



I-75

S.R. 44 TO S.R. 200

Preliminary Engineering Report

I-75 PD&E Study | South of S.R. 44 to S.R. 200
Financial Management Number: 452074-2

Sumter and Marion Counties

August 2024

PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation
District Five

I-75 Improvements Project Development and Environment (PD&E) Study
(Southern Section)

Limits of Project: I-75 from South of S.R. 44 to S.R. 200

Sumter and Marion Counties, Florida

Financial Management Number: 452074-2

ETDM Number: 14541

Date: August 2024

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

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1 PROJECT SUMMARY

Interstate 75 (I-75) is one of the State’s most important transportation facilities critical to Florida’s economic competitiveness and quality of life. As the primary north-south interstate in the Central Florida region, I-75 provides for the movement of people and freight, mobility between regional employment and population centers, and a thoroughfare for tourism and trade in Florida. In response to Central Florida I-75 corridor’s growing needs, the Florida Department of Transportation (FDOT) prepared an Interstate Master Plan (July 2024) for I-75 from Florida’s Turnpike in Sumter County to south of the County Road (C.R.) 234 interchange near the Marion County/Alachua County line. This master plan, known as I-75 Forward, identifies strategies for improving the I-75 corridor through 2050 and beyond.

1.1 Project Description

The FDOT is conducting a PD&E Study for proposed operational improvements to the I-75 corridor in Sumter County and Marion County, Florida. These interim improvements were identified as part of Phase 1 of a master planning effort for the I-75 corridor between Florida’s Turnpike and C.R. 234. The operational improvements being evaluated by this PD&E Study include construction of auxiliary lanes between interchanges for a 22.5-mile segment of I-75 from south of State Road (S.R.) 44 to S.R. 200, effectively widening this portion of I-75 from six to eight lanes. The Marion County Northbound and Ocala Southbound weigh stations are located within the study limits as well as a rest area north of C.R. 484 and south of S.R. 200. Within the study limits, I-75 is a rural principal arterial interstate from south of S.R. 44 to the Wildwood weigh station and an urban principal arterial interstate for the remainder of the corridor. I-75 runs in a north and south direction with a posted speed of 70 miles per hour. I-75 is part of the Florida Strategic Intermodal System (SIS) and is designated by the Florida Division of Emergency Management (FDEM) as a critical link evacuation route. Within the study limits, I-75 is a six-lane limited access facility situated within approximately 300 feet of right of way. No transit facilities, frontage roads, or managed lanes are included as part of this study.

A project location map is shown in **Figure 1-1**.

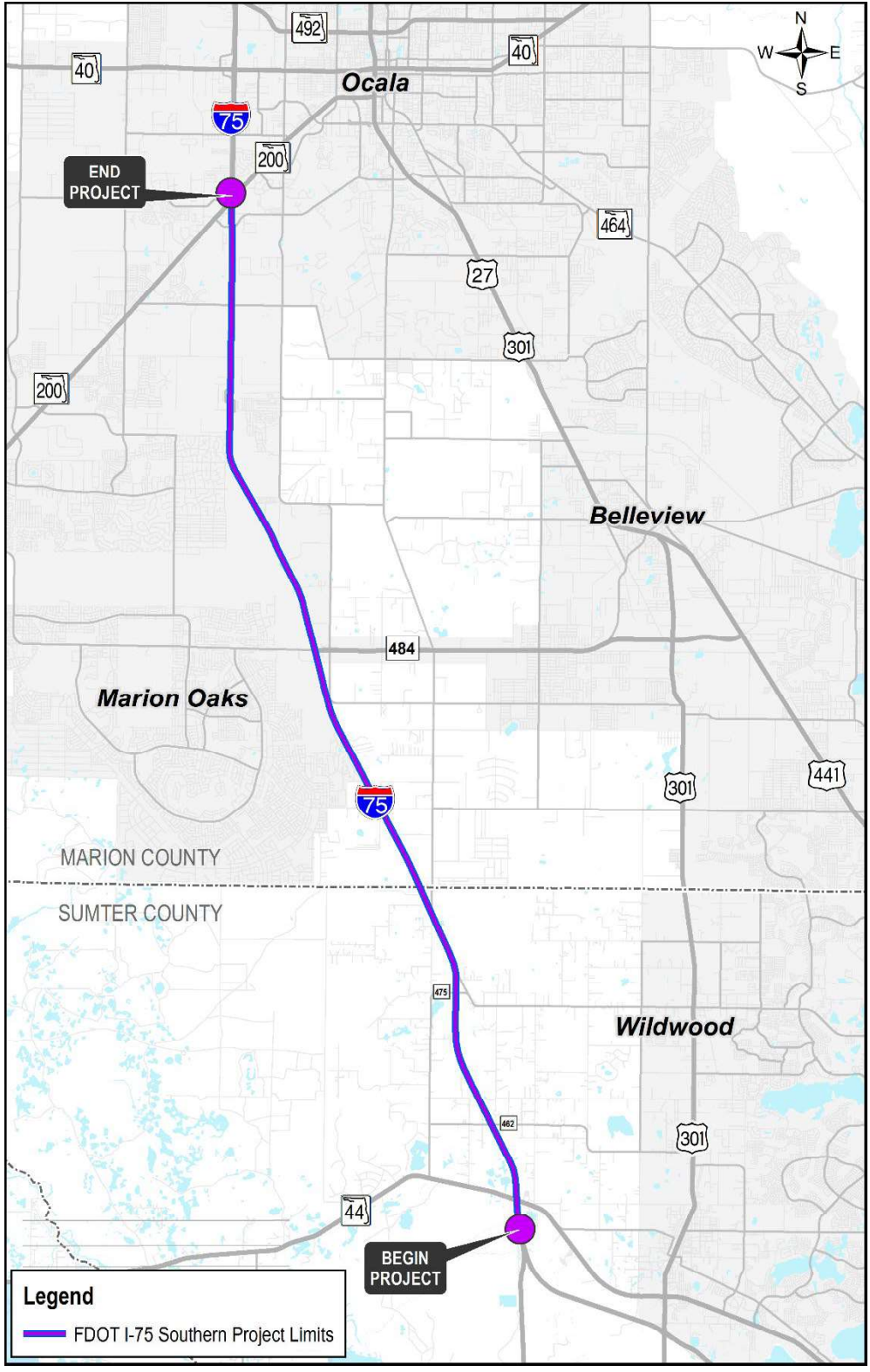


Figure 1-1: Project Location Map

1.2 Purpose and Need

1.2.1 Project Purpose

The purpose of this project is to evaluate short-term operational improvements on the mainline of I-75 from south of S.R. 44 to S.R. 200. No interchange improvements will be evaluated with these operational improvements.

1.2.2 Project Need

The primary needs for this project are to enhance current transportation safety and modal interrelationships while providing additional capacity between existing interchanges.

1.2.2.1 Project Status

Improvements along the I-75 project corridor are included in the Lake-Sumter Metropolitan Planning Organization (MPO) 2045 Long Range Transportation Plan (LRTP) and the Ocala Marion Transportation Planning Organization (TPO) 2045 LRTP to address population and employment growth in the area. Sumter County anticipates 94% growth in population from 115,657 in 2015 to 223,979 in 2045, and Marion County anticipates 33% growth in population from 333,200 in 2015 to 444,900 in 2045. The employment growth rate from 2015 to 2045 in Sumter and Marion counties is projected at 137% and 57% respectively.

The Lake-Sumter MPO 2045 LRTP Cost Feasible Plan includes adding auxiliary lanes on I-75 from S.R. 44 to S.R. 200. The implementation timeframe for these improvements is 2021-2025.

The Ocala Marion 2045 LRTP Cost Feasible Plan includes adding auxiliary lanes on I-75 from the south of S.R. 44 to S.R. 200. The implementation for these improvements is 2021-2025.

This project is also consistent with the I-75 Master Plan, which identifies future needs to improve safety, reliability, mobility, operational capacity, efficiency, and connectivity.

1.2.2.2 Safety

Historical crash data for this segment of I-75 was obtained from the Signal 4 crash database. Crash data analyzed between 2018 and 2022, with supplemental data from January 1, 2023, to March 31, 2023, indicates there was a total of 2,479 vehicle crashes between north of S.R. 44 and S.R. 200. Of these, 684 resulted in at least one injury and nine fatal crashes resulted in 12 fatalities. The number of crashes decreased from 2018 (479) to 2020 (365), but then increased to 505 crashes in 2022. Crashes occurring between Friday and Sunday comprised approximately 55 percent of the total crashes in this analysis period.

I-75 through the project limits experiences crash rates (1.8 - Rural, 1.66 - Urban) greater than the corresponding statewide averages (0.45 - Rural, 1.00 - Urban) for similar facilities. This is 4 times higher than the statewide rural rate and 66% higher than the statewide urban rate.

1.2.2.3 Modal Interrelationships

Truck traffic on I-75 is substantial and accounts for over 20 percent of all daily vehicle trips within

the study limits based on the FDOT Traffic Characteristics Inventory. The segment of I-75 between S.R. 44 and C.R. 484 experiences the highest volume of trucks with more than 25 percent of the total trips made by trucks. Multiple existing and planned Intermodal Logistic Centers (ILC) and freight activity centers in Ocala will continue to increase the growth in truck volumes. These facilities include the Ocala/Marion County Commerce Park (Ocala 489), Ocala 275 ILC, and the Ocala International Airport and Business Park.

The interaction between heavy freight vehicles and passenger vehicles between interchanges contributes to both operational congestion and safety concerns.

1.2.2.4 Capacity/Transportation Demand

Existing annual average daily traffic (AADT) on I-75 within the study limits ranges from 81,000 vehicles per day (vpd) to 97,000 vpd, with the highest volume of traffic occurring between C.R. 484 and S.R. 200. The AADT along I-75 between S.R. 44 and C.R. 484 is 81,000 vpd. I-75 northbound and southbound operate at level of service (LOS) C or better during the average weekday AM and PM peak hours. The LOS target for I-75 is D and as early as 2030, I-75 northbound and southbound between C.R. 484 and S.R. 200 is expected to operate at LOS F. By 2040, the Design Year AADT's within the study limits will range between 102,000 and 143,000, with the highest volumes of traffic continuing to occur between C.R. 484 and S.R. 200 (Table 1.1). The traffic growth and reduction in LOS is related to two factors, forecast increases in population and employment (detailed above) and continued growth in tourism in Central and South Florida. I-75 and Florida's Turnpike are critical transportation links serving these markets.

Table 1-1: Existing and Forecast Traffic Volumes

Segment	Existing (2019) AADT	Opening Year (2030)	Design Year (2040) AADT
S. R. 44 and C.R. 484	81,000	102,000	121,000
C.R. 484 and S.R. 200	97,000	121,000	143,000

I-75 is a unique corridor that experiences substantial increases in traffic during holidays, peak tourism seasons, weekends, and special events and experiences frequent closures because of incidents leading to non-recurring congestion. I-75 is part of the emergency evacuation route network designated by the FDEM.

1.3 Commitments

- Design and Right-of-Way funding has been identified in the Adopted FDOT Work Program (Fiscal Year 24-29). A Transportation Improvement Program (TIP) update will be processed with the Lake-Sumter Metropolitan Planning Organization (MPO) and the Ocala Marion Transportation Planning Organization (TPO) within three months of the Finding of No Significant Impact (FONSI) document approval. Once the update has been

finalized, FDOT will add an updated planning consistency table and related MPO/TPO planning documents to the project record.

- FDOT is committed to working with the Community of Royal throughout the duration of the project to continue providing project status updates, maintaining an open dialogue and to develop mitigation options that are consistent with the community's vision and goals. The following commitments are being made to mitigate the minor aesthetics impact to the Community of Royal from the C.R. 462 bridge replacement (refer to Section 4.3: Stakeholder Meetings of the EA for detailed descriptions of each aesthetic feature):
 - FDOT is committed to keeping the lanes of travel open during construction of the C.R. 462 bridge replacement.
 - Fencing will not be installed around pond 3-1 located just south of the Community of Royal historic royal landscape boundary.
 - The terrace, on the north side, will consist of a rectangular pattern and have a sunset buff pattern color.
 - Provide low-level landscaping not taller than the wall height of the terrace.
 - Include plants that are predominantly green year-round, showcase yellow and purple hues and blossoms, and utilize palms as opposed to trees.
 - Provide a sidewalk on the north side of the bridge.
 - Provide medallions highlighting the Community of Royal into the overall design on the bridge.
- No equipment or materials are to be staged or stored within the limits of the mapped 8MR00475 boundary where it intersects the I-75 right of way (the area from the edge of the expanded road/shoulder to the FDOT fence line between stations 1782+00 and 1792+00).
- FDOT will continue to coordinate with FDEP regarding any potential impacts to the Greenway during the permitting process and will minimize and avoid impacts to the maximum extent possible.
- FDOT will provide mitigation for impacts to wood stork Suitable Foraging Habitat within the Service Area of a USFWS Service-approved wetland mitigation bank or wood stork conservation bank.
- The most recent version of the USFWS Standard Protection Measures for the Eastern indigo snake will be utilized during construction.
- A survey for the listed plant species *Dicerandra cornutissima* (longspurred mint) will be performed during the design phase and coordination with USFWS/FDACS and the Rare Plant Conservation Program (RPCP) of Bok Tower Gardens (BTG) will occur if impacts to the species are anticipated.
- The USFWS is proposing to list the tricolored bat as an endangered species. To prevent disturbance of potential arboreal roost habitat, no tree clearing will occur when day-time

high temperatures are below 45 degrees, nor during maternity season (May 1st through July 15th).

- If the listing status of the monarch butterfly is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, during the design and permitting phase of the proposed project, FDOT commits to re-initiating consultation with the USFWS to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the newly listed species.
- FDOT is committed to maintaining traffic during the bridge replacements of C.R. 462, C.R. 475, and SW 66th Street without any extended detours due to the limited roadway network in the area and the hindrance detours would have on local motorists and first responders.
- The FDOT is committed to the construction of feasible and reasonable noise abatement measures at the noise impacted locations described above, 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 FDOT; and
 - Safety and engineering aspects have been reviewed, and any conflicts or issues resolved.

1.4 Alternatives Analysis Summary

Interstate 75 (I-75) is one of the State's most important transportation facilities critical to Florida's economic competitiveness and quality of life. As the primary north-south interstate in the Central Florida region, I-75 provides for the movement of people and freight, mobility between regional employment and population centers, and a thoroughfare for tourism and trade in Florida. Additionally, I-75 is designated as a primary hurricane evacuation route by the FDEM.

In response to the Central Florida I-75 corridor's growing needs within Sumter and Marion counties, the FDOT prepared an Interstate Master Plan for I-75 from Florida's Turnpike in Sumter County to south of the C.R. 234 interchange near the Marion County/Alachua County line. This master plan, known as I-75 Forward provides strategic direction and a long-term framework for planning and programming future improvements along the I-75 corridor through 2050 and beyond. The limits of this study, the required study analysis, documentation, and how best to phase the improvements were based on available funding and the unique circumstances of the project. The recommended improvements documented in I-75 Forward are to be implemented in phases as funding and priorities allow.

Phase 1 of I-75 Forward includes this project, south of S.R. 44 to S.R. 200, a distance of approximately 22.5 miles. Three options were considered for Phase 1 of I-75 Forward including

adding auxiliary lanes, adding general purpose lanes and adding both auxiliary lanes and general-purpose lanes. Based on cost, traffic analysis and stakeholder engagement, I-75 Forward identified adding auxiliary lanes for Phase 1 of this project. The Build Alternative (Auxiliary Lanes) is based on recommendations from I-75 Forward which included the evaluation of bridge widening concepts, bridge replacement concepts, stormwater drainage concepts and pond siting.

The No-Build Alternative does not address the purpose and need for this project; however, it serves as the baseline against which the build alternative is evaluated. The Build Alternative (Auxiliary Lanes) is the sole build alternative evaluated in this PD&E study.

1.5 Description of Preferred Alternative

To accommodate the auxiliary lanes, the existing I-75 bridge (southbound) over S.R. 44 will be widened, and the existing I-75 bridge over C.R. 484 will be widened (modified beams). These bridges will have the same typical section as I-75. The existing C.R. 462 bridge over I-75 will be replaced, the existing C.R. 475 bridge over I-75 will be replaced, and the existing SW 66th (William Street) bridge over I-75 will be replaced. The Florida Greenway Land Bridge (Florida Trail) over I-75, the existing I-75 bridge (northbound) over S.R. 44, the I-75 bridge over SW 43rd Street and I-75 bridge over S.R. 200 (SW College Road) will remain. The concept layout plans are provided in **Appendix A**. Typical sections of the proposed bridge improvements are provided in **Appendix B**.

The Preferred Alternative typical section will be accommodated within the existing 300-foot-wide roadway right of way and includes three 12-foot-wide general-purpose lanes in each direction, one 12-foot-wide auxiliary lane in each direction, 12-foot-wide (10-foot paved) inside and outside shoulders, and a depressed grassed median, as shown in **Figure 1-2**. The Preferred Alternative drainage improvements include approximately 32 stormwater management facilities utilizing dry retention/treatment systems. Additional right of way will be required to provide the necessary pond sites.



Figure 1-2: I-75 Preferred Alternative Typical Section

1.6 List of Technical Documents

The following technical, environmental, and public involvement documents are referenced in support of the Preliminary Engineering Report. These documents have been submitted to FDOT as part of this project and some are in the process of being prepared.

- Environmental Assessment, May 2024
- Public Involvement Plan, March 2024
- I-75 Forward, July 2024
- Natural Resources Evaluation Report (NRE), May 2024
- Contamination Screening Evaluation Report (CSER), June 2024
- Cultural Resource Assessment Survey (CRAS), November 2023
- Cultural Resource Assessment Survey (CRAS) Addendum, April 2024
- Cultural Resource Assessment Survey (CRAS) Addendum No. 2, July 2024
- Noise Study Report (NSR), July 2024
- Typical Section Package, May 2024
- Water Quality Impacts Evaluation (WQIE), March 2024
- Project Traffic Analysis Report (PTAR), March 2024
- Pond Siting Report (PSR) for Sumter County, April 2024
- Pond Siting Report (PSR) for Marion County, May 2024
- Sociocultural Effects Evaluation, May 2024
- Air Quality Report, April 2024
- Farmlands Memorandum, May 2024
- Location Hydraulics Report (LHR), April 2024
- Utilities Assessment Package, March 2024
- Comments and Coordination Report, July 2024

2 EXISTING CONDITIONS

This study area includes the I-75 corridor from south of S.R. 44 to S.R. 200. The I-75 corridor consists of the I-75 roadway and interchanges, bridges, weigh station, and a rest area. The existing conditions described in the following sections of this report were derived from a review of multiple data sources as well as additional data that was collected during field reviews conducted during this PD&E study. The existing data sources included the as-built plans, FDOT Straight Line Diagrams (SLDs), FDOT Bridge Inspection Reports, and FDOT Crash History. The following section summarizes existing roadway characteristics, existing transit services, existing traffic characteristics, existing operational analysis results, and the historical safety analysis.

2.1 Previous Planning Studies

In response to the corridor's growing needs, FDOT prepared an interstate master plan known as I-75 Forward for I-75 in Sumter and Marion counties. The main objective of I-75 Forward was to identify the best strategies for improving the corridor through 2050 and beyond. The improvements evaluated in the I-75 Forward included highway widening, managed lanes, auxiliary lanes, collector/distributor (C/D) roads, modifying interchanges, evaluating new interchanges, stormwater management facilities, safety and traffic operational improvements, ramp enhancements, interchange reconfigurations, and/or transportation systems management and operations (TSM&O) strategies.

Development of the master plan comprised of data collection, public engagement analysis of current and future transportation needs, and the identification and evaluation of potential projects to address those needs.

The I-75 corridor in Sumter, Marion, and the surrounding counties has been the focus of several planning studies and projects since 2014. This project is part of the Phase 1 strategy from the I-75 Forward Interstate Master Plan. Previous or ongoing planning studies by FDOT, Florida's Turnpike, and the local government along the corridor influenced I-75 Forward and were incorporated or considered in the analyses. Previous planning reports title/name have been included in the List of Technical Documents.

Since the master plan has been prepared, new private developments along the corridor have come-up or are planned for construction. Similarly, several FDOT projects, Marion County projects, are under construction or planned for construction within or adjacent to the I-75 Forward corridor. These projects were taken into consideration when identifying improvements along I-75. Details about the private development, FDOT projects, and Marion County projects have been provided in I-75 Forward Interstate Master Plan.

2.2 Existing Roadway Characteristics

The I-75 right of way width is typically 300feet but varies throughout the corridor, particularly at the rest area, weigh stations, and the S.R. 44, C.R. 484 and S.R. 200 interchanges. The limits of the existing conditions analysis are within the interchange proper.

The three existing interchanges (S.R. 44, C.R. 484, and S.R. 200) within the project limits are

configured as diamond interchanges with signal control at each ramp terminal intersection. The interchange of I-75/Florida's Turnpike system-to-system interchange is not included in the project, but heavily influences traffic at the south end of the project corridor. This interchange is a half interchange providing movements from northbound Turnpike to northbound I-75 and from southbound I-75 to southbound Turnpike. In addition, there is a braided ramp system for the S.R. 44 interchange and Florida's Turnpike. This configuration eliminated a weaving segment between the Turnpike to I-75 northbound on-ramp and the I-75 northbound off-ramp to S.R. 44 and a two-sided weaving maneuver between the southbound I-75 on-ramp from S.R. 44 to the Turnpike southbound off-ramp. **Table 2-1** presents the existing roadway characteristics.

Table 2-1: Existing Roadway Characteristics

Characteristic	Roadway Segment				
	I-75 (Sumter)	I-75 (Marion)	SR 44	CR 484	SR 200
FDOT Roadway ID	18130000	36210000	18070000	N/A	36100000
Location (Milepost)	21.028 – 28.996	1.949 – 3.205	8.326 - 8.412	N/A	14.800 – 14.989
Functional Classification	Rural Principal Arterial-Interstate	Rural/Urban Principal Arterial-Interstate	Rural Principal Arterial-Other	N/A	Urban Principal Arterial - Other
SIS Designation	SIS	SIS	SIS	N/A	Non-SIS
Speed Limit	70 mph	70 mph	45 mph	45 mph	45mph
Lane Width	12 feet	12 feet	12.5 feet	12 feet	12 feet
Shoulder Width	Average 10 ft paved shoulder with 12 ft outside lawn shoulder	Average 10 ft paved shoulder with 12 ft outside lawn shoulder	2 ft curb & gutter shoulder	5-foot paved shoulder	5-foot paved shoulder with 2 ft curb & gutter shoulder
Median	40-foot vegetation median	40-foot vegetation median	48-foot curb & vegetation median (W of I-75 & Interchange area) 20-foot paved median (E of I-75)	10-20 feet paved median & raised traffic separator median	15-foot paved with barrier median (W of I-75) 15-foot paved with barrier & raised traffic separator median (interchange area) 15-foot raised traffic separator median (E of I-75)
FDOT Access Classification	1	1	3	1	3
Curb and Gutter	None	None	Yes	Yes	Yes
Sidewalks	None	None	None	Yes	Yes
Bike Lanes	None	None	None	None	None
Street Lighting	Present	Present	Present	Present	Present
Surrounding Land Uses	Rural, Agriculture	Industrial, Residential, Commercial	Agriculture, Commercial	Commercial, Residential	Commercial, Residential

Note: street lighting is only present at interchanges.

2.2.1 Roadway Typical Sections

The existing I-75 typical section, from south of S.R. 44 to S.R. 200 consists of six 12-foot-wide general-purpose lanes, three in each direction, and 12-foot-wide (10-foot paved) inside and outside shoulders, as shown in **Figure 2-1**. The southbound and northbound lanes are separated by a 40-foot-wide depressed grassed median that has a double-face guardrail separating northbound and southbound traffic. In the vicinity of C.R. 462, additional lanes are added/dropped to accommodate the directional interchange at Florida’s Turnpike. In this area, the southbound and northbound lanes are separated by a varying width depressed grassed median that has a double-face guardrail separating northbound and southbound traffic.

Drainage swales run parallel to I-75 on the outside with high-fill sections and guardrail on bridge approaches. The existing I-75 typical section meets or exceeds the minimum American Association of State Highway and Transportation Officials (AASHTO) and FDOT criteria for lane width, shoulder width, median width, and border width.

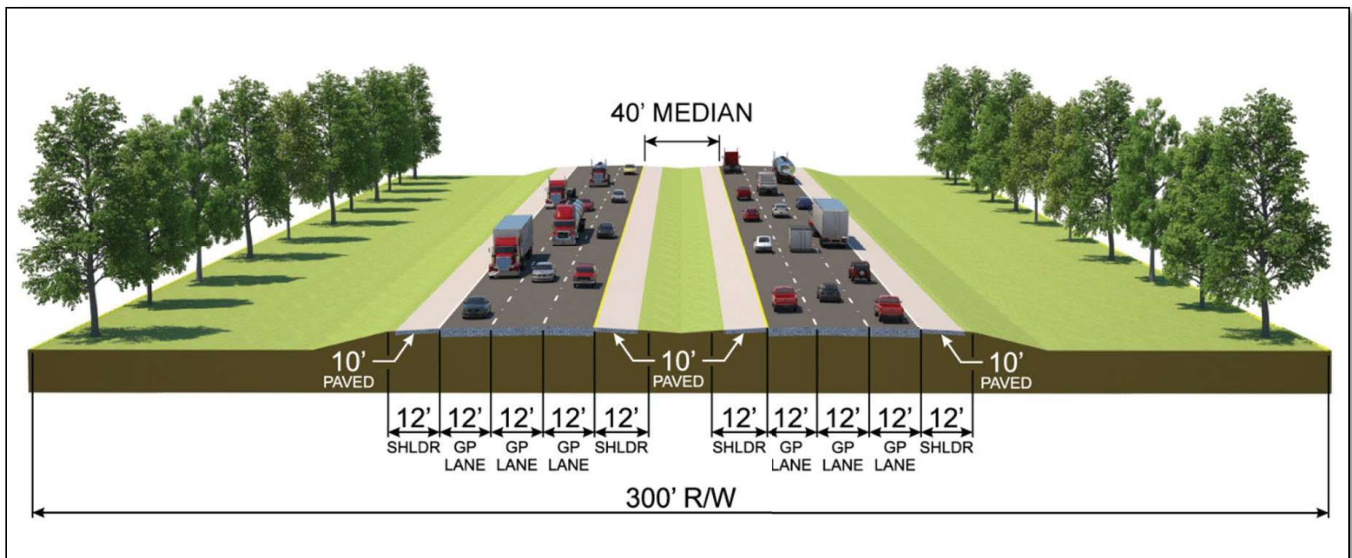


Figure 2-1: Existing I-75 Roadway Typical Section – S.R. 200 to north of C.R. 462

2.2.2 Roadway Functional and Context Classifications

According to FDOT’s SLDs, I-75 from M.P. 21.778 to M.P. 28.996 in Sumter County, is functionally classified as rural principal arterial-interstate. The study segment of I -75 from M.P 0 to M.P. 14.200 in Marion County is functionally classified as rural principal arterial-interstate (M.P. 0 to M.P. 4.000) and urban principal arterial-interstate (M.P. 4.000 to 14.200).

I-75 is part of the SIS and is designated as a primary hurricane evacuation route in the state by the FDEM. Context classification does not apply to limited access facilities and, therefore, does not apply to I-75.

2.2.3 Access Management Classification

The access management classification is limited access (Class 1) throughout the study limits and

I-75 meets all access management standards for this classification.

2.2.4 *Right of Way*

The existing limited access right of way width varies along the corridor with a minimum width of 300 feet. But it can vary throughout the corridor particularly at the rest area, weigh stations, bifurcated areas and interchanges. Existing right of way, property lines and other features along the corridor are also shown on the conceptual design plans.

2.2.5 *Adjacent Land Use*

The study corridor is located within Sumter County and Marion County, Florida. The future land use in the vicinity of the Sumter County segment of the study area consists of predominantly agricultural, general commercial, mixed use, and industrial land users. The agricultural/rural residential uses include single family structures and accessory structures, facilities, and uses associated with farming, agriculture, and raising poultry or livestock. A map showing Sumter County's Future Land Use is provided in **Section 3.0**.

The future land use in vicinity of the Marion County segment of the study area consists of predominantly agricultural near county lines, medium residential, preservation, municipality, and urban growth boundary (UGB). UGB identifies urban areas where long term capital improvements shall be directed to create compact and efficient development patterns and allow for sufficient growth opportunities to maintain the County's long-term viability. A map showing Marion County's 2045 Future Land Use is provided in **Section 3.0**.

2.2.6 *Pavement Type and Condition*

The I-75 corridor in this area is classified as FC5M, or friction course 5 (asphaltic concrete). Pavement condition is measured on a scale of Good to Fair to Poor based on an annual survey of the state highway system to measure the presence of cracks and ruts on the roadway as well as overall ride quality. According to the FDOT Flexible Pavement Design Manual Table 7.1, a "Good" crack rating means no cracking, a "Fair" crack rating has cracks rated 8 or higher, and a "Poor" crack rating is for a 7 or less. Crack ratings that are at or below 6.4 are considered deficient.

The 2024 Pavement Condition Forecast Report for Sumter County was obtained from the FDOT D5 Materials Office. This report provides yearly values for Cracking, Ride, and Rutting for specific M.P. ranges.

The current Cracking and Ride values from the beginning of this study (M.P. 21.778) to the Sumter/Marion County line (M.P. 28.996) are 6.5 and 8.6, respectively. However, the future (2029) pavement condition is predicted to be 5.7 and 8.6 for Cracking and Ride, respectively. Currently, the segment of I-75 from the Sumter/Marion County line (M.P. 0) to S.R. 200 (M.P. 14.200) is being resurfaced (FDOT FPID 443170-1) and is estimated for completion in Fall 2024. Therefore, road quality is considered good.

The 2029 Pavement Condition Forecast Report for Sumter and Marion County was obtained from the FDOT D5 Materials Office.

2.2.7 Existing Design and Posted Speed

Within the study limits, I-75 is a rural and urban principal arterial interstate that runs in a north and south direction with a posted and design speed of 70 miles per hour.

2.2.8 Horizontal Alignment

Existing horizontal alignment data was surveyed and is displayed on the concept plans as the Baseline of Survey I-75 (**Appendix A**). Moreover, the alignment information was collected from FDOT database/I-75 plan sheets. There are nine horizontal curves within the study limits as summarized in **Table 2-2**.

Table 2-2: I-75 Horizontal Alignment

Curve	PI Station	Delta	Degree of curve	Tangent (feet)	Length (feet)	Radius (feet)	PC Station	PT Station
I – 75 Sumter County								
Curve 1A (NB) (INT)	3135+35.24	30° 00' 00" (LT.)	1° 00' 00"	1535.24	3000.00	5729.57	3120+00.00	3150+00.00
Curve 1B (NB) (INT)	3161+54.31	15° 00' 00" (RT.)	1° 00' 00"	754.31	1500.00	5729.57	3154+00.00	3169+00.00
Curve 2	2218+43.48	24° 00' 00" (LT.)	1° 00' 00"	1211.06	2386.60	5697.65	2206+32.42	2230+19.02
Curve 3 (NB – median EOP)	3219+52.64	23° 59' 59" (LT.)	0° 59' 40"	1224.66	2413.40	5761.65	3207+2798	3231+41.39
Curve 4 (NB)	1358+92.37	27° 13' 02" (RT.)	0° 30' 00"	2774.10	5443.48	11459.16	1331+18.27	1385+61.75
Curve 5 (SB)	1359+00.12	27° 13' 02" (RT.)	1° 00' 00"	1387.05	2721.74	5729.58	1345+13.07	1372+34.81
Curve 6	1442+21.72	24° 55' 38" (LT.)	1° 00' 00"	1266.40	2492.72	5729.58	1429+55.32	1454+48.04
I – 75 Marion County								
Curve 7	29+17.63	3° 38' 07" (LT.)	0° 15' 00"	727.31	1454.12	22918.31	21+90.32	36+44.45
Curve 8 (NB)	194+46.92	13° 31' 34" (RT.)	0° 15' 00"	2717.86	5410.44	22918.31	167+29.06	221+39.50
Curve 9 (SB)	194+50.71	13° 31' 34" (RT.)	1° 00' 00"	679.46	1352.61	5729.58	187+71.24	201+23.85
PC = Point of Curvature PT = Point of Tangency								

All nine horizontal curves meet the minimum curve length and superelevation requirements for a 70-mph design speed set forth in Florida Design Manual (FDM) Table 211.7.1 and Table 210.9.1, respectively.

2.2.9 Vertical Alignment

The existing vertical alignment of I-75 was obtained through vertical geometry data provided in the FDOT as-built plans. This data is presented in **Table 2-3**.

Table 2-3: I-75 Vertical Alignment

Curve	Location	Type	Curve Length (ft)	Grade IN (%)	Grade OUT (%)	K Value*	Meets Criteria Y/N	Deficient Element (Based on FDM)
1	I-75 NB of S.R. 44 bridge	Sag	450	+0.128	+3.00	156.69	Y	K required = 206
2	I-75 over S.R. 44	Crest	1685	+3.00	-2.81	290.02	N	K required = 312
3	I-75 over S.R. 44	Sag	500	-2.81	+0.35	158.23	N	K required = 206
4	I-75 Under C.R. 462	Sag	400	-0.315	-0.10	1860.47	N	L required = 800'
5	I-75 1100 ft of C.R. 462	Sag	400	-0.10	0.00	4000.00	N	L required = 800'
6	I-75 2000 ft of C.R. 462	Sag	400	0.00	0.200	2000.00	N	L required = 800'
7	I-75 over S.R. 484	Sag	400	+0.75	+2.9956	206	N	L required = 800'
8	I-75 over S.R. 484	Crest	1600	+2.9956	-2.400	312	N	N/A
9	I-75 West of S.R. 484	Sag	400	-2.400	-0.3636	196.43	N	L required = 800'
*K Value based on 70 mph Speed for Mainline (Interstate Resurfacing) (FDM Table 211.9.2)								
C.R. 462 (Royal Road) over I-75								
1	C.R. 462 (Royal Road) Bridge over I-75	Crest	772	+4.503	-4.503	86.05	N	K required = 98
S.R. 484 (S.R. -466) over I-75								
1	C.R. 475N (S.R. 466) Bridge over I-75	Crest	1360	+4.75	-3.75	160.00	Y	N/A
*K value based on 45 mph Speed for Side streets (New Construction) (FDM Table 210.10.3)								

The existing vertical alignment of I-75 was evaluated to determine if the existing facility meets FDOT’s current design standards for vertical curvature with a design speed of 70 mph. The 2024 FDM requires a maximum grade of 3 percent. After reviewing the vertical curves along I-75, it was determined that all existing vertical curves meet this maximum grade criterion. The FDM requires a minimum vertical curve length of 800 feet for a sag, 1,000 feet for a crest (open highway - OH), and 1,800 feet for a crest (within interchange - WI). Out of the nine identified vertical curves along I-75, none of the curves meet the criteria for vertical curve length. The FDM requires interstates to have a minimum K value of 206 for sag curves, 506 for new reconstruction crest curves and 312 for resurfacing crest curves. Only curves 4, 5, and 6 meet the criteria for K value.

2.2.10 Pedestrian Accommodation and Bicycle Facilities

2.2.10.1 Pedestrian Accommodations

I-75 is classified as a rural and urban principal arterial - interstate, subsequently no pedestrian accommodations are located on I-75. Pedestrian accommodations for each of the three interchanges within the project vary.

There are no existing sidewalks or bicycle paths in the S.R. 44/I-75 interchange. There are no existing crosswalks, marked school zones or bicycle paths within the interchange.

The I-75/C.R. 484 interchange is a diamond interchange. C.R. 484 is classified as an “urban principal arterial-other” east of I-75 and an “urban minor arterial” west of I-75. C.R. 484 is currently a 4-lane divided arterial with a 45 mile-per-hour (mph) posted speed limit in the vicinity of the area of influence. Limited sidewalk connectivity exists at the interchange. However, construction of a new project is underway to improve address vertical clearance issues, safety, traffic flow, bicycle lanes, and pedestrian facilities.

At the I-75/S.R. 200 interchange, the design of a new project is underway to add turn lanes on S.R. 200 to the I-75 ramps and extend and widen the existing right turn lane from westbound S.R. 200 to the I-75 northbound ramp.

2.2.10.2 Transit Facilities

Existing transit services were reviewed within the study area. The study area includes two main transit services, and they are summarized as follows:

- **Sumter County**

In coordination with the Sumter County Board of County Commissioners (BOCC) and the Florida Commission for Transportation Disadvantaged, Sumter County provides door-to-door services between the hours of 8:30 am - 3 pm, Monday through Friday. Some of the door to door shuttles use I-75 corridor, but it is not a fixed route service. A transportation disadvantaged qualifying application is required to receive door-to-door services. In addition, Sumter County provides shuttle services along two designated routes that use I-75 on Mondays, Wednesdays, and Fridays. A shuttle route travels from bus stop to bus stop. The shuttle can deviate off the route a short distance (3/4 of a mile) to pick up or drop off. Reservations and an application are required for all deviations. The detailed route locations and arrival times of these two routes (Orange/South Sumter Route and Wildwood Circulator) are provided in the Project Traffic Analysis Report (PTAR).

- **SunTran**

SunTran is the dedicated transit agency available in Marion County and has provided transit services since 1998. SunTran is a cooperative effort of the Ocala/Marion County Transportation Planning Organization, Marion County, the City of Ocala, the FDOT, and the Federal Transportation Administration (FTA). Some of the transit routes use the I-75 corridor. Routes operate 5:00 AM – 10:00 PM on weekdays and Saturdays. SunTran provides fixed-schedule service on seven routes, mostly centered in Ocala. Among the

seven routes, there are 3 routes that operate transit in the project areas: Purple (S.R. 40), Orange (S.R. 200), and Silver (US 27). However, none of the routes operates directly along the I-75 corridor. SunTran operates the purple and orange routes on approximately 70-minute headways while the silver route is operated at up to 140-minute headways. The detailed route locations and arrival times of these three routes are also included in the PTAR.

2.2.11 Intersection Layout and Traffic Control

The focus of this project is the I-75 mainline. However, all the roadways that cross I-75 within the study limits are discussed in detail in the PTAR. I-75 crosses four roadways within the project limits. The project limits extend from the S.R. 200 to south of S.R. 44. The specific lane configurations at each ramp terminal intersection are summarized as follows):

S.R. 44 at the I-75 Interchange:

- Two continuous through lanes in each direction on S.R. 44
- A single right and dual left turn lanes southbound off-ramp
- Dual left-turn lanes from the arterial to both I-75 on-ramps
- Single exclusive right-turn lane onto both I-75 on-ramps
 - The westbound right-turn lane is channelized
- Both the off-ramp approaches consist of dual left-turn lanes and a signal-controlled channelized right-turn lane

C.R. 484 at the I-75 Interchange:

- Two continuous through lanes in each direction on C.R. 484
- Single right-turn and single left-turn channelized lanes onto the northbound and southbound I-75 on-ramps
- The northbound off-ramp approach consists of a single left-turn lane and single right-turn lane under signal control
- The southbound off-ramp approach consists of dual left-turn lanes and a single right-turn lane under signal control
- C.R. 484 modifications currently under construction
 - Add turn lanes and turn lane extensions at both the C.R. 484 and I-75 and the C.R. 484

- and C.R. 475A intersection.
- Reconstruct westbound through lanes
- • Modify existing I-75 bridge to accommodate the widening

S.R. 200 at the I-75 Interchange:

- Three continuous through lanes in each direction on S.R. 200
- Dual left-turn lanes onto the I-75 on-ramps
- Single channelized right-turn lane onto the northbound or southbound I-75 on-ramps
- The northbound off-ramp approach consists of a dual left-turn lane and a dual right-turn lane under signal control
- The southbound off-ramp approach consists of dual left-turn lanes and dual right-turn lanes under signal control.

Roadway segment characteristics, including road names, road ID, milepost, functional classification, SIS designation, speed limit, lane width, shoulder width, median, and FDOT access classification were reviewed using SLDs, field evaluations, and aerial photography.

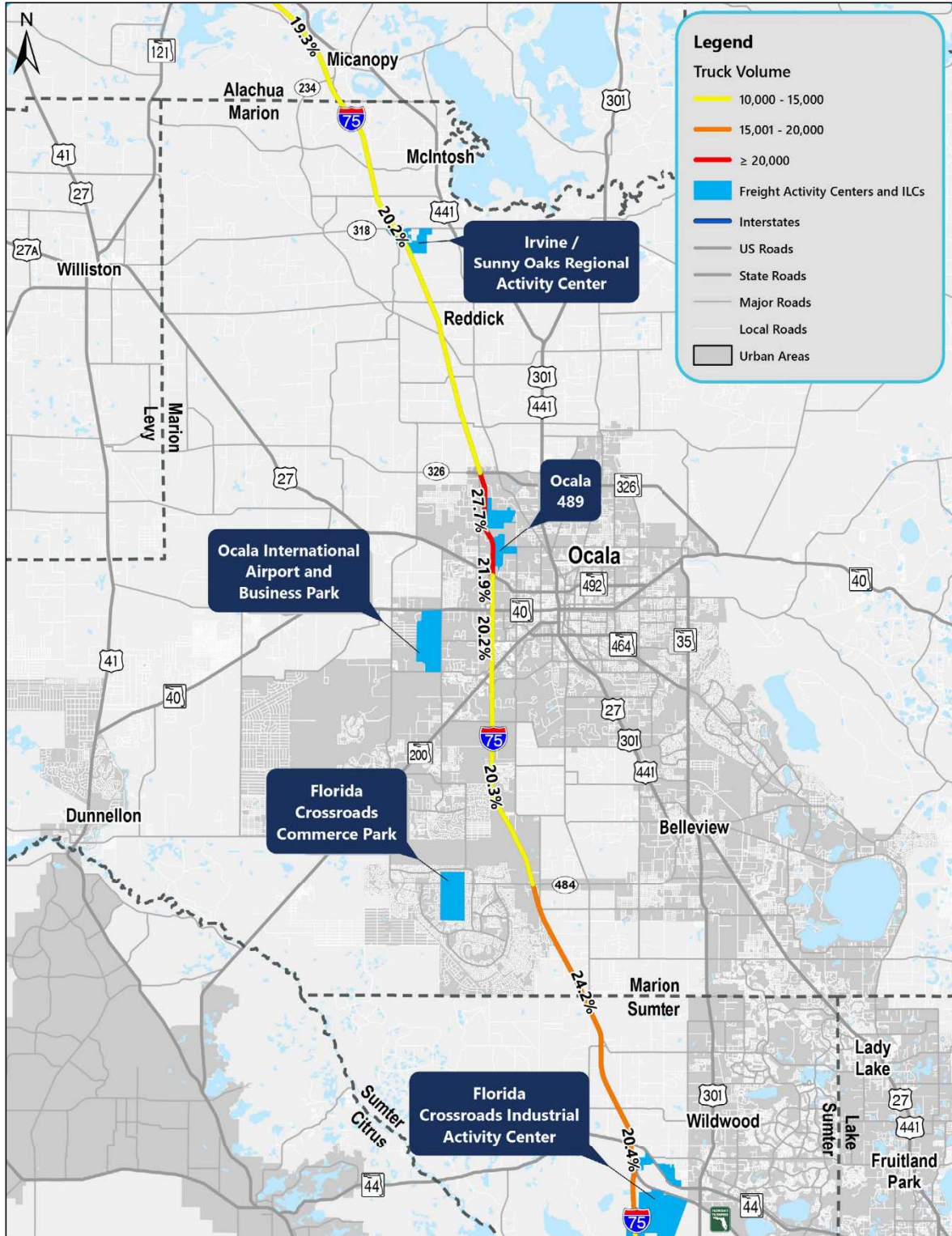
2.2.12 Railroad Crossings

There are no railroad crossings listed within this study area. This was verified by review of the straight-line diagrams and by field review.

2.2.13 Freight

I-75 is a Primary Highway Freight System in the National Highway Freight Network serving as the main north-south highway facility across Florida. There is a high truck percentage (approximately 20%) along I-75. It maintains mobility between regional employment and population centers, provides system connectivity to several east-west roadways, and serves as a throughfare for tourism and trade. Truck volumes are shown in **Figure 2-2**.

between Florida and other states is expected to increase by 80% on the I-75 corridor between 2011 and 2040, with I-75 in the Ocala area carrying the highest tonnage of all the state's highways.



Sources: FDOT Roadway Characteristics Inventory, 2022 and Marion County, Property Appraiser parcel data, 2021

Figure 2-2: Truck Volumes, Freight Activity Centers, and ILCs

Multiple existing and planned ILC and freight activity centers in Marion County and surrounding areas contribute to this growth in truck volumes and freight tonnage. The activity centers are the Ocala/Marion County Commerce Park (Ocala 489), Ocala 275 ILC, McGinley Commerce Park (Florida Crossroads Commerce Park), Siemens Technology Park (Sunny Oaks), an expanded Ocala International Airport and business park, and the Florida Crossroads Industrial Activity Center in Sumter County.

2.2.14 Traffic Data

2.2.14.1 Existing System Peak Hours

Field data was collected and reviewed to determine a system peak hour for the purposes of balancing counts and evaluating a consistent peak hour for the operational analyses (Synchro, and HCS2023 (as mentioned in the PTAR)). **Table 2-4** shows existing (2019) system peak hour summary. The total entering intersection volume for each intersection was summed for the entire study area for each 15-minute bin collected. The 15-minute bins were summed together to determine the max total network hourly volume for each period collected. The resulting system peak hours are as follows:

- AM Peak Hour: 7:15 AM – 8:15 AM; PM Peak Hour: 4:30 PM – 5:30 PM
- Weekend Midday Peak Hour: 1:00 PM – 2:00 PM

2.2.14.2 Existing Traffic Volumes

The collected intersection turning movement counts and vehicle classification counts were adjusted using a seasonal adjustment factor obtained from the 2018 Florida Traffic Online (most current at the time of count post processing) to estimate 2019 average daily traffic (ADT) volumes and AADTs. An axle correction factor was not needed for the tube counts as vehicle classification counts were collected. The raw ADTs, seasonal factors, and resulting 2019 AADTs collected for the S.R. 44, C.R. 484, and S.R. 200 study limits are summarized in detail in the I-75 Forward Interstate Master Plan report and PTAR.

The following summarizes the ADT peaking throughout the year and how that compares to the AADT observed at the station:

- AADT varies throughout the corridor with highest being 96,000 (at S.R. 40 to S.R. 200)
- Peaking is observed around Spring Break (March to April) – approximately 138,000 ADT (~44% increase)
- Peaking is observed around the Thanksgiving and Winter Holidays (Christmas and New Years) – approximately 143,000 ADT (~49% increase)
- The peak observed occurs primarily on the weekend as well as Fridays for long holiday weekends.
- I-75 operates at level of service (LOS) C or better during the average weekday AM and PM peak hours.

Table 2-4: Existing (2019) System Peak Hour Summary

Start Time	AM Peak		Start Time	PM Peak		Start Time	Weekend Midday Peak	
	Total Network Entering Intersection Volume	Total Hourly Network Entering Intersection Volume		Total Network Entering Intersection Volume	Total Hourly Network Entering Intersection Volume		Total Network Entering Intersection Volume	Total Hourly Network Entering Intersection Volume
7:00 AM	20,407		3:30 PM	27,520		1:00 PM	26,377	
7:15 AM	24,341		3:45 PM	27,742		1:15 PM	26,550	
7:30 AM	25,889		4:00 PM	29,078		1:30 PM	26,463	
7:45 AM	26,545	7:00 AM-8:00 AM	4:15 PM	28,632	3:30 PM-4:30 PM	1:45 PM	26,147	1:00 PM-2:00 PM
8:00 AM	23,036	7:15 AM-8:15 AM	4:30 PM	29,614	3:45 PM-4:45 PM	2:00 PM	25,887	1:15 PM-2:15 PM
8:15 AM	21,887	7:30 AM-8:30 AM	4:45 PM	28,327	4:00 PM-5:00 PM	2:15 PM	25,423	1:30 PM-2:30 PM
8:30 AM	22,160	7:45 AM-8:45 AM	5:00 PM	29,582	4:15 PM-5:15 PM	2:30 PM	25,701	1:45 PM-2:45 PM
8:45 AM	21,544	8:00 AM-9:00 AM	5:15 PM	30,617	4:30 PM-5:30 PM	2:45 PM	26,325	2:00 PM-3:00 PM
9:00 AM	19,991	8:15 AM-9:15 AM	5:30 PM	28,429	4:45 PM-5:45 PM			
9:15 AM	20,529	8:30 AM-9:30 AM	5:45 PM	26,625	5:00 PM-6:00 PM			
9:30 AM	21,164	8:45 AM-9:45 AM	6:00 PM	24,846	5:15 PM-6:15 PM			
9:45 AM	21,737	9:00 AM-10:00 AM	6:15 PM	23,368	5:30 PM-6:30 PM			

Source: 2019 field collected intersection turning movement data

I-75 is a unique corridor that experiences substantial increases in traffic during holidays, peak tourism seasons, weekends, and special events and experiences frequent closures because of incidents leading to non-recurring congestion.

2.2.15 *Operational Conditions*

As part of the PTAR, an existing conditions analysis was conducted. The existing conditions analysis evaluated typical recurring congestion patterns, the occurrence of nonrecurring congestion, and historical safety data in the study area.

A summary of average network travel times, vehicle hours of delay, and maximum demand to capacity (D/C) ratios for each direction and peak period is summarized in **Table 2-5**. The facility operates at LOS C or better during the AM, PM and weekend peak periods for both the northbound and southbound directions. The maximum D/C ratio observed in the northbound direction is 0.70 during the weekend peak period while the maximum D/C ratio observed in the southbound direction is 0.71 during the PM peak period. The average speeds on this facility are above 69 mph. It is important to note that these results are for average peak hour and do not represent volume spikes previously discussed and do not account for operations during incidents.

Table 2-5: Freeway Operations Summary – 2019 Existing Conditions

Performance Metric	South Section - AM		South Section - PM		South Section - Weekend	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Length (mi)	23.0	22.8	23.0	22.8	23.0	22.8
Average Travel Time (min)	19.5	19.4	19.5	19.5	19.8	19.6
Total VHD (veh-h)	16.6	14.4	18.7	47.2	65.1	70.5
Space Mean Speed (mph)	70.6	70.6	70.6	70.1	69.8	69.7
Reported Density (pc/mi/ln)	10.8	9.2	12.2	16.1	17.1	17.9
Max D/C	0.56	0.43	0.53	0.71	0.70	0.69

The D/C, speed, and LOS contours for each analysis facility and peak period are detailed in the figures provided in the PTAR.

2.2.16 *Managed Lanes*

No managed lanes such as Express Lanes or Tolled Lanes are currently provided within the corridor.

2.2.17 Crash Data and Safety Analysis

Crash records were obtained from the University of Florida’s Signal Four (S4) crash database for I-75 and associated interchanges as part of the PTAR Area of Impact (AOI). The safety analysis was performed for the most recent five years of crash data (January 1, 2018 – December 31, 2022). The data indicates there was a total of 2,590 vehicle crashes between Florida's Turnpike and S.R. 200. Of these, 707 resulted in at least one injury and 11 resulted in a fatality, five of which involved a commercial motor vehicle. The number of crashes decreased from 2018 (592) to 2020 (378), but then increased to 559 crashes in 2022. Crashes occurring between Friday and Sunday comprised approximately 55 percent of the total crashes in this analysis period. Supplemental crash data from January 1, 2023, to March 31, 2023, were also analyzed to verify crash trends and patterns. This is consistent with the approved methodology for this study and with guidance from the 2023 FDOT Safety Crash Data Guidance published by the State Safety Office.

This section summarizes the safety analysis conducted for I-75 northbound, I-75 southbound, the interchange ramps, and the interchange ramp terminal intersections within the study’s AOI. The study segments are shown in **Table 2-6**. A more detailed summary of the 2018 to 2022 crash data and supplemental 2023 crash data sets in tabular and graphical format are also provided in PTAR.

A safety analysis was not performed for I-75 mainline, ramps, and interchange ramp terminal intersections at Turnpike and S.R. 44. The interchange area at I-75 and Turnpike/S.R. 44 was under construction for a new Turnpike interchange and ramp system to/from S.R. 44, thus the historical crash records are not representative of the current geometric configuration of the interchange.

Table 2-6: I-75 Mainline Study Segments

Location	Roadway ID 1	Begin MP 1	End MP 1	Roadway ID 2	Begin MP 2	End MP 2	Total Length
I-75 Northbound							
SR 44 to Marion County Weigh Station	18130000	23.507	28.996	36210000	0.000	1.957	7.446
Marion County Weight Station	36210000	1.957	3.259	-	-	-	1.302
Marion County Weight Station to CR 484	36210000	3.259	4.660	-	-	-	1.401
CR 484 Interchange Area	36210000	4.660	5.351	-	-	-	0.691
CR 484 to Rest Area	36210000	5.351	9.665	-	-	-	4.314
Rest Area Interchange Area	36210000	9.665	10.503	-	-	-	0.838
Rest Area to SR 200	36210000	10.503	13.672	-	-	-	3.169
SR 200 Interchange Area	36210000	13.672	14.353	-	-	-	0.681
I-75 Southbound							
SR 200 Interchange Area	36210000	14.353	13.540	-	-	-	0.813
SR 200 to Rest Area	36210000	13.540	10.535	-	-	-	3.005
Rest Area Interchange Area	36210000	10.535	9.740	-	-	-	0.795
Rest Area to SR 484	36210000	9.740	5.316	-	-	-	4.424
SR 484 Interchange Area	36210000	5.316	4.628	-	-	-	0.688
SR 484 to Marion County Weight Station	36210000	4.628	3.209	-	-	-	1.419
Marion County Weight Station	36210000	3.209	1.931	-	-	-	1.278
Marion County Weight Station to SR 44	36210000	1.931	0.000	18130000	28.996	23.218	7.709

2.2.17.1 I-75 Northbound Crash Statistics

Figure 2-3 displays a summary of crash frequency by year along with their respective severity for the study period along I-75 northbound. There was a total of 1,384 reported crashes during this period, 384 of which (28 percent) resulted in 768 injuries. Six fatal crashes were observed along I-75 northbound, which resulted in seven fatalities. As displayed in the figure, the crashes per year along the corridor ranged between 275 and 283 crashes pre-COVID (2018-2019). An approximate 28 percent reduction in crashes was observed in 2020 (202 crashes) largely due to the travel restrictions during COVID-19. Post COVID-19 pandemic saw an increase in crashes in 2021 (276 crashes), and then another increase in 2022 (258 crashes). There were 90 crashes in the first three months of 2023 when the crash data was obtained.

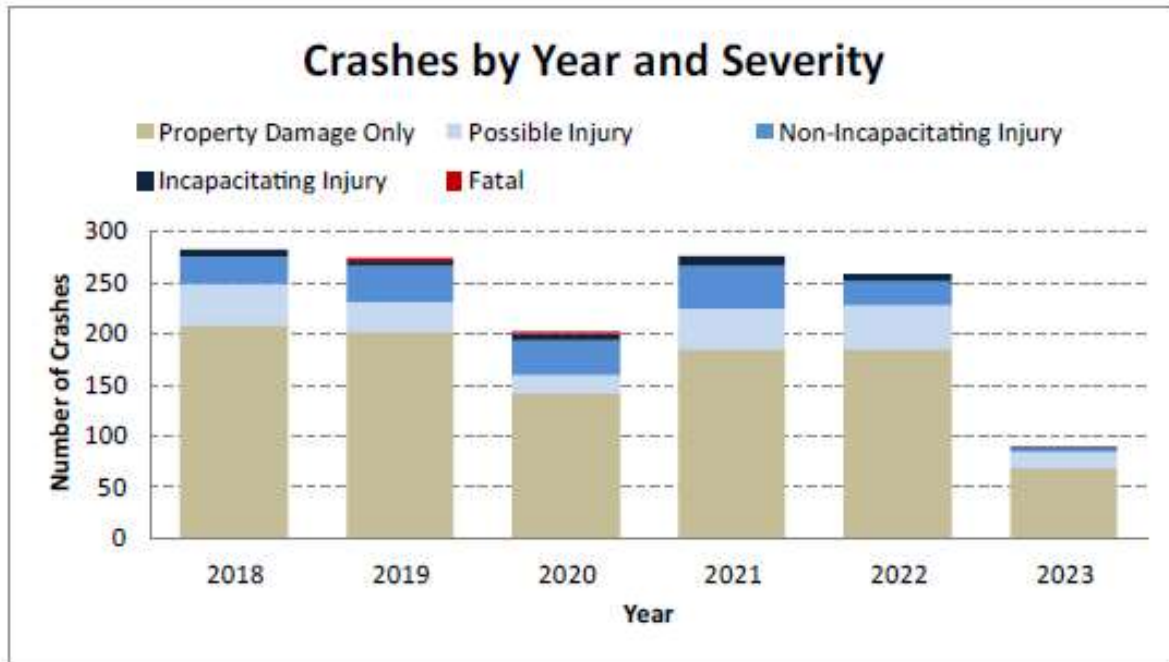


Figure 2-3: Historical (January 2018-March 2023) Crashes per Year – I-75 Northbound

Figure 2-4 displays the crashes along I-75 northbound by type and severity for the study period. The highest crash type observed was rear end, comprising 53 percent of the total crashes. Sideswipe (20 percent) and fixed object/run-off road (19 percent) were the second and third highest crash types. Rear end and fixed object/run-off road accounted for 78 percent of the injury crashes.

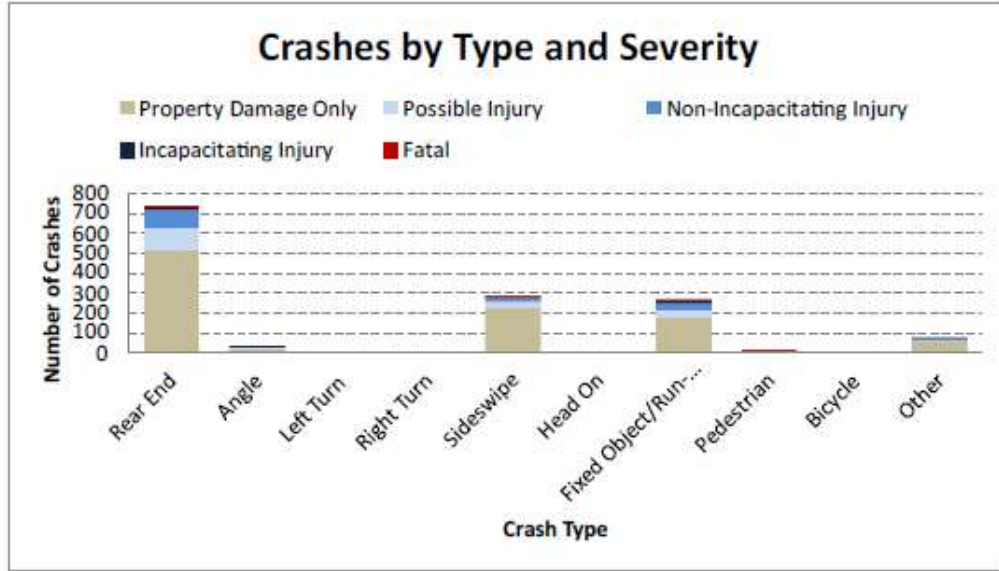


Figure 2-4: Historical (January 2018-March 2023) Crashes by Type and Severity I-75 Northbound

2.2.17.2 I-75 Southbound Crash Statistics

Figure 2-5 displays a summary of crash frequency by year along with their respective severity for the study period along I-75 southbound. There was a total of 1,095 reported crashes, 300 of which (27 percent) resulted in 644 injuries. Three fatal crashes resulted in five fatalities. The crashes per year along the corridor ranged between 204 and 228 crashes pre-COVID (2018-2019) but an approximate 25 percent reduction in crashes was observed in 2020 (163 crashes) largely due to the travel restrictions during COVID. Post-COVID crash frequency increased in 2021 (203 crashes) and peaked in 2022 (247 crashes). There were 50 crashes in the first three months of 2023.

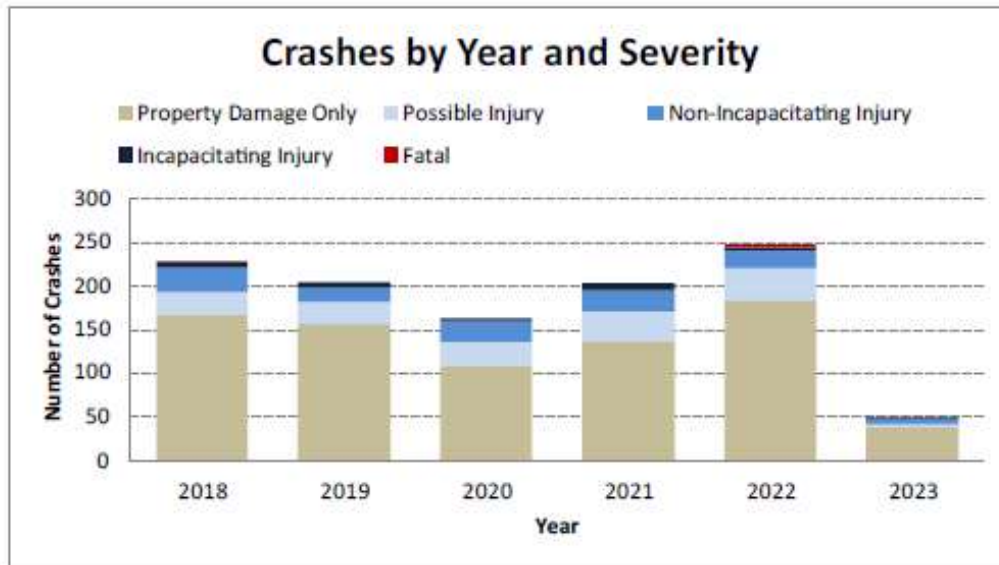


Figure 2-5: Historical (January 2018-March 2023) Crashes per Year I-75 Southbound

Figure 2-6 displays the crashes along I-75 southbound by type and severity for the study period. The highest crash type observed was rear end, comprising 51 percent of the total crashes. Sideswipe (24 percent) and fixed object/run-off road (16 percent) were the second and third highest crash types. Rear end and fixed object/run-off road were the highest injury crash types, accounting for 71 percent of the injury crashes.

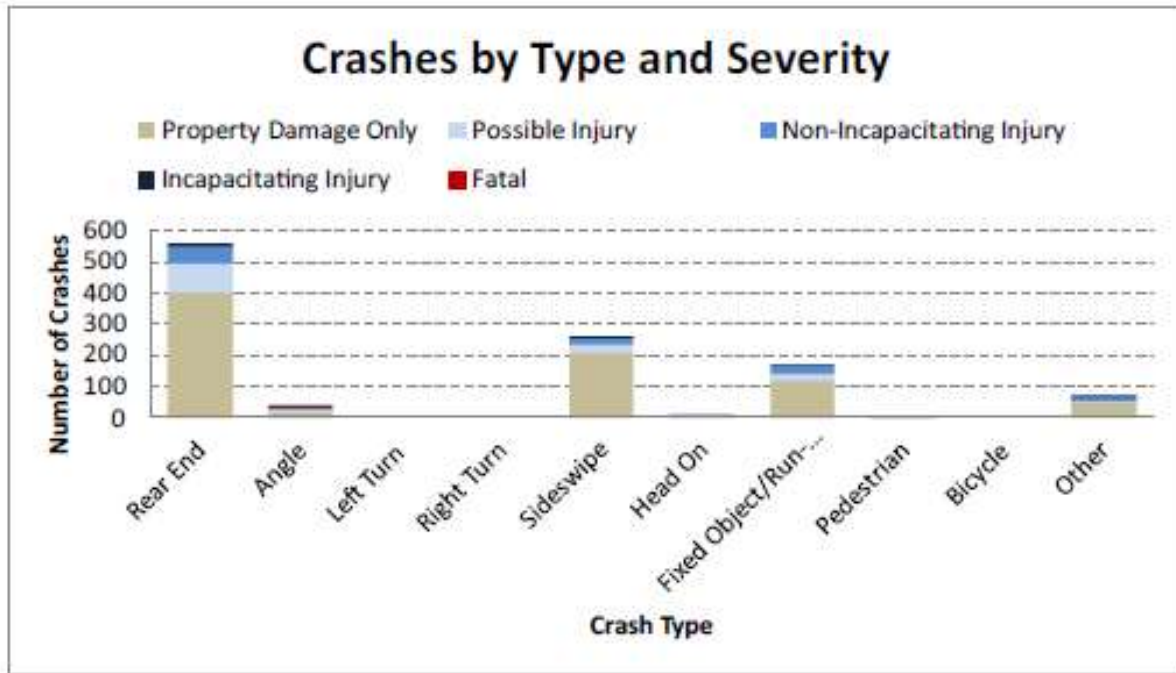


Figure 2-6: Historical (January 2018-March 2023) Crashes by Type and Severity – I-75 Southbound

2.2.17.3 Interchange Ramp Crash Statistics

In addition to the I-75 mainline study segments, interchange ramp crashes were summarized to identify high crash ramps based on crash frequency. **Table 2-7** displays each of the ramps, the total number of crashes, and the total number of injury crashes (no fatal crashes were observed). I-75 northbound ramps to/from Marion County Weigh Station had a higher ramp crash frequency compared to the southbound ramps. I-75 southbound off-ramp to C.R. 484 had the highest ramp crash frequency of each of the four ramps at the interchange. I-75 northbound ramps to/from Marion County Rest Area had a higher ramp crash frequency compared to the southbound ramps. I-75 northbound Off-Ramp to S.R. 200 had the highest ramp crash frequency of each of the ramps at the interchange.

Table 2-7: Historical (January 2018-March 2023) Interchange Ramp Crash Statistics

Interchange	Ramps	Total Number of Crashes	Total Number of Injury Crashes
Marion County Weigh Station	I-75 NB Ramps	2	0
	I-75 SB Ramps	0	0
CR 484	I-75 NB Off-Ramp	26	8
	I-75 NB On-Ramp	19	2
	I-75 SB Off-Ramp	68	10
	I-75 SB On-Ramp	21	14
Rest Area	I-75 NB Ramps	7	1
	I-75 SB Ramps	4	0
SR 200	I-75 NB Off-Ramp	51	19
	I-75 NB On-Ramp	11	1
	I-75 SB Off-Ramp	21	7
	I-75 SB On-Ramp	19	5
Total		249	67

Bold indicates the ramp with the highest crash frequency

2.2.17.4 Interchange Ramp Terminal Crash Statistics

In addition to the I-75 mainline study segments and interchange ramps, interchange ramp terminal intersection crashes were summarized to identify high crash ramp terminal intersections based on crash frequency. **Table 2-8** displays each of the ramp terminal intersections, the total number of crashes, and the total number of injury crashes (no fatal crashes were observed). As displayed in the table, I-75 and C.R. 484 southbound ramp terminal (181 crashes) and I-75 and S.R. 200 southbound ramp terminal (143 crashes) had the highest intersection crash frequencies. Rear end was the highest crash type for all of the ramp terminal intersections. Left turn and sideswipe was the second highest crash type for of the ramp terminal intersections.

Table 2-8: Historical (January 2018-March 2023) Ramp Terminal Intersection Crash Frequency

Interchange	Ramp Terminal	Total Number of Crashes	Total Number of Injury Crashes	Highest Crash Type 1	Highest Crash Type 2
CR 484	I-75 SB Ramp Terminal	181	33	Rear End – 37%	Left Turn – 23%
	I-75 NB Ramp Terminal	39	9	Rear End – 33%	Sideswipe – 31%
SR 200	I-75 SB Ramp Terminal	143	32	Rear End – 58%	Left Turn – 16%
	I-75 NB Ramp Terminal	63	27	Rear End – 62%	Sideswipe – 11%

Bold indicates the intersection with the highest crash frequency

2.2.17.5 Contributing Factors

The following summarizes the contributing factors for the I-75 mainline ramps, interchange ramps, and ramp terminal intersections.

I-75 Mainline

As discussed in the previous sections, rear end was the highest crash type for both I-75 northbound and southbound. Sideswipe and fixed object/run-off road were either the second or third highest crash type along I-75 northbound and southbound. Potential contributing factors relating to these crash types are discussed below:

- Rear End and Sideswipe
 - Reoccurring congestion related to AM and PM peak hour traffic volumes.
 - Non-reoccurring congestion related to crashes, disabled vehicles, etc.
 - Abrupt speed changes and slowdowns related to the vertical curves from the bridges over C.R. 484 and S.R. 200; and
 - Near merge/diverge areas where vehicles traveling at different speeds are interacting.
- Fixed Object/Run-Off Road
 - Inadequate roadway lighting between interchanges.
 - Unexpected horizontal curves along long straight mainline segments causing disruption to driver expectations.
 - Vehicles traveling at high speeds not being able to recover within the paved/grass shoulder; and
 - Obstructions near the roadside (light poles) and no roadside guardrail.

Interchange Ramps

The highest crash type for off-ramps was rear end and the highest crash types for on-ramps were rear end and sideswipe. The type of ramp can contribute to crash type trends and potential contributing factors relating to these crash types as discussed below:

- Off-Ramps
 - Rear end crashes can occur due to high exiting speed of vehicles combined with congestion/queueing from the ramp terminal with the crossing arterial.
- On-Ramps
 - Rear end and sideswipe crashes can occur due to high vehicle speeds combined with congestion along the freeway mainline as vehicles approach the end of the merge lane.

Ramp Terminal Intersections

Rear end was the highest crash type for the ramp terminal intersections and left turn/sideswipe was the second highest crash type for the ramp terminal intersections. Potential contributing factors relating to these crash types are discussed below:

- Rear End and Sideswipe
 - Reoccurring congestion related to AM and PM peak hour traffic volumes.
 - Insufficient signage/wayfinding approaching the terminals contributing to incorrect lane usage and sudden lane changes as drivers attempt to position themselves in the correct lane; and
 - High vehicle operating speeds lead to higher intersection approach speeds.
- Left Turn
 - High vehicle operating speeds leading to higher intersection approach speeds; and
 - Protected/permissive left turn signal timing and low number of gaps in traffic leading to

2.2.17.6 Safety Analysis Summary

The safety data showed a total of 1,384 reported crashes along I-75 northbound during this period, 384 of which (28 percent) resulted in 768 injuries. Six fatal crashes were observed along I-75 northbound, which resulted in seven fatalities. The highest crash type observed was rear end, comprising 53 percent of the total crashes. Sideswipe (20 percent) and fixed object/run-off road (19 percent) were the second and third highest crash types. Rear end and fixed object/run-off road accounted for 78 percent of the injury crashes.

A total of 1,095 reported crashes were observed along I-75 southbound, 300 of which (27 percent) resulted in 644 injuries. Three fatal crashes were observed along I-75 southbound, which resulted in five fatalities. The highest crash type observed was rear end, comprising 51 percent of the total crashes. Sideswipe (24 percent) and fixed object/run-off road (16 percent) were the second and third highest crash types. Rear end and fixed object/run-off road were the highest injury crash types, accounting for 71 percent of the injury crashes.

A crash rate analysis was performed for I-75 northbound, I-75 southbound, and I-75 ramp terminal intersections and the following location is experiencing a statewide safety ratio >1:

- I-75 Northbound, S.R. 44 to Marion County Weight Station (2018 and 2019); and
- I-75 Southbound, Marion County Weight Station to S.R. 44 (2018 and 2019).

The evaluation of typical recurring congestion patterns, the occurrence of nonrecurring congestion, and historical safety data showed that the existing congestion issues along the I-75 facility are primarily non-recurring congestion events such as incidents/crashes and special event traffic. This is further intensified for the weekends as multiple non-recurring congestion events have a higher likelihood of happening together (e.g., crash during a special event demand increase).

The existing conditions analysis evaluated typical recurring congestion patterns, the occurrence of nonrecurring congestion, and historical safety data in the study area. The results of the analysis included:

2.2.17.7 Recurring Congestion (Highway Capacity Manual (HCM) Analysis)

The HCM Freeway Facilities analysis showed that on an average weekday, there is not recurring congestion along I-75 in each of the AM and PM peak periods. The analysis also showed acceptable operations along I-75 for the average weekend midday peak period.

2.2.17.8 Nonrecurring Congestion (Travel Time Reliability Analysis)

- An evaluation of the 2019 National Performance Management Research Data Set (NPMRDS) data confirmed the findings of the HCM freeway analysis that the corridor congestion along I-75 is not a recurring congestion issue.
- The weekday Level of Travel Time Reliability (LoTTR) charts show that the corridor is reliable during the AM, midday, and PM peak periods in both directions.
- An evaluation of the 2019 NPMRDS data showed that the weekend travel times in both directions are not as reliable as the weekdays. The heat maps show breakdowns along the I-75 corridor for special event weekends such as Spring Break, July 4th, Thanksgiving, Christmas, and New Year's.
- The LoTTR charts show that the corridor is unreliable in the northbound direction during the midday of the weekends. The southbound LoTTR charts show that the data indicates the corridor is nearing unreliable conditions on the weekends.

2.2.18 *Railroad Crossings*

There are no railroads or railroad crossings within the study area.

2.2.19 Drainage

The existing drainage for I-75 from south of S.R. 44 to S.R. 200 was assessed by conducting field reviews throughout the corridor and reviewing existing as-built plans and other available construction plans, SLDs, Geographic Information System (GIS) maps, and Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs). Further, existing permit information was obtained from the FDEP, the St. Johns River Water Management District (SJRWMD) and the Southwest Florida Water Management District (SWFWMD).

The project area has been divided into 33 drainage basins based on the overland topography and other features that influence the drainage patterns throughout this portion of I-75. The southern drainage basins, Basins 0 through 8, are within Sumter County, and the remainder of the drainage basins, Basins 9 through 32, are in Marion County. Basins 0 and 1 are within an open basin with positive outfall to the Withlacoochee River and Basins 2-32 are closed basins. Drainage conveyance within the corridor is a mix of open and closed conveyance, with cross drains and median drains directing run off to a series of swales and/or infield ponds within the I-75 project corridor (**Appendix D1**).

The project corridor crosses through two (2) major watersheds, both the Withlacoochee River and Ocklawaha River Basins. The Withlacoochee Basin is within the jurisdictional boundaries of SWFWMD, and the Ocklawaha Basin is in the SJRWMD. Additionally, the project crosses three (3) separate Water body IDs (WBIDs) associated with the Withlacoochee River watershed and the Ocklawaha River watershed. None of the WBIDs are considered impaired within the vicinity of the I-75 corridor.

The Ocklawaha River and Withlacoochee River are categorized as Outstanding Florida Waters (OFW). Lake Panasoffkee, located west of the I-75 / Florida's Turnpike Interchange and south of S.R. 44, is the receiving water body for the Little Jones Creek which passes through the I-75 / S.R. 44 interchange. Little Jones Creek and Lake Panasoffkee are part of the Withlacoochee River OFW. One existing in-field pond within the I-75 and S.R. 44 interchange has a connection to Little Jones Creek and is permitted with the SWFWMD to address the OFW criteria. No other ponds have direct discharges to the Little Jones Creek tributary. Since the project limits extend through both the SWFWMD and SJRWMD, interagency agreements are anticipated to determine the appropriate reviewing agency for this project.

The roadside areas are also utilized for management of stormwater in accordance with water quality and water quantity requirements of the Water Management Districts (WMDs) and the FDOT. These stormwater management facilities were designed and permitted when the corridor was last widened from 4 to 6 lanes. A majority of the stormwater management facilities are designed to be dry retention facilities due to the well-drained soil conditions and the high number of closed drainage basins.

The project limits exist within two Florida counties, Sumter and Marion. Both counties are adjacent to and naturally drain into the Gulf of Mexico to the west. The topography within the project area ranges from relatively flat in Sumter County to rolling hills in Marion County. Elevations range from 45 feet to 65 feet within Sumter County and from 65 feet to 113 feet in

Marion County. All elevations are referenced to North American Vertical Datum (NAVD88).

2.2.19.1 Watersheds and Springsheds

Two primary watersheds exist within the limits of the project; the Withlacoochee River Watershed – which is regulated and managed by the SWFWMD, and the Ocklawaha River Watershed – which is regulated and managed by the SJRWMD. Two major springsheds also exist within the project limits:

- Silver Springs Springshed, listed as Outstanding Florida Springs, begins north of S.R. 44 on the east side of I-75 and continues north on the east side of I-75 to the project end.
- Rainbow Springs and Rainbow River Springshed on the west side of I-75, occurs in the northern portion of the study area in Marion County.

Effective in June 2018, the FDEP issued a final order establishing the Silver Springs and Rainbow Springs and Rainbow River Springsheds as part of the “Silver and Rainbow Springs Best Management Action Plan”. This Best Management Action Plan (BMAP) establishes nutrient TMDLs for the impaired water basins, as authorized under the Florida Watershed Restoration Act and the Florida Springs and Aquifer Protection Act. Surface waters covered in the BMAP are Class III waters which are defined as suitable for recreational use and for the propagation and well-being of fish and wildlife.

2.2.19.2 Water Management Districts

The project limits extend into two WMD jurisdictions. In Sumter County, the I-75 right of way is located entirely within the boundaries of the SWFWMD. In Marion County, I-75’s west right of way line is also the demarcation line which separates SWFWMD (to the west) and the SJRWMD to the east.

2.2.19.3 Efficient Transportation Decision Making

The WMD agencies participated in the Efficient Transportation Decision Making (ETDM) review process. Highlights of their review and evaluation of this project are summarized below in **Table 2-9**.

Table 2-9: WMD Review and Evaluation

Issue	SWFWMD	SJRWMD
Water Quality and Quantity	Recommend participating in BMAP activities	Anticipate interagency agreement
Floodplain	Recommend use of flood studies	No adverse impacts to floodplain
Special Designations	Lake Panasoffkee Wildlife Area OFW	Sensitive Karst Area

Design Criteria: Stormwater management design criteria required by the two WMD’s are uniquely different regarding water quality treatment and water quantity attenuation. **Table 2-10** itemizes each District’s water quality design criteria.

Table 2.10: WMD Design Criteria for Water Quality

Design Element	SWFWMD	SJRWMD
Water Quality	<p><u>Dry Retention</u>: Half-inch over impervious, 72-hour recovery</p> <p><u>Wet Detention</u>: 1-inch over the impervious</p>	<p><u>Dry Retention</u>: One-inch or 1.75-inches over new impervious, 72-hour recovery</p> <p><u>Wet Detention</u>: 1-inch or 2.5-inches over new impervious</p>
Water Quantity	<p><u>Open Basin</u>: 25-year/24-hour peak discharge</p> <p><u>Closed Basin</u>: 100-year/24-hour retention volume</p>	<p><u>Open Basin</u>: 25-year/24-hour peak discharge</p> <p><u>Closed Basin</u>: 25-year/96-hour retention volume, 14-day recovery</p>

2.2.19.4 Existing Permits

Environmental Resource Permits (ERP's) or Management and Storage of Surface Waters (MSSW) permits have been issued by both the SWFWMD and the SJRWMD for the project limits, in its entirety. A list of the permits relating to the current operating stormwater management facilities handling the existing I-75 facility are summarized below in **Table 2-11**.

Table 2-11: Existing Permits

Description	Permit #	Permit Date	Agency
Turnpike/I-75 Interchange Modification – Northern Terminus	43010725.007	March 9, 2015	SWFWMD
Turnpike/I-75 Interchange Modification	43010725.009	February 15, 2017	SWFWMD
I-75/Turnpike Interchange – Treatment Swales N. of S.R. 44	43010725.010	September 26, 2017	SWFWMD
I-75/S.R. 44 Interchange	4010725.01 4010725.03	May 4, 1993 July 12, 1994	SWFWMD
I-75 from S.R. 44 to Sumter/Marion County	4010725.00	February 2, 1993	SWFWMD
I-75 from Marion/Sumter County Line to C.R. 484	4-083-0164G	March 9, 1993	SJRWMD
I-75 from C.R. 484 to S.R. 200	4-083-0165AG	June 15, 1993	SJRWMD

2.2.19.5 Floodplains

We have reviewed the FEMA National Flood Hazard Layer (NFHL) Viewer and noted numerous designated flood hazard areas throughout the project limits. The FIRMs are dated either 2013 or 2017 and the designations are primary Zone A (areas prone to flooding with a Base Flood Elevation and Zone AE (area with established Base Flood Elevations). For the Interim Auxiliary Lane roadway typical section, all floodplain impacts will be mitigated within the existing right of way through compensatory volume provided within the roadway ditches. Whereas the ultimate roadway typical section is expected to impact all designated floodplain areas identified within the I-75 right of way.

All floodplain compensation sites will be sized to provide equivalent flood volumes in a “cup to cup” manner to ensure the existing impacts maintain the historic stages that exist throughout the corridor. These sites will be sized similar to the stormwater management sites, to include an additional 20-percent increase in size to account for the rolling terrain and the tie-down grades. There are no floodways associated with the project area. All floodplain impacts are estimated from the FEMA floodplain GIS layers and 2-foot contour maps, and volumes will be replaced by balancing cut/fill either within the right of way, or by the addition of equivalent compensatory volume within the proposed stormwater management facilities. These floodplains are associated with the contributing drainage basins and surface water tributaries to the Withlacoochee River and to the Ocklawaha River. There are no regulatory floodways within the project limits.

FEMA has approved Flood Insurance Studies (FIS) and has authorized the issuance of FIRMs for Sumter and Marion counties. The FIRMs are listed in **Table 2-12** below by Panel Number and issue date.

Table 2-12: Sumter and Marion County FIRM List

County	Map No.	Effective Date
Sumter	12119C0127D	9/26/2013
Sumter	12119C0064D	9/26/2013
Sumter	12119C0063D	9/26/2013
Sumter	12119C0061D	9/26/2013
Sumter	12119C0053D	9/26/2013
Marion	12083C0880D	8/28/2008
Marion	12083C0860D	8/28/2008
Marion	12083C0720D	8/28/2008
Marion	12083C0716E	4/19/2017
Marion	12083C0708E	4/19/2017
Marion	12083C0706E	4/19/2017
Marion	12083C0518E	4/19/2017

Source: www.fema.gov/flood-maps/national-flood-hazard-layer

FEMA designates locations of floodplains by zones and are defined as follows.

Zone A: Special Flood Hazard Area without BFE

Zone AE: Special Flood Hazard Area with BFE

Zone C: Areas of Minimal Flood Hazard

Zone X: 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas less than one square mile.

2.2.20 Lighting

There is no lighting on the mainline. However, conventional lighting is present along the on/off ramps associated with the S.R. 200. High mast lighting is located at the S.R. 44 and S.R. 484 interchanges. FDOT is responsible for maintaining the lighting provided along I-75 and the interchange ramps within the project limits.

2.2.21 Utilities

Utility agencies that occur within the study area were identified as part of the data collection effort for the I-75 PD&E Study. The existing utilities within the project area were identified through the Sunshine State 811 “IRTH One Call” system. Each utility agency/owner (UAO) will be contacted to document existing and planned facilities located within the study area. A Utility Assessment Report (UAR) was compiled to identify and describe the exact location, type/size/material of all utility facilities, obtain an order-of-magnitude cost estimate including potentially reimbursable utilities, and provide any potential mitigations to resolve potential conflicts during construction of any proposed improvements. The UAR is available in the project file.

The following UAOs were identified within the study area and are listed below in **Table 2-13**.

Table 2-13: Utility Agency Owners Potentially Occurring in the Study Area

Type of Utility	Utility Owner	Limits	Offset/Side	Potential Impacts
Communications	AT&T Florida	No Facilities		
	Brighthouse (dba Charter/Spectrum)	No Response to Date		
	CenturyLink (local)	East and West along I-75 Majority of the lines stay outside I-75 ROW	East and West Throughout	None Anticipated
	CenturyLink (lv13)	East and West along I-75 Majority of the lines stay outside I-75 ROW	East and West Throughout	Crossing Conflicts: NW 120th Ave., SW County Highway 484, SW 66th Street
	City of Ocala Telecomm	Runs east and west along S.R. 200 with Crossings north and south of S.R. 200	East to West	None Anticipated
	Comcast	Runs east/west along SW County Highway 484	East to West	None Anticipated
	Cox Cable	No Response to Date		
	Zayo	Outside I-75 ROW with two underground crossings	East to West Crossings	SW 66th Street
	Zito	Underground crossing south of 484	East and West Crossing	None Anticipated
Electric	City of Ocala Electric	Crossing at SW 66th St and north of S.R. 200	East to West	South Basin 20 South Basin 31 South Basin 29
	Duke Energy Distribution	No Facilities		
	Duke Energy Fiber	No response to date. Typically follows Duke Transmission		
	Duke Energy Transmission	Multiple overhead crossings	East to West Crossings	Pond 1-3A
	SECO Energy	Runs along ROW with multiple crossings	East to West	Crossings Multiple anticipated
Gas	Central Florida Gas	No Facilities		
	Spectra Energy Sabal Trail	Runs along S.R. 44 east and west	East to West Crossings	Crossing just north of S.R. 44 South Basin 1
	TECO Peoples Gas	Facilities within the corridor	Unknown	More research needed
Water /Sewer	City of Wildwood W&S	Crossing just north of S.R. 44	East to West S.R. 44	None Anticipated
	Marion County Utilities	Multiple underground crossings	East to West Crossings	None Anticipated
	City of Ocala W&S	SW 42nd St crossing S.R. 200 crossing	East to West	None Anticipated

2.2.22 Soils and Geotechnical Data

The I-75 alignment of interest is depicted on the U.S. Geological Survey (USGS) Ocala West, Wildwood, Lake Panasoffkee, Oxford and Shady, Florida Quadrangle maps (see **Appendix D**), and on excerpts of the Natural Resources Conservation Service (NRCS) Web Soil Survey of Sumter and Marion counties, Florida. The USGS Quadrangle map indicates natural grades along the I-75 alignment typically ranging from +60 to +75ft National Geodetic Vertical Datum (NGVD), although natural grades at the southern terminus (where I-75 merges with the Florida’s Turnpike and south of S.R. 44) are approximately +45ft to +50ft NGVD.

2.2.22.1 Soils and Groundwater

The NRCS Soil Survey of Sumter County and Marion County were reviewed to obtain near-surface soils information along the project alignment. The NRCS Soil Survey soil types within the project limits are summarized in **Table 2-14** and **Table 2-15**. Detailed soil maps are contained in **Appendix D**.

Table 2-14: Sumter County NRCS Soil Units

Unit No.	Soil Name	Depth (inches)	Soil Description	USCS Classification on Symbol	AASHTO Classification Symbol	Depth to Seasonal High Groundwater (feet)
1	Arrendondo sand, 0 to 5 percent slopes	0 – 8	Fine sand	SM, SP-SM	A-3, A-2-4	---
		8 – 62	Fine sand	SM, SP-SM	A-3, A-2-4	
		62 – 69	Loamy sand, sandy loam, loamy fine sand, fine sandy loam	SC-SM, SC	A-2-4, A-2-6	
		69 – 80	Sandy loam, sandy clay, sandy clay loam	SC	A-6, A-7-6, A-2-4	
4	Candler sand, 0 to 5 percent slopes	0 - 6	Sand	SP, SP-SM	A-3	---
		6-63	Sand, fine sand	SP, SP-SM	A-3	
		63 - 80	Sand, fine sand	SP-SM	A-2-4, A-3	
6	Kendrick fine sand, 0 to 5 percent slopes	0 – 7	Fine sand	SM, SP-SM	A-2-4, A-3	---
		7 – 28	Fin sand, loamy fine sand	SM, SP-SM	A-2-4, A-3	

Unit No.	Soil Name	Depth (inches)	Soil Description	USCS Classification on Symbol	AASHTO Classification Symbol	Depth to Seasonal High Groundwater (feet)
		28 – 73	Sandy clay loam, fine sandy loam	SC	A-2-4, A-6, A-2-6	
		73 – 80	Sandy clay loam	SC	A-6, A-2-6, A-2-4	
13	Tavares fine sand, 0 to 5 percent slopes	0 - 5	Fine sand	SP, SP-SM	A-3, A-2-4	3.5 - 6.0
		5 – 80	Fine sand, sand	SP, SP-SM, SM	A-3, A-2-4	
15	Adamsville fine sand, bouldery subsurface	0 – 5	Fine sand	SP-SM	A-3, A-2-4	2.0 – 3.5
		5 – 80	Fine sand, sand	SP, SP-SM	A-3, A-2-4	
21	EauGallie fine sand, bouldery subsurface	0 - 8	Fine sand	SP	A-3	0.5 - 1.5
		8 - 25	Sand, fine sand	SP	A-3	
		25 - 36	Sand, fine sand	SM, SP-SM	A-3, A-2-4	
		36 - 57	Sand, fine sand	SP, SP-SM	A-3, A-2-4	
		57 - 80	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM, SM	A-2-6, A-2-4	
27	Sumterville fine sand, bouldery subsurface, 0 to 5 percent slopes	0 - 9	Fine sand	SM, SP-SM	A-2-4, A-3	1.5 - 3.0
		9 - 29	Fine sand, sand	SM, SP-SM	A-2-4, A-3	
		29 - 80	Sandy clay, sandy clay loam	CH, CL	A-7	
33	Sparr fine sand, bouldery subsurface, 0 to 5 percent slopes	0 – 8	Fine sand	SP-SM	A-2-4, A-3	1.5 – 3.5
		8 – 46	Fine sand, sand	SP-SM	A-2-4, A-3	
		46 – 58	Sandy clay loam, fine sandy loam	SC-SM, SC, SM	A-2-4	
		58 – 80	Sandy clay loam, sandy clay	SC-SM, SC	A-2-4, A-2-6, A-4, A-6	

Unit No.	Soil Name	Depth (inches)	Soil Description	USCS Classification on Symbol	AASHTO Classification Symbol	Depth to Seasonal High Groundwater (feet)
36	Floridana mucky fine sand, frequently ponded, 0 to 1 percent slopes	0 - 4	Mucky fine sand	SM, SP-SM	A-3, A-2-4	0.0 – 2.0
		4 - 15	Fine sand	SP-SM, SM	A-2-4, A-3	
		15 - 32	Sand, fine sand	SM, SP-SM	A-3, A-2-4	
		32 - 44	Sandy loam, fine sandy loam, sandy clay loam	CL, SC, SC-SM	A-7-6, A-6, A-4	
		44 - 80	Sandy loam, fine sandy loam, sandy clay loam	SC, CL, SC-SM	A-7-6, A-2-4, A-4	
39	Mabel fine sand, bouldery subsurface, 0 to 5 percent slopes	0 - 6	Fine sand	SP-SM, SP, SM	A-2-4, A-3	1.5 – 3.0
		6 - 16	Fine sand	SP-SM, SP, SM	A-2-4, A-3	
		16 - 24	Sandy clay, sandy clay loam	SC, CL, CH	A-2, A-6, A-7	
		24 - 30	Clay, sandy clay	MH, CH	A-7	
		30 - 80	Clay, clay loam, sandy clay loam	SC, CL, CH	A-6, A-7	
40	Milhopper sand, bouldery subsurface, 0 to 5 percent slopes	0 - 7	Sand	SP-SM	A-2-4, A-3	3.5 – 6.0
		7 - 45	Fine sand, sand	SP-SM	A-2-4, A-3	
		45 - 80	Sandy clay loam, fine sandy loam	SM, SC-SM, SC	A-2-4, A-2-6, A-4, A-6	
44	Oldsmar fine sand, bouldery subsurface	0 - 9	Fine sand	SP-SM, SP	A-3	0.0 – 1.5
		9 - 31	Fine sand	SP-SM, SP	A-3	
		31 - 48	Fine sand	SP-SM, SM	A-2-4, A-3	
		48 - 80	Sandy clay loam, fine sandy loam	SC-SM, SC	A-2, A-4, A-7, A-6	

Unit No.	Soil Name	Depth (inches)	Soil Description	USCS Classification Symbol	AASHTO Classification Symbol	Depth to Seasonal High Groundwater (feet)
53	Tavares fine sand, bouldery subsurface, 0 to 5 percent slopes	0 – 7	Fine sand	SP, SP-SM	A-3	3.5 – 6.0
		7 – 80	Sand, fine sand	SP, SP-SM	A-3	
57	Gator muck, 0 to 1 percent slopes, frequently flooded	0 - 34	Muck	PT	A-8	0
		34 – 46	Sandy loam, sandy clay loam, fine sandy loam	CL, SM, SC	A-7-6, A-4, A-6	
		46 – 52	Stratified fine sandy loam to sandy clay loam to loamy fine sand	SM, SC-SM, SC	A-2-4, A-4, A-6	
		52 – 60	Sand, fine sand	SP-SM, SM	A-2-4, A-3	
62	Urban land, 0 to 2 percent slopes	0 – 6		---	---	---
		6 – 36	Cemented material	SP-SM	A-3, A-2-4	
		36 – 46	Paragravelly sand, sand Paragravelly sand, Paragravelly fine sand, sand Paragravelly sand	SM, SP-SM	A-2-4, A-3	
		46 – 80	Paragravelly fine sand, sand	SM, SP-SM	A-2-4, A-3	
66	Arredondo fine sand, bouldery subsurface, 0 to 5 percent slopes	0 – 8	Fine sand	SM, SP-SM	A-2-4, A-3	---
		8 – 58	Fine sand, loamy fine sand	SM, SP-SM	A-2-4, A-3	
		58 – 80	Loamy fine sand, fine sandy loam	SC-SM, SM	A-2-4	
‘---’ indicates no information shown in the NRCS database						

Table 2-15: Marion County NRCS Soil Units Summary

Unit No.	Soil Name	Depth (inches)	Soil Description	USCS Classification Symbol	AASHTO Classification Symbol	Depth to Seasonal High Groundwater (feet)
2	Adamsville sand, 0 to 5 percent slopes	0 – 6	Sand	SP-SM	A-2-4, A-3	1.5 – 3.5
		6 – 80	Sand	SP-SM	A-2-4, A-3	
9	Arredondo sand, 0 to 5 percent slopes	0 – 7	Sand	SM, SP-SM	A-3, A-2-4	---
		7 – 65	Sand	SM, SP-SM	A-3, A-2-4	
		65 – 70	Loamy sand, loamy fine sand, sandy loam	SC-SM, SC	A-2-4, A-2-6	
		70 – 80	Sandy loam, fine sandy loam, sandy clay loam	SC	A-6, A-2-6, A-2-4	
11	Pedro-Arredondo complex, 0 to 5 percent slopes	Pedro				---
		0 – 5	Fine sand	SP-SM	A-2-4, A-3	
		5 – 13	Fine sand	SP-SM	A-2-4, A-3	
		13 – 16	Sandy clay loam	SC	A-2, A-4, A-6	
		16 – 25	Weathered bedrock	---	---	
		25 - 29	Unweathered bedrock	---	---	
		Arredondo				---
		0 – 7	Sand	SP-SM, SM	A-2-4, A-3	

Unit No.	Soil Name	Depth (inches)	Soil Description	USCS Classification Symbol	AASHTO Classification Symbol	Depth to Seasonal High Groundwater (feet)
		7 – 67	Sand	SM, SP-SM	A-2-4, A-3	
		67 – 70	Loamy sand, loamy fine sand, sandy loam	SC-SM, SM	A-2-4	
		70 – 80	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2-4, A-2-6, A-4, A-6	
13	Astatula sand, 0 to 5 percent slopes	0 – 3	Sand	SP, SP-SM	A-3	---
		3 – 80	Sand	SP, SP-SM	A-3	
17	Blichton sand, 2 to 5 percent slopes	0 – 5	Sand	SM, SP-SM	A-2-4, A-3	0.5 – 1.5
		5 – 26	Sand	SM, SP-SM	A-2-4, A-3	
		26 – 30	Sandy loam, fine sandy loam	SC-SM, SM	A-2-4	
		30 – 77	Sandy clay loam	SC	A-6	
		77 – 80	Stratified sandy loam to sandy clay loam	SC-SM, SM	A-2-4	
22	Candler sand, 0 to 5 percent slopes	0 – 6	Sand	SP, SP-SM	A-3	---
		6 – 63	Sand, fine sand	SP, SP-SM	A-3, A-2-4	
		63 – 80	Sand, fine sand	SP-SM	A-2-4, A-3	
37	Hague sand, 2	0 – 8	Sand	SP-SM	A-2-4, A-3	---

Unit No.	Soil Name	Depth (inches)	Soil Description	USCS Classification Symbol	AASHTO Classification Symbol	Depth to Seasonal High Groundwater (feet)
	to 5 percent slopes	8 – 24	Sand	SP-SM	A-2-4, A-3	
		24 – 49	Sandy clay loam, sandy loam	SC, SC-SM, SM	A-2, A-4, A-6	
		49 – 74	Sandy loam, loamy sand, loamy fine sand	SC, SC-SM, SM	A-2	
		74 – 80	Loamy sand, loamy fine sand	SM	A-2-4	
40	Holopaw sand, frequently ponded, 0 to 1 percent slopes	0 – 5	Sand	SM, SP, SP-SM	A-2-4, A-3	0.0 – 1.0
		5 – 59	Sand	SP-SM, SP	A-3, A-2-4	
		59 – 80	Sandy clay loam, fine sandy loam, sandy loam	CL, SC	A-6, A-4, A-7-6	
43	Kanapaha-Kanapaha wet, fine sand, 0 to 5 percent slopes	0 – 7	Fine sand	SP-SM, SM	A-2-4, A-3	0.0 – 1.5
		7 – 8	Fine sand	SP-SM, SM	A-2-4, A-3	
		48 – 55	Sandy loam, sandy clay loam, fine sandy loam	SC	A-2-6, A-2-4, A-7-6	
		55 – 70	Sandy clay loam, sandy clay	SC	A-2-6, A-7-6	
		70 – 80	Sandy clay loam, sandy loam	SC	A-2-6, A-7-6	
44	Kendrick fine sand, 0 to 5	0 – 7	Loamy sand	SM, SC-SM	A-2-4	---

Unit No.	Soil Name	Depth (inches)	Soil Description	USCS Classification Symbol	AASHTO Classification Symbol	Depth to Seasonal High Groundwater (feet)
	percent slopes	7 – 28	Loamy fine sand, fine sand	SM, SP-SM	A-2-4	
		28 – 76	Fine sandy loam, sandy clay loam	SC	A-6, A-2-6	
		76 – 80	Sandy clay loam	SC	A-2-6	
58	Placid sand, depressional	0 – 19	Fine sand	SM, SP, SP-SM	A-2-4, A-3	0.0 – 0.5
		19 – 80	Fine sand, sand, loamy fine sand	SM, SP, SP-SM	A-2-4, A-3	
61	Pomona sand	0 – 5	Sand	SP, SP-SM	A-2-4, A-3	0.0 – 1.5
		5 – 26	Sand	SP, SP-SM	A-2-4, A-3	
		26 – 39	Sand, fine sand	SM, SP-SM	A-2-4, A-3	
		39 – 51	Sand	SP, SP-SM	A-2-4, A-3	
		51 – 72	Sandy clay loam, sandy loam, sandy clay	SC, SC-SM	A-2, A-4, A-6	
65	Sparr fine sand, 0 to 5 percent slopes	0 – 8	Fine sand	SP-SM	A-2-4, A-3	1.5 – 5.0
		8 – 48	Fine sand	SP-SM	A-2-4, A-3	
		48 – 56	Sandy loam, sandy clay loam	SC, SC-SM, SM	A-2-4	
		56 – 72	Sandy clay, sandy clay loam, sandy loam	SC, SC-SM	A-2-4, A-2-6, A-4, A-6	

Unit No.	Soil Name	Depth (inches)	Soil Description	USCS Classification Symbol	AASHTO Classification Symbol	Depth to Seasonal High Groundwater (feet)
		72 – 80	Sandy clay loam, sandy loam	SC, SC-SM, SM	A-2-6, A-4, A-6, A-2-4	
74	Wacahoota gravelly sand, gravelly subsoil variant, 2 to 5 percent slopes	0 – 5	Gravelly sand	GP-GM, SP-SM	A-2-4, A-3, A-1	0.0 – 1.5
		5 – 31	Gravelly sand	SP-SM, GP-GM	A-2-4, A-3, A-1	
		31 – 36	Gravelly sandy loam	SM, SC-SM, GC-GM, GM	A-1	
		36 – 72	Gravelly sandy clay loam, sandy clay loam	GC	A-2-6, A-2-4	
		72 – 78	Sandy clay loam, sandy clay	SC	A-2-6, A-6, A-7	
77	Zuber loamy sand, 2 to 5 percent slopes	0 – 7	Loamy sand	SM	A-2-4	---
		7 – 15	Loamy sand, loamy fine sand	SM	A-2-4	
		15 – 20	Sandy clay loam, sandy clay	SC	A-2-6, A-6	
		20 – 70	Sandy clay, clay	CH, CL, SC	A-6, A-7	
		70 – 80	Sandy clay loam, sandy clay, clay	CH, CL, SC	A-6, A-7	
Notes:	‘---’ indicates no information shown in the NRCS database					

The sand soil units depicted along the project alignment by the NRCS Soil Survey maps are generally suitable for support of the proposed roadway improvements. However, shallow groundwater, shallow clay, shallow limestone/bouldery subsurface and organic soil (muck) are present at various locations within the project corridor. These conditions can impact design and construction of the roadway improvements.

Shallow groundwater can impact roadway grades and stormwater pond site selection, design, and construction. Near-surface clay can perch groundwater, potentially causing impacts to the pavement base. Near surface limestone (rock, boulders) can pose a challenge to permitting stormwater ponds, as well as roadway and pond construction. Muck is associated with lowland/wetland depressional areas and can have severe limitations for roadway embankment construction. Removal of muck, or treatment by means of a soil surcharge, is typically required to provide adequate support for the roadway embankment.

Information contained in the NRCS Soil Survey is very general and may be outdated. It may not therefore be reflective of actual soil and groundwater conditions, particularly if recent development in the site vicinity has modified soil conditions or surface/subsurface drainage. In particular, the NRCS seasonal high groundwater levels summarized above do not account for changes in groundwater due to development and are only relevant for the natural, undisturbed condition of the soils.

2.2.22.2 Regional Geology

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. The nature and relationship of the three sedimentary layers typical of Central Florida geology cause sinkholes. The deepest, or basement, layer is a massive, cavernous limestone formation known as the Floridan aquifer. The Floridan aquifer limestone is overlain by a silty or clayey sand, clay, phosphate, and limestone aquitard (or flow-retarding layer) ranging in thickness from nearly absent to greater than 100 feet and locally referred to as the Hawthorn formation. The Hawthorn formation is in turn overlain by a 10- to 70-foot-thick surficial layer of sand, bearing the water table aquifer. The likelihood of sinkhole occurrence at a given site within the region is determined by the relationship among these three layers, specifically by the water (and soil)-transmitting capacity of the Hawthorn formation at that location.

The water table aquifer is comprised of Recent and Pleistocene sands and is separated from the Eocene limestone of the Floridan aquifer by the Miocene sands, clays, and limestone of the Hawthorn formation. Since the thickness and consistency of the Hawthorn layer is variable across Central Florida, the likelihood of groundwater flow from the upper to the lower aquifer (known as aquifer recharge) will also vary by geographical location. In areas where the Hawthorn formation is absent, water table groundwater (and associated sands) can flow downward to cavities within the limestone aquifer, like sand through an hourglass, recharging the Floridan aquifer, and sometimes causing the formation of surface sinkholes. This process of subsurface erosion associated with recharging the Floridan aquifer is known as raveling. Thus, in Central Florida, areas of effective groundwater recharge to the Floridan aquifer have a higher potential for the formation of surface sinkholes.

No method of geological, geotechnical, or geophysical exploration is known that can accurately predict the occurrence of sinkholes. It is common geotechnical practice in Central Florida to make a qualitative prediction of sinkhole risk on the basis of local geological conditions in the vicinity of a particular site.

The U.S. Geological Survey Map entitled “Recharge and Discharge Areas of the Floridan Aquifer in the SJRWMD and Vicinity, Florida,” 1984, indicates the project corridor is a high recharge

area; therefore, we can conclude that the relative risk of sinkhole formation is high compared to the overall risk across Central Florida. Numerous sinkholes have been documented throughout the alignment, and historical aerial photographs reveal I-75 crosses several relic sinkhole formations. The sinkhole-prone, or karst, geology of the study area poses several geotechnical engineering challenges. Buried limestone pinnacles and boulders can cause bridge foundation pile lengths to be highly variable. Stormwater pond permitting is complicated by the relatively low permeability clay and the shallow limestone, which can create a connection to the Floridan aquifer if limestone is present within the pond excavation limits.

2.2.22.3 Potentiometric Surface

According to the FDEP, September 2017 Upper Floridan Aquifer Potentiometric Surface contour map, the potentiometric surface of the Floridan Aquifer in the vicinity of the I-75 corridor is approximately +50 ft NAVD. At locations where ground surface elevations are above the potentiometric surface, which is the majority of the alignment, artesian flow conditions are not anticipated. However, at the southern end of the project and south of S.R. 44, where natural ground surface elevations are +45 to +50 ft NGVD (which translates to approximately +44 to +49 ft NAVD), several springs are documented, and artesian conditions are expected.

2.2.23 *Aesthetics Features*

I-75 within the study limits has existing landscaping at multiple locations along the corridor within the FDOT right of way, primarily at the interchange infield areas. There is existing landscaping at the interchanges S.R. 200, C.R. 484, S.R. 44, and turnpike interchanges. These landscape areas consist primarily of planted palms, crepe myrtles, and/or natural vegetation. No wildflowers area currently exists within the study limits.

2.2.24 *Traffic Signs*

Signing along I-75 within the project study limits consists primarily of standard ground mounted regulatory signage (e.g., speed limit) and standard ground mounted wayfinding signage at each interchange. These signs appear in good condition and have been maintained. There are four overhead sign structures within the study limits.

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

I-75 is part of FDOT D5's Integrated Corridor Management System. Currently, there are transportation sensor systems throughout the corridor that transmit to the regional transportation management center. The I-75 Florida Regional Advanced Mobility Elements (FRAME) project is complete and uses connected vehicle (CV) technologies to disseminate real-time information to motorists during freeway emergencies and incidents on I-75 and to reroute traffic using east to west arterials.

There are no dynamic message signs (DMS) within the project area.

2.2.26 *Existing Bridge Conditions*

All existing bridges were evaluated in accordance with 2020 FDOT and AASHTO criteria. The evaluation included an assessment of bridge width, bridge length, type of bridge (prestressed concrete beam, steel girder, etc.), vertical and horizontal clearances, and load posting information. The evaluation also considered a condition assessment from the latest bridge inspection reports, which included the National Bridge Institute overall condition ratings, the Bridge Health Index, and Federal Highway Administration Sufficiency Ratings.

Bridge Inspection Reports, rating calculations and available bridge plans were reviewed to determine the existing condition of each bridge. As part of the PD&E study, bridges will be evaluated for replacement or widening. **Table 2-16** summarizes the location, sufficiency rating, health index and performance rating for the bridges in the study. The bridge typical section graphic is in **Appendix B**.

Table 2-16: I-75 Structures

Bridge #	Description	Year Built	Vertical Clearance	Inspection Year	Sufficiency Rating	Health Index	Perf Rating
180047	C.R. 462 over I-75	1962	16.45' OR 16'5 1/3"	2019	80.1	99.25	Good
180048	C.R. 462 over I-75	1964	16.40	2019	87.3	99.63	Good
180069	I-75 NB over S.R. 44	2000	MIN 16'10 7/16"	2019	94.2	99.38	Good
180070	I-75 SB over S.R. 44	2000	MIN 16'10 7/16"	2019	94.2	99.21	Good

Bridge #	Description	Year Built	Vertical Clearance	Inspection Year	Sufficiency Rating	Health Index	Perf Rating
360001	I-75 SB over C.R. 484	1985/1999 (inside widening)	14' 8 3/4"	2019	90.1	96.03	Good
360045	I-75 NB over C.R. 484	1999 Inside Widening	14' 8 3/4"	2019	90.1	98.43	Good
360048	SW 66 th Street over I-75	1963	16.40	2019	75.7	94.89	Good
360063	I-75 over S.R. 200	1993 replacement	MIN 16' 6"	2019	96.0	99.09	Good
365302	SW 43rd Street over I-75	2010	MIN 16' 11 1/8"	2018	98.4	99.89	Excellent
369001	Greenway Trail over I-75	1999 widening	MIN 5.05m (16' 6 2/3")	2017	-2	99.68	Good

The health index of all bridges within the project corridor is 94.89 or better (good condition). None

of the bridges are structurally deficient. Bridge No. 369001 (Greenway Trail over I-75) is a unique pedestrian bridge that includes plantings, walls, and hardscape areas on the bridge.

2.2.27 Social and Economic

The Environmental Screening Tool (EST) Sociocultural Data Report (SDR) (Clipping) was used to identify demographic data in the project area. The SDR uses the Census 2018 – 2022 American Community Survey (ACS) data and reflects the approximation of the population based on the portion of a quarter-mile project buffer area (project area) intersecting the census block groups along the project corridor.

The SDR identified 1,639 households with a population of 3,824. The median household income is \$66,250 for the study area compared to \$70,105 in Sumter County and \$55,265 in Marion County. Approximately 11.41% of the households are below poverty level compared to 8.01% in Sumter County and 13.47% in Marion County. Within the project area, 1.22% of households receive public assistance, compared to 1.13% in Sumter County and 2.46% in Marion County.

The study area has a Hispanic or Latino ethnicity of 15%, which is greater than Sumter County (6.5%) and similar to that of Marion County (16.4%). The Census data shows some areas of the study area have a high percentage of Black or African American populations, notably the Community of Royal which has historically been an African American Community. The data also shows that the elderly population in the study area (34.07%) is lower than those in Sumter County (57.91%) and higher than those in Marion County (28.89%). Study area populations with disabilities are lower than those in Marion and Sumter counties.

Table 2-17 provides a summary comparison of demographics for the project area, Sumter County and Marion County.

Table 2-17: Demographics Characteristics

Geography	Median Household Income	Below Poverty	Minority	Median Age	Population with Disability
Study Area	\$66,250	11.41%	40.53%	45	8.59%
Sumter County	\$70,105	8.01%	15.73%	68.3	12.87%
Marion County	\$55,265	13.47%	32.09%	48.5	12.55%

The Community of Royal Rural Historic Landscape occurs within the project area. The Community of Royal was founded by free Blacks in the years following the Civil War and is the only Black homestead community in the state that retains a direct connection to the 1800s. The first confirmed African Americans to own land in the Community of Royal date to the 1870s; however historical documents and archaeological evidence note the existence of free Blacks in the area during the 1830s. The community is representative of agricultural trends beginning during Florida’s frontier times and is one of the only remaining rural African American towns in the state. Today, many of the descendants of these earlier Black agriculturalists continue to occupy the buildings and properties developed by their ancestors.

The NRCS noted that there are soils designated as Prime Farmland and Farmland of Local

Importance at all buffer widths within the project footprint. Additionally, areas currently used for agricultural production are present within the study area buffer.

2.2.28 Cultural Resources

A Cultural Resource Assessment Survey (CRAS), dated November 2023, was conducted within the I-75 right of way from south of S.R. 44 to S.R. 200, and a CRAS Addendum, dated February 2024, was conducted for the proposed stormwater management pond footprints (plus a 100-foot buffer). Coordination with the State Historic Preservation Officer (SHPO) regarding the CRAS was initiated on November 28, 2023, and concurrence with the results of the CRAS was provided on December 19, 2023. Coordination with SHPO regarding the CRAS Addendum was initiated on March 4, 2024, and concurrence with the results of the CRAS Addendum was provided on April 22, 2024.

Following the submittal of the CRAS Addendum in March 2024, pond site 18-4 was established to provide stormwater management in Basin 18. A CRAS for pond site 18-4 was performed and documented as CRAS Addendum No. 2., dated July 2024. Coordination with SHPO regarding CRAS Addendum No. 2 was initiated on July 11, 2024, and concurrence with the results was provided on July 29, 2024. All CRAS documents and SHPO concurrence letters are located in the project file.

2.2.28.1 Archaeological Sites

Seven previously recorded archaeological sites were identified within the Area of Potential Effects (APE) during the Florida Master Site File (FMSF) research. **Table 2-18** includes a description and SHPO evaluation for each of these previously recorded archaeological sites.

Table 2-18: Previously Recorded Archaeological Sites

FMSF No.	Site Name	Description	SHPO Evaluation	SHPO Recommendation
8SM00130	Muldrew’s	Prehistoric, low-density artifact scatter	Not Evaluated	No further Cultural Resources work
8SM00357	Nichols Pond Site	Prehistoric, low-density artifact scatter	Ineligible	No further Cultural Resources work
8SM01367	I-75 Pond	Precontract unspecified	Insufficient Information	No further Cultural Resources work
8SM01368	Southbound I-75	Precontract unspecified	Insufficient Information	No further Cultural Resources work
8MR00475	North Barge Canal	Prehistoric, low-density artifact scatter	Ineligible	No equipment staging or storage
8MR00481	Turpentine	Historic scatter related to the turpentine industry	Not Evaluated	No equipment staging or storage
8MR02542	Tartan Farm Pond	Prehistoric artifact scatter	Ineligible	No further Cultural Resources work

The FDOT determined that insufficient information is available to evaluate sites 8MR00475 and 8SM00130 because the limits of both sites extend beyond the APE. Since no evidence for previously recorded historic archaeological site 8MR00481 was found during the CRAS, these

two sites were combined into one multicomponent site under 8MR00475. The SHPO has previously evaluated Sites 8MR02542 and 8SM00357 as being ineligible for the National Register of Historic Places (NRHP), and the current study found no reason to change this evaluation.

Two previously recorded sites (8MR01367 and 8SM01368) were revisited as part of the current survey. Site 8SM01367 is constrained by modern roadways and utilities and cannot be fully delineated. Insufficient information is available to evaluate the site. Additional archaeological excavation in the vicinity of Site 8SM01368 is not possible due to modern development; however, further work is unlikely to uncover significant cultural deposits, therefore, the FDOT determined that site 8SM01368 is ineligible for the NRHP and no further work is needed.

2.2.28.2 Historic Resources

The CRAS evaluated two previously recorded historic resources (the Cross Florida Greenway [8MR03410] and the Community of Royal [8SM01343]), and documentation and evaluation of one new historic resource within the APE. **Table 2-19** includes a description and SHPO evaluation for each of these identified historic resources.

Table 2-19: Previously Recorded Historic Resources

FMSF No.	Name	Resource Type	SHPO Evaluation
8MR03410	Cross Florida Greenway	Designed historic landscape	Eligible for NRHP
8SM01343	Community of Royal	Rural historic landscape	Eligible for NRHP
8SM01393	C.R. 462 Bridge	Historic bridge	Ineligible

The resource group, the Cross Florida Greenway (8MR03410), is a designed historic landscape that was determined eligible for listing in the NRHP by the SHPO on June 28, 2022. The resource roughly represents the route of the Marjorie Harris Carr Cross Florida Greenway.

The Community of Royal (8SM01343), is a previously recorded rural historic landscape located in north-central Sumter County. This resource was determined eligible for listing in the NRHP by the SHPO on April 4, 2022, under Criterion A for its significance in Ethnic Heritage (Black), Agricultural, Exploration and Settlement, and Community Planning and Development.

The historic architectural survey also resulted in the documentation of one new historic resource, FDOT Bridge No. 180047 (8SM01393), included in **Table 2-19**. The bridge was built following construction of the original I-75 and is not historically linked to the development of the Community of Royal. As such, it has been determined that the newly recorded bridge (8SM01393) is individually ineligible and ineligible as a contributing feature to the Community of Royal (8SM01343). The SHPO concurred with this determination on April 22, 2024.

The locations of the previously recorded archaeological sites are shown in **Figures 2-7** and **2-8**. Further details for these sites are documented in the CRAS and CRAS Addendum located in the project file.

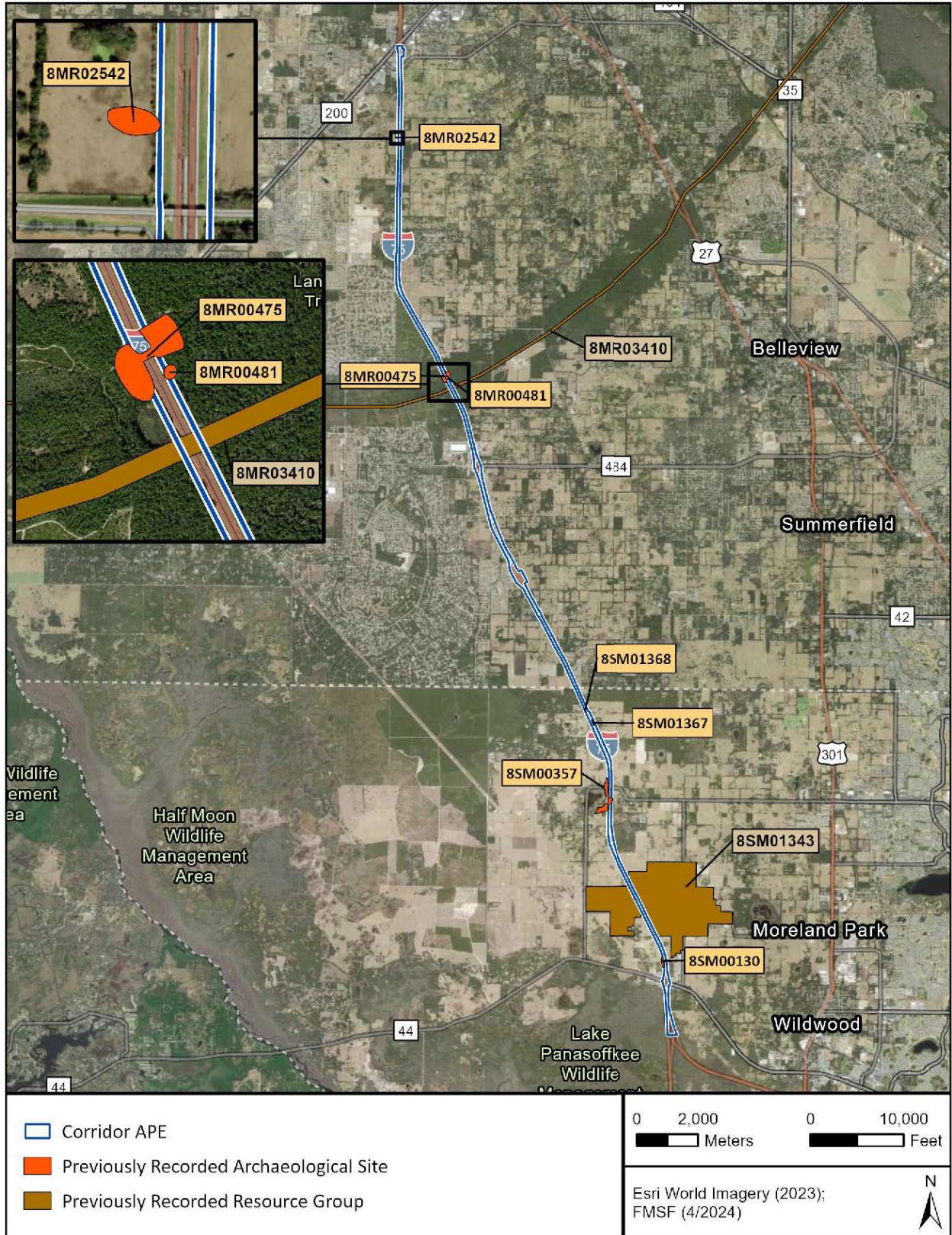


Figure 2-7: Previously Recorded Archaeological Sites (1 of 2)

The current survey also reported the survey of two previously recorded archaeological sites, 8SM01367 and 8SM01368, not tested by the original survey. The findings are reported in the February 2023 CRAS.

2.2.29 Natural Resources

For the purposes of the natural resources evaluation, the project corridor is defined as a 500 foot buffer on either side of the existing right of way. This preliminary ecological database evaluation of the project corridor was completed to document existing environmental conditions for the PD&E study.

In preparation for field work, GIS data reviewed for the evaluation included but was not limited to:

- Bing aerial photography (2018)
- USFWS National Wetlands Inventory (NWI,2018)
- USFWS Consultation Area GIS data layers (2003-2006)
- Florida Fish and Wildlife Conservation Commission's (FWC) Wildlife Observations (2016)
- FWC Wildlife Occurrence System data (2016)
- FWC Eagles Nest Locations data (2017)
- FWC Florida Scrub-jay Habitat data (2015)
- USFWS Wood Stork Core Foraging Habitat data (2017)
- Florida Natural Areas Inventory (FNAI) Florida Conservation Lands data (2020)
- FDOT Longspurred Mint Survey data (2017)
- Federal Geographic Data Committee (FGDC) Sand Skink Suitability data (2013)

A Natural Resources Evaluation (NRE) was prepared in accordance with Presidential Executive Order 11990 and Part 2, Chapter 9, Wetlands and Other Surface Waters, of the FDOT PD&E Manual. Agency coordination was initiated as part of the ETDM screening (November 2023). Full agency comments are available in the ETDM Summary Report (ETDM No. 14541), located in the project file.

2.2.29.1 Wetlands and Surface Waters

The jurisdictional extent of wetland and other surface water (OSW) systems within the study corridor was approximated through a desktop GIS analysis, the review of aerial photography, National Wetland Inventory (NWI) data (USFWS, 2014), U.S. Geological Survey Topographic Maps, soils maps, land use maps, and ground-truthing activities. The approximated wetland lines

were then field verified and/or updated as needed based on current site conditions. The wetland limits were identified in accordance with the U.S. Army Corps of Engineers (USACE) Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (November 2010), the State of Florida's Delineation of the Landward Extent of Wetlands and Surface Waters (Chapter 62-340, Florida Administrative Code (FAC)). To the extent wetland boundaries differed between the federal and state methods, the more landward extent was used to define that wetland system's boundary.

Approximate wetland and OSW locations were identified along the project corridor. Nine (9) wetland areas and five (5) OSWs were identified in proximity to the project. Wetland communities anticipated to be impacted primarily consist of mixed wetland hardwood communities (FLUCCS 615). Dominant vegetation within these areas consists primarily of red maple (*Acer rubrum*), American elm (*Ulmus americana*), and sugar berry (*Celtis laevigata*), with scattered swamp bay (*Persea palustris*) and box elder (*Acer negundo*). The understory is comprised of box elder (*Acer negundo*), beggarticks (*Bidens alba*), royal fern (*Osmunda regalis*), button bush (*Cephalanthus occidentalis*), elderberry (*Sambucus nigra*), cinnamon fern (*Osmundastrum cinnamomeum*), and climbing fern (*Lygodium sp.*). Signs of hydrology included stained leaves, water lines, lichen lines, and drainage patterns. Several small freshwater marsh areas occur scattered along the project corridor. Dominant vegetation within these areas consists of maidencane (*Panicum hemitomom*), duck potato (*Sagittaria Lancifolia*), saw grass (*Cladium jamaicense*), Virginia chain fern (*Woodwardia virginica*), and swamp fern (*Blechnum serrulatum*) with Carolina willow (*Salix caroliniana*), primrose willow (*Ludwigia sp.*), and wax myrtle (*Myrica cerifera*) along the margins. Signs of hydrology included standing water, saturated soils, and drainage patterns.

OSWs observed within the project corridor are limited to permitted surface water collection features (FLUCCS 837) associated with the existing roadway. The dominant vegetation in this herbaceous community consists of maidencane, arrowhead (*Sagittaria lancifolia*) and pennywort (*Hydrocotyle umbellata*) with some primrose willow. These jurisdictional surface waters are part of the roadside drainage system and are routinely maintained. Their proximity to the road and continued disturbance from routine maintenance activities limit their functional habitat value.

2.2.29.2 Protected Species

The project corridor is located within a historically rural, agricultural area that has seen increased development of residential and commercial land uses, especially west of Ocala. These agricultural areas and the remaining natural habitats within the project corridor have the potential to support several wildlife species listed by the USFWS and the FWC. The project is not located within an area designated as critical habitat by the USFWS and does not contain essential fish habitat (EFH).

This project was evaluated for impacts to wildlife and habitat resources, including protected species, in accordance with 50 CFR Part 402, the Florida Endangered and Threatened Species Act (Section 379.2291 F.S.), and the PD&E Manual. A NRE report was prepared and is located in the project file.

The project corridor is located within the USFWS designated Consultation Area for the Florida scrub-jay (*Aphelocoma coerulescens*); however, the right of way does not provide habitat and only some of the pond alternatives contain marginal habitat for the Florida scrub-jay. Species listed as having a Low probability of occurrence is due to the lack of suitable habitat within the project

corridor and due to the existing roadway. However, several species were observed in the field or identified to have a Moderate probability of occurrence, including the gopher tortoise (*Gopherus polyphemus*), Florida sandhill crane (*Antigone canadensis pratensis*), wood stork (*Mycteria americana*), tricolored heron (*Egretta tricolor*), southeastern American kestrel (*Falco sparverius paulus*), and little blue heron (*Egretta caerulea*). The bald eagle (*Haliaeetus leucocephalus*) has a Moderate probability of occurrence and is protected by the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act and FAC 68A-16.002. The Florida black bear (*Ursus americanus floridanus*) has a Low to Moderate probability of occurrence and is protected in the State of Florida through FAC 68-A-4.009. In addition, there are large contiguous tracts that are connected to undeveloped areas outside the project corridor that have known occurrences of some species that require larger habitats such as the Eastern indigo snake (*Drymarchon couperi*).

Candidate species including the monarch butterfly (*Danaus plexippus*) and tricolored bat (*Perimyotis subflavus*) were also identified as having a Moderate probability of occurrence within the project area with bat species currently protected in the State of Florida by FAC 68-4.001, FAC 68A-29.002 and FAC 68A-9.010.

Four federally Endangered plant species, Britton's beargrass (*Nolina brittoniana*), Lewton's polygala (*Polygala lewtonii*), clasping warea (*Warea amplexifolia*) and longspurred mint (*Dicerandra cornutissima*), and three federally Threatened species, Florida bonamia (*Bonamia grandiflora*), scrub pigeon-wing (*Clitoria fragrans*) and scrub buckwheat (*Eriogonum longifolium* var. *gnaphalifolium*) occur in scrubby habitat, which does occur within the project corridor. Longspurred mint was observed during the field surveys but none of the other protected species were observed during the field review.

The results of the general protected species survey and any species-specific surveys required during the PD&E study have been documented in the NRE, located in the project file. Maps showing the locations of protected species are provided in **Figures 2-9 to 2-17**.

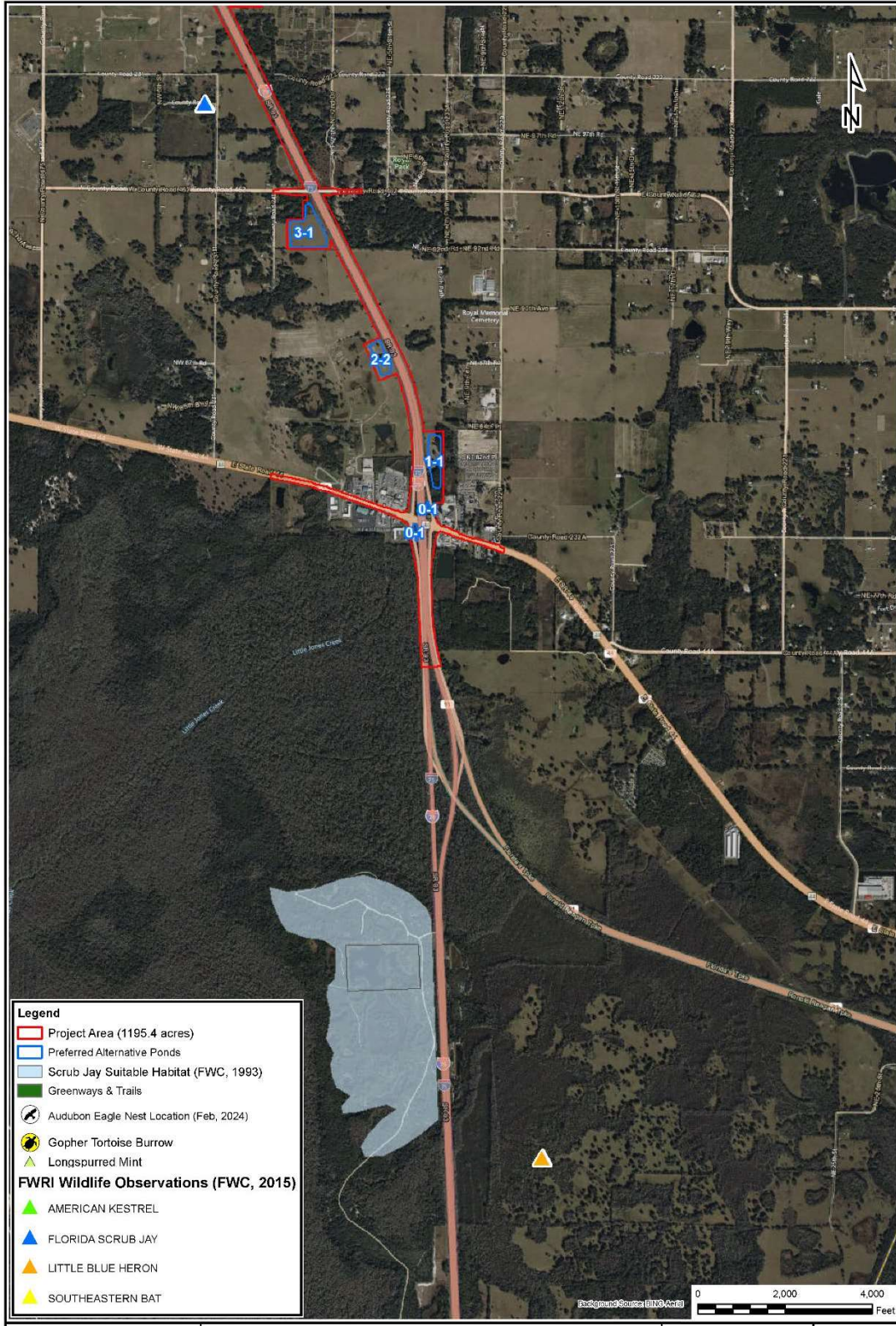


Figure 2-9: Protected Species Map (1 of 9)

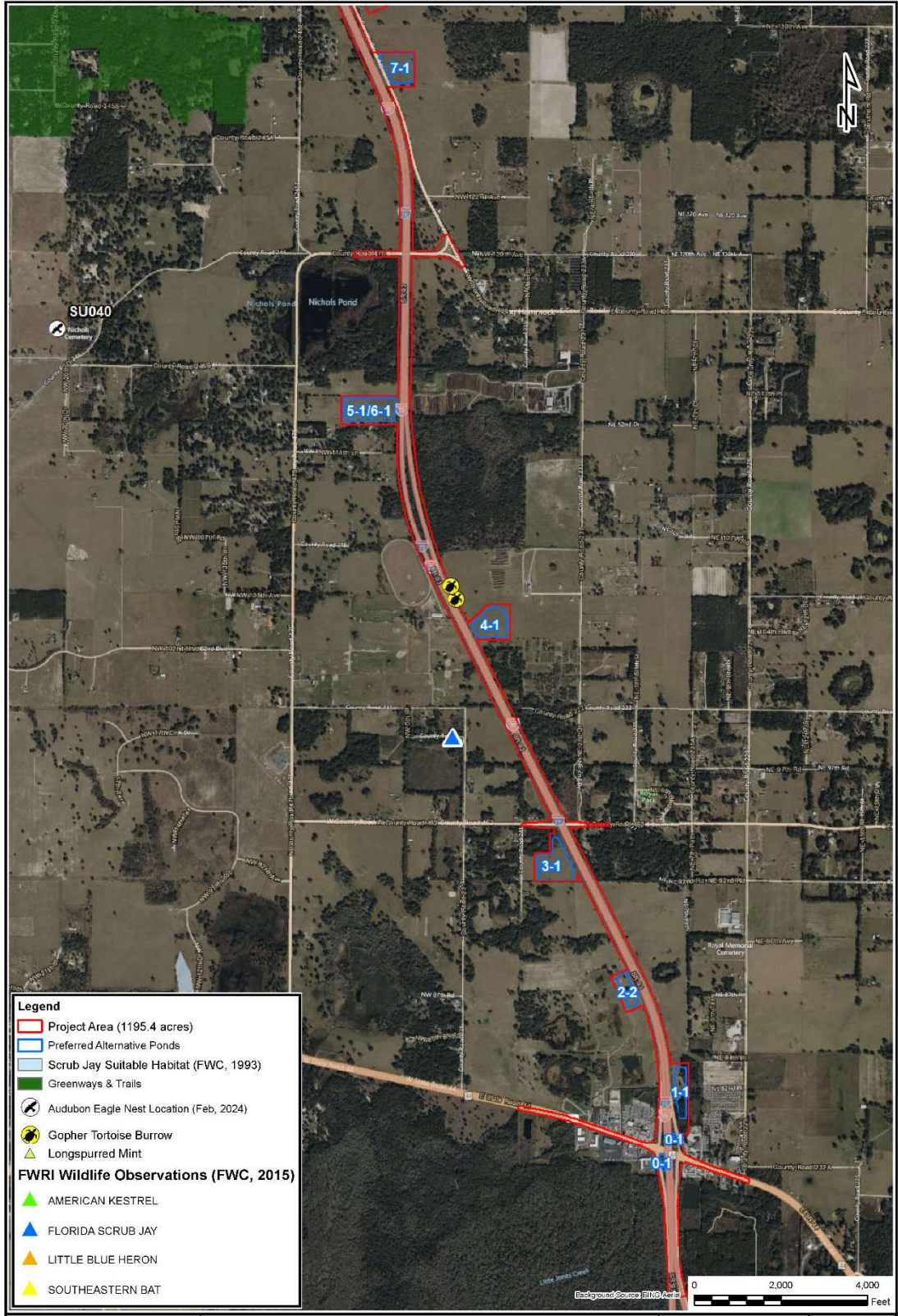


Figure 2-10: Protected Species Map (2 of 9)

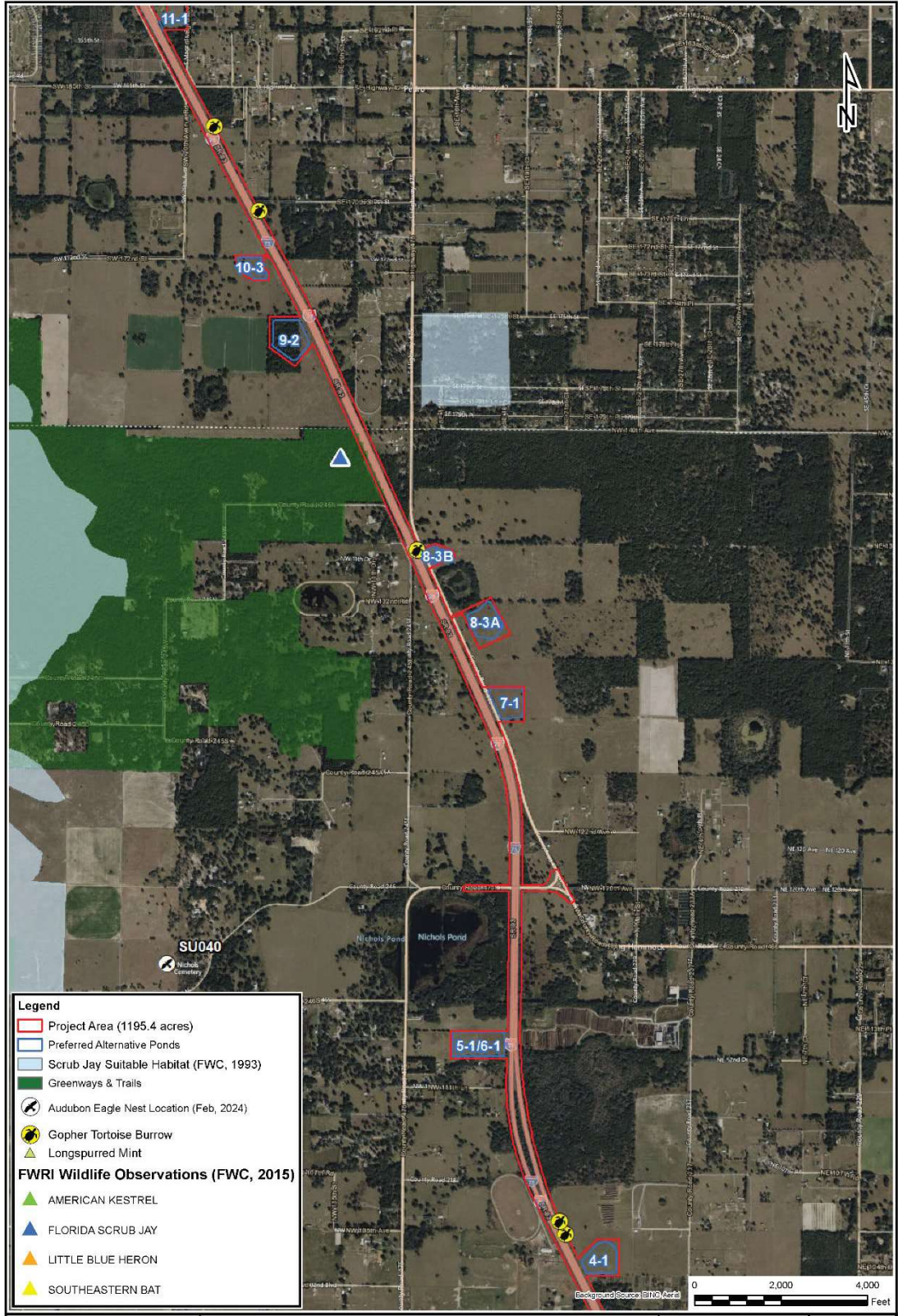


Figure 2-11: Protected Species Map (3 of 9)

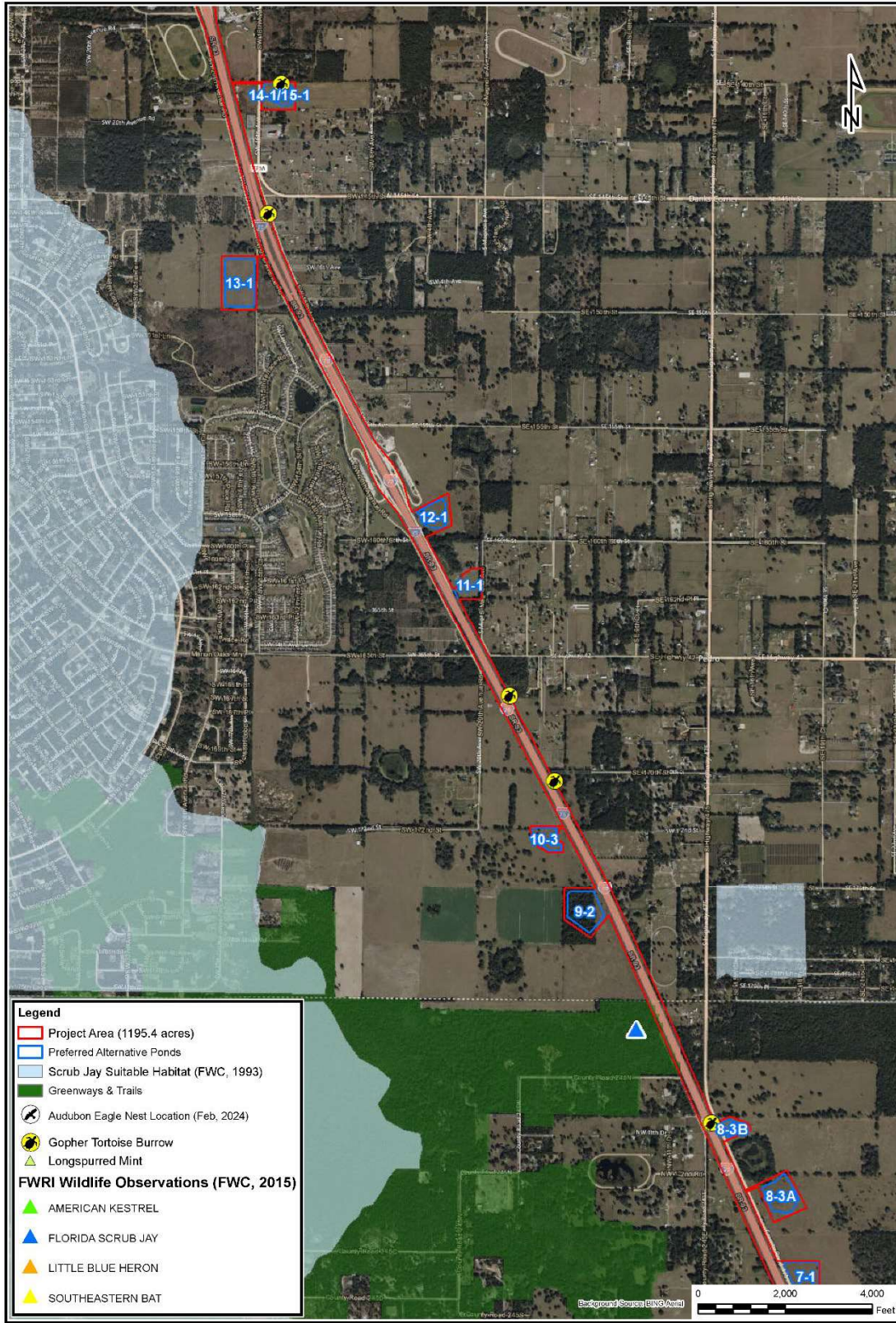


Figure 2-12: Protected Species Map (4 of 9)

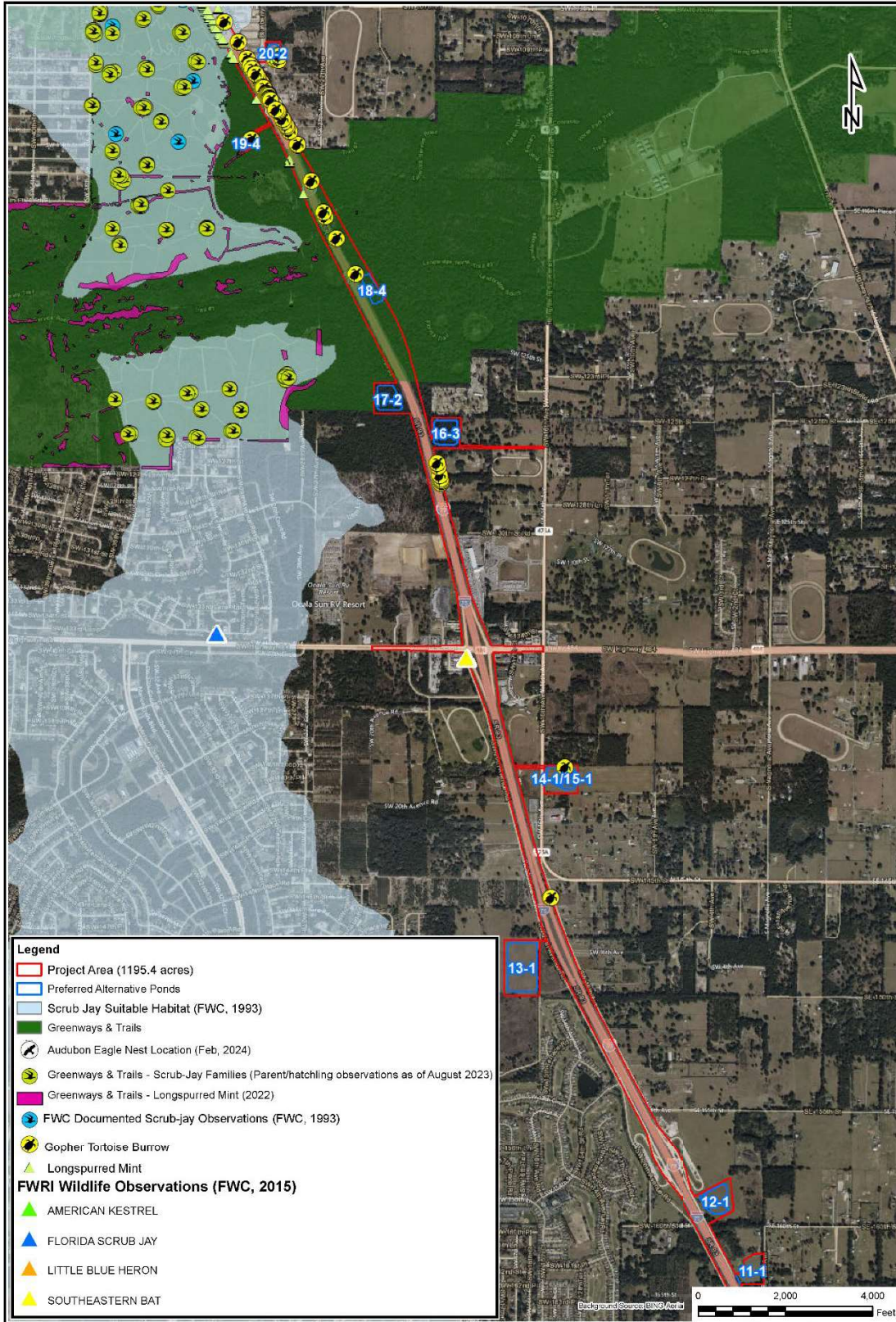


Figure 2-13: Protected Species Map (5 of 9)

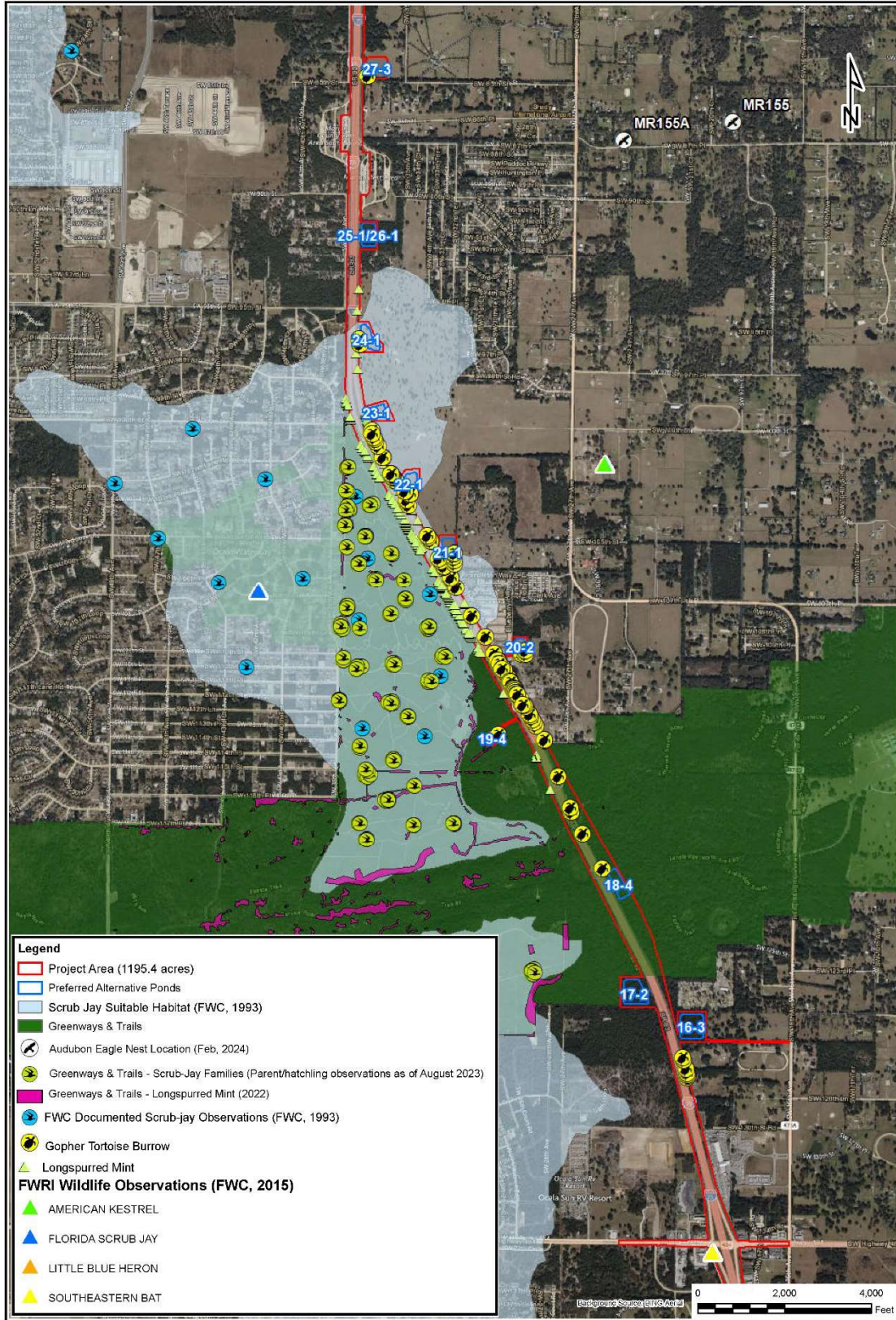


Figure 2-14: Protected Species Map (6 of 9)

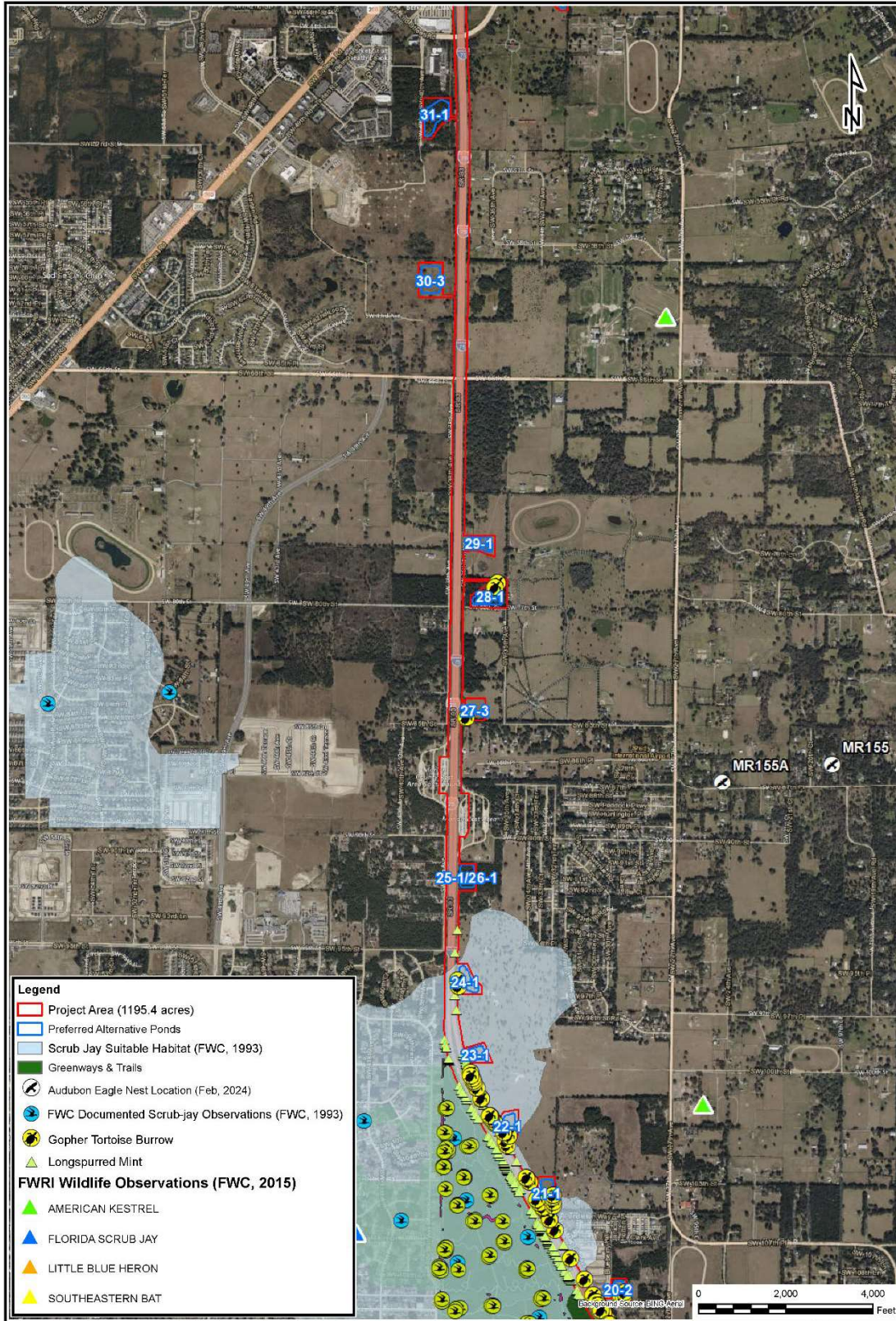


Figure 2-15: Protected Species Map (7 of 9)

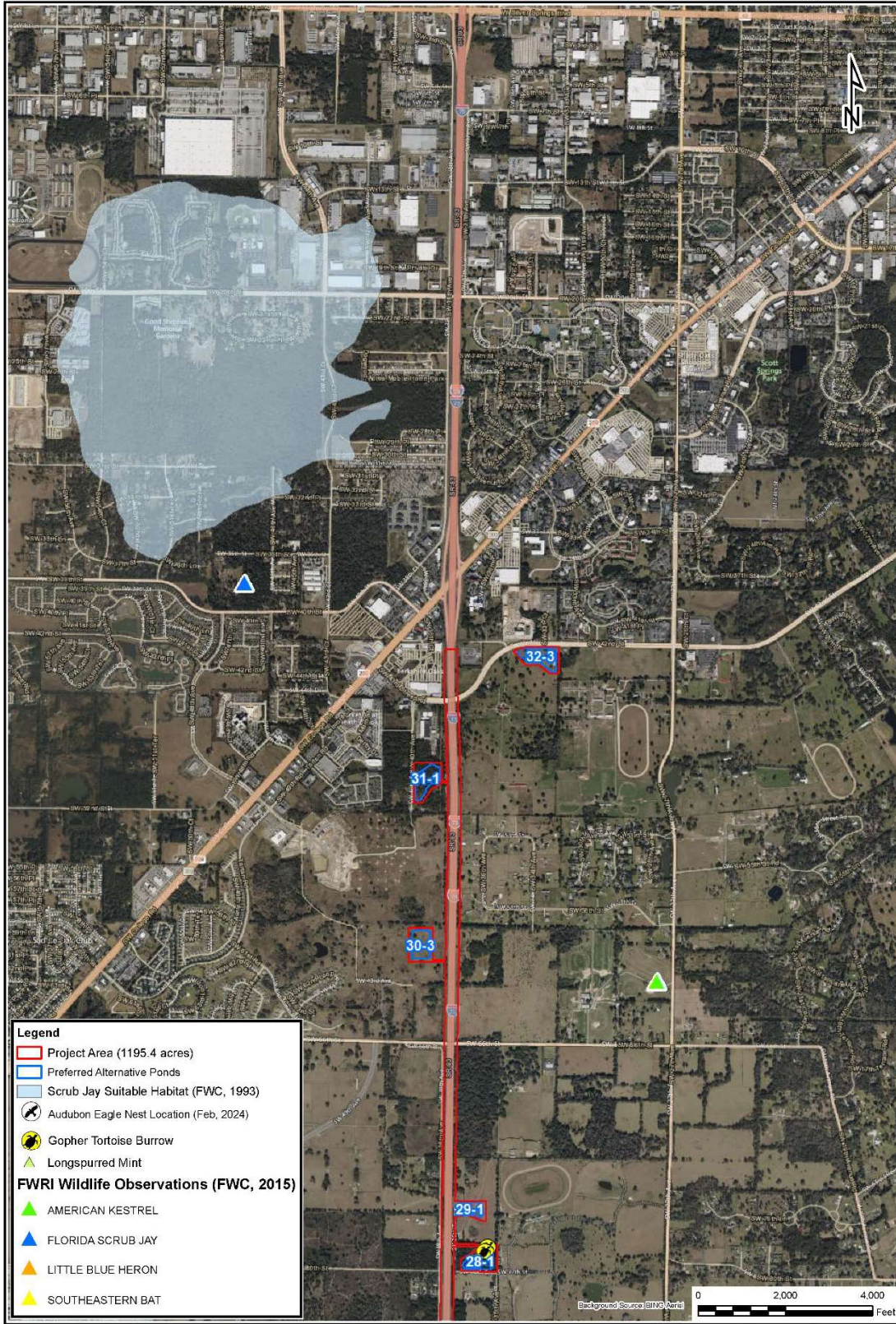


Figure 2-16: Protected Species Map (8 of 9)

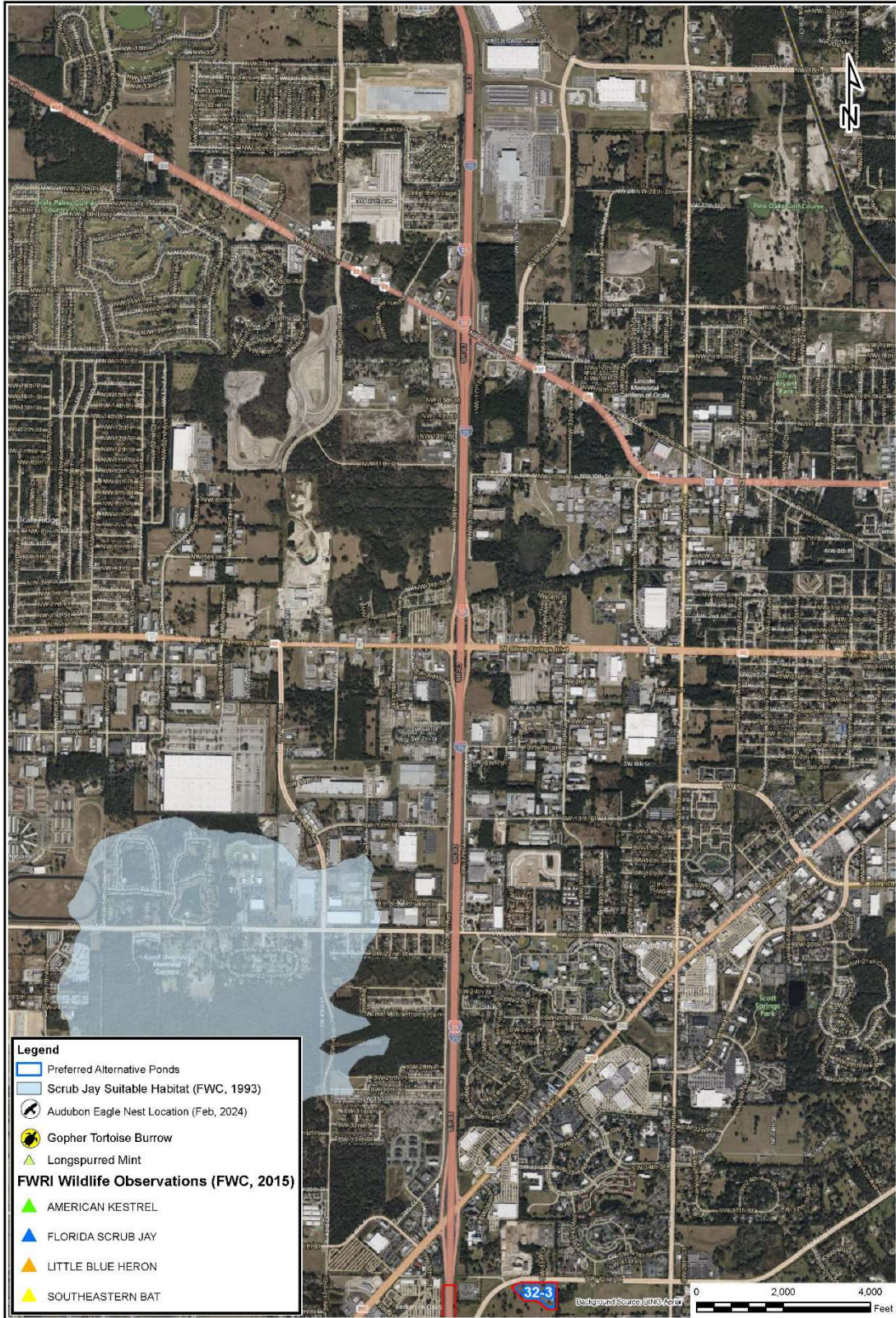


Figure 2-17: Protected Species Map (9 of 9)

2.2.30 *Noise*

Several noise-sensitive land uses exist within the study corridor. FHWA Noise Abatement Criteria (NAC) categorizes land uses into activity categories that have similar sensitivity levels. Most noise sensitive land uses within the study corridor fall under NAC-B - Residential. The NAC-C land uses within the study corridor include religious facilities, equestrian complexes, the Don Garlits Museum of Drag Racing, the Alphabet Land Learning Center, and the SummerGlen golf course. The NAC-E land uses include several motels with on-site swimming pools, businesses with outdoor benches, and restaurants with outdoor tables. The Noise Study Report (NSR), located in the project file, reported 81 noise receptors are currently affected by I-75 traffic noise.

2.2.31 *Contamination Sites*

A Contamination Screening Evaluation was conducted to assess the risk of encountering petroleum or hazardous substance contamination of soil, groundwater, surface water, or sediment that could adversely affect this project. Relevant information from the FDEP, USEPA, and local agencies in Marion and Sumter counties was used to identify known or potential contamination sites within the study area. Additionally, a site reconnaissance of the project study area was conducted on December 13, 2023. Results of the contamination screening evaluation are documented in the project Contamination Screening Evaluation Report (CSER), located in the project file.

Based on the results of the contamination screening activities, Risk Ratings were assigned to each potential contamination site. The 39 site locations are shown on **Figures 2-18** through **2-21** and the contamination status of each site is summarized in **Tables 2-20** and **2-21**. Using the FDOT Risk Ratings a total of 22 Low Risk sites and 17 Medium Risk sites were identified.

Table 2-20: Contamination Low Risk Ratings: Roadway

Site No.	Site Name	Site Address	Risk Rating
1	A Day in The Country Inc	809 S.R. 44	Low
6	Radio Tower 1	N/A	Low
8	Tommy's Tire Shop	418 S.R. 44	Low
9	Black Gold Compost Facility	11424 C.R. 237	Low
10	Radio Tower 2	C.R. 475 North	Low
11	Radio Tower 3	Southwest 20 th Avenue Road	Low
13	Whetstone Oil Co-Southern Road Building	I-75 Weigh Station	Low
15	SummerGlen Golf Course	1450 Southwest 154 th Street Road	Low
17	Summerglen Electrical Substation	14245 Southwest 16 th Avenue	Low
18	Don Garlits Museum of Drag Racing Inc	13700 Southwest 16 th Avenue	Low
22	Quality #193; Marion Oaks Amoco; H&D Service Inc	2045 Southwest Highway 484/2105 Southwest 135 th Street	Low
23	Chevron #47740	2095 Southwest 135 th Street/Highway 484	Low
24	Conrad's Wood Recycling	10920 Southwest 27 th Avenue	Low
26	Radio Tower 4	North of Southwest 66 th Street	Low
27	Radio Tower 5	Southwest 40 th Avenue	Low
29	Industrial Technologies and Services Americas, Inc.	4647 Southwest 40 th Avenue	Low
30	Electrical Substation 2	Southwest 43 rd Street Road	Low
33	Interstate Center	I-75 and S.R. 200	Low
35	Gadco-Ocala 400	3701 Southwest College Road	Low
36	Home Depot #0253	3300 Southwest 35 th Terrace	Low
37	Historical Railroad	S.R. 200 and I-75 Intersection	Low
38	Agricultural Land Use and Tree Farms	East and West of I-75	Low

Table 2-21: Contamination Medium Risk Ratings: Roadway

Site No.	Site Name	Site Address	Risk Rating
2	Apec-Treeline #842	861 East Highway 44	Medium
3	Florida Citrus Center #400; Sunoco Service Station #06146419; Wareco Service Center #576	753 East S.R. 44/7993 Northeast 7 th Drive	Medium
4	Former BP Station	549 S.R. 44	Medium
5	Pilot #4556; Wilco Travel Plaza #4510	744/768 East Highway 44	Medium
7	Wildwood Travel Center #53	556 East S.R. 44	Medium
12	Tampa Bay Auto Transport	I-75 Southbound Mile Marker 337.5	Medium
14	Circle Express Spill	Near I-75 Weigh Station	Medium
16	Florida Peach – Belleview	East of I-75	Medium
19	Gate #133	1800 Southwest Highway 484	Medium
20	Pilot Travel Center #293	2020 Southwest 135 th Street/Southwest Highway 484	Medium
21	Florida Citrus Center #30	1805 Southwest Highway 484/135 th Street	Medium
25	Mike’s Mobile Repair Service	I-75 Northbound Mile Marker 344	Medium
28	Eagle Transport	I-75 Northbound Mile Marker 349	Medium
31	Sunshine Food #250; Shealy J L – Historical Gas Station	3710/3740 Southwest College Road	Medium
32	Raceway #6721	3708 Southwest College Road	Medium
34	Diamond Oil S.R. 200	3711 Southwest College Road	Medium
39	Area of Pits-Dumps Complex, Udorthents	East and West of I-75	Medium

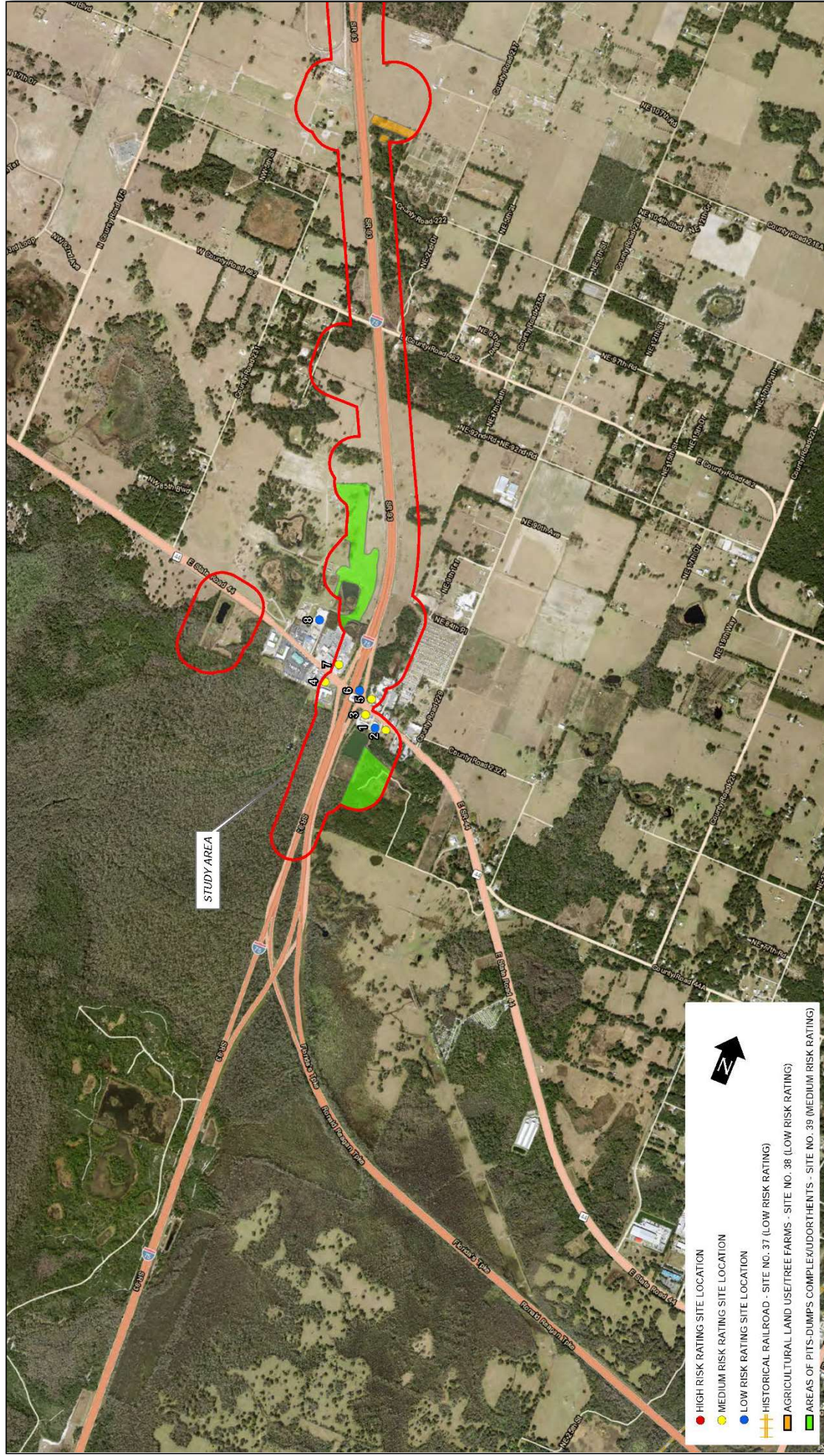


Figure 2-18: Potential Contamination Site Map (1 of 4)

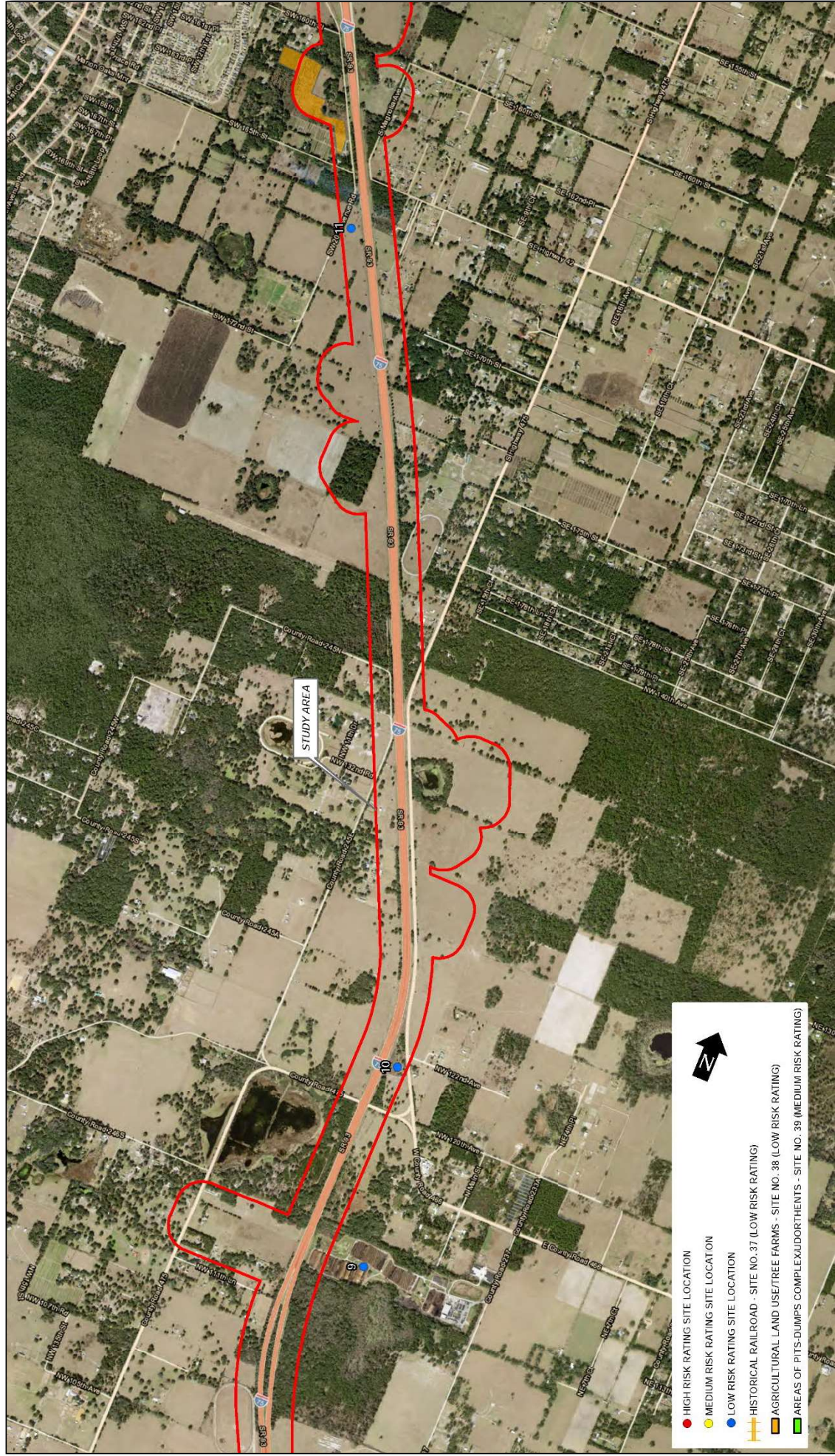


Figure 2-19: Potential Contamination Site Map (2 of 4)

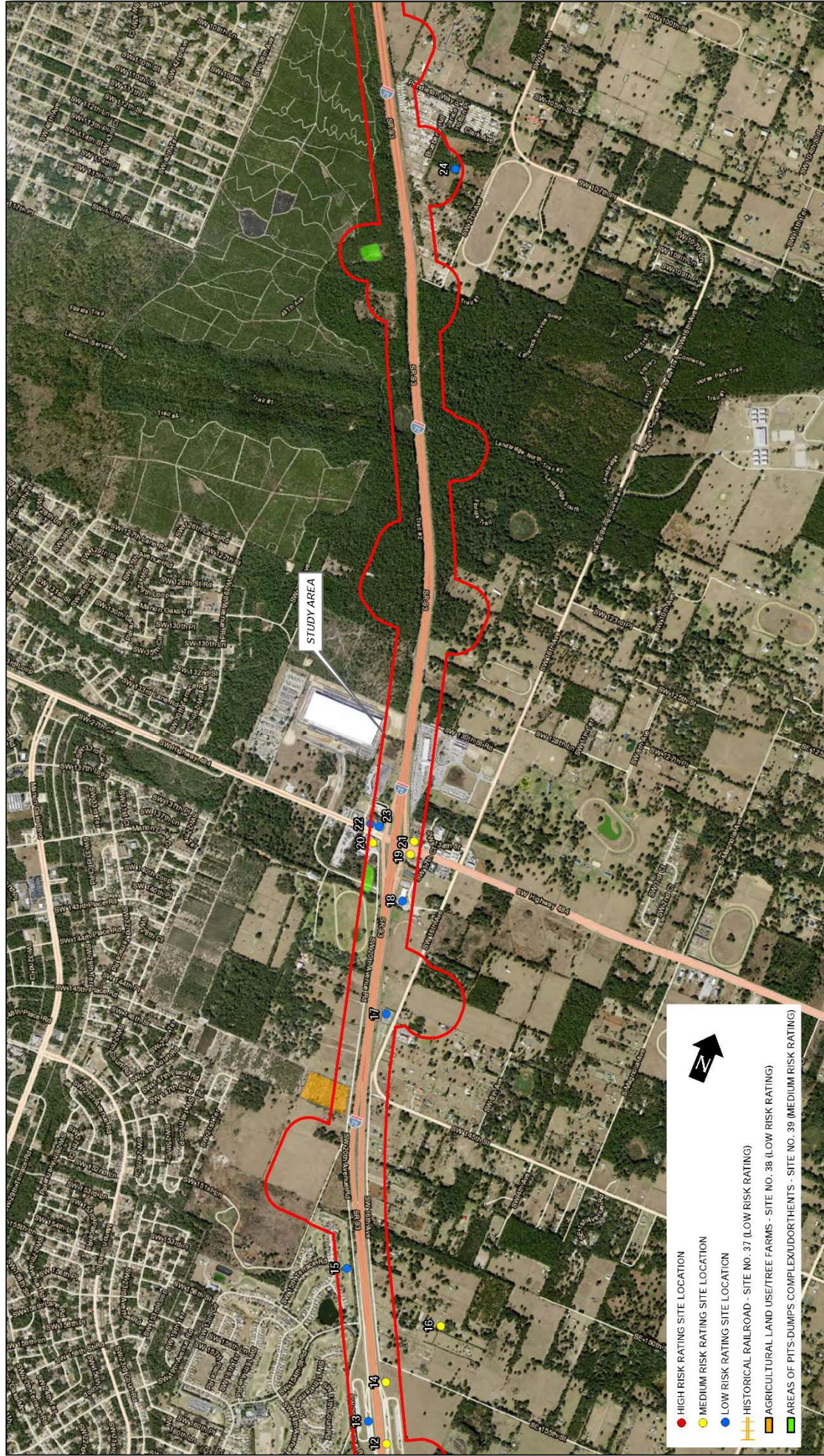


Figure 2-20: Potential Contamination Site Map (3 of 4)

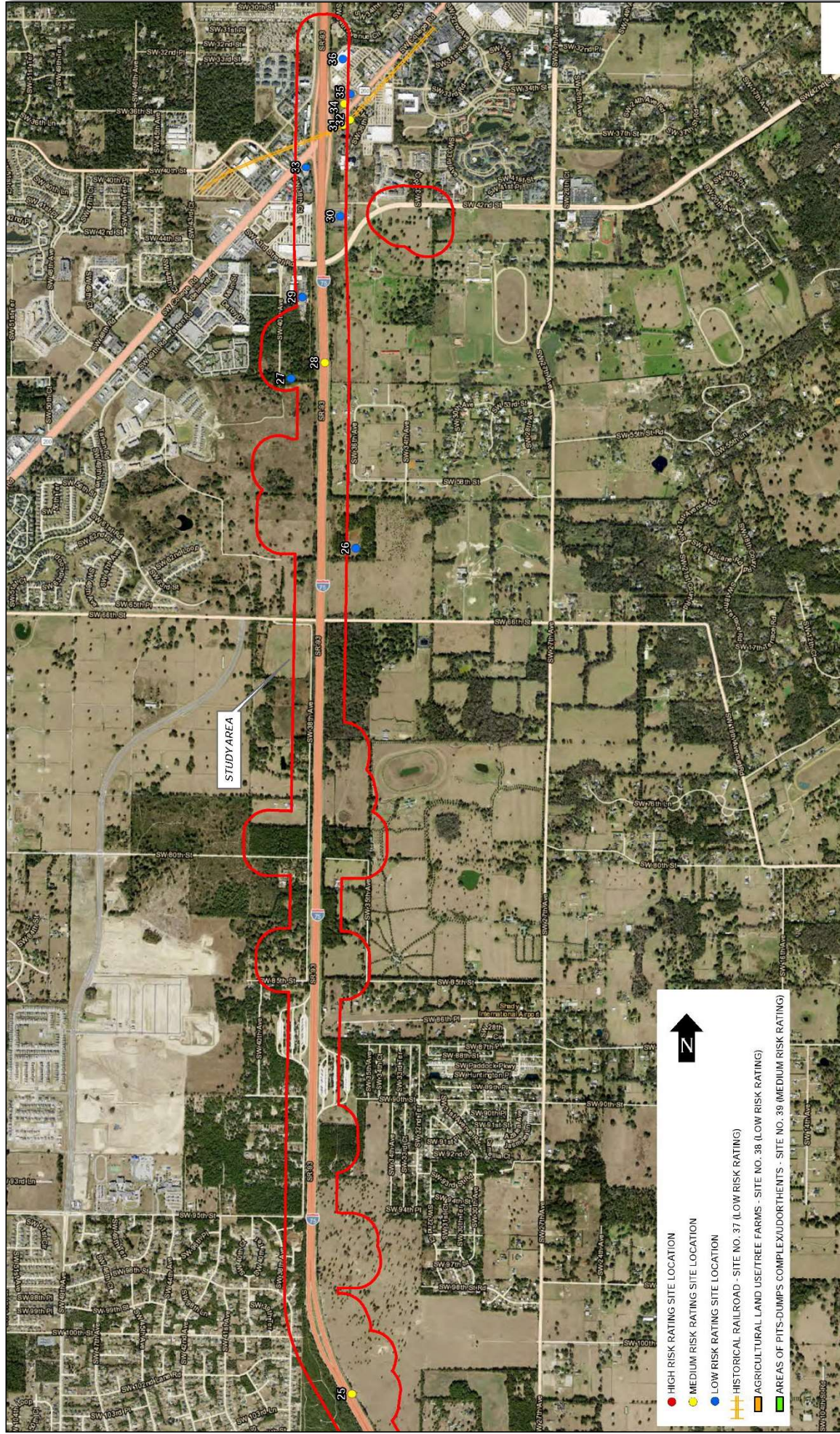


Figure 2-21: Potential Contamination Site Map (4 of 4)

3 FUTURE CONDITIONS

The future conditions identify the best approximation of land use, travel demand and known improvements in the corridor at the time of the study. The future growth in the surrounding corridor and the development of the future travel demand model is summarized in the following discussion. Context classification does not apply to limited access facilities and, therefore, does not apply to I-75. The development of future travel demand and traffic conditions is illustrated in detail in the PTAR.

3.1 Future Traffic Considerations

To support the design year traffic analysis and forecasts, a future year (2040) subarea model was developed based on the TSM 2045 scenario. Two future model scenarios, No-Build and Build were developed.

Reviews of network geometry were conducted along the I-75 study corridor for the future year. Network modifications made for the model base year (2015) were applied in the model future year (2040) scenarios.

Development of project traffic volumes involved the following:

- The volume projections from the previously completed I-75 Master Plan were used in the PTAR to support the ongoing auxiliary lane PD&E.
- Recommended growth rates were determined based on a comprehensive evaluation of historic, BEBR, and model growth rates. The applied linear growth rates and the AADT growth per year are summarized in the tables provided in PTAR. Generally, the model growth per year was applied to the existing year counts. The determination between model slope and model growth rate was made based on the impacts each has on the future AADT. Due to differences in the magnitude of existing AADT versus the base year AADT in the model, use of the model growth rate or model slope may result in an unrealistically low or high future year AADT projection. These AADT projections using both methods were reviewed prior to selecting one approach over another. For instances where the model growth and slope result in unreasonable AADT projections, the historical growth rates were considered and used.
- Design Year design-hour turning movement volumes were developed for three peak hours (i.e., AM, PM, and weekend midday). Standard K and D factors were applied to the Design Year AADTs to estimate Directional Design Hour Volumes (DDHVs). A methodology that follows the iterative, growth-factoring procedures described in the *NCHRP Report 765*, which is a method consistent with the acceptable tools described in FDOT's *Project Traffic Forecasting Handbook* (2019), was used to convert future segment DDHVs into intersection turning movement volumes for the 2050 AM, PM, and weekend midday peak hours in the approved Master Plan. 2030 and 2040 peak hour volumes were developed based on an interpolation of 2019 existing and 2050 Master Plan volumes.
- The raw intersection turning movement volumes developed using the NCHRP 765 methodologies were reviewed against the existing turning movement volumes to ensure that

volumes were not less in the future than the existing. Volumes along the arterials were balanced accordingly between ramp terminal intersections and between intersections where driveways do not exist.

Traffic operational analyses were conducted for the freeway mainline conditions using HCM 7th Edition methodologies as implemented by Highway Capacity Software (HCS2023). Traffic operational analyses were conducted for the interchange conditions using HCM methodologies as implemented by Synchro 12 software.

The analysis results indicated the following:

Mainline

Opening Year (2030): Additional mainline capacity will be needed between north of S.R. 200 (beginning of the study limits) to the C.R. 484 interchange. Additional capacity is expected to be needed to accommodate average weekday PM peak period traffic in 2030. Severe congestion (speeds lower than 25 mph) is expected to be present between the beginning of the study limits and SR 200. These are due to expected bottlenecks at the SR 200 interchange. The southbound travel time is expected to increase by up to 3.3 minutes (approximately a 17% increase) versus the 2019 existing condition.

Design Year (2040): Additional mainline capacity will be needed between north of SR 200 (beginning of the study limits) to the Turnpike interchange. Additional capacity is expected to be needed to accommodate average weekday AM, weekday PM, and weekend midday peak period traffic in 2040. Severe congestion (speeds lower than 25 mph) is expected to be present between the beginning of the study limits and CR 484. These are due to expected bottlenecks at the S.R. 200 and C.R. 484 interchanges. The southbound travel time is expected to increase by up to 11.5 minutes (approximately a 59% increase) versus the 2019 existing condition.

Interchanges

S.R. 44: Each of the movements at the S.R. 44 at I-75 ramp terminal intersections are expected to operate at LOS E or better and under capacity (v/c ratio less than 1.0) during each of the 2040 peak hours analyzed. The 95th percentile queues along the SR 44 off-ramps are not expected to extend into the portion of the ramps designated for deceleration during the 2040 No-Build peak hours analyzed. The overall intersection LOS at the ramp terminal intersections is estimated to be LOS D or better in the 2040 No-Build AM, PM, and weekend peak hours analyzed.

C.R. 484: Each of the movements at the C.R. 484 at I-75 ramp terminal intersections are expected to operate under capacity (v/c ratio less than 1.0) during each of the 2040 No-Build peak hours. The C.R. 484 at I-75 northbound and southbound ramp terminal intersections are anticipated to operate at a LOS D or better during each AM, PM, and weekend peak hours. The 95th percentile queues along the C.R. 484 off-ramps are not expected to extend into the portion of the ramps designated for deceleration during the 2040 No-Build peak hours analyzed.

S.R. 200: Each of the movements at the S.R. 200 at I-75 ramp terminal intersections are expected to operate under capacity (v/c ratio less than 1.0) during each of the 2040 No-Build peak hours. The SR 200 at I-75 northbound and southbound ramp terminal intersections are anticipated to operate at overall intersection LOS D or better during the 2040 AM, PM, and weekend peak hours.

The 95th percentile queues along the SR 200 off ramps are not expected to extend into the portion of the ramps designated for deceleration during the 2040 No-Build peak hours analyzed.

3.2 Future Land Use

The anticipated future land uses in the study area are consistent with the existing uses. The Sumter County and Marion County future land use map classifies the portion of the study area within the unincorporated county as Rural Land.

The Sumter County's future land use designations within the study area are mixed use, agricultural and recreational. The Marion County's future land use within the study area are medium residential area, Preservation, and Urban/rural reserves (UGB). Sumter County and Marion County future land use maps are shown below in **Figure 3-1** and **Figure 3-2** respectively. The source of these maps are Sumter County Unified Comprehensive Plan 2023 and Marion County Comprehensive Plan. The Environmental Technical Advisory Team (ETAT) expects that the project is not anticipated to impact future land use patterns.

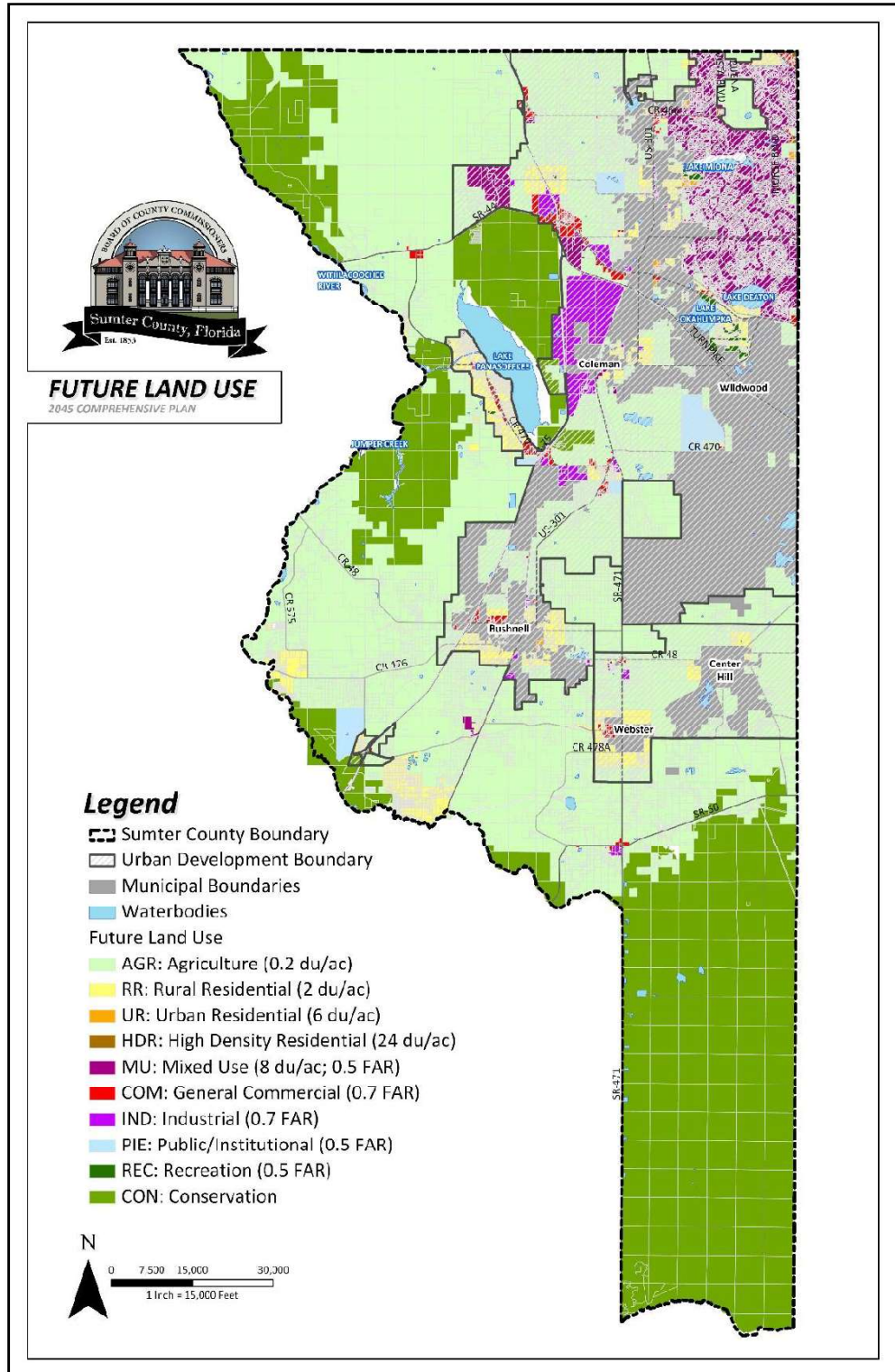


Figure 3-1: Sumter County 2045 Future Land Use Map

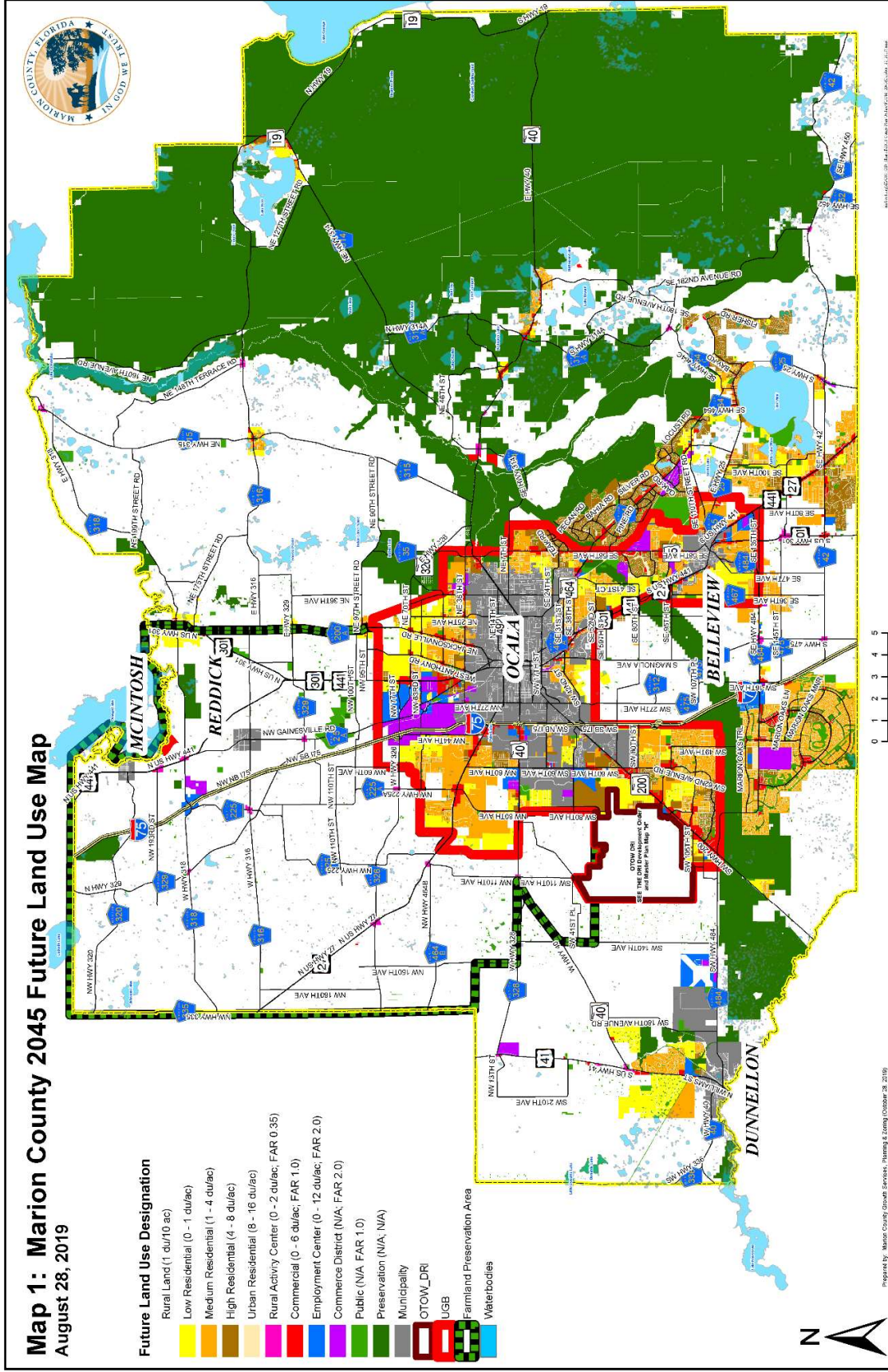


Figure 3-2: Marion County Future Land Use Map

4 DESIGN CONTROLS AND CRITERIA

Several design standards and manuals were evaluated to lay out the applicable design criteria for this PD&E study. The design criteria is based on the parameters outlined in the current edition (as of February 2024) of these publications:

- FDOT FDM, 2024
- FDOT Structures Manual, AASHTO - LRFD Bridge Design Specifications (9th edition), 2020
- FDOT Manual of Uniform Minimum Standards for Design, 2016
- FDOT Standard Specifications for Road and Bridge Construction, 2022
- FDOT Standard Plans for Road and Bridge Construction, 2023-2024
- FDOT Utility Accommodation Manual, FDOT, 2017
- FDOT Drainage Manual, 2024
- FDOT Highway Safety Manual, 2015
- Manual of Uniform Traffic Control Devices (MUTCD), FHWA, 2023
- Roadside Design Guide, AASHTO, 2011

The design controls and standards used to develop the typical sections, horizontal and vertical alignment requirements, and other design features are summarized in the following section.

4.1 Design Controls

The design controls that were used in the I-75 alternatives development are shown in **Table 4-1**.

Table 4-1: I-75 Design Controls

Design Control	Value	Source
Functional Classification	Rural Principal Arterial Interstate	Straight Line Diagram
Design Speed	70 mph	FDM Table 201.5.1
Design Vehicle	WB-62 FL	FDOT Scope

The C.R. 462 overpass will be replaced to accommodate the auxiliary lane widening. The design controls that were used in the development of the C.R. 462 alternatives are shown in **Table 4-2**.

Table 4-2: C.R. 462 Design Controls

Design Control	Value	Source
Functional Classification	Rural-Minor Collector	N/A
Design Speed	45 mph	FDM Table 201.5.1

The C.R. 475 overpass will be replaced to accommodate the auxiliary lane widening. The design controls that were used in the C.R. 475 street alternatives development are shown in **Table 4-3**.

Table 4-3: C.R. 475 Street Design Controls

Design Control	Value	Source
Functional Classification	Rural Minor Collector	N/A
Design Speed	45 mph	FDM Table 201.5.1

The SW 66th Street overpass will be replaced to accommodate the auxiliary lane widening. The design controls that were used in the development of the SW 66th Street alternatives are shown in **Table 4-4**.

Table 4-4: SW 66th Street Design Controls

Design Control	Value	Source
Functional Classification	Urban Collector	N/A
Design Speed	45 mph	FDM Table 201.5.1

4.2 Design Criteria

4.2.1 Roadway Design Criteria

The roadway design criteria used in the I-75 alternative development are listed in **Table 4-5**.

Table 4-5: I-75 Roadway Design Criteria

Design Control	Value	Source
Lane Width	12 feet	FDM (Section 211.2)
Cross Slopes	0.02 to 0.03	FDM (Figure 211.2.1)
Median Width	64 feet (Without Barrier) 26 feet (With Barrier)	FDM (Table 211.3.1)
Shoulder Width	12 feet (%10 feet paved)	FDM (Table 211.4.1)
Superelevation	10 Max	FDM (Table 210.9.1)
Border Width (Min.)	94 feet	FDM (Section 211.6)
Clear Zone Width Recoverable Terrain (Min.)	36 feet	FDM (Table 215.2.1)
Stopping Sight Distance	861 feet	FDM (Table 211.10.1)
Horizontal Alignment		
Maximum Deflection w/o HC	0° 45'	FDM (Section 211.7.1)
Maximum Curvature	3° 30'	FDM (Table 210.9.1)
Maximum Degree w/o SE	0° 15'	FDM (Table 210.9.1)
Desirable Length of Curve	2,100 feet	FDM (Table 211.7.1)
Minimum Length of Curve	1,050 feet	FDM (Table 211.7.1)
Vertical Alignment		
Vertical Grade	3% Max	FDM (Table 211.9.1)
Vertical Clearance	16.5 ft (Over roadway)	FDM (Table 260.6.1)
Min. K, Crest Curve	506	FDM (Table 211.9.2)
Minimum Length (Crest)	1,000 feet – Open Highway 1,800 feet – Within Interchanges	FDM (Table 211.9.3)
Min. K, Sag Curve	206	FDM (Table 211.9.2)
Minimum Length (Sag)	800	FDM (Table 211.9.3)
HC = horizontal curve; SE = superelevation		

The roadway design criteria used to develop the C.R. 462, C.R. 475, and SW 66th Street preliminary alternatives are listed in **Table 4-6**.

Table 4-6: C.R. 475, C.R. 462 and SW 66th Street Roadway Design Criteria

Design Control	Value	Source
	Arterial/collector	
Lane Width	12 feet	FDM (Table 210.2.1 Note 2)
Cross Slopes	0.02	FDM (Figure 210.2.1)
Shoulder Width on Bridge	8 feet (low volume)	FDM (Figure 260.1.2)
Superelevation	5% Max	FDM (Table 210.9.2)
Border Width (Min.)	12 feet	FDM (Table 210.7.1)
Clear Zone Width Recoverable Terrain (Min.)	24 feet	FDM (Table 215.2.1)
Stopping Sight Distance	360 feet	FDM (Table 210.11.1)
Horizontal Alignment		
Maximum Deflection w/o HC	0° 45' 00"	FDM (Section 210.8.1)
Maximum Curvature	8° 15'	FDM (Table 210.9.2)
Maximum Degree w/o SE	2° 45'	FDM (Table 210.9.2)
Desirable Length of Curve	675 feet	FDM (Table 210.8.1)
Minimum Length of Curve	400 feet	FDM (Table 210.8.1)
Vertical Alignment		
Vertical Grade	6% Max	FDM (Table 210.10.1)
Vertical Clearance	16.5 ft (Over roadway)	FDM (Table 260.6.1)
Min. K, Crest Curve	98	FDM (Table 210.10.3)
Minimum Length (Crest)	135 ft	FDM (Table 210.10.4)
Min. K, Sag Curve	79	FDM (Table 210.10.3)
Minimum Length (Sag)	135 ft	FDM (Table 210.10.4)
Minimum Vertical Clearance for Bridges		
Roadway over Arterial	16.5' for New Bridges	FDM (Table 260.6.1)
	16.0' for Existing Bridges	FDM (Table 260.6.1)
Minimum Widths for Existing Bridges (Divided; Median Separator)		
Traveled Way Width	Total width of Approach Lanes	FDM (Table 260.9.1)
Shoulder Width (ft)	1.5'(Median); 4.0'(outside)	FDM (Table 260.9.1)
HC = horizontal curve; SE = superelevation		

4.2.2 Drainage Design Criteria

The project limits exist within two Florida counties, Sumter and Marion. The typical flow pattern is east to west through the project corridor. The topography within the project area ranges from relatively flat in Sumter County to rolling hills in Marion County. Elevations range from 45' to 65' within Sumter County and from 65' to 113' in Marion County. All elevations are referenced to North American Vertical Datum (NAVD88).

Drainage conveyance within the project limits is typically accomplished via open swales, both within the roadside areas and in the median. Stormwater runoff within the swales is conveyed downstream to historic receiving basins including cross drain locations and natural depressions.

Two primary watersheds exist within the limits of the project; the Withlacoochee River Watershed, regulated and managed by the SWFWMD, and the Ocklawaha River Watershed, regulated and managed by the SJRWMD. Two major springsheds also exist within the project limits:

- Silver Springs Springshed, listed as Outstanding Florida Springs, begins north of S.R. 44 on the east side of I-75 and continues north on the east side of I-75 to the project end.
- Rainbow Springs and Rainbow River Springshed on the west side of I-75, occurs in the northern portion of the study area in Marion County.

Stormwater management design criteria required by both WMDs are uniquely different in regard to water quality treatment and water quantity attenuation. **Table 4-7** itemizes each WMD’s water quality design criteria.

Table 4-7: Water Management Design Criteria for Water Quality

SWFWMD	SJRWMD
<u>Dry Retention</u> : Half-inch over impervious, 72-hour recovery	<u>Dry Retention</u> : One-inch or 1.75-inches over new impervious, 72-hour recovery
<u>Wet Detention</u> : 1-inch over the impervious	<u>Wet Detention</u> : 1-inch or 2.5-inches over new impervious
<u>Open Basin</u> : 25-year/24-hour peak discharge <u>Closed Basin</u> : 100-year/24-hour retention volume	<u>Open Basin</u> : 25-year/24-hour peak discharge <u>Closed Basin</u> : 25-year/96-hour retention volume, 14-day recovery

4.2.2.1 Presumptive Water Quality

The project lies within the jurisdiction of the SWFWMD and SJRWMD. I-75 forms the boundary between the two WMDs (i.e. SWFWMD and SJRWMD), with west of I-75 falling under the jurisdiction of SWFWMD and east of I-75 falling under the jurisdiction of SJRWMD. Pond Siting Reports were developed for both Sumter and Marion counties located in the project file.

All FDOT projects must comply with the prevailing statewide regulations, including Chapter 62-330 of the Florida Administrative Code (F.A.C.). The required volume of runoff to be treated from a site is determined by the type of treatment system used, i.e. wet detention, detention with effluent filtration, on-line retention or off-line retention treatment systems. Wet detention shall treat one-inch of runoff from the contributing area. On-line and off-line retention systems shall treat the runoff from the first one-inch of rainfall or for projects with drainage areas less than 100 acres, the first one-half inch of runoff. Further, if a project discharges directly into an OFW, 50% additional treatment volume will also be required. It is anticipated that the proposed stormwater management sites for this project will not discharge to either the Ocklawaha River or Withlacoochee River OFW.

4.2.2.2 Impaired Water Body Rule

Chapter 62-303, F.A.C describes impaired water bodies. Water bodies that have been assessed and determined to be impaired by the FDEP due to pollutant discharges are included on the “Verified List” adopted by FDEP Secretarial Order.

The waterbodies within these watersheds are not nutrient impaired; however, there are Best Management Action Plans for Silver Springs and Rainbow Springs. The corridor traverses the watersheds for Silver Springs and Rainbow Springs. The Withlacoochee River and the Ocklawaha River are classified as OFWs by the FDEP. Since there are no direct discharges within the corridor, no additional treatment is required.

4.2.2.3 Water Quantity

The SWFWMD Applicant’s Handbook Volume II (Applicant’s Handbook) states that reasonable assurance must be provided for that the proposed construction, alteration, operation, maintenance, removal or abandonment of the works will:

- Not cause adverse water quantity impacts to receiving waters and adjacent lands;
- Not cause adverse flooding to on-site or off-site property;
- Not cause adverse impacts to existing surface water storage and conveyance capabilities; and
- Not adversely impact the maintenance of surface or ground water levels or surface water flows established pursuant to Section 373.042, Florida Statute (F.S.).

Projects located within an open drainage basin; the allowable discharge is:

1. The historic discharge, which is the peak rate at which runoff leaves a parcel of land by gravity under existing site conditions, or the legally allowable discharge at the time of permit application; or
2. Amounts determined in the previous District permit actions relevant to the project.

For the purposes on this project, open basin discharges and peak stages for the existing and developed conditions will be computed using the SWFWMD’s 24-hour, 25-year rainfall maps and the NRCS Type II Florida Modified 24-hour rainfall distribution with an antecedent moisture condition II.

However, for watersheds without a positive outfall or located within a closed drainage basin, the required retention volume shall be the post-development runoff volume less the pre-development runoff volume computed using the SWFWMD’s 24-hour, 100-year rainfall map and the NRCS Type II Florida Modified 24-hour rainfall distribution with an antecedent moisture condition II. However, FDOT requires the post-development volumes not exceed the pre-development volumes for the critical duration (1-hour through 10-day), up to and including the 100-year frequency.

The FDOT and the statewide ERP program have several criteria which will impact the amount of right of way required for stormwater treatment. Some of these FDOT criteria are:

- Closed Basins – Retention Volume should recover at a rate that half of the volume is available in 7 days with the total volume available in 30 days.
- Soil conditions may limit recovery rates of some ponds. A secondary approach and criterion may need to be used in problematic basins with approval from the D5 Drainage Engineer.
- A minimum of 20-foot horizontal distance for pond maintenance between Normal Pool Level (NPL) and adjacent easement or right of way line.
- A minimum of 15-foot within this pond maintenance area shall be at a slope of 1:8 of flatter.
- A 1-foot minimum freeboard is required between the maximum design pond stage and inside maintenance berm top of bank.
- Fences should only be installed when a documented maintenance need for restricted access has been demonstrated.

Relevant ERP criteria for this project include:

- Wet detention stormwater facilities should provide treatment for 1-inch of runoff of the contributing area.
- A minimum of 35% of the littoral zone, concentrated at the outfall shall be required for biological assimilation of pollutants. This percentage is based on the ratio of vegetated littoral zone to the surface area of the pond at the control elevation.
- The maximum stacking height for treatment volume for wet stormwater facilities is 18-inches with a littoral shelf.
- The littoral zone shall be no deeper than 3.5 feet below the design overflow elevation.
- Wet detention stormwater facilities should have an average length to width ratio of 2:1 to maximize the flow path of water from the inlet to the outlet to promote good mixing.
- The wet detention system's treatment volume shall be discharged in no less than 120 hours (5 days) with no more than one-half the total volume being discharged within the first 60 hours (2.5 days).
- Due to the detention time required for wet ponds, only that volume which drains below the overflow elevation within 36 hours may be counted as part of the volume required for water quantity storage under Part III of the Applicant's Handbook.
- Dry retention stormwater facilities should recover the treatment volume within 72 hours for open basins.

- Closed Basins – If soil conditions are not sufficient for percolation, then detention must be provided for a duration sufficient to prevent adverse flood stages.
- Offsite runoff that is co-mingled with project runoff may not require stormwater treatment based on the flexibility for State Transportation projects.
- Stormwater treatment facilities shall not be constructed within 100 feet of an existing public drinking water well and shall not be constructed within 75 feet of an existing private drinking water well.

4.2.2.4 Floodplain Compensation

The FEMA NFHL Viewer was referred (2013 and 2017) for Sumter and Marion counties, it depicts Zone A and Zone AE floodplain limits in various locations along the I-75 project limits.

The proposed auxiliary lane project includes widening the area within isolated floodplains. These floodplains are primarily relatively shallow localized depressions, with limited offsite contributing area. Many of these depressions are associated with the existing linear stormwater management facilities within the limited access right of way. There are no floodways associated with the project area. All floodplain impacts are estimated from the FEMA floodplain GIS layers and 2-foot contour maps, and volumes will be replaced by balancing cut/fill either within the right of way, or by the addition of equivalent compensatory volume within the proposed stormwater management facilities.

A Location Hydraulics Report (LHR) was prepared under separate cover and can be found in the project file. Modifications to existing drainage structures such as extending cross drains and median drains included in this project will result in an insignificant change in their capacity to carry floodwater. These modifications will cause minimal increases in flood heights and flood limits which will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant change in flood risks or damage. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes as the result of modifications to existing drainage structures. Therefore, it has been determined that this encroachment is not significant.

5 ALTERNATIVES ANALYSIS

Alternatives Considered

This Section presents the alternatives analysis conducted for this I-75 PD&E Study. Alternatives considered include the No-Build Alternative and Build Alternatives. **Tables 5-2** and **5-3** at the end of this Section presents the summary of project impacts and costs.

5.1 No-Build (No-Action) Alternative

The No-Build Alternative includes no changes to I-75 within the study area other than routine maintenance. The No-Build Alternative requires no additional expenditure of funds and has no additional environmental impacts. Although the No-Build Alternative does not meet the purpose and need for the project and offers no future capacity, operational, or safety improvements, it was considered as a viable alternative throughout the study process and served as the basis of comparison for the build alternatives.

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

I-75 is part of FDOT's Integrated Corridor Management System and TSM&O strategies along the I-75 corridor, including this project, which have already been employed or will be deployed in the future. TSM&O is a program used to actively manage the multimodal transportation network, measuring performance, streamlining and improving the existing system, promoting effective cooperation/collaboration, and delivering positive safety and mobility outcomes to the travelling public.

Currently, there are transportation sensor systems throughout the I-75 corridor that transmit information to FDOT District Five's Regional Transportation Management Center. This hurricane-ready facility serves as the nerve center for traffic management across the nine counties of FDOT's District Five. The I-75 IFRAME project which uses CV technologies to disseminate real-time information to motorists during freeway emergencies and incidents on I-75 was completed in Summer 2021.

The project traffic analysis indicated that Intelligent Transportation System TSM&O strategies alone would not meet the project's purpose the need. However, TSM&O could be beneficial when implemented with roadway and interchange improvement strategies along the project.

5.3 Multimodal Alternatives

I-75 is a limited access facility. No multimodal accommodation is proposed.

5.4 Build (Auxiliary Lanes) Alternative

The Build Alternative (Auxiliary Lanes) is based on recommendations from the I-75 Forward. The build alternative analysis included the evaluation of bridge widening concepts, bridge replacements concepts, stormwater drainage concepts and pond siting.

The Auxiliary Lanes Alternative proposes to add one 12-foot auxiliary lane between interchanges

to the outside of the general-purpose lanes in each direction. The auxiliary lanes would not impact the interchange bridges. The Preferred Alternative typical section would be accommodated within the existing 300-foot-wide right of way and include three 12-foot-wide general-purpose lanes in each direction, one 12-foot-wide auxiliary lane in each direction, 12-foot-wide inside and outside shoulders), and a depressed grassed median, as shown in **Figure 5-1**. The Preferred Alternative drainage improvements include approximately 31 stormwater management facilities utilizing dry retention/treatment systems. Additional right of way will be required to provide the necessary pond sites for the proposed improvement. In addition, as previously noted, three bridges over I-75 will be replaced: bridges at C.R. 462 (Bridge No. 180047), C.R. 475 (Bridge No. 180048), and SW 66th Street (Bridge No. 360048) as they do not meet the 300-foot horizontal and 16.0 feet vertical clearance.

Details are provided in **Appendix B** and **Section 7: Preferred Alternative**.



Figure 5-1: Typical Section

During the development of Build Alternative, all engineering elements were reviewed. The engineering elements such as complete streets, pedestrians and bicycle accommodation, traffic operations and safety, managed lanes, access management, interchanges on interstate highways, intelligent transportation systems, lane repurposing, landscape, lighting, wildlife crossings, permits, stormwater management, drainage and landscaping, sea level impact projection (SLIP) studies, water quality, hydrology and floodplains, utilities and railroads, survey and mapping, geotechnical investigation, structures and bridges, perimeter walls, transportation management plan, constructability, and construction impacts were reviewed. Out of these, complete streets, pedestrians and bicycle accommodation, managed lanes, access management, intelligent transportation systems, lane repurposing, landscape, lighting, wildlife crossings, sea level impact projection (SLIP) studies, perimeter walls, don't apply. Remaining elements have been discussed throughout the report.

5.4.1 Traffic and Safety Analysis

Operational results documented in the PTAR concluded that the proposed auxiliary lane improvements would result in operational improvements when compared to No-Build operational results. The LOS target for I-75 is D and as early as 2030, under the No-Build condition, I-75 northbound and southbound between C.R. 484 and S.R. 200 is expected to operate at a LOS F. Under the Build condition for the Opening Year (2030), it is anticipated I-75 will operate at a LOS C or better in the northbound direction and a LOS D or better in the southbound direction. The additional auxiliary lanes between interchanges will improve travel times by 8% northbound (1.8

minutes) and 13% southbound (2.9 minutes) over the No-Build condition. The total network vehicle hours of delay are anticipated to be improved by 83% northbound and 79% southbound over the No-Build condition.

The proposed improvements provide the capacity needed to service average peak period 2030 future volumes; however, deficiencies are anticipated with the 2040 future volume demand exceeding capacity at spot locations. Multiple segments on the facility are anticipated to operate at LOS E and LOS F during the 2040 AM and weekend peak periods in the northbound direction. Multiple segments are anticipated to operate at LOS E and/or LOS F during the 2040 PM and weekend peak periods in the southbound direction.

The results of the safety analysis documented in the PTAR show the proposed improvements are predicted to have a slightly higher crash cost (total present value) compared to the No-Build due to having 3.4 more predicted fatal crashes over the 10-year life cycle of the project (0.34 fatal crash increase per year). The proposed improvements are predicted to experience approximately 23 less injury and 94 less property damage-only crashes per year over the 10-year life cycle of the project.

The additional auxiliary lanes between interchanges will provide more capacity along the interstate mainline thus reducing the potential for re-occurring congestion along the I-75 mainline. Reducing the congestion has the potential to reduce high speed/high severity rear end crashes along the I-75 mainline.

Based on *NCHRP Report 687*, the addition of an auxiliary lane between an entrance ramp and an exit ramp has the potential to reduce the number of multi-vehicle crashes by up to 20 percent. The reduction in multi-vehicle crashes applies almost equally to both fatal, injury, and property damage-only crashes.

Further details on the safety improvements and operational results are provided in the PTAR, located in the project file.

5.4.2 Reliability Results

A corridor reliability analysis of the existing condition (2019) was conducted using HCS2023 and Highway Capacity Manual (HCM) 7th Edition methodologies to evaluate the Build Alternative versus the No-Build scenario. The reliability analysis accounts for non-recurring congestion events such as incidents, special events and weather.

The opening (2030) and interim (2040) years traffic operational analysis results for the weekday AM, weekday PM, and weekend midday peak hours show that the additional auxiliary lanes provide network travel time and average network delay savings versus the No-Build scenario. The travel time and delay improvements can be attributed to the auxiliary lanes releasing the bottlenecks along I-75 that are expected to occur under the No-Build scenario. The auxiliary lanes will provide space for entering and exiting vehicles to queue off of the general purpose lanes and provide longer weaving distances between interchanges. These improvements should result in fewer crashes and lane closures, thereby improving reliability and delaying the need for additional capacity. **Table 5-1** compares the benefits of the Build Alternative over the No-Build scenario for average travel time and vehicle hours of delay in the project area.

Table 5-1: Operational Comparison to the No-Build Scenario

Year	Performance Metric	% Benefit over No-Build Scenario					
		AM Peak Hour		PM Peak Hour		Weekend Peak Hour	
		NB	SB	NB	SB	NB	SB
2030	Average Travel Time	5%	2%	3%	13%	20%	9%
	Vehicle Hours of Delay	48%	22%	36%	94%	76%	56%
2040	Average Travel Time	44%	8%	28%	-11%	51%	-7%
	Vehicle Hours of Delay	83%	54%	81%	68%	90%	82%

Source: FDOT District 5, PTAR: I-75 (S.R. 93) from Florida's Turnpike (S.R. 91) to S.R. 200, July 2022

Further details on the safety improvements and operational results are provided in the PTAR, located in the project file.

5.5 Comparative Alternatives Evaluation

An analysis of the social and economic, cultural, natural and physical environmental issues/resources was performed as part of this PD&E study and is summarized in the Environmental Assessment. The purpose of the environmental analysis was to determine the effects associated with the Build and No-Build Alternative.

The proposed project improvements would result in minimal impacts to social and economic resources and is anticipated to improve the quality of life for area residents by improving mobility and safety. Roadway improvements for the Build Alternative will be implemented within the existing right of way; however, additional right of way is required for stormwater pond locations. The Build Alternative will not result in any relocations and will have no substantial adverse impacts on the neighborhoods, social environment, or community services. Additionally, the Build Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations.

Two resources within the study area are eligible for listing in the NRHP, the Cross Florida Greenway (8MR03410) and the Community of Royal (8SM01343). It was determined the project will result in no adverse effect on the Cross Florida Greenway (8MR03410) and only minor aesthetic impacts on the Community of Royal (8SM01343) from the C.R. 462 bridge replacement. The FDOT has, in coordination with the local community, committed to mitigate the minor aesthetics impact to the Community of Royal. Refer to **Section 1.3: Commitments** for details on mitigation measures for these minor aesthetic impacts. There are no Section 4(f) resources within the project area. The SHPO concurred that no further cultural resources work is required.

The proposed project will result in 5.38 and 3.72 acres of direct and secondary impacts to wetlands, respectively. There is an estimated total of 3.1 acres of direct impact to OSW. The estimated Uniform Mitigation Assessment Method (UMAM) functional loss that would result from the project is 3.61 units (0.15 herbaceous and 3.46 forested) resulting from direct impacts and 0.25

units (0.013 herbaceous and 0.237 forested) of functional loss resulting from secondary wetland impacts.

A determination of “May Affect, But Not Likely to Adversely Affect” was assigned to the Eastern indigo snake and the wood stork. A “No Effect” determination was made for all other federal and state listed species. No designated critical habitat is located within the project area.

Noise levels for this project were predicted at 309 receptor locations representing 367 residential and 38 nonresidential special land use (SLU) noise sensitive sites. were included in the TNM. Noise levels at 185 residences and 13 SLU sites are predicted to approach or exceed the Noise Abatement Criteria (NAC) for the year 2050 Preferred Alternative and are therefore considered "impacted."

Overall, 81 noise receptors are currently affected by I-75 traffic noise. Under the No-Build Alternative, noise levels are predicted to meet or exceed the NAC for 153 noise receptors. By comparison, predicted noise levels for the Build Alternative meet or exceed the NAC at 198 noise receptors with an average 3.1 dB(A) increase in noise levels over the existing condition. The greatest increase, 4.8 dB(A), occurs in NSA SB3 at receptors SB3-01 and SB3-02. None of the project noise increases in the study corridor are considered substantial (defined as 15 dB(A) or higher). Two noise barrier systems are proposed and are discussed in **Section 7.2.3: Air and Noise**.

Potentially contaminated sites were identified near the mainline, and additional sites near or within the preferred pond sites. The contamination risk rating system incorporates four levels of risk: No, Low, Medium, and High. A Level I Contamination Screening Evaluation was performed and found the project study area contains no High Risk sites, 20 Medium Risk sites, and 50 Low Risk sites. Level II Impact to Construction Assessments (ICAs) or construction support will be considered during the design phase for eleven Medium Risk sites.

5.5.1 Evaluation Matrix

Alternatives were evaluated based on the ability of each to meet the project’s purpose and need. The No-Build Alternative, which preserves the mainline in its current condition, served as the base condition against which all other alternatives were judged. A qualitative and quantitative evaluation matrix (**Table 5-2**) was prepared using criteria from a multitude of categories including socioeconomic, environmental, cultural, contamination, and project costs. A detailed breakdown of project costs is provided in **Table 5-3**.

Table 5-2: Alternative Evaluation Summary

Evaluation Factors	No-Build Alternative	Build Alternative (Auxiliary Lanes)
Meets Project Purpose and Need	No	Yes
Number of Business Relocations	0	0
Number of Residential Relocations	0	0
Total Number of Parcels	0	27
Anticipated Right of Way Acquisition – (Total Acres)	0	310.28 Acres

Evaluation Factors	No-Build Alternative	Build Alternative (Auxiliary Lanes)
Species/Habitat (Potential Interactions)	0	Yes
Potential Contamination Sites	0	11
Wetlands and Other Surface Waters within Proposed Right of Way	0	5.38 Acres wetlands 3.72 Acres secondary impacts 3.1 Acres OSWs
Floodplains	0	9.75 Acres
Farmlands	0	18.9 Acres
Potential Noise Sensitive Sites (within 66 dB(A) isopleth)	0	185 Residences 13 Special Land Use sites
Community Facilities (schools, police, fire, medical, etc.)	0	0
Historic/Archaeological Sites (NRHP eligible/listed)	0	0/0
Utility Conflicts*	0	Minimal
TOTAL ESTIMATED PROJECT COST	\$0	\$349.45M

Table 5-3: Estimated Project Costs in Millions (2024)

Item	No-Build Alternative	Build (Auxiliary Lanes) Alternative
Roadway Design	\$0.00	\$28.01
Construction	\$0.00	\$218.81
Utility Relocation	None	\$9.50
SUBTOTAL CONSTRUCTION	None	\$256.32
Construction Engineering and Inspection (CEI)	None	\$17.98
Right of Way	\$0.00	\$75.15
TOTAL ESTIMATED PROJECT COST	\$0.00	\$349.45

5.5.2 Value Engineering Study

The proposed auxiliary lane improvements addressed in this Report will be advanced through a Phased Design-Build procurement. Therefore, in accordance with FDOT Procedure 625-030-002-j (Value Engineering Program), a Value Engineering Study was not performed during the PD&E Study.

5.6 Selection of the Preferred Alternative

Based on the results of the technical analysis and public and agency input, auxiliary lanes were

chosen as the preferred build alternative for this I-75 PD&E Study. This alternative consists of adding one 12-foot auxiliary lane between interchanges to the outside of the general-purpose lanes in each direction (See **Figure 5-2**). The auxiliary lanes would not impact the interchange bridges.

The Preferred Alternative meets the project’s need to enhance current transportation safety and modal interrelationships while providing additional capacity between existing interchanges. It also meets the project’s purpose of providing short-term operational improvements on the mainline of I-75 within the project limits.

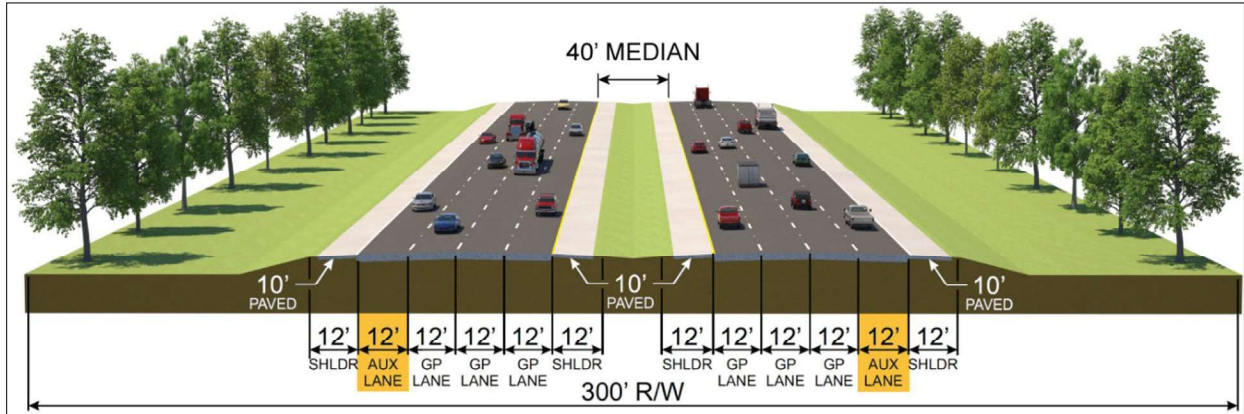


Figure 5-2: Proposed Typical Section

6 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

A comprehensive Public Involvement Program (PIP) (February 2024) was prepared and initiated at the start of the PD&E study. The PIP was developed in accordance with the FDOT Project Development and Environment Manual, Section 339.155, Florida Statutes; Executive Orders 11990 and 11988; Council on Environmental Quality Regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA); and 23 CFR 771. A Comments and Coordination Report was prepared to document public involvement activities that occurred during the PD&E Study based on the plan outline in the PIP included in the project file.

This Section provides information on how the agency coordination and public and stakeholder engagement are being conducted for the I-75 PD&E Study from south of S.R. 44 to S.R. 200.

6.1 Agency Coordination

Agency coordination was conducted throughout the PD&E Study. Coordination meetings between FDOT, Sumter County, Marion County, the City of Ocala, City of Belleview, Ocala Metro Chamber and Economic Partnership, and the East Central Florida Regional Planning Council were conducted to discuss the proposed improvements and project status. Presentations were also given to local officials and agencies to share the project status, specific location, and design concepts, and to receive feedback.

This project was reviewed through the ETDM process where stakeholders provided input that informed the scope of the PD&E Study and assisted FDOT with early identification of potential

project effects as well as avoidance, minimization, and mitigation opportunities. The Advanced Notification Package was sent to the ETAT on December 5, 2023, and the ETDM Programming Screen Summary Report was published on February 22, 2024. An updated ETDM Programming Screen Summary Report was published on March 29, 2024, to include acceptance of the Class of Action Determination which can be found at <https://etdmpub.flas-etat.org/est/> (under ETDM project number 14541).

An Environmental Look Around meeting was held on December 12, 2023, with the local agencies identified within the I-75 project corridor to explore the potential for joint stormwater management projects. There was one opportunity identified as a potential partnership with Marion County for joint ponds on this project.

6.2 Public Information Meetings

Two public meetings were conducted for the I-75 improvements. One was held in Ocala on December 11, 2023, from 5:30 p.m. – 7:30 p.m., at the Savannah Center at The Villages and the second was held on December 13, 2023, from 5:30 p.m. – 7:30 p.m. at the Hilton Ocala. A virtual public meeting also occurred on Thursday, December 14, 2023, at 5:30 p.m.

Twenty-nine (29) members of the public participated in the December 11, 2023, event and two public comments were received. One comment was positive for the project overall and suggested improvements for additional interchanges in the project area and another population projection. The second comment noted heavy traffic along S.R. 484 Westbound and on/off ramps at S.R. 44, asking FDOT to consider improvements.

Forty-five (45) members of the public participated in the December 13, 2023, event and 19 comments were received. The comments were positive overall and suggested improvements for additional interchanges in the project area. A majority of the comments expressed concerns about construction related noise and pond placements, as well an inquiry into an entrance/exit interchange added for The Villages between C.R. 44 and C.R. 484 due to congestion at the exits at C.R. 484 and C.R. 475.

Thirty (30) members of the public participated in the December 14, 2023, virtual event and four public comments were received. Comments included inquiries about the project schedule, concerns about noise, and future improvements. Two comments were received during the public comment period concerning potential property impacts and noise impacts. FDOT provided responses to each attendee who submitted a comment. Details and documentation of the public information meetings for this project are included in the Comments and Coordination Report located in the project file.

6.3 Stakeholder Meetings

FDOT conducted an extensive public outreach program with stakeholders having an interest in the project. Throughout the study, FDOT communicated project details and gathered feedback to understand stakeholder's concerns, aiding in decisions about the project and reach consensus on specific topics.

I-75 intersects the Cross Florida Greenway by easement and coordination with the FDEP Division of Parks was regarded as essential to discuss any involvement the project may have within the

Cross Florida Greenway. Discussions during a meeting on November 30, 2023, involved confirmation that the project will not impact the Greenway Land Bridge, stormwater management facility (pond site 19-4) size and location, and potential relocation of longspurred mint occurring in the project area to avoid impacts to the listed plant. A second meeting was held March 6, 2024, to discuss the approach and options to provide stormwater treatment (pond site 19-4) within the existing FDOT owned land. Pond size and specific options to minimize impacts to the existing forested areas and provide a large buffer between the pond and trails were discussed and consensus was reached.

Public engagement with the Community of Royal was initiated very early in the project and has continued throughout the PD&E phase. FDOT held a series of meetings on November 16, 2023, February 1, 2024, March 28, 2024, and June 6, 2024 with the Community of Royal to address concerns regarding proposed ponds, maintenance of the C.R. 462 bridge, potential impacts to the viewshed in the vicinity of the C.R. 462 bridge, aesthetics, and the overall process of the project.

During community engagement events with the Community of Royal, the inclusion of aesthetic features in the design of the proposed C.R. 462 bridge replacement was discussed. Due to the potential minor aesthetic impacts on the Community of Royal rural historic landscape viewshed, design options presented to the community included installing a medallion on a support column or similar location with prominent visibility to the traveling public, honoring the Community of Royal and its establishment. Additional options included the use of terraces along the retaining wall of the new bridge coupled with the use of drought tolerant Florida-friendly plants and providing landscaping around dry ponds within the project area. Based on the feedback, several key decisions have been made and have been incorporated into the bridge replacement and commitments (see **Section 1.3 Commitments**). These include:

- FDOT is committed to keeping the lanes of travel open during construction of the C.R. 462 bridge replacement.
- Fencing will not be installed around pond 3-1 located just south of the Community of Royal historic royal landscape boundary.
- The terrace, on the north side, will consist of a rectangular pattern and have a sunset buff pattern color.
- Provide low-level landscaping not taller than the wall height of the terrace.
- Include plants that are predominantly green year-round, showcase yellow and purple hues and blossoms, and utilize palms as opposed to trees.
- Provide a sidewalk on the north side of the bridge.
- Provide medallions highlighting the Community of Royal into the overall design on the bridge.

Details of these meetings and all public engagement activities are included in the Comments and Coordination Report located in the project file.

6.4 Public Hearing

Two Public Hearings were held for the I-75 improvements. One in-person Public Hearing was held at the Wildwood Community Center in Wildwood, Florida on June 26, 2024, and one virtual Public Hearing was held on June 27, 2024. The purpose of these hearings was to present information on

the Preferred Build Alternative for the I-75 improvements and allow the public the opportunity to ask team members questions about the project and make a public statement for the project record. Prior to the Public Hearings, on June 3, 2024 all technical materials were made available for public review at the Marion Oaks Public Library and The Villages Public Library. The in-person hearing began with an open house at 5:30 p.m., followed by a formal presentation at 6:00 p.m. The presentation, materials on display, and handouts were uploaded to the project website for public viewing.

Seventy-five (75) members of the public participated in the June 26, 2024 Public Hearing, and 31 members of the public attended the virtual Public Hearing on June 27, 2024. All attendees were given the opportunity to provide written comments at the hearing or within the comment period which opened at the in-person Public Hearing on June 26, 2024, and closed on July 8, 2024. During the Public Hearings, 12 written comments were received and 11 people gave a public statement. Following the Public Hearings 21 email comments and 11 phone calls were received during the comment period and several comments included support for the project. The majority of the comments were related to noise level concerns resulting from the addition of auxiliary lanes, particularly at the SummerGlenn and Kingsland Estates communities.

Regarding the SummerGlen development, FDOT responded with details on specific receptor locations and the methodology used during the noise analysis to determine if noise abatement consideration is warranted at each location. FDOT explained that present and future noise levels at the closest SummerGlen residential receptor to I-75 fell below noise abatement criterion (NAC) and therefore, will have no noise impacts on the residences.

For the Kingsland Estates subdivision, the analyzed noise barrier does not currently meet FDOT criteria; however, a section of the community is currently under development and will be reevaluated for noise impacts during the project design phase. A land use review will be performed during the design phase to identify all noise sensitive sites that may have received a building permit between the time the noise study was finalized (July 2024) and prior to the date the Finding of No Significant Impact (FONSI) for the project is approved (Date of Public Knowledge). If the review identifies noise sensitive sites that have been permitted prior to the Date of Public Knowledge, those noise sensitive sites will be evaluated for traffic noise impacts and abatement considerations.

A number of residents in the project area reported, both verbally and in writing, concerns regarding potential detours during construction. Specific concerns included disruption of traffic, impacts to emergency services and first responders, and traffic diverting to the local roadway network when issues arise on I-75. FDOT responded by reviewing available right of way at each bridge replacement location and determined that traffic could be maintained without requiring additional right of way from a constructability and engineering perspective. Considering the impacts detouring traffic would have on the local roadway network and the feedback received from stakeholders, a commitment was being made to maintain traffic during construction at C.R. 462, C.R. 475, and SW 66th Ave.

Other comments included lighting considerations, advocating for wildlife crossings, requests to provide a multi-use path on bridge replacements, and inquiries and concerns regarding potential impacts from the testing and construction of proposed pond sites. All substantive comments were responded to by FDOT. A detailed record of all comments, comment responses, public notices, displays, meeting materials, and the presentation, and Public Hearing transcripts can be found in the project's Comments and Coordination Report.

7 PREFERRED ALTERNATIVE

This section describes the design features of the Preferred Alternative. The Preferred Alternative involves adding one 12-foot auxiliary lane in each direction. The lane would be added to the outside with no permanent construction required on the inside. The auxiliary lanes would not impact the existing interchanges. However, the auxiliary lanes would impact the interchange bridges, at S.R. 44, C.R. 484, and C.R. 462. To accommodate the auxiliary lanes, the existing I-75 bridges (southbound) over S.R. 44 and over C.R. 484 would be widened (modified beams). The existing bridges for C.R. 462, C.R. 475, and SW 66th Street, which all cross over I-75, would be replaced. However, the Florida Greenway Land Bridge (Florida Trail) over I-75, the existing I-75 bridges (northbound) over S.R. 44, over SW 43rd Street and over S.R. 200 (SW College Road) would remain unchanged.

7.1 Engineering Details of the Preferred Alternative

7.1.1 Typical Sections

The proposed improvement consists of adding a 12-foot-wide auxiliary lane in each direction along the existing 6-lane divided facility. This improvement will be constructed by widening the existing facility to the outside in each direction within the existing 300-foot-wide right of way. The resulting typical section includes three 12-foot-wide general-purpose lanes in each direction, one 12-foot-wide auxiliary lane in each direction, 12-foot-wide inside and outside shoulders (10-foot paved), and a depressed grassed median as shown in **Figure 7-1**. Typical section is provided in **Appendix C**.



Figure 7-1: I-75 Proposed Typical Section

7.1.2 Access Management

The access management classification is limited access (Class I) throughout the study limits and I-75 meets all access management standards for this classification. There are no proposed changes to Access Management with the proposed improvements.

7.1.3 Right of Way and Relocations

The existing limited access right of way width varies along the corridor with a minimum width of

300 feet. The project will require right of way for proposed stormwater ponds. The Preferred Alternative stormwater ponds have the potential to impact 27 parcels for a total of 310.28 acres.

In order to minimize the unavoidable effects of right of way acquisition and displacement of people, a right of way and Relocation Assistance Program will be carried out in accordance with Florida Statute 421.55, Relocation of displaced persons, and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646 as amended by Public Law 100-17). No residential or business relocations are anticipated as a result of the Preferred Alternative.

7.1.4 *Horizontal and Vertical Geometry*

The horizontal and vertical alignment of the proposed improvements will generally follow the existing alignment of I-75. At the beginning of the project, south of S.R. 44, a slight horizontal alignment shift to the west and additional pavement will be provided in the northbound direction to accommodate the addition of the northbound auxiliary lane. In the southbound direction, the southbound auxiliary lane will continue through the existing S.R. 44 bridge and tie in to the existing I-75 north of the Turnpike. North of S.R. 44, the auxiliary lane would be provided in both directions between the existing interchanges. The egress/ingress at the existing weigh station and rest areas will be reconstructed to accommodate the auxiliary lanes. It should be noted, the northbound rest area is currently being reconstructed under a separate project.

7.1.5 *Design Variations and Design Exceptions*

Design exceptions are not anticipated for the project. Design variations will likely be required for vertical geometry approaching overpasses.

7.1.6 *Multimodal Accommodations*

I-75 is classified as a rural principal arterial interstate from south of S.R. 44 to the Wildwood weigh station and an urban principal arterial interstate for the remainder of the corridor. Due to the rural nature of the majority of the corridor, there are two paratransit (door to door) services that potentially utilize I-75 between S.R. 44 and S.R. 200 for daily operations: Sumter County Transit and Marion Transit. It is not anticipated that this project will impact these services.

7.1.7 *Intersection/ Interchange Concepts*

There are no intersection or interchange concepts for this project. No interchange improvements were evaluated with this PD&E.

7.1.8 *Toll Lane Projects*

There is no Toll Lane proposed for this project.

7.1.9 *Intelligent Transportation System and TSM&O Strategies*

Traffic analysis indicated that TSM&O strategies alone would not be enough to address the corridor needs but could be implemented with roadway and interchange improvement strategies.

FDOT D5 already employs or will be deploying several TSM&O strategies along the I-75 Forward corridor. The existing corridor includes several ITS and TSM&O features and any potential upgrades will be evaluated during the design phase and any potential impacts will be replaced in kind.

7.1.10 Landscaping

Landscaping opportunities throughout the study area will be reviewed and finalized in the design phase; however, discussions with the Community of Royal were held during the PD&E Study regarding landscaping options in the vicinity of the C.R. 462 bridge replacement. During public engagement events with the Community of Royal, FDOT presented renderings of potential landscape designs. A consensus was reached for FDOT to install low-level landscaping no taller than the proposed terrace on the north side of the bridge, and no tall trees would be located within the terrace. Landscaping will incorporate plants that are predominantly green year-round, showcase yellow and purple hues and blossoms and utilize palms as opposed to trees.

7.1.11 Lighting

Within the study limits, lighting is present along the interchanges. High mast lighting is located at S.R. 44 and S.R. 484 and conventional street lighting at S.R. 200. Refer to **Section 2.2.21 Utilities** for additional details. Project effects are not anticipated to affect the existing lighting and should be sufficient for the additional lanes.

7.1.12 Wildlife Crossings

There is one wildlife crossing located within the project area, the Cross Florida Landbridge, spanning I-75 near the central portion of the proposed project. It is not anticipated to be impacted by the project.

7.1.13 Permits

The following agency permits are anticipated for this project:

- SJRWMD Individual Permit
- USACE 404 Individual/Standard Permit
- FDEP National Pollutant Discharge Elimination System Construction Generic Permit
- FWC Gopher Tortoise Relocation Permit

The proposed project would require permits from state regulatory agencies for impacts to wetlands, water quality protection, and gopher tortoises. Improvements to I-75 will be permitted by the SJRWMD pursuant to the agreement between SJRWMD and SWFWMD.

A 404 Individual Permit for the proposed I-75 widening project will also be necessary. This project will involve the dredge and fill impact to approximately 5.38 acres of wetlands and 3.1 acres of OSWs. Wetlands occurring within the project corridor are hydrologically connected to wetland systems adjacent to Little Jones Creek, which flows into the Withlacoochee River.

A NPDES permit will be required from the FDEP.

It is anticipated that an FWC Gopher Tortoise Conservation Permit will be required to relocate gopher tortoises identified within the project area and may require Incidental Take Permits for other impacted protected species.

7.1.14 Drainage and Stormwater Management Facilities

A total of 31 preferred stormwater management facilities have been identified for the project. Dry retention ponds are proposed in Basins 2-32 due to the “Closed Basin” characteristics. Wet detention ponds are proposed for Basins 0 and 1 since this area is within an “Open Basin” with positive outfall to the Withlacoochee River. The preliminary pond sizes have been calculated accounting for attenuation based on volumetric differences in runoff predicted by the NRCS equation for runoff for the 100-year, 24-hour storm. The pond sizing calculations do not consider percolation of the soil below the pond bottom. Therefore, some of the ponds can provide the required volume in a smaller footprint due to high permeability rates and vertical separation between the pond bottom and the water table/confining layer. Alternatives that can use a smaller area than estimated in the calculations will be further evaluated in design.

Proposed ponds 3-1, 18-4 and 19-4 were sized to provide treatment volume for the additional impervious area proposed for this project. The remaining stormwater management facilities were sized conservatively to account for the ultimate I-75 roadway typical section condition consistent with I-75 Forward, having a 300-foot wide right of way footprint throughout this portion of the project. For these pond sites, it was assumed that 90-percent of the ultimate build-out typical section would consist of impervious area due to the safety requirements associated with the expanded interstate corridor.

Table 7-1 lists the ponds identified as preferred ponds for this PD&E including the preferred size for each pond. Details of the design approach, criteria for site selection, per basin pond options, and pond selection methodology can be found in the Pond Siting Reports located in the project file. Pond sizes and locations will be finalized during the design phase of this project.

Table 7-1: Preferred Ponds

Basin(s)	Pond ID	Preferred Pond Size (acres)
0	0-1	-
1	1-1	13.12
2	2-2	8.51
3	3-1	18.80
4	4-1	15.56
5 and 6	5-1/6-1	20.00
7	7-1	12.76
8-3A	8-3A	17.89
8-3B	8-3B	5.31

Basin(s)	Pond ID	Preferred Pond Size (acres)
9	9-2	19.20
10	10-3	8.28
11	11-1	8.14
12	12-1	12.99
13	13-1	23.84
14 and 15	14-1/15-1	12.50
16	16-3	11.81
17	17-2	10.50
18	18-4	-
19	19-4	-
20	20-2	3.99
21	21-1	7.15
22	22-1	5.95
23	23-1	5.18
24	24-1	6.63
25 and 26	25-1/26-1	5.74
27	27-3	8.46
28	28-1	10.63
29	29-1	6.13
30	30-3	10.34
31	31-1	10.82
32	32-3	10.05
TOTAL		310.28

The project will be designed to meet the regulatory requirements of the applicable WMDs, and the requirements outlined in the FDOT Drainage Manual. FDOT will implement Best Management Practices (BMPs) during construction to ensure adherence to water quality standards. The proposed stormwater management will provide the required water quality and attenuation requirements for the project in accordance with WMD ERP regulations.

7.1.15 Floodplain Analysis

The FEMA has designated locations of the 100-year base flood elevations (BFE's) within the project corridor. These floodplains are associated with the contributing drainage basins and surface water tributaries to the Withlacoochee River and to the Ocklawaha River.

The proposed roadway improvements will impact several floodplains that extend within the existing I-75 right of way. Much of these impacts will be offset by the new roadway swales/ditches,

new stormwater management ponds and floodplain compensation sites. Estimated floodplain encroachment and floodplain compensation (FPC) site acreages are listed in **Table 7-2**.

Table 7-2: Estimated Floodplain Encroachment and FPC Site Sizes

Basin No.	Floodplain within Right of Way	Flood Zone	Base Flood Elevation (ft)	Floodplain Encroachment Area (acres)	FPC Site Size (acres)
0	No	-	-	-	0.00
1	No	-	-	-	0.00
2	Yes	A	56.0	0.02	0.03
3	Yes	A	58.0	0.13	0.16
4	No	-	-	-	0.00
5	Yes	A	59.0	0.93	1.12
6	Yes	A	54.0	1.07	1.29
7	No	-	-	-	0.00
8	Yes	A	57.0	0.86	1.04
9	No	-	-	-	0.00
10	No	-	-	-	0.00
11	No	-	-	-	0.00
12	No	-	-	-	0.00
13	No	-	-	-	0.00
14	No	-	-	-	0.00
15	No	-	-	-	0.00
16	No	-	-	-	0.00
17	Yes	A	54.0	0.63	0.76
18	Yes	A	54.0	0.53	0.64
19	No	-	-	-	0.00
20	No	-	-	-	0.00
21	Yes	AE	83.8	0.80	0.97
22	Yes	AE	81.3	0.18	0.22
23	Yes	AE	82.0	0.23	0.28
24	No	-	-	-	0.00
25	Yes	AE	82.8	0.78	0.94
26	No	-	-	-	0.00
27	No	-	-	-	0.00
28	Yes	AE	67.5	1.05	1.26
29	No	-	-	-	0.00
30	Yes	AE	76.8	1.16	1.39
31	Yes	AE	70.7	-	0.00
32	Yes	AE	69.7	1.38	1.66
TOTAL				9.75	11.76

Note: Zone A base flood elevations are estimated based on GIS and topographic data.
FPC site size estimates include an additional 20% to account for access and terrain irregularities.

The proposed roadway design will be developed to avoid and minimize the potential for impacts to the FEMA designated floodplain that extends into the I-75 roadway right of way. Likewise, there are no regulatory floodways associated with this portion of I-75.

Modifications to existing drainage structures such as extending cross drains and median drains included in this project will result in an insignificant change in their capacity to convey stormwater runoff through the Interstate corridor during extreme weather events. Proposed modifications to the existing cross drains will cause minimal, if any, increases in flood heights and flood limits to these depressional areas. The proposed roadway and drainage improvements will be developed to prevent adverse impacts on the natural and beneficial floodplain values noted for the land uses adjacent to I-75. There will be no significant change in the potential for interruption or termination of emergency services or evacuations as the result of modifications to existing drainage structures. Finally, the proposed design approach for the roadway and drainage improvements to this portion of I-75 will not cause or create any significant changes to the flood risks, potential for overtopping nor changes to the existing flood stages on either side of I-75.

The Preferred Alternative has been developed to avoid and minimize the potential for impacts to the FEMA designated floodplain that extends into the I-75 roadway right of way. Mitigation for any floodplain impacts along the mainline associated with the Preferred Alternative will be within the existing right of way through compensatory volume provided within the roadway ditches. Mitigation for floodplain impacts from the interchange in-fields will be through compensatory volume provided within the proposed stormwater management facilities.

FEMA has approved FIS's and has authorized the issuance of FIRM's for Sumter and Marion counties. The FIRMs are listed in **Table 2-12 (Section 2.2.19.5 Floodplains)**.

7.1.16 Bridge and Structure Analysis

For the I-75 Forward where the typical section will occupy the 300-foot right of way, three bridges will be replaced to accommodate the proposed auxiliary lanes. Bridges at C.R. 462, C.R. 475, and SW 66th Street do not meet the 300-foot horizontal and 16-foot vertical clearance. The Preferred Alternative for each of the three structures will be comprised of two 150-foot deck slabs with columns located in the I-75 median.

FDOT is committed to maintaining traffic during the bridge replacements for the C.R. 462, C.R. 475 and SW 66th Avenue bridge replacements and not utilizing detours. This is due to several reasons which are mentioned below but primarily based on feedback and discussions throughout the course of the project in which it was stated that traffic would be maintained at these locations.

Over the course of the study, maintenance of traffic for the bridge replacements was discussed with the local governments and stakeholders. Based on the feedback provided there were concerns raised regarding utilizing any type of detour while the bridges are being replaced. The concerns with detouring were primarily based on I-75 being closed or backed up due to seasonal traffic and/or crashes and the impacts that has on the local roadway network.

The existing east-west and north-south roadway network throughout the project area is very limited, leaving motorists little opportunity to traverse the area. C.R 475 provides a vital north-

south roadway that provides a parallel facility that is utilized by local traffic when travel times on I-75 are increased. In addition, with I-75 being a limited access facility, there are limited opportunities for the public to travel east-west to cross I-75. With limited facilities crossing I-75, reducing the number of crossings while replacing any of the bridges would result in substantial increase in time to local commuters and residents in the area. In addition, when I-75 is congested and/or closed it puts a heavy burden on the local roadway network for all motorists in the area.

The City of Ocala and Marion County both mentioned the importance of maintaining traffic at the bridge locations during construction. Specifically, they cited the congestion from the diversion that occurred to the local roadway network when SW 66th Avenue was previously hit, closing I-75, and the impact to those facilities. Concerns were also mentioned related to diverting traffic from SW 66th and the likely increase of traffic on S.R. 200 which currently experiences congestion.

While meeting with the Community of Royal, the local community was very adamant that the C.R. 462 bridge provides a vital east-west connection and that a detour would impact the community in terms of their day-to-day lives such as visiting relatives and attending church and other events, etc. In order to minimize impacts to the community, a decision was made to commit to maintaining traffic at the C.R. 462 bridge while it is being replaced. Further information regarding the coordination, proposed replacement and overall aesthetics can be found in the SCE Report.

Feedback received from the public hearing, both verbal and written, further documented the concerns stakeholders have with any proposed detours. Their concerns consisted of disruption of traffic, impacts to emergency services and first responders and the traffic diversion that occurs to the local roadway network when any issues arise on I-75.

After reviewing available right of way at each location, it was determined that traffic could be maintained without requiring additional right of way from a constructability and engineering perspective. Considering the impacts detouring traffic would have on the local roadway network and the feedback received from stakeholders, a commitment is being made to maintain traffic during construction at C.R. 462, C.R. 475 and SW 66th Avenue.

7.1.16.1 C.R. 462 Bridge Replacement

The C.R. 462 bridge replacement proposes a phasing construction approach. It involves the proposed construction of 34 feet of new bridge (with a new total width of approximately 300 feet) while maintaining traffic in the existing bridge. The phases are as follows (**Figure 7-2**):

- Phase I
 1. Construct 34-foot proposed bridge north from existing bridge
 2. Maintaining traffic in existing bridge
- Phase II
 1. Traffic to new partial bridge
 2. Demolish existing bridge

- Phase III
 1. Finish construction new bridge
 2. Maintain traffic in temporary configuration
- Phase IV
 1. Open new bridge and shift traffic to final configuration



Figure 7-2: C.R. 462 Phased Construction Proposed

7.1.16.2 C.R. 475 Bridge Replacement

The C.R. 475 bridge replacement proposes a phasing construction approach. It involves the construction of 34 feet of new bridge while maintaining traffic in the existing bridge. The phases are as follows (**Figure 7-3**):

- Phase I
 1. Construct 34-foot proposed bridge north from existing bridge
 2. Maintaining traffic in existing bridge
- Phase II
 1. Traffic to new partial bridge
 2. Demolish existing bridge
- Phase III
 1. Finish construction new bridge
 2. Maintain traffic in temporary configuration
- Phase IV

1. Open new bridge and shift traffic to final configuration

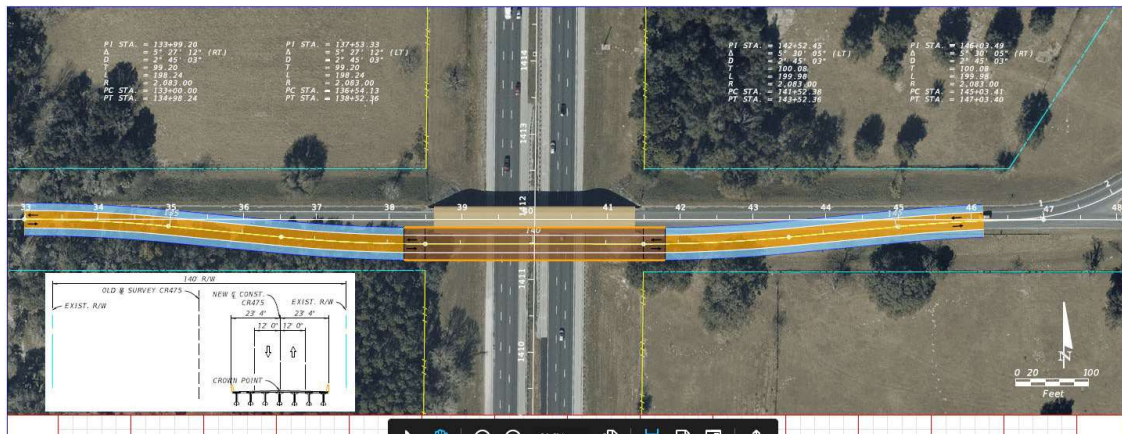


Figure 7-3: C.R. 475 Phased Construction Proposed

7.1.16.3 SW 66TH STREET Bridge Replacement

The SW 66th Street bridge replacement proposes a phasing construction approach. It involves the construction of 34 feet of the new bridge while maintaining traffic on the existing bridge. The phases are as follows (**Figure 7-4**):

- Phase I
 1. Construct 34-foot proposed bridge north from existing bridge
 2. Maintaining traffic in existing bridge
- Phase II
 1. Traffic to new partial bridge
 2. Demolish existing bridge
- Phase III
 1. Finish construction new bridge
 2. Maintain traffic in temporary configuration
- Phase IV
 1. Open new bridge and shift traffic to final configuration



Figure 7-4: SW 66th Street Phased Construction Proposed

Additional details regarding the bridge replacements are provided in **Appendix B**.

7.1.17 Transportation Management Plan

A Transportation Management Plan (TMP) is required for minimizing activity-related traffic delays and crashes. All TMPs share the common goal of congestion relief during the construction phase by managing traffic flow and balancing traffic demand with highway capacity through the project area. The TMP is to be developed.

7.1.18 Constructability

The Temporary Traffic Control Plan (TTCP) for the I-75 mainline will consist of two phases. The first phase will require over building the inside shoulder and constructing temporary pavement in the median of the northbound travel lanes to shift traffic. This will require removal of the existing median double-faced guardrail that runs primarily on the northbound side of the median. To prevent crossover incidents, a temporary concrete barrier wall will be placed in the median to separate northbound and southbound traffic. Emergency Shoulder Use (ESU) is required for the northbound direction. A 12-foot outside shoulder width will be provided during the phase for constructing the outside widening. The travel lanes will be 12-feet wide in the first phase and 11-feet to 12-feet wide in the second phase.

To facilitate future two-lanes for CR-462, CR-475 and SW 66th Street design will utilize an alignment shift approaching the bridge of approximately 30-feet to partially construct enough of the proposed bridge to continuously maintain two lanes of traffic. The first phase will consist of constructing enough of the bridge to maintain two lanes of traffic adjacent to the existing bridge while maintaining two lanes of traffic on the existing bridge as shown on **Figure 7-5**. Once the partial proposed bridge is completed, the second phase will shift two lanes of traffic, one lane in each direction, to the proposed bridge (**Figure 7-6**). The existing bridge will then be partially demolished, and the remainder of the proposed bridge completed. The third phase will shift all traffic to the new bridge while the approach roadway and existing bridge are removed (**Figure 7-7**). Finally, the fourth phase shown in **Figure 7-8** represents the post construction condition.

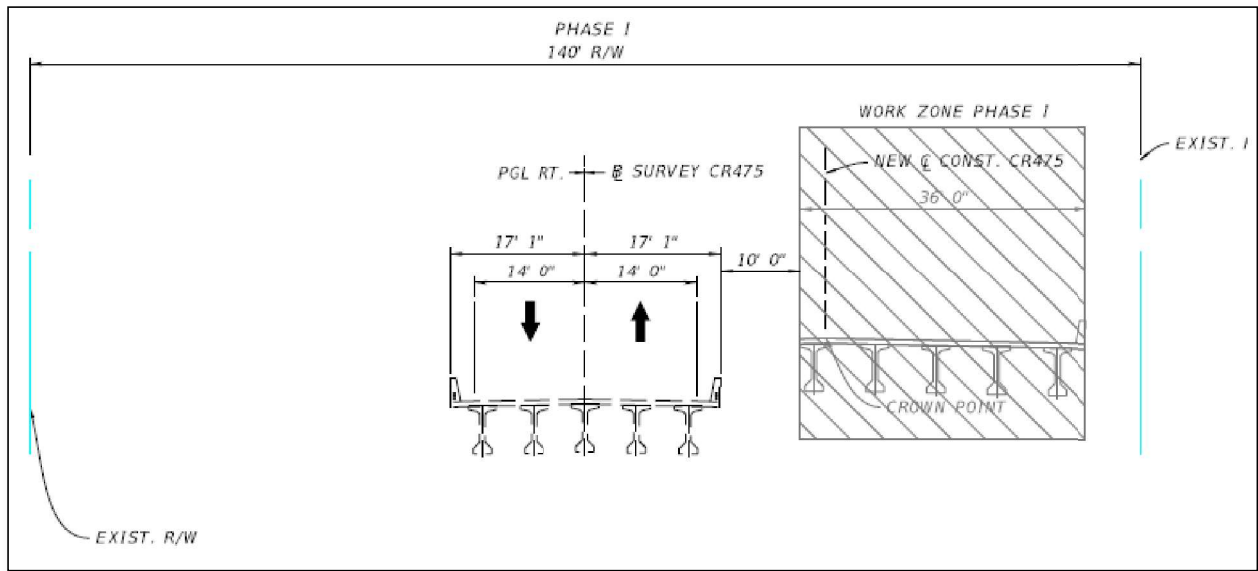


Figure 7-5: Bridge Construction Phase I

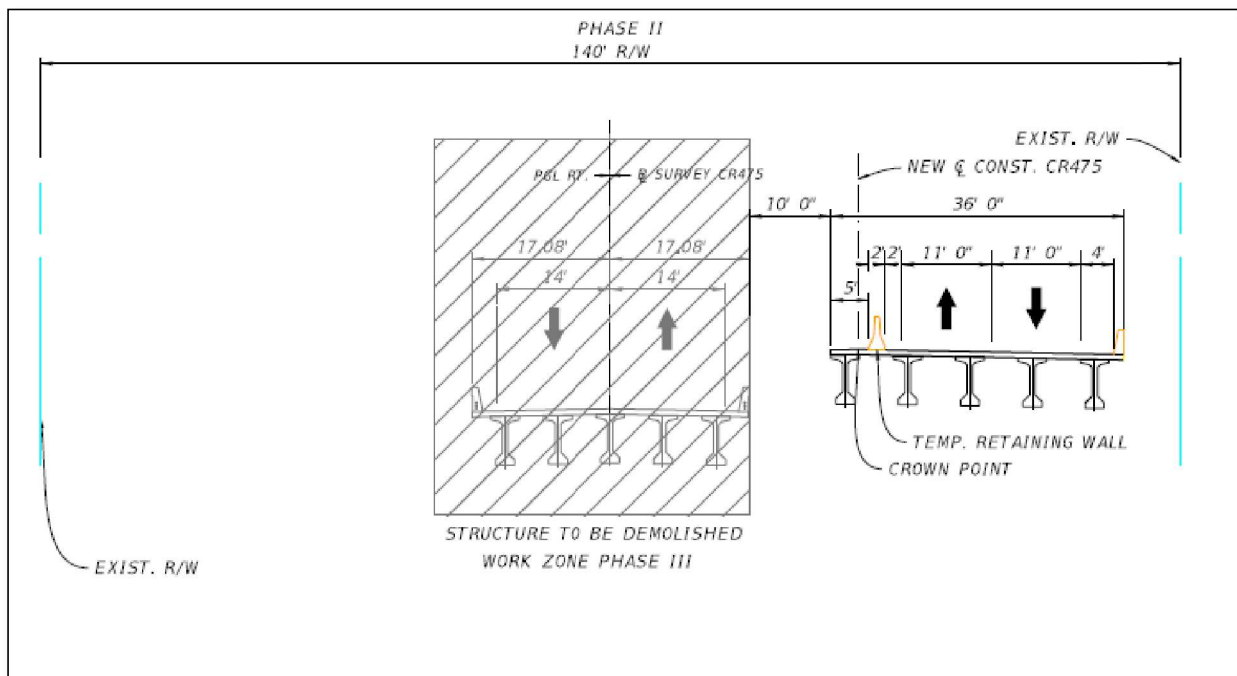


Figure 7-6: Bridge Construction Phase II

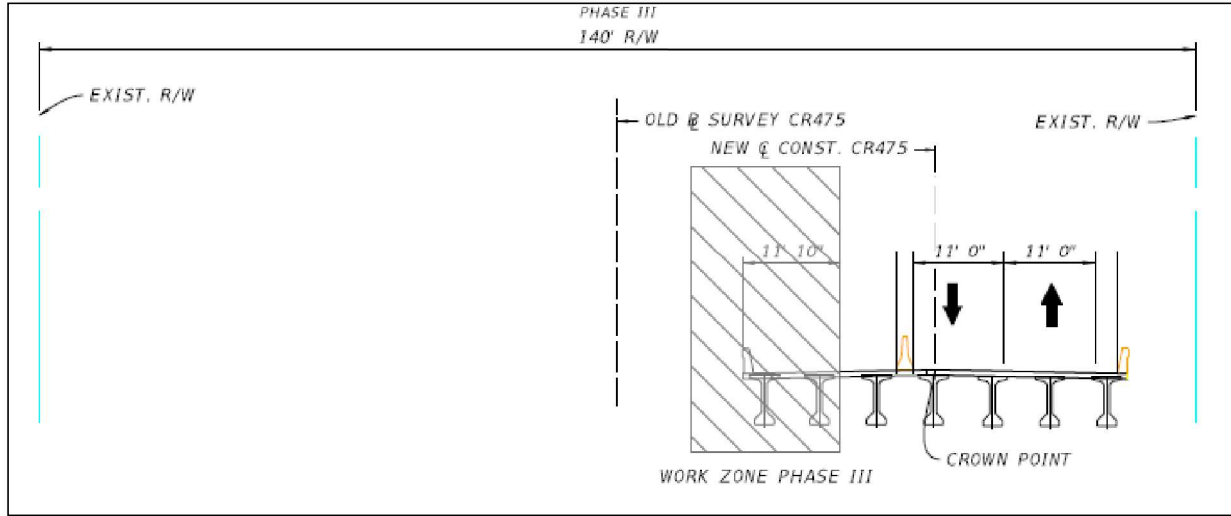


Figure 7-7: Bridge Construction Phase III

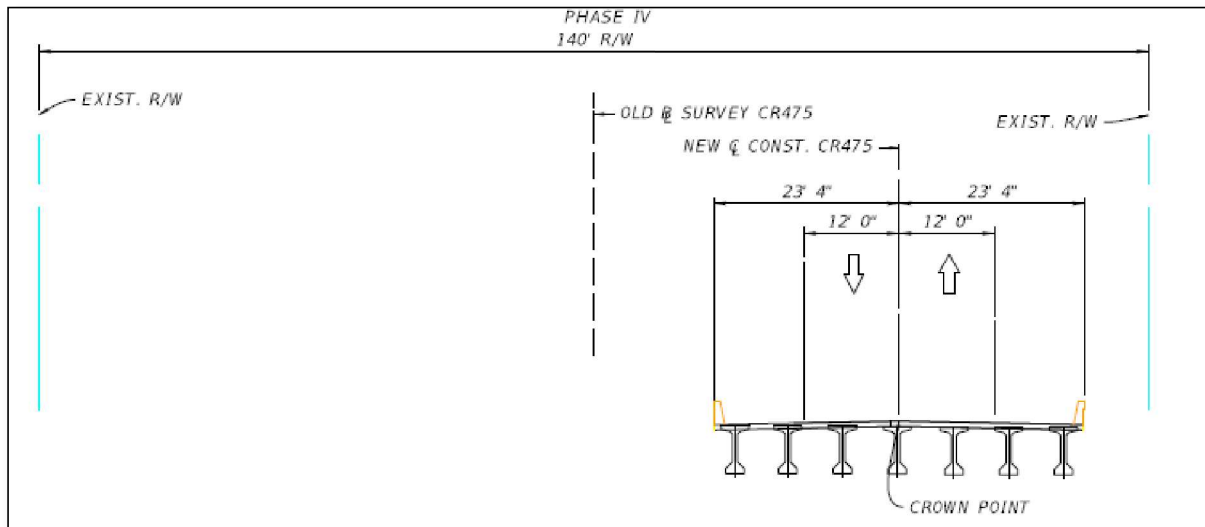


Figure 7-8: Bridge Construction Phase IV

7.1.19 Construction Impacts

Traffic on I-75 northbound and southbound will be affected due to construction. Noise and vibration impacts may be generated by heavy equipment and construction activities such as pile driving and vibratory compaction of embankments. Adherence to local construction noise and/or construction vibration ordinances by the construction contractor will also be required where applicable.

Visual impacts associated with the storage of construction materials and establishment of temporary construction facilities will occur but are temporary and short-term in nature.

Water quality impacts resulting from erosion and sedimentation will be controlled in accordance with FDOT Standard Specifications for Road and Bridge Construction and using BMPs. Erosion and sedimentation will be treated in accordance with the FDEP's National Pollutant Discharge

Elimination System (NPDES) permit and the Storm Water Pollution Prevention Plan (SWPPP).

Maintenance of traffic and sequence of construction will be planned and scheduled to minimize traffic delays during project construction. Signs will be used as appropriate to provide sufficient notice of road closures and other pertinent information to the traveling public. The local news media will be notified in advance of road closings and other construction-related activities which could inconvenience the community so that pedestrians, motorists, and property owners can plan travel routes in advance. Access to all businesses and residences will be maintained to the extent practical through controlled construction scheduling.

7.1.20 Special Features

Currently there are no special features associated with this project.

7.1.21 Utilities

This is a preliminary evaluation of potential utility conflicts within the project corridor based on proposed improvements under the Preferred Alternative. Additional conflicts may be identified during the final design. To advance utility coordination efforts beyond the study phase, Subsurface Utility Engineering (SUE) is required to provide verified vertical and horizontal (vvh) information relative to underground utilities. Obtaining vvh information will guide the design phase to ensure that informed and intelligent decisions are made to reduce potential utility relocations.

Based on the information provided in the Utility Assessment Package dated March 2024, utilities within the corridor that are in conflict with the project are as following:

- Century Link (lvl3) – Crossing conflicts at NW 120th Avenue, SW County Highway 484, SW 66th Street.
- Zayo – Outside I-75 right of way with two underground crossings (potential impact to SW 66th Street).
- City of Ocala Electric – Overhead crossing at SW 66th Street and north of SR 200 (Potential impact to South Basin 20 Pond alternative B, South Basin 31 Pond alternative A and B, and South Basin 29 Pond alternative B).
- Duke Energy Transmission – Multiple overhead crossings.
- SECO Energy – Runs along the right of way with multiple crossings.
- Spectra Energy – Sabal Trail – Runs along S.R. 44 east and west.

Table 2-13 provides a list of the Utility Agency Owner’s (UAO) that potentially occur in the project area, the limits of each utility within the project area, and potential impacts of each utility. Refer to **Section 2.2.21 Utilities**. Utility companies have not provided potential adjustment cost data; therefore, the cost of utility relocations will be provided when received. If utilities are in FDOT right of way by permit, the cost for relocation is at the expense of the utility owner.

7.1.22 Cost Estimates

A construction cost estimate for the Preferred Alternative was developed using FDOT’s Long Range Estimates (LRE) system (**Appendix E**). The estimate includes major items such as roadway design, construction, utility relocations, construction engineering and inspection, and right of way. The LRE is included in **Table 7-3**.

Table 7-3: Summary of Estimated Project Costs (2024)

Item	No-Build	Build Alternative (Auxiliary Lanes)
Roadway Design	\$0.00	\$28.01
Construction	\$0.00	\$218.81
Utility Relocation	None	\$9.50
SUBTOTAL CONSTRUCTION	None	\$256.32
Construction Engineering and Inspection (CEI)	None	\$17.98
Right of Way	\$0.00	\$75.15
TOTAL ESTIMATED PROJECT COST	\$0.00	\$349.45

7.2 Summary of Potential Environmental Impacts of the Preferred Alternative

7.2.1 *Social and Economic*

This portion of I-75 is compatible and consistent with the planned land uses documented in the Marion County Comprehensive Plan 2035, the City of Ocala, Ocala 2035, and the Sumter County Unified Comprehensive Plan Florida. The project will have no Land Use Changes and there is limited potential for 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.

Project implementation would benefit the economy by enhancing connectivity to local and regional employment centers and improving LOS, resulting in reduced commute times to/from businesses in surrounding areas and improved travel reliability. Providing auxiliary lanes would improve the efficiency of the existing travel lanes and reduce incident-related congestion. This improvement would allow I-75 to move people, goods, and services in a more efficient manner to employment, entertainment, economic centers, and shopping districts. It is anticipated the proposed project will have a beneficial economic impact.

7.2.2 *Cultural Resources*

7.2.2.1 Section 4(f) Potential

An evaluation was conducted to identify properties within the project study area that may be protected under Section 4(f) of the U.S. Department of Transportation Act of 1966. Field conditions were reviewed along with existing data including the ETDM Programming Screen

Summary Report and GIS files for the FDEP Greenways and Trails and FNAI Managed Lands. It was determined that I-75 currently bisects Marjorie Harris Carr Conservation Area, an FNAI Managed Area which is managed by the FDEP (**Figure 7-9**).

The Marjorie Harris Carr Conservation Area is identified as a state park, a state-owned Florida managed area. The entire conservation area totals approximately 78,946 acres and traverses four counties: Citrus, Levy, Marion and Putnam. With its links to other existing and proposed public lands, the Marjorie Harris Carr Conservation Area is a key section of a much larger system of greenway corridors, including the Central Florida Loop.

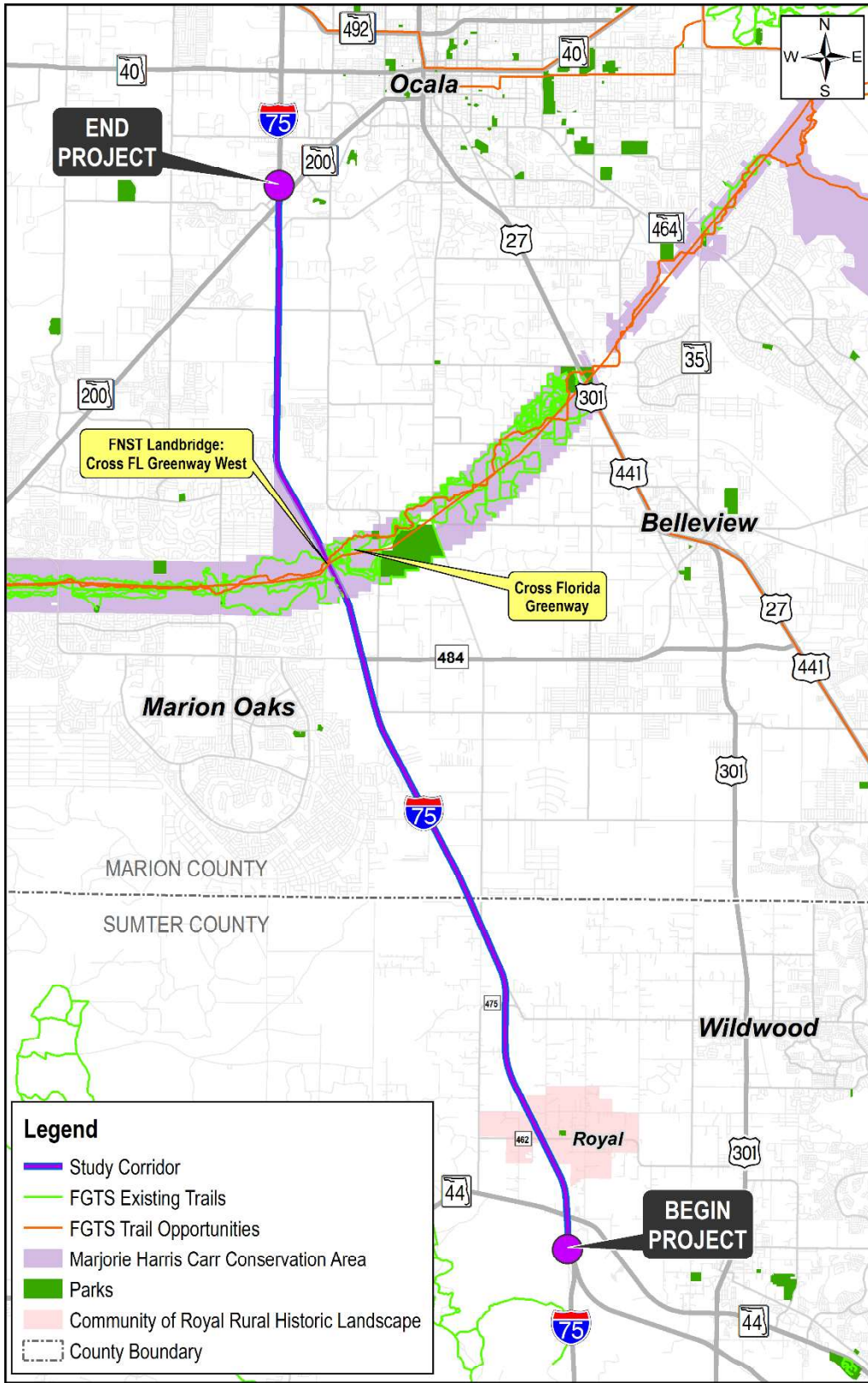


Figure 7-9: Potential Section 4(f) Areas

As shown on **Figure 7-10**, one approximately 3.3-acre stormwater management facility (pond site 19-4) is proposed within a parcel owned by FDOT and surrounded by the Marjorie Harris Carr Conservation Area. Pond site 19-4 will have No Use of the Marjorie Harris Carr Conservation Area within the meaning of Section 4(f).

One approximately 3.8-acre stormwater management facility (pond site 18-4) is proposed on FDOT easement land within the Marjorie Harris Carr Conservation Area. This portion of the conservation area was part of the original Cross Florida Barge Canal improvement which was cancelled by a presidential Executive Order in 1971. In a letter to FDOT dated September 28, 1993, FHWA determined that Section 4(f) does not apply to the Marjorie Harris Carr Conservation Area since the Section 4(f) resource was developed or planned concurrently with the development of a transportation facility (i.e. the Cross Florida Barge Canal). Documentation supporting FHWA's determination includes a transfer of easement land from the Canal Authority to FDOT in 1962 (see **Figure 7-10**). OEM's State Cultural Resources Coordinator reviewed the 1993 letter from FHWA and supporting documentation from The Canal Authority leading to FHWA's determination. OEM accepted FHWA's determination stating Section 4(f) is Not Applicable for pond site 18-4 in accordance with 23 CFR 774.11(i), the modern equivalent to the citation in the 1993 letter from FHWA. The concurrence from OEM, dated March 7, 2024, and the 1993 letter from FHWA are located in the project file.



Figure 7-10: FDOT Easement Within Canal Authority Land

7.2.2.2 Archaeological Sites

Archaeological surveys included pedestrian surveys and systematic subsurface testing within the roadway APE and the ponds APE. As a result of shovel testing, nine new archaeological sites were recorded within the APE (8MR04479, 8MR04480, 8MR04481, 8SM01395, 8SM01396, 8SM01412, 8SM01415, 8MR04527, and 8MR04543). Due to the limits of the APE and the likelihood for archaeological deposits beyond the limits of the APE insufficient information is available to evaluate newly recorded Sites 8MR04480, 8MR04481, 8SM01395, 8SM01415 and 8MR04543. However, given the paucity of artifacts, the lack of diagnostic artifacts, and the absence of archaeological features within the APE, the proposed work will have no adverse effect on the the portion of these resources within the project area. In addition, newly recorded Sites 8MR04479, 8SM01396, 8SM01412, and 8MR04527 are recommended ineligible for the NRHP and no further work for these sites is anticipated in support of the current project.

Table 7-4 includes a description and recommended evaluation for each of these new archaeological sites. Further details for these sites are documented in the CRAS and CRAS Addendum located in the project file.

Table 7-4: Archaeological Sites Identified Within the APE

FMSF No.	Location	Description	Recommended Evaluation	SHPO Recommendation
8MR04479	East side of the I-75 right of way, approximately 0.62 mile north of the SW 66 th Street overpass	Historic artifact scatter	Ineligible	No further Cultural Resources work
8MR04480	West side of I-75 right of way, approximately 0.5 mile south of the Cross Florida Greenway overpass	Precontact artifact scatter	Insufficient Information	No further Cultural Resources work
8MR04481	West side of I-75 right of way, approximately 0.2 mile north of SW 66 th Street	Precontact ceramic scatter	Insufficient Information	No further Cultural Resources work
8SM01395	East side of I-75 right of way, approximately 230 ft north of the C.R. 475 overpass	Precontact artifact scatter	Insufficient Information	No further Cultural Resources work
8SM01396	West side of I-75 right of way, approximately 1.0 mile south of the C.R. 475 overpass	Precontact artifact scatter	Ineligible	No further Cultural Resources work
8SM01412	Proposed Pond 1-1	Precontact artifact scatter	Ineligible	No further Cultural Resources work
8SM01415	Proposed Pond 8-3B	Precontact artifact scatter	Insufficient Information	No further Cultural Resources work
8MR04527	Proposed Pond 27-3	Precontact lithic scatter	Ineligible	No further Cultural Resources work
8MR04543	Proposed Pond 18-4	Greenway scatter	Insufficient Information	No further Cultural Resources work

A total of nine isolated archaeological occurrences were recorded within the APE. Archaeological occurrences are, by DHR Module Three definition, ineligible for listing in the NRHP; therefore, no further work for these archaeological occurrences is recommended.

7.2.2.3 Historic Sites

An assessment of project effects was conducted for the undertaking of both the I-75 auxiliary lane project area and the associated pond sites. In consideration of direct and indirect effects, namely potential viewshed changes to the Community of Royal rural historic landscape, the I-75 auxiliary lane construction within the existing right of way will not adversely affect the Community of Royal (8SM01343).

Construction of pond sites associated with the I-75 auxiliary lane project, specifically pond sites 3-1 and 4-1, are proposed in undeveloped pastoral settings adjacent to the boundary of the Community of Royal (8SM01343). The shallow dry ponds are anticipated to result in minimal long term (after construction completion) visual changes to the rural landscape that characterizes the area's present (and historic) conditions. Pond 3-1 abuts I-75 and requires separation from the limited access right of way. FDOT proposes to install landscaping around pond 3-1 using low-level plants that do not block the historic viewsheds of the Community of Royal. Further, incorporation of the community's preferences in landscaping enhancements around the dry ponds, depending on consensus from the community, will further reduce and visual changes adjacent to the historic property boundary. FDOT has determined pond sites, specifically 3-1 and 4-1, to have no adverse effect to historic properties including the Community of Royal; therefore, no further architectural history survey is warranted for the pond locations.

The newly recorded resource, C.R. 462 bridge (8SM01393), was built following construction of the original I-75 and is not historically linked to the development of the Community of Royal. It was recommended the newly recorded bridge (8SM01393) be individually ineligible, and ineligible as a contributing feature to the Community of Royal (8SM01343), since it is not significant under NRHP Criterion A, B, C or D. SHPO concurrence for the CRAS Addendum containing these historic resources' recommendations was provided on April 22, 2024.

Based on the results of the comprehensive CRAS study, the proposed project is expected to result in No Adverse Effect to historic properties and no further cultural resources work is recommended. A more detailed description of cultural resources within the APE is provided in the CRAS Report and CRAS Addendum, located in the project file.

Coordination with SHPO regarding the CRAS was initiated on November 28, 2023, and concurrence with the results of the Roadway CRAS was provided on December 19, 2023. Coordination with SHPO regarding the CRAS Addendum was initiated on March 4, 2024, and concurrence with the results of the Ponds CRAS Addendum was provided on April 22, 2024. A CRAS for pond site 18-4 will be performed and documented as CRAS Addendum No. 2., submitted to SHPO for concurrence and added to the project file.

7.2.3 *Air and Noise*

7.2.3.1 Noise

Noise levels for this project were predicted using the FHWA Traffic Noise Model (TNM), version 2.5. A total of 309 receptor locations representing 367 residential and 38 nonresidential SLU noise sensitive sites were included in the TNM. Noise levels at 185 residences and thirteen special land use sites are predicted to approach or exceed the Noise Abatement Criteria (NAC) for the year 2040 Preferred Alternative and are therefore considered “impacted.”

Analyses of the impacted locations were performed to determine if noise abatement was feasible and reasonable under FDOT policy as listed in Chapter 18 of the PD&E Manual. The PD&E study phase analysis indicated that noise barriers are potentially feasible and reasonable at two locations within the project corridor. These two noise barriers could potentially provide reasonable and feasible noise abatement for 51 of the 185 impacted residences, and one impacted SLU site. Noise abatement was not determined feasible and reasonable for the remaining twelve impacted SLU sites. The results of the noise barrier evaluations where noise abatement was determined to not be feasible and reasonable are summarized in **Tables 7-5 and 7-6**.

The potentially feasible and reasonable noise barriers meet the FDOT's cost per benefit criteria with a preliminary cost under the \$42,000 per benefited receptor criterion. The inclusion of noise barriers at the two potential locations, including proposed dimensions, will be carried forward for further consideration in this project's design phase. The results of the noise barrier evaluations where noise abatement was determined to be feasible and reasonable are summarized in **Table 7-7**. Locations of the proposed noise barriers are shown on **Figures 7-11 to 7-13**).

Table 7-5: Not Feasible and Reasonable Residential Noise Barrier Evaluation Summary

Noise Study Area	Barrier ID	Number of Impacted Residences	Analyzed Noise Barrier Height (ft) ¹	Analyzed Noise Barrier Length (ft) ¹	Analyzed Noise Barrier Location ²	Total Noise Barrier System Cost ³	Number of Residences Potentially Benefitted by a Noise Barrier ⁴		Does the Barrier Satisfy the Noise Reduction Design Goal ⁶	Total Noise Barrier System Cost Per Benefitted Residence ⁷
							Impacted	Total ⁵		
RESIDENTIAL NOISE BARRIERS EVALUATED ON NORTHBOUND SIDE OF I-75										
NB2,NB3	NB-A1	6	20	4,859	ROW	\$2,915,400	6	11	Yes	\$265,036
NB4	NB-A2	4	22	2,794	ROW	\$1,844,040	4	7	Yes	\$263,434
NB4	NB-A3	9	14	5,200	ROW	\$2,184,000	9	13	Yes	\$168,000
NB5	NB-A4	9	16	5,373	ROW	\$2,579,040	9	12	Yes	\$214,920
NB8	NB-A5	3	16	1,338	ROW	\$642,240	3	3	Yes	\$214,080
NB9	NB-A6	5	20	4,859	ROW	\$2,280,000	5	6	Yes	\$380,000
RESIDENTIAL NOISE BARRIERS EVALUATED ON SOUTHBOUND SIDE OF I-75										
SB3	SB-A1	6	20	3,233	ROW	\$1,939,800	6	7	Yes	\$277,114
SB3	SB-A2	4	16	2,220	ROW	\$1,065,600	4	4	Yes	\$266,400
SB3	SB-A3	7	18	4,161	ROW	\$2,246,940	6	6	Yes	\$374,490
SB7	SB-A5	37	14	6,544	SH	\$2,748,480	34	51	Yes	\$53,892
SB8	SB-A6	11	20	4,609	ROW	\$2,765,400	10	10	Yes	\$276,540

¹ Full height is for length indicated.

² ROW (within Right of Way); SH (on road shoulder).

³ Unit cost of \$30/ft² for all noise barriers.

⁴ Residences that receive a minimum 5 dB(A) reduction from analyzed noise barrier.

⁵ Total includes impacted/benefitted residences and residences with a predicted noise level that does not approach or exceed the NAC but are incidentally benefited.

⁶ FDOT Noise Reduction Design Goal is 7.0 dB(A) at a minimum of 1 benefitted receptor. Analysis ends if goal is not achieved.

⁷ FDOT Reasonable Cost Guideline is \$42,000 per benefitted residence.

Table 7-6: Not Feasible and Reasonable SLU Noise Barrier Evaluation Summary

Noise Study Area	Barrier ID	SLU Description	Analyzed Noise Barrier Height (ft)1	Analyzed Noise Barrier Length (ft) 1	Analyzed Noise Barrier Location 2	Does the Barrier Satisfy the Noise Reduction Design Goal 3	Did the Barrier Pass the Reasonable Cost Guidelines Calculation?	Additional Daily Usage Required to be Cost Reasonable (Persons/Hour)
SLU NOISE BARRIERS EVALUATED ON NORTHBOUND SIDE OF I-75								
NB5	NB-A4	Shree Swaminarayan Temple Front Patio	16	5,373	ROW	Yes	No	2,991
NB9	NB-A6	Equestrian Complexes Paddock and Barn Areas	20	3,800	ROW	Yes	No	2,748
SLU NOISE BARRIERS EVALUATED ON SOUTHBOUND SIDE OF I-75								
SB6	SB-A4	Hampton Inn Pool and Alphabet Land Learning Center Playground	20	1,953	ROW	Yes	No	998
SB8	SB8-SLU1	Ocala Korean Baptist Church Front Entrance and Benches	20	6,010	ROW	Yes	No	4,774
SB10	SB-A7	Shopping Center Bench; Fairfield Inn Pool; Steak and Shake Tables	16	1,206	ROW	Yes	No	177

¹ Full height is for length indicated.

² ROW (within Right of Way); SH (on road shoulder).

³ FDOT Noise Reduction Design Goal is 7.0 dB(A). Analysis ends if goal is not achieved.

Table 7-7: Potentially Feasible and Reasonable Noise Barrier Evaluation Summary

Noise Study Area	Barrier ID	Number of Impacted Residences	Approximate Noise Barrier Stationing		Preliminary Noise Barrier Height (ft) ¹	Preliminary Noise Barrier Length (ft) ¹	Preliminary Noise Barrier Location	Total Noise Barrier System Cost ²	Number of Residences Potentially Benefited by a Noise Barrier ³		Total Noise Barrier System Cost Per Benefited Residence ³
			Begin Station	End Station					Impacted	Total	
NOISE BARRIERS ON NORTHBOUND SIDE OF I-75											
NSA NB7	NB1	50	1807+20	1858+80	14	5,112	SH ⁵	\$2,147,040	33	53	\$40,510
NOISE BARRIERS ON SOUTHBOUND SIDE OF I-75											
NSA SB11	SB1	18	2166+87	2183+00	22	1,621	ROW ⁴	\$1,069,860	18	32	\$33,433

¹ Full height is for length indicated.

² Unit cost of \$30/ft² for all noise barriers.

³ Total includes impacted/benefited residences and residences with a predicted noise level that does not approach or exceed the NAC but are incidentally benefited.

⁴ ROW – Noise barrier constructed at the I-75 Right of Way with 10-foot offset unless otherwise noted.

⁵ SH – Noise barrier constructed at the shoulder of the roadway. Any required tapers in height at a shoulder noise barrier termination would be in addition to the length indicated.

Statement of Likelihood

The FDOT is committed to the construction of feasible and reasonable noise abatement measures at the noise impacted locations described above, 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 FDOT; and
 - Safety and engineering aspects have been reviewed, and any conflicts or issues resolved.

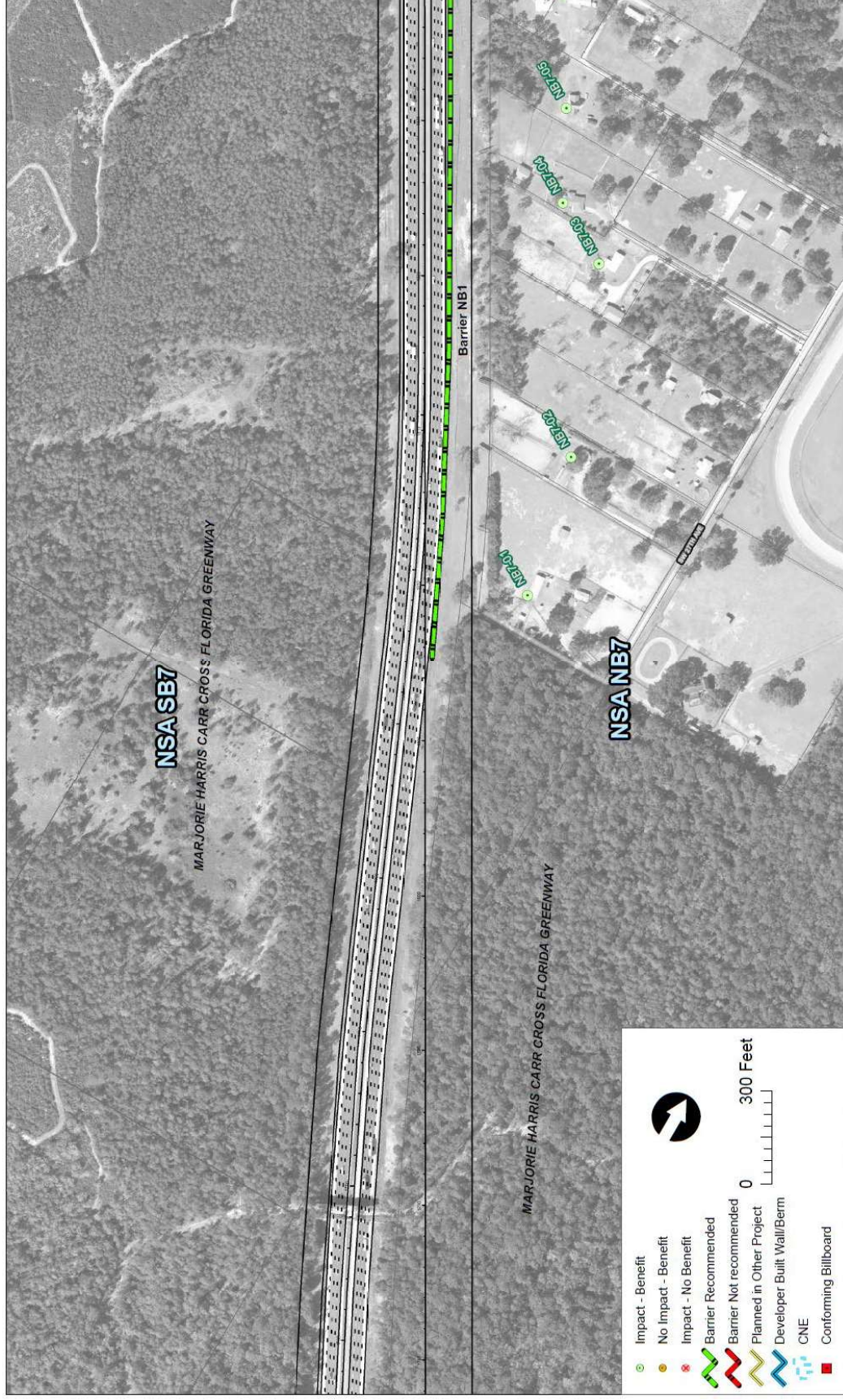


Figure 7-11: Noise Barrier Location Map 1

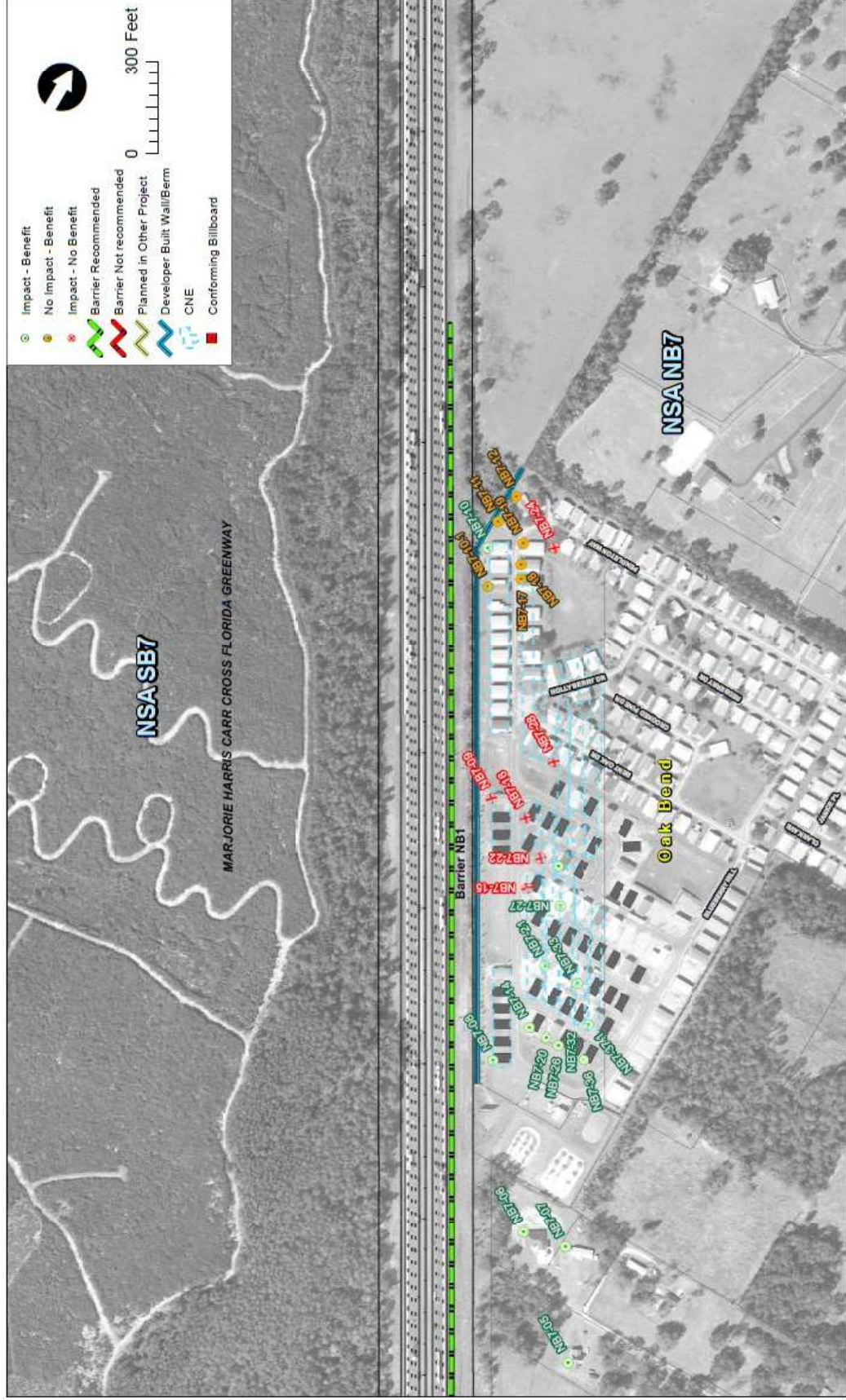


Figure 7-12: Noise Barrier Location Map 2

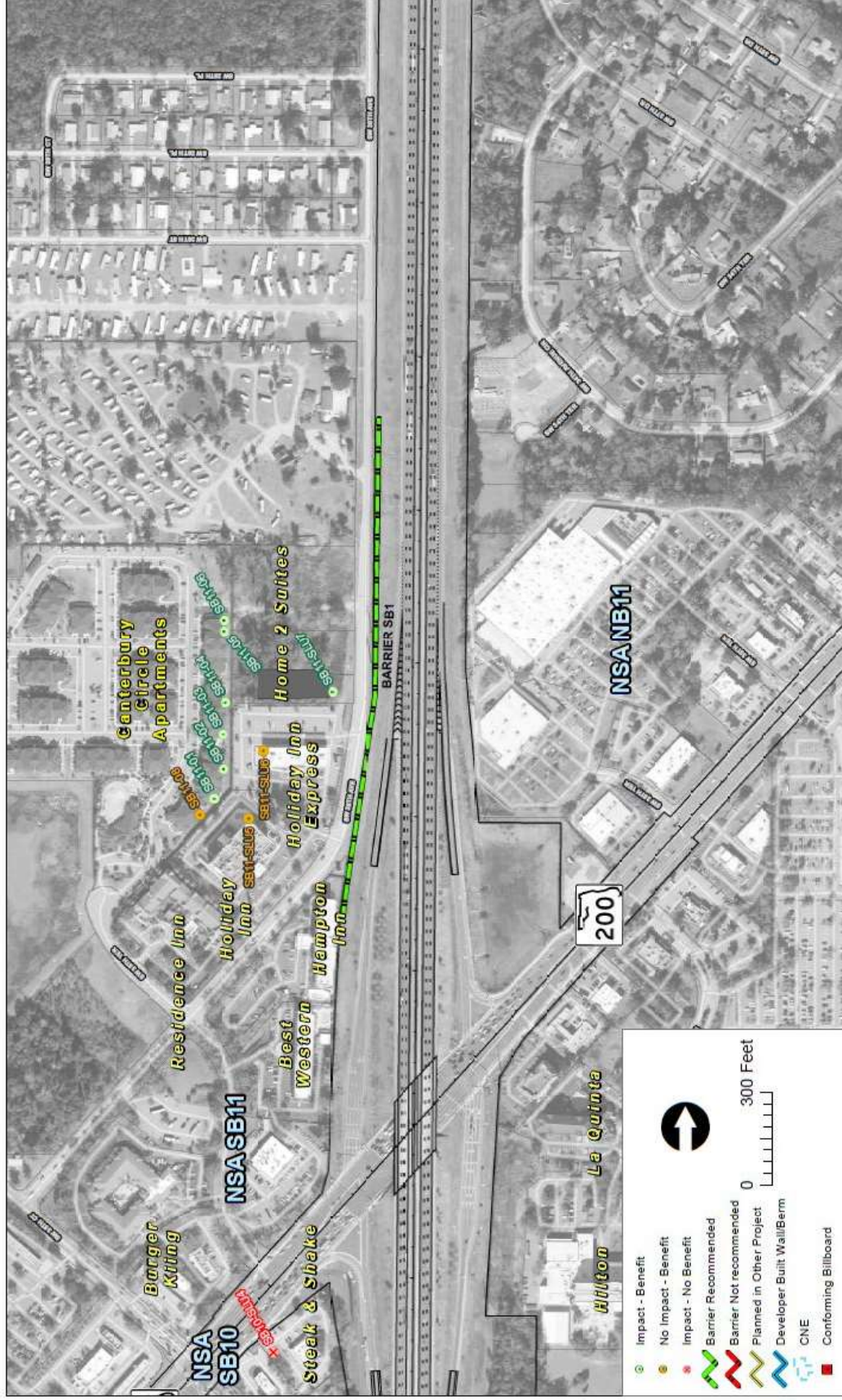


Figure 7-13: Noise Barrier Location Map 3

7.2.3.2 Air Quality

As noted by the USEPA, the proposed project is located in Sumter and Marion counties which are currently designated as being in attainment for the following Clean Air Act National Ambient Air Quality Standards (NAAQS): ozone, nitrogen dioxide, particulate matter (2.5 microns in size and 10 microns in size), sulfur dioxide, carbon monoxide (CO), and lead. Because the counties are in attainment, the Clean Act conformity requirements do not apply to the project.

Based on the information provided in Air Quality Technical Memorandum, dated March 2024, this project is not expected to create adverse impacts on air quality because the project area is in attainment for all National Ambient Air Quality Standards (NAAQS) and because the project is expected to improve the Level of Service (LOS) and reduce delay and congestion on all facilities within the study area.

Construction activities will cause short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts will be minimized by adherence to all applicable State and local regulations and to the FDOT Standard Specifications for Road and Bridge Construction.

7.2.4 *Potential Impacts to Community Resources*

The Cross Florida Greenway Trail crosses the Land Bridge connecting the Marjorie Harris Carr Conservation Area from the west side of I-75 to the east. The trail follows a natural ridge over 100 feet in elevation to minimize ecological damage and is used by visitors for hiking, walking, running, nature trips, and horseback riding. The trail is also an important corridor for wildlife to safely cross the interstate. The project will pass under the Cross Florida Greenway and will not disturb the trail's route or affect the land bridge. The addition of auxiliary lanes will not affect the structure.

Within the project area, I-75 intersects the Cross Florida Greenway Trail by land under an existing easement. Coordination with the FDEP Division of Parks regarding the Cross Florida Greenway Trail occurred throughout the PD&E Study.

The FDEP Office of Greenways and Trails has identified one multi-use trail opportunity within the 500-foot buffer to run adjacent to the Cross Florida Greenway Trail.

The location of proposed pond site (18-4) occurring within the existing FDOT easement was selected with consideration to provide a large buffer between the pond and all active recreation trails in the vicinity. Since the proposed roadway improvements will not disturb the Cross Florida Greenway Trail or affect the land bridge, the proposed project is expected to result in no involvement with recreational and protected lands.

FDOT conducted several public engagement events with the Community of Royal by FDOT to discuss the potential pond effects on the rural historic landscape viewshed. FDOT is committed to working with the Community of Royal throughout the duration of the project to continue providing project status updates, maintaining an open dialogue and to develop mitigation options that are consistent with the community's vision and goals.

The following commitments are being made to mitigate the impact to the Community of Royal from the C.R. 462 bridge replacement:

- No detours during construction.
- Fencing will not be installed around the pond.
- The terrace, on the north side, will consist of a rectangular pattern and have a sunset buff pattern color.
- Provide low-level landscaping not taller than the wall height of the terrace.
- Include plants that are predominantly green year-round, showcase yellow and purple hues and blossoms, and utilize palms as opposed to trees.
- Provide a sidewalk on the north side of the bridge.
- Provide medallions highlighting the Community of Royal into the overall design on the bridge.
- FDOT is committed to keeping the lanes of travel open during construction of the C.R. 462 bridge replacement.

There are 18.9 acres of prime farmland anticipated to be impacted for the Preferred Alternative including the preferred ponds sites. These unavoidable farmland impacts were minimized as much as possible. A Farmland Conversion Impact Rating Form was prepared and sent to NRCS for review and concurrence was received on May 17, 2024. The Farmland Conversion Impact Rating form and concurrence is included in the project file.

7.2.5 Wetlands

Nine (9) wetland areas and five (5) OSWs were identified in proximity to the project. Wetland communities anticipated to be impacted primarily consist of mixed wetland hardwood communities (FLUCCS 615). All nine (9) wetland areas shown on **Figures 7-14 to 7-17** are considered jurisdictional by the SWFWMD and the FDEP. There is an estimated total of 5.38 and 3.72 acres of direct and secondary impact to wetlands, respectively. There is an estimated total of 3.1 acres of direct impact to OSW.

Cumulative impacts are not anticipated to result from the proposed project since the proposed mitigation will be completed in the same basin as the impacts. The proposed mitigation is anticipated to sufficiently offset requisite direct wetland impacts, and secondary impacts that may result from the proposed project.

Construction practices will include perimeter stabilization, as well as control BMPs for erosion, sediment, and turbidity in accordance with regulatory requirements, and a National Pollutant Discharge Elimination System (NPDES) permit will be required from the FDEP. No secondary water quality impacts should result from the proposed project. The proposed stormwater management system will intercept stormwater runoff allowing the capture and controlled removal of pollutants generated onsite prior to discharge. The proposed stormwater management system improvements will be designed to meet the state water quality standards and should ensure that ecological function, and water quantity and quality within adjacent wetlands and OSW will not be adversely affected.



Figure 7-14: Wetland Impacts (1 of 4)



Figure 7-15: Wetland Impacts (2 of 4)



Figure 7-16: Wetland Impacts (3 of 4)

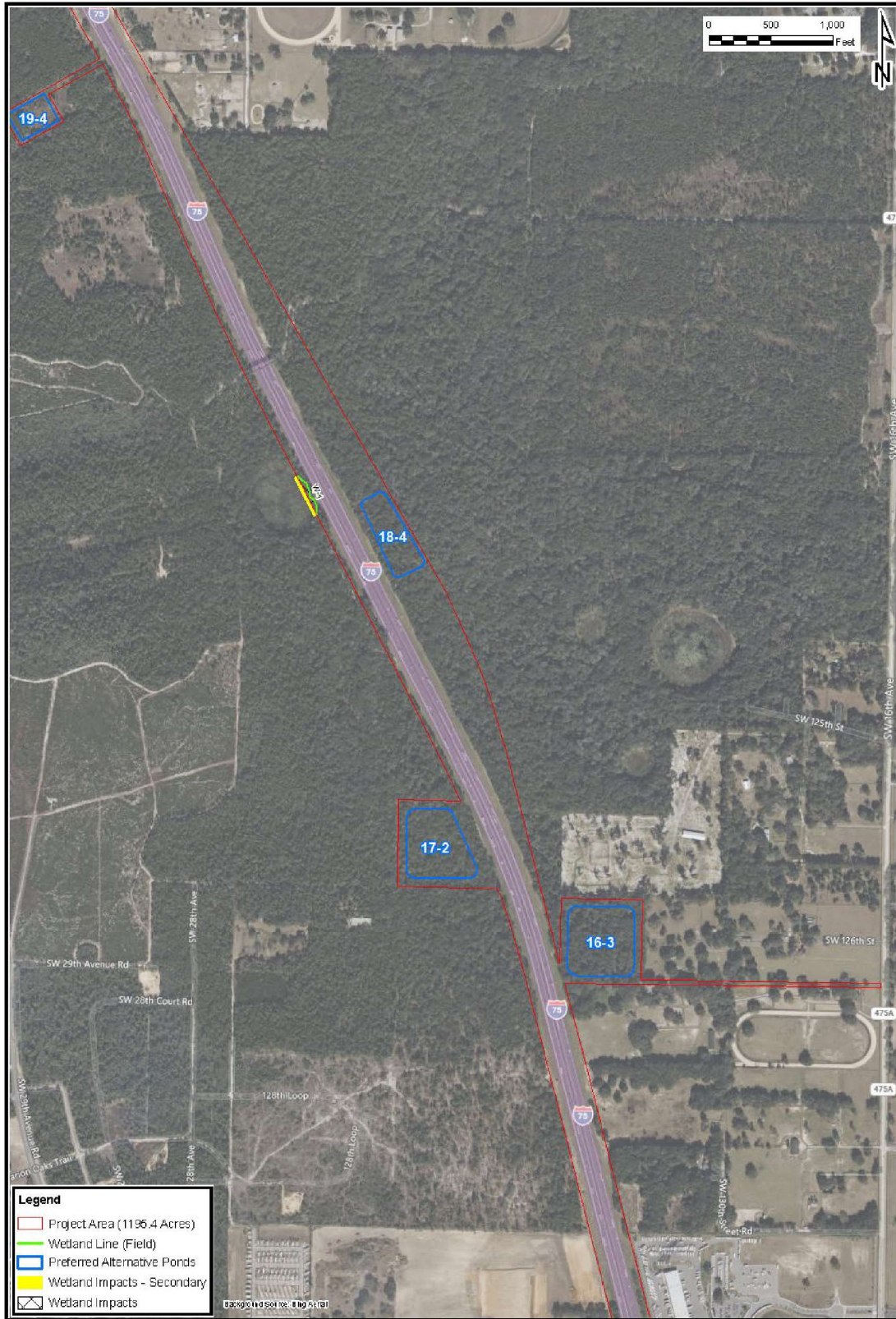


Figure 7-17: Wetland Impacts (4 of 4)

Mitigation to offset the estimated 5.38 acres of direct impacts associated with the clearing and construction of the Preferred Alternative will be required. The functional loss associated with the proposed wetland impacts was estimated using the UMAM, which is the current standard wetland functional assessment tool required by the state for assessing the functions provided by wetlands and OSW, the amount that those functions are reduced by a proposed impact, and the amount of mitigation necessary to offset that loss.

Compensatory mitigation will be required to offset an estimated 3.61 units (0.15 herbaceous and 3.46 forested) of functional loss resulting from direct impacts and 0.25 units (0.013 herbaceous and 0.237 forested) of functional loss resulting from secondary wetland impacts. Approximately 3.1 acres of OSW impacts are proposed for this project. OSWs that occur within the project are limited to permitted stormwater features. In-kind replacement and/or construction of new stormwater management features are anticipated to sufficiently offset impacts to the remaining proposed OSW impacts. Therefore, no mitigation is proposed for OSW impacts.

The preferred mitigation option proposed for this project is the purchase of mitigation credits from an approved in basin mitigation bank to offset any impacts as agreed to with the appropriate regulatory agencies. The final mitigation approach and selection of the bank(s) and number of credits will be provided once the UMAM scores have been reviewed and approved by SWFWMD and FDEP staff.

The project is located within the Withlacoochee River and the Ocklawaha River Basins with all wetland impacts occurring within the Withlacoochee River Basin. This project falls within the service areas for the Green Swamp, Withlacoochee, Crooked River, Hilochee and Hammock Lakes Mitigation Banks. As of May 2023, data available from the SWFWMD indicates that credits are available at the Green Swamp Mitigation Bank, the Hammock Lakes Mitigation Bank, and the Withlacoochee Wetland Mitigation Bank. Additionally, data available from the USACE maintained Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS) indicates that credits are available from the Green Swamp Mitigation Bank, the Crooked River Mitigation Bank, the Hilochee Mitigation Bank, and the Withlacoochee Mitigation Bank.

Wetland impacts resulting from the construction of this project will be mitigated pursuant to Section 373.4137, Florida Statutes, to satisfy all mitigation requirements of Part IV of Chapter 373, Florida Statutes, and 33 U.S.C. §1344.

7.2.6 Protected Species and Habitat

The proposed project would have “No Effect” on Florida scrub-jay (*Aphelocoma coerulescens*), Britton’s beargrass (*Nolina brittoniana*), Florida bonamia (*Bonamia grandiflora*), Lewton’s polygala (*Polygala lewtonii*), clasping warea (*Warea amplexifolia*), scrub buckwheat (*Eriogonum longifolium* var. *gnaphalifolium*) and scrub pigeon-wing (*Clitoria fragrans*). A determination of “May Affect, But Not Likely to Adversely Affect” was found appropriate for wood stork (*Mycteria americana*), Eastern indigo snake (*Drymarchon couperi*) and longspurred mint (*Dicerandra cornutissima*). A determination of “No Adverse Effect Anticipated” was given to Florida burrowing owl (*Athene cunicularia floridana*), gopher tortoise (*Gopherus polyphemus*), Florida pine snake (*Pituophis melanoleucus mugitus*), short-tailed snake (*Lampropeltis extenuate*), striped newt (*Notophthalmus perstriatus*), Florida sandhill crane (*Antigone canadensis pratensis*), southeastern American kestrel (*Falco sparverius paulus*), and wading birds common to wetlands.

No impacts are anticipated to bald eagle (*Haliaeetus leucocephalus*), Florida black bear (*Ursus americanus floridanus*) or state bats. USFWS concurred with the effect determinations in the NRE on July 3, 2024.

A more detailed description of potential project impacts to natural resources is provided within the NRE.

Protected species observed within the project corridor include the gopher tortoise, little blue heron, and longspurred mint. One hundred (100) gopher tortoise burrows were documented within the project area. A 100% survey of the suitable gopher tortoise habitat will be conducted within 90 days prior to the commencement of construction and if necessary, a permit will be obtained from the FWC. The longspurred mint was observed in clusters along the edge of the right of way within the northern portion of the project area. Clusters were generally sparse in numbers. If these areas cannot be avoided, relocation and/or seed collection will be conducted through coordination with the USFWS and Bok Tower Gardens prior to construction. Species details are discussed in the NRE.

Adverse impacts to individual species or regional populations of federal or state protected species, or their habitat are not anticipated due to the proposed action. Compensatory mitigation to offset requisite wetland impacts combined with in-kind replacement of roadside ditches and/or swales should result in no net loss of foraging habitat for the wood stork.

7.2.7 Future Land Use

Marion County future land use designation for the year 2045 expects that I-75 will primarily be located through municipal, commerce district, and rural lands. There are small portions of the roadway located through commercial and employment center lands. Sumter County future land use designation for the year 2035 primarily classifies the land surrounding I-75 as agricultural, rural residential, commercial and industrial. Future Land Use maps for Marion County and Sumter County are provided in **Appendix B**.

7.2.8 Contamination

Based on the findings of the Level I Contamination Screening Evaluation for the potential contamination sites along the roadway corridor, Level II ICAs or construction support are recommended for the following Medium Risk sites for this project (refer to **Tables 2-20** and **2-21**, and **Figures 2-18** through **2-21**).

- Site No. 2: Former gas station with petroleum groundwater impacts in the deeper portion of the surficial aquifer at a depth of about 45-50 feet.
- Site No. 4: Could affect the construction of the southwest portion of proposed Pond 0-1 if dewatering is required.
- Site No. 5: Could affect the construction of the northeast portion of proposed Pond 0-1 if dewatering is required.
- Site No. 12: Potentially has petroleum impacted soil within the work area.
- Site No. 14: Potentially has petroleum impacted soil within the work area.

Site No. 25: Potentially has petroleum impacted soil within the work area.

Site No. 28: Has groundwater impacts approximately 25 feet below the ground surface but has a conditional closure that includes restrictions on dewatering activities.

Site No. 39: Consists of areas of pits and dumps. These are outside the roadway and should be addressed individually with the stormwater ponds that are assigned a Medium Risk.

The remaining Medium Risk sites should be reviewed if dewatering is proposed in the vicinity of those sites.

Contamination Risk Ratings assigned to the proposed stormwater pond sites are summarized in **Table 7-8** and shown on **Figures 7-18** through **7-21**. Using the FDOT Risk Ratings a total of 28 Low Risk sites and three Medium Risk sites were identified.

Table 7-8: Contamination Risk Ratings: Proposed Stormwater Facilities

Pond Site No.	Location	Risk Potential
Pond 0-1	This pond site consists of two areas. Northeast and southwest corners of the I-75 and S.R. 44 interchange	Medium
Pond 1-1	About 130 feet east of I-75 and about 810 feet north of S.R. 44	Low
Pond 2-2	About 85 feet west of I-75	Low
Pond 3-1	About 140 feet southwest of I-75 and about 460 feet south of Sumter C.R. 462 East	Low
Pond 4-1	About 130 feet east of I-75 and 1,700 feet north of C.R. 231	Low
Pond 5-1/6-1	About 140 feet west of I-75 and about 700 feet north of NW 111 Lane	Low
Pond 7-1	About 190 feet east of I-75 and about 650 feet south of NE 130 th Avenue	Low
Pond 8-3A	About 450 feet east of I-75 and about 460 feet north of NE 130 th Avenue	Low
Pond 8-3B	About 210 feet east of I-75 and about 150 feet south of NE 135 th Grove	Low
Pond 9-2	About 165 feet west of I-75	Low
Pond 10-3	About 270 feet west of I-75 and about 1,200 feet east of SW 20 th Avenue Road	Low
Pond 11-1	About 155 feet east of I-75 and about 70 feet west of South Magnolia Avenue	Low
Pond 12-1	About 200 feet east of I-75 and about 90 feet south of the I-75 northbound weigh station	Low
Pond 13-1	About 340 feet west of I-75 and about 120 feet north of 21 st Terrace	Low
Pond 14-1/15-1	About 775 feet east of I-75, about 2,700 feet south of S.R. 484	Low
Pond 16-3	About 145 feet east of I-75	Low
Pond 17-2	About 180 feet west of I-75	Low
Pond 18-4	About 115 feet east of I-75 located in FDOT easement 0.25 mile south of Greenway Trail	Low
Pond 19-4	About 650 feet west of I-75	Medium
Pond 20-2	About 520 feet east of I-75 and about 200 feet east of SW 109 th Place	Low
Pond 21-1	About 90 feet west of I-75 and about 325 feet northwest of SW 106 th Street	Low
Pond 22-1	About 145 feet east of I-75	Low

Pond Site No.	Location	Risk Potential
Pond 23-1	About 115 feet east of I-75	Low
Pond 24-1	About 130 feet east of I-75. The eastern half of this pond site shares a footprint with Pond 24-3	Low
Pond 25-1/ 26-1	About 110 feet east of I-75 and about 355 feet east of SW 38 th Avenue. The northern portion of this pond contains the footprint of Pond 25-2	Low
Pond 27-3	About 170 feet east of I-75 and about 50 feet north of SW 85 th Street	Low
Pond 28-1	About 160 feet east of I-75 and about 80 feet north of SW 35 th Avenue	Medium
Pond 29-1	About 130 feet east of I-75	Low
Pond 30-3	About 430 feet west of I-75 and about 1,900 feet north of SW 66 th Street	Low
Pond 31-1	About 250 feet west of I-75 and about 65 feet east of SW 40 th Avenue	Low
Pond 32-3	About 1,490 feet east of I-75 and about 45 feet south of SW 42 nd Street	Low

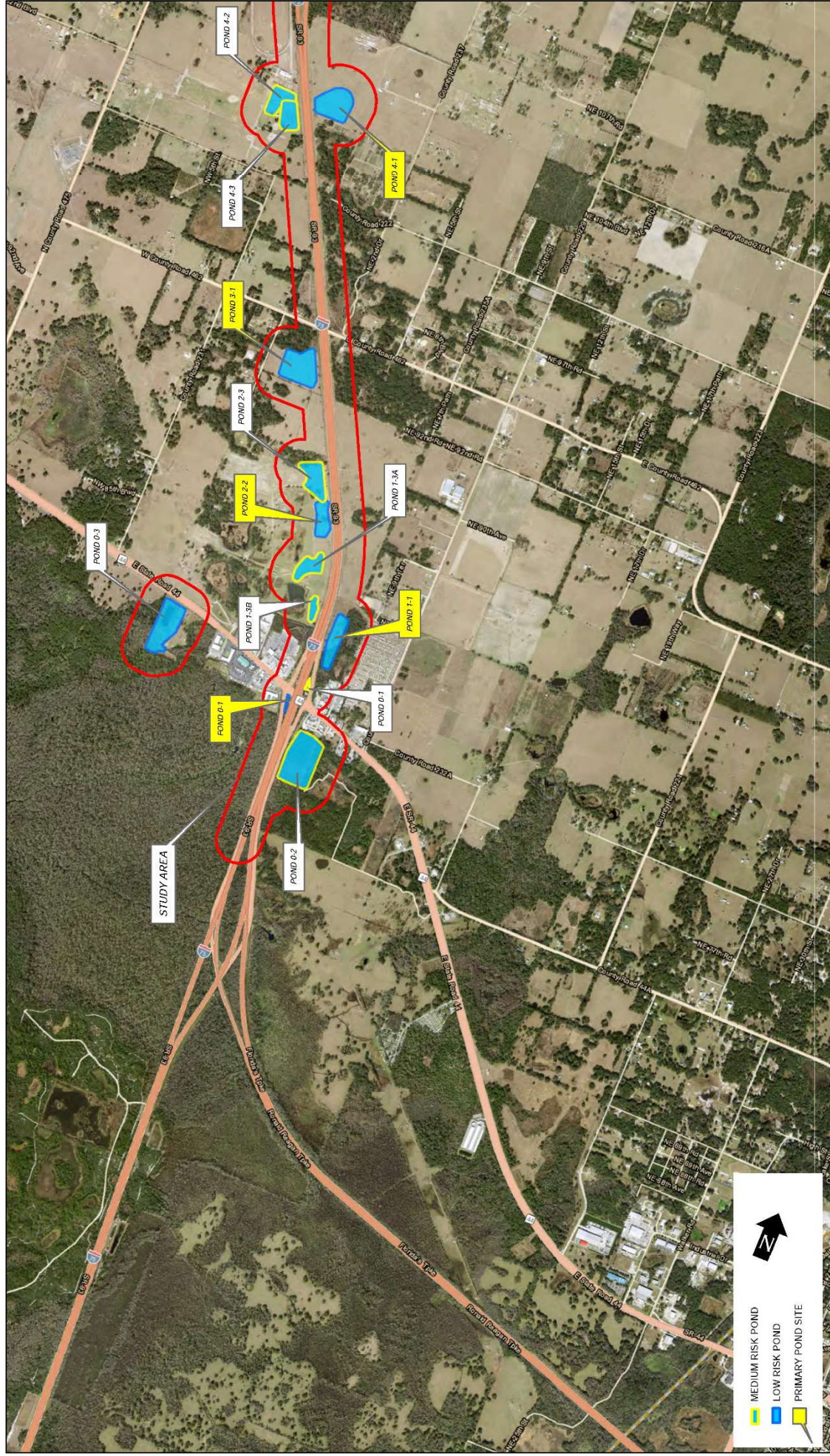


Figure 7-18: Potential Contamination Pond Site Map (1 of 4)

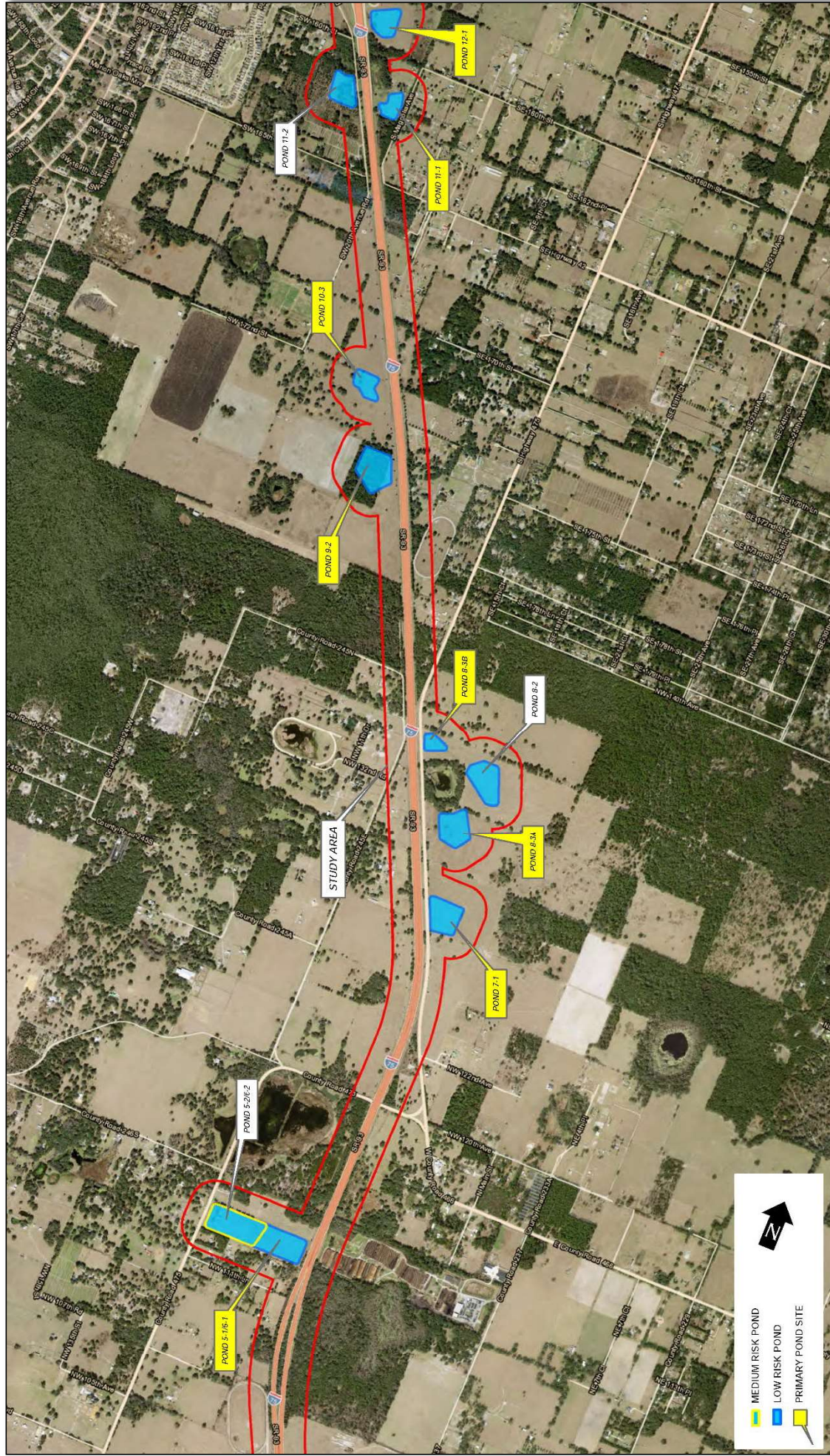


Figure 7-19: Potential Contamination Pond Site Map (2 of 4)

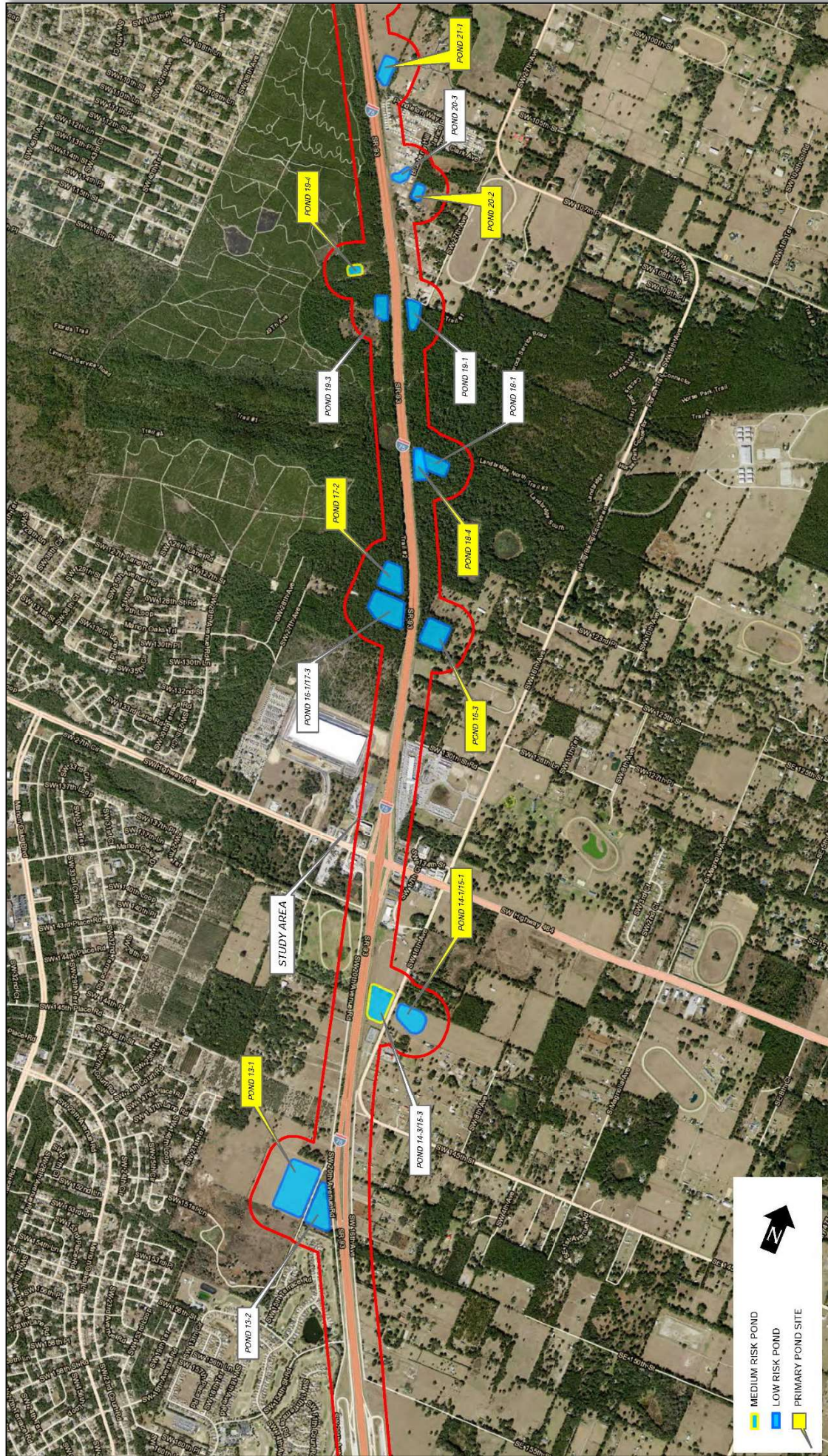


Figure 7-20: Potential Contamination Pond Site Map (3 of 4)

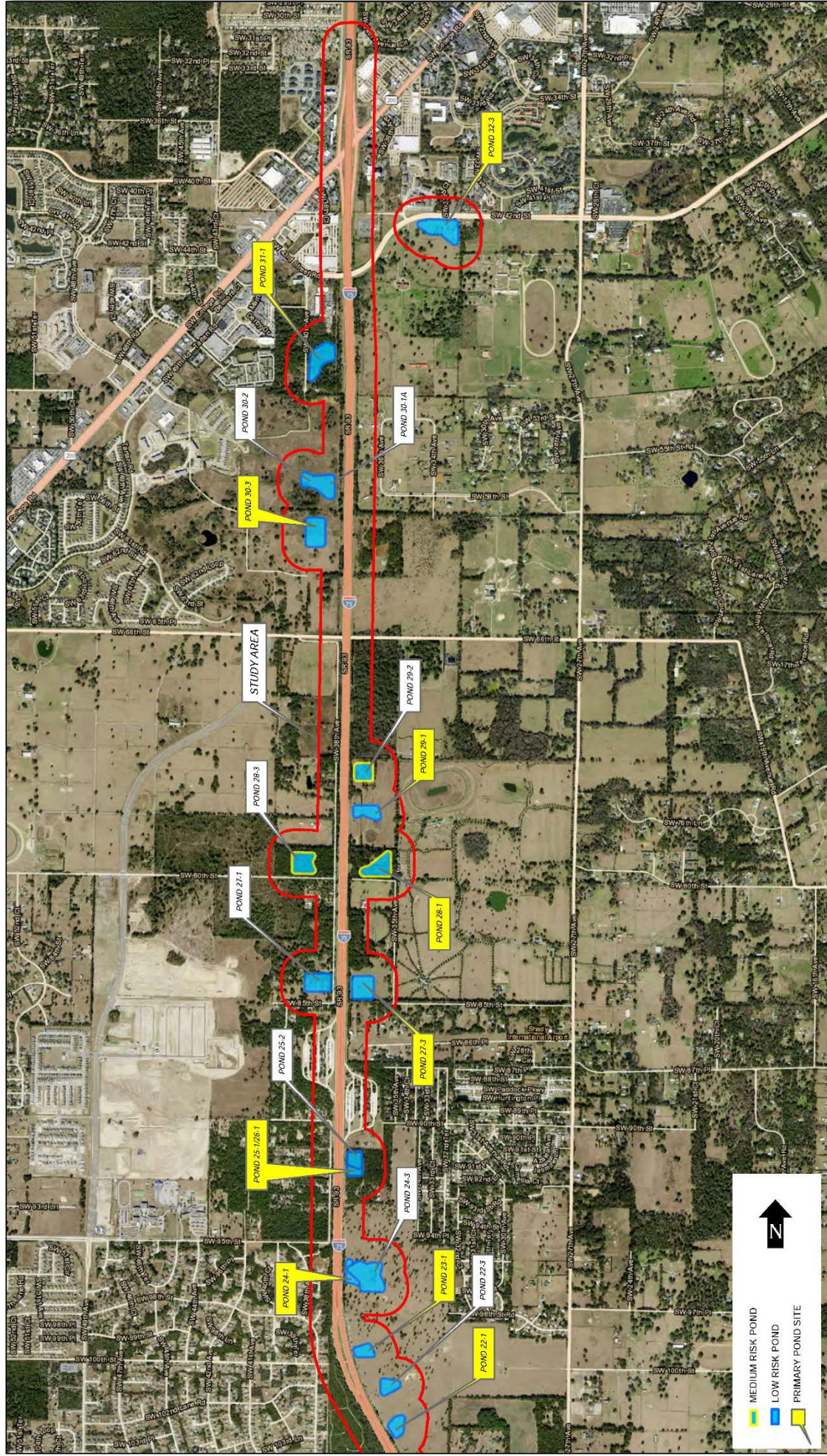


Figure 7-21: Potential Contamination Pond Site Map (4 of 4)

For the potential stormwater facilities contamination sites, it is recommended that the three Medium Risk Ponds be evaluated for potential contamination impacts to determine their suitability for this project. Specifically, Pond 0-1 has potential petroleum contamination due to Sites 4 and 5, Pond 19-4 is in an area of historical excavation, and Pond 28-1 contains areas of dumping.

Table 7-9 includes contamination sites for both the roadway and pond sites that are recommended for further assessment due to potential impacts within the project area.

Table 7-9: Contamination Sites with Potential Impacts in Project Area

Contamination Site	Reason for Potential Impact
Site No. 2: Apec-Treeline #842	Petroleum impacted soil within work area
Site No. 4: Former BP Station	Southwest portion of proposed Pond 0-1 could be affected if dewatering is required
Site No. 5: Pilot #4556; Wilco Travel Plaza #4510	Northeast portion of proposed Pond 0-1 could be affected if dewatering is required
Site No. 12: Tampa Bay Auto Transport	Petroleum impacted soil within work area
Site No. 14: Circle Express Spill	Petroleum impacted soil within work area
Site No. 25: Mike's Mobile Repair Service	Petroleum impacted soil within work area
Site No. 28: Eagle Transport	Groundwater impacts approximately 25 feet below the ground surface
Site No. 39	Area of Pits-Dumps, Udorthents
Pond Site 0-1	Potential petroleum contamination
Pond Site 19-4	Area of historical excavation
Pond Site 28-1	Contains areas of dumping

Based upon the above considerations, it is determined that there is no practical alternative to the proposed action, and that all practical measures have been included to eliminate or minimize all possible impacts from contamination involvement.