County, the City of St. Cloud, and the Central Florida Expressway Authority (CFX). Feedback from these meetings has helped shape the project alternatives. The following is a list of meetings held to date.

- Osceola County – April 5, 2024
- CFX – May 24, 2024
- Joint Osceola County/CFX/St. Cloud – July 15, 2024
- CFX – August 6, 2024
- CFX – August 29, 2024
- Osceola County – October 18, 2024
- Joint Osceola County/CFX/St. Cloud – December 18, 2024
- Osceola County – April 9, 2025

- Osceola County – May 2, 2025
- Osceola County – June 6, 2025
- Osceola County – June 20, 2025
- Osceola County – July 11, 2025
- Osceola County – August 15, 2025
- Osceola County – August 29, 2025

Stakeholder outreach will continue through the completion of the PD&E Study and future project phases.

6.2 Public Involvement

Several measures were taken to ensure that the public was informed of the project issues and had a way to communicate their concerns to the Enterprise. These measures include:

- Public Kick-off Newsletter (English/Spanish)
- Newspaper Ads (English/Spanish)
 - Osceola News Gazette
 - El Osceola Star/Hola Osceola!
- Invitational/Informational Letters (English/Spanish)
- Press Release
- Public Notice
- Project Website www.TurnpikeSR60toCWR.com
- Agency/Stakeholder coordination as discussed below
- Additional details are provided in the Comments and Coordination Report in the project file.

The Comments and Coordination Report is prepared at the end of the study to document outreach and agency coordination conducted throughout the study. Chapter 6 will be updated as additional outreach is held.

6.3 Alternatives Public Information Meeting

The Enterprise provided several options for attendees to participate in an Alternatives Public Information Meeting as shown below.

- March 4, 2025 virtually/online
 - Via the GoToWebinar platform
 - By telephone (listen only)

- March 5, 2025 at the St. Cloud Community Center
- March 11, 2025 at the Intergenerational Recreation Center

Public notice for this meeting, including information on how to access the meeting platform, was provided in letters to property owners and tenants in the project area, a posting in the Florida Administrative Register, advertisements in local newspapers, emails to the project contact list, and posting on the project website and social media.

The meeting began with a presentation followed by a question-and-answer session. Attendees were also informed that they could provide feedback at any point throughout the study by submitting comments online through the project website and emailing or mailing the Enterprise project manager directly. The presentation provided an overview of the project development process, study limits, purpose and need, alternatives development process and environmental effects evaluation. The study team presented solutions developed and evaluated to address the project needs. These improvements were a result of coordination with the community, stakeholders, and local agencies resulting in proposed improvements to Florida's Turnpike Mainline (SR 91) corridor which includes structural and drainage improvements.

6.4 Public Hearing

This section will be completed after the public hearing is held.

7 PREFERRED ALTERNATIVE

The preferred alternative consists of two typical sections for the rural segment and one typical section for the urban segment. All the typical sections provide 12-foot travel lanes and 12-foot inside and outside shoulders. The rural segment widens Florida's Turnpike Mainline (SR 91) from four (4) to six (6) lanes while the urban segment widens Florida's Turnpike Mainline (SR 91) from four (4) to eight (8) lanes. The preferred alternative has a design speed of 70 miles per hour (mph) and will be constructed within the existing ROW width. Conceptual Design Plans for the preferred alternative can be found in the project file.

Any refinement after the Public Hearing will be updated after Hearing is held.

7.1 Engineering Details of the Preferred Alternative

7.1.1 Typical Sections

Rural Segment

The first typical section for the rural segment consists of widening to the outside and maintaining the existing 40-foot median with guardrail. This is consistent with the typical section recommended for the segment south of the project limits (FPID 423374-2-22-01) and maximizes the existing pavement as shown in **Figure 7-1**. This typical section will be used in the following sections:

- MP 193.78 to MP 202.75
- MP 204.17 to MP 206.42
- MP 207.46 to MP 212.79
- MP 217.66 to MP 220.50
- MP 221.75 to MP 223.29

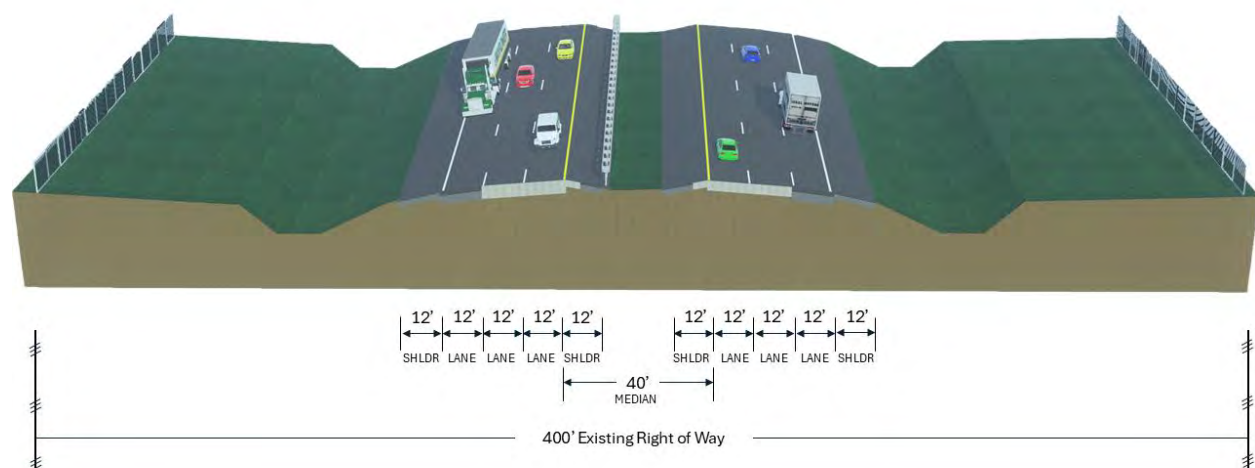


Figure 7-1 Rural Segment Typical Section 1

The second typical section for the rural segment consists of reconstructing the existing Florida's Turnpike Mainline (SR 91) to provide six (6) lanes. This typical section (**Figure 7-2**) shifts the alignment to the east approximately 37-feet and raises the roadway profile to provide appropriate base clearance above the SHGWT. This approach addresses ongoing maintenance issues and the frequency of needed resurfacing. This typical section will be used in the following sections:

- MP 202.75 to MP 204.17
- MP 206.42 to MP 207.46
- MP 212.79 to MP 217.66
- MP 220.50 to MP 221.75
- MP 223.29 to MP 233.73

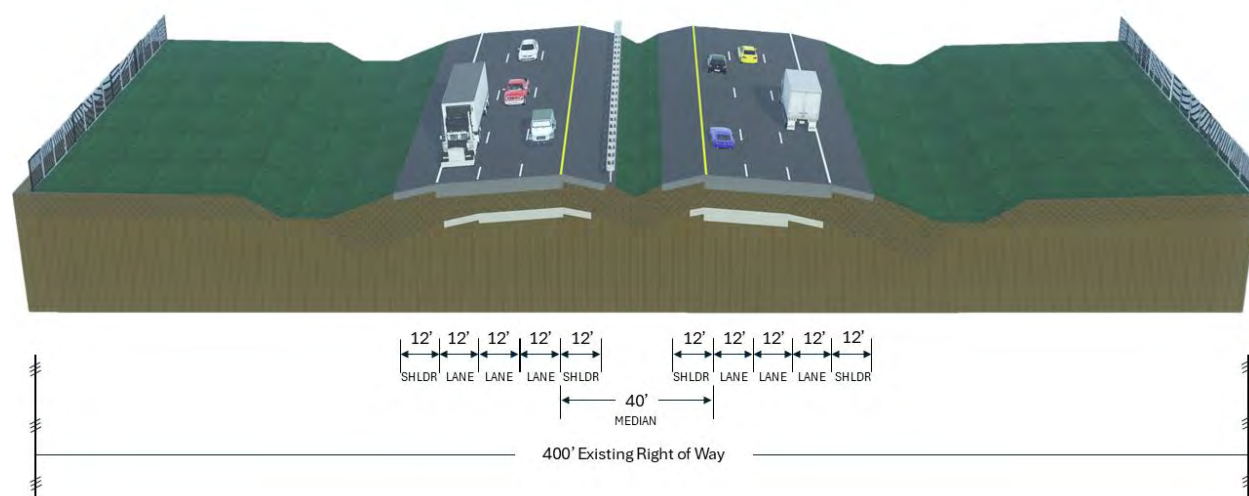


Figure 7-2 Rural Typical Section 2

Urban Segment

The typical section for the urban segment (from MP 233.73 to MP 239.03) consists of reconstructing Florida's Turnpike Mainline (SR 91) from four (4) to eight (8) lanes resulting in a 26-foot median separated by median barrier wall as shown in **Figure 7-3**. The typical section matches the segment to the north, under construction as part of the widening of Florida's Turnpike Mainline (SR 91) from Clay Whaley Road to US 192 (FPID 441224-4-52-01).

This typical section raises the profile to address existing maintenance issues associated with the SHGWT and shifts the alignment 30-feet where feasible to facilitate construction.

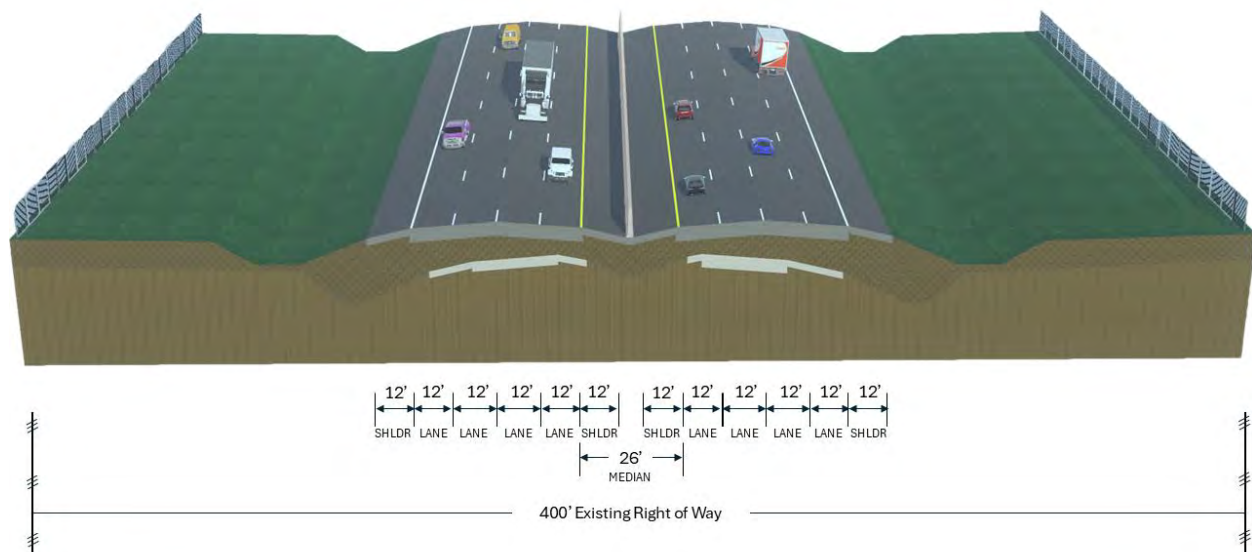


Figure 7-3 Urban Typical Section

The signed and sealed Typical Section Package can be found in **Appendix F**.

The Typical Section Package is under review, and the final signed and sealed package will be updated in the Appendix when it becomes available.

7.1.2 Access Management

There are no access changes proposed as part of this study.

7.1.3 Right-of-Way

There is no ROW acquisition required for the preferred alternative.

7.1.4 Horizontal and Vertical Geometry

The preferred alternative's horizontal alignment generally follows that of the existing corridor. This alignment shifts to the east, 37-feet in the rural segment and 30-ft in the urban segment, where reconstruction is proposed to raise the profile and provide adequate base clearance above the SHGWT.

The CRAVE Study VE Recommendation No. 6 suggested the following horizontal alignment improvements.

- Eliminate the double reverse curve at MP 216 and MP 226.
- Adjust the roadway geometry at MP 203, 207 and 213.5 to address high crash rates.

This recommendation was partially accepted. Removing the reverse curves was rejected because these areas correspond to the bifurcated segments of Florida's Turnpike Mainline (SR 91). The Enterprise has determined that these bifurcated segments will not be closed. The preferred

alternative accommodates the required superelevation transitions. The horizontal curve at MP 203 and MP 207 was flattened to address the high crash rates. The curve at MP 213.5 was realigned and has a normal crown with a large radius. This curve will remain as is.

The vertical alignment of the preferred alternative generally follows that of the existing corridor except in the reconstruction segments. The vertical profile in these segments will be raised as discussed above and a minimum grade of 0.5% will be maintained.

The CRAVE Study VE Recommendation No. 13 suggested the following vertical alignment improvements for the urban segment with median barrier wall inlets.

- Relocate the low point to provide the minimum clearance for median outfall pipes and optimize profile.

The proposed vertical curves in the urban segment were reviewed and necessary adjustments were performed to ensure maintaining minimum clearance for the median outfall pipes located at the sag points. The horizontal and vertical alignment is reflected in the Conceptual Design Plans in the project file.

7.1.5 Design Variations and Design Exceptions

Throughout the study limits where the existing profile consists of a flat grade (0%), the preferred alternative reconstructs Florida's Turnpike Mainline (SR 91) to provide a minimum grade of 0.5%. Because of the 26-foot closed median proposed in the urban segment, vertical grades are introduced to facilitate positive drainage. The proposed vertical alignment will use vertical curves that provide the minimum K values, but not the minimum vertical curve lengths as per FDM. This approach meets stopping sight distance requirements and facilitates positive drainage.

The 2018 AASHTO Policy on Geometric Design of Highways and Streets (Green Book) has requirements for minimum length of vertical curves based on their K values. The K value is a measure of the rate of curvature and is equal to the length of curve divided by the algebraic difference of the incoming and outgoing grades (L/A). Design controls for K based on stopping sight distance with a driver's eye height of 3.5-feet and an object height of 2-feet can be found in FDM Tables 3-35 (crest) and 3-37 (sag). With mainline profile grades targeted at 0.5% up and down ($A=1.0$), this corresponds to vertical curve lengths of 247-feet (crest) and 181-feet (sag) at 70 mph.

Per FDM Table 211.9.2, K values for vertical curves (where $A=1.0$ and using interstate criteria), minimum lengths are 506-feet (crest) and 206-feet (sag). These K values are based on stopping sight distance with a driver's eye height of 3.5-feet but an object height of 6-inch. However, FDM Table 211.9.3 requires minimum vertical curve lengths of 1,000-feet (crest), 1,800-feet (crest within interchanges), and 800-feet (sag).

A design variation for vertical curve length is required at the locations shown in **Table 7-1**. This variation will be prepared during the final design phase of the project.

Table 7-1 Design Variation – Vertical Curve Length

No.	PVI Station	Proposed Curve Data			FDM Curve Length Criteria	K-Value Criteria	
		Type	Length (feet)	K-Value		FDM	AASHTO
1	2578+17.61	Sag	300	750	800	206	181
2	2590+00.00	Crest	600	600	1000	506	247
3	2604+00.00	Sag	300	300	800	206	181
4	2617+00.00	Crest	600	600	1000	506	247
5	2630+00.00	Sag	300	295	800	206	181
6	2644+00.00	Crest	612	601	1000	506	247
7	2654+99.43	Sag	300	512	800	206	181
8	2772+53.52	Sag	300	489	800	206	181
9	2786+75.00	Crest	600	600	1000	506	247
10	2802+00.00	Sag	300	300	800	206	181
11	2814+92.89	Crest	600	600	1000	506	247
12	2830+50.00	Sag	300	512	800	206	181
13	3142+38.78	Sag	300	600	800	206	181
14	3152+50.00	Crest	600	600	1000	506	247
15	3162+50.00	Sag	300	300	800	206	181
16	3174+50.00	Crest	600	600	1000	506	247
17	3184+50.00	Sag	300	300	800	206	181
18	3198+75.00	Crest	600	600	1000	506	247
19	3213+00.00	Sag	300	300	800	206	181
20	3223+00.00	Crest	600	600	1000	506	247
21	3233+00.00	Sag	300	240	800	206	181
22	3268+50.00	Sag	300	240	800	206	181
23	3281+50.00	Crest	600	600	1000	506	247
24	3294+00.00	Sag	300	300	800	206	181
25	3306+00.00	Crest	600	600	1000	506	247
26	3316+50.00	Sag	300	300	800	206	181
27	3328+50.00	Crest	600	600	1000	506	247
28	3339+00.00	Sag	300	300	800	206	181
29	3352+00.00	Crest	600	600	1000	506	247
30	3363+25.00	Sag	300	231	800	206	181
31	3533+50.00	Sag	300	240	800	206	181
32	3557+00.00	Sag	300	240	800	206	181
33	3670+00.00	Sag	300	500	800	206	181
34	3680+00.00	Crest	600	588	1000	506	247
35	3690+00.00	Sag	300	294	800	206	181

Project Development and Environment Study
Widening Florida's Turnpike Mainline (SR 91) from north of SR 60 to south of Clay Whaley Road
Florida Department of Transportation, Florida's Turnpike Enterprise

No.	PVI Station	Proposed Curve Data			FDM Curve Length Criteria	K-Value Criteria	
		Type	Length (feet)	K-Value		FDM	AASHTO
36	3700+50.00	Crest	600	600	1000	506	247
37	3711+00.00	Sag	300	300	800	206	181
38	3721+50.00	Crest	600	600	1000	506	247
39	3732+00.00	Sag	300	216	800	206	181
40	3761+00.00	Sag	300	216	800	206	181
41	3771+00.00	Crest	600	600	1000	506	247
42	3783+00.00	Sag	300	300	800	206	181
43	3793+00.00	Crest	600	600	1000	506	247
44	3805+00.00	Sag	300	300	800	206	181
45	3815+00.00	Crest	600	600	1000	506	247
46	3826+00.00	Sag	300	300	800	206	181
47	3836+00.00	Crest	600	600	1000	506	247
48	3847+00.00	Sag	300	300	800	206	181
49	3857+00.00	Crest	600	600	1000	506	247
50	3868+00.00	Sag	300	300	800	206	181
51	3878+00.00	Crest	600	571	1000	506	247
52	3888+00.00	Sag	300	270	800	206	181
53	3900+00.00	Crest	600	517	1000	506	247
54	3912+30.00	Sag	300	273	800	206	181
55	3923+50.00	Crest	600	568	1000	506	247
56	3934+00.00	Sag	300	284	800	206	181
57	3944+00.00	Crest	600	600	1000	506	247
58	3954+00.00	Sag	350	228	800	206	181
59	3977+00.00	Sag	400	234	800	206	181
60	3987+00.00	Crest	600	600	1000	506	247
61	3997+00.00	Sag	300	300	800	206	181
62	4008+00.00	Crest	600	600	1000	506	247
63	4020+50.00	Sag	300	300	800	206	181
64	4035+00.00	Crest	600	600	1000	506	247
65	4048+50.00	Sag	300	300	800	206	181
66	4063+50.00	Crest	600	600	1000	506	247
67	4076+00.00	Sag	300	300	800	206	181
68	4086+00.00	Crest	600	600	1000	506	247
69	4096+00.00	Sag	300	297	800	206	181
70	4110+51.81	Crest	600	593	1000	506	247
71	4140+20.00	Crest	600	600	1000	506	247

No.	PVI Station	Proposed Curve Data			FDM Curve Length Criteria	K-Value Criteria	
		Type	Length (feet)	K-Value		FDM	AASHTO
72	4156+50.00	Sag	300	300	800	206	181
73	4166+50.00	Crest	600	600	1000	506	247
74	4176+50.00	Sag	300	300	800	206	181
75	4186+50.00	Crest	600	600	1000	506	247
76	4196+50.00	Sag	300	300	800	206	181
77	4206+50.00	Crest	600	600	1000	506	247
78	4216+50.00	Sag	550	550	800	206	181
79	4226+50.00	Crest	600	600	1000	506	247
80	4236+50.00	Sag	550	379	800	206	181
81	4264+50.00	Sag	390	300	800	206	181
82	4275+00.00	Crest	600	480	1000	506	247
83	4285+50.00	Sag	450	300	800	206	181
84	4296+00.00	Crest	900	600	1000	506	247
85	4306+70.00	Sag	456	300	800	206	181
86	4316+70.00	Crest	924	601	1000	506	247
87	4326+70.00	Sag	468	300	800	206	181
88	4349+55.00	Sag	546	301	800	206	181
89	4373+00.00	Sag	300	191	800	206	181
90	4384+00.00	Crest	945	601	1000	506	247
91	4395+00.00	Sag	480	300	800	206	181
92	4406+00.00	Crest	960	600	1000	506	247
93	4416+80.00	Sag	390	269	800	206	181
94	4431+00.00	Crest	780	600	1000	506	247
95	4442+50.00	Sag	345	300	800	206	181
96	4458+50.00	Crest	600	600	1000	506	247
97	4471+50.00	Sag	300	300	800	206	181
98	4486+00.00	Crest	678	600	1000	506	247
99	4497+86.68	Sag	354	313	800	206	181

7.1.6 Tolled Projects

A Toll Siting Technical Memorandum was completed with the purpose of recommending a suitable tolling point location within the study limits, based on the criteria set forth in the 2023 General Tolling Requirements (GTR).

The existing Three Lakes Toll Plaza (MP 236) currently serves as the only tolling point between MP 155 and Clay Whaley Road. The typical section within this segment of Florida's Turnpike Mainline (SR 91) features a four-lane section with two (2) 12-foot lanes and two (2) 12-foot

shoulders in each direction. The proposed configuration expands this segment to eight (8) lanes, four (4) 12-foot lanes and two (2) 12-foot shoulders per direction.

The Fort Pierce Mainline Toll Plaza is located at MP 155 and the next toll gantry is Three Lakes at MP 236. This is a valid tolling approach due to the absence of interchanges between these points. However, future plans (as discussed in **Section 3.1**) include a Southport Connector Expressway at MP 233 and a new interchange at Nolte Road at MP 241 that is under construction, necessitating a new toll plaza to collect tolls before reaching the existing Three Lakes tolling point.

A new toll plaza will be constructed to maintain toll collection during reconstruction of Three Lakes. This facility will match the existing toll and will not be a throwaway, as it will meet future needs once the Southport Connector Expressway is operational.

Based on these considerations, the segment between MP 227 (Station 3860+00) and MP 229.5 (Station 3990+00) was selected for the proposed toll plaza. This segment is bounded by the Canoe Creek Service Plaza to the north and the bifurcated section to the south. South of the bifurcated section lies the Three Lakes Wildlife Management Area, where the availability of power service is significantly reduced.

The selected toll site location offers several advantages. The furthest most available location within the segment was chosen to reduce power service costs, as it allowed for minimized primary service conductor sizing and improved routing options. Its proximity to Canoe Creek Road and the Canoe Creek Service Plaza enhances access and infrastructure support. The proposed toll site could not be located closer to the existing Three Lakes Toll Plaza due to geometric constraints, including a horizontal curve on the approach to the Canoe Creek Service Plaza, multiple vertical curves, and the presence of two bridges, one over Canoe Creek and another carrying Canoe Creek Road over the Turnpike. A full toll site analysis, including evaluation of constraints, can be found in the Toll Siting Technical Memorandum in the project file.

7.1.7 Intelligent Transportation System and TSM&O Strategies

The proposed improvements will require the relocation of existing ITS infrastructure. The anticipated impacts to the existing ITS devices by the preferred alternative and preliminary requirements on the operation and improvements recommendation are further detailed in the Concept of Operations, TSM&O Technical Memorandum and Conceptual Signing and Pavement Marking, ITS and Lighting Plans found in the project file. Recommendations for the existing ITS FOC communications and ITS infrastructure are listed below. The following recommendations shall be evaluated during final design.

FOC Communications Backbone

Within the project corridor, a 96-count FOC backbone serves as the primary communication network. Drops to Local Hubs (LHUBs) consist of 12-count and 24-count cables in accordance with current Enterprise standards. The Enterprise's tolling network also shares this backbone, utilizing the red and black fiber buffers, with 48-count drop cables extending to each toll site. The proposed PD&E improvements will affect the FOC backbone in two segments within the project limits:

- **Segment 1:** From Station 4080+00 to Station 4160+00
- **Segment 2:** From Station 4185+00 to Station 4240+00

These impacted segments will require the installation of new conduit, pull boxes, splice boxes, and replacement fiber optic cable. In addition, it is recommended that a new 144-count SM fiber optic cable be installed from the beginning to the end of the project corridor (from the splice box at Station 2115+60 to the splice box at Station 4519+64). All existing ITS and tolling devices within the study limits must be reconnected to the new fiber optic cable with new ITS and Tolls lateral connections replaced in kind.

Closed-Circuit Television (CCTV) Cameras

A new CCTV camera system will be designed and installed to accommodate the changes in roadway geometry. CCTV cameras will be strategically placed to ensure full coverage of all project segments, with consideration given to minimizing blind spots, optimizing viewing angles for incident detection, and supporting traffic operations monitoring.

Dynamic Message Signs (DMS)

Currently, there are no DMS coverage gaps within the corridor. A total of nine (9) DMS units are deployed—seven (7) along the main line and two (2) at service plazas. These signs are strategically positioned to enable Traffic Management Center (TMC) operators to disseminate real-time traffic information and incident notifications to motorists. While the DMS units at service plazas will remain in their current locations, roadway widening will necessitate the relocation of several mainline DMS units. Details regarding these relocations are provided in the Conceptual Signing and Pavement Marking, ITS and Lighting Plans found in the project file. In addition, it is recommended that verification CCTV cameras be installed at all mainline DMS locations, as these sites currently lack surveillance capability.

Some existing signs within the project corridor are monochrome, such as the DMS at Canoe Creek Service Plaza. Although current Enterprise standards specify the use of full-color DMS the use of these smaller DMS appears to be limited to safety-related text messages advising motorists entering the service plaza to check tire pressure and thread. Verification CCTV cameras are already installed at these locations and will remain.

Table 7-2 Overhead Signage Disposition

Location	Direction of Travel	Mile Post	Sign Type	Disposition
Florida's Turnpike Mainline (SR 91)	SB	195.7	Overhead DMS (Half Span)	Replace at MP 195.7
Florida's Turnpike Mainline (SR 91)	NB	208.2	Overhead DMS (Full Span)	Replace at MP 208.2
Florida's Turnpike Mainline (SR 91)	SB	224.7	Overhead DMS (Full Span)	Replace at MP 224.7

Location	Direction of Travel	Mile Post	Sign Type	Disposition
Florida's Turnpike Mainline (SR 91)	NB	227.6	Overhead DMS (Half Span)	Replace at MP 227.6
Entrance to Service Plaza	NB	229.5	Overhead guide sign (Cantilever)	
Entrance to Service Plaza	NB	229.9	Overhead DMS (Cantilever)	To remain
Entrance to Service Plaza	SB	230.3	Overhead DMS (Cantilever)	To remain
Entrance to Service Plaza	SB	230.5	Overhead guide sign (Cantilever)	
Florida's Turnpike Mainline (SR 91)	SB	230.9	Overhead DMS (Full Span)	Relocate at MP 230.8
Florida's Turnpike Mainline (SR 91)	NB	235.6	Overhead DMS (Half Span)	Replace at MP 235.6
Florida's Turnpike Mainline (SR 91)	SB	237.6	Overhead DMS (Half Span)	Replace at MP 237.6

Wrong Way Vehicle Detection System (WWVDS)

The existing pair of WWVDS highlighted signs at both entrances to the Canoe Creek Service Plaza utilize solar power and cellular communications. It is recommended that this WWVDS be upgraded to have AC power and fiber optic communications which are readily accessible at the adjacent service plaza DMS cabinet.

Microwave Vehicle Detection System (MVDS)

New MVDS sites will be added to improve coverage as necessary. Additional MVDS will be placed to cover all ramp exits/entrances within the project limits to provide queue detection and warning capability. All MVDS and ITS poles with MVDS will be replaced to accommodate the change in roadway geometry. The MVDS will be spaced at approximately one mile and will be collocated on CCTV camera poles, when possible, to minimize the amount of ITS poles needed.

Travel Time System (TTS)

All Bluetooth (BT) Automatic Vehicle Identification (AVI) detectors and ITS poles with BT AVI detectors will be replaced to accommodate the change in roadway geometry. Typically, new BT AVI are added at mainline DMS sites to enhance data collection and information dissemination capabilities.

Power Infrastructure Improvements

It is recommended that a new power service from the appropriate utility companies be installed with transformers placed at strategic locations to allow for new power distribution for proposed ITS devices impacted by the PD&E recommendation. Additionally existing 600V systems will need to be replaced with a 480V system or lower depending on further analysis since the use of 600V is allowed by FDM. Existing older ITS cabinets will need to have new UPS as a system enhancement. The existing generators currently providing back-up power primarily to existing mainline DMS and nearby ITS are not impacted by the PD&E improvements and will remain.

TSM&O Strategies

While the preferred alternative will have impacts on the existing ITS infrastructure, it also provides an opportunity for ITS upgrades as well as the inclusion of operations and maintenance strategies during construction for system efficiency. **Table 7-3** below is an excerpt of only the strategies and supporting ITS infrastructure or operational improvements recommended for this project. As summarized in the TSM&O Technical Memorandum, these strategies along with other TSM&O initiatives under consideration by the Enterprise will require additional review and evaluation during the design phase of the project to ensure the proposed project needs are addressed.

Table 7-3 Application TSM&O Strategies and Recommendations

Strategy	Recommended Supporting ITS Infrastructure or Operational Improvement
Freeway Management Systems (FMS)	• Maintain and expand the current ITS network (CCTV, MVDS, Bluetooth, RWIS, DMS, and HAR) • Communication upgrades include new managed field ethernet switch (MFES) at all new sites and upgrade of the FOC backbone to 144-CT fiber • Power system upgrades include UPS, remote power management unit. • New DMS shall be full color and meet Enterprise and FDM standards.
Access Management	Install Vehicle detection (BT or MVDS) near gore section of off-ramps for queue detection (southbound off ramp to Yeehaw Junction).
Dynamic Detour System (DDS)	The proposed ITS network enhancements will provide real-time freeway and alternate route traffic conditions.
Dynamic Merge Control (DMC)	Use of the existing and proposed Dynamic Message Signs (DMS) will facilitate implementation for upstream temporary lane closures.
Queue Warning	The existing and proposed DMS can be used to provide warning messages about significant queues or slow down traffic ahead.
Traveler Information Services	The proposed ITS network enhancements will provide real-time freeway and alternate route traffic conditions. Information can be displayed on DMS and Florida's statewide website, telephone system (FL 511).
Traffic Incident Management (TIM) Program	Deploy additional dedicated service patrol units during construction specifically in the urban section of the project.

Strategy	Recommended Supporting ITS Infrastructure or Operational Improvement
Data Integration Video Aggregation System (DIVAS)	Continue aggregation of video collected from existing and proposed close circuit television (CCTV) cameras to Florida's statewide tool used to share data with public and private partners.
Road Weather Information System (RWIS)	Install additional RWIS coverage in the middle and northern sections of the project.
Vehicle to Infrastructure (V2I) Communication	Collocate Roadside Units (RSU) with other ITS devices such as CCTV camera and Microwave Vehicle Detection System (MVDS) sites as much as possible to minimize the need for additional infrastructures such as dedicated poles, cabinets, power and communications equipment. The 14 CCTV sites to be relocated should be considered.

7.1.7.1 Long Term Deployment Strategies

The relocation of existing ITS infrastructure impacted by roadway widening will provide the Enterprise with infrastructure at the beginning of its service life, including the installation of a 144-count FOC backbone. This enhanced backbone will support future expansion of ITS devices connected to the Enterprise network and ensure long-term system resilience. Below is a summary of recommended infrastructure upgrades and ITS services that should be evaluated and incorporated in future phases.

Connected Vehicle Expansion

The Enterprise has already installed CV technologies as part of the CV Deployment Project (FPID 442627-1). It is recommended that the Enterprise, while designing the replacement of the ITS, make the system ready for future CV infrastructure. This will include Road-Side Units (RSUs) and various applications that would make use of the RSUs.

RSUs are devices that can communicate various types of messages (travel times, Traffic Incident Management (TIM) messages, etc.) with On-Board Units (OBUs) within individual vehicles. These devices communicate by utilizing 5G communications through Cellular-Vehicle to Anything (C-V2X) communications to transmit and receive CV messages. They are built to withstand outdoor weather conditions and should be built according to the USDOT Federal Highway Administration (FHWA) 4.1 Specifications.

RSUs communications require clear line-of-sight between RSU and OBUs. Due to this, spacing considerations are critical to ensure that there are no communications interruptions between RSUs and OBUs. Current industry signal strengths allow for RSU spacing every mile in areas with clear line of sight or every half mile for areas where roadway geometry or presence of roadway elements such as overpasses, noise walls, or vegetation may interfere with signal coverage areas. As CCTVs and MVDS will be placed at every mile, it is recommended that RSUs be collocated with ITS poles as much as possible, lessening the need for additional poles and LHUBs. Fourteen (14) CCTV camera sites with collocated devices such as MVDS, RWIS and/or BT as shown in the concept roll plot will require relocation and should be considered as priority candidates for RSU installation fulling CV readiness.

CV Applications

The Enterprise is currently developing the Connected Vehicles Smartphones as a Sensor Surrogate (CV-SaaS) safety application that aims to emulate OBU data utilizing smartphone data to detect unsafe driving conditions and generate system-wide and user-based alerts in near real-time. In addition, the smartphone application (which at the time of this writing is not available to the public) will use audible alerts to minimize driver distraction). The following CV applications are for information and potential implementation within the study limits and are not indicative of prioritization or currently being developed under the existing CV Smartphone contract between the Enterprise and any of its CV vendors:

- **Queue Warning** - This application utilizes sensors to detect if a queue for off ramps has backed up to a certain point on the off ramp and warns motorists exiting on the mainline if

they are approaching a stopped queue. Vehicles outfitted with OBUs will receive targeted messages warning them of stopped vehicles ahead. Vehicles without OBUs will still receive warnings in the form of physical signs mounted along the ramp that either flash or have beacons that flash when the Queue Warning application is activated.

- **Wrong-way Warning** - As a CV application, vehicles outfitted with OBUs will receive targeted messages warning them of the wrong way vehicles. This is achievable either through the IVP hub or a special module provided by the wrong way manufacturer.
- **Spot Weather Impact Warning (SWIW)** - This application utilizes available technologies that can alert drivers of unsafe conditions or roadway closure due to high winds, fog, or flood.
- **Reduced Speed/Work Zone Warning (RSWZW)** - This application utilizes a portable RSU to notify road users downstream of an approaching construction zone and providing notifications such as "reduce speed", "change lanes", "lane closures", and notify motorists of lane shifts and of workers present or vehicle/truck entering mainline, allowing oncoming travelers advanced notification or warnings.

Roadway Safety Detection Using Artificial Intelligence (AI)

As edge computing capabilities of CCTVs increase, there is an opportunity to place additional CCTVs on ITS poles to perform real-time safety analytics. It should be noted that as these applications utilize AI, the Enterprise would have to implement these technologies in accordance with the FDOT AI Policy 010-325-065. Due to the ever-changing landscape of AI technology, the exact form of detection (static cameras, LiDAR, etc.) utilized for these applications should be evaluated at the time of design/construction.

7.1.8 Landscape

Landscaping improvements are not proposed as part of this project.

7.1.9 Lighting

A preliminary analysis was performed to evaluate impacts to the existing lighting for the preferred alternative. The existing ramp lighting at the Yeehaw Junction interchange and Canoe Creek Service Plaza is impacted by the proposed improvements and requires the replacement of several light poles. Similarly, the proposed improvements in the urban segment will require new lighting. The list below summarizes the preliminary quantity of light poles to be replaced with new poles and luminaires as well as new lighting.

- Yeehaw Junction: one (1) shoulder mounted light pole, northbound on ramp to Florida's Turnpike Mainline (SR 91)
- Canoe Creek Service Plaza: Twelve (12) shoulder mounted light poles, three (3) at each entrance and exit ramp.

- Urban Segment: 236 light poles, shoulder mounted, northbound and southbound direction.

Proposed new lighting at the Yeehaw Junction interchange and Canoe Creek Service Plaza will be connected to existing load centers. Two (2) electrical load centers are estimated to be required for the proposed new lighting within the urban segment. All proposed lighting will include standard aluminum poles, top mounted using LED luminaires per current Enterprise requirements. The number of poles, luminaire illuminance and distribution type will be further analyzed during the final design phase of the project.

7.1.10 Wildlife Crossings

Wildlife crossings and crossing features not only promote habitat connectivity and increase motorist safety, but they also have an added benefit to reduce impacts to protected species. It is also important to consider features for both large and small animals. Small animals killed in the roadway may not impact the motorist but, as roadkill, they become an attractant for other animals, particularly birds, that feed on carrion. The crested caracara has been documented within the corridor and eat carrion, which increases the chances that caracara would be struck by a vehicle as well when accessing the food source. During the field visit, a juvenile caracara was observed as roadkill adjacent to another small animal roadkill along the corridor. Therefore, implementation of appropriate wildlife crossing features could also reduce impacts to protected species.

The Enterprise will continue to evaluate the inclusion of wildlife crossings and/or habitat connectivity enhancements during design phase. The following wildlife crossing features are recommended to be evaluated during the design phase:

- Install 10-foot-tall fencing between MP 193.5 and MP 231.7, within the rural segment.
- Bury the new fencing in the ground and connect it to existing and proposed structures (culverts, bridge culverts, and bridges) along the corridor.
- Maintain the existing location, width, height, and wildlife shelves of existing culverts, bridge culverts, and bridges for wildlife connectivity between MP 193.5 to MP 236.0.

The wildlife crossings are actively being coordinated with Enterprise staff and will be discussed with resource agencies in the near future.

7.1.11 Permits

The preferred alternative will require permits from state and federal regulatory agencies for impacts to wetlands, other surface waters (OSWs), and water quality. Since the preferred alternative is anticipated to impact regulated wetlands, **Table 7-4** below lists the anticipated permits associated with the construction of the preferred alternative.

Table 7-4 Anticipated Permits for the Preferred Alternative

Permit Type	Agency
Section 404 Dredge and Fill Permit - Regional General Permit SAJ-92	USACE
Section 408 Permit	USACE
Individual Environmental Resource Permit (ERP)	SFWMD / SJRWMD
Right-of-Way Occupancy Permit	SFWMD
National Pollution Discharge Prevention and Elimination System (NPDES)*	FDEP

Notes: *This permit will be obtained by the selected construction contractor

7.1.12 Drainage and Stormwater Management Facilities

The drainage collection and treatment system for the rural segment is summarized below.

- Runoff from the median grass area and inside shoulders of both directions flows toward the median ditch bottom inlets and is then conveyed to roadside ditches by a closed pipe system.
- Runoff from three (3) traffic lanes and the outside shoulder flows off the roadway to a roadside ditch in each direction.
- Dry detention swales are proposed to collect and treat runoff from roadside ditches. After being treated, water is released to the closest cross-drain culvert.

The drainage collection and treatment system for the urban segment is summarized below.

- Runoff from two (2) inside traffic lanes and the inside paved shoulder in both directions flows toward the median barrier wall inlets and is then conveyed to roadside ditches by a closed pipe system.
- Runoff from two (2) outside traffic lanes and the outside paved shoulder flows off the roadway to a roadside ditch in each direction.
- Dry detention swales are proposed to collect and treat runoff from roadside ditches. After being treated, water is released to the closest cross-drain culvert.

Swales shall be constructed with a bottom elevation at least 1-foot above the assumed SHGWT. An orifice at the bottom of each swale is recommended to release the treated water. The orifice shall be set at or above the SHGWT to ensure a properly maintained dry swale and sized to discharge no more than 0.5-inches of detention volume in 24 hours or has a minimum size of six

(6) square inches. The top-term elevation of dry swales should be high enough to contain the required Dry Detention Volume and a 100-year, 72-hour storm from the basin. The minimum treatment volume depths for dry detention swales are assumed to be 0.5-feet. The top of the swale should include a 10-foot maintenance berm, with a 1:6 front slope and a 1:4 back slope. All swales are sized to provide 1-foot of freeboard and include a 20% additional pond area factor for landscaping and tie-in slopes.

7.1.13 Floodplain Analysis

Within the project limits, Florida's Turnpike Mainline (SR 91) passes through fifty (50) flood zone areas, with a total length of approximately 69,643-feet or 13.19-miles. About 10.12 miles pass through Flood Zone A without Base Flood Elevation (BFE), and 3.07 miles pass through Flood Zone AE with BFE or depth. About 2,790-feet of Florida's Turnpike Mainline (SR 91) passes through a 0.2% annual chance of flood hazard area. Most of the existing cross-drains (culverts and bridges) act as floodways. Bridge BD_30 over Canoe Creek (C-34 Canal) and Bridge BD_40 over W.P.A Canal are classified as a Regulated Floodway in the FEMA Flood Insurance Rate Maps (FIRMs). The proposed widening is limited to within the ROW; no off-site basins will be impacted. The existing corridor was built about 4-feet higher than the roadside ground elevation; thus, it is assumed that no flood elevations in flood zones have overtopped the existing surface. As a result, the floodplain encroachment areas are limited only to newly added lanes.

Within this PD&E effort, it is assumed that each of the dry detention system volumes is "stacked" instead of taking credit for any volumes overlapping. This provides a conservative estimate that can be further evaluated during the final design phase. Dry detention systems were proposed to treat water quality from impervious areas, attenuate stormwater from impervious areas, and offset FEMA floodplain encroachment caused by roadway improvements.

7.1.14 Bridge and Structure Analysis

The widening or reconstruction of the existing bridge structures are recommended to accommodate the construction of the preferred alternative. A summary of recommended improvements is included below and summarized in **Table 7-5**. Refer to the Bridge Analysis Report for additional details (found in the project file).

Table 7-5 Proposed Bridge Improvements

Location	Bridge Number	Description	Proposed SR 91 Roadway Improvement	Proposed Bridge Improvement	Cost of Improvement
MP 195.7	920018	US 441 over SR 91	6-Lane Widening	Replacement	\$4,523,040.00
MP 199.1	920059	SR 91 SB over Outfall Canal	6-Lane Widening	Widening	\$1,562,557.50

Project Development and Environment Study
Widening Florida's Turnpike Mainline (SR 91) from north of SR 60 to south of Clay Whaley Road
Florida Department of Transportation, Florida's Turnpike Enterprise

Location	Bridge Number	Description	Proposed SR 91 Roadway Improvement	Proposed Bridge Improvement	Cost of Improvement
MP 199.1	920126	SR 91 NB over Outfall Canal	6-Lane Widening	Widening	\$1,562,557.50
MP 206.3	920061	SR 91 SB over Drainage Canal	6-Lane Widening	Widening	\$1,171,800.00
MP 206.3	920127	SR 91 NB over Drainage Canal	6-Lane Widening	Widening	\$1,171,800.00
MP 207.5	920941	Lake Marian Road/ CR 523A over SR 91	6-Lane Widening	Replacement	\$6,356,400.00
MP 208.4	920025	S. Canoe Creek Road/ CR 523 over SR 91	6-Lane Widening	Replacement	\$5,094,400.00
MP 220.9	920064	SR 91 SB over Outfall Canal/Renison Road	6-Lane Reconstruction	Replacement	\$2,183,373.75
MP 220.9	920128	SR 91 NB over Outfall Canal/Renison Road	6-Lane Reconstruction	Replacement	\$2,183,373.75
MP 228.8	920067	SR 91 SB over Canoe Creek	6-Lane Reconstruction	Replacement	\$4,559,841.00
MP 228.8	920129	SR 91 NB over Canoe Creek	6-Lane Reconstruction	Replacement	\$4,559,841.00
MP 229.4	920042	N. Canoe Creek Road/ CR 523 over SR 91	6-Lane Reconstruction	Replacement	\$7,015,920.00
MP 235.4	920070/ 920130	SR 91 over Fanny Brass Creek	8-Lane Reconstruction	Replacement	\$4,301,792.50
MP 235.9	920131	Friars Cove Road over SR 91	8-Lane Reconstruction	Replacement	\$6,734,160.00

Location	Bridge Number	Description	Proposed SR 91 Roadway Improvement	Proposed Bridge Improvement	Cost of Improvement
MP 237.1	920072/ 920132	SR 91 over Gator Bay	8-Lane Reconstruction	Replacement	\$4,301,792.50
MP 238.1	920073/ 920133	SR 91 over WPA Canal	8-Lane Reconstruction	Replacement	\$4,916,207.75

Bridge Structures

Most of the existing Florida's Turnpike Mainline (SR 91) bridges within the project limits require replacement to accommodate the proposed six (6) lanes or eight (8) lanes in the rural and urban sections respectively. The bridges at MP 199.1 (Bridge Nos. 920059/920126) and 206.3 (Bridge Nos. 920061/920127), are located within a roadway segment that is proposed to be milled, resurfaced and widened. As such, a cost analysis was carried out to evaluate replacement of these bridges versus widening. The categories analyzed include geometry, bridge cost, roadway cost, maintenance, canal conveyance and load rating with scores for each category range from 1 to 5. Although these bridges are beginning to age, the structures have a current Health Index of 97.0 or more, and a Sufficiency Rating of 98.6 or more. They also have sufficient load carrying capacity with a Load Rating Inventory (LRFR) of 44.7 and provide adequate freeboard clearance to design high water. Widening provides an opportunity to save significant project costs, particularly from a roadway perspective. In addition to the cost of the new bridges, replacement would require an alignment shift as well as reconstruction of the mainline roadway to facilitate construction of the bridge. **Table 7-6** shows the results of this comparative analysis and recommends widening of these bridges.

Table 7-6 prestressed Slab Bridge Cost Analysis

Scoring Category	Category Weight	Widening Ranking	Replacement Ranking	Widening Score	Replacement Score
Geometry	20%	5.0	4.0	1.00	0.80
Bridge Cost	30%	5.0	4.0	1.50	1.20
Roadway Cost	20%	4.0	1.0	0.80	0.20
Maintenance	20%	1.0	4.0	0.20	0.80
Canal Conveyance	5%	3.0	4.0	0.15	0.20
Load Rating	5%	5.0	5.0	0.25	0.25
	100%			3.90	3.45

The five existing overpass bridges within the project limits have intermediate multi-column piers which are located within the median as well as outside edge of shoulders of Florida's Turnpike Mainline (SR 91). Due to this existing pier support placement, all overpass bridges require replacement to accommodate the proposed eight (8) lane typical section and thus widening was not considered.

Bridge and Box Culverts

The condition of existing bridge culverts within the project limits was reviewed to evaluate replacement versus extension. The following criteria were used in this analysis.

For culverts located within the milling and resurfacing with widening segment of the project:

- If the culvert is in excellent condition (Health Index > 90) and has a satisfactory Inventory Load Rating (LRFR or LFR > 36 tons) as applicable, extension is recommended. However, no extension is proposed if the existing length exceeds the required length to accommodate the widening while maintaining the roadside shielding of the existing headwalls.
- If the culvert is in poor or declining condition (Health Index below 90) or has a low Inventory Load Rating (LRFR or LFR < 36 tons) as applicable, then replacement is recommended.

For culverts located within segments proposed to be reconstructed:

- Replacement of the culvert is recommended. Per Enterprise preference, existing box culverts should be replaced with pipes of similar drainage capacity.

Of the twelve (12) existing bridge culverts, three (3) (Bridge Nos. 920058, 920076 & 920092) are located within the segment to be milled, resurfaced and widened and are in excellent condition with satisfactory load ratings. They are recommended to be maintained as-is. No extension is required. The remaining nine (9) bridge culverts are recommended for replacement with pipes.

Of the eighteen (18) box culverts, six (6) are located within the segment to be milled, resurfaced and widened (Structure Nos. 92Q003, 92Q004, 92Q009, 92Q015, CD-28A and CD-29) and are in excellent condition. They are recommended to be maintained as-is. One (1) culvert (No. 92Q002) within this segment is in excellent condition but requires extension to accommodate the proposed embankments. The remaining eleven (11) culverts are recommended for replacement.

Wildlife Crossing Evaluation

Nine (9) existing box culverts were evaluated for the feasibility of accommodating a wildlife crossing. The options evaluated include a 4-ft high wildlife shelf above the SHGWT within the wetland culvert or an adjacent upland culvert with minimum dimensions of 4-foot H x 8-foot W above the SHGWT. Bridge Culvert No. 920058 at MP 194.0 was also evaluated for the feasibility of replacing the culvert with a bridge for large mammal crossings. These locations were analyzed from a geometric perspective, placing the headwalls outside the clear zone and assuming a minimum 1-foot headwall and a 4-foot box height to replace the existing bridge and box culverts for all locations except at Bridge Culvert No. 920058, which was analyzed with an 8-foot box height to match the existing bridge culvert dimensions. Three culverts at MP 212.8 and MP 229.6

(Culvert Nos. 92Q011, 92Q021 and 92Q022) can accommodate wildlife improvements with no impact to the proposed roadway. Culvert No. 92Q015 at MP 218.9 can accommodate the wildlife improvements with the addition of guardrail protection so that the headwall can be located within the clear zone. Bridge Culvert No. 920058 at MP 194.0 can accommodate a wildlife shelf within the wetland culvert if the existing roadway profile is increased by a minimum of 2-ft. The option for replacement with a bridge was eliminated as it would require a significant increase in roadway profile to accommodate the large mammal crossing. The four remaining bridge and box culverts at MP 214.1, 215.2, 217.0 and 220.0 (Culvert Nos. 920080, 92Q012, 920063 and 92Q016) can accommodate wildlife improvements with the addition of guardrail protection so that the headwall can be located within the clear zone as well as a minimum roadway profile increase of 3-inches to 2-feet, depending on the location. The addition of guardrail as well as minor profile adjustments at the various culvert locations will be assessed further in final design.

The wildlife crossings are actively being coordinated with Enterprise staff and will be discussed with resource agencies in the near future.

Farm Access Culverts

Twelve (12) farm access culverts are located within the limits of the proposed widening of the Florida's Turnpike Mainline (SR 91). Given the favorable condition of the existing farm access culverts, eleven (11) of these culverts are recommended to be widened and rehabilitated to accommodate the proposed roadway improvements. Construction of the new roadway will require removal of the existing culvert headwall and wingwalls and extended to the outside. Additionally, the existing median slab constructed in 1975 was designed with AASHTO H-10 loading requirements and will need to be reconstructed to current vehicle loading in the proposed roadway configuration.

One (1) farm access, culvert No. 92Q026, is located immediately adjacent to residential housing developments and no longer serves its original rural intent as a farm access facility and is proposed to be removed as part of the preferred alternative.

Roadway resurfacing of the Florida's Turnpike Mainline (SR 91) in 1998 to improve the cross-slope of the roadway from 1.56% to 2.0% and widen the shoulders, added additional overlay on top of the existing culverts. Portions of the existing culverts which are to be widened or reconstructed can be designed for additional fill and/or overlay on the culverts, however the proposed roadway profile will need to be carefully considered in final design to minimize additional loading to the existing culverts. Transition of roadway cross slopes before and after the culverts like that which are done for bridges will be necessary to limit the impacts of additional loading on the culverts.

Two existing farm access culverts were evaluated for the feasibility of accommodating wildlife crossings (Culvert Nos. 92Q013 and 92Q014). Culvert No. 92Q013 is also recommended to accommodate nature trails and maintenance vehicles, and Culvert No. 92Q014 is also recommended to accommodate maintenance vehicles. As the heights of the culverts are 13-ft and 10-ft, respectively, and the invert elevations of the culverts are above the SHGWT, both farm

access culverts can accommodate wildlife crossings and maintenance vehicles, and culvert no. 9Q2Q013 can additionally accommodate a nature trail.

The wildlife crossings are actively being coordinated with Enterprise staff and will be discussed with resource agencies in the near future.

Estimated Culvert Cost

The estimated total cost for extension or removal of the twelve Cattle Crossing Culverts is \$6,127,647.99. Culvert widening costs are based on a unit cost of \$2,000.00 per cubic yard of concrete, and \$1.50 per pound of reinforcing steel, with a 20% escalation for phased construction and temporary walls and is assumed to include minor demolition associated with widening. The assumed cost of removal of culvert no. 92Q026 is based on a unit cost of \$800.00 per cubic yard of existing concrete.

The estimated cost for extension of box culvert 92Q002 is \$215,126.67 based on the same unit costs used for the Cattle Crossing Culverts. The estimated costs for replacing culverts with pipes are not included in this report and can be found in the Bridge Hydraulics Report in the project files.

7.1.15 Transportation Management Plan

A Transportation Management Plan (TMP) is required for minimizing activity-related traffic delays and crashes and to ensure work zone safety for both the traffic and construction workers. The goal is to reduce congestion during construction by managing traffic through the project area in a safe manner. Temporary Traffic Control Plans (TTCP) will be prepared during the final design phase to safely construct the proposed improvements while maintaining the facility open to traffic. The project will adhere to the FDM and standard Plans.

Florida's Turnpike Mainline (SR 91)

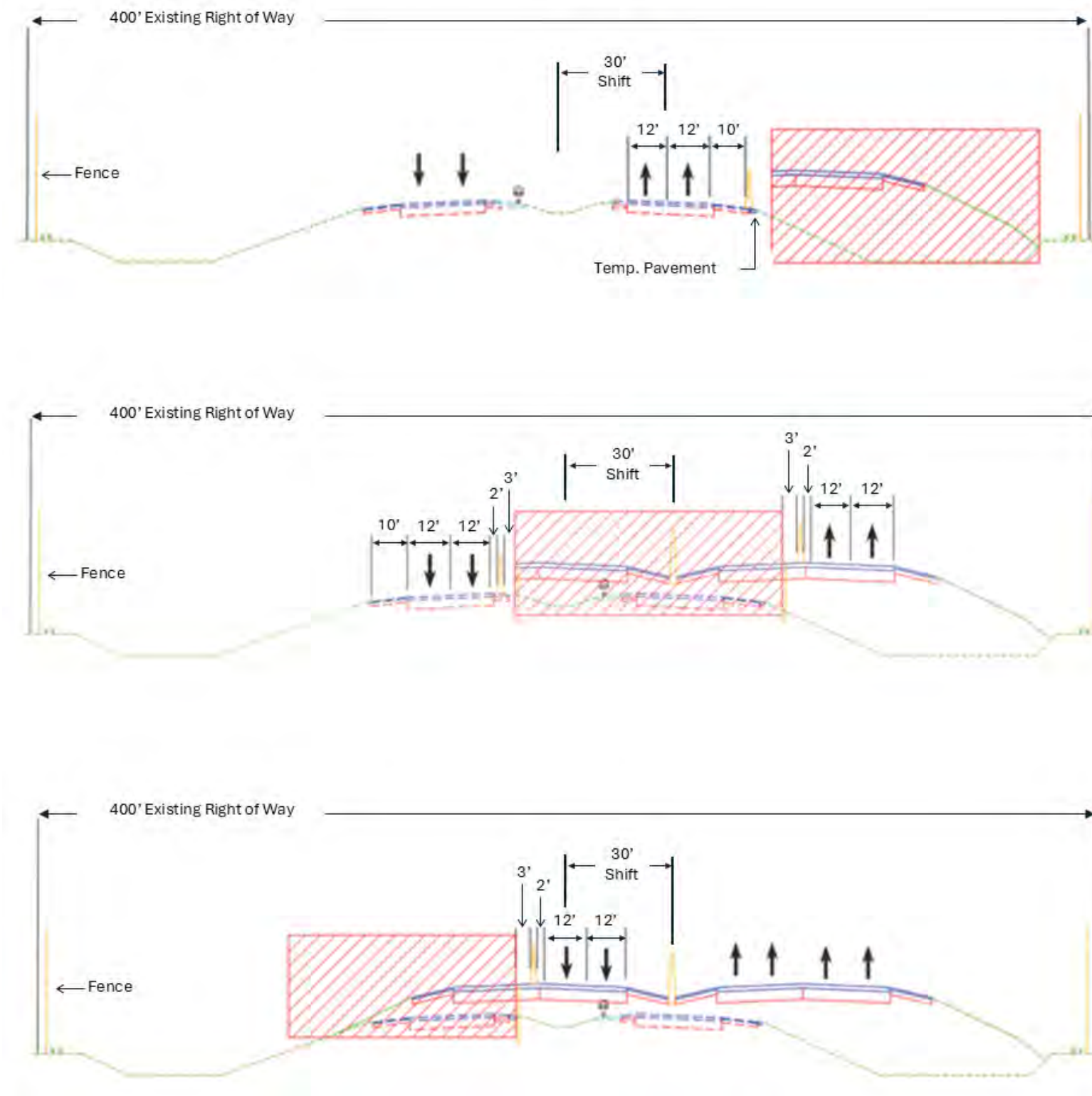
Reconstruction Segments: Where pavement reconstruction is required to raise the profile, the preferred alternative alignment has been shifted to the east 30 to 37-feet to minimize temporary pavement and traffic impacts. **Figure 7-4** depicts the conceptual construction phasing schemes along Florida's Turnpike Mainline (SR 91).

In Phase I, a substantial portion of the proposed northbound pavement is constructed while northbound and southbound traffic is maintained on the existing facility. In Phase II, northbound traffic is shifted to the newly built northbound pavement while work on the median, the remainder of the northbound pavement, and part of the southbound pavement is constructed. In Phase III, southbound traffic is shifted into the newly built southbound pavement while construction of the remaining southbound work is completed.

Widening Segments: Segments where the preferred alternative recommends milling, resurfacing and widening will also be constructed in three (3) phases. In Phase I, temporary asphalt pavement is constructed in the median. In Phase II, traffic is shifted to the outside onto the temporary pavement and both northbound and southbound widening is constructed. In Phase

III, northbound and southbound traffic is shifted to the outside while work in the median is completed.

Pavement Reconstruction: In sections where full depth pavement reconstruction is required but horizontal shifts are not feasible, the conceptual construction sequencing is divided into four phases. In Phase I, temporary pavement is constructed in the median. In Phase II, southbound traffic is shifted onto the temporary pavement and most of the southbound side of the typical section is completed. In Phase III, southbound traffic is shifted onto the newly built southbound pavement, northbound traffic is shifted to the median and the northbound outside pavement is constructed. In Phase IV, northbound traffic is shifted to the newly built northbound pavement and the median is completed.



PHASE I DETAILS

1. Partial construction of new NB section

Use FDOT Index 102-100, 102-600, 102-602, 102-613

PHASE II DETAILS

1. Shift NB traffic onto newly build NB section
2. Complete remainder of NB section and median
3. Partial construction of new SB section

Use FDOT Index 102-100, 102-600, 102-602, 102-613

PHASE III DETAILS

1. Shift SB traffic onto newly build SB section
2. Complete remainder of SB section

Use FDOT Index 102-100, 102-600, 102-602, 102-613

Figure 7-4 Florida's Turnpike Mainline (SR 91) Conceptual TTCP

Structures

Section 7.1.14 of this report highlights the proposed improvements for existing structures. General construction sequencing is shown below. Additional information can be found in the *Bridge Analysis Report* in the project file.

Mainline Bridge Replacement: For the replacement of bridges along Florida's Turnpike Mainline (SR 91), **Figure 7-5** shows the three (3) phase construction sequence required. In Phase 1, the northbound bridge is partially constructed next to the existing bridge. In Phase 2, northbound traffic is shifted onto the newly constructed northbound bridge and the remainder of the northbound bridge is completed along with a portion of the southbound bridge. The existing northbound bridge is demolished in this phase. In Phase 3, southbound traffic is shifted onto the newly constructed southbound bridge, and the remainder of the southbound bridge is completed. The existing southbound bridge is demolished during this phase.

Mainline Bridge Widening: The widening of bridges along Florida's Turnpike Mainline (SR 91), can be constructed in two (2) phases. In Phase I, traffic is slightly shifted towards the inside and outside widening is constructed on both sides. In Phase II, traffic is shifted to its final location, shoulders are maintained at 10-feet with temporary barrier while widening to the inside is constructed on both sides.

Overpass Bridges: There is no feasible detour for the bridges that cross over Florida's Turnpike Mainline (SR 91). All five (5) overpass bridges will be constructed in two (2) phases. In Phase 1, traffic will be maintained while the new bridge is partially constructed. In Phase 2, traffic will be shifted onto the portion of the newly constructed bridge, while the existing bridge is demolished and the new bridge is completed.

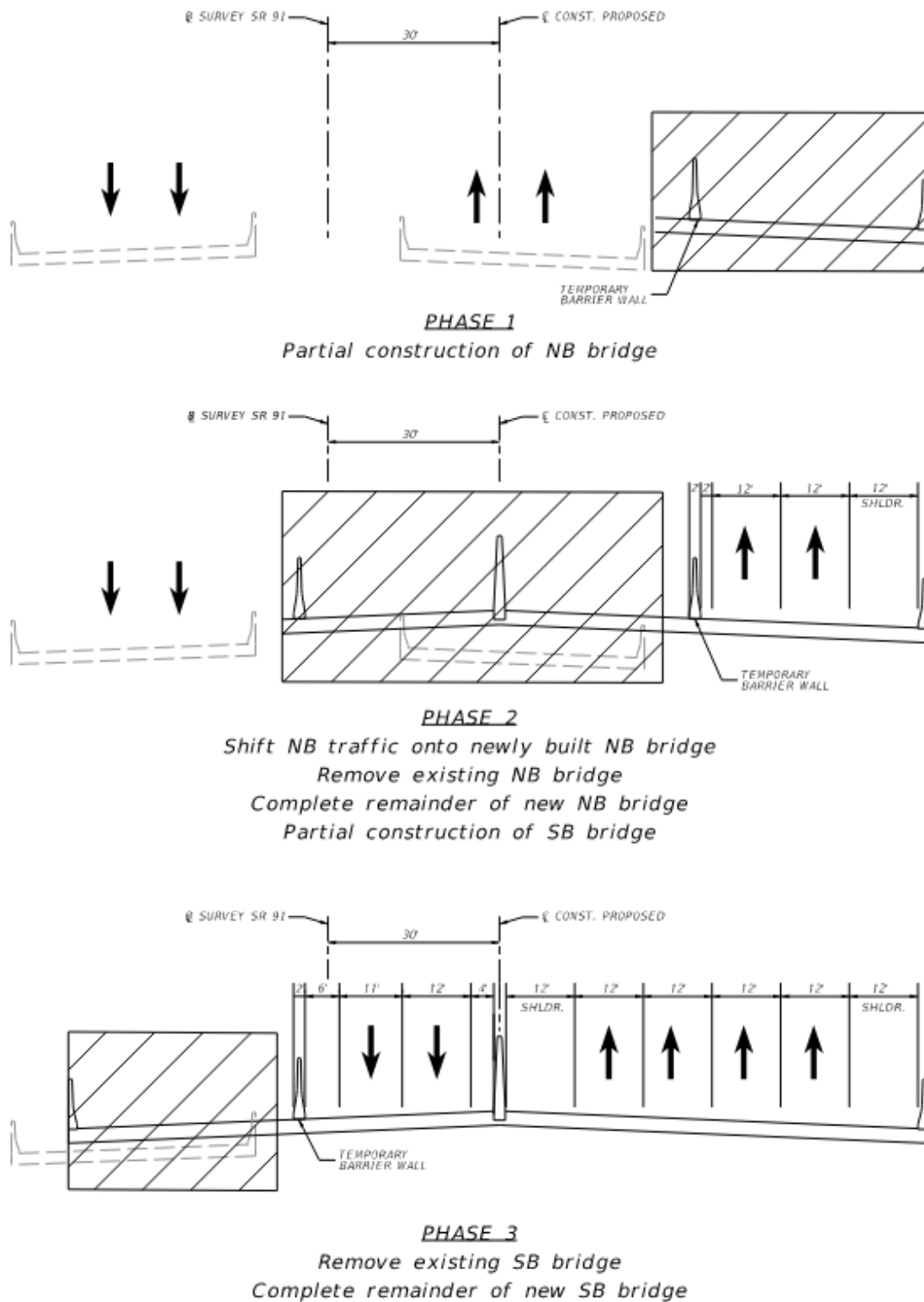


Figure 7-5 Florida's Turnpike Mainline (SR 91) Bridge TTCP Phasing

7.1.16 Constructability

No major constructability issues are anticipated. Since there is no interchange access throughout the 45-mile corridor, median crossovers for contractors will be evaluated as part of the TTCP during the final design phase. It is also recommended to coordinate with ongoing projects to the south and those within the urban segment (by others) to confirm construction schedules, potential overlap areas and maximize construction efficiencies while minimizing impacts to the traveling public. The project was divided into five construction segments as shown in **Figure 7-6**, with the following considerations. These should be re-evaluated during design to confirm assumptions and timing of other projects moving forward.

Segment 1: MP 193.5 to MP 204.4

- Rural, 10.9 miles
- Within SJRWMD (can be permitted as one project)
- Coordinate with ongoing project to the south
 - FPID 423374-2: Florida's Turnpike Mainline (SR 91) Widening from north of SR 70 (MP 152) to north of Yeehaw Junction/US 441/SR 60 (MP 193.5), currently in PD&E phase.
 - FPID 452574-1 - FDOT D5 SR 60 Widening from Prairie Lake Road to Florida's Turnpike Mainline (SR 91), currently in the PD&E phase.
- Bridges:
 - US 441 over SR 91
 - SR 91 southbound over Outfall Canal
 - SR 91 northbound over Outfall Canal

Segment 2: MP 204.4 to MP 213

- Rural, 8.6 miles
- Within SFWMD
- Bridges:
 - SR 91 southbound over Drainage Canal
 - SR 91 northbound over Drainage Canal
 - Lake Marian Road (CR 523 A) over SR 91
 - S. Canoe Creek Road (CR 523) over SR 91

Segment 3: MP 213 to MP 222

- Rural, 9 miles
- Within SFWMD

- Includes bifurcated segment
- Bridges:
 - SR 91 southbound over Outfall Canal/Renison Road
 - SR 91 northbound over Outfall Canal/Renison Road

Segment 4: MP 222 to MP 229

- Rural, 7 miles
- Within SFWMD
- Includes bifurcated segment
- Bridges:
 - SR 91 southbound over Canoe Creek
 - SR 91 northbound over Canoe Creek

Segment 5: MP 229 to MP 238.5

- Urban
- Within SFWMD
- Includes
 - Canoe Creek Service Plaza
 - Toll plaza
 - CFX's Southport/NE Connector (depending on timing) *
- Bridges
 - N. Canoe Creek Road (CR 523) over SR 91
 - SR 91 over Fanny Brass Creek
 - Friars Cove Road over SR 91
 - SR 91 over Gator Bay
 - SR 91 over WPA Canal
- This segment can be divided into two construction segments depending on timing of other improvements under consideration by others

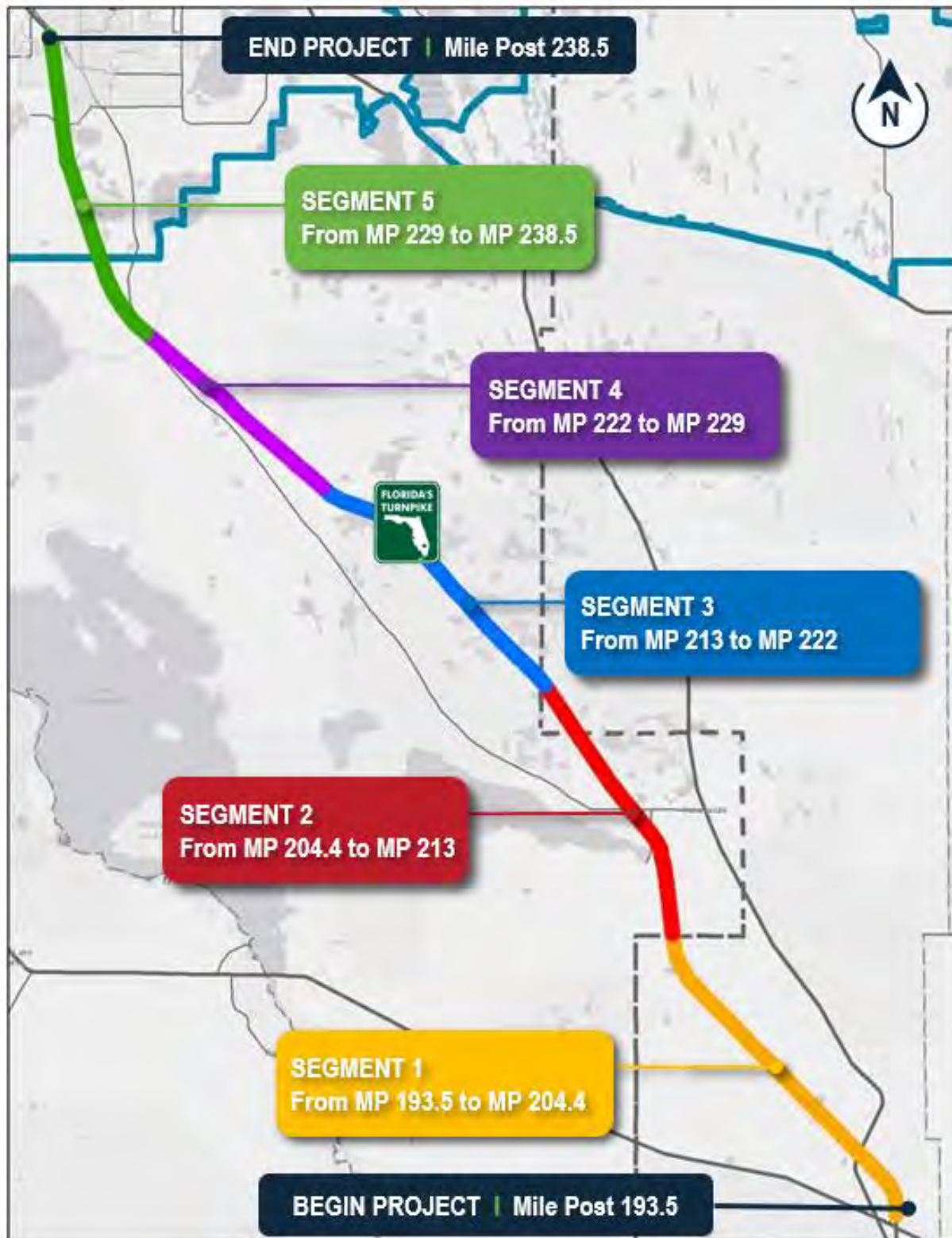


Figure 7-6 Proposed Construction Segments

7.1.17 Construction Impacts

Minor impacts from construction are anticipated. Potential impacts include delays associated with maintenance of traffic activities, especially during bridge construction. Some temporary construction easements may be required for the side street construction where the existing ROW is limited.

7.1.18 Special Features

Existing median crossovers (i.e., median openings) were evaluated against the requirements in FDM 211.3.2. The following criteria were reviewed for crossovers.

- Crossovers should not be spaced closer than three (3) miles apart.
- Crossovers should not be located within 1.5 miles of any interchange.
- Crossovers should not be located within 1,500-feet of the end of a speed-change taper (of a ramp or facility widening/narrowing) or any structure (bridge, overpassing facility or overhead sign).
- Crossovers should not be located where the median width is less than 40-feet and not located in urban areas.

Recommendations for existing and proposed crossovers are summarized in **Table 7-7**. The numbers (No.) column only labels the crossovers recommended for the preferred alternative.

Table 7-7 Proposed Median Crossover Locations

No.	Existing MP	Proposed MP	Recommended Disposition
1	195.494	195.427	Relocate/shift to provide 1500-ft from the US 441 bridge over Florida's Turnpike Mainline (SR 91)
	197.217		Remove to meet three (3) mile spacing
2	198.470	198.470	No change
3	200.520	202.500	Relocate to meet three (3) mile spacing
	204.398		Remove to meet three (3) mile spacing
4	205.410	205.510	Relocate to meet three (3) mile spacing
	206.515		Remove to meet three (3) mile spacing
	207.308		Remove to meet three (3) mile spacing
5		208.816	New median crossover proposed
	209.707		Remove to meet three (3) mile spacing
6		211.820	New median crossover proposed

No.	Existing MP	Proposed MP	Recommended Disposition
	212.705		Remove to meet three (3) mile spacing
7		214.851	New median crossover proposed
8	216.272	216.272	Does not meet three (3) mile spacing but recommend keeping as it is located within the bifurcated segment
9		218.032	New median crossover proposed
	220.495		Remove to meet three (3) mile spacing
10		221.205	New median crossover proposed
11	224.216		No change
12	228.386		No change
	231.592 *		Recommend removal to accommodate proposed CFX interchange area
	232.596 *		Recommend removal to accommodate proposed CFX interchange area
	234.602 *		Recommend removal to accommodate proposed CFX interchange area and proposed median less than 40-feet
	237.809		Recommend removal as median less than 40-feet

*** Median crossovers are not shown in the Concept Plans at these locations. Final disposition should be considered during the final design phase in coordination with timing of CFX improvements.*

7.1.19 Utilities

Fifteen utility companies were identified from data collected and a design ticket from Sunshine 811. There are potential conflicts between the utility facilities and the proposed widening. Potential conflicts include buried fiber, buried copper, and power poles. If Orlando Utilities Commission Electric and/or Duke Distribution poles are in conflict, then any joint users on the poles will be in conflict as well. The anticipated utility impacts and associated costs are summarized in **Table 7-8**.

Should impacts to utilities occur inside FDOT's ROW, utility relocation costs would be at UAO expense unless some other agreement is presented.

Table 7-8 Utility Impacts and Relocation Costs

Utility Agency/Owners	Location of Existing Utilities	Description of Existing Utilities	Estimated Relocation Cost (High level estimate provided)
AT&T Enterprises	Easement/Enterprise ROW	AT&T facilities are in the median of Florida's Turnpike (SR 91) and are there by easement but are not reimbursable per an agreement with the Florida Turnpike Enterprise.	Utility Expense
CenturyLink Local	County ROW/Enterprise ROW	CenturyLink Local has underground fiber and copper cables running parallel to the Florida's Turnpike Mainline (SR 91) and crossing under the Florida's Turnpike Mainline (SR 91) at various locations.	Utility Expense
Duke Energy Transmission	Duke Easement	Duke Transmission facilities cross Florida's Turnpike Mainline (SR 91) at MP 226.63.	\$1,000,000.00
Orlando Utilities Commission Communications	Within County ROW	Orlando Utilities Commission Communication	Utility Expense
Toho Water Authority	County ROW/Enterprise ROW	Toho Water Authority has an 18-in PVC wastewater pipe and an 8-in raw water line that crosses SR 91 to the east of Clay Whaley Road. Further to the east they have a 42-in steel casing with a 26-in HDPE raw water line and a 24-in steel casing pipe with a 14-in HDPE distribution line crossing SR 91 east of Clay Whaley Road. If Toho's facilities are in conflict, then they would be open to enter into a Utility Work by Highway Contractor Agreement. This would be at their expense.	Utility Expense

7.1.20 Project Costs

The Preferred Alternative can be constructed within the existing ROW. Cost estimates were prepared using FDOT's Long Range Estimate (LRE) system and summarized below in **Table 7-9**.

Table 7-9 Cost Estimate

	Cost
Construction	\$1,824,823,000
Contingency (15%)	\$273,724,000
Utility Relocations	\$1,000,000
SUB TOTAL	\$2,099,547,000
Design (15%)	\$314,933,000
CEI (15%)	\$314,933,000
TOTAL ESTIMATED PROJECT COST	\$2.73B

Wildlife crossings are not included in the LRE (to be evaluated further during design phase)

7.2 Summary of Environmental Impacts

7.2.1 Future Land Use

The preferred alternative will remain within the existing ROW. Therefore, there will be no conversion of land to transportation use. According to the future land use data, the area surrounding the project within the rural segment will continue to support vacant, rural, and conservation land uses, while the land use in the urban segment will support residential and mixed-use land uses. Therefore, the preferred alternative is not expected to affect the existing character or use of the surrounding area, but it will support planned developments within the area by meeting future travel demands.

7.2.2 Section 4(f)

Section 4(f) of the U.S. Department of Transportation (U.S. DOT) Act protects publicly owned and accessible parks, recreation areas, and wildlife and waterfowl refuges and historic sites, regardless of ownership and accessibility. Section 4(f) applies to projects that receive funding from or require approval by an agency of the U.S. DOT. As this project is state funded and no Federal permits or approvals are anticipated, Section 4(f) does not apply to this project.

7.2.3 Cultural Resources

Archaeological survey was performed throughout the Archaeological APE. Archaeologists safely excavated 191 shovel test pits (STPs), and all were negative for archaeological material. Additionally, the pedestrian survey did not identify any surface archaeological materials. There was no evidence of the Three Lakes Logging Tram (8OS01882) archaeological site within the APE. The project will have no effect on archaeological sites.

The survey of the historical built environment resulted in the documentation of one newly recorded linear resource (8OS03737), one new segment of a previously recorded linear resource (8OS03274), and two previously recorded historical structures (8OS03544 and 8OS03545). The State Historic Preservation Officer (SHPO) has already evaluated the three (3) previously recorded canals (8OS01927, 8OS02548, 8OS02549) and six (6) previously recorded bridges (8OS03246-8OS03251) within the APE as ineligible for listing in the National Register of Historic Places (NRHP). This survey did not identify any modifications to these resources.

The Enterprise possesses insufficient information to evaluate SR 60 (8OS03274) for listing in the NRHP. This segment of 8OS03274 has already been heavily modified and altered to accommodate Florida's Turnpike Mainline (SR 91), and no alterations to SR 60 are proposed as part of this project. The proposed activities will not diminish the character-defining qualities of the resource may qualify it for listing in the NRHP. As such, the project will have no adverse effect on 8OS03274.

The Enterprise has determined that the Canoe Creek Service Plaza, Building 1 (8OS03544) remains ineligible for listing in the NRHP, and that the Canoe Creek Service Plaza, Building 2 (8OS03545) remains eligible for listing in the NRHP. The proposed activities will not diminish the character-defining qualities of the resource that qualify it for listing in the NRHP. As such, the project will have no adverse effect on 8OS03545.

The Enterprise possesses insufficient information to evaluate the Canoe Creek Canal (8OS03737) for listing in the NRHP. The proposed activities will not diminish the character-defining qualities of the resource that may qualify it for listing in the NRHP. As such, the project will have no adverse effect on 8OS03274.

The Enterprise has determined that the proposed undertaking will have no adverse effect on properties listing in or eligible for listing in the NRHP. No additional investigation within the area of potential effect (APE) is necessary.

7.2.4 Wetlands

The study area was reviewed to identify wetlands and OSWs located within the limits of the preferred alternative. The project will remain within the existing ROW, which contains approximately 140.16 acres of historical forested wetlands and 43.10 acres of historical herbaceous wetlands. Although the exact number of wetland impacts will not be determined until the design and permitting phase of the project, it is preliminarily estimated that 11.14 acres of historical forested wetlands and 1.02 acres of historical herbaceous wetlands will be impacted, and require mitigation, as a result of the preferred alternative. Direct impacts to OSWs within the ROW are anticipated to the upland-cut, man-made ditches and at nine waterbodies (Cow Log Branch, Parker Slough, C-34 Canal, Gator Bay Branch, WPA Canal, and unnamed canals) that intersect Florida's Turnpike Mainline (SR 91). The preferred alternative would implement avoidance and minimization measures to the maximum extent practicable but is expected to result in unavoidable wetland and OSW impacts. Mitigation will be provided to offset unavoidable impacts to wetlands and wetland-cut ditches to achieve no net loss of wetland function. Therefore,

the proposed project is expected to result in no significant impacts on wetlands or other surface waters.

7.2.5 Protected Species and Habitat

The study area was evaluated for the presence of federally- and state-protected species and their habitat in accordance with the Endangered Species Act (ESA) and Part 2, Chapter 16 of the FDOT PD&E Manual, respectively. Twenty-five (25) listed animal species, 50 listed plant species, and two (2) species proposed for federal listing have the potential to occur within the study area. Of those, 15 animal species and 22 plant species have a moderate or high potential for occurrence and five (5) animal species were observed within the study area **Table 7-10** below lists the federal- and state- listed species and the effects determination for the preferred alternative. Additional surveys for the Audubon crested caracara and Florida bonneted bat are anticipated to be required and the need for a Florida grasshopper sparrow survey will be reviewed during the design and permitting phase of the project. The preferred alternative would implement avoidance and minimization measures to the greatest extent practicable. The NRE describes and summarizes the implementation measures and commitments that are anticipated to be necessary to receive the effects determinations provided below.

Table 7-10 Federal and State Listed Species with Effect Determination

Common Name	Effects Determination
Federally-Listed Species	
American alligator	No Effect
Lake Whales Ridge plants	
Audubon’s crested caracara	May Affect, Not Likely to Adversely Affect
Everglade snail kite	
Florida grasshopper sparrow	
Florida scrub-jay	
Red-cockaded woodpecker	
Wood stork	
Florida bonneted bat	
Florida panther	
Eastern indigo snake	
State-Listed Species	
Florida pine snake	No Adverse Effect Anticipated
Gopher tortoise	
Florida burrowing owl	
Florida sandhill crane	
Little blue heron	
Tricolored heron	
Southeastern American kestrel	

7.2.6 Essential Fish Habitat

The National Oceanic and Atmospheric Administration (NOAA) Fisheries (formerly known as the National Marine Fisheries Service) is the regulatory agency responsible for the nation's living marine resources and their habitats, including EFH. Based on the Efficient Transportation Decision Making (ETDM) coordination, the NOAA Fisheries concluded that the proposed project will not directly or indirectly impact EFH and provided a "No Involvement" determination. Based on the location of the project and comments received, the project will have no involvement with EFH.

7.2.7 Highway Traffic Noise

Within the project limits, noise levels were predicted at 388 Noise Abatement Criteria (NAC) B receptors representing 1,637 residences. Of these, 470 residences are predicted to approach or exceed the NAC under the 2050 Build condition and are therefore considered impacted.

Noise barriers were evaluated for the impacted noise sensitive sites. The results of the noise barrier evaluation conclude that noise barriers (see Error! Reference source not found. for more detail on the noise barriers) are a feasible and reasonable method to abate traffic related noise impacts for two noise sensitive areas and will provide at least a 5 dB(A) benefit to 399 impacted residences.

Statement of Likelihood

Enterprise is committed to the construction of feasible and reasonable noise abatement measures. Two potentially feasible and reasonable noise barrier systems have been identified for this project contingent upon the following conditions:

- Final recommendations on the construction of abatement measures are determined during the project's final design and through the public involvement process.
- Detailed noise analyses during the final design process support the need, feasibility, and reasonableness of providing abatement.
- Cost analysis indicates that the cost of the noise barrier(s) will not exceed the cost reasonable criterion.
- Community input supporting types, heights, and locations of the noise barrier(s) is provided to FTE; and
- Safety and engineering aspects have been reviewed and any conflicts or issues resolved.

A land use review will be performed during the design phase to identify all noise sensitive sites that may have received a building permit subsequent to the noise study, but prior to the project's Date of Public Knowledge (DPK). The date the SEIR is approved by the Enterprise, will be the DPK. If the review identifies noise sensitive sites that have been permitted prior to the DPK, then those sensitive sites will be evaluated during the design phase for traffic noise impacts and abatement considerations.

Table 7-11 Noise Barrier Evaluation Summary

Noise Barrier System (CNEs included in barrier system)	Number of Impacted Residences	Noise Barrier Height (ft.)	Noise Barrier Length (ft.) ¹	Noise Barrier Location	Total Preliminary Barrier Cost ²	Number of Residences Potentially Benefited by a Noise Barrier		Noise Barrier System Cost Per Benefited Residence
						Impacted	Total ³	
#1 (NB07) Esprit, Deer Creek West, Mallard Pond, & Keystone Pointe	280	22	6560	ROW ⁴	\$10,900,000	276	501	\$21,756
		22	5340	ROW ⁴				
		14	550	SH ⁵				
		14	300	SH ⁵				
		8	100	SH ⁵				
		8	100	SH ⁵				
#2 (SB06) Eden at Cross Prairie & The Meadow at Cross Prairie	123	22	6120	ROW ⁴	\$5,889,600	123	225	\$26,176
		14	500	SH ⁵				

1. Full height is for length indicated. The length for any required taper in height at a shoulder noise barrier termination would be in addition to the length indicated.
2. Unit cost of \$40/ft² for all noise barriers
3. Total includes impacted/benefited residences and residences with a predicted noise level that does not approach or exceed 67 dBA, but are incidentally benefited.
4. ROW - Right of Way noise barrier
5. SH - Shoulder noise barrier

This information will be updated once the Noise Study Report becomes available

7.2.8 Contamination

A Limited Contamination Evaluation Screening Report (LCSER) was prepared to evaluate existing contamination conditions the project could potentially be involved with. A study area was established to include a 500-foot radius from the project limits and outside of the ROW. Contamination risk ratings (CRRs) were assigned to potential contamination sites within the study area as shown in **Table 7-12**. The CRR system was developed by FDOT and incorporated four levels of risk: *No*, *Low*, *Medium* and *High*.

Table 7-12 Potential Contamination Site Summary

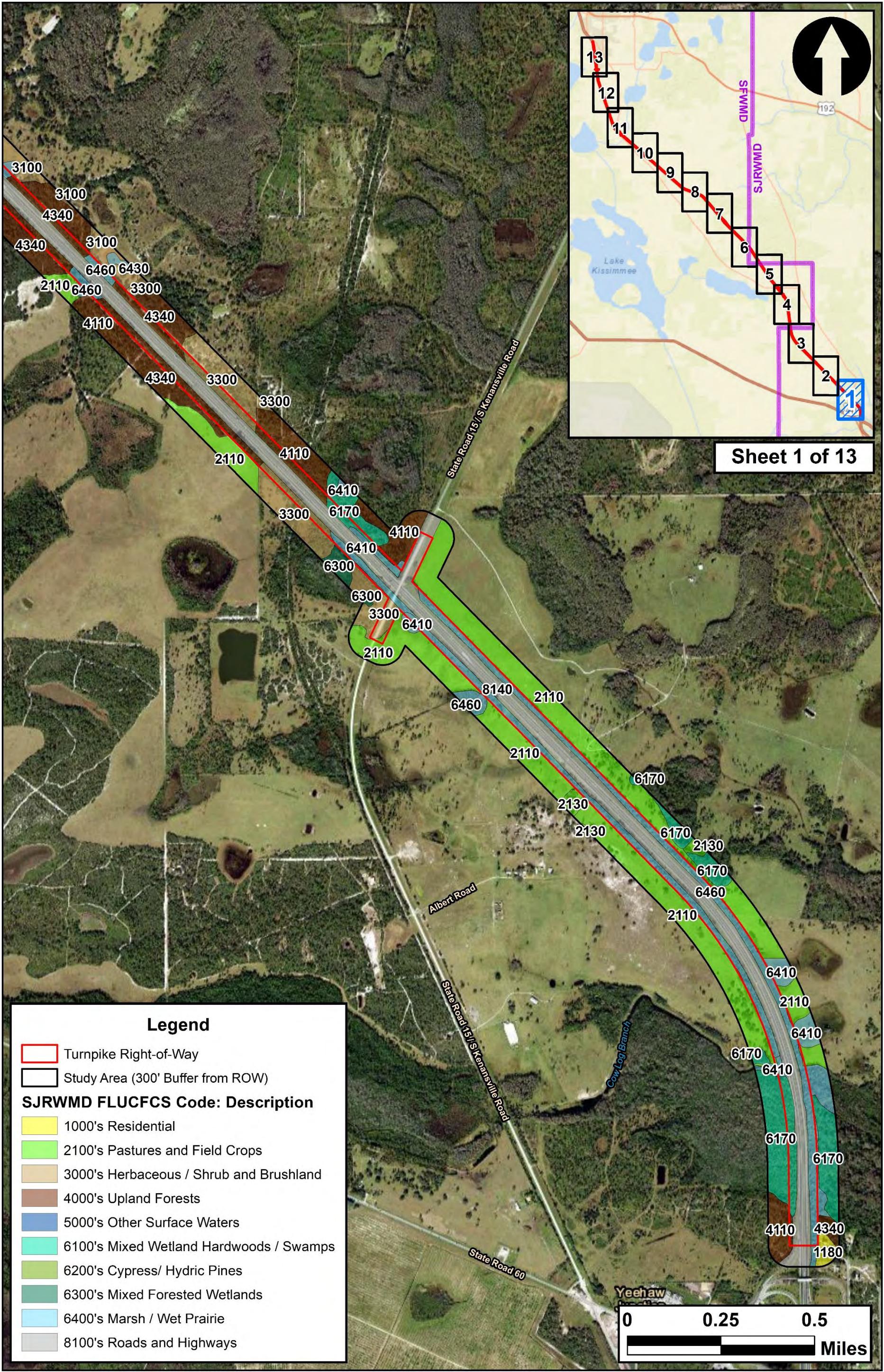
Site No.	Facility Name	Facility ID	Risk Rating
1	FL Department of Transportation Yeehaw Toll MP 193 Turnpike	9500018; 9401968	Low
2	FL Department of Transportation – Turnpike MP 194 Turnpike	8622660	Low
3	Queen Transportation Spill MP 207 Turnpike	9800721	Low

Site No.	Facility Name	Facility ID	Risk Rating
4	Sequoia Enterprises Ber 2010-71-43471Z FL Turnpike Southbound, MP 200	9812294	Low
5	W P Hayman #1 Oil-Gas Well 27.790895°, -80.978600°	OG_31	Low
6	Vidya Boodram and CO. 03-11-3134 MP 202 Turnpike	9806548	Low
7	Hillandale Farms Inc.; Cal-Maine Foods Inc. 4189 / 4201 North Canoe Creek Road	9602618; 9813526	Low
8	H&H Sod Co. Inc. 4699 N Canoe Creek Road	8732837; SQG_140364	Low
9	Halls Industries Inc. 6301 N Canoe Creek Road	8627079	Low
10	FL Department of Transportation – Turnpike MP 229 Canoe Creek Service Plaza Gas Station	8622661	Medium
11	Cattle Pens, no address identified	N/A	Low
12	Historical Field Crop Farming, no address identified	N/A	Low
13	Historical Railroads, no address identified	N/A	Medium
14	Area of Arents	NRCS Soil Unit No. 4	Low
15	Area of Pits	NRCS Soil Unit No. 31	Low
16	Existing Bridge Structures	See structure numbers in Table 2-18	Medium

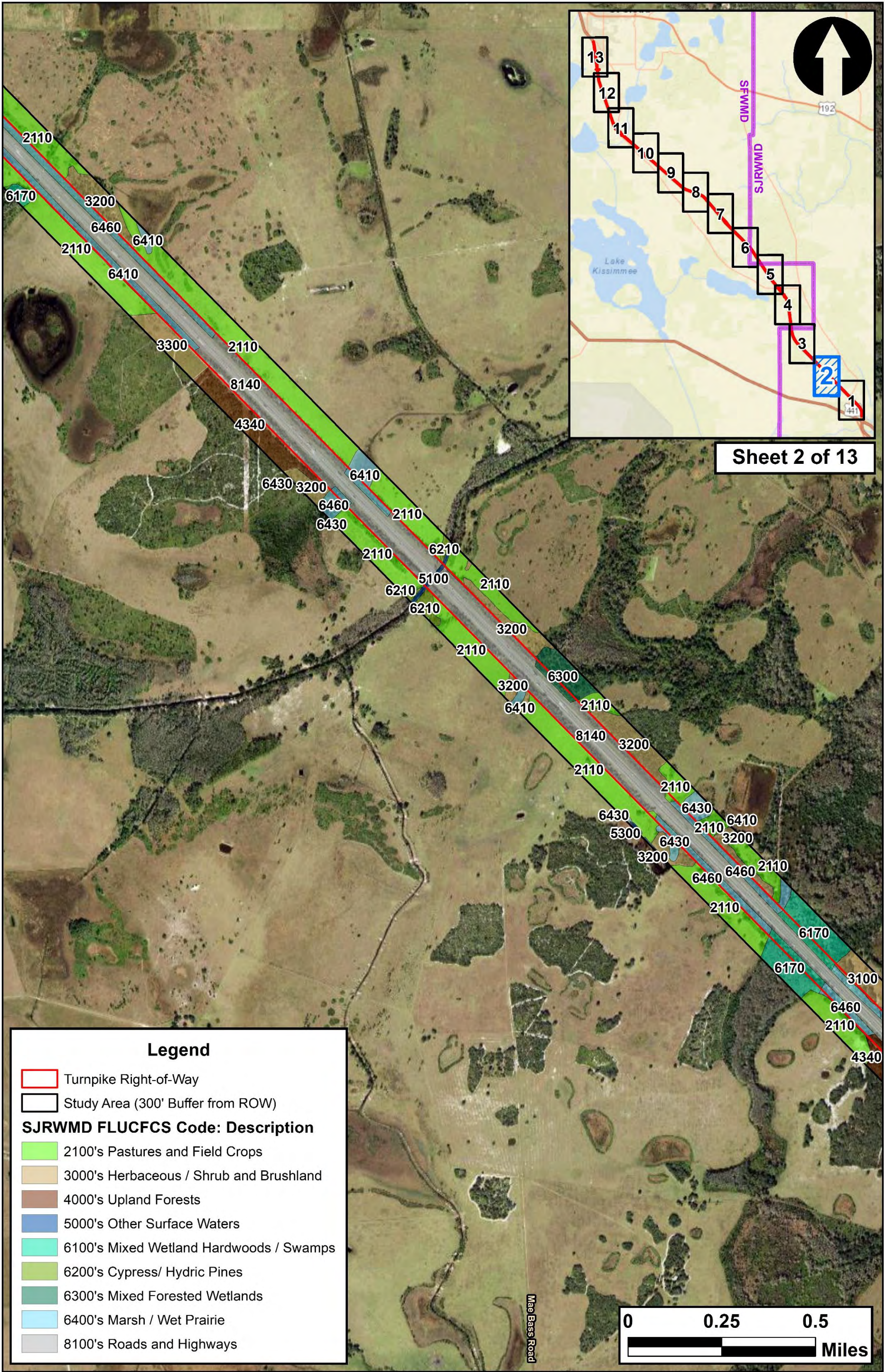
Sites 8, 9, 10, 11, 12, and 13 listed above have been assigned a Medium Risk Rating, potentially requiring Level II Impact to Construction Assessment prior to construction associated with this project. There are no sites identified with a High Risk Rating.

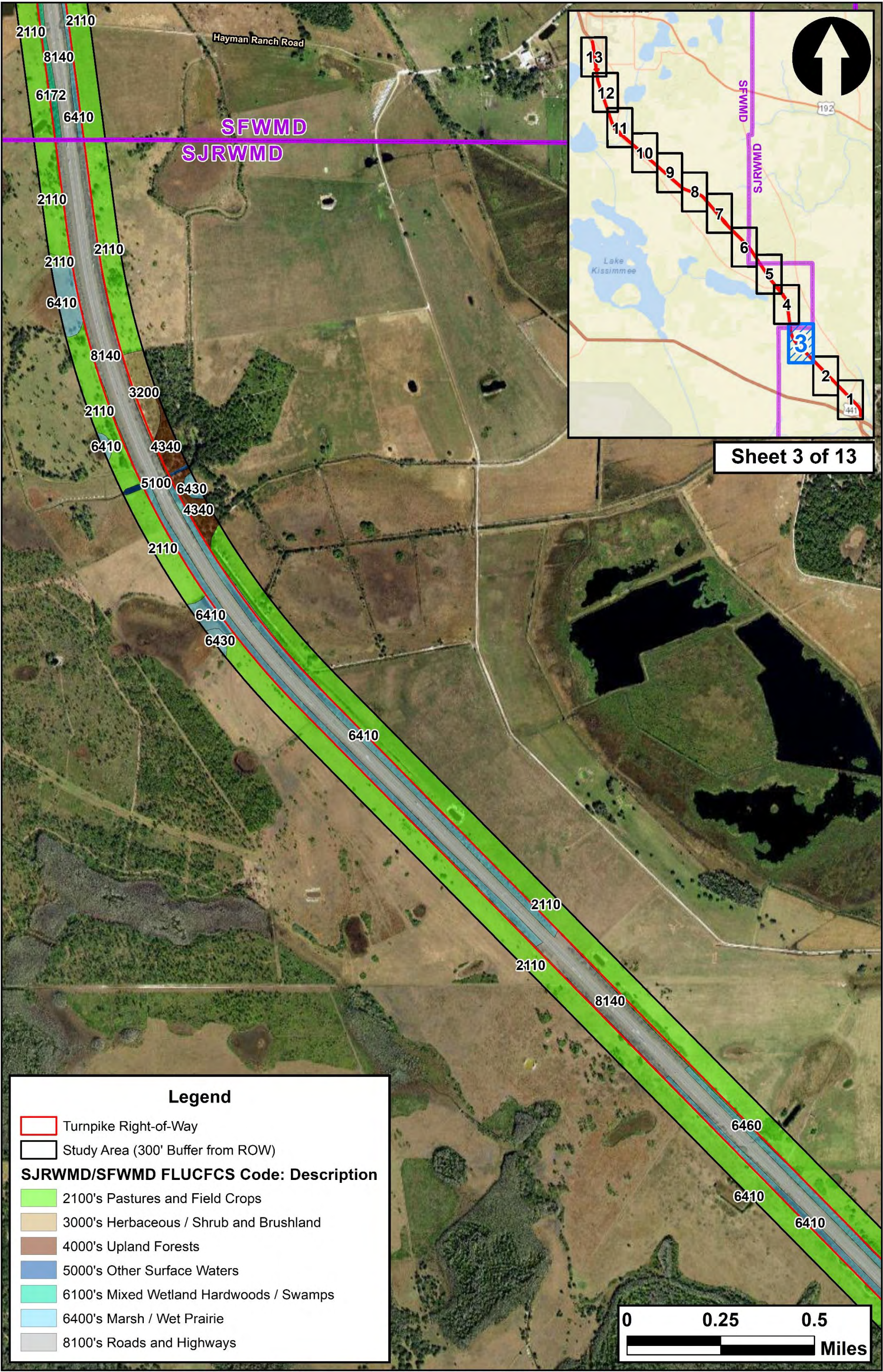
APPENDIX A

Existing and Future Land Use

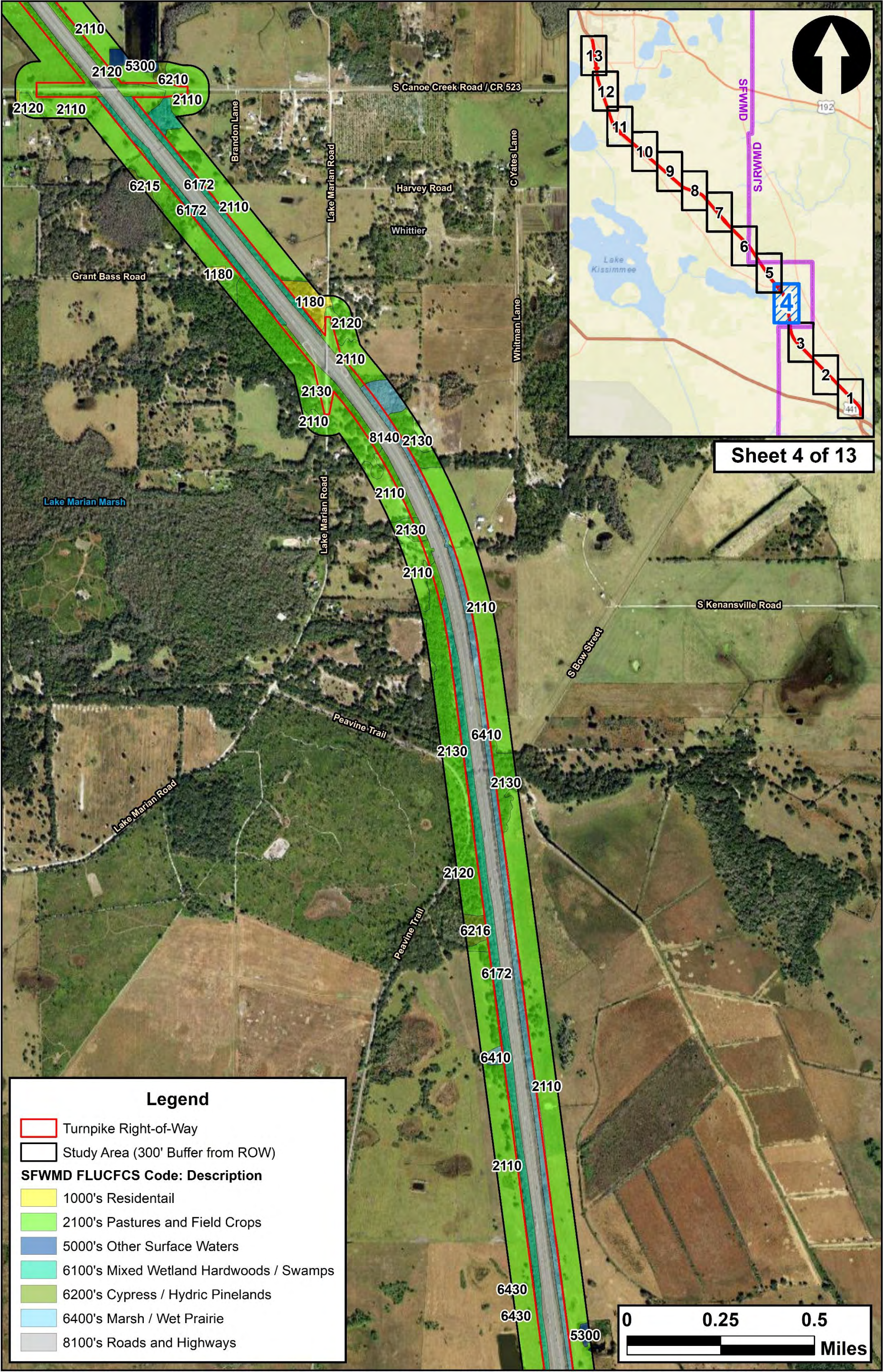


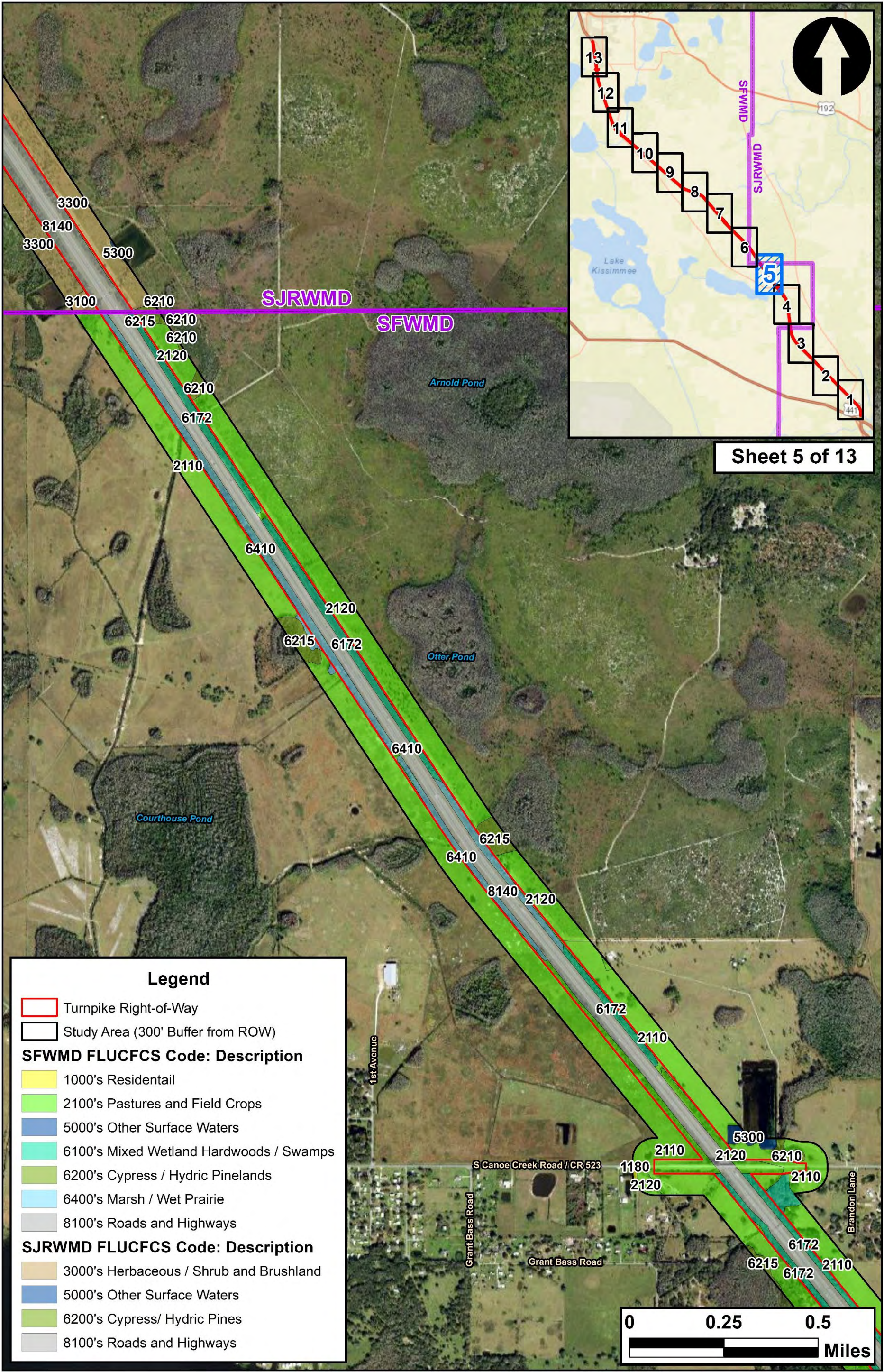
Existing Land Use within the Study Area, Sheet 1 of 13



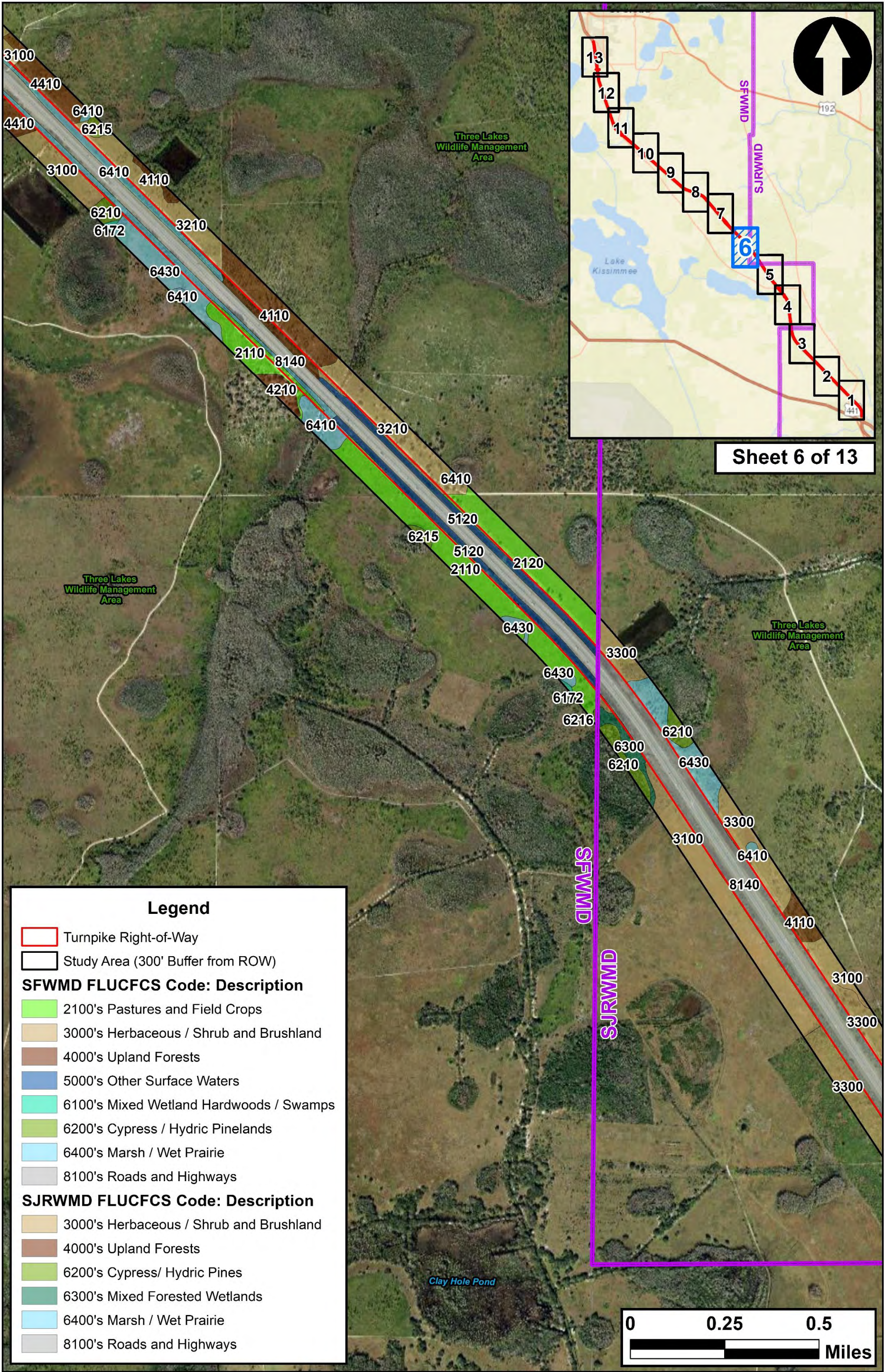


Existing Land Use within the Study Area, Sheet 3 of 13

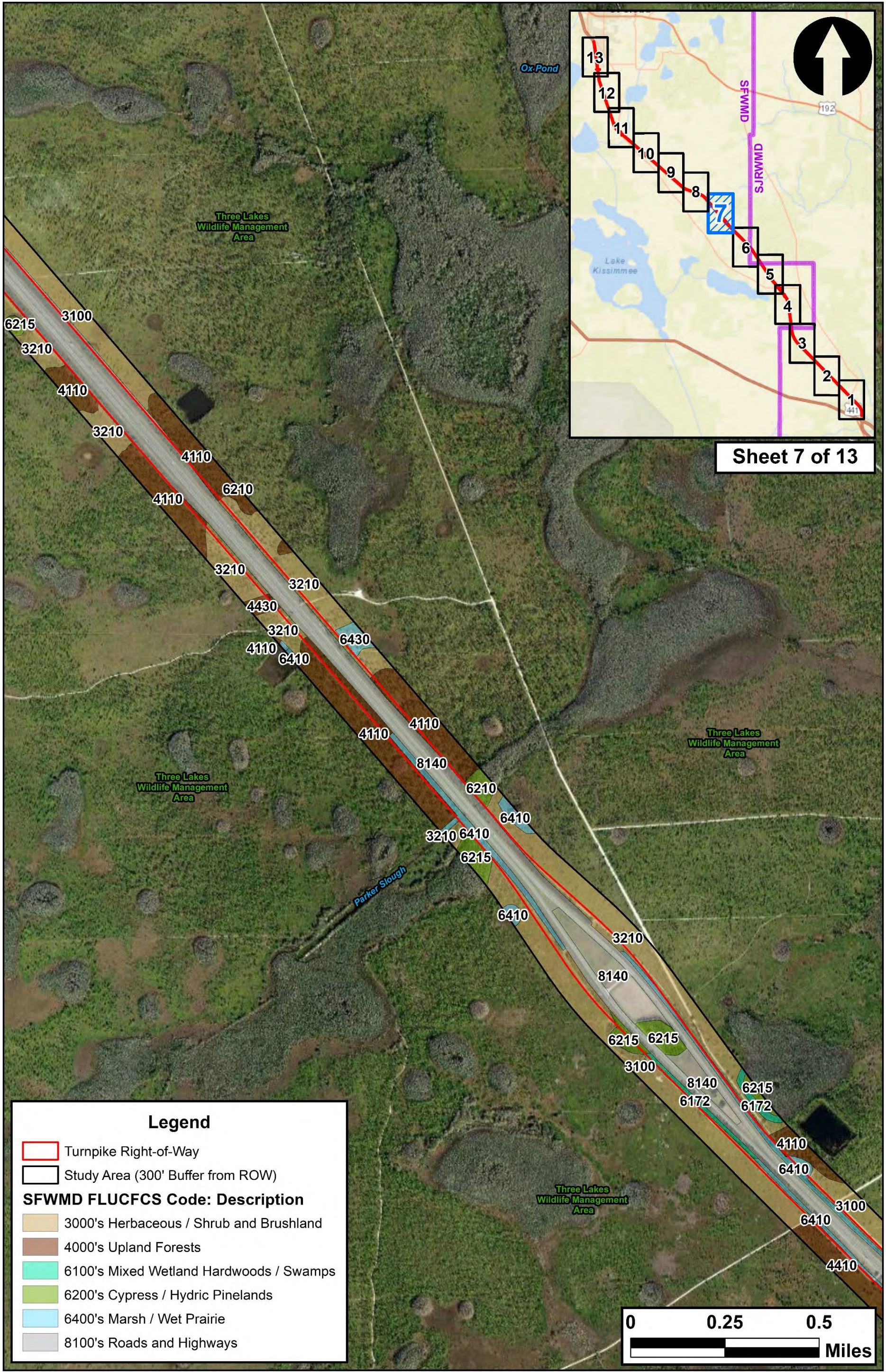




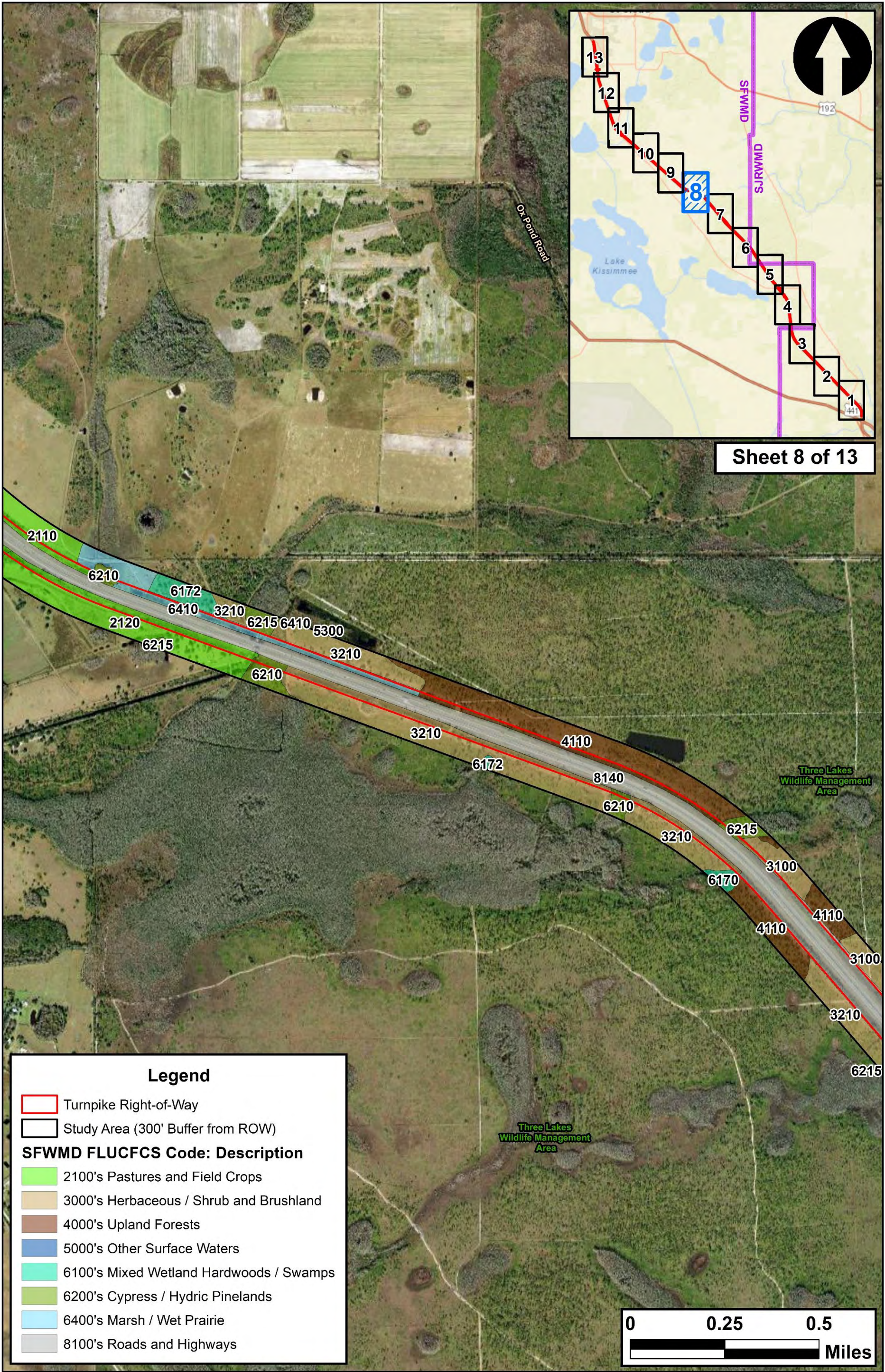
Existing Land Use within the Study Area, Sheet 5 of 13



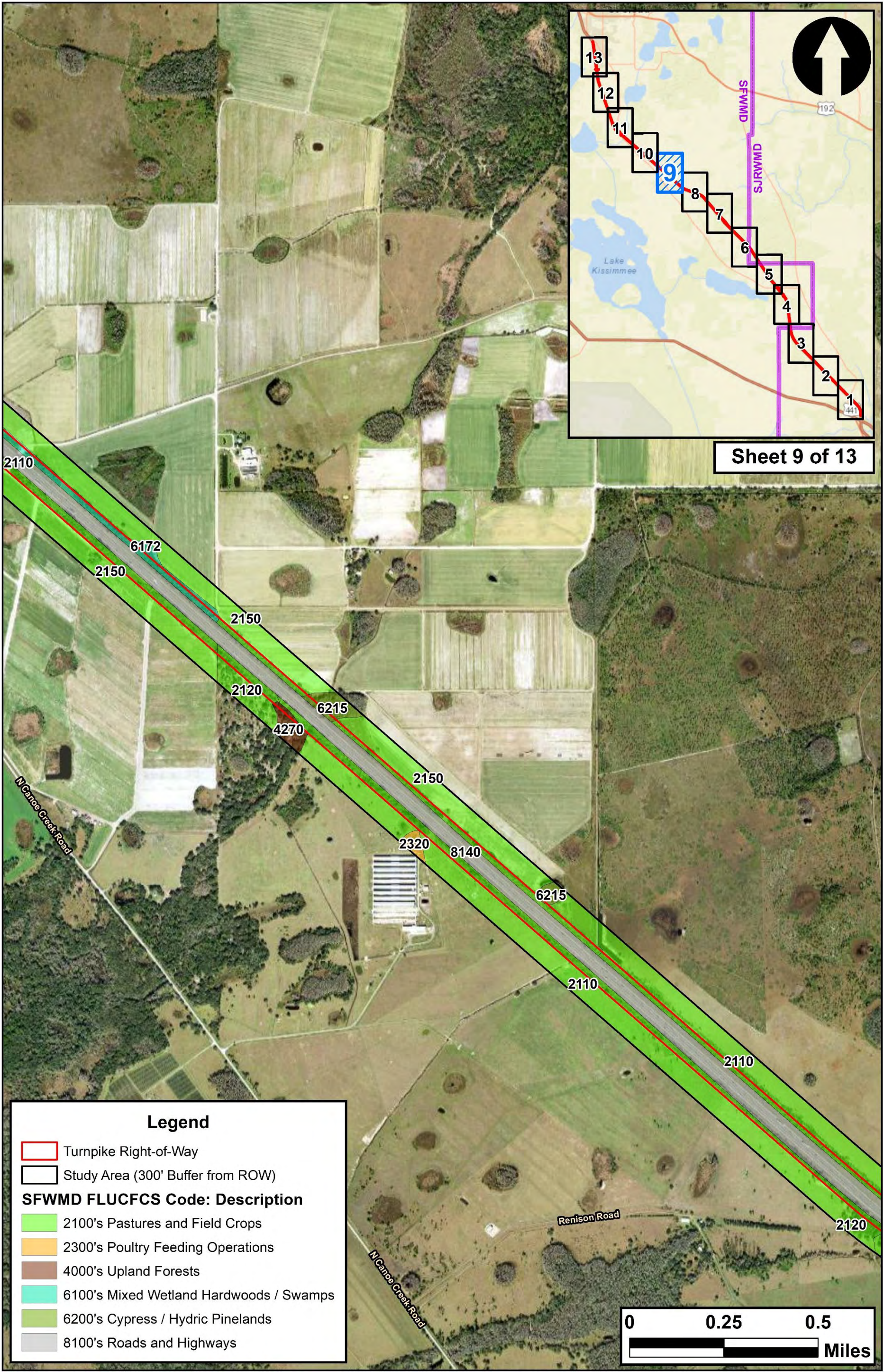
Existing Land Use within the Study Area, Sheet 6 of 13



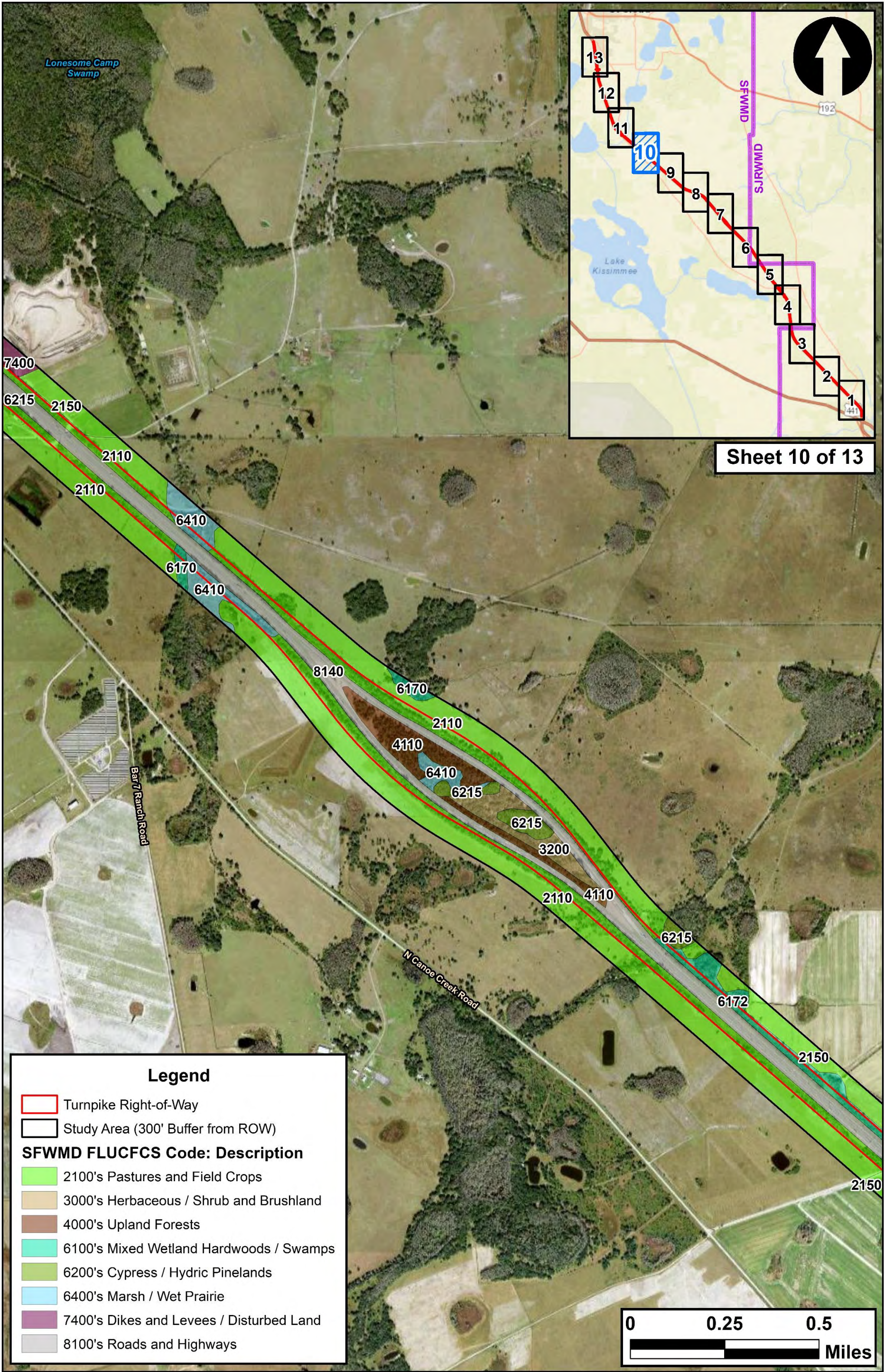
Existing Land Use within the Study Area, Sheet 7 of 13



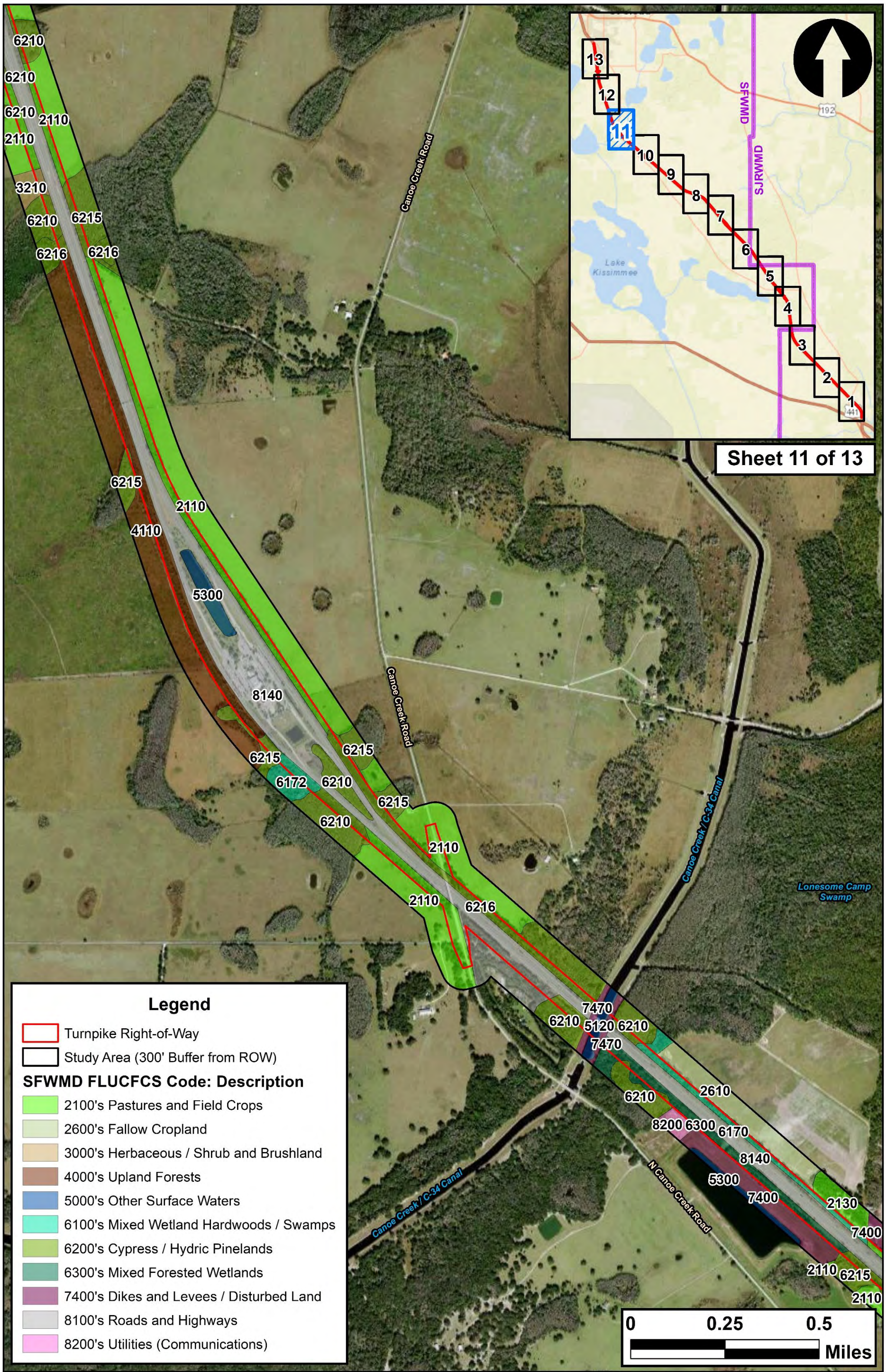
Existing Land Use within the Study Area, Sheet 8 of 13



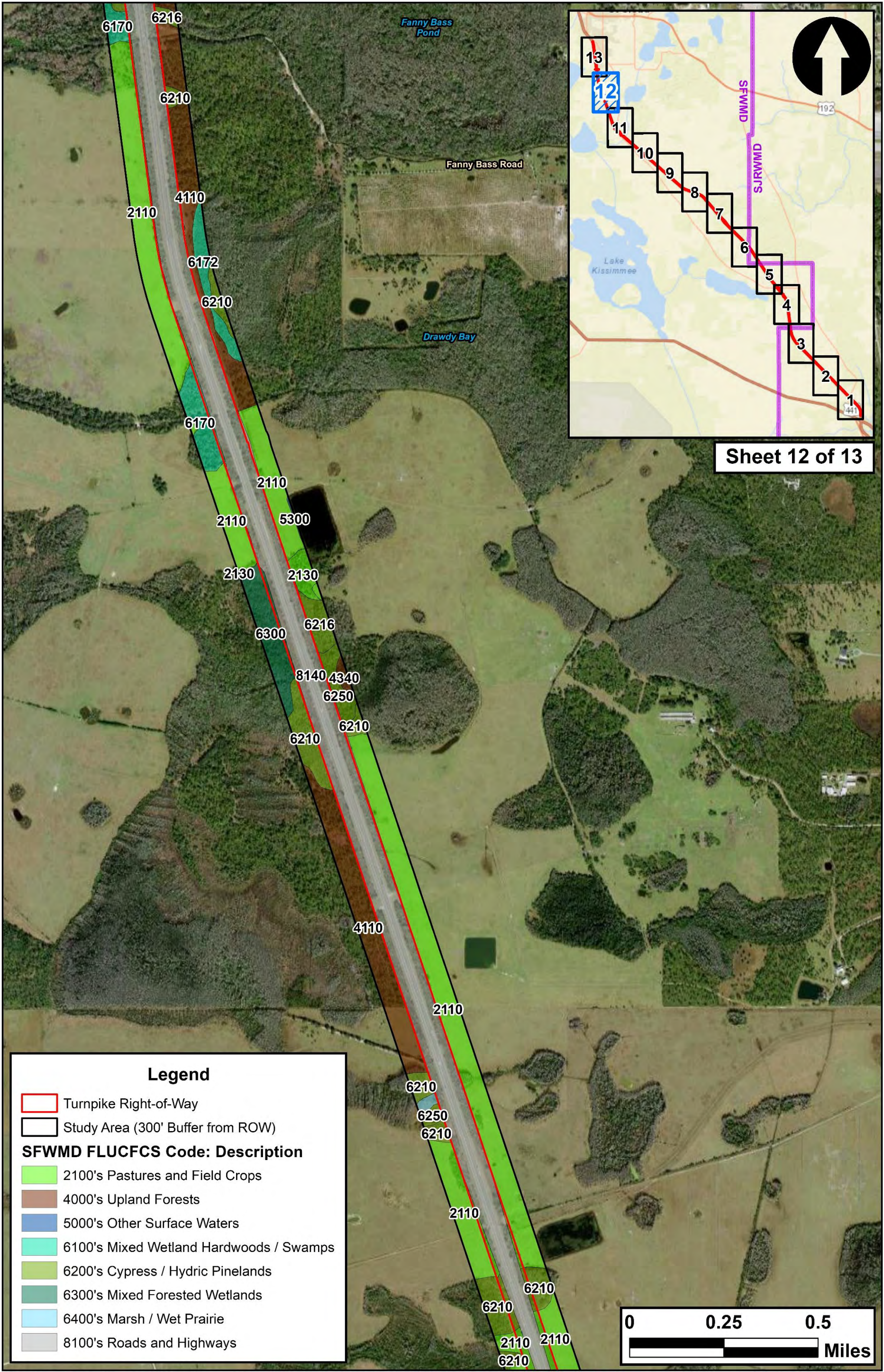
Existing Land Use within the Study Area, Sheet 9 of 13



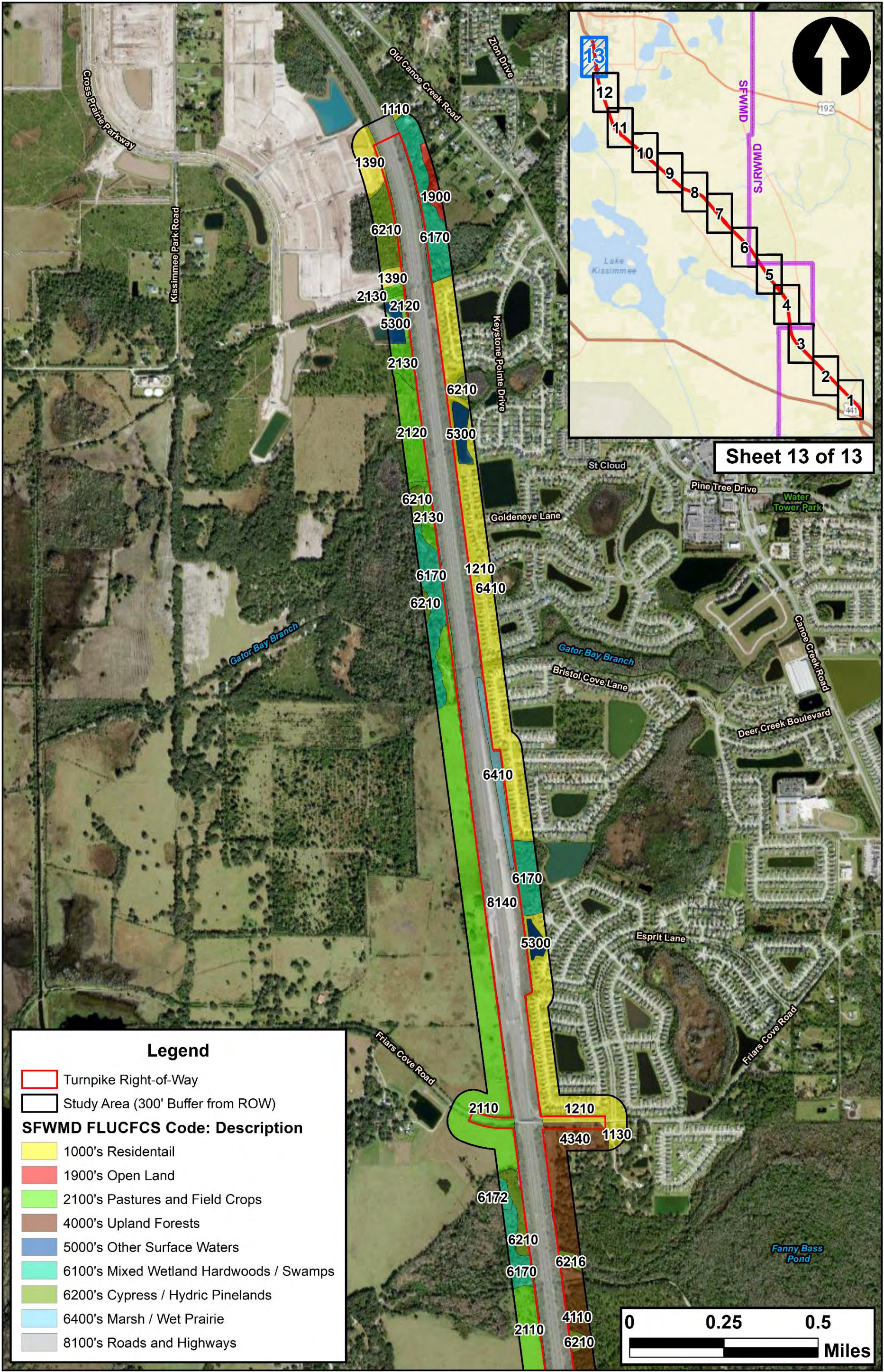
Existing Land Use within the Study Area, Sheet 10 of 13



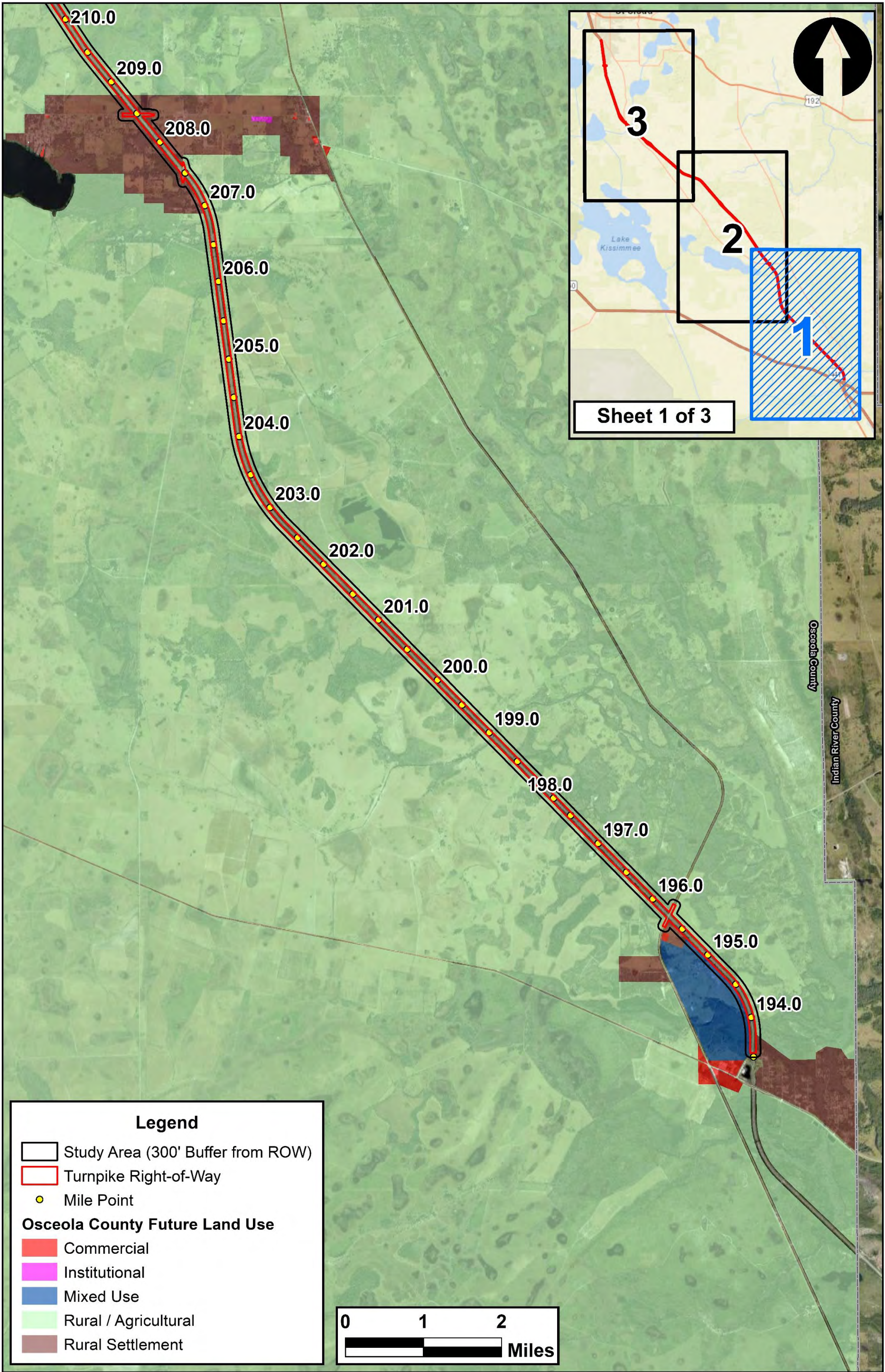
Existing Land Use within the Study Area, Sheet 11 of 13



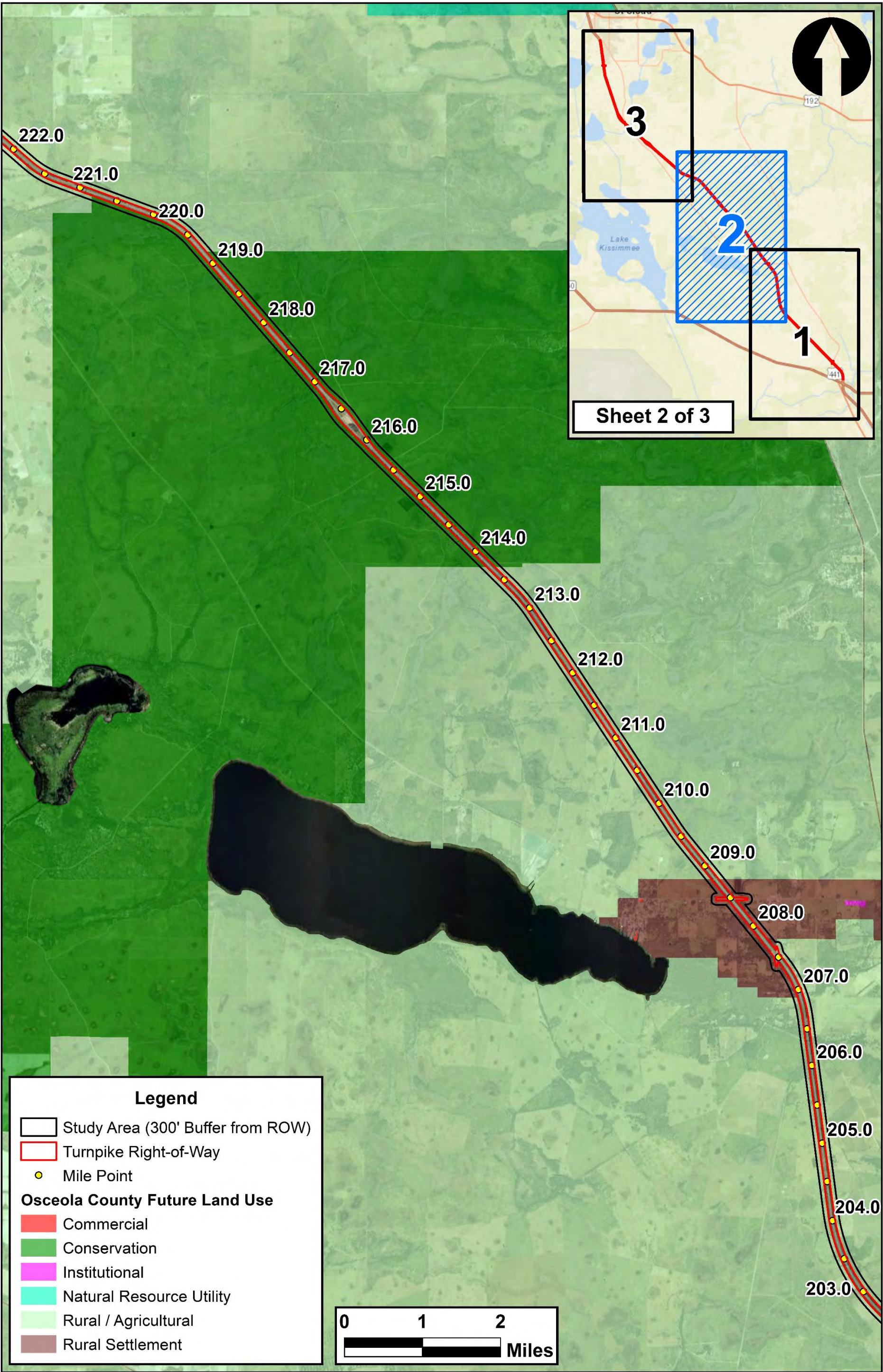
Existing Land Use within the Study Area, Sheet 12 of 13



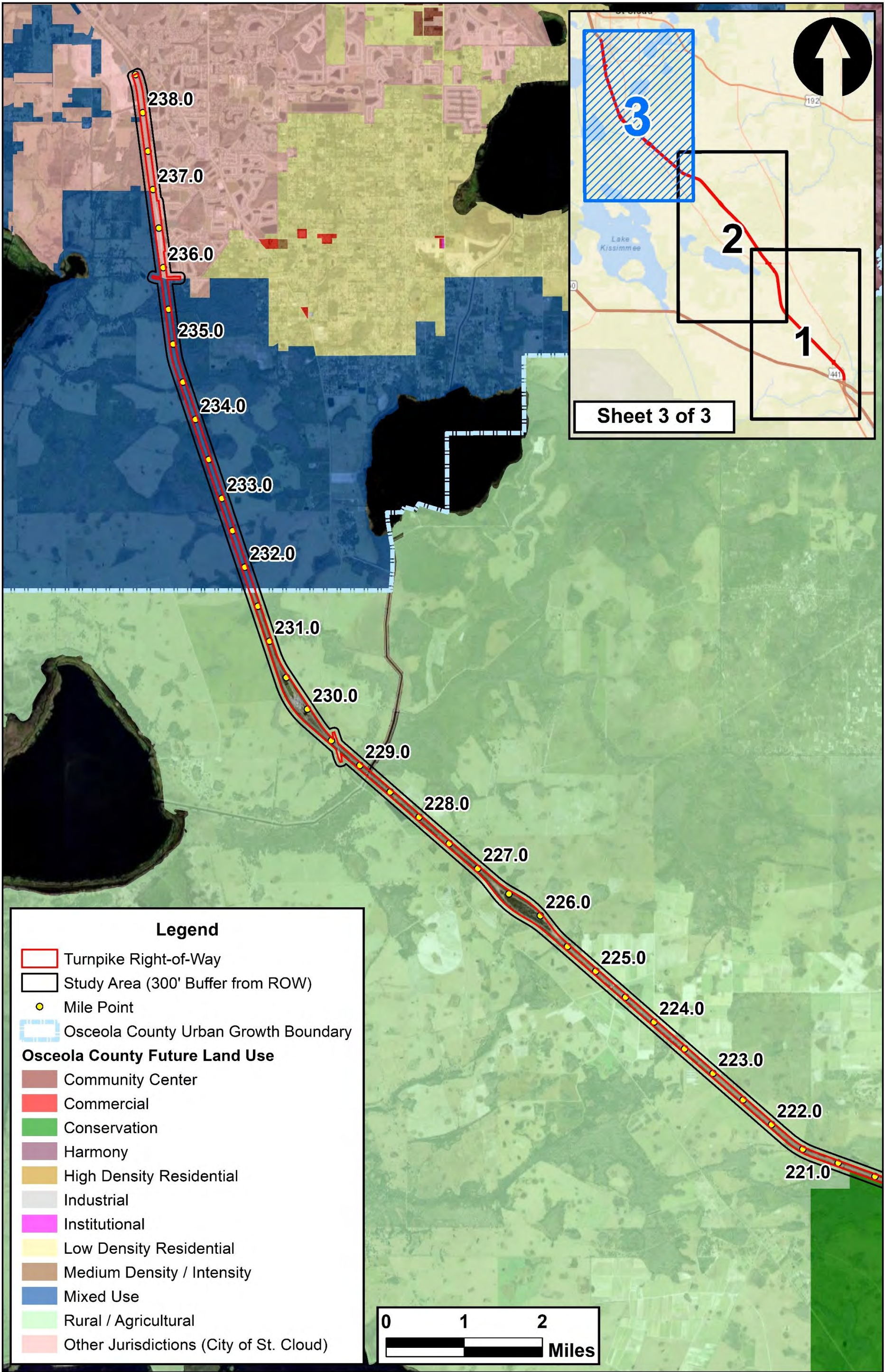
Existing Land Use within the Study Area, Sheet 13 of 13



Future Land Use Map, Sheet 1 of 3



Future Land Use Map, Sheet 2 of 3



Future Land Use Map, Sheet 3 of 3

APPENDIX B

Poor Pavement Condition

Table 6
Poor Pavement Condition Data Table
 FTE PD&E from SR 60 to Kissimmee Park Road
 FPID. 423374-3
 CITS Contract No. CAQ97
 GEC Project No. 5474GE
 Page 1 of 4

Report Title	Milepost Range	Date of Report	Core No.	Lane	Approximate Milepost
PSER SR 91 Mainline Resurfacing Turnpike	190.5 - 198.5	4/24/2017	C-03	R1	193.3
			C-64		193.4
			BF-01	R2	193.7
			BF-02		195.2
			BF-09		193.1
			BF-03	L2	195.7
			BF-04		195.7
			BF-05		195.5
			BF-06		195.3
			BF-07		195.3
			C-18		194.1
			BF-08		193.1
			SC-07	L3	193.2
Final PSER Resurface TPK Mainline	198.5 - 207.0	8/8/2019	C-12A	R2	204.1
			C-13		204.5
			C-16A		205.5
			C-22A	L2	205.7
			C-22C		205.5
			C-23		205.0

Table 6
Poor Pavement Condition Data Table
 FTE PD&E from SR 60 to Kissimmee Park Road
 FPID. 423374-3
 CITS Contract No. CAQ97
 GEC Project No. 5474GE
 Page 2 of 4

Report Title	Milepost Range	Date of Report	Core No.	Lane	Approximate Milepost
PSER State Road 91	207.0 - 216.8	12/19/2014	C-64	R1	216.4
			C-2	R2	207.5
			C-3		208.0
			C-20A		215.3
			C-20B		215.3
			C-74	L1	212.7
			C-65		216.5
			C-41	L2	209.2
			C-39		210.1
			C-37		211.1
			C-35		212.2
			C-32		213.6
			C-30		214.1
			C-28		215.1
			C-4	OR	208.4
			C-6		209.4
			C-8		210.3
			C-13		212.2
			C-17		214.2
			C-21		215.9
			C-23		216.4
			C-44	OL	207.5
			C-40		209.8
			C-36		211.8
			C-34		212.7
			C-31		213.9
			C-27		215.8
			C-26		215.8

Table 6
Poor Pavement Condition Data Table
 FTE PD&E from SR 60 to Kissimmee Park Road
 FPID. 423374-3
 CITS Contract No. CAQ97
 GEC Project No. 5474GE
 Page 3 of 4

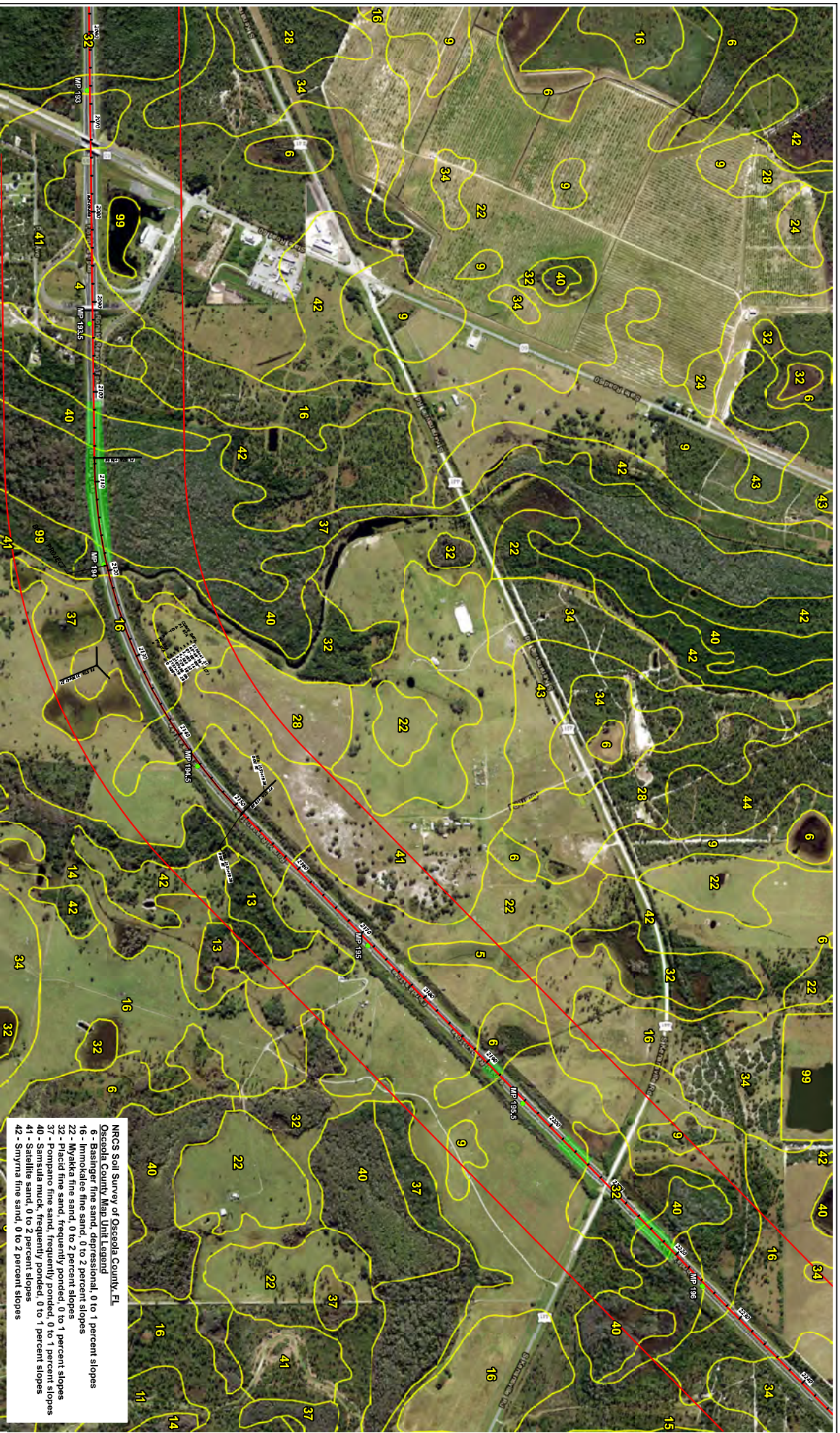
Report Title	Milepost Range	Date of Report	Core No.	Lane	Approximate Milepost
PSER SR 91 - Mainline Resurfacing	216.8 - 227.1	12/10/2013	C-4	L1	225.8
			C-6		224.8
			C-8		223.8
			C-12		221.8
			C-20		217.8
			C-22		216.8
			C-23	IR	216.8
			C-27		218.8
			C-31		220.8
			C-37		223.8
			C-39		224.8
			C-43		226.8
			C-26	R1	218.3
			C-30		220.3
			C-34		222.3
			C-36		223.3
			C-42		226.3
			C-45	L2	227.1
			C-47		226.3
			C-53		223.3
			C_55		222.3
			C-57		221.3
			C-59		220.3
			C-61		219.3
			C-63		218.3
			C-65		217.3
			C-90		217.6
			C-48	OL	225.8
			C-54		222.8
			C-56		221.8
			C-60		219.8
			C-62		218.8

Table 6
Poor Pavement Condition Data Table
 FTE PD&E from SR 60 to Kissimmee Park Road
 FPID. 423374-3
 CITS Contract No. CAQ97
 GEC Project No. 5474GE
 Page 4 of 4

Report Title	Milepost Range	Date of Report	Core No.	Lane	Approximate Milepost
PSER SR 91 - Mainline Resurfacing (Continued)	216.8 - 227.1	12/10/2013	C-67	R2	216.8
			C-69		217.8
			C-71		218.8
			C-73		219.8
			C-75		220.8
			C-77		221.8
			C-79		222.8
			C-81		223.8
			C-83		224.8
			C-85		225.8
			C-87		226.8
			C-89		224.3
			C-91		223.7
			C-92		225.1
			C-93		219.2
			C-94		220.4
			C-68	OR	217.3
			C-72		219.3
			C-74		220.3
			C-78		222.3
			C-80		223.3
			C-82		224.3
			C-84		225.3
			C-86		226.3
PCER Resurface Turnpike in Osceola County	227.1 - 234.95	5/16/2018	C-71	OL	130.7
			C-66	R1	229.9
			C-75		230.3
			C-73	R2	230.0
			C-74		230.2
			C-6		228.4
			C-69	L1	230.0
			C-72	OR	227.1

APPENDIX C

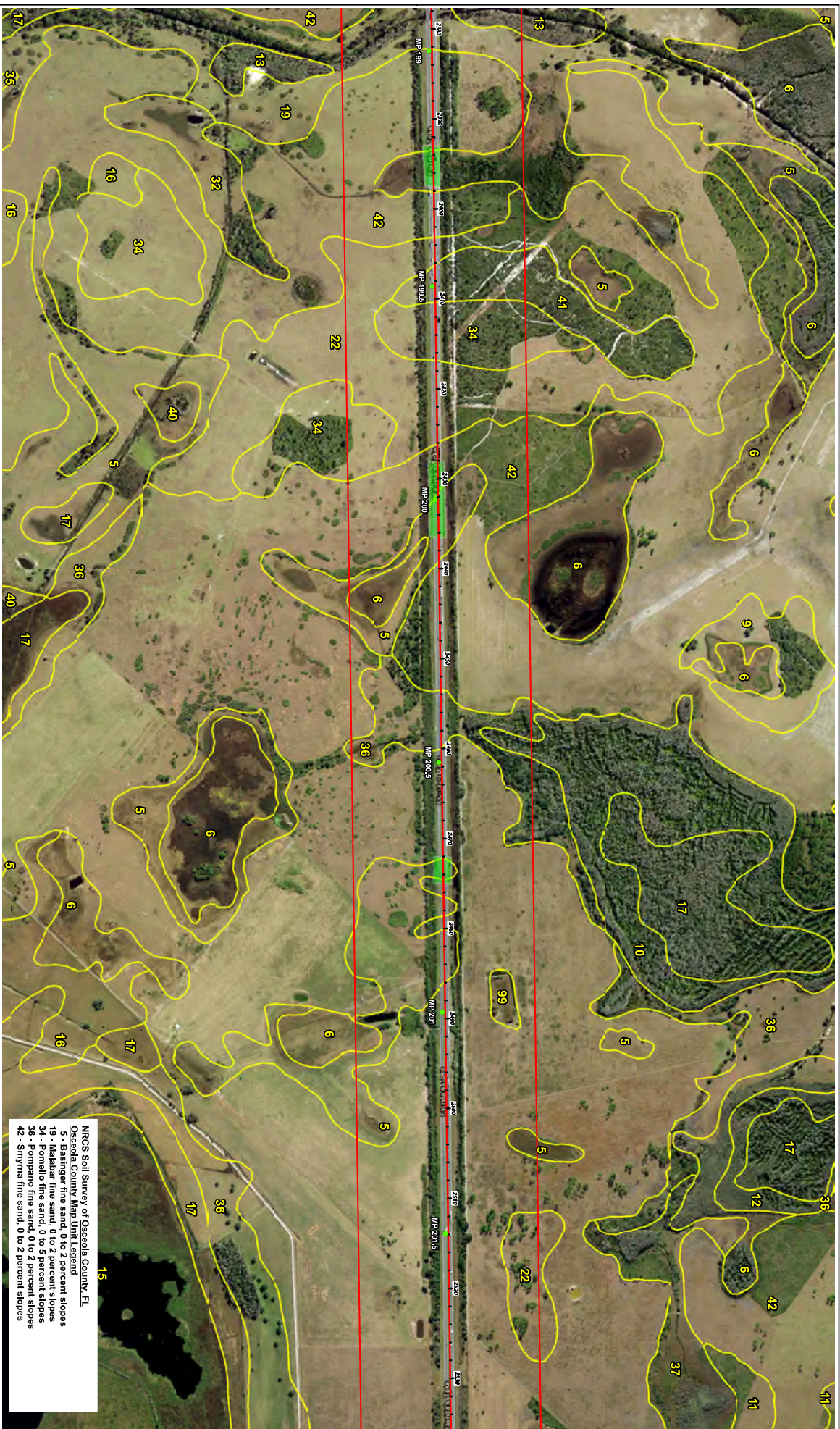
NRCS Soil Survey Maps



SR 60 TO
KISSIMMEE PARK ROAD

NRCS SOIL SURVEY MAP

FIGURE
NO.
2A



Geotechnical and Environmental Consultants, Inc.
 919 LAKE BALDWIN LANE
 ORLANDO, FL 32814
 P.E. LICENSE NUMBER 42763

SR 60 TO KISSIMMEE PARK ROAD

NRCS SOIL SURVEY MAP

FIGURE NO. 2C



APPROXIMATE MUCK LOCATION



SR 60 TO
KISSIMMEE PARK ROAD

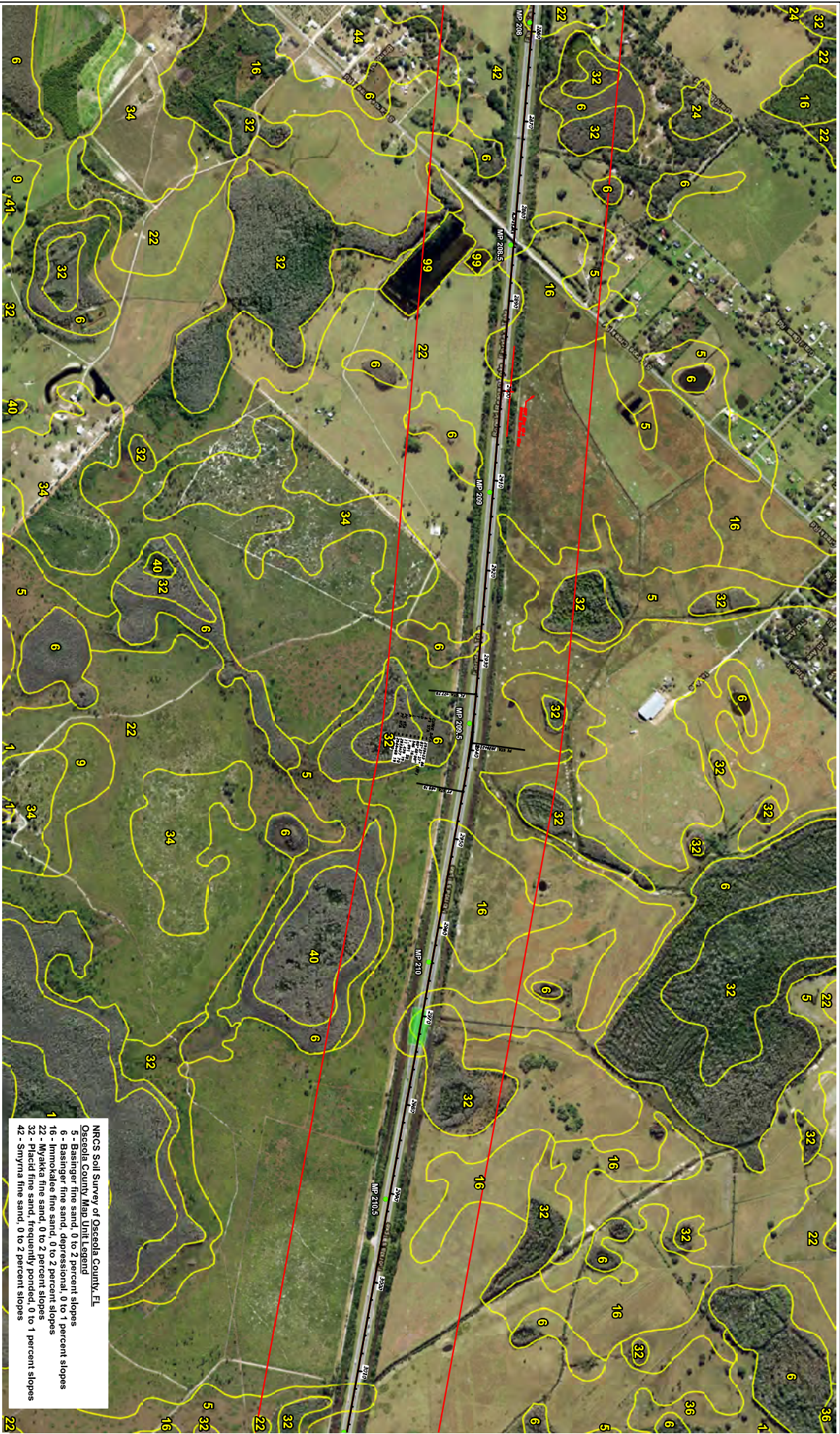
NRCS SOIL SURVEY MAP

FIGURE
NO.
2D

NRCS Soil Survey of Osceola County, FL
Osceola County Map Unit Legend
22 - Myakka fine sand, 0 to 2 percent slopes
27 - Ona fine sand, 0 to 2 percent slopes
32 - Piccadilly fine sand, frequently ponded, 0 to 1 percent slopes
36 - Tampa fine sand, 0 to 2 percent slopes
42 - Smyrna fine sand, 0 to 2 percent slopes



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ORLANDO, FL 32814
P.E. LICENSE NUMBER 42763



APPROXIMATE MUCK LOCATION



SR 60 TO
KISSIMMEE PARK ROAD

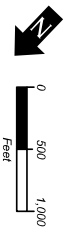
NRCs SOIL SURVEY MAP

FIGURE
NO.

2F



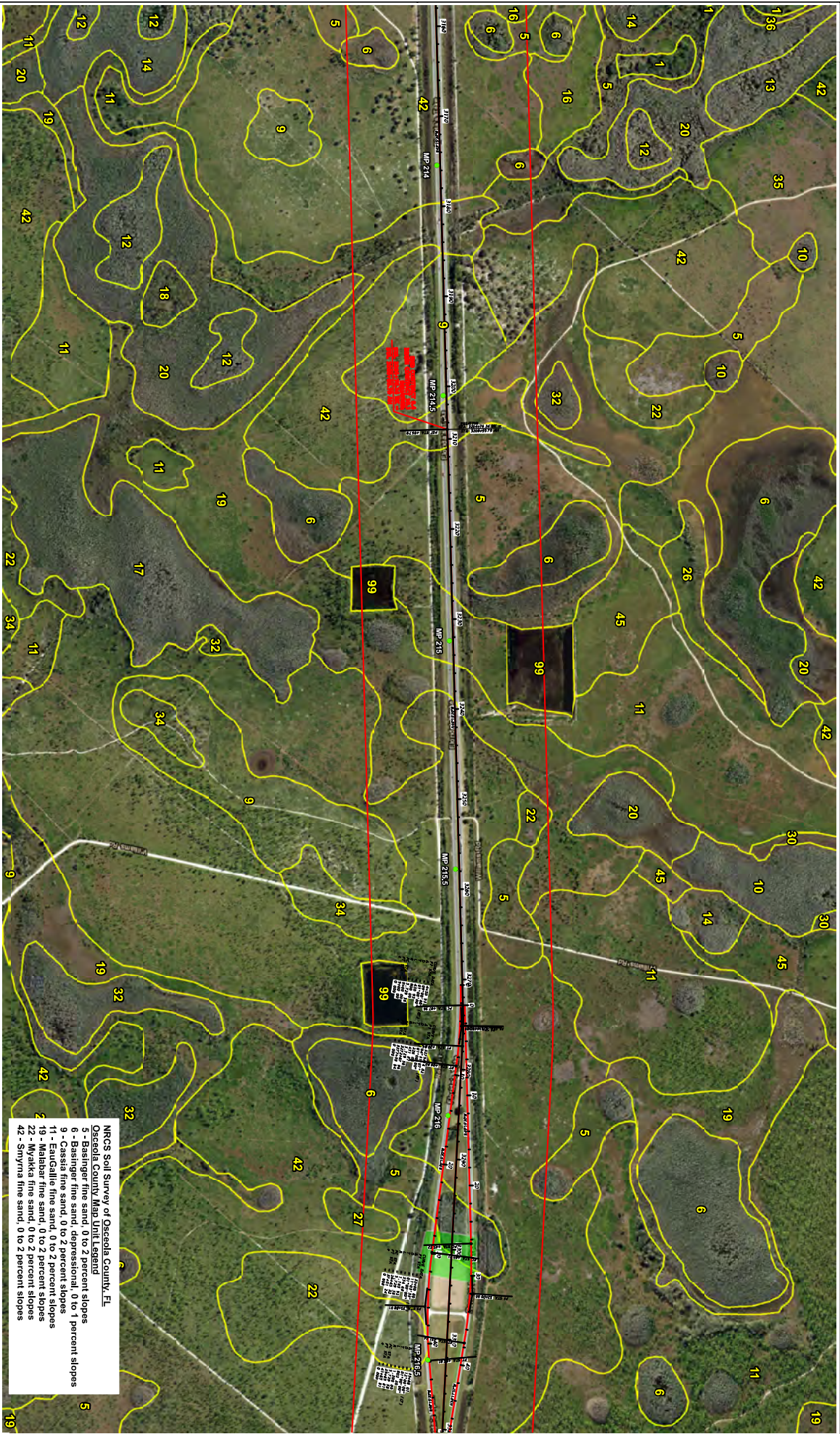
APPROXIMATE MUCK LOCATION



SR 60 TO
KISSIMMEE PARK ROAD

NRCS SOIL SURVEY MAP

FIGURE
NO.
2G



APPROXIMATE MUCK LOCATION

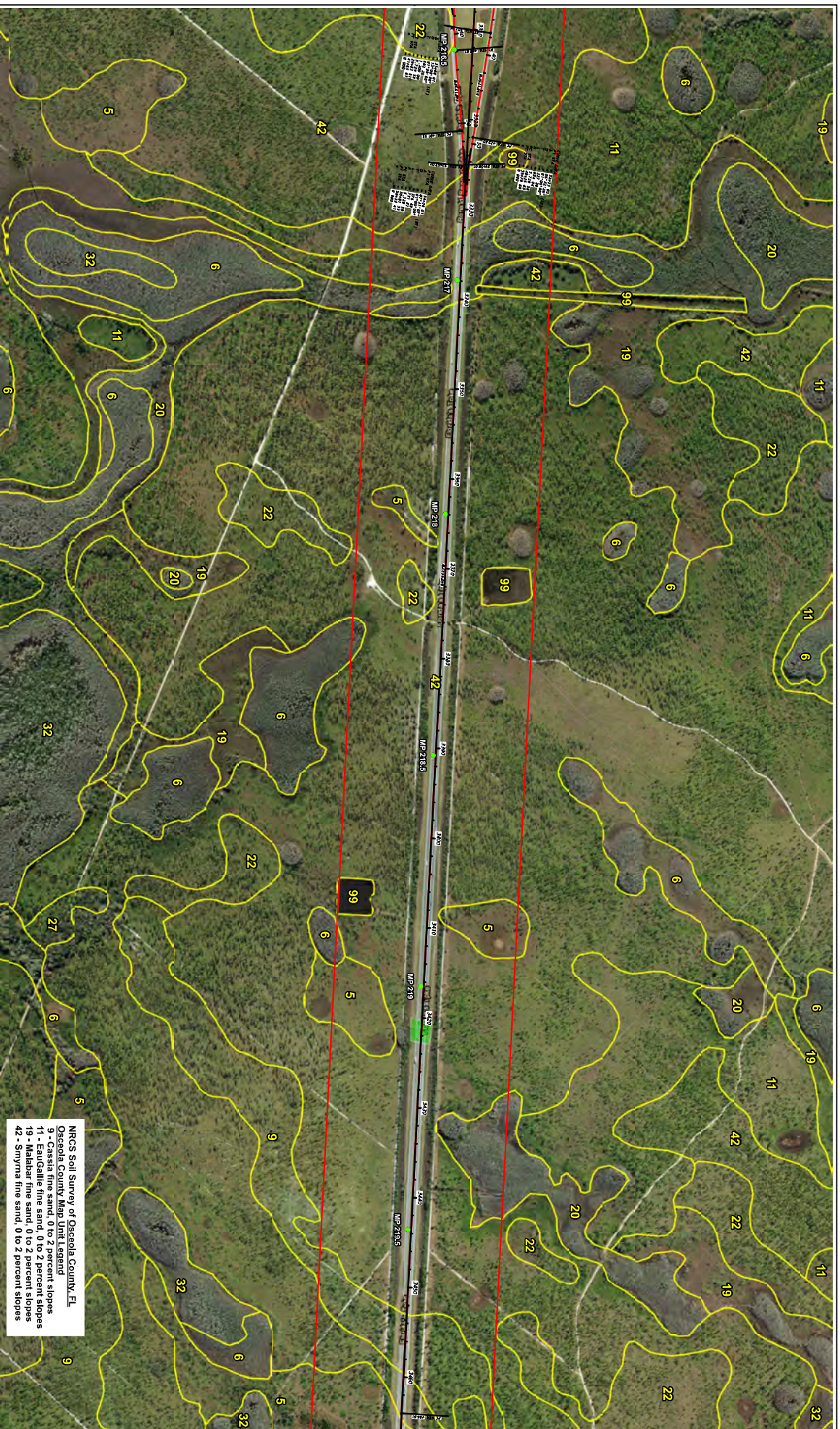


SR 60 TO
KISSIMMEE PARK ROAD

NRCS SOIL SURVEY MAP

FIGURE
NO.

2H



APPROXIMATE MUCK LOCATION



SR 60 TO
KISSIMMEE PARK ROAD

NRCS SOIL SURVEY MAP

FIGURE
NO.

21



APPROXIMATE MUCK LOCATION



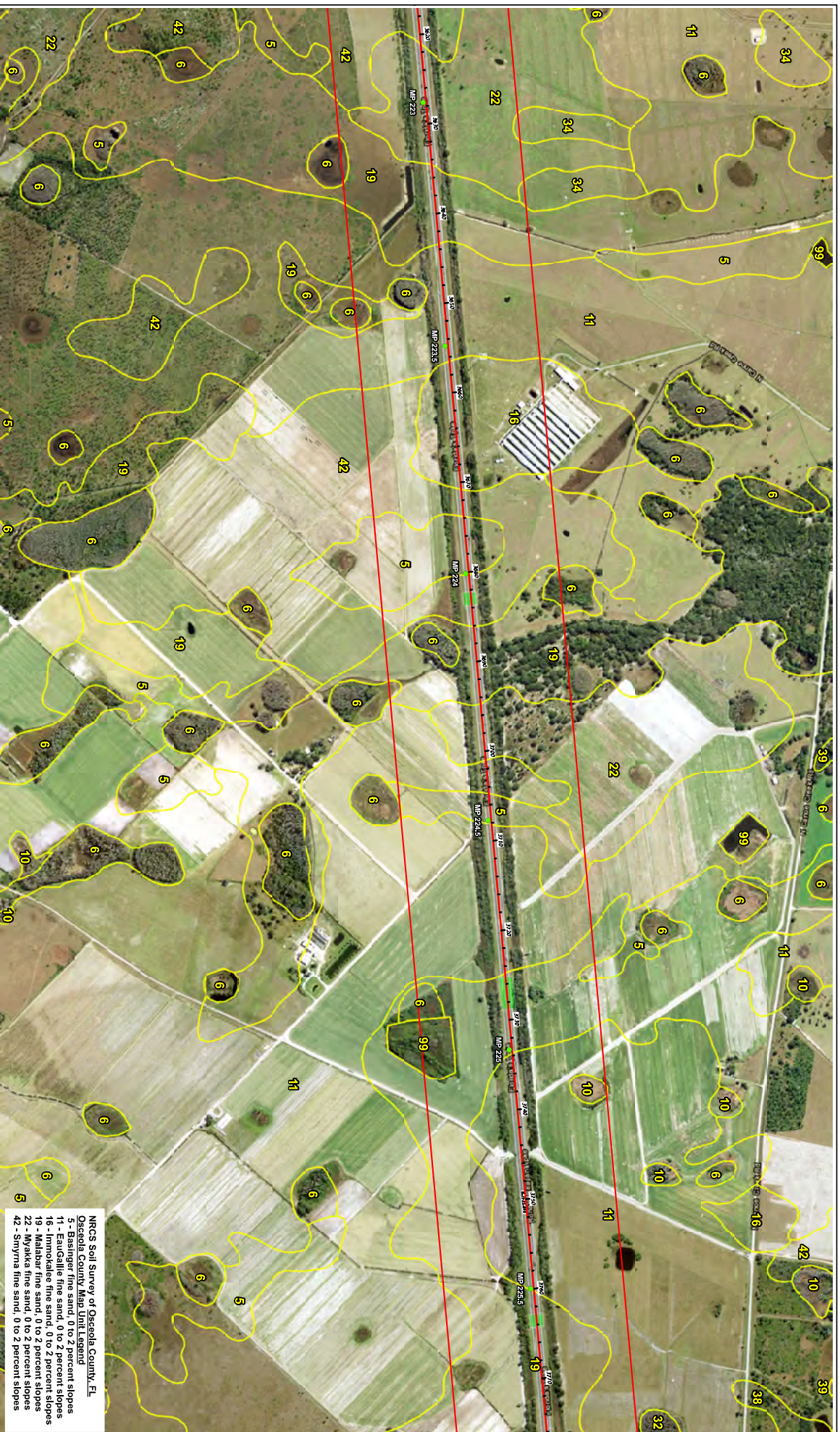
SR 60 TO
KISSIMMEE PARK ROAD

NRCS SOIL SURVEY MAP

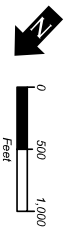
FIGURE
NO.

24

NRCS Soil Survey of Osceola County, FL
Osceola County Map Unit Legend
5 - Basinger fine sand, 0 to 2 percent slopes
6 - Basinger fine sand, depressional, 0 to 1 percent slopes
9 - Cassia fine sand, 0 to 2 percent slopes
19 - Mahala fine sand, 0 to 2 percent slopes
32 - Mahala fine sand, 0 to 2 percent slopes
42 - Smyrna fine sand, 0 to 2 percent slopes



APPROXIMATE MUCK LOCATION



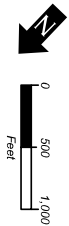
SR 60 TO
KISSIMMEE PARK ROAD

NRCS SOIL SURVEY MAP

FIGURE
NO.
2K



APPROXIMATE MUCK LOCATION



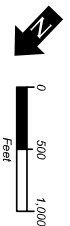
SR 60 TO
KISSIMMEE PARK ROAD

NRCS SOIL SURVEY MAP

FIGURE
NO.
2L



APPROXIMATE MUCK LOCATION



SR 60 TO
KISSIMMEE PARK ROAD

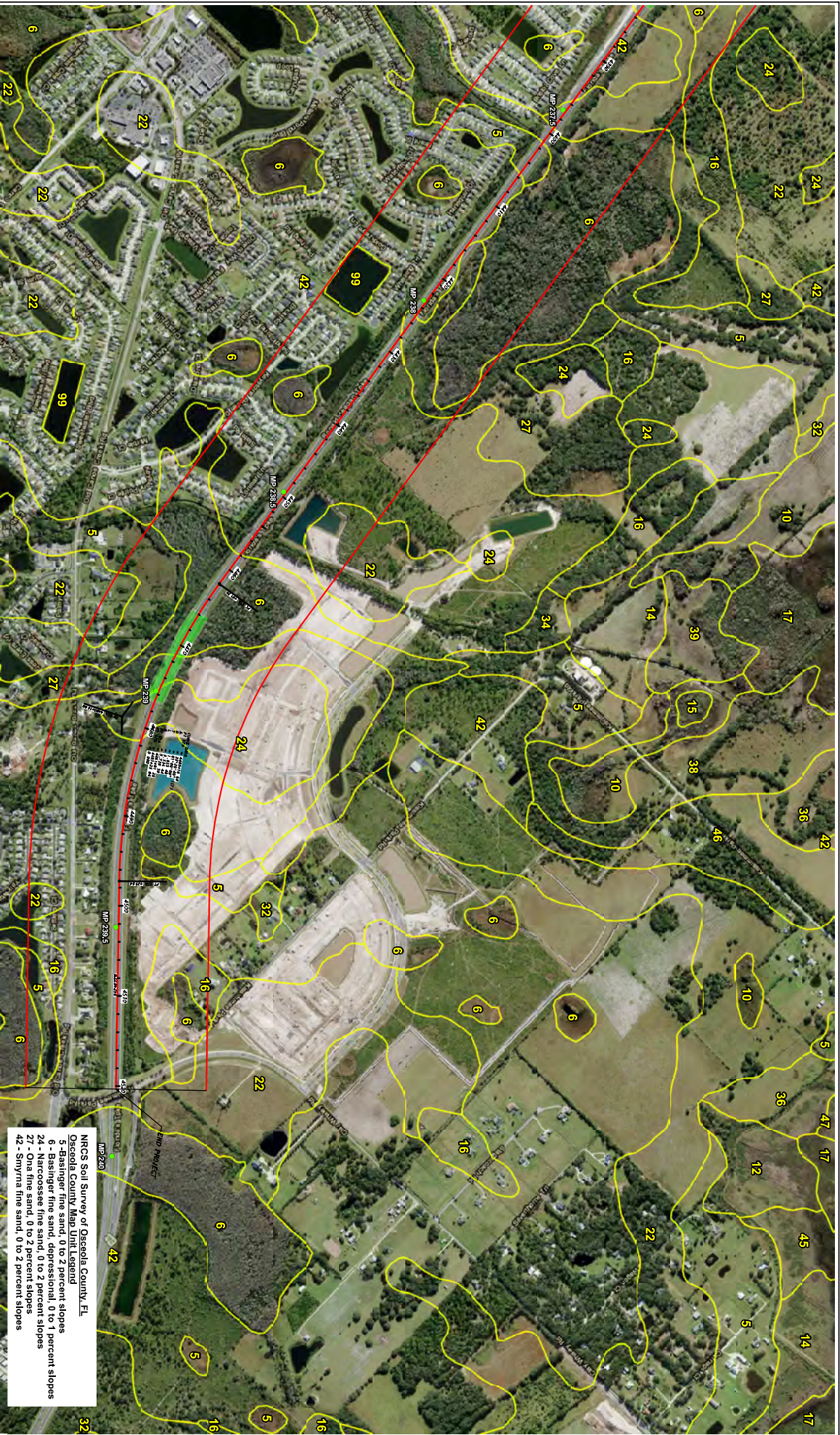
NRCs SOIL SURVEY MAP

FIGURE
NO.
2M



NRCS Soil Survey of Osceola County, FL
 Osceola County Area Unit Legend
 32 - Fluvent fine sand, depressional, 0 to 1 percent slopes
 42 - Smymra fine sand, 0 to 2 percent slopes

		SR 60 TO KISSIMMEE PARK ROAD		NRCS SOIL SURVEY MAP	
				FIGURE NO. 2N	



APPROXIMATE MUCK LOCATION



SR 60 TO
KISSIMMEE PARK ROAD

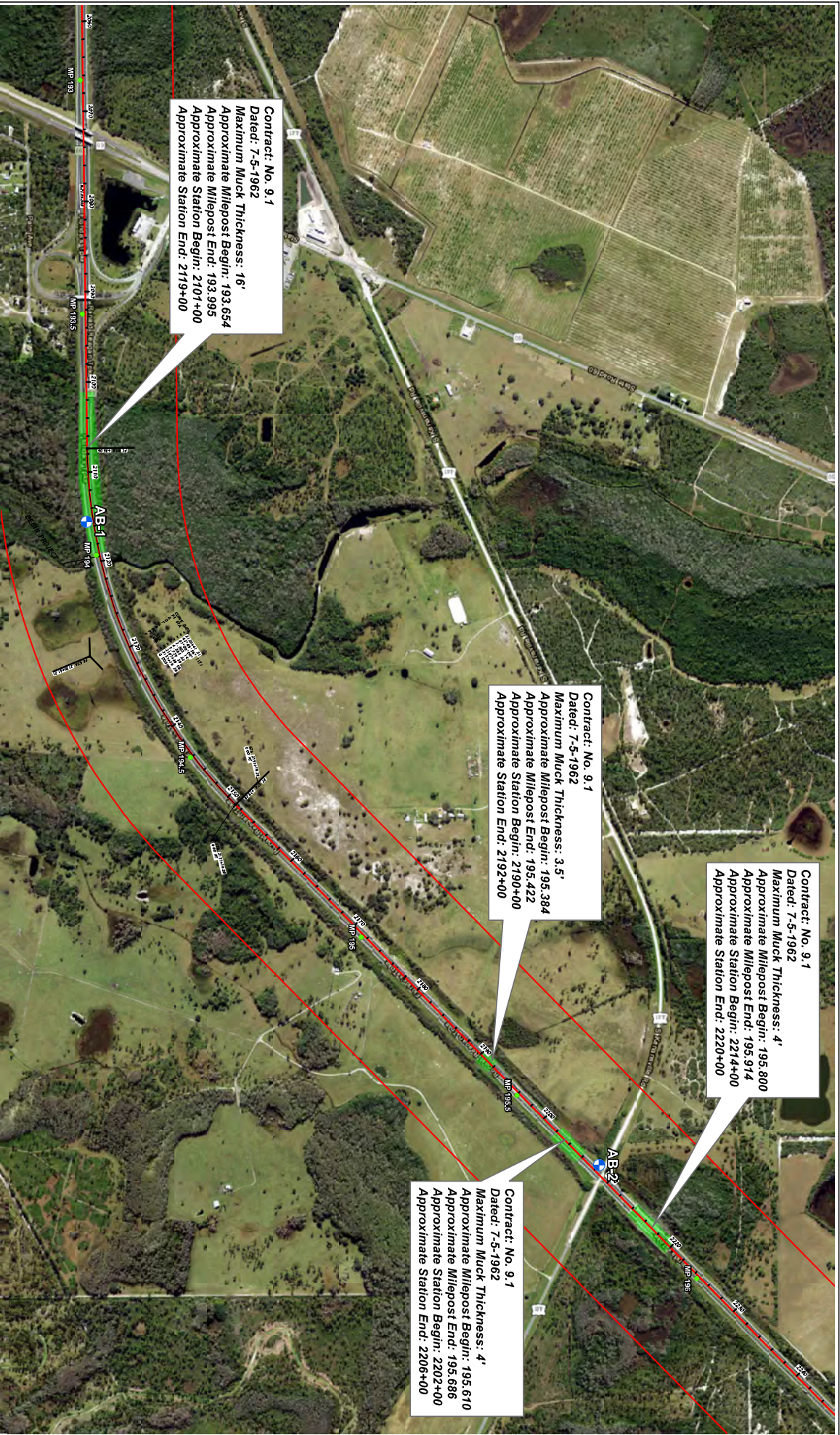
NRCS SOIL SURVEY MAP

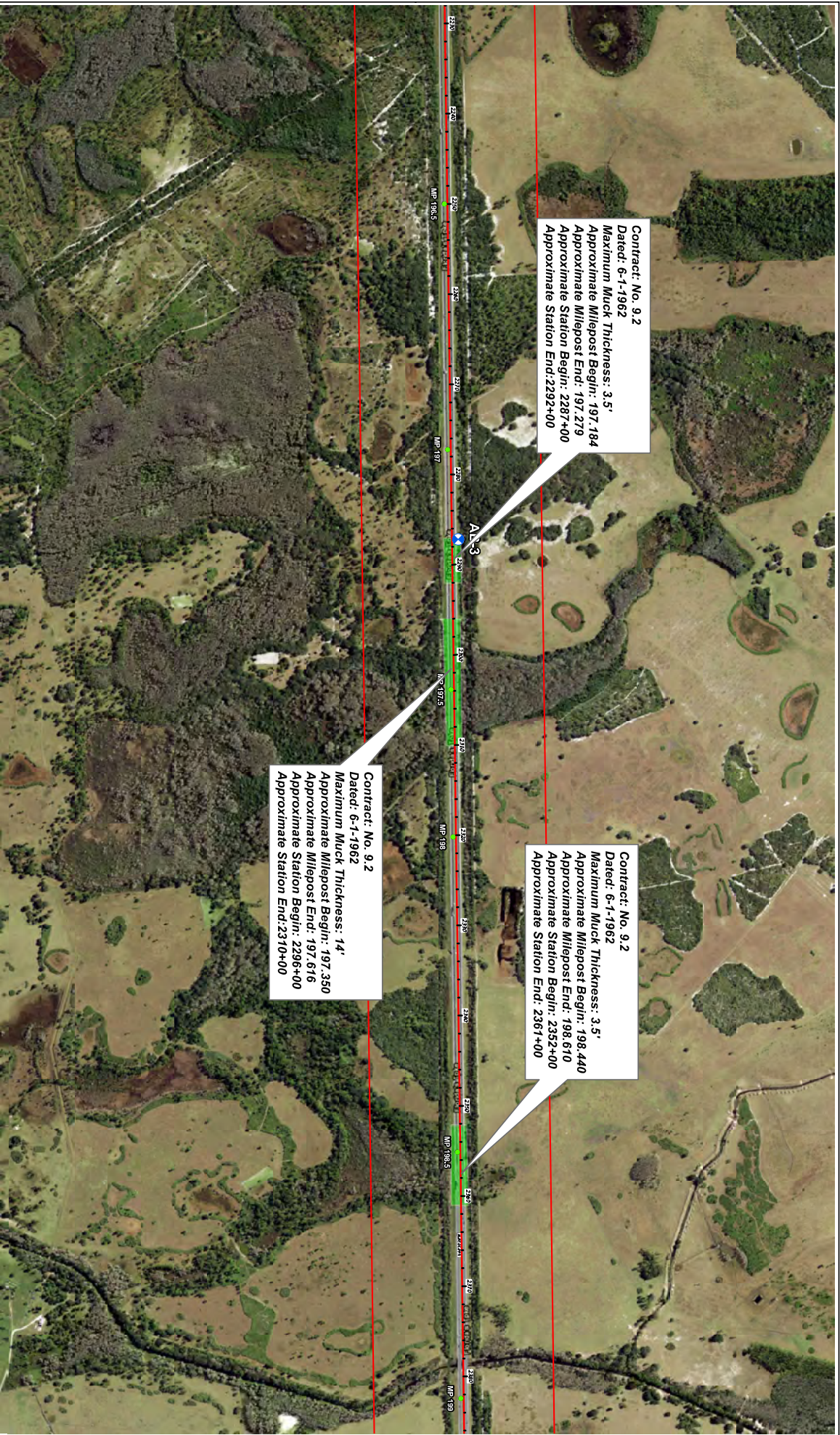
FIGURE
NO.

2P

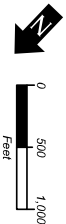
APPENDIX D

Muck Limits Aerial Maps





APPROXIMATE MUCK LOCATION

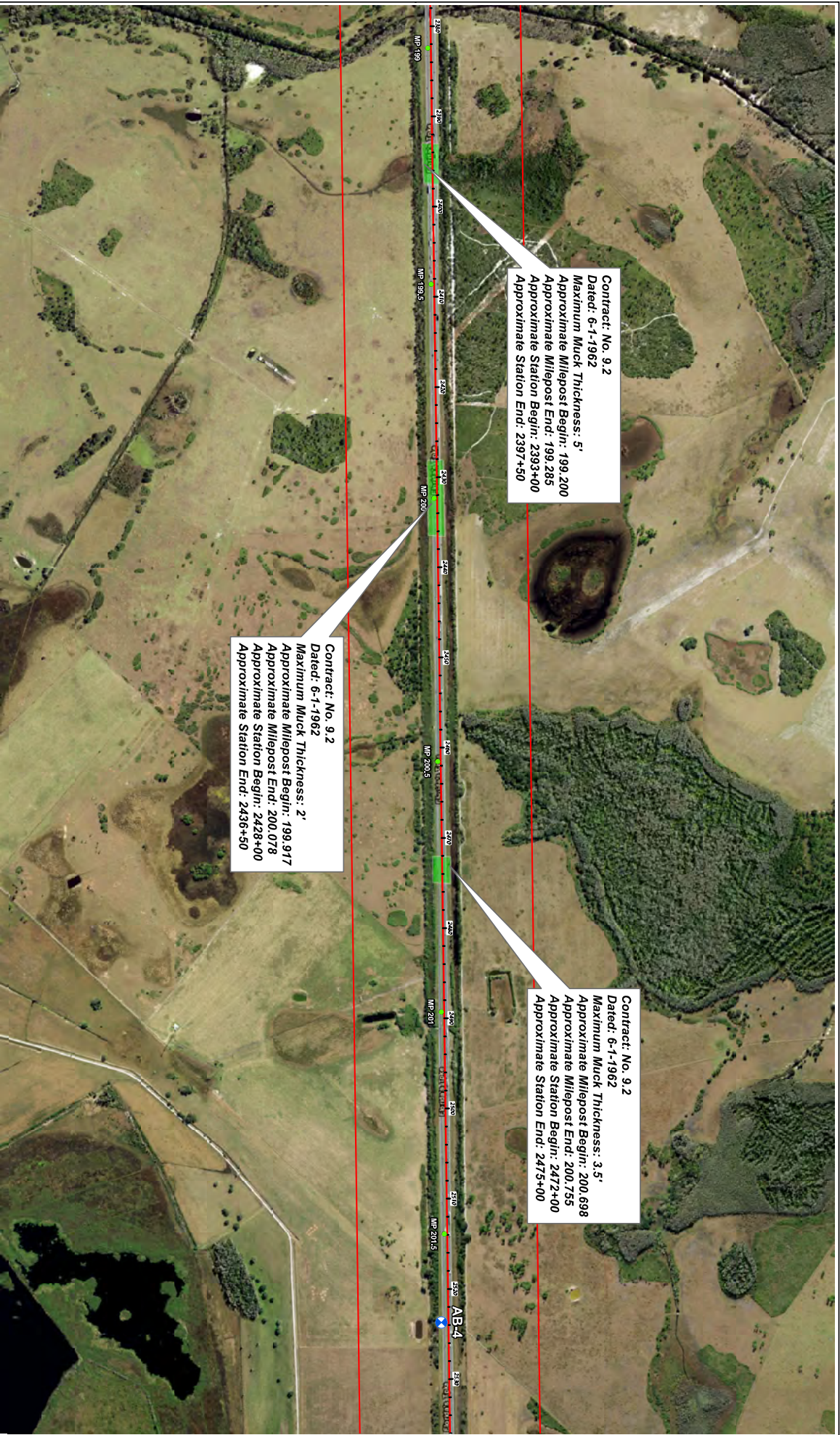


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SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.
3B



APPROXIMATE MUCK LOCATION



SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.

3C



APPROXIMATE MUCK LOCATION

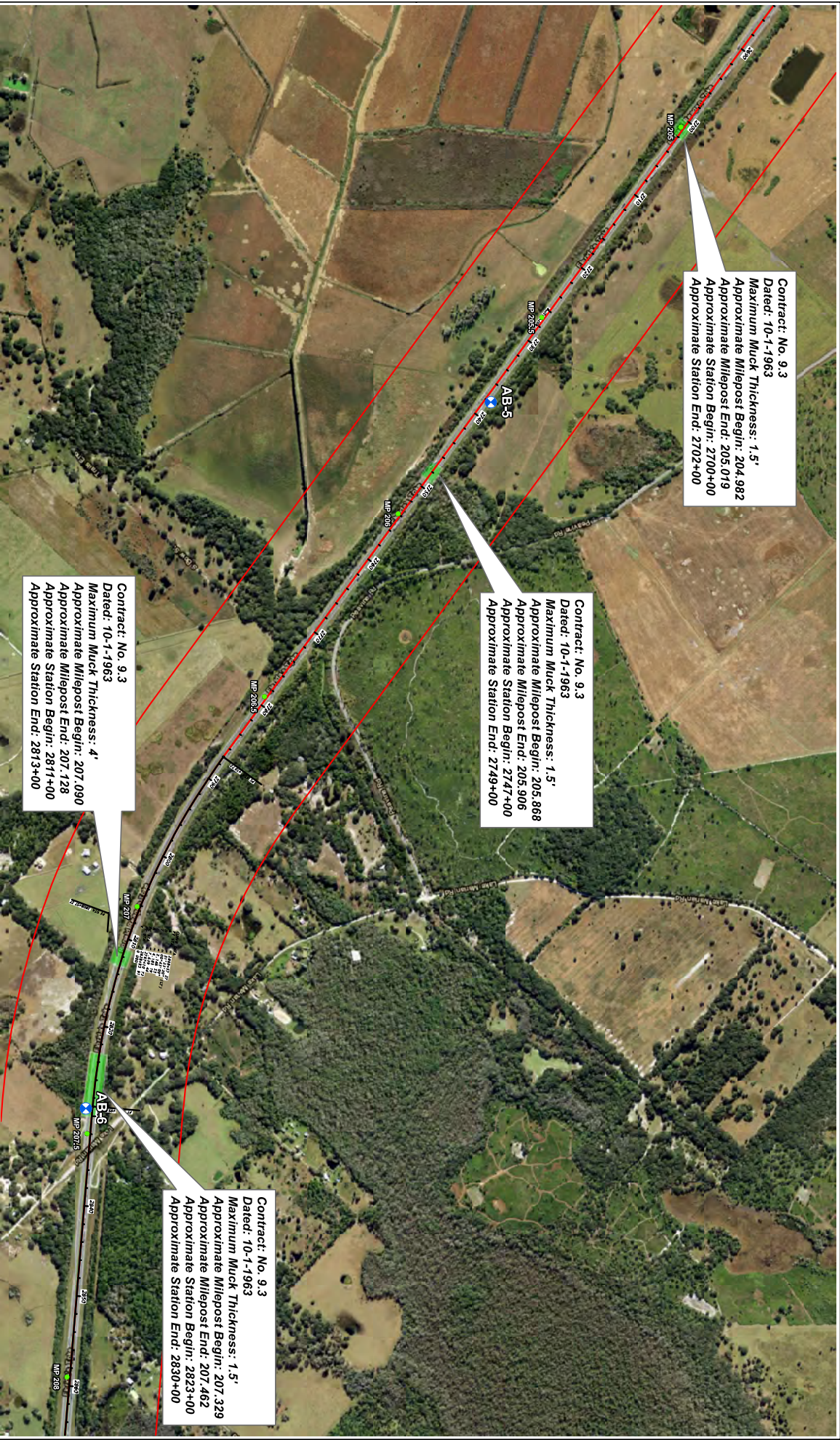


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SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.
3D

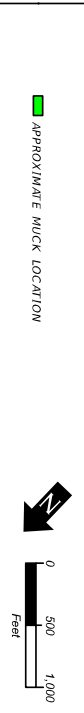


Contract: No. 9.3
Dated: 10-1-1963
Maximum Muck Thickness: 1.5'
Approximate Milepost Begin: 204.982
Approximate Milepost End: 205.019
Approximate Station Begin: 2700+00
Approximate Station End: 2702+00

Contract: No. 9.3
Dated: 10-1-1963
Maximum Muck Thickness: 1.5'
Approximate Milepost Begin: 205.868
Approximate Milepost End: 205.906
Approximate Station Begin: 2747+00
Approximate Station End: 2749+00

Contract: No. 9.3
Dated: 10-1-1963
Maximum Muck Thickness: 4'
Approximate Milepost Begin: 207.090
Approximate Milepost End: 207.128
Approximate Station Begin: 2811+00
Approximate Station End: 2813+00

Contract: No. 9.3
Dated: 10-1-1963
Maximum Muck Thickness: 1.5'
Approximate Milepost Begin: 207.329
Approximate Milepost End: 207.462
Approximate Station Begin: 2823+00
Approximate Station End: 2830+00



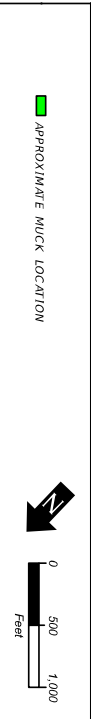
SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO. 3E



Contract: No. 9.4
Dated: 3-1-1963
Maximum Muck Thickness: 2.5'
Approximate Milepost Begin: 210.099
Approximate Milepost End: 210.176
Approximate Station Begin: 2969+20
Approximate Station End: 2973+25



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SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.
3F



APPROXIMATE MUCK LOCATION



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P.E. LICENSE NUMBER 42763

SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.

3G



APPROXIMATE MUCK LOCATION



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PUBLIC LICENSE NUMBER 42763

SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.
3H



APPROXIMATE MUCK LOCATION

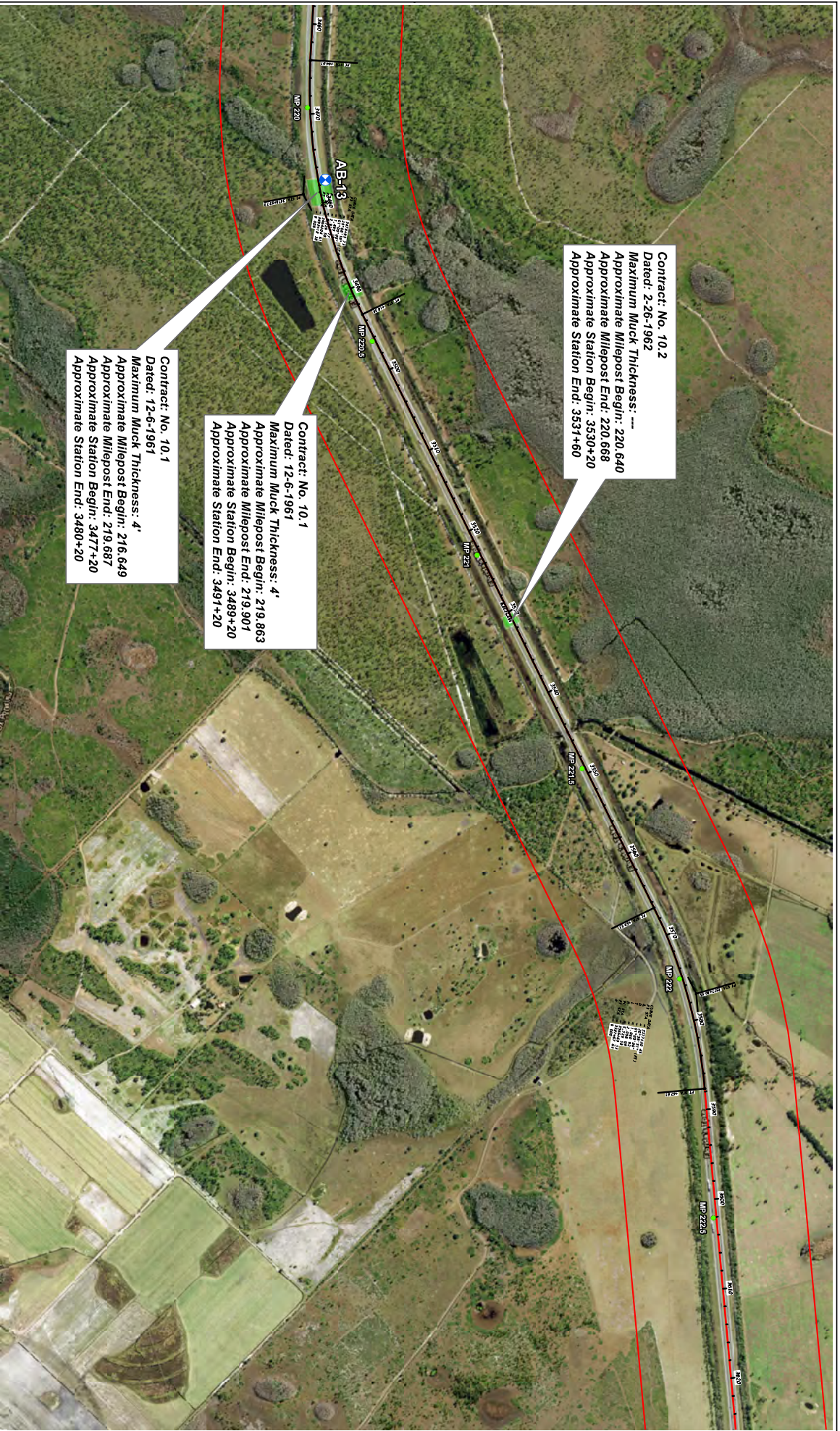


SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.

31



APPROXIMATE MUCK LOCATION



SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.
34



Contract No. 10.2
Dated: 2-26-1962
Maximum Muck Thickness: 3.5'
Approximate Milepost Begin: 227.082
Approximate Milepost End: 227.110
Approximate Station Begin: 3879+15
Approximate Station End: 3871+70

Contract No. 10.2
Dated: 2-26-1962
Maximum Muck Thickness: 4'
Approximate Milepost Begin: 227.251
Approximate Milepost End: 227.356
Approximate Station Begin: 3879+15
Approximate Station End: 3884+75

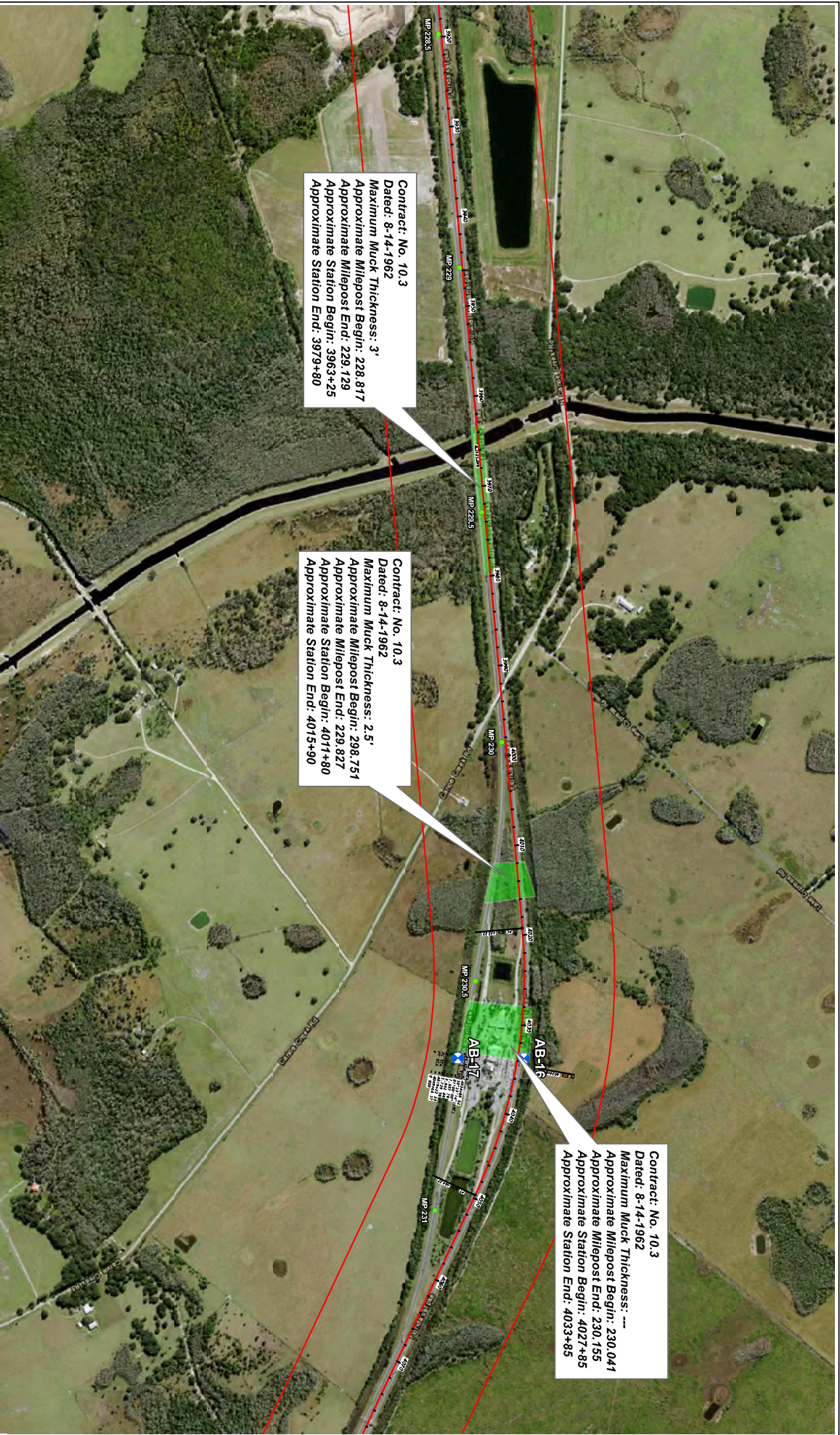


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SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.
3L



Contract: No. 10.3
Dated: 8-14-1962
Maximum Muck Thickness: 3'
Approximate Milepost Begin: 228.817
Approximate Milepost End: 229.129
Approximate Station Begin: 3963+25
Approximate Station End: 3979+80

Contract: No. 10.3
Dated: 8-14-1962
Maximum Muck Thickness: 2.5'
Approximate Milepost Begin: 298.751
Approximate Milepost End: 229.827
Approximate Station Begin: 4011+80
Approximate Station End: 4015+90

Contract: No. 10.3
Dated: 8-14-1962
Maximum Muck Thickness: ---
Approximate Milepost Begin: 230.041
Approximate Milepost End: 230.155
Approximate Station Begin: 4027+85
Approximate Station End: 4033+85

APPROXIMATE MUCK LOCATION

0 500 1,000 Feet

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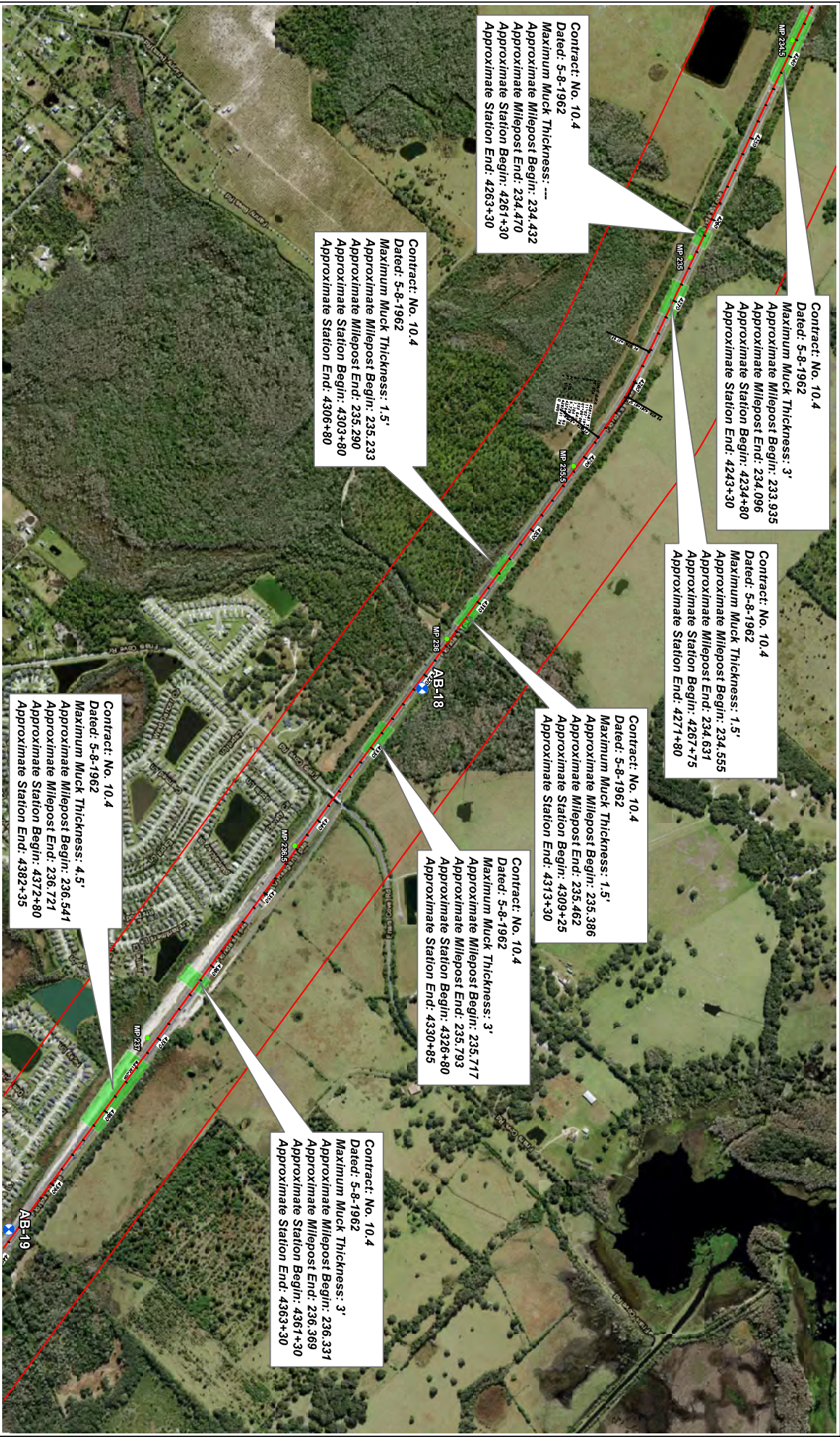
SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

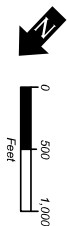
FIGURE NO.

3M

T:\J547AGE FTE PD&E from SR 60 to Kissimmee Park Road_AduroaGP7 CADD Files\AGS\AERIAL 3M.mxd 1/24/2025



APPROXIMATE MUCK LOCATION

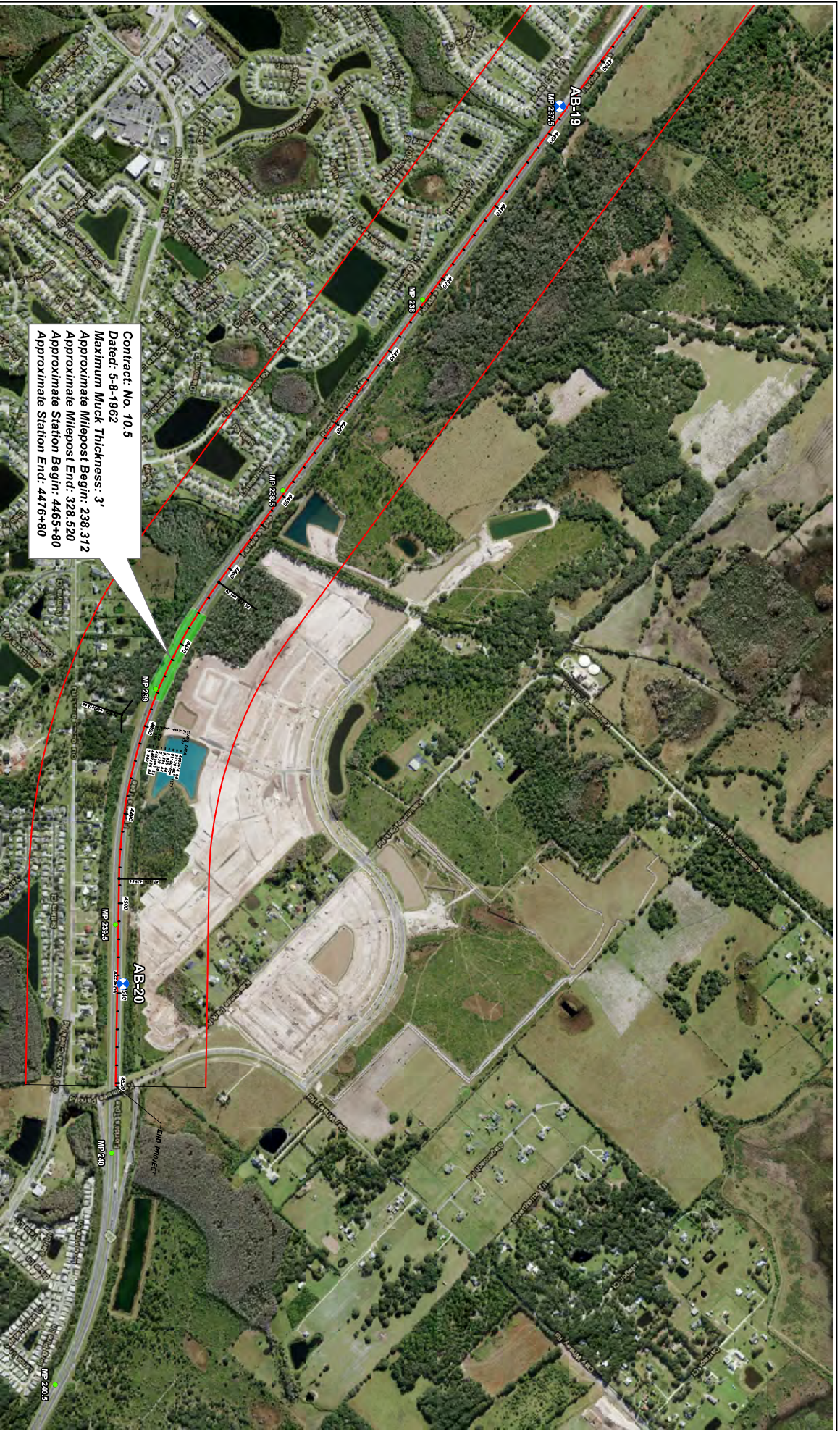


SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.

30



APPROXIMATE MUCK LOCATION



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SR 60 TO
KISSIMMEE PARK ROAD

MUCK LIMITS AERIAL MAP

FIGURE
NO.
3P

APPENDIX E

ETDM Advance Notification and Programming Summary Report



Florida Department of Transportation

RON DESANTIS
GOVERNOR

Turkey Lake Service Plaza
Mile Post 263 | Bldg. #5315
P.O. Box 613069, Ocoee, Florida 34761

JARED W. PERDUE, P.E.
SECRETARY

March 16, 2023

Mr. Chris Stahl, Clearinghouse Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399-3000

**Subject: Advance Notification
Florida's Turnpike (SR 91) Widening
From N of SR 60 to S of Kissimmee Park Road (MP 193-238.5)
ETDM Number: 14523
Financial Project Identification Number: 423374-3
Osceola County, Florida**

Dear Mr. Stahl,

This Advance Notification (AN) package is being sent to your office for distribution to State agencies that conduct federal consistency reviews (consistency reviewers) in accordance with the Coastal Zone Management Act and Presidential Executive Order 12372. Although we will request specific comments during the permitting process, we are asking that consistency reviewers examine the attached information and provide us with their comments.

Consistency reviewers have 45 days from the Programming Screening Notification to provide their comments. Once you have received their comments, please submit a consistency determination for the State of Florida within 60 days of the Programming Screening Notification. If you need more review time, please send a written request for an extension to our office within the initial 60-day comment period.

This is a non-federal action and the Florida Department of Transportation will determine what type of environmental documentation will be necessary. The determination will be based upon in-house environmental evaluations and comments from other agencies. A consistency review for this project is not required by 15 CFR Part 930 because no federal actions are involved.

In addition, please review this project's consistency, to the maximum extent feasible, with requirements of Chapter 163 of the Florida Statutes.

Mr. Chris Stahl, Clearinghouse Coordinator
Florida State Clearinghouse, FDEP
ETDM No. 14523 AN package
Page 2 of 2

Your comments should be submitted via the Environmental Screening Tool (EST) if you are an Environmental Technical Advisory Team (ETAT) representative, or emailed or mailed to the Florida's Turnpike contact:

Rax Jung, Ph.D., P.E.
Project Development Engineer
Florida's Turnpike Enterprise
Environmental Management Office
P.O. Box 613069
Ocoee, FL 34761
Email: Rax.Jung@dot.state.fl.us

I appreciate your cooperation in this matter.

Sincerely,



Rax Jung, Ph.D., P.E.
Project Development Engineer
Florida's Turnpike Enterprise

Enclosure: AN Package

c: Transmittal List, Part III of AN Package

Advance Notification Package

Project 14523 - Florida's Turnpike (SR 91) Widening from N of SR 60 to S of Kissimmee Park Road (MP 193-238.5)

Programming Screen - Published on 03/17/2023

Printed on: 3/17/2023

Table of Contents

I. Location Maps	1
II. Fact Sheet	7
a. Purpose and Need	7
b. Project Description	7
c. Preliminary Environmental Discussion	8
i. Social and Economic	8
1. Social	8
2. Economic	9
3. Land Use Changes	9
4. Mobility	10
5. Aesthetic Effects	10
6. Relocation Potential	10
7. Farmlands	10
ii. Cultural and Tribal	11
1. Section 4(f) Potential	11
2. Historic and Archaeological Sites	11
3. Recreational and Protected Lands	11
iii. Natural	11
1. Wetlands and Surface Waters	12
2. Water Resources	12
3. Floodplains	12
4. Coastal Zone Consistency	13
5. Protected Species and Habitat	13
6. Coastal and Marine	13
iv. Physical	14
1. Noise	14
2. Air Quality	14
3. Contamination	14
4. Infrastructure	14
5. Navigation	15
v. Special Designations	15
1. Special Designations: Outstanding Florida Waters	15
2. Special Designations: Aquatic Preserves	15
3. Special Designations: Wild and Scenic Rivers	15
4. Special Designations: Sole Source Aquifers	15
d. Anticipated Permits	15
e. Anticipated Technical Studies	16
III. Transmittal List	17
IV. Ancillary Documentation	19

I. Location Maps

North of SR 60 TO South of Kissimmee Park Road

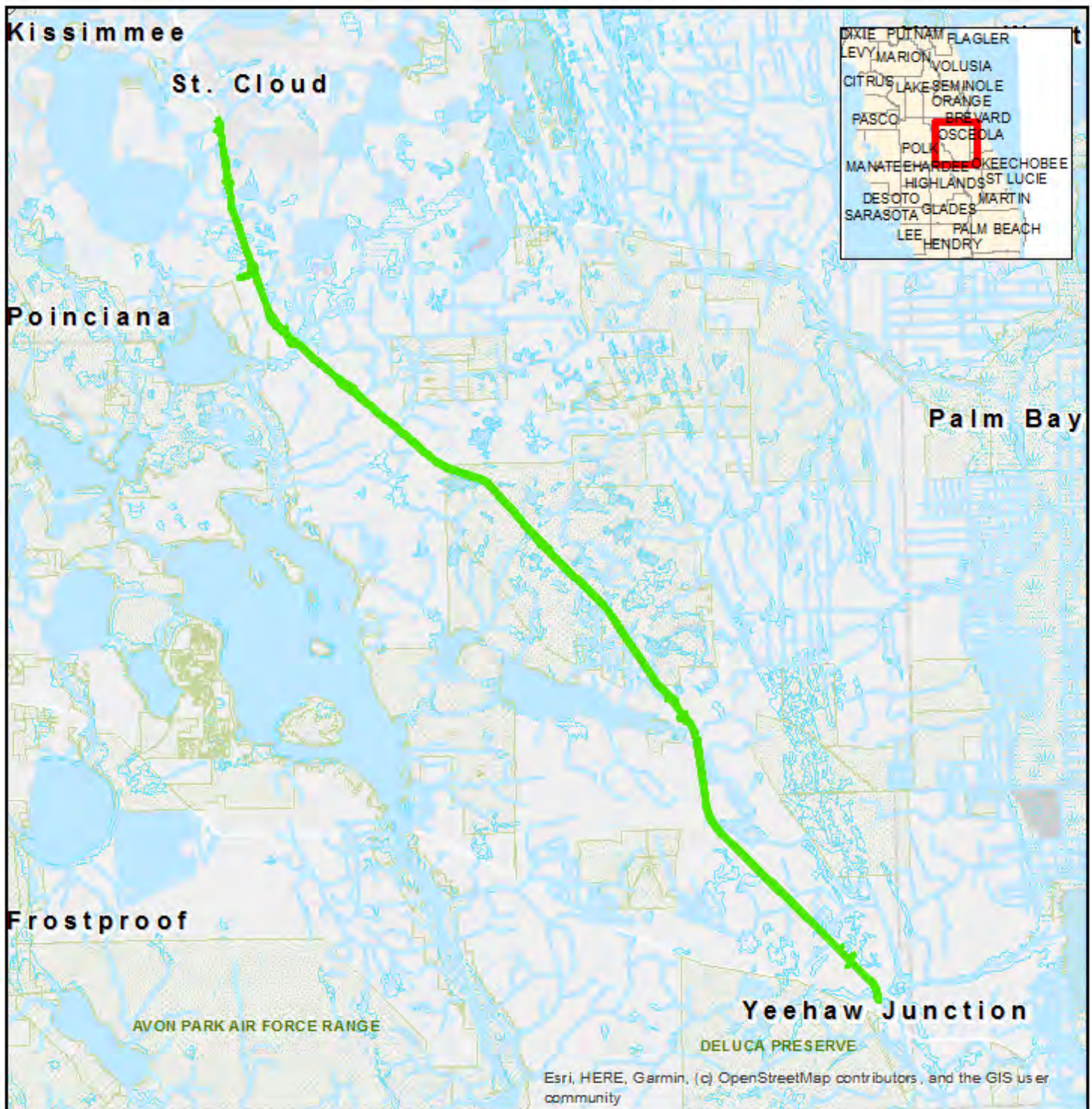


Project Aerial Map



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North of SR 60 TO South of Kissimmee Park Road



Project Base Map

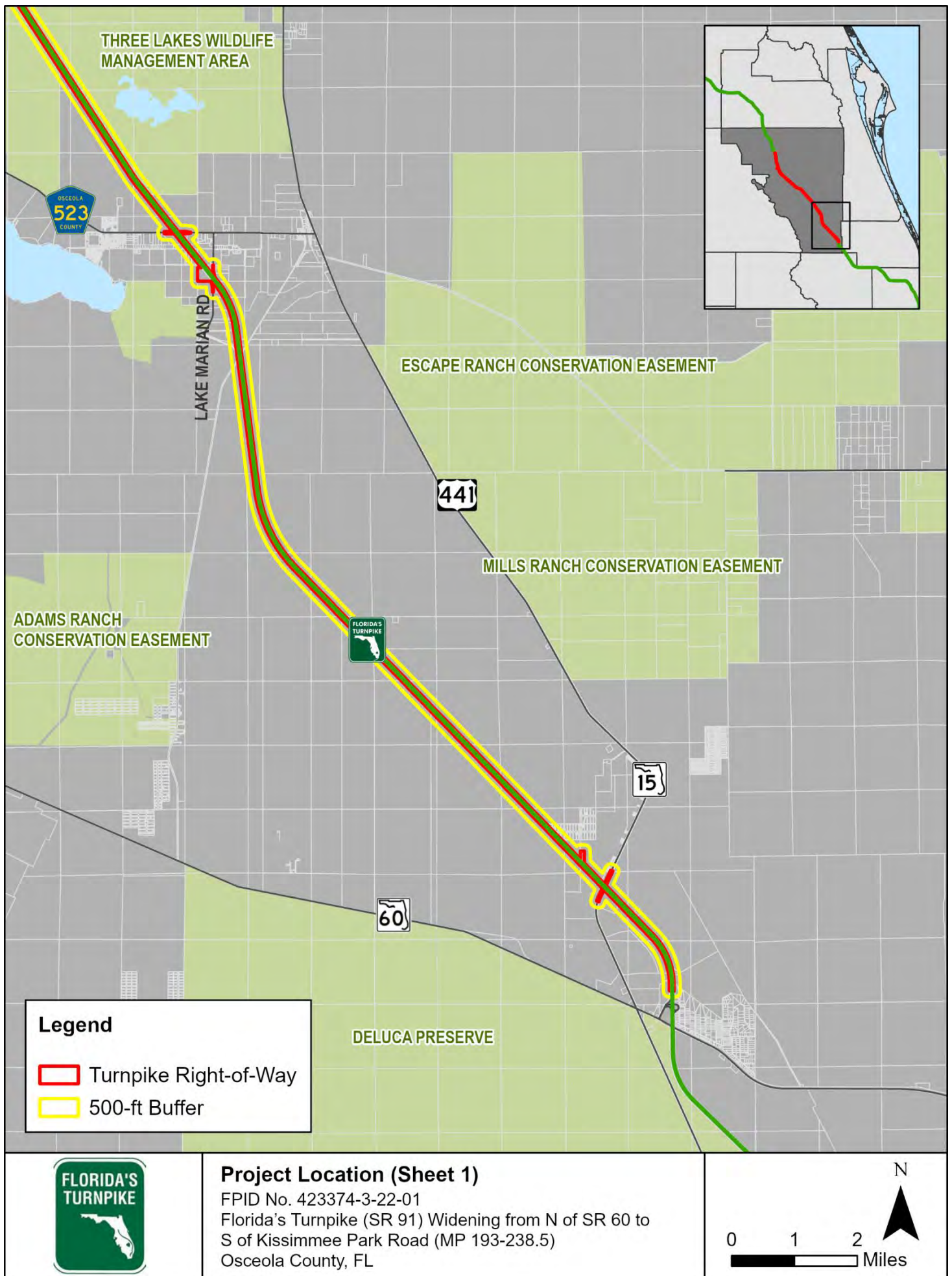
- | | | |
|---|---|----------------------------|
| ● ETDM Alternative Point | — ETDM Alternative Segment | Managed Conservation Lands |
| ○ Begin | ETDM Alternative Poly | Water Body |
| ● End | Census Places | Water Body |
| | Railroad | Swamp/Marsh |
| | River, Stream or Canal | |

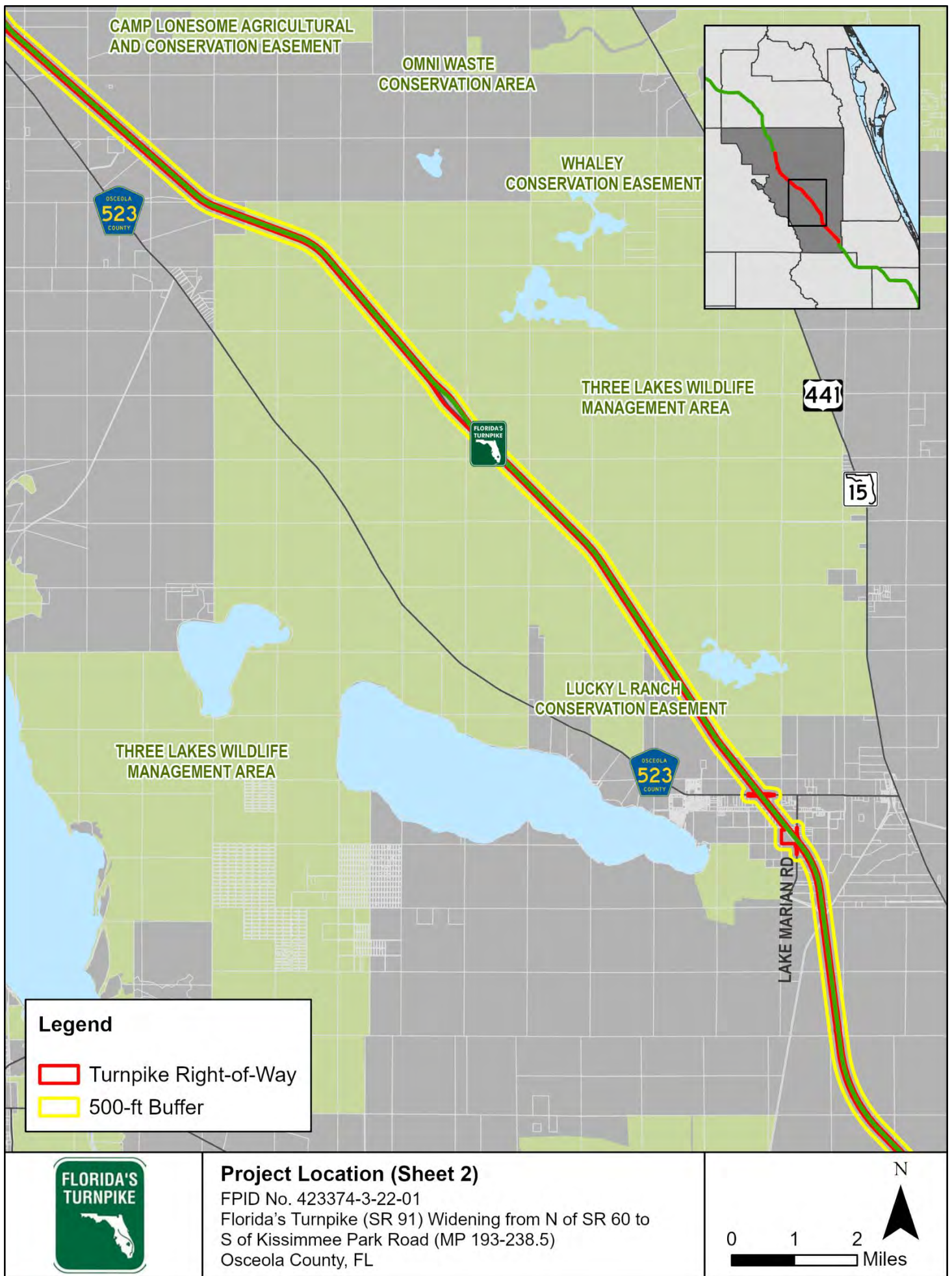
Data Sources:
 US Geological Survey
 US Census Bureau
 Florida Natural Areas Inventory

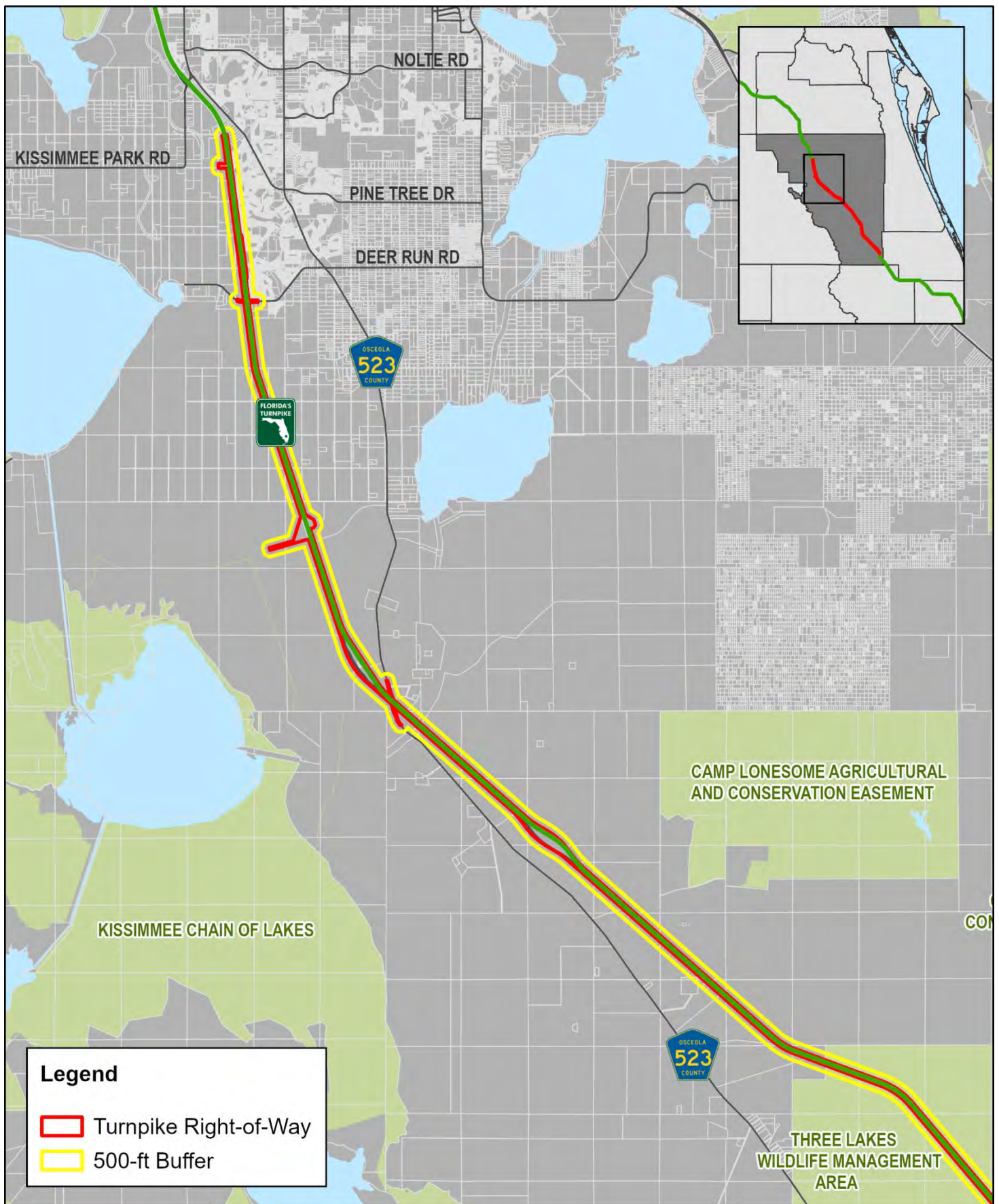
0 1.5 3 6 Miles



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Project Location (Sheet 3)

FPID No. 423374-3-22-01
 Florida's Turnpike (SR 91) Widening from N of SR 60 to
 S of Kissimmee Park Road (MP 193-238.5)
 Osceola County, FL



II. Fact Sheet

The Florida Department of Transportation may adopt this planning product into the environmental review process, pursuant to Title 23 U.S.C. § 168(d) or the state project development process.

Disclaimer

DISCLAIMER: The Fact Sheet data consists of the most up-to-date information available at the time the Advance Notification Package is published. Updates to this information may be found on the ETDM website at <http://etdmpub.fl.a-etat.org>

Special Note: Please be aware of the selected Milestone date when viewing project data on the ETDM website. Snapshots of project and analysis data have been taken for Project #14523 at various points throughout the project's life-cycle. On the website these **Project Milestone Dates** are listed in the the project header immediately after the project contact information. Click on any of the dates listed to view the information available on that date.

#14523 - Florida's Turnpike (SR 91) Widening from N of SR 60 to S of Kissimmee Park Road (MP 193-238.5)

Planning Organization: Florida's Turnpike Enterprise

District: District 5

From: North of State Road 60

Plan ID:

Federal Involvement: State Funds Only (SFO)

Phase: Programming Screen

County: Osceola

To: South of Kissimmee Park Road

Financial Management No.: 423374-3

Contact Information: Name: Suman Juluru Phone: 407-264-3424 E-mail: Suman.Juluru@dot.state.fl.us

Snapshot Data From: Current Draft Data

a. Purpose and Need

The purpose of this project is to increase capacity, meet existing and future travel demands, and address roadway deficiencies for the segment of Florida's Turnpike (State Road (SR) 91) from north of SR 60 at approximately MP 193 to south of Kissimmee Park Road at approximately MP 238.5. The project will also evaluate potential new interchange locations.

Capacity

Travel demand on the Florida's Turnpike has increased significantly in the past and is expected to increase in the future. According to the *Florida's Turnpike Enterprise (FTE) Traffic Trends Report*, July 2022, the last ten years (with the exception of 2019-2020, due to COVID-19) showed an annual increase in traffic volumes (AADT) along this segment of SR 91. This section of the Turnpike is experiencing 0.5 percent annual growth. In the *Florida's Turnpike Enterprise 2022 Traffic Engineer's Annual Report*, at MP 236 (Three Lakes Plaza) within the study limits, AADT increased 20.8 percent from 29,300 AADT in FY 2021 to 35,400 AADT in FY 2022. Additionally, forecasted traffic data show the need to widen the Florida's Turnpike within the project limits to six lanes by year 2035 to maintain acceptable levels of service.

Transportation Demand

Florida's Turnpike serves regional, but also local trips, particularly for commuters traveling to/from residential and employment centers and has therefore become a critical component of local transportation networks. At approximately 45.5 miles with only two existing access points, there is a need to evaluate new access points to provide for emergency evacuation, incident management, and population/employment growth. Additionally, the Florida's Turnpike is a designated evacuation route by the Florida Division of Emergency Management. The expansion of the project segment will improve hurricane evacuation and emergency response times. Due to population growth and transportation demand in the surrounding area, the existing interchange to the north of this project limit, Kissimmee Park Road, and the Turnpike mainline is programmed for capacity improvements with a Fiscal Year 2024 construction date.

Roadway Deficiencies

The project will address existing roadway deficiencies, such as horizontal and vertical geometries, clear zone requirements, and inside and outside shoulder widths. Various locations have substandard outside shoulder width and inside shoulder width. The project limits include multiple culvert and farm crossing structures built in the early 1960's that have cracks, scaling, spalling and siltation deficiencies.

Consistency with Planning Documents

The project is listed in the State Transportation Improvement Plan (STIP) with PD&E funding only, primarily in Fiscal Year (FY) 2026. The project is not currently listed in the FY 2022/2023-2026/27 MetroPlan Orlando Transportation Improvement Program (TIP), which was adopted on July 27, 2022 and amended on February 8, 2023. Only the PD&E phase is listed in the MetroPlan Orlando 2045 Metropolitan Transportation Plan- Cost Feasible Plan, adopted December 2020 and revised on December 14, 2022. Final design, right-of-way, and construction phases are listed as unfunded needs. Additional coordination will take place during the PD&E Study to ensure plan consistency by including this project in the relevant planning documents.

b. Project Description

The project involves capacity improvements up to eight (8) lanes and the addition of potential new interchanges along Florida's Turnpike north of SR 60 (MP 193) to south of Kissimmee Park Road (MP 238.5) in Osceola County, a distance of approximately 45.5 miles.

c. Preliminary Environmental Discussion

i. Social and Economic

1. Social

Project PED Comments

none

Analysis Area PED Comments: Mainline

The Environmental Screening Tool (EST) Sociocultural Data Report (SDR) was used to determine demographic data. The SDR uses the U.S. Decennial Census (1990, 2000, 2010) and the American Community Survey (ACS) 5-year estimates from 2017-2021 and reflects the approximation of the population based on block group level data with a 500-foot study area buffer of the study corridor.

The available SDRs report data using two methods. The "intersecting" feature for the census data reports data for all block group populations in their entirety that intersect with the 500-foot buffer. In comparison, the "clipping" feature for the census data reports data for a subset of the block groups that intersect with the project buffer. With this second method, the portion of the block groups that lie outside the area of interest boundary are removed and demographics are then recalculated assuming an equal distribution of the population. For the purposes of this Preliminary Environmental Discussion, the "clipping" SDR data was used, which is the more commonly referenced data.

The SDR identified the following demographics data:

Population and Income

In 2010, the total population was 862 individuals within the 500-foot project buffer (2010 Census Data Block Groups - Housing, Osceola County). In 2017-2021 using the ACS Block Group Data, the total population is 1,818 individuals.

In 2010 in the same project buffer, there were 284 households, of which 6.69% were below poverty and 0.70% were on public assistance (2010 Census Data Block Groups - Income, Osceola County). In 2017-2021, there were 436 households, of which 4.82% were below poverty level and 2.98% were on public assistance (2021 ACS Block Group Data - Income).

Race and Ethnicity

Census data from 2010 within the 500-foot study area buffer reports 65 individuals (7.54% of the population) described as Black or African American Alone; 302 individuals (35.03% of the population) as Hispanic or Latino of Any Race; and 58 individuals (6.73% of the population) as Some Other Race Alone (2010 Census Data Block Groups - Race and Ethnicity). Data from the ACS 2017-2021 within the 500-foot study area buffer reports 203 individuals (11.17% of the population) described as Black or African American Alone; 940 individuals (51.71% of the population) as Hispanic or Latino of Any Race; and 240 individuals (13.20% of the population) as Some Other Race Alone (2021 ACS Block Group Data - Race and Ethnicity).

Age and Disability

Census data from 2010 within the 500-foot study area buffer reports 94 individuals (10.09% of the population) aged 65 and older (2010 Census Data Block Groups - Population Totals). Data from the ACS 2017-2021 reports 271 individuals (14.96% of the population) (2021 ACS Block Group Data - Population Totals). The 2017-2021 ACS data includes information on individuals with a disability between the ages of 20 and 64. There are 102 individuals (10.13% of the population) reported to have a disability.

Housing

According to the 2010 Census Data Block Groups - Housing (Osceola County): Within the 500-foot study area buffer, there were 329 total housing units. Of those, 284 (86.3%) were occupied and 45 (13.7%) were vacant. According to the 2017-2021 ACS Block Group Data - Housing: Within the 500-foot study area buffer, there were 502 total housing units. Of those, 437 (87%) were occupied and 65 (13%) were vacant.

Language

According to the 2010 Census Data Block Groups - Household Language (Osceola County): Within the 500-foot study area buffer, 33 individuals (4.47% of the population) speak English "not well" and 6 individuals (0.81% of the population) speak English "not at all". According to the 2017-2021 ACS Block Group Data - Household Language (Osceola County): Within the 500-foot study area buffer, 120 individuals (7.13% of the population) speak English "not

well" and 18 individuals (1.07% of the population) speak English "not at all".

This PD&E Study will be developed in accordance with the Civil Rights Act of 1964, the Civil Rights Act of 1968, along with Title VI of the Civil Rights Act, Executive Order 12898 (Environmental Justice), which requires Federal agencies to take the appropriate steps to identify and address any disproportionately high and adverse human health or environmental effects of Federal programs, policies, and activities on minority and low-income populations. Where there is potential for disproportionately high and adverse effects on minority and low-income populations, proactive measures will be taken to involve the affected community in the decisions related to alternative selection, impact analysis, and mitigation.

The proposed project is expected to result in minimal involvement with social resources.

A Sociocultural Effects evaluation will be conducted during the PD&E phase to evaluate impacts and enhancements to social conditions.

2. Economic

Project PED Comments

none

Analysis Area PED Comments: Mainline

The Florida's Turnpike aids in the movement of people and goods in the central and south Florida regions and beyond. It is a designated Strategic Intermodal System (SIS) corridor and important freight corridor. It also serves regional, but also local trips, particularly for commuters traveling to/from residential and employment centers and has therefore become a critical component of local transportation networks. There are no airports near the project but there is one airstrip within 500 feet of the corridor.

The Geographic Information Systems (GIS) data identifies two (2) Developments of Regional Impact (DRI) (Edgewater and Green Island), as well as three (3) Planned Unit Development (PUD) sites (Friar's Cove and two other sites) within the 500-foot study area buffer.

The capacity improvements to the Turnpike Mainline will enhance economic conditions of the area by addressing the deficient capacity of the roadway in the future condition in order to serve the mobility demands, thereby supporting increased growth and by better facilitating the movement of local and regional freight through the increase in travel time reliability. In addition, short-term construction related jobs will be created.

Economic enhancements are anticipated.

A Sociocultural Effects evaluation will be conducted during the PD&E phase to evaluate impacts and enhancements to economic conditions.

3. Land Use Changes

Project PED Comments

none

Analysis Area PED Comments: Mainline

Capacity improvements along Florida's Turnpike mainline are anticipated to occur within the existing right-of-way with the exception of potential new interchange locations and potential pond site and/or drainage accommodations. A 500-foot study area buffer from the existing right-of-way line was used to identify potential impacts.

Analysis of the 2014-2019 Water Management District (WMD) Florida Land Use and Land Cover (FLUCCS Level 3) GIS data identifies "Improved Pastures" as the highest percentage of land use which accounts for 2,924.05 acres (35.91%) of the area within the 500-foot study area buffer. Land listed as "Roads and Highways" account for 1,487.15 acres (18.27%) of the study buffer. "Pine Flatwoods" cover 530.81 acres (6.51%) and "Unimproved Pastures" cover 492.49 acres (6.08%) within the 500-foot study area buffer, respectively.

Analysis of the GeoPlan Florida Level 2 Future Land Use 2020 GIS data has identified lands within the 500-foot study area buffer as predominantly:

- Agriculture (3,919.81 acres; 48.17%)
- Transportation/Utilities (2,404.68 acres; 29.55%)
- Mixed Use - General (871.06 acres; 10.7%)
- Conservation (747.79 acres; 9.19%)
- remaining classifications are less than 2% of the total.

According to the future land use data, the area surrounding the corridor will continue to support the aforementioned land uses. Any potential new interchanges would result in minor direct land use changes, related to the conversion of the vacant land to transportation use. Additionally, indirect or secondary impacts could result if new development were to occur at the new interchange location. However, the proposed project is anticipated to result in minimal impacts overall to land use.

A Sociocultural Effects evaluation will be conducted during the PD&E phase to evaluate impacts and enhancements to land use changes.

4. Mobility

Project PED Comments

none

Analysis Area PED Comments: Mainline

The Florida's Turnpike serves as a primary north-south connection through central and south Florida. Within the study area, it runs generally parallel to smaller roadway facilities including US 441 and Canoe Creek Road and serves a critical role in the movement of commuters and freight traffic. Florida's Turnpike is also a designated emergency evacuation route network established by the Florida Division of Emergency Management. It is the only north-south evacuation route in rural Osceola County; US 441 and Canoe Creek Road are not evacuation routes. Additionally, the project corridor is part of the Emergency Shoulder Use (ESU) innovative strategy to temporarily increase traffic flow and capacity during major hurricane evacuations using existing paved shoulders. First developed in 2017 and covering key corridors within the state, ESU replaced the former one-way plans, also known as contraflow and lane reversal.

Within the 500-foot study area buffer there are no (0) Transportation Disadvantaged Service Provide Areas, no (0) bus transit routes, two (2) existing recreational trails (Three Lakes North and Three Lakes Wildlife Management Area to Old Creek Road Connector), one (1) Aviation Transportation Facility (Flying S Ranch Airstrip), and two (2) Hiking Trail Priorities (2018-2022)/ multi-use trails opportunities: a segment of the Florida National Scenic Trail corridor (CR 523 Connector- Road Walk) and Three Lakes North (Orange).

The proposed project is anticipated to enhance mobility by providing for increased roadway capacity and improved level of service.

A Sociocultural Effects evaluation will be conducted during the PD&E phase to evaluate impacts and enhancements to mobility.

5. Aesthetic Effects

Project PED Comments

none

Analysis Area PED Comments: Mainline

Within the 500-foot study area buffer there are two (2) U.S. Census Designated Places, St. Cloud and Yeehaw Junction. The area surrounding the corridor primarily consists of agricultural, recreation (conservation lands), public/semi-public and acreage not zoned for agriculture. Specific community features include two (2) DRIs (Edgewater and Green Island), as well as three (3) PUD sites (Friar's Cove and two other sites). There are two existing recreational trails consisting of Three Lakes North and Three Lakes Wildlife Management Area to Old Creek Road Connector. State-managed conservation lands include Three Lakes Wildlife Management Area and Lucky L Ranch Conservation Easement. Florida Forever Board of Trustees projects (potential, future conservation land expansion) include Adams Ranch, Big Bend Swamp/Holopaw Ranch, and Osceola Pine Savannas. Office of Greenways and Trails trail opportunities include a segment of the FNST corridor (CR 523 Connector- Road Walk) and Three Lakes North (Orange).

The project appears to be consistent with existing area development and the future land use vision and aesthetic character of the corridor. No impacts to vistas or viewsheds are anticipated as the project is anticipated to remain at-grade with the potential exception of a new interchange(s). For these reasons the project is anticipated to have minimal involvement with aesthetic effects.

A Sociocultural Effects evaluation will be conducted during the PD&E phase to evaluate impacts and enhancements to aesthetic resources.

6. Relocation Potential

Project PED Comments

none

Analysis Area PED Comments: Mainline

Water Management District 2014-2019 GIS data indicate there are 126.57 acres of residential uses within the 500-foot study area buffer. While efforts will be made to identify alternatives within the existing right-of-way, the proposed widening to Florida's Turnpike may require additional right-of-way from adjacent properties.

The proposed project is not anticipated to result in any relocations.

If required, a Conceptual Stage Relocation Plan (CSRP) will be prepared. Additionally, a Sociocultural Effects evaluation will be conducted during the PD&E phase to evaluate impacts to residents and businesses.

7. Farmlands

Project PED Comments

none

Analysis Area PED Comments: Mainline

NRCS GIS data available in the EST indicates that there 4,919 acres of Prime Farmland Soils within the 500-foot project buffer. The project is mostly located outside of designated Urban Areas as per the US Census Bureau 2010 maps but the northern limit is located within the Kissimmee Urbanized Area. According to the Osceola County Future Land Use Map (2040) the majority of the project area will remain as Rural/Agricultural. Water Management District Land Use and Cover data (2014-2019) indicates that there are 3,853 acres of land classified as agricultural lands within the 500-foot project buffer. These consist of citrus groves, woodland pastures, improved pastures, unimproved pastures, field crops, poultry feeding operations, and abandoned groves.

Farmlands involvement is anticipated to be minimal since project construction within existing rights-of-way acquired prior to August 1984 are exempt. Additionally, since this project does not involve federal funding, it is not subject to the provisions of the Farmland Protection Policy Act of 1982, 7 CFR Part 658.

ii. Cultural and Tribal

1. Section 4(f) Potential

Project PED Comments

none

Analysis Area PED Comments: Mainline

Section 4(f) of the Department of Transportation Act of 1966 is not applicable to non-federally funded projects.

2. Historic and Archaeological Sites

Project PED Comments

none

Analysis Area PED Comments: Mainline

A review of the Florida Master Site File (FMSF) database indicates that no comprehensive survey of the corridor has been conducted and approximately 60% of the 500-foot project buffer has not had a prior field survey. According to the FMSF GIS data available in the EST, identified resources include three (3) archaeological or historical sites within the 500-foot project buffer, consisting of Lakes Logging Tram (OS01882) which has not been evaluated by the SHPO and is listed as having insufficient survey information, and two (2) homestead sites (OS02544 and OS02545) determined ineligible for listing in the National Register of Historic Places (NRHP). There are six (6) historic bridges, all of which have been determined ineligible for listing in the NRHP (OS03246, OS03247, OS03248, OS03249, OS03250, and OS03251). Florida Site File Resource Groups within the 500-foot project buffer include Canoe Creek Road Ditch (OS01927), Destiny North Canal I (OS02548), and Destiny North Canal II (OS2549). There are no documented cemeteries.

The proposed project is expected to result in minimal involvement with archaeological and historic sites.

A Cultural Resources Assessment Survey (CRAS) will be conducted during the PD&E Study to evaluate potential impacts to these resources.

3. Recreational and Protected Lands

Project PED Comments

none

Analysis Area PED Comments: Mainline

Within 500 feet of the project, there are two existing recreational trails consisting of Three Lakes North and Three Lakes Wildlife Management Area to Old Creek Road Connector. State-managed conservation lands include Three Lakes Wildlife Management Area and Lucky L Ranch Conservation Easement. Florida Forever Board of Trustees projects (potential, future conservation land expansion) include Adams Ranch, Big Bend Swamp/Holopaw Ranch, and Osceola Pine Savannas. Office of Greenways and Trails trail opportunities include a segment of the FNST corridor (CR 523 Connector-Road Walk) and Three Lakes North (Orange).

The proposed project is anticipated to result in minimal involvement with recreational resources. Potential impacts will be evaluated during the PD&E Study.

iii. Natural

1. Wetlands and Surface Waters

Project PED Comments

none

Analysis Area PED Comments: Mainline

According to the USFWS National Wetlands Inventory V2 GIS data available in the EST, there are approximately 1,160 acres of wetlands and surface waters within 500 feet of the project. This includes 373 acres of freshwater emergent (marsh) wetlands, 626 acres of freshwater forested/shrub wetlands, 112 acres of riverine systems, and 48 acres of freshwater ponds. The Water Management District Florida Land Use and Cover GIS data reports approximately 1,294 acres of wetlands and surface waters within the same buffer. This includes 55 acres of wet prairie, 304 acres of freshwater marsh, 1 acre of emergent aquatic vegetation, 99 acres of treeless hydric savanna, 406 acres of cypress swamp, 331 acres of mixed wetland hardwoods, 59 acres of wetland forested mixed, 28 acres of bay swamp, and 11 acres of hydric pine flatwoods. The difference in these two estimates appears to be mostly attributable to mapping of roadside ditches.

While there are approximately 1,200 acres of wetlands and surface waters within the 500-foot project buffer, it is anticipated that a more moderate amount of wetlands will be impacted with the capacity improvements and associated pond sites. Alternatives will be evaluated to avoid and minimize wetland and surface water impacts, where possible. Unavoidable impacts to wetlands and surface waters will require an Environmental Resource Permit (ERP) from the St. Johns River Water Management District and/or the South Florida Water Management District, and a Section 404 Dredge and Fill permit. Only one water resource within the project limits, the C-34 Canal (managed by SFWMD) located approximately 1 mile south of the Canoe Creek Service Plaza, is a U.S. Army Corps of Engineers (USACE) retained water. Therefore, depending upon proposed impacts to this canal and any potential project segmentation for future design and permitting project phases, the Section 404 permit could be issued by either the USACE or the Florida Department of Environmental Protection (FDEP) through the state 404 program.

Avoidance and minimization measures will be incorporated into the project's design, best management practices will be utilized during project construction activities, and compensatory mitigation will be provided for any adverse wetland impacts resulting from the proposed project improvements. Further, the proposed stormwater management system for the project will be developed to meet the design and performance criteria established in the SJRWMD and/or SFWMD Environmental Resource Permit Applicant's Handbook for the treatment and attenuation of discharges to nearby waterbodies. As such, stormwater runoff from the proposed project will be treated to prevent water quality impacts to nearby wetlands.

Due to the percentage and proximity of wetlands and surface waters located within the 500-foot project buffer, moderate involvement regarding wetland resources is anticipated.

A Natural Resource Evaluation (NRE) will be conducted during the PD&E study to determine specific impacts to wetlands and surface waters.

2. Water Resources

Project PED Comments

none

Analysis Area PED Comments: Mainline

Nearly 70% of the project 500-foot buffer is located within the Lake Okeechobee Watershed, which is a Northern Everglades and Estuaries Protection Program (NEEP) Watershed. There is one (1) Basin Management Action Plan (BMAP), Lake Okeechobee Surface Water BMAP, within the 500-foot project buffer. There are no waters with Adopted Total Maximum Daily Loads (TMDLs) within the 500-foot project buffer but there are two FDEP Strategic Monitoring Plan (SMP) for waterbodies (Blue Cypress Creek [WBID 3133] and Little Creek [WBID 3100]) and three FDEP waters not attaining standards (WNAS) consisting of Blue Cypress Creek [WBID 3133], Lake Kissimmee (Mid Drain) [WBID 3183B1] and Lake Tohopekaliga Drain (South Segment) [WBID 3173C]. The Lake Tohopekaliga Drain (South Segment) [WBID 3173C] is a verified impaired Florida Water that failed water quality standards for nutrients (macrophytes and total phosphorus). There are no U.S. Environmental Protection Agency (USEPA) 303(d) listed impaired waters however there are two (2) 305(b) assessed waters within the 500-foot project buffer. There are 11 USEPA water quality data monitoring stations, five (5) FDEP Statewide coverage of Storage Retrieval (STORET) stations, and one FDEP Watershed Information Network (WIN) monitoring location. There are five Super Act Risk Sources, three Super Act Wells, and 24 USEPA NPDES permits/programs.

The project is expected to result in minimal involvement with water quality and quantity resources.

The project will be designed to meet state water quality and quantity requirements, and Best Management Practices (BMPs) will be utilized during construction. A Water Quality Impact Evaluation (WQIE) will be conducted during the PD&E study to document and assess potential impacts to water resources.

3. Floodplains

Project PED Comments

none

Analysis Area PED Comments: Mainline

Digital Flood Insurance Rate Map (DFIRM) data available in the EST indicates that 62% of the 500-foot project buffer is located outside of the 100-year floodplain, while 38% is located within a flood zone. Flood zones include AE (13.46%) and A (24.28%) of the 500-foot buffer.

The project is anticipated to have moderate involvement with floodplain resources.

A Location Hydraulics Report will be completed during the PD&E Study.

4. Coastal Zone Consistency

Coastal Zone Consistency Determination is Required: **No**

Project is not subject to a consistency review as required by **15 CFR 930**.

5. Protected Species and Habitat

For the official list of fish and wildlife designated by the state of Florida as Endangered, Threatened or Species of Special Concern, please refer to sections 68A-27.003, .0031 and 005 in *Rules Relating to Endangered or Threatened Species*, Chapter 68A-27, Florida Administrative Code, <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68A-27>. For general information on Florida imperiled species and species conservation programs, go to <https://myfwc.com/wildlifehabitats/wildlife/>

Project PED Comments

none

Analysis Area PED Comments: Mainline

Within the 500-foot project buffer, approximately 26.7% is located within the Upper St. Johns River Ecosystem Management Area and 73.3% is within the South Florida Ecosystem Management Area. Managed Areas include Three Lakes Wildlife Management Area and Lucky L Ranch Conservation Easement. The Everglades Headwaters National Wildlife Refuge and Conservation Area covers 67.62% of the 500-foot project buffer. FWC Strategic Habitat Conservation Areas Priority Rankings within the 500-foot project buffer include 0.13% as highest priority, 21.65% as high priority, 0.11% as medium, and 0.84% as lowest priority. No data was available for the remaining 77.26%. FWC watersheds containing rare and imperiled fish include Lake Tohopekaliga for the bluenose shiner and South Fork of the Upper Bull Creek for the ironcolor shiner.

USFWS Consultation Areas that overlap the project include the Florida bonneted bat (100% of the 500-foot buffer), Caracara (100%), Florida Grasshopper Sparrow (100%), Red cockaded woodpecker (87.83%), Florida scrub-jay (100%), Snail kite (100%), and Lake Wales Ridge Plants (100%). Wood stork core foraging areas (CFAs) cover 50.19%. The USFWS Information for Planning and Consultation (IPaC) also identifies the following plants to potentially occur within the project area: Brittons beargrass, Florida bonamia, Lewton's polygala, papery whitlow-wort, pigeon wings, pygmy fringe-tree, sandlace, scrub buckwheat, scrub lupine, and wide-leaf warea. According to the Florida Natural Areas Inventory (FNAI) Florida Element Occurrence data, threatened or endangered species that have been documented or considered as likely to occur within 1 mile of the project include the caracara, red-cockaded woodpecker, eastern indigo snake, large-flowered rosemary, many-flowered grass-pink, and nodding pinweed. The Florida Ecological Greenways Network data indicates that 45.09% of the 500-foot project buffer is within Priority 1- Critical Linkages, while 39.94% is within Priority 2, 4.12% is within Priority 5, and 10.84% is located outside of a priority zone.

The project is located within the "Occasional" Florida black bear range. There is one (1) black bear road kill documented in the roadway corridor and three (3) bear nuisance reports within the 500-foot project buffer. No Florida panthers have been documented in the project buffers and the project is located outside of the Florida panther Consultation Area.

State listed species with potential to occur include the gopher tortoise, Florida sandhill crane, Florida burrowing owl, Florida pine snake, and wading birds including the little blue heron and tricolored heron. There are three (3) documented bald eagle nests with primary and/or secondary protection buffers that overlap the 500-foot project buffer.

Much of the proposed work will occur within existing, maintained right-of-way. The proposed project is anticipated to result in Moderate involvement with wildlife and habitat resources.

A listed species assessment will be included in the NRE completed for the PD&E study.

6. Coastal and Marine

Project PED Comments

none

Analysis Area PED Comments: Mainline

The EST analysis did not identify any Environmentally Sensitive Shorelines or Coastal Barrier Resources within the project buffer areas.

No adverse impacts to coastal resources are anticipated due to the location of the project study area and its distance from environmentally sensitive shorelines.

iv. Physical

1. Noise

Project PED Comments

none

Analysis Area PED Comments: Mainline

There are two (2) Developments of Regional Impact (DRI) within the 500-foot project buffer including Edgewater and Green Island. There are three (3) Planned Unit Developments, consisting of Friar's Cove and two (2) unnamed Planned Developments. Water Management District FLUCCS data of Residential Areas identifies 1.55% of the 500-foot buffer as medium density, fixed single family units, rural residential, and mixed unit residential.

The majority of the project is rural in nature, however, some noise sensitive sites may include single-family and mobile home residential areas. The proposed project is expected to result in minimal involvement regarding noise impacts.

A Noise Study Report (NSR) will be conducted during the PD&E Study.

2. Air Quality

Project PED Comments

none

Analysis Area PED Comments: Mainline

The project is not located within a USEPA-designated Air Quality Maintenance Area or Non-Attainment Area for any of the six pollutants [ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and small particulate matter] specified by the USEPA in National Ambient Air Quality Standards; therefore, the Clean Air Act conformity requirements do not currently apply to the project.

An Air Quality Technical Memorandum will be completed during the PD&E Study, if deemed necessary.

3. Contamination

Project PED Comments

none

Analysis Area PED Comments: Mainline

Based on the EST, there are eight (8) petroleum contamination monitoring sites (all have been closed or deemed "no cleanup required" with one exception of "work underway" for MP 229 of the Turnpike) seven (7) registered petroleum tanks, and five (5) Super Act Risk Sources within 500 feet of the project. There are no non-landfill solid waste sites within 1,000 feet of the project. There are no National Priority List (NPL) Superfund sites, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites, or landfill sites within the project's half-mile buffer.

A Contamination Screening Evaluation Report (CSER) will be prepared during the PD&E Study. Any contaminated site identified will be assessed to determine the need for avoidance, minimization, or remediation prior to construction. For these reasons and given that few potential contamination sources have been identified within the vicinity of the project, minimal involvement regarding contamination is anticipated.

4. Infrastructure

Project PED Comments

none

Analysis Area PED Comments: Mainline

Within the 500-foot project buffer there is the Flying S Ranch Airstrip, four (4) cellular towers, nine (9) wireless antenna structures, seven (7) Federal Aviation Administration (FAA) known obstructions, one (1) FDEP Public Water Supply Plant (Canoe Creek Service Plaza) and one (1) power transmission line (Duke Energy).

Given the limited number of infrastructure-related features along the project corridor, minimal involvement regarding infrastructure is anticipated.

A Utility Assessment Package will be prepared during the PD&E Study.

5. Navigation

Project PED Comments

none

Analysis Area PED Comments: Mainline

There are no navigable waterway crossings within the 500-foot project buffer. The SFWMD-managed C-34 Canal (Canoe Creek) crosses under the existing roadway but is not a navigable waterway.

v. Special Designations

1. Special Designations: Outstanding Florida Waters

Project PED Comments

none

Analysis Area PED Comments: Mainline

There is one (1) Outstanding Florida Water, Three Lakes Prairie Lakes, within the 500-foot project buffer.

Involvement with Special Designations is expected to be minimal since the waters associated with the OFW designation are located on state-managed lands outside of the existing right-of-way.

2. Special Designations: Aquatic Preserves

Project PED Comments

none

Analysis Area PED Comments: Mainline

There are no Aquatic Preserves within the 500-foot project buffer.

3. Special Designations: Wild and Scenic Rivers

Project PED Comments

none

Analysis Area PED Comments: Mainline

There are no Wild and Scenic Rivers, Nationwide Rivers Inventory (NRI) rivers, or NRI Study Rivers within the 500-foot project buffer.

4. Special Designations: Sole Source Aquifers

Project PED Comments

none

Analysis Area PED Comments: Mainline

The entire project corridor and the 500-foot project buffer is located within the Surficial Aquifer System, a Principal Aquifer. Nearly all (99.98%) of this is within the Recharge/less than 1 recharge area, with 0.02% in the Discharge/1 to 5 area. Specifically, this is the Biscayne Aquifer Sole Source Aquifer Streamflow and Recharge Source Zone. According to the Surficial Aquifer System Contamination Potential (FAVA II), 74.77% of the project's 500-foot buffer is within the "most vulnerable" ranking, 13.68% within the "more vulnerable" ranking, 0.14% is in the "vulnerable" ranking", and 11.41% currently lacks data.

Projects that lack federal funding do not require USEPA review and concurrence when within areas designated as sole source aquifers.

d. Anticipated Permits

Permit	Type	Comments	Assigned By	Date
SFWMD Right-of-Way Occupancy Permit	WMD	The C-34 Canal is located within the project limits. Depending on proposed impacts, a right-of-way occupancy permit may be required.	Florida's Turnpike Enterprise	02/20/23

Permit	Type	Comments	Assigned By	Date
Federal 404 permit	USACE	Only one water resource within the project limits, the C-34 Canal (managed by SFWMD) located approximately 1 mile south of the Canoe Creek Service Plaza, is a U.S. Army Corps of Engineers (USACE) retained water. Therefore, depending upon proposed impacts to this canal and any potential project segmentation for future design and permitting project phases, the Section 404 permit could be issued by either the USACE or the Florida Department of Environmental Protection (FDEP) through the state 404 program.	Florida's Turnpike Enterprise	02/20/23
Environmental Resource Permit	Water	An Environmental Resource Permit (ERP) from the St. Johns River Water Management District (SJRWMD) and/or the South Florida Water Management District (SFWMD) will be required. Should one WMD permit the project, an inter-agency agreement will be required.	Florida's Turnpike Enterprise	02/20/23
State 404 permit	FDEP	Only one water resource within the project limits, the C-34 Canal (managed by SFWMD) located approximately 1 mile south of the Canoe Creek Service Plaza, is a U.S. Army Corps of Engineers (USACE) retained water. Therefore, depending upon proposed impacts to this canal and any potential project segmentation for future design and permitting project phases, the Section 404 permit could be issued by either the USACE or the Florida Department of Environmental Protection (FDEP) through the state 404 program.	Florida's Turnpike Enterprise	02/20/23

e. Anticipated Technical Studies

Technical Study	Type	Comments	Assigned By	Date
Geotechnical Report	Engineering		Florida's Turnpike Enterprise	02/20/2023
Noise Study Report	Environmental		Florida's Turnpike Enterprise	02/20/2023
State Environmental Impact Report (SEIR)	Environmental		Florida's Turnpike Enterprise	02/20/2023
Contamination Screening Evaluation Technical Memorandum	Other		Florida's Turnpike Enterprise	02/20/2023
Sociocultural Effects Evaluation	Other		Florida's Turnpike Enterprise	02/20/2023
Preliminary Engineering Report	Engineering		Florida's Turnpike Enterprise	02/20/2023
Interchange Justification Report	Engineering		Florida's Turnpike Enterprise	02/20/2023
Air Quality Technical Memorandum	Environmental		Florida's Turnpike Enterprise	02/20/2023
Cultural Resource Assessment Survey	Environmental		Florida's Turnpike Enterprise	02/20/2023
Location Hydraulics Technical Memorandum	Engineering		Florida's Turnpike Enterprise	02/20/2023
Utility Assessment Package	Engineering		Florida's Turnpike Enterprise	02/20/2023
Pond Siting Report	Engineering		Florida's Turnpike Enterprise	02/20/2023
Natural Resources Evaluation (NRE)	Environmental		Florida's Turnpike Enterprise	02/20/2023

III. Transmittal List

The asterisk (*) denotes a hardcopy recipient. The double asterisk (**) denotes an external email recipient.

	Organization	Name
1.	City of St. Cloud	De La Cruz, Ivy
2.	City of St. Cloud	Dunklin, Melissa
3.	City of St. Cloud	Felblinger, Kevin
4.	City of St. Cloud	Fletcher, Shawn
5.	City of St. Cloud	Gilbert, Ken
6.	City of St. Cloud	Goerke, Douglas
7.	City of St. Cloud	Miller, Jason
8.	City of St. Cloud	Miller, Veronica
9.	City of St. Cloud	The Honorable Linette Matheny, City Council Member Seat 2
10.	City of St. Cloud	The Honorable Nathan Blackwell, Mayor, City Council Member Seat 1
11.	City of St. Cloud	Urban, Kolby
12.	East Central Florida Regional Planning Council	McCue, Tara
13.	FDEP - State 404 Program	Popak, Allan
14.	FDEP - State 404 Program	Walton, Jennipher
15.	FDOT District 5	Ganey, Jim
16.	FDOT District 5	Linger, Kathaleen
17.	FDOT District 5	Walsh, William G.
18.	Federal Aviation Administration	Vernace, Bart
19.	Federal Emergency Management Agency	Director, Region IV Mitigation Division
20.	Federal Rail Administration	Director, Office of Public Engagement
21.	Federal Rail Administration	Regional Administrator, Region 3
22.	Federal Transit Administration	Taylor, Yvette
23.	FL Department of Agriculture and Consumer Services	Camposano, Brian
24.	FL Department of Agriculture and Consumer Services	Kiser, Mark
25.	FL Department of Agriculture and Consumer Services	Morris, Vincent
26.	FL Department of Economic Opportunity	Preston, Matt
27.	FL Department of Environmental Protection	Stahl, Chris
28.	FL Department of State	Stewart, Benjamin
29.	FL Department of State	Welch, Marcy
30.	FL Fish and Wildlife Conservation Commission	DiGruttolo, Laura
31.	FL Fish and Wildlife Conservation Commission	Hight, Jason
32.	FL Fish and Wildlife Conservation Commission	Irving, Robert
33.	FL House	Hawkins, Fred
34.	FL House	Stark, Paula
35.	FL Senate	Torres, Jr, Victor
36.	Florida's Turnpike Enterprise	Jung, Rax
37.	Florida's Turnpike Enterprise	Stein, Philip
38.	METROPLAN Orlando	Huttmann, Gary
39.	METROPLAN Orlando	Laurent, Taylor
40.	Miccosukee Tribe of Indians of Florida	**Donaldson, Kevin
41.	Muscogee (Creek) Nation	**Historic & Cultural Preservation Department
42.	National Marine Fisheries Service	Amendola, Kim
43.	National Marine Fisheries Service	Gregg, Kurtis
44.	National Park Service	Barnett, Anita
45.	Natural Resources Conservation Service	Giuliani, Isabelle
46.	Natural Resources Conservation Service	Nelson, Willie
47.	Osceola County	Arrington, Brandon
48.	Osceola County	Arrington, Mary Jane
49.	Osceola County	Booth, Erika
50.	Osceola County	Booth, Ricky
51.	Osceola County	Castillo, Terry
52.	Osceola County	Choudhry, Peggy
53.	Osceola County	Collier, Larry
54.	Osceola County	Fisher, Don

55.	Osceola County	Grieb, Cheryl
56.	Osceola County	Hawkins, Fred
57.	Osceola County	Janer, Viviana
58.	Osceola County	Kane, Steven
59.	Osceola County	Litton, Bill
60.	Osceola County	Lopez, Marcos
61.	Osceola County	Olore, Tawny
62.	Osceola County	Pace, Debra
63.	Osceola County	Scarborough, Katrina
64.	Osceola County	Soto, Kelvin
65.	Osceola County	Stangle, Raymond
66.	Osceola County	Vickers, Bruce
67.	Poarch Band of Creek Indians	**Haikey, Larry D.
68.	Saint Johns River Water Management District	Dewey, Cammie
69.	Saint Johns River Water Management District	Parsons, Melissa B.
70.	Saint Johns River Water Management District	Smith, Sandy
71.	Saint Johns River Water Management District	von Canal, Marc
72.	Seminole Nation of Oklahoma	**Yahola, Ben
73.	Seminole Tribe of Florida	Backhouse, Paul N.
74.	Seminole Tribe of Florida	Simon, Danielle A.
75.	South Florida Water Management District	Huffman, Jessica
76.	South Florida Water Management District	Westerfield, Caitlin
77.	US Army Corps of Engineers	Beech, Veronica d.
78.	US Army Corps of Engineers	Gilbert, Michelle L.
79.	US Army Corps of Engineers	Lovvorn, Lisa
80.	US Coast Guard	Beceiro, Omar
81.	US Coast Guard	Bridges, Marty
82.	US Coast Guard	Kowalczyk, Lisia
83.	US Coast Guard	Overton, Randall D.
84.	US Coast Guard	Zercher, Jennifer
85.	US Department of Health and Human Services	National Center for Environmental Health Centers for Disease Control and Prevention
86.	US Department of Housing and Urban Development	Gonzalez Maldonado, Hector
87.	US Department of Housing and Urban Development	Quade, John
88.	US Department of Interior	Connelly, Kyle
89.	US Department of Interior	Massey, Gant
90.	US Department of Interior	Stewart, Heather
91.	US Department of Interior	Sumner, David M.
92.	US Environmental Protection Agency	Adelsbach, Terry
93.	US Environmental Protection Agency	Dean, William K.
94.	US Environmental Protection Agency	Kajumba, Ntale
95.	US Environmental Protection Agency	Singh-White, Alya
96.	US Environmental Protection Agency	Somerville, Amanetta
97.	US Fish and Wildlife Service	Cantrell, Mark
98.	US Fish and Wildlife Service	Rivera, Jose
99.	US Fish and Wildlife Service	Wrublik, John
100.	US House	Soto, Darren
101.	US Senate	Rubio, Marco
102.	US Senate	Scott, Rick

IV. Ancillary Documentation



Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JARED W. PERDUE, P.E.
SECRETARY

ETDM Summary Report

Project #14523 - Florida's Turnpike (SR 91) Widening from N of SR 60 to S of Kissimmee Park Road (MP 193-238.5)

Programming Screen - Published on 06/13/2023

Printed on: 6/14/2023

Table of Contents

Chapter 1 Overview	2
Chapter 2 Project Details	3
2.1. Purpose and Need	3
2.2. Project Description Data	5
Chapter 3 Alternative #1	7
3.1. Alternative Description	7
Chapter 4 Eliminated Alternatives	30
Chapter 5 Project Scope	31
5.1. General Project Recommendations	31
5.2. Anticipated Permits	31
5.3. Anticipated Technical Studies	31
5.4. Issue Resolution Activity Log	32
Chapter 6 Hardcopy Maps: Alternative #1	33
Appendices	57
7.1. PED Comments	57
7.2. GIS Analyses	57
7.3. Project Attachments	58
7.4. Degree of Effect Legend	58

Introduction to Programming Screen Summary Report

The Programming Screen Summary Report shown below is a read-only version of information contained in the Programming Screen Summary Report generated by the ETDM Coordinator for the selected project after completion of the ETAT Programming Screen review. The purpose of the Programming Screen Summary Report is to summarize the results of the ETAT Programming Screen review of the project; provide details concerning agency comments about potential effects to natural, cultural, and community resources; and provide additional documentation of activities related to the Programming Phase for the project. Available information for a Programming Screen Summary Report includes:

- Screening Summary Report chart
- Project Description information (including a summary description of the project, a summary of public comments on the project, and community-desired features identified during public involvement activities)
- Purpose and Need information (including the Purpose and Need Statement and the results of agency reviews of the project Purpose and Need)
- Alternative-specific information, consisting of descriptions of each alternative and associated road segments; an overview of ETAT Programming Screen reviews for each alternative; and agency comments concerning potential effects and degree of effect, by issue, to natural, cultural, and community resources.
- Project Scope information, consisting of general project commitments resulting from the ETAT Programming Screen review, permits, and technical studies required (if any)
- Class of Action determined for the project
- Issue Resolution Activity Log (if any)

The legend for the Degree of Effect chart is provided in an appendix to the report.

For complete documentation of the project record, also see the GIS Analysis Results Report published on the same date as the Programming Screen Summary Report.

The Florida Department of Transportation may adopt this planning product into the environmental review process, pursuant to Title 23 U.S.C. § 168(d) or the state project development process.



#14523 Florida's Turnpike (SR 91) Widening from N of SR 60 to S of Kissimmee Park Road (MP 193-238.5)

District: District 5

County: Osceola

Planning Organization: Florida's Turnpike Enterprise

Plan ID: Not Available

Federal Involvement: Other Federal Permit

Phase: Programming Screen

From: North of State Road 60

To: South of Kissimmee Park Road

Financial Management No.: 423374-3

Contact Information: Suman Juluru 407-264-3424 Suman.Juluru@dot.state.fl.us

Snapshot Data From: Project Published 6/13/2023

Topics and Categories are reflective of what was in place at the time of the screening event.

	Social and Economic							Cultural and Tribal		Natural					Physical						
	Social	Economic	Land Use Changes	Mobility	Aesthetic Effects	Relocation Potential	Farmlands	Section 4(f) Potential	Historic and Archaeological Sites	Recreational and Protected Lands	Wetlands and Surface Waters	Water Resources	Floodplains	Protected Species and Habitat	Coastal and Marine	Noise	Air Quality	Contamination	Infrastructure	Navigation	Special Designations
Alternative #1 - Mainline From: North of SR 60 To: South of Kissimmee Park Road Published: 06/13/2023 Reviewed from 03/17/2023 to 05/01/2023)	2	1	2	1	2	2	N/A	N/A	2	3	3	2	2	3	N/A	2	2	3	2	N/A	3

Purpose and Need

Purpose and Need

The purpose of this project is to increase capacity, meet existing and future travel demands, and address roadway deficiencies for the segment of Florida's Turnpike (State Road (SR) 91) from north of SR 60 at approximately MP 193 to south of Kissimmee Park Road at approximately MP 238.5. The project will also evaluate potential new interchange locations.

Capacity

Travel demand on the Florida's Turnpike has increased significantly in the past and is expected to increase in the future. According to the *Florida's Turnpike Enterprise (FTE) Traffic Trends Report*, July 2022, the last ten years (with the exception of 2019-2020, due to COVID-19) showed an annual increase in traffic volumes (AADT) along this segment of SR 91. This section of the Turnpike is experiencing 0.5 percent annual growth. In the *Florida's Turnpike Enterprise 2022 Traffic Engineer's Annual Report*, at MP 236 (Three Lakes Plaza) within the study limits, AADT increased 20.8 percent from 29,300 AADT in FY 2021 to 35,400 AADT in FY 2022. Additionally, forecasted traffic data show the need to widen the Florida's Turnpike within the project limits to six lanes by year 2035 to maintain acceptable levels of service.

Transportation Demand

Florida's Turnpike serves regional, but also local trips, particularly for commuters traveling to/from residential and employment centers and has therefore become a critical component of local transportation networks. At approximately 45.5 miles with only two existing access points, there is a need to evaluate new access points to provide for emergency evacuation, incident management, and population/employment growth. Additionally, the Florida's Turnpike is a designated evacuation route by the Florida Division of Emergency Management. The expansion of the project segment will improve hurricane evacuation and emergency response times. Due to population growth and transportation demand in the surrounding area, the existing interchange to the north of this project limit, Kissimmee Park Road, and the Turnpike mainline is programmed for capacity improvements with a Fiscal Year 2024 construction date.

Roadway Deficiencies

The project will address existing roadway deficiencies, such as horizontal and vertical geometries, clear zone requirements, and inside and outside shoulder widths. Various locations have substandard outside shoulder width and inside shoulder width. The project limits include multiple culvert and farm crossing structures built in the early 1960's that have cracks, scaling, spalling and siltation deficiencies.

Consistency with Planning Documents

The project is listed in the State Transportation Improvement Plan (STIP) with PD&E funding only, primarily in Fiscal Year (FY) 2026. The project is not currently listed in the FY 2022/2023-2026/27 MetroPlan Orlando Transportation Improvement Program (TIP), which was adopted on July 27, 2022 and amended on February 8, 2023. Only the PD&E phase is listed in the MetroPlan Orlando 2045 Metropolitan Transportation Plan- Cost Feasible Plan, adopted December 2020 and revised on December 14, 2022. Final design, right-of-way, and construction phases are listed as unfunded needs. Additional coordination will take place during the PD&E Study to ensure plan consistency by including this project in the relevant planning documents.

Purpose and Need Reviews

FDEP - State 404 Program

Acknowledgement	Date Reviewed	Reviewer	Comments
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Understood	03/29/2023	Jennipher Walton (jennipher.walton@florida dep.gov)	No Purpose and Need comments found.
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FL Department of Agriculture and Consumer Services

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	03/27/2023	Mark Kiser (Mark.Kiser@fdacs.gov)	No Purpose and Need comments found.

FL Department of Environmental Protection

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	04/05/2023	Chris Stahl (Chris.Stahl@FloridaDEP. gov)	No Purpose and Need comments found.

FL Department of State

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	04/06/2023	Marcy Welch (Marsha.Welch@dos.myfl orida.com)	No Purpose and Need comments found.

METROPLAN Orlando

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	04/30/2023	Taylor Laurent (TLaurent@metroplanorla ndo.org)	Recommend coordination with other planned or ongoing corridor improvement projects which are nearby or intersect with the corridor for planning consistency, if applicable.

National Marine Fisheries Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	04/10/2023	Kurtis Gregg (kurtis.gregg@noaa.gov)	No Purpose and Need comments found.

National Park Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	04/21/2023	Anita Barnett (anita_barnett@nps.gov)	No Purpose and Need comments found.

Natural Resources Conservation Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	05/01/2023	Isabelle Giuliani (isabelle.giuliani@usda.g ov)	No Purpose and Need comments found.

Saint Johns River Water Management District

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	04/05/2023	Sandy Smith (ssmith@sjrwmd.com)	No Purpose and Need comments found.

South Florida Water Management District

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	04/27/2023	Caitlin Westerfield (cwesterf@sfwmd.gov)	No Purpose and Need comments found.

US Army Corps of Engineers

Acknowledgement	Date Reviewed	Reviewer	Comments
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Understood	04/28/2023	Veronica Beech (Veronica.C.Beech@usace.army.mil)	The Corps understands the purpose and need for the project.
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US Coast Guard

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	04/24/2023	Marty Bridges (Martin.A.Bridges@uscg.mil)	No Purpose and Need comments found.

US Environmental Protection Agency

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	04/27/2023	Amanetta Somerville (somerville.amanetta@epa.gov)	No Purpose and Need comments found.

US Fish and Wildlife Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	03/22/2023	John Wrublik (john_wrublik@fws.gov)	No Purpose and Need comments found.

Project Description Data

Project Description

The project involves capacity improvements up to eight (8) lanes and the addition of potential new interchanges along Florida's Turnpike north of SR 60 (MP 193) to south of Kissimmee Park Road (MP 238.5) in Osceola County, a distance of approximately 45.5 miles.

Summary of Public Comments

Summary of Public Comments is not available at this time.

Justification

There are no public comments available prior to the programming screen.

Planning Consistency Status

Planning Consistency Status

Are the limits consistent with the plans?

Yes

No

Only the PD&E phase is listed as cost-feasible in the MetroPlan Orlando 2045 Metropolitan Transportation Plan- Cost Feasible Plan, adopted December 2020 and revised on December 14, 2022. Final design, right-of-way, and construction phases are listed as unfunded needs. Additional coordination will take place during the PD&E Study to ensure plan consistency by including this project in the relevant planning documents.

Currently Adopted CFP-LRTP?

MPOs (if applicable)

METROPLAN Orlando

LRTP Pages - <https://etdmpub.flas-etat.org/est/servlet/blobViewer?blobID=38499>

STIP Pages - <https://etdmpub.flas-etat.org/est/servlet/blobViewer?blobID=38500>

Attachments

Phase	Currently Approved TIP	Currently Approved STIP	TIP / STIP \$	TIP / STIP Fiscal Year	Comments
PE (Final Design)	No	No	Unknown	Unknown	Currently, only PD&E funds are programmed.
ROW	No	No	Unknown	Unknown	Currently, only PD&E funds are programmed.
Construction	No	No	Unknown	Unknown	Currently, only PD&E funds are programmed.

Potential Lead Agencies

- FL Department of Transportation

Exempted Agencies

Agency Name	Justification	Date
Federal Transit Administration	FTA has requested to be exempt from reviewing any non-transit projects.	02/14/2023
FDOT Office of Environmental Management	OEM is automatically exempt from projects identified as 'State Funds Only' (SFO).	02/14/2023

Community Desired Features

No desired features have been entered into the database. This does not necessarily imply that none have been identified.

User Defined Communities Within 500 Feet

- com.esri.aims.mtier.io.http.UnableToPingEsrimapException

Census Places Within 500 Feet

- com.esri.aims.mtier.io.http.UnableToPingEsrimapException

Alternative #1 - Mainline

Alternative Description

Name	From	To	Type	Status	Total Length	Cost	Modes	SIS
Mainline	North of SR 60	South of Kissimmee Park Road	Widening	ETAT Review Complete	45.5 mi.		Roadway	Y

Project Effects Overview for Alternative #1 - Mainline

Topic	Degree of Effect	Organization	Date Reviewed
Social and Economic			
Social	2 Minimal	US Environmental Protection Agency	04/28/2023
Farmlands	1 Enhanced	Natural Resources Conservation Service	05/01/2023
Cultural and Tribal			
Historic and Archaeological Sites	2 Minimal	FL Department of State	04/06/2023
Recreational and Protected Lands	N/A N/A / No Involvement	National Park Service	04/21/2023
Recreational and Protected Lands	2 Minimal	South Florida Water Management District	04/27/2023
Recreational and Protected Lands	3 Moderate	FL Department of Environmental Protection	05/03/2023
Recreational and Protected Lands	2 Minimal	Saint Johns River Water Management District	04/05/2023
Natural			
Wetlands and Surface Waters	4 Substantial	South Florida Water Management District	04/27/2023
Wetlands and Surface Waters	3 Moderate	Saint Johns River Water Management District	04/05/2023
Wetlands and Surface Waters	4 Substantial	US Environmental Protection Agency	04/28/2023
Wetlands and Surface Waters	3 Moderate	FDEP - State 404 Program	03/29/2023
Wetlands and Surface Waters	0 None	National Marine Fisheries Service	04/10/2023
Wetlands and Surface Waters	3 Moderate	US Fish and Wildlife Service	03/22/2023
Wetlands and Surface Waters	2 Minimal	US Army Corps of Engineers	04/21/2023
Water Resources	2 Minimal	Saint Johns River Water Management District	05/01/2023
Water Resources	4 Substantial	US Environmental Protection Agency	04/28/2023
Water Resources	2 Minimal	FL Department of Environmental Protection	05/03/2023
Water Resources	2 Minimal	South Florida Water Management District	04/27/2023
Floodplains	4 Substantial	South Florida Water Management District	04/27/2023
Floodplains	2 Minimal	Saint Johns River Water Management District	05/01/2023
Protected Species and Habitat	3 Moderate	US Fish and Wildlife Service	03/22/2023
Protected Species and Habitat	3 Moderate	FL Department of Agriculture and Consumer Services	03/28/2023
Protected Species and Habitat	4 Substantial	South Florida Water Management District	04/27/2023

Coastal and Marine	N/A	N/A / No Involvement	Saint Johns River Water Management District	04/05/2023
Coastal and Marine	0	None	National Marine Fisheries Service	04/10/2023
Coastal and Marine	N/A	N/A / No Involvement	South Florida Water Management District	04/27/2023
Physical				
Air Quality	2	Minimal	US Environmental Protection Agency	04/27/2023
Contamination	3	Moderate	US Environmental Protection Agency	04/28/2023
Contamination	0	None	FL Department of Environmental Protection	05/03/2023
Contamination	2	Minimal	South Florida Water Management District	04/27/2023
Navigation	1	Enhanced	US Army Corps of Engineers	04/28/2023
Navigation	N/A	N/A / No Involvement	US Coast Guard	04/24/2023
Special Designations				
Special Designations	4	Substantial	US Fish and Wildlife Service	03/22/2023
Special Designations	4	Substantial	South Florida Water Management District	04/27/2023
Special Designations	N/A	N/A / No Involvement	US Environmental Protection Agency	04/28/2023
Special Designations	2	Minimal	Saint Johns River Water Management District	05/01/2023

ETAT Reviews and Coordinator Summary: Social and Economic

Social

Project Effects

Coordinator Summary Degree of Effect: **2** Minimal assigned 06/08/2023 by Florida's Turnpike Enterprise

Comments:

The U.S. Environmental Protection Agency (USEPA) encouraged the project team to evaluate and discuss noise impacts on local residences, businesses, and communities in future environmental documents. Similarly, the USEPA recommends the consideration of meaningful public involvement to enable the development of transportation solutions that meet the needs of the community and vulnerable populations that potentially would be impacted by the project. The USEPA indicated that the Noise Study Report and Public Involvement Plan prepared for the project will better define potential impacts to the social environment.

A comprehensive Public Involvement Plan will be developed at the beginning of the PD&E Study which will outline methods to collect input from the community including special populations. Disproportionate and adverse effects to special populations will be avoided, minimized, and/or mitigated to the greatest extent practicable. In addition, a Sociocultural Effects Evaluation will be conducted in accordance with the PD&E Manual. As referenced in the Noise section, a noise study will be conducted to identify noise sensitive sites and to determine eligibility for noise abatement measures.

Degree of Effect: **2** Minimal assigned 04/28/2023 by Amanetta Somerville, US Environmental Protection Agency

Coordination Document: To Be Determined: Further Coordination Required

Coordination Document Comments:

The USEPA would like to review the following support documents:

- Public Involvement Plan
- Noise Study Report

Direct Effects

Identified Resources and Level of Importance:

The FDOT states that the proposed project improvements will be limited to the existing right of way, except in the areas where new potential interchanges are identified and evaluated in later planning and environmental documents. FDOT further states that business or residential relocations and property access impacts are not anticipated due to this project's right-of-way acquisition.

The EPA encourages evaluating and discussing noise impacts on local residences, businesses, and communities in future environmental documents. The EPA assigns a degree of effect on social impacts as Minimal until further project development, including the Noise Study report, and the Public Involvement Plan, are available for review.

Comments on Effects to Resources:

The proposed project will need additional parcels for roadway expansion and improvements. Partial acquisition of land, homes, businesses, and other community features may affect the quality of life. Environmental characteristics and community elements help individuals maintain health and well-being. Executive Order 12898 (Environmental Justice) requires Federal agencies to take the appropriate steps to identify and address any disproportionately high and adverse human health or environmental effects of Federal programs, policies, and activities on minority and low-income populations.

Additional Comments (optional):

The USEPA would like to review the following support documents:

- Public Involvement Plan
- Noise Study Report

CLC Commitments and Recommendations:

Economic

Project Effects

Coordinator Summary Degree of Effect: 1 *Enhanced* assigned 05/12/2023 by Florida's Turnpike Enterprise

Comments:

No ETAT reviews were submitted for this issue. Economic enhancement is anticipated given that the capacity improvements will better serve the area's mobility demands, thereby supporting increased growth, and better facilitate the movement of local and regional freight through the increase in travel time reliability. In addition, short-term construction related jobs will be created.

None found

Land Use Changes

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 06/02/2023 by Florida's Turnpike Enterprise

Comments:

No ETAT reviews were submitted for this issue. Capacity improvements along Florida's Turnpike mainline are anticipated to occur within the existing right-of-way with the exception of potential new interchange locations and potential pond site and/or drainage accommodations. Any potential new interchanges would result in minor direct land use changes, related to the conversion of vacant land to transportation use. According to the future land use data, the area surrounding the corridor will continue to support vacant, rural, and conservation land uses.

None found

Mobility

Project Effects

Coordinator Summary Degree of Effect: 1 *Enhanced* assigned 06/02/2023 by Florida's Turnpike Enterprise

Comments:

No ETAT reviews were submitted for this issue. The proposed project is anticipated to enhance mobility by providing increased roadway capacity, improved level of service, additional access location(s), and enhanced network connectivity.

None found

Aesthetic Effects

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 05/12/2023 by Florida's Turnpike Enterprise

Comments:

No ETAT reviews were submitted for this issue. No impacts to vistas or viewsheds are anticipated as the project is anticipated to remain at-grade with the potential exception of a new interchange(s). Aesthetic effects and enhancements, such as decorative features on structural elements, will be evaluated during the PD&E Study and documented in the Environmental Document.

None found

Relocation Potential

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 06/02/2023 by Florida's Turnpike Enterprise

Comments:

No ETAT reviews were submitted for this issue. While efforts will be made to identify alternatives that stay within the existing right-of-way, the proposed roadway widening may require additional right-of-way from adjacent properties for potential pond site and/or drainage accommodations. In addition, new interchanges may be considered that would involve right-of-way acquisition.

A Sociocultural Effects Evaluation will be conducted in accordance with the FDOT PD&E Manual during the PD&E Study to determine potential impacts to residents. A Conceptual Stage Relocation Plan will be prepared if relocations are determined to be necessary. However, with the exception of the very northern limit of the project, the corridor is very sparsely populated; thus, relocations are expected to be minimized or avoided.

None found

Farmlands

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 06/02/2023 by Florida's Turnpike Enterprise

Comments:

The Natural Resources Conservation Service (NRCS) stated that there are soils designated as Farmland of Unique Importance within all project buffer widths. Additionally, there is existing agricultural production within all buffer widths. The NRCS explained that truncating, heavily modifying, and filling these important soils compromises the inherent soil properties that make these soils productive for farming; this affects society as a whole.

While it is agreed that there is Farmland of Unique Importance within the project buffers, and that any new right-of-way needs for stormwater management or new interchanges could affect these resources, pursuant to the FDOT PD&E Manual, this state-funded project is not subject to the provisions of the Farmland Protection Policy Act of 1981, 7 CFR Part 658. The environmental document will include a general discussion of land use changes associated with this project which will include lands coded as agricultural. Therefore, the Florida's Turnpike Enterprise assigns a Summary Degree of Effect of "N/A" for this issue.

Degree of Effect: 1 *Enhanced* assigned 05/01/2023 by Isabelle Giuliani, Natural Resources Conservation Service

Coordination Document: PD&E Support Document As Per PD&E Manual

Coordination Document Comments:

An AD1006 or CPA 106 will be require to complete evaluation.

Direct Effects

Identified Resources and Level of Importance:

The USDA-NRCS considers soil map units with important soil properties for agricultural uses to be Prime Farmland (Important Farmland soils). Prime Farmland (as defined in ETDM) is classified in several different categories based on specific criteria. **Prime Farmland** must meet specific soil-related criteria, as defined by the USDA-Natural Resources Conservation Service. **Farmland of Unique Importance** is based on the ability of the soil to grow very specific crops, such as citrus, vegetables, sugar cane, and other high-value specialty crops. It is also based on the extent that a soil is used for these crops within a specific county. Therefore, a soil in one county may be Unique Farmland, but not in an adjacent county. **Farmland of Local Importance** is classified as being important to the local entities (counties) and worthy of special consideration. Locally Important Farmland soils were designated by local governance (Soil and Water Conservation Districts).

Nationally, there has been a reduction in the overall amount of Prime, Locally Important, and Unique Farmlands through conversion to non-farm uses. This trend has the possibility of impacting the nation's food supply and exporting capabilities.

Comments on Effects to Resources:

Conducting GIS analysis of Prime Farmland (using USDA-NRCS data) and Important Farmland Analysis has resulted in the determination that there are soils designated as Farmland of Unique Importance at all buffer widths within the Project footprint. In addition, there are areas currently used for agricultural production at all buffer widths.

At the 100 foot buffer width, there are 2,288.95 acres of Farmland of Unique Importance. At the 200 foot buffer width, there are 2,8985.61 acres of Farmland of Unique Importance. At the 500 foot buffer width, there are 4,919.15 acres of Farmland of Unique Importance. At the 5280 foot buffer width,

there are 31,450.2 acres of Farmland of Unique Importance.

Additional Comments (optional):

An AD1006 or CPA 106 will be require to complete evaluation.

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Cultural and Tribal

Section 4(f) Potential

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 05/12/2023 by Florida's Turnpike Enterprise

Comments:

No ETAT reviews were submitted for this issue. Pursuant to the FDOT PD&E Manual, Section 4(f) is not applicable on state funded projects.

None found

Historic and Archaeological Sites

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 05/12/2023 by Florida's Turnpike Enterprise

Comments:

The Florida Department of State (FDOS) noted the three (3) archaeological sites and six (6) historic bridges within the 500-foot project buffer as described in the Preliminary Environmental Discussion (PED). The FDOS stated that if the bridges are post-1945 steel and concrete bridges, they are exempt from evaluation per the ACHP 2012 comment. The FDOS also noted three (3) canals/ditches within the 500-foot project buffer as described in the PED.

A Cultural Resources Assessment Survey will be prepared in accordance with the FDOT PD&E Manual. Communications will continue with the Department of State, Division of Historical Resources (DHR), pursuant to Subsection 10.2.3.6 of the Environmental Resource Permit (ERP) Applicant's Handbook Volume I.

Degree of Effect: 2 *Minimal* assigned 04/06/2023 by Marcy Welch, FL Department of State

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

There are three archaeological sites within the 500' buffer. One is a logging tram that has not been evaluated by SHPO, and the remaining two are homesteads that are not eligible for the NRHP. There are six historic bridges. These are considered not eligible. IF they are post 1945 steel and concrete bridges, they are exempt from evaluation per the ACHP 2012 comment concerning these bridges. There are 3 canals/ditches within the 500' bugger, and no cemeteries.

Comments on Effects to Resources:

The location of the resources in relation to the APE for this undertaking will determine the affects this undertaking may have on any historic resources. At the moment, impacts appear to be minimal.

Additional Comments (optional):

CLC Commitments and Recommendations:

Recreational and Protected Lands

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 05/26/2023 by Florida's Turnpike Enterprise

Comments:

The Florida Department of Environmental Protection (FDEP) noted that there are recreational opportunities within the 500-foot project buffer which include three (3) trails, three (3) Board of Trustees (BOT) projects, one wildlife management area, and one conservation easement. The FDEP requested that the evaluation of primary, secondary, and cumulative impacts of the project be included in the environmental documentation.

The South Florida Water Management District (SFWMD) noted that as per Rule 62-330.302(1), F.A.C. and Section 373.414(1), F.S., the applicant must demonstrate that the project is not contrary to/is clearly in, the public interest using seven (7) criteria. The Florida's Turnpike Enterprise notes that demonstration of the project being clearly in the public interest is required if an activity is found to significantly degrade or is within an Outstanding Florida Water.

The National Park Service had no comments.

The Saint Johns River Water Management District (SJRWMD) noted that no SJRWMD conservation easements are adjacent to the project and that the recreational trails and Florida Forever projects near the project corridor should be avoided when identifying stormwater pond locations.

Potential impacts to recreation will be evaluated during the PD&E Study, pursuant to the PD&E Manual. Minimal impacts to recreation areas and protected lands are anticipated since roadway improvements will be primarily within existing right-of-way. For new right-of-way needs, recreational and protected lands will be avoided to the greatest extent practicable.

Degree of Effect: N/A N/A / No Involvement assigned 04/21/2023 by Anita Barnett, National Park Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 04/27/2023 by Caitlin Westerfield, South Florida Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

Recreation Areas

Comments on Effects to Resources:

Potential direct/ temporary impacts on access to and enjoyment of these features during project construction.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 3 Moderate assigned 05/03/2023 by Chris Stahl, FL Department of Environmental Protection

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

GIS data indicate that the following public recreational opportunities are located within the 500-foot buffer of the project: Three Lakes North Trail, Three Lakes Wildlife Management Area To Old Creek Road Connector, Three Lakes Wildlife Management Area, Lucky L Ranch Conservation Easement, Adams Ranch Florida Forever BOT Project, Big Bend Swamp/Holopaw Ranch Florida Forever BOT Project, Osceola Pine Savannas Florida Forever Bot Project, CR 523 Connector Trail

Comments on Effects to Resources:

The Department is interested in preserving the area's recreational trail opportunities and state lands which support natural communities, wildlife corridor functions, natural flood control, stormwater runoff filtering capabilities, aquifer recharge potential, contributions to regional spring complexes. Therefore, future environmental documentation should include an evaluation of the primary, secondary, and cumulative impacts of roadways on the above state lands and recreation sites.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 04/05/2023 by Sandy Smith, Saint Johns River Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

There are no individual SJRWMD conservation easements adjacent to the project limits. There are a couple of recreational trails and Florida Forever projects that should be avoided when locating pond sites.

Comments on Effects to Resources:

Pond locations and ROW expansions should avoid wetlands, trails and Florida Forever properties.

Additional Comments (optional):

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Natural

Wetlands and Surface Waters

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 06/08/2023 by Florida's Turnpike Enterprise

Comments:

The USEPA noted that there is an estimated 1,075 acres of palustrine and 112 acres of riverine wetlands within the 500-foot project buffer. The USEPA also stated that there are over 2,540 acres of land within the Lake Okeechobee Watershed of the Northern Everglades and Estuaries Protection Program (NEEPP) within the 100-foot project buffer. The agency also stated that the project area is within the Biscayne Bay Streamflow and Recharge Source Zones for the Biscayne Bay Sole Source Aquifer. The USEPA commented on the project area's sensitivity to contamination noting that heavy rains have the potential to cause degradation in water quality. The agency recommended: consistency with Section 404 of the Clean Water Act; siting stormwater management facilities outside of jurisdictional waters of the U.S.; designing stormwater management system to handle significant storm events and to treat water to prevent water quality impacts; and evaluating floodplain impacts.

The SFWMD noted that the estimated 1,200 acres of wetlands within the 500-foot project buffer are in a landscape of high conservation value at a state and regional scale. Several of these wetlands are within a conservation easement or public conservation land. The SFWMD recommended practicable design modifications to avoid adverse wetland impacts as per the ERP Applicant's Handbook Volume I, since the wetlands in the area are not anticipated to be of low ecological value.

The U.S. Army Corps of Engineers (USACE) noted that Canoe Creek (C-34 Canal) is a retained water of the U.S. and therefore any work within the creek would require a Section 10 and/or Section 404 permit.

The National Marine Fisheries Service (NMFS) noted that the proposed work would not directly or indirectly impact areas that support essential fish habitat or NOAA trust fishery resources.

The SJRWMD noted that stormwater pond siting should consider wetland avoidance and address normal water levels of the ponds.

The FDEP, State 404 Program, noted that there are approximately 1,160 acres of wetlands and surface waters within the 500-foot project buffer as per National Wetlands Inventory data, and nearly 1,300 acres of wetlands and surface waters within this buffer as per Water Management District Land Use and Cover data. The C-34 Canal is the only water under USACE jurisdiction; therefore, dependent upon proposed impacts to that canal and future project segmentation, the Section 404 permit could be issued by either the USACE or FDEP. The FDEP noted that the additional pavement surface will require additional stormwater management to prevent water quality impacts to wetlands and surface waters.

The U.S. Fish and Wildlife Service (USFWS) recommended that the valuable wetland resources be avoided to the greatest extent practicable and that mitigation that fully compensates for the loss of wetlands be provided if impacts are unavoidable.

During the PD&E Study, a wetland evaluation will be prepared and documented in a Natural Resources Evaluation report in accordance with the FDOT PD&E Manual to determine potential adverse impacts to wetlands and surface waters. All necessary measures will be taken to avoid and/or minimize impacts to wetlands to the greatest extent practicable during project design. Should avoidance and/or minimization not be practicable, a mitigation plan will be prepared in accordance with 62-330 F.A.C and CWA 404. As Florida's Turnpike Enterprise is committed to providing sufficient mitigation to offset unavoidable impacts to wetlands and surface waters consistent with both state and federal regulations, Florida's Turnpike Enterprise assigns a Summary Degree of Effect of Moderate for this issue.

Florida's Turnpike Enterprise will continue to coordinate with FDEP, FWS, USEPA, SFWMD, SJRWMD, USACE, and NMFS throughout the PD&E

Study, as applicable, for the wetland evaluation and anticipated permitting needs.

Degree of Effect: **4** *Substantial* assigned 04/27/2023 by Caitlin Westerfield, South Florida Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

As identified in the Advance Notification Package approximately 1,200 acres of forested wetlands, herbaceous wetlands, and surface waters occur within 500 ft of the right-of-way buffer. The wetlands within the project boundary are in a landscape location with high conservation value at a State and regional scale and are important natural resources. Several wetlands within the 500' buffer are under a conservation easement or located within public conservation land.

Comments on Effects to Resources:

To avoid adverse wetland impacts the project will have to meet the permit criteria in the ERP Applicant's Handbook Volume I. This project will need to consider practicable design modifications. Design modifications are not required if the applicant demonstrates compliance with Section 10.2.1.2(a) and (b), however, wetlands within and adjacent to the 500' buffer not expected to have low ecological value. The project crosses three SFWMD cumulative impact basins. Current and expected future development within Osceola County has resulted in a high demand for wetland credits.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: **3** *Moderate* assigned 04/05/2023 by Sandy Smith, Saint Johns River Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

It appears there are wetlands located within the existing right of way and adjacent to the project limits. Care should be taken when locating pond sites and addressing normal water levels of the ponds. At this time, it is unclear of all the direct and indirect impacts since the pond sites are not located as of yet and the extent of the roadway expansion is unknown. This is an existing roadway so many of the wetlands within the existing ROW have already experienced some degradation and secondary effects by the existing turnpike use. This project is located both within the SJRWMD regulatory jurisdiction and South Florida. The sections in SJRWMD are located in basin 20 Southern St. Johns River Regulatory Basin. At this time there are three mitigation banks located within this basin. Lake Washington, Mary A and Lucky L. Ranch, some of these banks currently have credits others are currently sold out or don't have any available for both state and federal credits.

Comments on Effects to Resources:

Any wetland impacts will need to be avoided and minimized and mitigated as necessary.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: **4** *Substantial* assigned 04/28/2023 by Amanetta Somerville, US Environmental Protection Agency

Coordination Document: To Be Determined: Further Coordination Required

Coordination Document Comments:

The USEPA would like to review the following PD&E support documents:

- Natural Resource Evaluation

Direct Effects

Identified Resources and Level of Importance:

In the Preliminary Environmental Discussion, FDOT identified 1,074.91 Acres of palustrine wetlands and 112.04 acres of riverine wetlands within the 500-foot project buffer. Within the 200-foot buffer, FDOT identified 481.81 acres of palustrine wetlands and 96.92 acres of riverine wetlands. Within the 100-ft buffer, the project area includes 2,540.82 acres in the Lake Okeechobee Watershed of the Northern Everglades and Estuaries Protection Program (NEEP). Lastly, the proposed project area is within the Biscayne Bay Streamflow and Recharge Source Zones for the Biscayne Bay Sole Source Aquifer. At this time, the EPA assigns a Substantial degree of effect for wetlands and surface waters due to the project's location, proximity to the Biscayne SSA, and the proposed project area's sensitivity to contamination.

Please note that ETDM Project 14523 did not identify the locations of potential interchanges. As such, the degree of impact may be more significant than the impacts described in the PD&E document for project # 14523. The EPA recommends that before a final determination of the project's degree of

effect on wetlands and water resources, an analysis of the total impacts of the identified locations of the new interchange is provided for review.

Comments on Effects to Resources:

Heavy rains within the project corridor have the potential to cause degradation in water quality from wildlife, stock, human sewage, and stormwater runoff. Wetlands are important because they are a critical natural resource and serve several functions, including filtration and treatment of surface water runoff, storing floodwaters, and erosion control. Stormwater runoff from roadways carries volatile organics, petroleum hydrocarbons, heavy metals, and pesticides/herbicides. With an increase in the impervious surface area, the project area may experience an increase in stormwater runoff and increased pollutants into surface waters and wetlands. Contamination by pollutants or sediments can reduce wetland function characteristics and value. Once contaminants reach wetlands, water chemistry changes can damage the ecosystem.

Additional Comments (optional):

The USEPA would like to review the following PD&E support documents:

- Natural Resource Evaluation

CLC Commitments and Recommendations:

Degree of Effect: 3 *Moderate* assigned 03/29/2023 by Jennipher Walton, FDEP - State 404 Program

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

According to the USFWS National Wetlands Inventory V2 GIS data available in the EST, there are approximately 1,160 acres of wetlands and surface waters within 500 feet of the project. This includes 373 acres of freshwater emergent (marsh) wetlands, 626 acres of freshwater forested/shrub wetlands, 112 acres of riverine systems, and 48 acres of freshwater ponds. The Water Management District Florida Land Use and Cover GIS data reports approximately 1,294 acres of wetlands and surface waters within the same buffer. This includes 55 acres of wet prairie, 304 acres of freshwater marsh, 1 acre of emergent aquatic vegetation, 99 acres of treeless hydric savanna, 406 acres of cypress swamp, 331 acres of mixed wetland hardwoods, 59 acres of wetland forested mixed, 28 acres of bay swamp, and 11 acres of hydric pine flatwoods. The difference in these two estimates appears to be mostly attributable to mapping of roadside ditches. Only one water resource within the project limits, the C-34 Canal (managed by SFWMD) located approximately 1 mile south of the Canoe Creek Service Plaza, is a U.S. Army Corps of Engineers (USACE) retained water. Therefore, depending upon proposed impacts to this canal and any potential project segmentation for future design and permitting project phases, the Section 404 permit could be issued by either the USACE or the Florida Department of Environmental Protection (FDEP) through the state 404 program.

Comments on Effects to Resources:

The proposed project will potentially impact surrounding wetlands and surface waters. The project is located within the United States Army Corps of Engineers (USACE) 404 Jurisdiction. In the event the entirety of the project's dredge and fill activities is not permitted by the Corps, a State 404 permit may be required per Chapter 62-331, F.A.C.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 04/10/2023 by Kurtis Gregg, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Magnuson-Stevens Act: Based on the project location, information provided in the ETDM website, and GIS-based analysis of impacts, NOAA's National Marine Fisheries Service (NMFS) concludes the proposed work would not directly or indirectly impact areas that support essential fish habitat (EFH) or NOAA trust fishery resources. NMFS has no comments or recommendations to provide pursuant to the EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act (P.L. 104-297); and this project will not require an EFH Assessment. Further consultation on this matter is not necessary unless future modifications are proposed and you believe that the proposed action may result in adverse impacts to EFH.

Endangered Species Act: We are not aware of any threatened or endangered species or critical habitat under the purview of NMFS that occur within the project area. However, it should be noted that a "no effect" determination must be made by the action agency and the reasoning underlying the determination should be documented in a project file. Please coordinate closely with the U.S. Fish and Wildlife Service for other species listed under the Endangered Species Act that may require consultation.

Fish and Wildlife Coordination Act: Based on the project location, information provided in the ETDM website, and GIS based analysis of impacts, NOAA's National Marine Fisheries Service (NMFS) concludes the proposed work would not directly impact wetlands areas that support NOAA trust fishery resources. NMFS has no comments or recommendations to provide pursuant to the Fish and Wildlife Coordination Act.

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 3 *Moderate* assigned 03/22/2023 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Wetlands

Comments on Effects to Resources:

Wetlands provide important habitat for fish and wildlife. Wetlands may occur within and near the project site. We recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to these wetlands are unavoidable, we recommend the Florida Department of Transportation provide mitigation that fully compensates for the loss of important resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 04/21/2023 by Michelle L Gilbert, US Army Corps of Engineers

Coordination Document: To Be Determined: Further Coordination Required

Coordination Document Comments:

The Corps will review the impact maps provided during application submission to determine the LEDPA and permit type.

Direct Effects

Identified Resources and Level of Importance:

Canoe Creek, a retained water of the U.S. The proposed work would have a minimal effect based on the entire project.

Comments on Effects to Resources:

The proposed work may affect Canoe Creek, including adjacent wetlands. Any work within or over the creek would need a Section 10 and/or 404 permit from the Corps.

Additional Comments (optional):

The Corps will review the impact maps provided during application submission to determine the LEDPA and permit type.

CLC Commitments and Recommendations:

Water Resources

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 06/08/2023 by Florida's Turnpike Enterprise

Comments:

The FDEP identified the Lake Okeechobee Basin within the 500-foot project area, for which there is a Basin Management Action Plan. The agency noted that stormwater runoff treatment should be maximized to prevent ground and surface water contamination. The FDEP recommended that stormwater retro-fitting would help reduce water quality impacts, and that the PD&E Study evaluate both existing and future/proposed stormwater management facilities.

The SJRWMD noted that the project will be required to meet the criteria of the ERP Applicants Handbook, Volumes I and II. The agency noted that increased water quality treatment is required for any system that will have a direct discharge to Three Lakes Prairie Lakes, which is an Outstanding Florida Water. The SJRWMD also commented that the project should be designed to include systems to infiltrate, retain and/or detain stormwater runoff

to provide direct water quality treatment, and to provide peak rate of discharge attenuation, and volumetric attenuation if applicable.

The USEPA noted two (2) FDEP Strategic Monitoring Plans in the project area and three (3) FDEP waters not attaining standards. Within the 200-foot project buffer, the USEPA noted the Floridan Aquifer System Contamination Potential for approximately 3,670 acres with a "more vulnerable" rating, and nearly 400 acres with a "most vulnerable" ranking, which indicates the project area's susceptibility to contamination.

The SFWMD noted that there are currently no existing stormwater management facilities for the roadway aside from the Canoe Creek Service Plaza and that the project design will need to meet the criteria in the ERP Applicants Handbook Volumes I and II.

The PD&E Study will include a Water Quality Impact Evaluation in accordance with the FDOT PD&E Manual to further examine potential effects to surface and groundwater resources, as well as identify impaired waters and other waterbodies that may be affected by this project. In addition, a Pond Siting Report will be prepared to identify alternatives for stormwater management and treatment. The effects on water quality and means to avoid, minimize and mitigate impacts will be evaluated during the study based on the project specific effects from the alternatives developed during the study. Florida's Turnpike Enterprise will provide water quality treatment consistent with 62-330 F.A.C., specifically water quality and quantity regulations outlined in the ERP Applicant's Handbook Vol. II. As such, Florida's Turnpike Enterprise assigns a Summary Degree of Effect of Minimal for this issue.

Florida's Turnpike Enterprise will continue to coordinate with the USEPA, SFWMD, SJRWMD and FDEP during the PD&E Study, as applicable.

Degree of Effect: 2 *Minimal* assigned 05/01/2023 by Melissa Bryan Parsons, Saint Johns River Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

Special Designations:

Portions of the project are within the SJRWMD's Upper St. Johns River Hydrologic Basin. To minimize the potential for adverse effects to the water resources, the project should be designed to comply with the standards and design criteria for the Upper St. Johns River Hydrologic Basin in section 13.1, SJRWMD ERP Applicant's Handbook, Volume II, in subsection 62-330.301 and 302, F.A.C., and in subsection 40C-41.063(1), F.A.C.

Water Resources:

The proposed project is expected to generate stormwater runoff that could potentially cause adverse water quality and quantity impacts to receiving waters and adjacent lands. Additionally, the proposed project may potentially affect existing permitted systems within and/or adjacent to the project boundary. However, the Degree of Effect is assumed to be "Moderate" because the project will require an Individual Environmental Resource Permit (ERP), and designing the project to meet the applicable Water Management District design criteria, and the conditions for issuance of an Individual ERP in 62-330.301 and 302, F.A.C., would provide reasonable assurance that the project would not result in adverse water quality or quantity impacts to water resources and adjacent lands.

The proposed project should be designed to provide water quality treatment as required per ERP Applicant's Handbook (A.H.) Volume I, SJRWMD ERP A.H. Volume II, and subsection 62-330.301(1)(e), F.A.C. Increased water quality treatment is required for any systems that will have a direct discharge to Three Lakes Prairie Lakes, which is an Outstanding Florida Water (OFW). The proposed project should be designed to provide water quantity treatment as required per section 3.0 and subsection 13.1, SJRWMD ERP A.H. Volume II, and subsections 62-330.301(1)(b) and (c) and 40C-41.063(1), F.A.C.

Floodplains:

Segments of the project abut or are located within areas identified as FEMA Flood Hazard Zone A or AE. The project has the potential to adversely affect floodplain storage or conveyance by direct encroachment into the floodplain or by generating stormwater runoff that could increase the rate or volume of discharge to the floodplain. However, the Degree of Effect is assumed to be "Moderate" because the project will require an Individual ERP, and designing the project to meet the applicable Water Management District design criteria, and the conditions for issuance of an Individual ERP in 62-330.301 and 302, F.A.C., would provide reasonable assurance that the project would not result in adverse impacts to the affected floodplains.

Comments on Effects to Resources:

An Individual ERP must be obtained for the project pursuant to 62-330, F.A.C. Designing the project to meet the applicable Water Management District design criteria, and the conditions for issuance of an Individual ERP in 62-330.301 and 302, F.A.C., would provide reasonable assurance that the project would not result in adverse water quality or quantity impacts to water resources and adjacent lands, would not result in adverse flooding to on-site or off-site property and would not result in adverse impacts to existing floodplain or surface water storage and conveyance capabilities.

This project is located within both the SFWMD and SJRWMD jurisdictional boundaries. Unless separate applications are submitted for respective

portions of the project within each district, the SJRWMD anticipates the potential for entering into an Interagency Agreement with the SFWMD to designate regulatory responsibility for this project in accordance with subsection 373.046(6) of the Florida Statutes.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 4 *Substantial* assigned 04/28/2023 by Amanetta Somerville, US Environmental Protection Agency

Coordination Document: To Be Determined: Further Coordination Required

Coordination Document Comments:

The USEPA would like to review the following PD&E support documents:

- Natural Resource Evaluation, and
- Water Quality Impact Evaluation

Direct Effects

Identified Resources and Level of Importance:

In the preliminary environmental discussion (PED), the FDOT acknowledges that the proposed corridor is within the 100-ft project buffer of the Northern Everglades and Estuaries Protection Plan (NEEP boundary) and is within the boundary of the Lake Okeechobee Watershed. Additionally, Within the 100-ft buffer, 2,541.26 acres of the proposed alternative project study area are within the Lake Okeechobee Basin Management Action Plan (BMAP) boundaries. Two FDEP Strategic Monitoring Plans exist for Blue Cypress Creek [WBID 3133] and Little Creek [WBID 3100]. There are also three FDEP waters not attaining standards consisting of the Blue Cypress Creek [WBID 3133], Lake Kissimmee (Mid Drain) [WBID 3183B1], and Lake Tohopekaliga Drain (South Segment) [WBID 3173C]. Within the 200-ft project buffer, the Floridian Aquifer System Contamination Potential (FAVA) for 3,669 acres of the proposed project area has a more vulnerable rating, and 396.8 acres have a most vulnerable rating indicating the area's susceptibility to contamination. At this time, the EPA assigns a Substantial Degree of Effect to Water Resources because of the alternative corridor's potential effects on the managed areas within the proposed project area and the proposed project area's sensitivity to contamination.

Please note that ETDM Project 14523 did not identify the locations of potential interchanges. As such, the degree of impact may be more significant than solely the impacts described in the PD&E document for project # 14523. The EPA recommends that before a final determination of the project's degree of effect on wetlands and water resources, an analysis of the total impacts of the identified locations of the new interchange is provided for review.

Comments on Effects to Resources:

Stormwater runoff, which contains dissolved or suspended anthropogenic contaminants, from the potential upcoming built environment can be a principal contributor to the water quality impairment of water bodies. Stormwater carries pollutants such as volatile organics, petroleum hydrocarbons, heavy metals, and pesticides/herbicides. Reducing natural surfaces, increasing impervious surfaces, improperly treated stormwater runoff, and insufficient stormwater systems contribute to the degradation of water bodies.

Additional Comments (optional):

The USEPA would like to review the following PD&E support documents:

- Natural Resource Evaluation, and
- Water Quality Impact Evaluation

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 05/03/2023 by Chris Stahl, FL Department of Environmental Protection

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

The EST GIS analysis identified the Lake Okeechobee Basin within the 500-foot project buffer.

Comments on Effects to Resources:

Every effort should be made to maximize the treatment of stormwater runoff from the proposed pathway/road widening project to prevent ground and surface water contamination. If an ERP permit is required to construct the project, stormwater treatment should be designed to maintain the natural predevelopment hydroperiod and water quality, as well as to protect the natural functions of adjacent wetlands. We recommend that the PD&E study include details on possible future stormwater treatment facilities. We recommend that the PD&E study include an evaluation of existing stormwater treatment adequacy and details on the future stormwater treatment facilities. Retro-fitting of stormwater conveyance systems would help reduce impacts

to water quality.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: **2** *Minimal* assigned 04/27/2023 by Caitlin Westerfield, South Florida Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

The project will discharge to multiple waterbodies along its 45.5-mile length. There are currently no existing stormwater management (SWM) facilities for the roadway right of way outside of the Canoe Creek Service Plaza area.

Comments on Effects to Resources:

To avoid degradation of water quality during construction and operation of the project, the design will need to meet the criteria in ERP Applicant's Handbook Volume I and II. Providing water quality volume for the new impervious area will improve the overall water quality.

Additional Comments (optional):

CLC Commitments and Recommendations:

Floodplains

Project Effects

Coordinator Summary Degree of Effect: **2** *Minimal* assigned 06/02/2023 by Florida's Turnpike Enterprise

Comments:

The SJRWMD reported that segments of the project abut or are located within areas identified as FEMA Flood Hazard Zone A or AE. The SJRWMD notes that the project has the potential to adversely affect floodplain storage or conveyance. The agency anticipates that an Individual ERP will be required; designing the project to meet the applicable Water Management District design criteria, and meeting the conditions for issuance of an Individual ERP would provide reasonable assurance that the project would not result in adverse impacts to the affected floodplains. Further, SJRWMD commented that where encroachment into the floodplains cannot be avoided or is not practicable, compensatory storage or other design considerations should be made to prevent a net reduction in flood storage within the 10-year and 100-year floodplains, if required.

The SFWMD noted that the project crosses numerous Zone A and AE floodplains and two (2) regulatory floodways. SFWMD stated that impacts to FEMA regulatory floodways are not permitted and impacts to floodplains should be avoided where practicable. The agency stated that cup for cup mitigation is required for floodplain impacts and that the compensating volume must be hydraulically connected to the same floodplain.

A Location Hydraulics Report in accordance with the FDOT PD&E Manual will be prepared during the PD&E Study. An ERP will be required and the appropriate permitting agency will be determined during the design phase. As Florida's Turnpike Enterprise is committed to meeting the conditions for issuance of all required state and federal environmental permits, adverse impacts to floodplains will not occur; Florida's Turnpike Enterprise therefore assigns a Summary Degree of Effect of Minimal for this issue.

Degree of Effect: **4** *Substantial* assigned 04/27/2023 by Caitlin Westerfield, South Florida Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

This project crosses numerous floodplains. There are two (2) regulatory floodways, numerous Zone A and Zone AE floodplains which cross the roadway right of way.

Comments on Effects to Resources:

Impacts to FEMA regulatory floodways are not permitted.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 05/01/2023 by Melissa Bryan Parsons, Saint Johns River Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

Special Designations:

Portions of the project are within the SJRWMD's Upper St. Johns River Hydrologic Basin. To minimize the potential for adverse effects to the water resources, the project should be designed to comply with the standards and design criteria for the Upper St. Johns River Hydrologic Basin in section 13.1, SJRWMD ERP Applicant's Handbook, Volume II, in subsection 62-330.301 and 302, F.A.C., and in subsection 40C-41.063(1), F.A.C.

Water Resources:

The proposed project is expected to generate stormwater runoff that could potentially cause adverse water quality and quantity impacts to receiving waters and adjacent lands. Additionally, the proposed project may potentially affect existing permitted systems within and/or adjacent to the project boundary. However, the Degree of Effect is assumed to be "Moderate" because the project will require an Individual Environmental Resource Permit (ERP), and designing the project to meet the applicable Water Management District design criteria, and the conditions for issuance of an Individual ERP in 62-330.301 and 302, F.A.C., would provide reasonable assurance that the project would not result in adverse water quality or quantity impacts to water resources and adjacent lands.

The proposed project should be designed to provide water quality treatment as required per ERP Applicant's Handbook (A.H.) Volume I, SJRWMD ERP A.H. Volume II, and subsection 62-330.301(1)(e), F.A.C. Increased water quality treatment is required for any systems that will have a direct discharge to Three Lakes Prairie Lakes, which is an Outstanding Florida Water (OFW). The proposed project should be designed to provide water quantity treatment as required per section 3.0 and subsection 13.1, SJRWMD ERP A.H. Volume II, and subsections 62-330.301(1)(b) and (c) and 40C-41.063(1), F.A.C.

Floodplains:

Segments of the project abut or are located within areas identified as FEMA Flood Hazard Zone A or AE. The project has the potential to adversely affect floodplain storage or conveyance by direct encroachment into the floodplain or by generating stormwater runoff that could increase the rate or volume of discharge to the floodplain. However, the Degree of Effect is assumed to be "Moderate" because the project will require an Individual ERP, and designing the project to meet the applicable Water Management District design criteria, and the conditions for issuance of an Individual ERP in 62-330.301 and 302, F.A.C., would provide reasonable assurance that the project would not result in adverse impacts to the affected floodplains.

Comments on Effects to Resources:

An Individual ERP must be obtained for the project pursuant to 62-330, F.A.C. Designing the project to meet the applicable Water Management District design criteria, and the conditions for issuance of an Individual ERP in 62-330.301 and 302, F.A.C., would provide reasonable assurance that the project would not result in adverse water quality or quantity impacts to water resources and adjacent lands, would not result in adverse flooding to on-site or off-site property and would not result in adverse impacts to existing floodplain or surface water storage and conveyance capabilities.

This project is located within both the SFWMD and SJRWMD jurisdictional boundaries. Unless separate applications are submitted for respective portions of the project within each district, the SJRWMD anticipates the potential for entering into an Interagency Agreement with the SFWMD to designate regulatory responsibility for this project in accordance with subsection 373.046(6) of the Florida Statutes.

Additional Comments (optional):

CLC Commitments and Recommendations:

Protected Species and Habitat

Project Effects

Coordinator Summary Degree of Effect: 3 Moderate assigned 06/08/2023 by Florida's Turnpike Enterprise

Comments:

The SFWMD commented that there is public land on both sides of the corridor, which is of statewide and regional conservation importance. The agency stated that the roadway widening in response to higher traffic volume will further limit wildlife movement and cause wildlife mortality. SFWMD recommended wildlife crossings to support wildlife movement.

The FDACS identified that the 100-foot and 500-foot project buffers contain several resources including Ecological Greenways Network critical linkage,

wildlife corridors, Strategic Habitat Conservation Areas, probable small animal wetland hotspots, and the Three Lakes Wildlife Management Area. Two rare natural communities, dry prairie and scrub, are also documented within the project buffers. The FDACS identified ten (10) species of rare/listed scrub plants may occur within the 100-foot and 500-foot project buffers, and federal species consultation areas for the Florida scrub-jay, Florida grasshopper sparrow, snail kite, Audubon's crested caracara, red-cockaded woodpecker (RCW), Florida bonneted bat, and Lake Wales Ridge plants overlap the project. The agency stated that RCWs have been documented within the 500-foot project buffer. The agency indicated that wildlife crossings should be analyzed for this project to reduce vehicle collisions with wildlife.

The USFWS identifies that the caracara, eastern indigo snake, Florida bonneted bat, Florida grasshopper sparrow, Florida scrub-jay, wood stork, and federally listed plants have the potential to occur near the project. The USFWS recommends species-specific surveys for the caracara, Florida grasshopper sparrow, and Florida bonneted bat if habitat will be affected or is near the project footprint. USFWS indicated that wetlands and wood stork foraging habitat impacted by the project should be replaced within the same CFA of the affected nesting colony, or, if mitigated within a USFWS-approved wetland mitigation bank, within a bank that has a mitigation service area that includes the project location. A wood stork foraging analysis is required for projects that impact greater than five (5) acres of wood stork foraging habitat. USFWS recommends that since the project bisects Three Lakes Wildlife Management Area, to evaluate a modified or a new underpass to allow for wildlife movement.

The Florida Fish and Wildlife Conservation Commission (FWC) did not provide any comments.

The majority of the project improvements will occur within existing right-of-way. A Natural Resources Evaluation will be prepared in accordance with the FDOT PD&E Manual. Surveys will be conducted for the listed species potentially occurring within the study area and the effects on listed species will be evaluated. Avoidance, minimization and mitigation for unavoidable impacts will be assessed during the alternatives development to avoid and minimize effects on protected species. The Natural Resources Evaluation will also serve as the Biological Assessment for the purposes of initiating consultation with the USFWS under Section 7 of the Endangered Species Act. Based on this information, Florida's Turnpike Enterprise has assigned a Summary Degree of Effect of Moderate for this issue. Coordination will continue during the PD&E Study with USFWS, FDACS, and the FWC, as necessary.

Degree of Effect: 3 *Moderate* assigned 03/22/2023 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Federally listed species and fish and wildlife resources

Comments on Effects to Resources:

Federally-listed species -

The Service has reviewed our Geographic Information Systems (GIS) database for recorded locations of federally listed threatened and endangered species on or adjacent to the project study area. The GIS database is a compilation of data received from several sources. Based on review of our GIS database, the Service notes that the following federally listed species may occur in or near the project area.

Audubon's crested caracara

The project is located in the geographic range of the threatened Audubon's crested caracara (*Caracara cheriway* = *Polyborus plancus audubonii*; caracara). If suitable nesting habitat occurs on, or within 985 feet of the project footprint, the Service recommends that the FDOT conduct surveys, based on the Service's guidance, to determine the status of active caracara nests in or near the project corridor.

Florida grasshopper sparrow

The project footprint is located in the potential range of the endangered Florida grasshopper sparrow (*Ammodramus savannarum floridanus*). If the project affects suitable habitat, then surveys for the Florida grasshopper sparrow, based on the Service's guidance, should be conducted. For more information on the current range of the species and suitable survey techniques, please contact Mary Peterson of the Service's Vero Beach office at Mary_Peterson@fws.gov.

Florida bonneted bat

The project footprint is located in the Service's consultation area for the endangered Florida bonneted bat (*Eumops floridanus*). To help determine if the project will affect the Florida bonneted bat, the Florida Department of Transportation should consult the Service's 2019 Florida bonneted bat

consultation key. This document is available upon request.

Wood Stork

The project corridor is located in the Core Foraging Area (CFA; all lands within 18.6 miles) of several active nesting colonies of the threatened wood stork (*Mycteria americana*). The Service believes that the loss of wetlands within a CFA due to an action could result in the loss of foraging habitat for the wood stork. To minimize adverse effects to the wood stork, we recommend that any lost foraging habitat resulting from the project be replaced within the CFA of the affected nesting colony. Moreover, wetlands provided as mitigation should adequately replace the wetland functions lost because of the action. The Service does not consider the preservation of wetlands, by itself, as adequate compensation for impacts to wood stork foraging habitat, because the habitat lost is not replaced. Accordingly, any wetland mitigation plan proposed should include a restoration, enhancement, or creation component. In some cases, the Service accepts wetlands compensation located outside the CFA of the affected wood stork nesting colony. Specifically, wetland credits purchased from a "Service Approved" mitigation bank located outside of the CFA would be acceptable to the Service, provided that the impacted wetlands occur within the permitted service area of the bank.

For projects that impact 5 or more acres of wood stork foraging habitat, the Service requires a functional assessment be conducted using our "Wood Stork Foraging Analysis Methodology" (Methodology), and this document is available upon request.

The Service believes that the following federally listed species have the potential to occur in or near the project site: Audubon's crested caracara, Eastern indigo snake (*Drymarchon corais couperi* = *Drymarchon couperi*), Florida bonneted bat, Florida grasshopper sparrow, Florida scrub-jay (*Aphelocoma coerulescens*), wood stork and Federally listed plants. Accordingly, the Service recommends that the Florida Department of Transportation (FDOT) prepare a Biological Assessment for the project (as required by 50 CFR 402.12) during the FDOT's Project Development and Environment process.

Fish and Wildlife Resources -

To benefit fish and wildlife, we recommend that native plants, trees and shrubs be used in the landscaping of the lands within the project footprint. The use of native wildflowers would be especially beneficial to insect pollinators and provide a more aesthetically pleasing environment than sod by itself.

The project footprint bisects the Three Lakes Wildlife Management Area administered by the Florida Fish and Wildlife Conservation Commission. This project affords an opportunity to enhance safe passage of wildlife under across Florida's turnpike. We urge the FDOT to review the segment of the project footprint that bisects the Three Lakes Wildlife Management Area, and determine if sufficient opportunities exist that would allow wildlife to safely cross the roadway. If this is not the case, we recommend that the FDOT consider redesigning existing underpasses or construction of a new underpass in this locality.

Wetlands provide important habitat for fish and wildlife. Wetlands may occur within and near the project site. We recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to these wetlands are unavoidable, we recommend the Florida Department of Transportation provide mitigation that fully compensates for the loss of important resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 3 *Moderate* assigned 03/28/2023 by Mark Kiser, FL Department of Agriculture and Consumer Services

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Resources within the 500-foot project buffer area that may be impacted by project activities include 284 acres of Priority 2 Aquifer Recharge area, 373 acres of Priority 2 natural floodplain, 793 acres of Priority 2 Significant Surface Waters, 1,111 acres of Surface Water Resource Priorities, 1,356 acres of wetlands, 2,076 acres of hydric soils, 3,899 acres of Priority 1 Florida Ecological Greenways Network critical linkages, 6,922 acres of Wildlife Corridor, 498 acres of Priority 1 Natural Communities, 2,172 acres of the Upper St. Johns River Ecosystem Management Area, 5,967 acres of the South Florida EMA (Kissimmee River), 2,684 acres of Strategic Habitat Conservation Areas, 5,212 acres of Probable Small Animal Wetland Hotspots, and 5,504 acres of the Everglades Headwaters NWR. Portions of the Three Lakes WMA are also within the 100 to 500-foot project buffer. Also present are two rare natural communities, including 391 acres of dry prairie (G2/S2 FNAI ranking) and 33 acres of scrub (G2/S2 FNAI ranking). 411 acres of rural lands may be impacted, including 235 acres of crops/pasture, 22 acres of tree plantations, and 5 acres of other agricultural operations. 273 acres of managed lands within the 500-foot project buffer may be impacted by restrictions on prescribed burning.

Ten species of rare/listed scrub plants may be present within the 100 to 500-foot project buffer, including Britton's beargrass, Florida bonamia, Lewton's polygala, papery whitlow-wort, scrub pigeon-wings, pygmy fringe-tree, sandlace, scrub buckwheat, scrub lupine, and wide-leaf warea. Large-flowered rosemary, many-flowered grass-pink, and nodding pinweed may also occur. Regarding the Florida black bear's range, occurrences are considered occasional within the 100- to 500-foot project buffer; nuisance reports and road kill have been documented within the 100-500' project buffer. 8,139 acres of the project footprint fall within the USFWS Consultation Areas for Florida scrub-jay, Florida grasshopper sparrow, snail kite, Audubon's crested caracara, Florida bonneted bat, and Lake Wales Ridge plants. 7,149 acres of the project's footprint fall within the USFWS Consultation Area for red-cockaded woodpecker; RCWs have been documented within the 500-foot buffer (639 acres of habitat).

Comments on Effects to Resources:

While Florida does not have a goal of no net loss or gain of wetland acreage, regulatory rules are written in a manner that achieves a programmatic goal through implementation, and a project permitting goal of no net loss in wetland or other surface water functions. The State's Environmental Resource Permit (ERP) standard requires that activities not adversely impact the value of functions provided to fish and wildlife and listed species by wetlands and other surface waters. There may be habitat fragmentation effects for animals with large home ranges, including Florida black bear. Because Audubon's crested caracaras and Florida scrub-jays do not avoid roadside habitats (and are attracted to them as sources of food), road mortality presents a challenge for the conservation and management of these threatened and declining species.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 4 *Substantial* assigned 04/27/2023 by Caitlin Westerfield, South Florida Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

The project seeks to widen the turnpike through Three Lakes Wildlife Management area, and Lucky L Mitigation Bank. Three Lakes Wildlife Management area contains conservation land of statewide and regional importance. This is public land on both the north and south side of the Turnpike. This conservation area is of critical importance to the abundance and diversity of listed species and wildlife.

Comments on Effects to Resources:

This project will widen the Turnpike in response to higher traffic volume, further limiting wildlife movement and causing wildlife mortality.

Additional Comments (optional):

CLC Commitments and Recommendations:

Coastal and Marine

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 06/02/2023 by Florida's Turnpike Enterprise

Comments:

The NMFS stated that the proposed work would not directly or indirectly impact areas that support essential fish habitat or NOAA trust fisheries resources.

The SFWMD and SJRWMD had no comments.

Due to the project's inland location, no project impacts on coastal or marine resources are anticipated.

Degree of Effect: N/A *N/A / No Involvement* assigned 04/05/2023 by Sandy Smith, Saint Johns River Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 04/10/2023 by Kurtis Gregg, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Magnuson-Stevens Act: Based on the project location, information provided in the ETDM website, and GIS-based analysis of impacts, NOAA's National Marine Fisheries Service (NMFS) concludes the proposed work would not directly or indirectly impact areas that support essential fish habitat (EFH) or NOAA trust fishery resources. NMFS has no comments or recommendations to provide pursuant to the EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act (P.L. 104-297); and this project will not require an EFH Assessment. Further consultation on this matter is not necessary unless future modifications are proposed and you believe that the proposed action may result in adverse impacts to EFH.

Endangered Species Act: We are not aware of any threatened or endangered species or critical habitat under the purview of NMFS that occur within the project area. However, it should be noted that a "no effect" determination must be made by the action agency and the reasoning underlying the determination should be documented in a project file. Please coordinate closely with the U.S. Fish and Wildlife Service for other species listed under the Endangered Species Act that may require consultation.

Fish and Wildlife Coordination Act: Based on the project location, information provided in the ETDM website, and GIS based analysis of impacts, NOAA's National Marine Fisheries Service (NMFS) concludes the proposed work would not directly impact wetlands areas that support NOAA trust fishery resources. NMFS has no comments or recommendations to provide pursuant to the Fish and Wildlife Coordination Act.

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: N/A *N/A / No Involvement* assigned 04/27/2023 by Caitlin Westerfield, South Florida Water Management District

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

N/A

Comments on Effects to Resources:

N/A

Additional Comments (optional):

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Physical

Noise

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 06/02/2023 by Florida's Turnpike Enterprise

Comments:

No ETAT reviews were submitted for this issue. Minimal noise impacts are anticipated based on the minimal development in proximity to the corridor. Pursuant to the FDOT PD&E Manual, a noise study will be conducted to identify noise sensitive sites and to determine eligibility for noise abatement measures.

None found

Air Quality

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 06/02/2023 by Florida's Turnpike Enterprise

Comments:

The USEPA noted that the project is in an attainment area, so pollutants under National Ambient Air Quality Standards (NAAQS) are at an acceptable level. USEPA notes that the project area air quality can be affected by airborne dust, and other ambient air pollutants from project construction, and recommends using diesel controls, cleaner fuel and cleaner construction practices for on-road and off-road equipment used for transportation, soil movement, or other project activities.

An air quality screening evaluation will be conducted, if necessary, in accordance with the FDOT PD&E Manual.

Degree of Effect: 2 *Minimal* assigned 04/27/2023 by Amanetta Somerville, US Environmental Protection Agency

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

A wide variety of air pollutants are emitted from stationary and mobile sources. The EPA establishes the National Ambient Air Quality Standards (NAAQS) to protect public health, public welfare and to regulate emissions of hazardous air pollutants. The proposed project is in an attainment area for all six criteria pollutants (ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and small particulate matter) under the NAAQS. Although the proposed roadway improvement and expansion may temporarily degrade air quality during construction, the EPA assigns a Minimal degree of effect on air quality.

Comments on Effects to Resources:

The project area air quality can be affected by airborne dust and other ambient air pollutants from project construction and construction equipment.

Additional Comments (optional):

CLC Commitments and Recommendations:

Contamination

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 06/02/2023 by Florida's Turnpike Enterprise

Comments:

The USEPA noted that there are 12 onsite sewage sites, 8 petroleum contamination monitoring sites, 7 storage tank contamination monitoring sites, 5 super act risk sources, 7 super act wells, and 24 USEPA National Pollutant Discharge Elimination System sites. Within the 200-foot project buffer, the USEPA noted the Floridan Aquifer System Contamination Potential for approximately 3,670 acres with a "more vulnerable" rating, and nearly 400 acres with a "most vulnerable" ranking, which indicates the project area's susceptibility to contamination.

The SFWMD commented on contamination concerns related to construction, including dewatering and containment of contaminant plumes.

The FDEP had no comments.

If construction dewatering is necessary, an FDEP generic permit would be required per Florida Administrative Code, Chapter 62-621.300. The specific permit application would depend on proximity to identified contamination. Pursuant to the FDOT PD&E Manual, a Contamination Screening Evaluation Report will be prepared during the PD&E Study. Regulated facilities identified within search criteria established in the FDOT PD&E Manual will be assessed to determine the need for avoidance, minimization, or remediation prior to construction or during construction.

Degree of Effect: 3 *Moderate* assigned 04/28/2023 by Amanetta Somerville, US Environmental Protection Agency

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

There are potential sources of sub-surface contamination reported within the 500-foot project buffer. There is 12 Onsite Sewage sites, 8 Petroleum Contamination Monitoring Sites, 7 Storage Tank Contamination Monitoring sites, 5 Super Act Risk Sources, 8 Super Act wells, and 24 U.S. EPA National Pollutant Discharge Elimination System site.

Also within the 100-ft buffer, the project area includes 2,541.26 acres in the Lake Okeechobee Watershed of the Northern Everglades and Estuaries Protection Program (NEEP). Within the 200-ft project buffer, the Floridian Aquifer System Contamination Potential (FAVA) for 3,669 acres of the proposed project area has a more vulnerable rating, and 396.8 acres have a most vulnerable rating indicating the area's susceptibility to contamination. The EPA assigns a Moderate degree of effect for contamination due to the project's location and the proposed project area's sensitivity to contamination.

Comments on Effects to Resources:

Soils, groundwater, and surface waters have the potential to be affected adversely by contaminated sites. The contamination of groundwater can result in poor drinking water quality and loss of water supply. Petroleum hydrocarbons are the primary focus of the site and risk assessments. The petroleum constituents that may negatively impact human health are

- aromatic hydrocarbons (benzene ethylbenzene, toluene, and xylenes),
- Polycyclic aromatic hydrocarbons,
- Gasoline additives (MTBE and TBA)
- Combustion emissions from fuels.

If there is an encounter with any subsurface hazardous wastes, it can contaminate groundwater and degrade land use. The property may become a brownfield site if these wastes are not cleaned up.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 05/03/2023 by Chris Stahl, FL Department of Environmental Protection

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 04/27/2023 by Caitlin Westerfield, South Florida Water Management District

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

surface water

Comments on Effects to Resources:

Contamination, turbidity

Additional Comments (optional):

CLC Commitments and Recommendations:

Infrastructure

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 06/02/2023 by Florida's Turnpike Enterprise

Comments:

No ETAT comments were submitted for this issue. A Utility Assessment Package will be prepared as part of the PD&E Study, pursuant to the FDOT PD&E Manual. Direct effects to adjacent infrastructure resources and right-of-way will be minimized to the greatest extent practicable. Florida's Turnpike Enterprise will prepare the appropriate ROW occupancy permit and/or CWA 408 permit, as necessary, once final right-of-way needs are determined as it pertains to the C-34 Canal.

None found

Navigation

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 06/08/2023 by Florida's Turnpike Enterprise

Comments:

The U.S. Coast Guard commented that the project has no involvement with navigation.

The USACE commented that the project crosses over Canoe Creek (C-34 Canal) which is part of the Central and Southern Florida Canals and is a retained water. Work in this canal may require a Section 408 authorization from the USACE.

Degree of Effect: 1 *Enhanced* assigned 04/28/2023 by Veronica del Carmen Beech, US Army Corps of Engineers

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

The project is crossing over Canoe Creek which is part of the Central and Southern Florida Canals. Depending on the specific details of the proposed work, the project may need authorization from the Corps pursuant to Section 14 of the Rivers and Harbors Act of 1899 and codified in 33 USC 408 if the project would alter or occupy, either temporarily and/or permanently, or use a Corps federally authorized Civil Works project. The Corps of Engineers-Regulatory Division cannot issue the Corps Permit for Section 404 impacts along the canal until the Section 408 authorization is issued or we confirm that it is not needed.

Comments on Effects to Resources:

The project crosses over Canoe Creek, which is on the Retained Waters List. We recommend that impacts to Canoe Creek be avoided and minimized to the maximum extent practicable.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: N/A *N/A / No Involvement* assigned 04/24/2023 by Marty Bridges, US Coast Guard

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Special Designations

Special Designations

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 06/08/2023 by Florida's Turnpike Enterprise

Comments:

The SJRWMD commented that portions of the project are within SJRWMD's Upper St. Johns River Hydrological Basin. Project design should comply with standards and design criteria for the Upper St. Johns River Hydrologic Basin in section 13.1, SJRWMD ERP Applicant's Handbook, Volume II, in subsection 62-330.301 and 302, F.A.C., and in subsection 40C-41.063(1), F.A.C.

The SFWMD commented that there are SFWMD conservation easements within the 500-foot project buffer including a wetland mitigation bank and onsite mitigation. The SFWMD noted that proposed work within Outstanding Florida Waters must be clearly in the public interest.

The USFWS noted that the project bisects public conservation lands located in the Three Lakes Wildlife Management Area and that the project should be designed to avoid impacts to these lands to the greatest extent practicable. The USFWS stated that if lands within this management area are impacted, at least the same acreage of currently unprotected lands should be provided for addition to the management area.

The USEPA reported that there are no Sole Source Aquifers in the project area.

Involvement with Special Designations is limited to the wetlands and waters associated with the state-owned conservation areas. However, the majority of the project will remain within the existing right-of-way. For new right-of-way needs, protected lands will be avoided to the greatest extent practicable. Any unavoidable impacts will be offset through mitigation approved by owning/managing agencies, including the FDEP. Florida's Turnpike Enterprise therefore assigns a Summary Degree of Effect of moderate for this issue.

Degree of Effect: 4 *Substantial* assigned 03/22/2023 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Conservation Lands

Comments on Effects to Resources:

The project is located immediately adjacent to and bisects public conservation lands located in the Three Lakes Wildlife Management Area (TLWMA) administered by the Florida Fish and Wildlife Conservation Commission. Therefore, we recommend that the Florida Department of Transportation design the project to avoid impacts to these lands to the greatest extent practicable. If lands within the TLWMA are lost due to construction of the project, we recommend that the FDOT mitigate the loss by acquiring at least the same acreage of currently unprotected lands for addition to the TLWMA.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 4 *Substantial* assigned 04/27/2023 by Caitlin Westerfield, South Florida Water Management District

Coordination Document: Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:

District conservation easements. Outstanding Florida waters, C-34 Canal

Comments on Effects to Resources:

There are SFWMD conservation easements within 500 ft of the buffer, areas include Lucky L Mitigation Bank and onsite mitigation located in the Lake Tohopekaliga Cumulative Impact Basin.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: N/A *N/A / No Involvement* assigned 04/28/2023 by Amanetta Somerville, US Environmental Protection Agency

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

In the January 2015 Agency Operating and Funding Agreement for Continuing Participation in Efficient Transportation Decision Making and Transportation Project Development Processes between the EPA, Federal Highway Administration, and FDOT Section 4-Statement of Work states that the USEPA will review issues for Special Designations focusing on Sole Source Aquifers (SSA) pursuant to the Safe Drinking Water Act. However, GIS analysis for Special Designations did not identify a Sole Source Aquifer. Therefore, the EPA assigns No Involvement to Special Designations.

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 05/01/2023 by Melissa Bryan Parsons, Saint Johns River Water Management District

Direct Effects

Identified Resources and Level of Importance:

Special Designations:

Portions of the project are within the SJRWMD's Upper St. Johns River Hydrologic Basin. To minimize the potential for adverse effects to the water resources, the project should be designed to comply with the standards and design criteria for the Upper St. Johns River Hydrologic Basin in section 13.1, SJRWMD ERP Applicant's Handbook, Volume II, in subsection 62-330.301 and 302, F.A.C., and in subsection 40C-41.063(1), F.A.C.

Water Resources:

The proposed project is expected to generate stormwater runoff that could potentially cause adverse water quality and quantity impacts to receiving waters and adjacent lands. Additionally, the proposed project may potentially affect existing permitted systems within and/or adjacent to the project boundary. However, the Degree of Effect is assumed to be "Moderate" because the project will require an Individual Environmental Resource Permit (ERP), and designing the project to meet the applicable Water Management District design criteria, and the conditions for issuance of an Individual ERP in 62-330.301 and 302, F.A.C., would provide reasonable assurance that the project would not result in adverse water quality or quantity impacts to water resources and adjacent lands.

The proposed project should be designed to provide water quality treatment as required per ERP Applicant's Handbook (A.H.) Volume I, SJRWMD ERP A.H. Volume II, and subsection 62-330.301(1)(e), F.A.C. Increased water quality treatment is required for any systems that will have a direct discharge to Three Lakes Prairie Lakes, which is an Outstanding Florida Water (OFW). The proposed project should be designed to provide water quantity treatment as required per section 3.0 and subsection 13.1, SJRWMD ERP A.H. Volume II, and subsections 62-330.301(1)(b) and (c) and 40C-41.063(1), F.A.C.

Floodplains:

Segments of the project abut or are located within areas identified as FEMA Flood Hazard Zone A or AE. The project has the potential to adversely affect floodplain storage or conveyance by direct encroachment into the floodplain or by generating stormwater runoff that could increase the rate or volume of discharge to the floodplain. However, the Degree of Effect is assumed to be "Moderate" because the project will require an Individual ERP, and designing the project to meet the applicable Water Management District design criteria, and the conditions for issuance of an Individual ERP in 62-330.301 and 302, F.A.C., would provide reasonable assurance that the project would not result in adverse impacts to the affected floodplains.

Comments on Effects to Resources:

An Individual ERP must be obtained for the project pursuant to 62-330, F.A.C. Designing the project to meet the applicable Water Management District design criteria, and the conditions for issuance of an Individual ERP in 62-330.301 and 302, F.A.C., would provide reasonable assurance that the project would not result in adverse water quality or quantity impacts to water resources and adjacent lands, would not result in adverse flooding to on-site or off-site property and would not result in adverse impacts to existing floodplain or surface water storage and conveyance capabilities.

This project is located within both the SFWMD and SJRWMD jurisdictional boundaries. Unless separate applications are submitted for respective portions of the project within each district, the SJRWMD anticipates the potential for entering into an Interagency Agreement with the SFWMD to designate regulatory responsibility for this project in accordance with subsection 373.046(6) of the Florida Statutes.

Additional Comments (optional):

CLC Commitments and Recommendations:

Eliminated Alternatives

There are no eliminated alternatives for this project.

Project Scope

General Project Recommendations

There are no general project recommendations identified for this project in the EST.

Anticipated Permits

Permit	Type	Conditions	Review Org	Review Date
SFWMD Right-of-Way Occupancy Permit	WMD	The C-34 Canal is located within the project limits. Depending on proposed impacts, a right-of-way occupancy permit may be required.	Florida's Turnpike Enterprise	02/20/23
Federal 404 permit	USACE	Only one water resource within the project limits, the C-34 Canal (managed by SFWMD) located approximately 1 mile south of the Canoe Creek Service Plaza, is a U.S. Army Corps of Engineers (USACE) retained water. Therefore, depending upon proposed impacts to this canal and any potential project segmentation for future design and permitting project phases, the Section 404 permit could be issued by either the USACE or the Florida Department of Environmental Protection (FDEP) through the state 404 program.	Florida's Turnpike Enterprise	02/20/23
Environmental Resource Permit	Water	An Environmental Resource Permit (ERP) from the St. Johns River Water Management District (SJRWMD) and/or the South Florida Water Management District (SFWMD) will be required. Should one WMD permit the project, an inter-agency agreement will be required.	Florida's Turnpike Enterprise	02/20/23
State 404 permit	FDEP	Only one water resource within the project limits, the C-34 Canal (managed by SFWMD) located approximately 1 mile south of the Canoe Creek Service Plaza, is a U.S. Army Corps of Engineers (USACE) retained water. Therefore, depending upon proposed impacts to this canal and any potential project segmentation for future design and permitting project phases, the Section 404 permit could be issued by either the USACE or the Florida Department of Environmental Protection (FDEP) through the state 404 program.	Florida's Turnpike Enterprise	02/20/23

Anticipated Technical Studies

Technical Study Name	Type	Conditions	Review Org	Review Date
Geotechnical Report	Engineering		Florida's Turnpike Enterprise	02/20/2023
Noise Study Report	Environmental		Florida's Turnpike Enterprise	02/20/2023
State Environmental Impact Report (SEIR)	Environmental		Florida's Turnpike Enterprise	02/20/2023
Contamination Screening Evaluation Technical Memorandum	Other		Florida's Turnpike Enterprise	02/20/2023

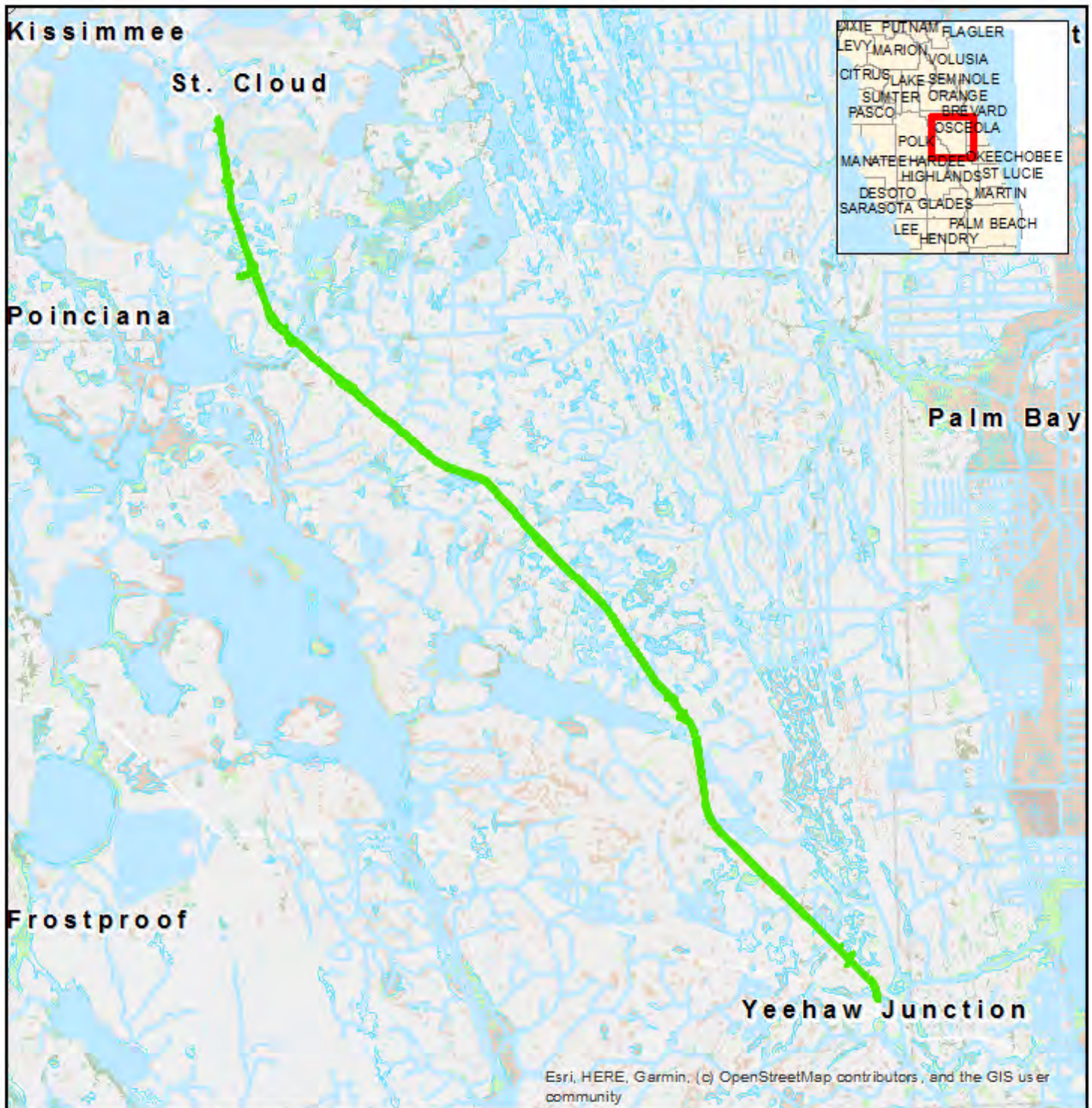
Sociocultural Effects Evaluation	Other		Florida's Turnpike Enterprise	02/20/2023
Preliminary Engineering Report	Engineering		Florida's Turnpike Enterprise	02/20/2023
Interchange Justification Report	Engineering		Florida's Turnpike Enterprise	02/20/2023
Air Quality Technical Memorandum	Environmental		Florida's Turnpike Enterprise	02/20/2023
Cultural Resource Assessment Survey	Environmental		Florida's Turnpike Enterprise	02/20/2023
Location Hydraulics Technical Memorandum	Engineering		Florida's Turnpike Enterprise	02/20/2023
Utility Assessment Package	Engineering		Florida's Turnpike Enterprise	02/20/2023
Pond Siting Report	Engineering		Florida's Turnpike Enterprise	02/20/2023
Natural Resources Evaluation (NRE)	Environmental		Florida's Turnpike Enterprise	02/20/2023

Issue Resolution Activity Log

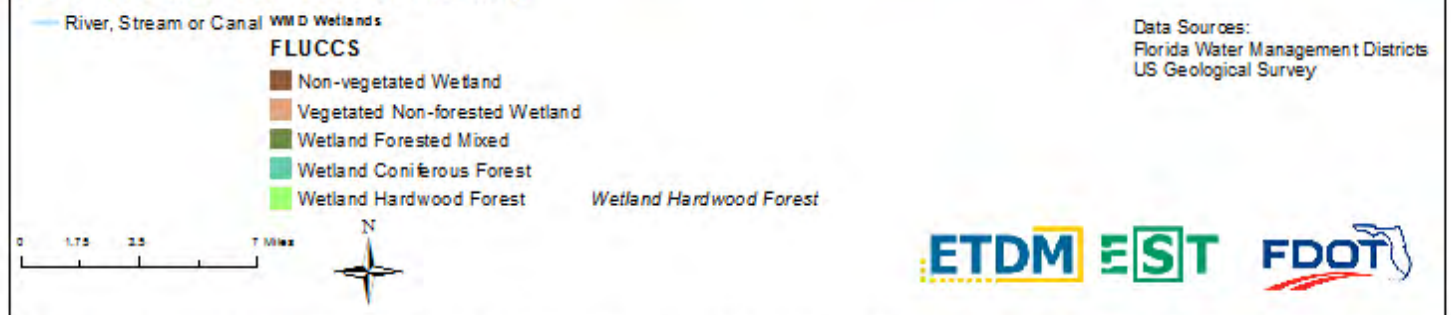
There are no issue resolution activities recorded for this project in the EST.

Hardcopy Maps: Alternative #1

North of SR 60 TO South of Kissimmee Park Road



Wetlands and Surface Waters Map



This map and its content is made available by the Florida Department of Transportation on an "as is," "as a vailable" basis without warranties of any kind, express or implied.

Appendices

PED Comments

Advance Notification Comments

US Coast Guard Comment --

Reviewed.

--Marty Bridges, 4/20/2023

Response --

--, \$tools.date.format("M/d/yyyy",\$comment.responseTimestamp)

FL Department of State Comment --

No comments

--Marcy Welch, 4/6/2023

Response --

--, \$tools.date.format("M/d/yyyy",\$comment.responseTimestamp)

FL Department of Environmental Protection Comment --

None

--Chris Stahl, 4/5/2023

Response --

--, \$tools.date.format("M/d/yyyy",\$comment.responseTimestamp)

FDEP - State 404 Program Comment --

FDEP looks forward to reviewing the Natural Resource Evaluation when available.

--Jennipher Walton, 3/29/2023

Response --

--, \$tools.date.format("M/d/yyyy",\$comment.responseTimestamp)

FL Department of Agriculture and Consumer Services Comment --

No comments.

--Mark Kiser, 3/28/2023

Response --

--, \$tools.date.format("M/d/yyyy",\$comment.responseTimestamp)

GIS Analyses

Since there are so many GIS Analyses available for Project #14523 - Florida's Turnpike (SR 91) Widening from N of SR 60 to S of Kissimmee Park Road (MP 193-238.5), they have not been included in this ETDM Summary Report. GIS Analyses, however, are always available for this project on the Public ETDM Website. Please click on the link below (or copy this link into your Web Browser) in order to view detailed GIS tabular information for this project:

<http://etdmpub.fl-a-etat.org/est/index.jsp?tpID=14523&startPageName=GIS%20Analysis%20Results>

Special Note: Please be sure that when the GIS Analysis Results page loads, the **Project Published 6/13/2023 Milestone** is selected. GIS Analyses snapshots have been taken for Project #14523 at various points throughout the project's life-cycle, so it is important that you view the correct snapshot.

Project Attachments

Note: Attachments are not included in this Summary Report, but can be accessed by clicking on the links below:

Date	Type	Size	Link / Description
02/20/2023	Project Documents	329 KB	http://etdmpub.fl.a-etat.org/est/servlet/blobViewer?blobID=38588 Hardcopy Map (from Attach Document Tool)
02/20/2023	Project Documents	339 KB	http://etdmpub.fl.a-etat.org/est/servlet/blobViewer?blobID=38587 Hardcopy Map (from Attach Document Tool)
02/20/2023	Project Documents	437 KB	http://etdmpub.fl.a-etat.org/est/servlet/blobViewer?blobID=38586 Hardcopy Map (from Attach Document Tool)
02/20/2023	Project Documents	1.09 MB	http://etdmpub.fl.a-etat.org/est/servlet/blobViewer?blobID=38580 Project Location Map
02/14/2023	Project Documents	1.29 MB	http://etdmpub.fl.a-etat.org/est/servlet/blobViewer?blobID=38499 L RTP Pages
02/14/2023	Project Documents	166 KB	http://etdmpub.fl.a-etat.org/est/servlet/blobViewer?blobID=38500 STIP Pages

Degree of Effect Legend

Color Code	Meaning	ETAT	Public Involvement
N/A	Not Applicable / No Involvement	There is no presence of the topic in relationship to the project, or the topic is irrelevant in relationship to the proposed transportation action.	
0	None (after 12/5/2005)	The topic is present, but the project will have no impact on the topic; project has no adverse effect on ETAT resources; permit issuance or consultation involves routine interaction with the agency. The <i>None</i> degree of effect is new as of 12/5/2005.	No community opposition to the planned project. No adverse effect on the community.
1	Enhanced	Project has positive effect on the ETAT resource or can reverse a previous adverse effect leading to environmental improvement.	Affected community supports the proposed project. Project has positive effect.
2	Minimal	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
2	Minimal to None (assigned prior to 12/5/2005)	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
3	Moderate	Agency resources are affected by the proposed project, but avoidance and minimization options are available and can be addressed during development with a moderated amount of agency involvement and moderate cost impact.	Project has adverse effect on elements of the affected community. Public Involvement is needed to seek alternatives more acceptable to the community. Moderate community interaction will be required during project development.
4	Substantial	The project has substantial adverse effects but ETAT understands the project need and will be able to seek avoidance and minimization or mitigation options during project development. Substantial interaction will be required during project development and permitting.	Project has substantial adverse effects on the community and faces substantial community opposition. Intensive community interaction with focused Public Involvement will be required during project development to address community concerns.
5	Potential Issue (Planning Screen)	Project may not conform to agency statutory requirements and may not be permitted. Project modification or evaluation of alternatives is required before advancing to the L RTP Programming Screen.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
5	Issue Resolution (Programming Screen)	Project does not conform to agency statutory requirements and will not be permitted. Issue resolution is required before the project proceeds to programming.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
	No ETAT Consensus	ETAT members from different agencies assigned a different degree of effect to this project, and the ETDM coordinator has not assigned a summary degree of effect.	
	No ETAT Reviews	No ETAT members have reviewed the corresponding topic for this project, and the ETDM coordinator has not assigned a summary degree of effect.	

APPENDIX F

Typical Section Package

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION PACKAGE

FINANCIAL PROJECT ID 423374-3-22-01

OSCEOLA COUNTY (92471)

STATE ROAD NO. 91

PD&E STUDY FOR TURNPIKE WIDENING FROM N OF SR60 TO CLAY WHALEY RD.

TURNPIKE DESIGN ENGINEER	TURNPIKE TRAFFIC OPERATIONS ENGINEER
•	•
•	•
CONCURRING WITH: TYPICAL SECTION ELEMENTS TARGET SPEED DESIGN & POSTED SPEEDS	CONCURRING WITH: TARGET SPEED DESIGN & POSTED SPEEDS
TURNPIKE INTERMODAL SYSTEMS DEVELOPMENT MANAGER	TURNPIKE STRUCTURES DESIGN ENGINEER
•	•
•	•
CONCURRING WITH: CONTEXT CLASSIFICATION TARGET SPEED	CONCURRING WITH: TYPICAL SECTION ELEMENTS TARGET SPEED
FHWA TRANSPORTATION ENGINEER	OSCEOLA COUNTY ENGINEER
•	•
•	•
CONCURRING WITH: TYPICAL SECTION ELEMENTS	CONCURRING WITH: TYPICAL SECTION ELEMENTS
NOT USED	NOT USED
•	•
•	•
CONCURRING WITH:	CONCURRING WITH:

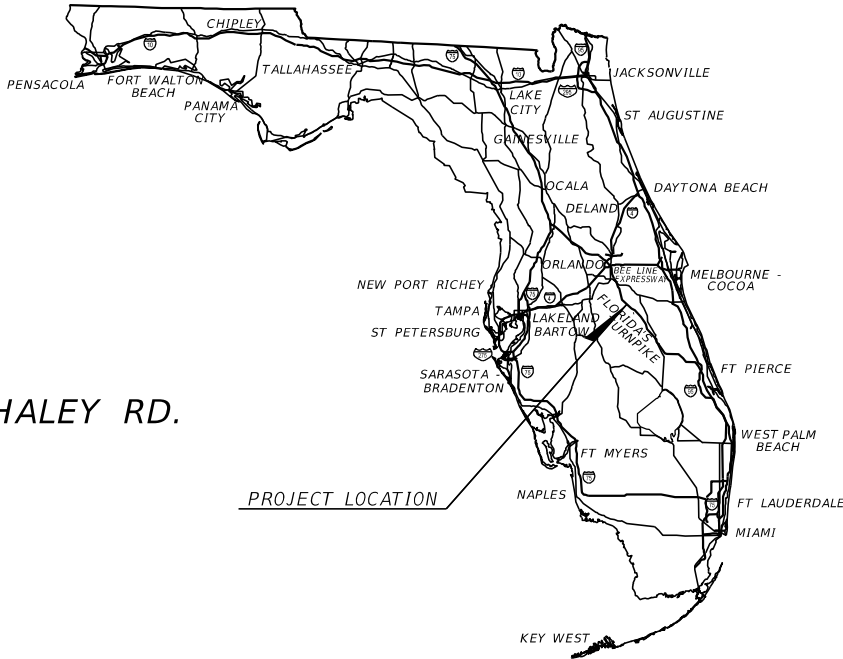
PROJECT LOCATION URL: <https://tinyurl.com/mw24x829>

PROJECT DESCRIPTION: PROJECT DEVELOPMENT AND ENVIRONMENT STUDY

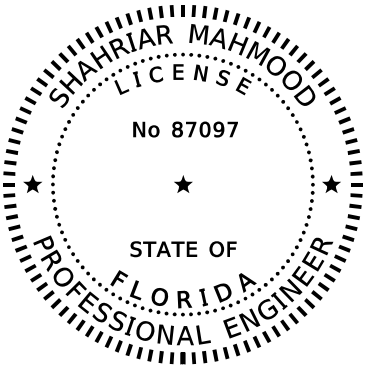
PROJECT LIMITS: BEGIN MP 193 – END MP 238.5

EXCEPTIONS: NONE

BRIDGE: (BRIDGE NO. 920018) MP 195.7
(US 441 OVER SR 91)
(BRIDGE NO. 920059) MP 199.1
(SR 91 SB OVER OUTFALL CANAL)
(BRIDGE NO. 920126) MP 199.1
(SR 91 NB OVER OUTFALL CANAL)
(BRIDGE NO. 920061) MP 206.3
(SR 91 SB OVER DRAINAGE CANAL)
(BRIDGE NO. 920127) MP 206.3
(SR 91 NB OVER DRAINAGE CANAL)
(BRIDGE NO. 920941) MP 207.5
(LAKE MARIAN RD. (CR 523A) OVER SR 91)
(BRIDGE NO. 920025) MP 208.4
(CANOE CREEK RD. (CR 523) OVER SR 91)
(BRIDGE NO. 920064) MP 220.9
(SR 91 SB OVER CANAL & RENISON RD.)
(BRIDGE NO. 920128) MP 220.9
(SR 91 NB OVER CANAL & RENISON RD.)
(BRIDGE NO. 920067) MP 228.8
(SR 91 SB OVER CANOE CREEK)
(BRIDGE NO. 920129) MP 228.8
(SR 91 NB OVER CANOE CREEK)
(BRIDGE NO. 920042) MP 229.4
(CANOE CREEK RD. (CR 523) OVER SR 91
(BRIDGE NO. 920070/920130) MP 235.4
(SR 91 OVER FANNY BRASS CREEK)
(BRIDGE NO. 920131) MP 235.9
(FRIARS COVE RD. OVER SR 91)
(BRIDGE NO. 920072/920132) MP 237.1
(SR 91 OVER GATOR BAY)
(BRIDGE NO. 920073/920133) MP 238.1
(SR 91 OVER WPA CANAL)



APPROVED BY:



THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY

ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE
NOT CONSIDERED SIGNED AND SEALED.
THE SIGNATURE MUST BE VERIFIED
IN THE ELECTRONIC DOCUMENTS.

ARDURRA GROUP, INC.
2600 LAKE LUCIEN DRIVE, SUITE 130
MAITLAND, FL 32751
SHAHRIAR MAHMOOD, P.E. NO. 87097

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE
FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

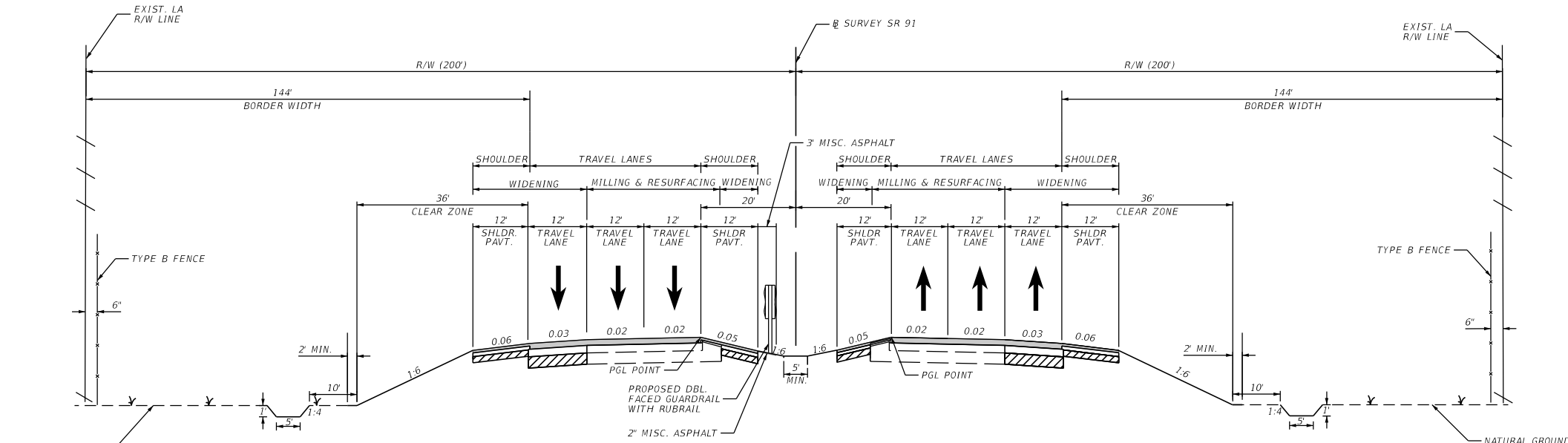
INDEX OF SHEETS

SHEET NO	SHEET DESCRIPTION	GOVERNING AGENCY
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2	TYPICAL SECTION NO. 1	FTE
3	TYPICAL SECTION NO. 2	FTE
4	TYPICAL SECTION NO. 3	FTE
5	TYPICAL SECTION NO. 4	FTE
6	TYPICAL SECTION NO. 5	FTE
7	TYPICAL SECTION NO. 6	OSCEOLA COUNTY
8	TYPICAL SECTION NO. 7	OSCEOLA COUNTY
9	TYPICAL SECTION NO. 8	OSCEOLA COUNTY
10	TYPICAL SECTION NO. 9	OSCEOLA COUNTY
11	TYPICAL SECTION NO. 10	OSCEOLA COUNTY
12	TYPICAL SECTION NO. 11	OSCEOLA COUNTY
13	TYPICAL SECTION NO. 12	OSCEOLA COUNTY
14	TYPICAL SECTION NO. 13	OSCEOLA COUNTY
15	TYPICAL SECTION NO. 14	OSCEOLA COUNTY
16	TYPICAL SECTION NO. 15	OSCEOLA COUNTY
17	TYPICAL SECTION NO. 16	OSCEOLA COUNTY
18	TYPICAL SECTION NO. 17	OSCEOLA COUNTY
19	TYPICAL SECTION NO. 18	OSCEOLA COUNTY
20	TYPICAL SECTION NO. 19	OSCEOLA COUNTY

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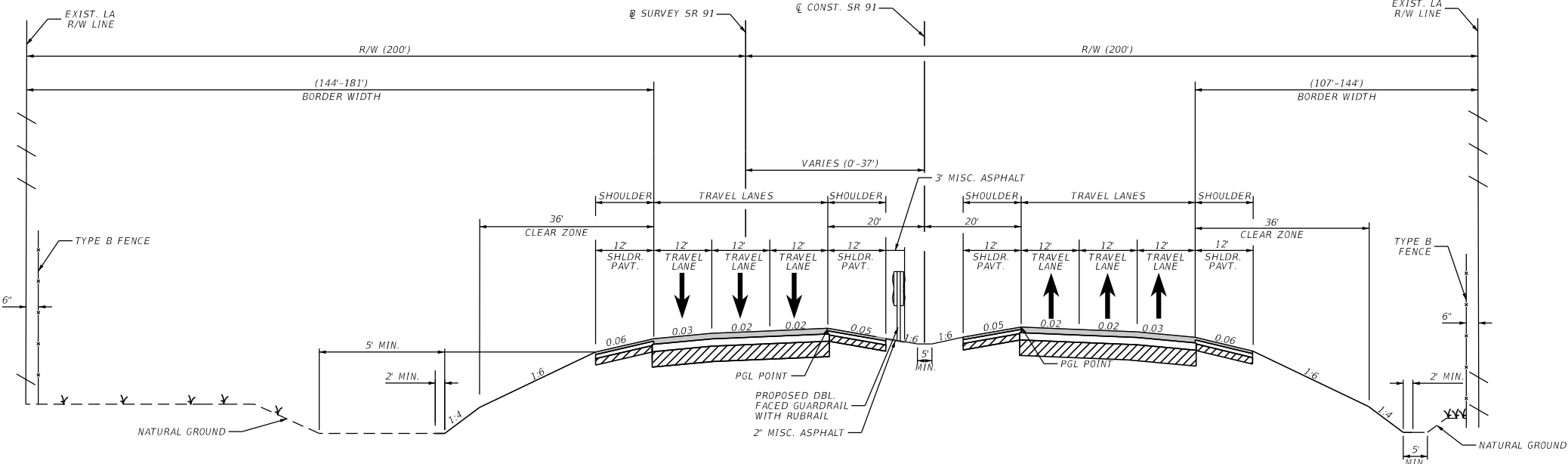
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PROJECT CONTROLS		TYPICAL SECTION No. 1					
CONTEXT CLASSIFICATION		 TYPICAL SECTION NO. 1 RURAL SEGMENT MILLING & RESURFACING WITH WIDENING FROM MP 193.782 TO MP 202.745 FROM MP 204.171 TO MP 206.422 FROM MP 207.458 TO MP 212.794 FROM MP 217.663 TO MP 220.497 FROM MP 221.748 TO MP 223.288					
FUNCTIONAL CLASSIFICATION							
HIGHWAY SYSTEM							
ACCESS CLASSIFICATION							
CRITERIA							
POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:		TRAFFIC DATA (TBD)					
CURRENT YEAR = ____AADT = ____TRUCK DDHV = ____ ESTIMATED OPENING YEAR = ____AADT = ____TRUCK DDHV = ____ ESTIMATED DESIGN YEAR = ____AADT = ____TRUCK DDHV = ____ K = __% D = __% T = __%(24 HOUR) DESIGN HOUR T = __% DESIGN SPEED = 70 MPH POSTED SPEED = 70 MPH		<table><tr><td>FINANCIAL PROJECT ID</td><td>SHEET NO.</td></tr><tr><td>423374-3-22-01</td><td>2</td></tr></table>		FINANCIAL PROJECT ID	SHEET NO.	423374-3-22-01	2
FINANCIAL PROJECT ID	SHEET NO.						
423374-3-22-01	2						

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PROJECT CONTROLS	
CONTEXT CLASSIFICATION C1 : NATURAL C2 : RURAL C2T : RURAL TOWN C3R : SUBURBAN RES. X N/A : L.A. FACILITY C3C : SUBURBAN COMM. C4 : URBAN GENERAL C5 : URBAN CENTER C6 : URBAN CORE	
FUNCTIONAL CLASSIFICATION INTERSTATE X FREEWAY/EXPWY. PRINCIPAL ARTERIAL MINOR ARTERIAL MAJOR COLLECTOR MINOR COLLECTOR LOCAL	
HIGHWAY SYSTEM X NATIONAL HIGHWAY SYSTEM X STRATEGIC INTERMODAL SYSTEM X STATE HIGHWAY SYSTEM OFF-STATE HIGHWAY SYSTEM	
ACCESS CLASSIFICATION X 1 - FREEWAY 2 - RESTRICTIVE w/Service Roads 3 - RESTRICTIVE w/660 ft. Connection Spacing 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing 5 - RESTRICTIVE w/440 ft. Connection Spacing 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing 7 - BOTH MEDIAN TYPES	
CRITERIA X NEW CONSTRUCTION / RECONSTRUCTION RESURFACING (LA FACILITIES) RRR (ARTERIALS & COLLECTORS)	
POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:	

TYPICAL SECTION No. 2					
					
TYPICAL SECTION NO. 2 RURAL SEGMENT RECONSTRUCTION WITH 37' CENTERLINE SHIFT FROM MP 202.745 TO MP 204.171 FROM MP 206.422 TO MP 207.458 FROM MP 212.794 TO MP 217.663 FROM MP 220.497 TO MP 221.748 FROM MP 223.288 TO MP 229.526 FROM MP 230.829 TO MP 233.728					
TRAFFIC DATA (TBD) CURRENT YEAR = ____ ESTIMATED OPENING YEAR = ____ ESTIMATED DESIGN YEAR = ____ K = ____% D = ____% T = ____% (24 HOUR) DESIGN HOUR T = ____% DESIGN SPEED = 70 MPH POSTED SPEED = 70 MPH AADT = ____ AADT = ____ AADT = ____ TRUCK DDHV = ____ TRUCK DDHV = ____ TRUCK DDHV = ____					
<table><tr><th>FINANCIAL PROJECT ID</th><th>SHEET NO.</th></tr><tr><td>423374-3-22-01</td><td>3</td></tr></table>		FINANCIAL PROJECT ID	SHEET NO.	423374-3-22-01	3
FINANCIAL PROJECT ID	SHEET NO.				
423374-3-22-01	3				

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

- ☐ C1 : NATURAL

☐ C2 : RURAL

☐ C2T : RURAL TOWN

☐ C3R : SUBURBAN RES.

☒ N/A : L.A. FACILITY
- ☐ C3C : SUBURBAN COMM.

☐ C4 : URBAN GENERAL

☐ C5 : URBAN CENTER

☐ C6 : URBAN CORE

FUNCTIONAL CLASSIFICATION

- ☐ INTERSTATE

☐ FREEWAY/EXPWY.

☐ PRINCIPAL ARTERIAL

☐ MINOR ARTERIAL
- ☐ MAJOR COLLECTOR

☐ MINOR COLLECTOR

☐ LOCAL

HIGHWAY SYSTEM

- ☒ NATIONAL HIGHWAY SYSTEM
- ☐ STRATEGIC INTERMODAL SYSTEM
- ☐ STATE HIGHWAY SYSTEM
- ☐ OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

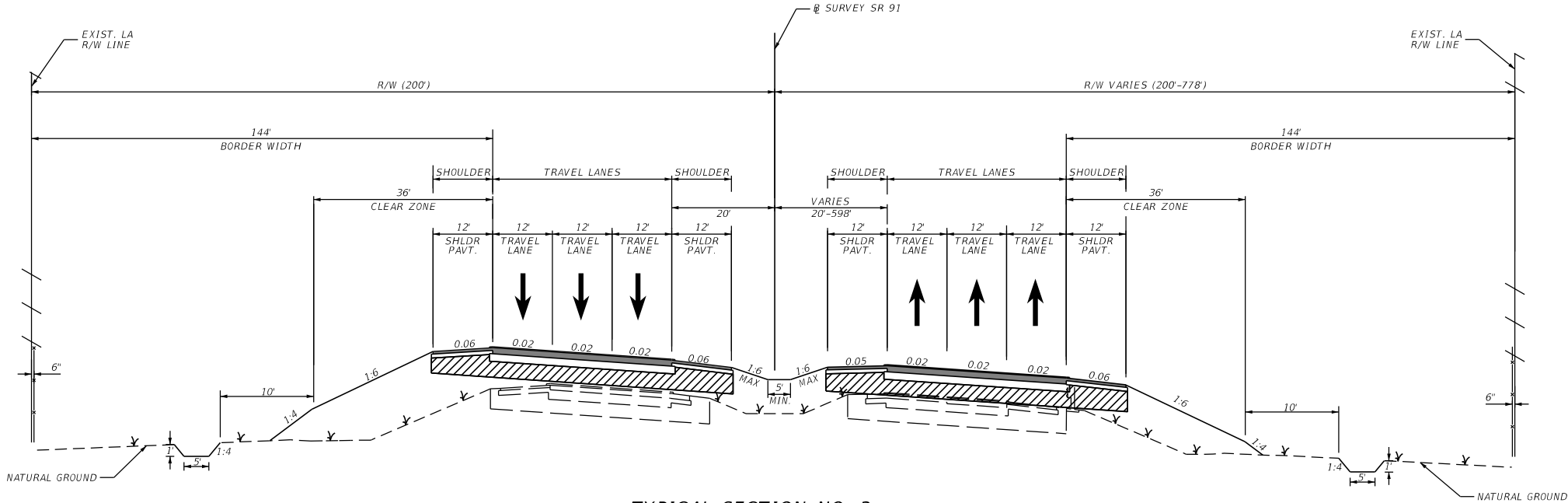
- ☒ 1 - FREEWAY
- ☐ 2 - RESTRICTIVE w/Service Roads
- ☐ 3 - RESTRICTIVE w/660 ft. Connection Spacing
- ☐ 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- ☐ 5 - RESTRICTIVE w/440 ft. Connection Spacing
- ☐ 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ☐ 7 - BOTH MEDIAN TYPES

CRITERIA

- ☒ NEW CONSTRUCTION / RECONSTRUCTION
- ☐ RESURFACING (LA FACILITIES)
- ☐ RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS
RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 3



TYPICAL SECTION NO. 3
RURAL SEGMENT
RECONSTRUCTION WITH BIFURCATED MEDIAN

FROM MP 229.526 TO MP 230.829

TRAFFIC DATA (TBD)

CURRENT YEAR = ____ AADT = ____ TRUCK DDHV = ____
ESTIMATED OPENING YEAR = ____ AADT = ____ TRUCK DDHV = ____
ESTIMATED DESIGN YEAR = ____ AADT = ____ TRUCK DDHV = ____
K = ____ D = ____ T = ____ (24 HOUR)
DESIGN HOUR T = ____
DESIGN SPEED = 70 MPH
POSTED SPEED = 70 MPH

FINANCIAL PROJECT ID

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NO.

4

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

- ☐ C1 : NATURAL

☐ C2 : RURAL

☐ C2T : RURAL TOWN

☐ C3R : SUBURBAN RES.

☒ N/A : L.A. FACILITY

☐ C3C : SUBURBAN COMM.

☐ C4 : URBAN GENERAL

☐ C5 : URBAN CENTER

☐ C6 : URBAN CORE

FUNCTIONAL CLASSIFICATION

- ☐ INTERSTATE

☒ FREEWAY/EXPWY.

☐ PRINCIPAL ARTERIAL

☐ MINOR ARTERIAL

☐ MAJOR COLLECTOR

☐ MINOR COLLECTOR

☐ LOCAL

HIGHWAY SYSTEM

- ☒ NATIONAL HIGHWAY SYSTEM

☒ STRATEGIC INTERMODAL SYSTEM

☒ STATE HIGHWAY SYSTEM

☐ OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- ☒ 1 - FREEWAY

☐ 2 - RESTRICTIVE w/Service Roads

☐ 3 - RESTRICTIVE w/660 ft. Connection Spacing

☐ 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing

☐ 5 - RESTRICTIVE w/440 ft. Connection Spacing

☐ 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing

☐ 7 - BOTH MEDIAN TYPES

CRITERIA

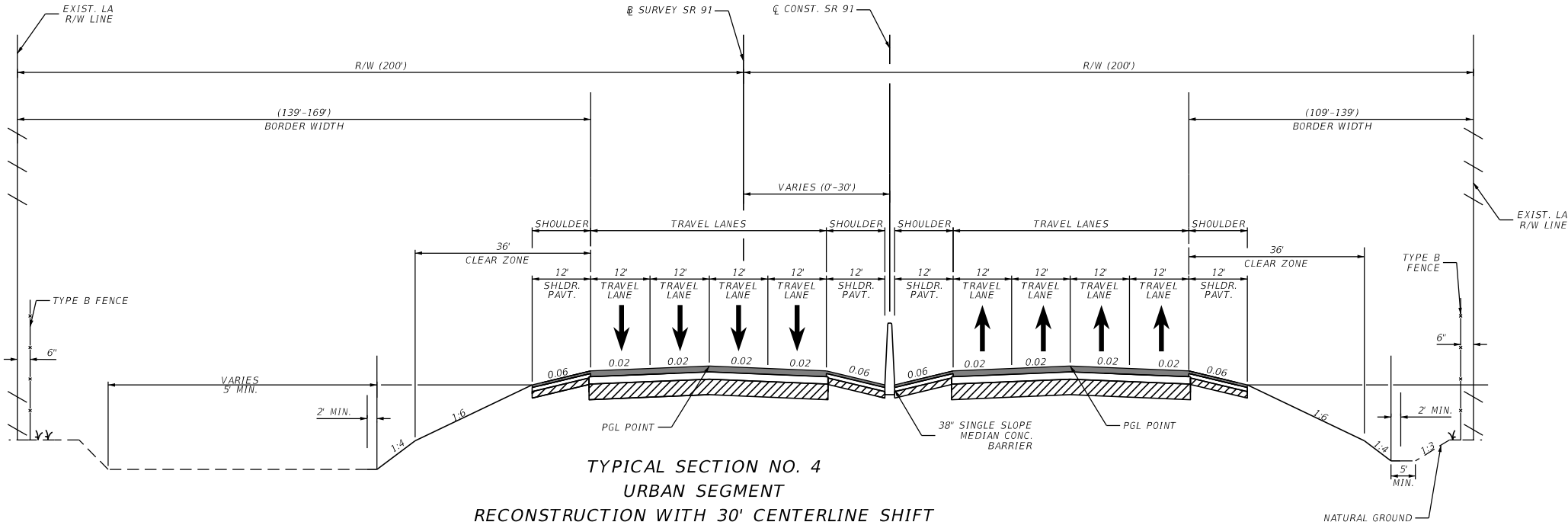
- ☒ NEW CONSTRUCTION / RECONSTRUCTION

☐ RESURFACING (LA FACILITIES)

☐ RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS
RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 4



TYPICAL SECTION NO. 4
URBAN SEGMENT
RECONSTRUCTION WITH 30' CENTERLINE SHIFT
FROM MP 233.728 TO MP 236.134
FROM MP 236.171 TO MP 239.027

TRAFFIC DATA (TBD)

CURRENT YEAR = ____ AADT = ____ TRUCK DDHV = ____
ESTIMATED OPENING YEAR = ____ AADT = ____ TRUCK DDHV = ____
ESTIMATED DESIGN YEAR = ____ AADT = ____ TRUCK DDHV = ____
K = ____% D = ____% T = ____% (24 HOUR)
DESIGN HOUR T = ____%
DESIGN SPEED = 70 MPH
POSTED SPEED = 70 MPH

FINANCIAL PROJECT ID

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SHEET NO.

5

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

- ☐ C1 : NATURAL

☐ C2 : RURAL

☐ C2T : RURAL TOWN

☐ C3R : SUBURBAN RES.

☒ N/A : L.A. FACILITY

☐ C3C : SUBURBAN COMM.

☐ C4 : URBAN GENERAL

☐ C5 : URBAN CENTER

☐ C6 : URBAN CORE

FUNCTIONAL CLASSIFICATION

- ☐ INTERSTATE

☒ FREEWAY/EXPWY.

☐ PRINCIPAL ARTERIAL

☐ MINOR ARTERIAL

☐ MAJOR COLLECTOR

☐ MINOR COLLECTOR

☐ LOCAL

HIGHWAY SYSTEM

- ☒ NATIONAL HIGHWAY SYSTEM

☒ STRATEGIC INTERMODAL SYSTEM

☒ STATE HIGHWAY SYSTEM

☐ OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- ☒ 1 - FREEWAY

☐ 2 - RESTRICTIVE w/Service Roads

☐ 3 - RESTRICTIVE w/660 ft. Connection Spacing

☐ 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing

☐ 5 - RESTRICTIVE w/440 ft. Connection Spacing

☐ 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing

☐ 7 - BOTH MEDIAN TYPES

CRITERIA

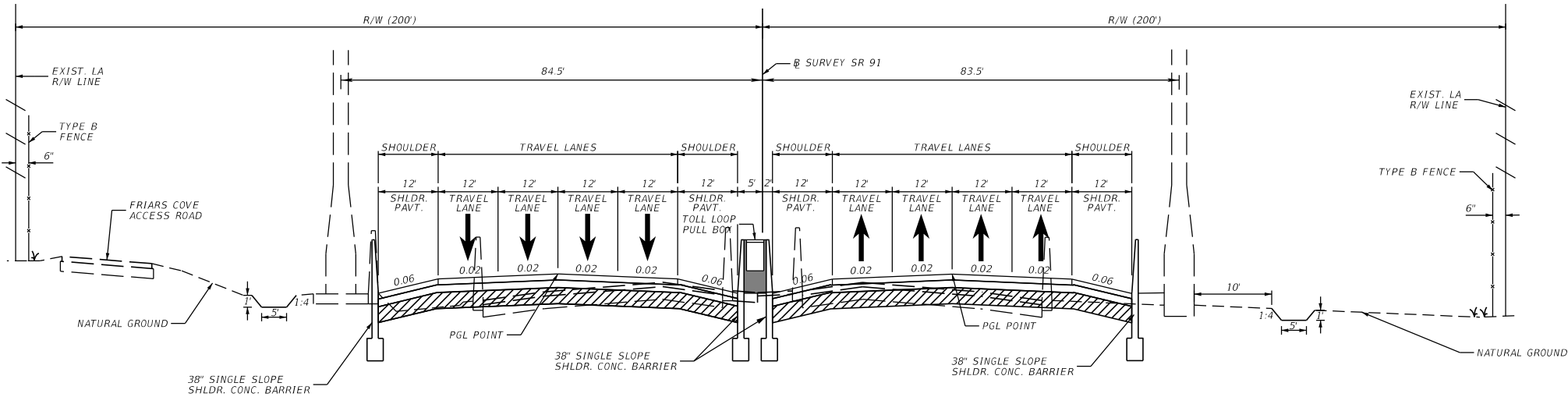
- ☒ NEW CONSTRUCTION / RECONSTRUCTION

☐ RESURFACING (LA FACILITIES)

☐ RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS
RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 5



TYPICAL SECTION NO. 5
URBAN SEGMENT
THREE LAKES TOLL PLAZA
FROM MP 236.134 TO MP 236.171

TRAFFIC DATA (TBD)

CURRENT YEAR = ____ AADT = ____ TRUCK DDHV = ____
ESTIMATED OPENING YEAR = ____ AADT = ____ TRUCK DDHV = ____
ESTIMATED DESIGN YEAR = ____ AADT = ____ TRUCK DDHV = ____
K = ____ D = ____ T = ____ (24 HOUR)
DESIGN HOUR T = ____
DESIGN SPEED = 70 MPH
POSTED SPEED = 70 MPH

FINANCIAL PROJECT ID

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SHEET NO.

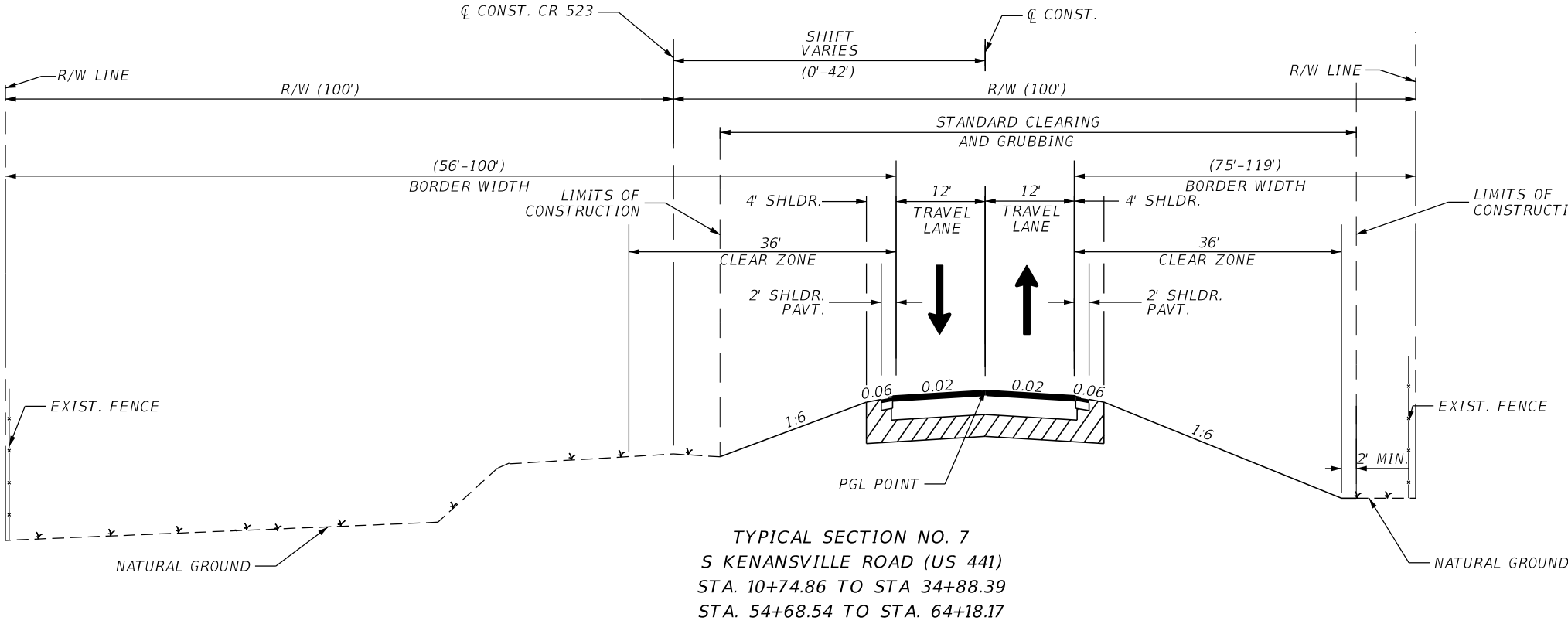
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PROJECT CONTROLS		TYPICAL SECTION No. 6	
CONTEXT CLASSIFICATION C1 : NATURAL C3C : SUBURBAN COMM. C2 : RURAL C4 : URBAN GENERAL C2T : RURAL TOWN C5 : URBAN CENTER C3R : SUBURBAN RES. C6 : URBAN CORE			

N/A : L.A. FACILITY

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PROJECT CONTROLS		TYPICAL SECTION No. 7	
CONTEXT CLASSIFICATION C1 : NATURAL C3C : SUBURBAN COMM. C2 : RURAL C4 : URBAN GENERAL C2T : RURAL TOWN C5 : URBAN CENTER C3R : SUBURBAN RES. C6 : URBAN CORE N/A : L.A. FACILITY		 TYPICAL SECTION NO. 7 S KENANSVILLE ROAD (US 441) STA. 10+74.86 TO STA 34+88.39 STA. 54+68.54 TO STA. 64+18.17	
FUNCTIONAL CLASSIFICATION INTERSTATE MAJOR COLLECTOR FREEWAY/EXPWY. MINOR COLLECTOR PRINCIPAL ARTERIAL LOCAL MINOR ARTERIAL			
HIGHWAY SYSTEM NATIONAL HIGHWAY SYSTEM STRATEGIC INTERMODAL SYSTEM STATE HIGHWAY SYSTEM OFF-STATE HIGHWAY SYSTEM			
ACCESS CLASSIFICATION 1 - FREEWAY 2 - RESTRICTIVE w/Service Roads 3 - RESTRICTIVE w/660 ft. Connection Spacing 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing 5 - RESTRICTIVE w/440 ft. Connection Spacing 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing 7 - BOTH MEDIAN TYPES			
CRITERIA NEW CONSTRUCTION / RECONSTRUCTION RESURFACING (LA FACILITIES) RRR (ARTERIALS & COLLECTORS)			
POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:			
		TRAFFIC DATA (TBD) CURRENT YEAR ESTIMATED OPENING YEAR ESTIMATED DESIGN YEAR K = % D = % T = % (24 HOUR) DESIGN HOUR T = % DESIGN SPEED = 60 MPH POSTED SPEED = 55 MPH AADT = AADT = AADT = TRUCK DDHV = TRUCK DDHV = TRUCK DDHV =	
		FINANCIAL PROJECT ID 423374-3-22-01 SHEET NO. 8	

N/A : L.A. FACILITY

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PROJECT CONTROLS CONTEXT CLASSIFICATION C1 : NATURAL C2 : RURAL C2T : RURAL TOWN C3R : SUBURBAN RES. N/A : L.A. FACILITY C3C : SUBURBAN COMM. C4 : URBAN GENERAL C5 : URBAN CENTER C6 : URBAN CORE FUNCTIONAL CLASSIFICATION INTERSTATE FREEWAY/EXPWY. PRINCIPAL ARTERIAL MINOR ARTERIAL MAJOR COLLECTOR MINOR COLLECTOR LOCAL
--

HIGHWAY SYSTEM

NATIONAL HIGHWAY SYSTEM

STRATEGIC INTERMODAL SYSTEM

STATE HIGHWAY SYSTEM

OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

1 - FREEWAY

2 - RESTRICTIVE w/Service Roads

3 - RESTRICTIVE w/660 ft. Connection Spacing

4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing

5 - RESTRICTIVE w/440 ft. Connection Spacing

6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing

7 - BOTH MEDIAN TYPES

CRITERIA

NEW CONSTRUCTION / RECONSTRUCTION

RESURFACING (LA FACILITIES)

RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS
RELATED TO TYPICAL SECTION:

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PROJECT CONTROLS CONTEXT CLASSIFICATION C1 : NATURAL C2 : RURAL C2T : RURAL TOWN C3R : SUBURBAN RES. N/A : L.A. FACILITY C3C : SUBURBAN COMM. C4 : URBAN GENERAL C5 : URBAN CENTER C6 : URBAN CORE

FUNCTIONAL CLASSIFICATION

INTERSTATE

FREEWAY/EXPWY.

PRINCIPAL ARTERIAL

MINOR ARTERIAL

MAJOR COLLECTOR

MINOR COLLECTOR

LOCAL

HIGHWAY SYSTEM

NATIONAL HIGHWAY SYSTEM

STRATEGIC INTERMODAL SYSTEM

STATE HIGHWAY SYSTEM

OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

1 - FREEWAY

2 - RESTRICTIVE w/Service Roads

3 - RESTRICTIVE w/660 ft. Connection Spacing

4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing

5 - RESTRICTIVE w/440 ft. Connection Spacing

6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing

7 - BOTH MEDIAN TYPES

8 - N/A

CRITERIA

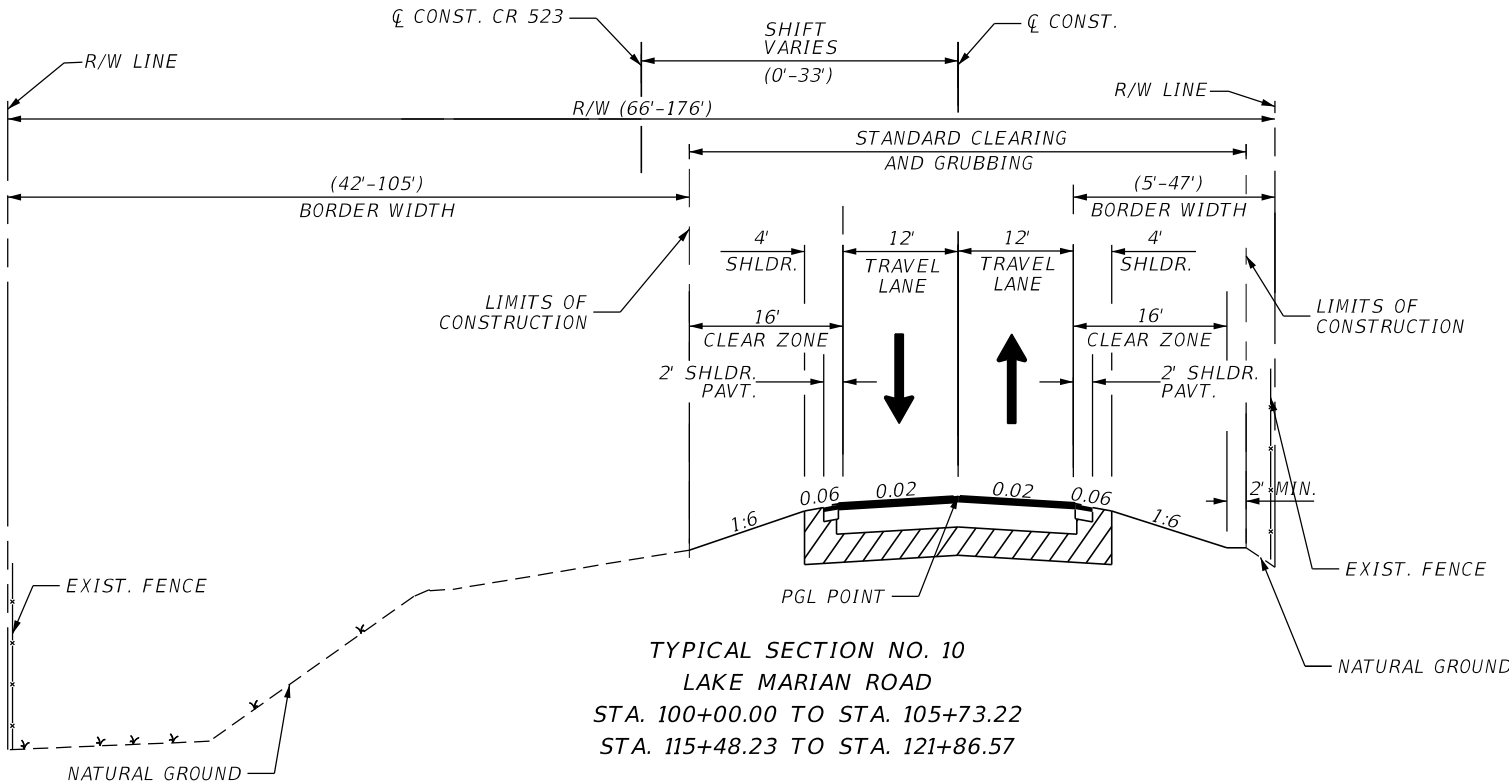
NEW CONSTRUCTION / RECONSTRUCTION

RESURFACING (LA FACILITIES)

RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS
RELATED TO TYPICAL SECTION:

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PROJECT CONTROLS		TYPICAL SECTION No. 10	
CONTEXT CLASSIFICATION C1 : NATURAL C3C : SUBURBAN COMM. C2 : RURAL C4 : URBAN GENERAL C2T : RURAL TOWN C5 : URBAN CENTER C3R : SUBURBAN RES. C6 : URBAN CORE N/A : L.A. FACILITY		 TYPICAL SECTION NO. 10 LAKE MARIAN ROAD STA. 100+00.00 TO STA. 105+73.22 STA. 115+48.23 TO STA. 121+86.57	
FUNCTIONAL CLASSIFICATION INTERSTATE MAJOR COLLECTOR FREEWAY/EXPWY. MINOR COLLECTOR PRINCIPAL ARTERIAL LOCAL MINOR ARTERIAL			
HIGHWAY SYSTEM NATIONAL HIGHWAY SYSTEM STRATEGIC INTERMODAL SYSTEM STATE HIGHWAY SYSTEM OFF-STATE HIGHWAY SYSTEM			
ACCESS CLASSIFICATION 1 - FREEWAY 2 - RESTRICTIVE w/Service Roads 3 - RESTRICTIVE w/660 ft. Connection Spacing 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing 5 - RESTRICTIVE w/440 ft. Connection Spacing 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing 7 - BOTH MEDIAN TYPES 8 - N/A		TRAFFIC DATA (TBD) CURRENT YEAR = ---- AADT = TRUCK DDHV = ESTIMATED OPENING YEAR = ---- AADT = TRUCK DDHV = ESTIMATED DESIGN YEAR = ---- AADT = TRUCK DDHV = K = % D = % T = % (24 HOUR) DESIGN HOUR T = % DESIGN SPEED = 40 MPH POSTED SPEED = 40 MPH	
POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:			

FINANCIAL PROJECT ID	SHEET NO.
423374-3-22-01	11

N/A : L.A. FACILITY

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PROJECT CONTROLS CONTEXT CLASSIFICATION C1 : NATURAL C2 : RURAL C2T : RURAL TOWN C3R : SUBURBAN RES. N/A : L.A. FACILITY C3C : SUBURBAN COMM. C4 : URBAN GENERAL C5 : URBAN CENTER C6 : URBAN CORE

FUNCTIONAL CLASSIFICATION

INTERSTATE

FREEWAY/EXPWY.

PRINCIPAL ARTERIAL

MINOR ARTERIAL

MAJOR COLLECTOR

MINOR COLLECTOR

LOCAL

HIGHWAY SYSTEM

NATIONAL HIGHWAY SYSTEM

STRATEGIC INTERMODAL SYSTEM

STATE HIGHWAY SYSTEM

OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

1 - FREEWAY

2 - RESTRICTIVE w/Service Roads

3 - RESTRICTIVE w/660 ft. Connection Spacing

4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing

5 - RESTRICTIVE w/440 ft. Connection Spacing

6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing

7 - BOTH MEDIAN TYPES

8 - N/A

CRITERIA

NEW CONSTRUCTION / RECONSTRUCTION

RESURFACING (LA FACILITIES)

RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS
RELATED TO TYPICAL SECTION:

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PROJECT CONTROLS CONTEXT CLASSIFICATION C1 : NATURAL C2 : RURAL C2T : RURAL TOWN C3R : SUBURBAN RES. N/A : L.A. FACILITY C3C : SUBURBAN COMM. C4 : URBAN GENERAL C5 : URBAN CENTER C6 : URBAN CORE

FUNCTIONAL CLASSIFICATION

INTERSTATE

FREEWAY/EXPWY.

PRINCIPAL ARTERIAL

MINOR ARTERIAL

MAJOR COLLECTOR

MINOR COLLECTOR

LOCAL

HIGHWAY SYSTEM

NATIONAL HIGHWAY SYSTEM

STRATEGIC INTERMODAL SYSTEM

STATE HIGHWAY SYSTEM

OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

1 - FREEWAY

2 - RESTRICTIVE w/Service Roads

3 - RESTRICTIVE w/660 ft. Connection Spacing

4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing

5 - RESTRICTIVE w/440 ft. Connection Spacing

6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing

7 - BOTH MEDIAN TYPES

8 - N/A

CRITERIA

NEW CONSTRUCTION / RECONSTRUCTION

RESURFACING (LA FACILITIES)

RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS
RELATED TO TYPICAL SECTION:

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PROJECT CONTROLS CONTEXT CLASSIFICATION C1 : NATURAL C3C : SUBURBAN COMM. C2 : RURAL C4 : URBAN GENERAL C2T : RURAL TOWN C5 : URBAN CENTER C3R : SUBURBAN RES. C6 : URBAN CORE N/A : L.A. FACILITY FUNCTIONAL CLASSIFICATION INTERSTATE MAJOR COLLECTOR FREEWAY/EXPWY. MINOR COLLECTOR PRINCIPAL ARTERIAL LOCAL MINOR ARTERIAL

HIGHWAY SYSTEM

NATIONAL HIGHWAY SYSTEM

STRATEGIC INTERMODAL SYSTEM

STATE HIGHWAY SYSTEM

OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

1 - FREEWAY

2 - RESTRICTIVE w/Service Roads

3 - RESTRICTIVE w/660 ft. Connection Spacing

4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing

5 - RESTRICTIVE w/440 ft. Connection Spacing

6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing

7 - BOTH MEDIAN TYPES

8 - N/A

CRITERIA

NEW CONSTRUCTION / RECONSTRUCTION

RESURFACING (LA FACILITIES)

RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS
RELATED TO TYPICAL SECTION:

BORDER WIDTH REQUIRES DESIGN VARIATION MEMORANDUM.
MINIMUM 40' REQUIRED FOR D=60 MPH WITH FLUSH SHOULDER.

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PROJECT CONTROLS CONTEXT CLASSIFICATION C1 : NATURAL C3C : SUBURBAN COMM. C2 : RURAL C4 : URBAN GENERAL C2T : RURAL TOWN C5 : URBAN CENTER C3R : SUBURBAN RES. C6 : URBAN CORE N/A : L.A. FACILITY FUNCTIONAL CLASSIFICATION INTERSTATE MAJOR COLLECTOR FREEWAY/EXPWY. MINOR COLLECTOR PRINCIPAL ARTERIAL LOCAL MINOR ARTERIAL HIGHWAY SYSTEM NATIONAL HIGHWAY SYSTEM STRATEGIC INTERMODAL SYSTEM STATE HIGHWAY SYSTEM OFF-STATE HIGHWAY SYSTEM ACCESS CLASSIFICATION 1 - FREEWAY 2 - RESTRICTIVE w/Service Roads 3 - RESTRICTIVE w/660 ft. Connection Spacing 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing 5 - RESTRICTIVE w/440 ft. Connection Spacing 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing 7 - BOTH MEDIAN TYPES 8 - N/A CRITERIA NEW CONSTRUCTION / RECONSTRUCTION RESURFACING (LA FACILITIES) RRR (ARTERIALS & COLLECTORS) POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:	TYPICAL SECTION No. 14 TYPICAL SECTION NO. 14 S CANOE CREEK ROAD BRIDGE (CR 523) OVER SR 91 STA. 172+18.65 TO STA. 174+70.86 TRAFFIC DATA (TBD) CURRENT YEAR = ---- ESTIMATED OPENING YEAR = ---- ESTIMATED DESIGN YEAR = ---- K = % D = % T = % (24 HOUR) DESIGN HOUR T = % DESIGN SPEED = 60 MPH POSTED SPEED = 55 MPH AADT = AADT = AADT = TRUCK DDHV = TRUCK DDHV = TRUCK DDHV = FINANCIAL PROJECT ID 423374-3-22-01 SHEET NO. 15
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PROJECT CONTROLS	TYPICAL SECTION No. 15
CONTEXT CLASSIFICATION C1 : NATURAL C3C : SUBURBAN COMM. C2 : RURAL C4 : URBAN GENERAL C2T : RURAL TOWN C5 : URBAN CENTER C3R : SUBURBAN RES. C6 : URBAN CORE N/A : L.A. FACILITY	
FUNCTIONAL CLASSIFICATION INTERSTATE MAJOR COLLECTOR FREEWAY/EXPWY. MINOR COLLECTOR PRINCIPAL ARTERIAL LOCAL MINOR ARTERIAL	
HIGHWAY SYSTEM NATIONAL HIGHWAY SYSTEM STRATEGIC INTERMODAL SYSTEM STATE HIGHWAY SYSTEM OFF-STATE HIGHWAY SYSTEM	
ACCESS CLASSIFICATION 1 - FREEWAY 2 - RESTRICTIVE w/Service Roads 3 - RESTRICTIVE w/660 ft. Connection Spacing 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing 5 - RESTRICTIVE w/440 ft. Connection Spacing 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing 7 - BOTH MEDIAN TYPES 8 - N/A	
CRITERIA NEW CONSTRUCTION / RECONSTRUCTION RESURFACING (LA FACILITIES) RRR (ARTERIALS & COLLECTORS)	TRAFFIC DATA (TBD) CURRENT YEAR ESTIMATED OPENING YEAR ESTIMATED DESIGN YEAR K = % D = % T = % (24 HOUR) DESIGN HOUR T = % DESIGN SPEED = 60 MPH POSTED SPEED = 55 MPH AADT = AADT = AADT = TRUCK DDHV = TRUCK DDHV = TRUCK DDHV =
POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:	
	FINANCIAL PROJECT ID 423374-3-22-01 SHEET NO. 16

N/A : L.A. FACILITY

PROJECT CONTROLS

CONTEXT CLASSIFICATION

() C1 : NATURAL	() C3C : SUBURBAN COMM.
(X) C2 : RURAL	() C4 : URBAN GENERAL
() C2T : RURAL TOWN	() C5 : URBAN CENTER
() C3R : SUBURBAN RES.	() C6 : URBAN CORE
(_) N/A : L.A. FACILITY	

FUNCTIONAL CLASSIFICATION

() INTERSTATE	() MAJOR COLLECTOR
() FREEWAY/EXPWY.	() MINOR COLLECTOR
(X) PRINCIPAL ARTERIAL	() LOCAL
() MINOR ARTERIAL	

HIGHWAY SYSTEM

() NATIONAL HIGHWAY SYSTEM
() STRATEGIC INTERMODAL SYSTEM
() STATE HIGHWAY SYSTEM
(X) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

() 1 - FREEWAY
() 2 - RESTRICTIVE w/Service Roads
() 3 - RESTRICTIVE w/660 ft. Connection Spacing
() 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
() 5 - RESTRICTIVE w/440 ft. Connection Spacing
() 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
() 7 - BOTH MEDIAN TYPES
(X) 8 - N/A

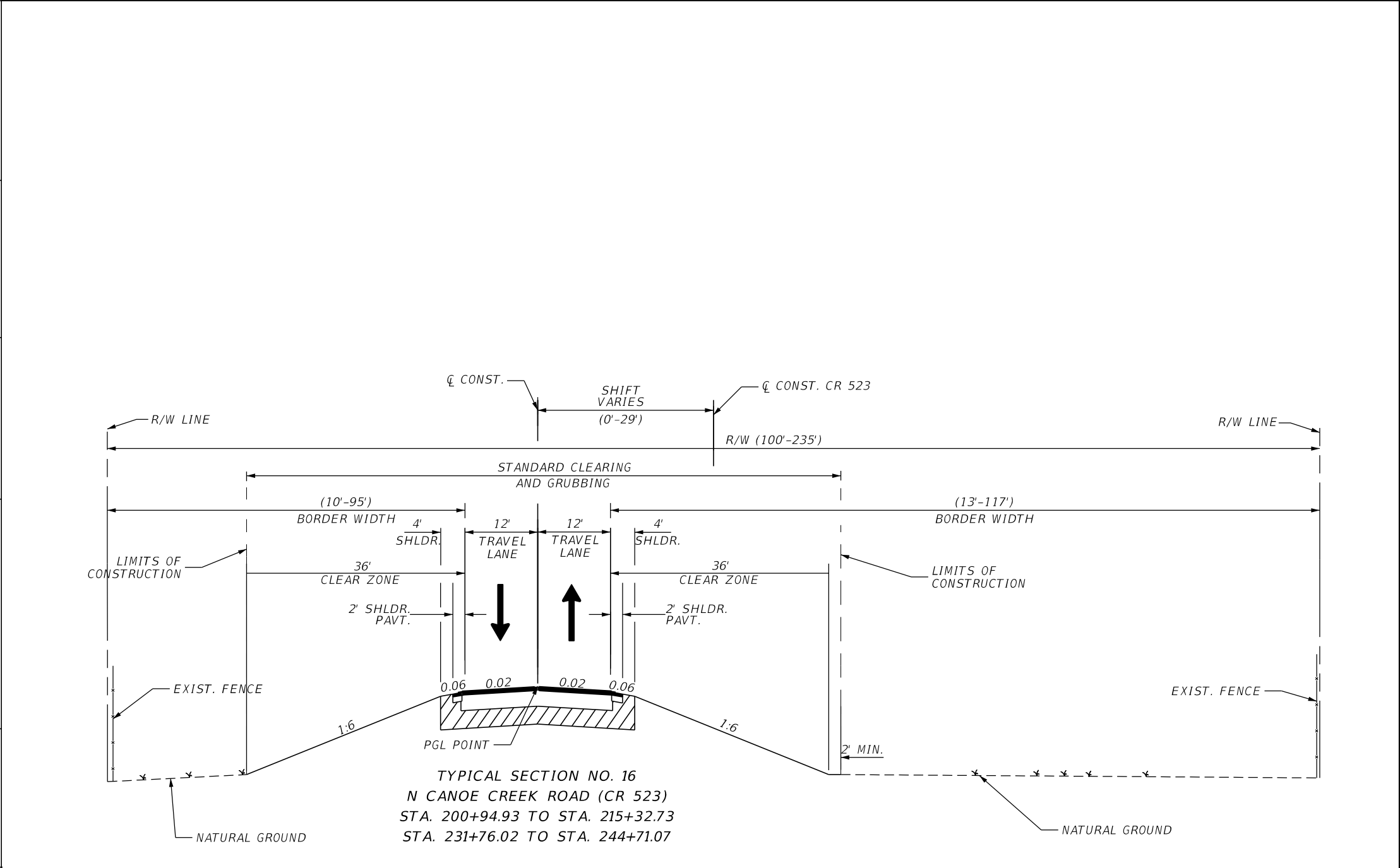
CRITERIA

(X)	NEW CONSTRUCTION / RECONSTRUCTION
()	RESURFACING (LA FACILITIES)
()	RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS
RELATED TO TYPICAL SECTION:

BORDER WIDTH REQUIRES DESIGN VARIATION MEMORANDUM.
MINIMUM 40' REQUIRED FOR D=60 MPH WITH FLUSH SHOULDER.

TYPICAL SECTION No. 16



TRAFFIC DATA (TBD)

CURRENT YEAR = ---- AADT = TRUCK DDHV = ESTIMATED OPENING YEAR = ---- AADT = TRUCK DDHV = ESTIMATED DESIGN YEAR = ---- AADT = TRUCK DDHV = K = % D = % T = % (24 HOUR) DESIGN HOUR T = % DESIGN SPEED = 60 MPH POSTED SPEED = 55 MPH	<table border="1"> <tr> <td>FINANCIAL PROJECT ID</td> <td>SHEET NO.</td> </tr> <tr> <td>423374-3-22-01</td> <td>17</td> </tr> </table>	FINANCIAL PROJECT ID	SHEET NO.	423374-3-22-01	17
FINANCIAL PROJECT ID	SHEET NO.				
423374-3-22-01	17				

<i>FINANCIAL PROJECT ID</i>	<i>SHEET NO.</i>
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SHEET
NO.

423374-3-22-01	17
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17

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PROJECT CONTROLS CONTEXT CLASSIFICATION C1 : NATURAL C2 : RURAL C2T : RURAL TOWN C3R : SUBURBAN RES. N/A : L.A. FACILITY C3C : SUBURBAN COMM. C4 : URBAN GENERAL C5 : URBAN CENTER C6 : URBAN CORE FUNCTIONAL CLASSIFICATION INTERSTATE FREEWAY/EXPWY. PRINCIPAL ARTERIAL MINOR ARTERIAL MAJOR COLLECTOR MINOR COLLECTOR LOCAL HIGHWAY SYSTEM NATIONAL HIGHWAY SYSTEM STRATEGIC INTERMODAL SYSTEM STATE HIGHWAY SYSTEM OFF-STATE HIGHWAY SYSTEM ACCESS CLASSIFICATION 1 - FREEWAY 2 - RESTRICTIVE w/Service Roads 3 - RESTRICTIVE w/660 ft. Connection Spacing 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing 5 - RESTRICTIVE w/440 ft. Connection Spacing 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing 7 - BOTH MEDIAN TYPES 8 - N/A CRITERIA NEW CONSTRUCTION / RECONSTRUCTION RESURFACING (LA FACILITIES) RRR (ARTERIALS & COLLECTORS) POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:	TYPICAL SECTION No. 17 TYPICAL SECTION NO. 17 N CANOE CREEK ROAD BRIDGE (CR 523) OVER SR 91 STA. 220+58.83 TO STA. 224+07.61 TRAFFIC DATA (TBD) <table><tr><td>CURRENT YEAR</td><td>=</td><td>----</td><td>AADT =</td><td>TRUCK DDHV =</td></tr><tr><td>ESTIMATED OPENING YEAR</td><td>=</td><td>----</td><td>AADT =</td><td>TRUCK DDHV =</td></tr><tr><td>ESTIMATED DESIGN YEAR</td><td>=</td><td>----</td><td>AADT =</td><td>TRUCK DDHV =</td></tr><tr><td>K =</td><td>%</td><td>D =</td><td>%</td><td>T =</td><td>% (24 HOUR)</td></tr><tr><td>DESIGN HOUR T</td><td>=</td><td>%</td><td></td><td></td><td></td></tr><tr><td>DESIGN SPEED</td><td>=</td><td>60 MPH</td><td></td><td></td><td></td></tr><tr><td>POSTED SPEED</td><td>=</td><td>55 MPH</td><td></td><td></td><td></td></tr></table> FINANCIAL PROJECT ID 423374-3-22-01 SHEET NO. 18	CURRENT YEAR	=	----	AADT =	TRUCK DDHV =	ESTIMATED OPENING YEAR	=	----	AADT =	TRUCK DDHV =	ESTIMATED DESIGN YEAR	=	----	AADT =	TRUCK DDHV =	K =	%	D =	%	T =	% (24 HOUR)	DESIGN HOUR T	=	%				DESIGN SPEED	=	60 MPH				POSTED SPEED	=	55 MPH			
CURRENT YEAR	=	----	AADT =	TRUCK DDHV =																																				
ESTIMATED OPENING YEAR	=	----	AADT =	TRUCK DDHV =																																				
ESTIMATED DESIGN YEAR	=	----	AADT =	TRUCK DDHV =																																				
K =	%	D =	%	T =	% (24 HOUR)																																			
DESIGN HOUR T	=	%																																						
DESIGN SPEED	=	60 MPH																																						
POSTED SPEED	=	55 MPH																																						

PROJECT CONTROLS

CONTEXT CLASSIFICATION

() C1 : NATURAL	() C3C : SUBURBAN COMM.
() C2 : RURAL	(X) C4 : URBAN GENERAL
() C2T : RURAL TOWN	() C5 : URBAN CENTER
() C3R : SUBURBAN RES.	() C6 : URBAN CORE
() N/A : L.A. FACILITY	

FUNCTIONAL CLASSIFICATION

() INTERSTATE	() MAJOR COLLECTOR
() FREEWAY/EXPWY.	() MINOR COLLECTOR
() PRINCIPAL ARTERIAL	(X) LOCAL
() MINOR ARTERIAL	

HIGHWAY SYSTEM

() NATIONAL HIGHWAY SYSTEM
() STRATEGIC INTERMODAL SYSTEM
() STATE HIGHWAY SYSTEM
(X) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

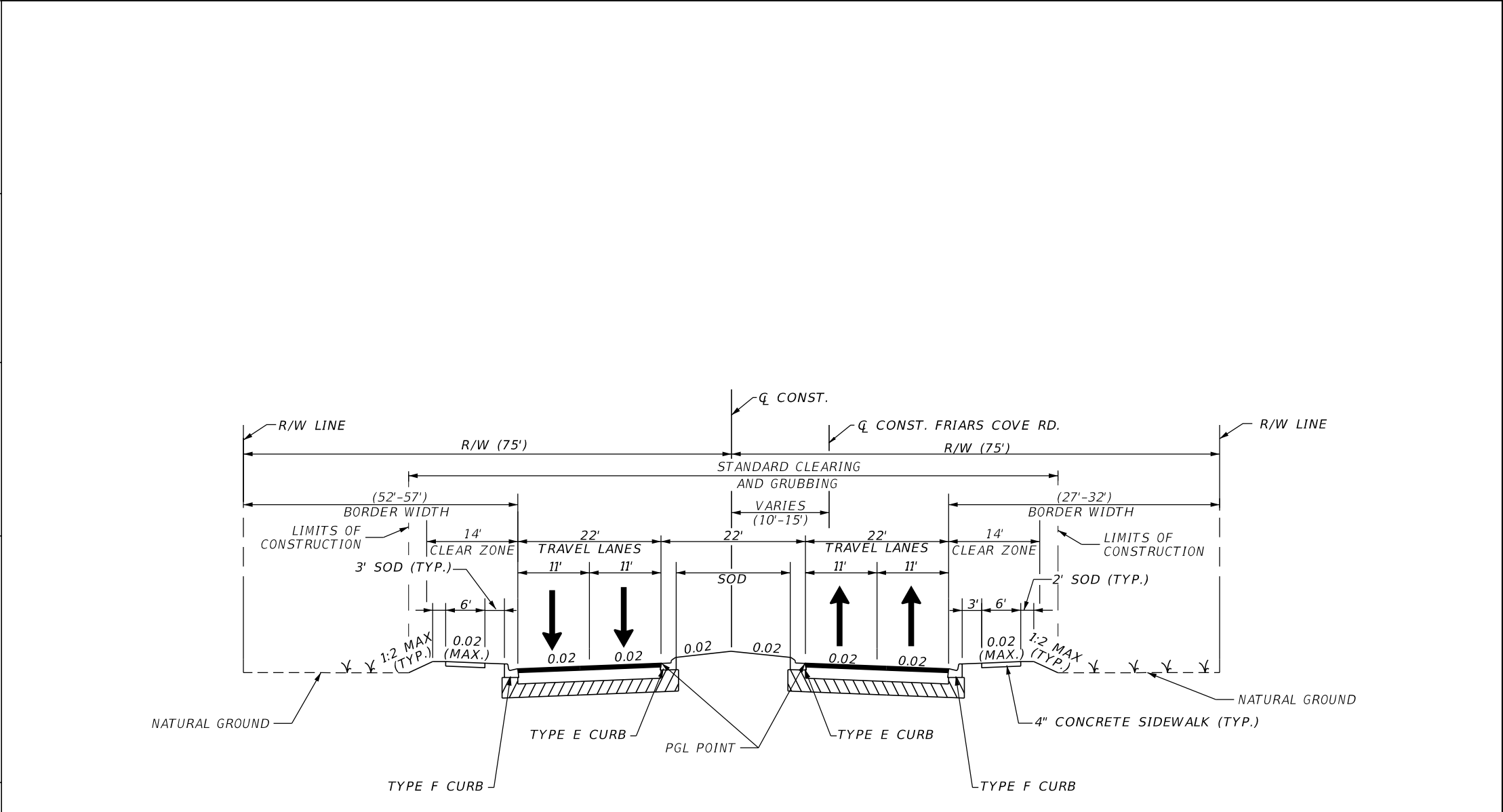
- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- () 3 - RESTRICTIVE w/660 ft. Connection Spacing
- () 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES
- (X) 8 - N/A

CRITERIA	
1	1.1
2	2.1
3	3.1
4	4.1
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95	95.1
96	96.1
97	97.1
98	98.1
99	99.1
100	100.1

(X) NEW CONSTRUCTION / RECONSTRUCTION
() RESURFACING (LA FACILITIES)
() RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS
RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 18



TYPICAL SECTION NO. 18
FRIARS COVE ROAD
STA. 400+78.57 TO STA. 407+59.61
STA. 410+05.07 TO STA. 419+41.36

TRAFFIC DATA (TBD)

CURRENT YEAR	=	----	AADT =		TRUCK DDHV =
ESTIMATED OPENING YEAR	=	----	AADT =		TRUCK DDHV =
ESTIMATED DESIGN YEAR	=	----	AADT =		TRUCK DDHV =
K =	%	D =	%	T =	% (24 HOUR)
DESIGN HOUR T	=	%			
DESIGN SPEED	=	35 MPH			
POSTED SPEED	=	35 MPH			

<i>FINANCIAL PROJECT ID</i>	<i>SHEET NO.</i>
<i>423374-3-22-01</i>	<i>19</i>

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PROJECT CONTROLS CONTEXT CLASSIFICATION C1 : NATURAL C2 : RURAL C2T : RURAL TOWN C3R : SUBURBAN RES. N/A : L.A. FACILITY C3C : SUBURBAN COMM. (X) C4 : URBAN GENERAL C5 : URBAN CENTER C6 : URBAN CORE FUNCTIONAL CLASSIFICATION INTERSTATE FREEWAY/EXPWY. PRINCIPAL ARTERIAL MINOR ARTERIAL MAJOR COLLECTOR MINOR COLLECTOR (X) LOCAL HIGHWAY SYSTEM NATIONAL HIGHWAY SYSTEM STRATEGIC INTERMODAL SYSTEM STATE HIGHWAY SYSTEM (X) OFF-STATE HIGHWAY SYSTEM ACCESS CLASSIFICATION 1 - FREEWAY 2 - RESTRICTIVE w/Service Roads 3 - RESTRICTIVE w/660 ft. Connection Spacing 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing 5 - RESTRICTIVE w/440 ft. Connection Spacing 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing 7 - BOTH MEDIAN TYPES (X) 8 - N/A CRITERIA (X) NEW CONSTRUCTION / RECONSTRUCTION RESURFACING (LA FACILITIES) RRR (ARTERIALS & COLLECTORS) POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:	TYPICAL SECTION No. 19 TYPICAL SECTION NO. 19 FRIARS COVE ROAD BRIDGE OVER SR 91 ROAD. STA. 407+59.61 TO STA. 410+05.07 TRAFFIC DATA (TBD) CURRENT YEAR = ---- ESTIMATED OPENING YEAR = ---- ESTIMATED DESIGN YEAR = ---- K = % D = % T = % (24 HOUR) DESIGN HOUR T = % DESIGN SPEED = 35 MPH POSTED SPEED = 35 MPH AADT = AADT = AADT = TRUCK DDHV = TRUCK DDHV = TRUCK DDHV = FINANCIAL PROJECT ID 423374-3-22-01 SHEET NO. 20
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