Preliminary Engineering Report

US 98 / SR 35 / SR 700
From CR 54 to US 301 / SR 39
Project Development & Environment (PD&E) Study

Florida Department of Transportation

District 7

Work Program Item Segment No. 443368-2

ETDM Project No. 14374

Pasco County, Florida

October 2022

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.

Preliminary Engineering Report

US 98 / SR 35 / SR 700
From CR 54 to US 301 / SR 39
Project Development & Environment (PD&E) Study

Work Program Item Segment No. 443368-2
ETDM Project No. 14374
Pasco County, Florida

Prepared for:

Florida Department of Transportation
District Seven

Prepared by:
H.W. Lochner, Inc.
4350 West Cypress Street, Suite 800
Tampa, FL 33607

October 2022

PROFESSIONAL ENGINEER CERTIFICATION

PRELIMINARY ENGINEERING REPORT

Project: US 98 / SR 35 / SR 700 from CR 54 to US 301 / SR 39

ETDM Number: 14374

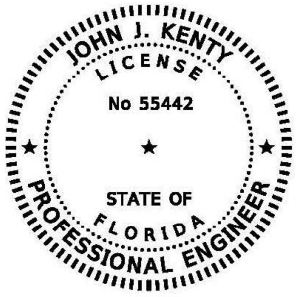
Financial Project ID: 443368-2-22-01

Federal Aid Project Number: N/A

This preliminary engineering report contains engineering information that fulfills the purpose and need for the US 98 / SR 35 / SR 700 Project Development & Environment Study from CR 54 to US 301 / SR 39 in Pasco, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.

I hereby certify that I am a registered professional engineer in the State of Florida practicing with H.W. Lochner, Inc., and that I have prepared or approved the evaluation, findings, opinions, conclusions or technical advice for this project.

John Kenty Date: 2022.11.03 15:53:37-04'00'



This item has been digitally signed and sealed by John J. Kenty on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

John J. Kenty, PE
P.E. #55442
H.W. Lochner, Inc.
4350 W. Cypress Street, Ste 800
Tampa, FL 33607

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District 7 is conducting a Project Development and Environment (PD&E) study along US Highway 98 (US 98) / State Road (SR) 35 / SR 700 from County Road (CR) 54 to US 301 / SR 39, in Pasco County. The study will focus on widening this section of US 98 from a 2-lane undivided facility to a 4-lane divided facility and includes the realignment of US 98 between CR 35A to US 301. The realignment allows US 98 to align with the Clinton Avenue/CR 52A (New SR 52) intersection at US 301 and was the result of a separate Alternatives Corridor Evaluation (ACE) study (Work Program Item (WPI) Segment No. 443368-1). The study will also evaluate issues related to traffic operations, access management, safety, and include pedestrian and bicycle accommodations.

The PD&E study objectives include: determine proposed typical sections and develop preliminary conceptual design plans for proposed improvements, while minimizing impacts to the environment; consider agency and public comments; and ensure project compliance with all applicable federal and state laws. A Type 2 Categorical Exclusion is being prepared as part of this study. The proposed improvements will include construction of stormwater management facility (SMF) and floodplain compensation (FPC) sites. The PD&E study satisfies all applicable requirements, including the National Environmental Policy Act (NEPA), to qualify for federal-aid funding of subsequent development phases (design, right of way (ROW) acquisition, and construction).

This Preliminary Engineering Report was prepared to evaluate proposed improvements for the widening of US 98, including SMF and FPC sites. The proposed improvements will widen US 98 from a 2-lane undivided facility to a 4-lane divided facility from CR 54 to north of Townsend Road, approximately 6.8 miles, and realign US 98 from north of Townsend Road to US 301, approximately 2.0 miles. The realignment allows US 98 to align with the Clinton Avenue (New SR 52) intersection at US 301 and was the results of a separate ACE study (WPI Segment No. 443368-1).

The 4-lane divided facility will consist of two 11 to 12-foot travel lanes in each direction separated by a median which varies from 14 to 40 feet. Where the existing roadway is widened, the roadway consists of rural typical sections with two 12-foot travel lanes in each direction and will fit within the existing 160-foot wide ROW. In the realignment section, the roadway consists of a suburban typical section with two 12-foot travel lanes in each direction located within a proposed 245-foot wide ROW and includes a 6-foot sidewalk on the east side of the road and a 12-foot shared use path on the west side of the road. Where the new US 98 connects to Clinton Avenue and extends to US 301, the roadway consists of an urban typical section with two 11-foot travel lanes in each direction within a 140-foot wide ROW and includes a 6-foot sidewalk on the east side of the road and a 10-foot shared use path on the west side of the road that connects to the existing shared use path on US 301. At the Hillsborough River and Old Lakeland Highway / CSX Railroad locations, the bridges will be replaced with twin bridges with two 12-foot travel lanes with 6-foot inside shoulders and 10-foot outside shoulders. Both bridges will include barrier separated 10-foot walkway to accommodate future shared use path and/or sidewalk (bicycle and pedestrian) accommodations and will be located within the existing 160-foot ROW. Eight stormwater and two

floodplain management sites were identified to capture and retain stormwater and compensate for any impacts to existing floodplain areas.

This study documents the need for the improvements as well as the procedures utilized to develop and evaluate various improvements, including elements such as proposed typical sections, preliminary horizontal alignments, and intersection enhancement alternatives.

Table of Contents

List of Figures

List of Tables

Appendices

SECTION 1 INTRODUCTION

1.1 PD&E STUDY PURPOSE

The objective of the PD&E study is to assist the FDOT's Office of Environmental Management (OEM) in reaching a decision on the type, location, and conceptual design of the proposed improvements for the widening of US 98, including SMF and FPC sites. This study documents the need for the improvements as well as the procedures utilized to develop and evaluate various improvements, including elements such as proposed typical sections, preliminary horizontal alignments, and intersection enhancement alternatives.

The PD&E study satisfies all applicable requirements, including the National Environmental Policy Act (NEPA), to qualify for federal-aid funding of subsequent development phases (design, ROW acquisition, and construction). This project was screened through the FDOT's Efficient Transportation Decision Making (ETDM) process as ETDM Project No. 14374. The ETDM Programming Screen Summary Report was published on February 24, 2021, containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical, and social resources. A Type 2 Categorical Exclusion will be prepared as part of this PD&E study.

The project is located in Sections 11, 12, 13, and 14, Township 25S, and Range 21E; and Sections 18, 19, 20, 27, 28, 29, 34 and 35, Township 25S, and Range 22E; Pasco County, Florida. See **Figure 1-1** for Project Location Map.

1.2 PROJECT PURPOSE AND NEED

Purpose

The purpose of this project is to evaluate the capacity improvements of the corridor, including the realigned intersection of US 98/Clinton Ave at US 301 which will enhance safety and provide system linkage/regional connectivity.

Need

A realignment of US 98 to Clinton Avenue intersection is needed to eliminate the existing closely spaced intersections of US 301 at US 98 and US 301 at Clinton Avenue, to reduce crashes, and to enhance safety. Construction of the realignment of SR 52 from east of McKendree Road to east of US 301 began in 2019 and will serve as an additional east/west route in the regional transportation network. When completed, this improvement will increase traffic at the US 301 at US 98 and US 301 at Clinton Avenue intersections, exacerbating the current intersection safety concerns. Also, plans are currently underway for the widening of US 98 from north of West Socrum Loop Road to South of CR 54 (Financial Management (FM) No.: 436673-1-22-01). This project will address capacity needs for the final segment of US 98 connecting to US 301 (which is a designated regional freight mobility corridor) as well as operational improvements to the intersection of US 98 and US 301 ultimately resulting in enhanced transportation network connectivity.

Figure 1-1 Project Location Map

Project Status

In April 2019, FDOT District Seven initiated the ACE process for the US 301/US 98/Clinton Avenue Intersection Realignment Study in Pasco County, Florida. The ACE completed in January 2021 and recommended the Alternative B alignment. The widening and realignment of US 98 is listed in both the Needs Plan and the Cost Feasible Plan of the Pasco County MPO's 2045 Long Range Transportation Plan (LRTP). The project is funded for ROW and design-build construction (WPI Segment #443368-3 and -4) on the Pasco County Metropolitan Planning Organization's (MPO's) 2023-2027 Transportation Improvement Program (TIP) Project List. The project is also listed on the current State Transportation Improvement Program (STIP) for ROW and design-build construction.

System Linkage

US 98 is a regional corridor which provides a connecting link between Polk and Pasco Counties and, within the area, provides a connection to the cities of Lakeland and Bartow to the south.

US 98 is the longest road in Florida and spans from Pensacola to Palm Beach primarily traveling along the Gulf Coast. Plans are currently underway for the widening of US 98 from north of West Socrum Loop Road to South of CR 54 (FM No.: 436673-1-22-01). This project will provide additional capacity for the final segment of US 98 connecting to US 301 (which is a designated regional freight mobility corridor) as well as operational improvements to the intersection of US 98 and US 301 ultimately resulting in enhanced transportation network connectivity. Currently, this segment of US 98 experiences truck volumes in excess of 23% of annual average daily traffic (AADT) which illustrates this facility's importance to the overall freight network within the State of Florida.

Also, the SR 52/Clinton Avenue extension from I-75 to West of Fort King Road (FM No.: 435142-1) is currently under construction. This extension will provide direct linkage to I-75 from this project.

Safety

The closely spaced intersections of US 301 at US 98 and US 301 at Clinton Avenue have crash rates that exceed the statewide average. Between 2014 and 2018, the intersection of US 301 at US 98 experienced a total of 63 crashes. The predominant crash types were angle crashes (58%) followed by rear end crashes (29%). This intersection exhibited a crash rate (0.816 crashes per million entering vehicles) that was consistently higher than the statewide average (0.270) for a similar type of intersection resulting in a crash ratio of 3.022 (crash rate divided by statewide average crash rate).

Between 2014 and 2018, the intersection of US 301 and Clinton Avenue experienced a total of 65 crashes. The predominant crash types were rear end crashes (55%) followed by angle crashes (25%). This intersection exhibited a crash rate (1.259) that was consistently higher than the statewide average (0.526) for a similar type of intersection resulting in a crash ratio of 2.394. A realignment of US 98 to Clinton Avenue to eliminate high traffic volumes at one of the two closely spaced intersections has the potential to reduce crashes and enhance safety.

Capacity

US 98 operates at Level of Service (LOS) C under the existing conditions. However, the US 301 at Clinton Avenue intersection fails to meet the LOS target D. In the design year (2045), US 98 from CR 54 to Old Lakeland Highway will fail to meet the LOS target C and both the intersections of US 301 at Clinton Avenue and US 301 at US 98 will fail to meet the LOS target of D with no improvements. Proposed improvements are expected to increase LOS along the corridor and at intersections to an acceptable LOS.

1.3 COMMITMENTS

The following commitments are made for this project:

1. The FDOT will implement the most current version of the US Fish and Wildlife Service's (USFWS) Standard Protection Measures for the Eastern Indigo Snake.
2. The FDOT will complete a wood stork suitable foraging habitat assessment during the project's Design phase to ensure that the proper amount of mitigation is procured for impacts to suitable wood stork foraging habitat in accordance with The Corps of Engineers, Jacksonville District, U. S. Fish and Wildlife Service, Jacksonville Ecological Services Field Office and State of Florida Effect Determination Key for the Wood Stork in Central and North Peninsular Florida.
3. The FDOT will resurvey the project footprint for the presence of burrowing owls, Florida sandhill cranes and Southeastern American kestrels during the nesting season and prior to construction commencement. If nesting activity is noted, coordination with the FWC will be completed as necessary.
4. The FDOT will resurvey two known osprey nests in cell towers within the study area during the osprey nesting season and prior to construction to determine if these nests are still used by ospreys or other bird species.
5. The FDOT will conduct surveys for the stiff-leaved wild pine, plume polypody and other state-listed plant species during the project's design/environmental permitting phase and prior to construction. If listed plants are observed, the FDOT will continue coordination with the Florida Department of Agriculture and Consumer Services (FDACS) and Florida Native Plant Society or similar organization to facilitate the relocation of protected plants within the project footprint.
6. To facilitate wildlife movement between the state-owned lands on both sides of the road, a wildlife feature will be provided. This feature will consist of 10-foot-wide shelves constructed at the seasonal high-water elevation on both sides of the Hillsborough River beneath the US 98 bridge.

1.4 ALTERNATIVES ANALYSIS SUMMARY

For the widening of US 98, ROW constraints associated with the conservation lands associated with the Green Swamp Wilderness Preserve and Upper Hillsborough River Preserve limited alternatives. Centering

the widening within the existing ROW provides the best alternative with the least environmental impacts and engineering constraints.

An ACE study was performed to evaluate alternatives that realign US 98 to Clinton Avenue to eliminate the current closely spaced intersections of US 301 at US 98 and US 301 at Clinton Avenue; facilitate east/west travel; maximize the benefits of the improvements to Clinton Avenue and designation as SR 52 west of US 301; and enhance safety along the corridor (WPI Segment No.443368-1). Five (5) corridors were developed. Two (2) realign US 98 to the south increasing the distance between the intersections of US 301 at US 98 and US 301 at Clinton Avenue. These corridors did not satisfy the stated purpose and need of the study and were eliminated. Three (3) corridors realign US 98 to the north to Clinton Avenue, east of the US 301 and Clinton Avenue intersection. The realignments proposed with these corridors eliminate one of the major intersections and a required turning and weaving movement for most routes through the area which will alleviate congestion and improve safety.

The ACE selected Corridor B (presented as the preferred alternative in this PD&E study). Corridor B has minimal impacts to the natural environment, no involvement with cultural resources, minimal involvement with physical environmental resources, and minimal social impacts. While slightly more costly than one of the other corridors, the fewer potential social impacts to residential relocations and community cohesion justify the selection. The ACE was approved by OEM on January 28, 2021.

1.5 DESCRIPTION OF PREFERRED ALTERNATIVE

The proposed improvements will widen US 98 from a 2-lane undivided facility to a 4-lane divided facility from CR 54 to north of Townsend Road, approximately 6.8 miles, and realign US 98 from north of Townsend Road to US 301, approximately 2.0 miles. The realignment allows US 98 to align with the Clinton Avenue (New SR 52) intersection at US 301 and was the results of a separate ACE study (WPI Segment No. 443368-1).

The 4-lane divided facility will consist of two 11 to 12-foot travel lanes in each direction separated by a median which varies from 14 to 40 feet. Where the existing roadway is widened, the roadway consists of rural typical sections with two 12-foot travel lanes in each direction and will fit within the existing 160-foot wide ROW. In the realignment section, the roadway consists of a suburban typical section with two 12-foot travel lanes in each direction located within a proposed 245-foot wide ROW and includes a 6-foot sidewalk on the east side of the road and a 12-foot shared use path on the west side of the road. Where the new US 98 connects to Clinton Avenue and extends to US 301, the roadway consists of an urban typical section with two 11-foot travel lanes in each direction within a 140-foot wide ROW and includes a 6-foot sidewalk on the east side of the road and a 10-foot shared use path on the west side of the road that connects to the existing shared use path on US 301. At the Hillsborough River and Old Lakeland Highway / CSX Railroad locations, the bridges will be replaced with twin bridges with two 12-foot travel lanes with 6-foot inside shoulders and 10-foot outside shoulders. Both bridges will include barrier separated 10-foot walkway to accommodate future shared use path and/or sidewalk (bicycle and pedestrian) accommodations and will be located within the existing 160-foot ROW. The remaining segment of Old US 98 between the new US 98 connection and US 301 (Mile Post (MP) 7.185 to MP 8.183) will be milled and

resurfaced. Eight stormwater and two floodplain management sites were identified to capture and retain stormwater and compensate for any impacts to existing floodplain areas. The conceptual plans for the preferred alternative are shown in **Appendix A**.

1.6 LIST OF TECHNICAL DOCUMENTS

Table 1-1 lists the technical documents that have been prepared as part of this study.

Table 1-1 US 98 PD&E Study Technical Documents

Technical Document	Dated
Public Involvement	
Public Involvement Plan	April 2021
Comments and Coordination Report	October 2022
Engineering	
Preliminary Engineering Report	October 2022
Context Classification Assignment Evaluation	October 2020
Location Hydraulics Report	September 2022
Pond Siting Report	July 2022
Project Traffic Analysis Report	September 2022
Typical Section Package	October 2022
Utility Assessment Package	September 2022
Environmental	
Type 2 Categorical Exclusion	October 2022
Conceptual Stage Relocation Plan	September 2022
Contamination Screening Evaluation Report	September 2022
Cultural Resource Assessment Survey	October 2021
Cultural Resource Assessment Survey Technical Memorandum	November 2021
Cultural Resource Assessment Survey Technical Memorandum Addendum	May 2022
Cultural Resource Assessment Desktop Analysis	September 2022
Natural Resource Evaluation	October 2021
Natural Resource Evaluation Technical Memorandum	August 2022
Noise Study Report	September 2022
Water Quality Impact Evaluation	July 2022

SECTION 2 EXISTING CONDITIONS

2.1 ROADWAY

The existing US 98 from CR 54 to US 301 is a 2-lane roadway. The roadway is functionally classified by FDOT as a Rural Principal Arterial – Other from CR 54 to Old Lakeland Highway (CR 35A) and Urban Principal Arterial – Other from Old Lakeland Highway (CR 35A) to US 301. The 2-lane undivided facility has 12-foot travel lanes and 8-foot (4-foot paved) shoulders. There are no sidewalks, shared use paths, bike lanes or other similar multi-modal facilities within the project corridor. The existing ROW along the project corridor is 160 feet wide. The existing roadway typical section is provided in **Figure 1-2**.

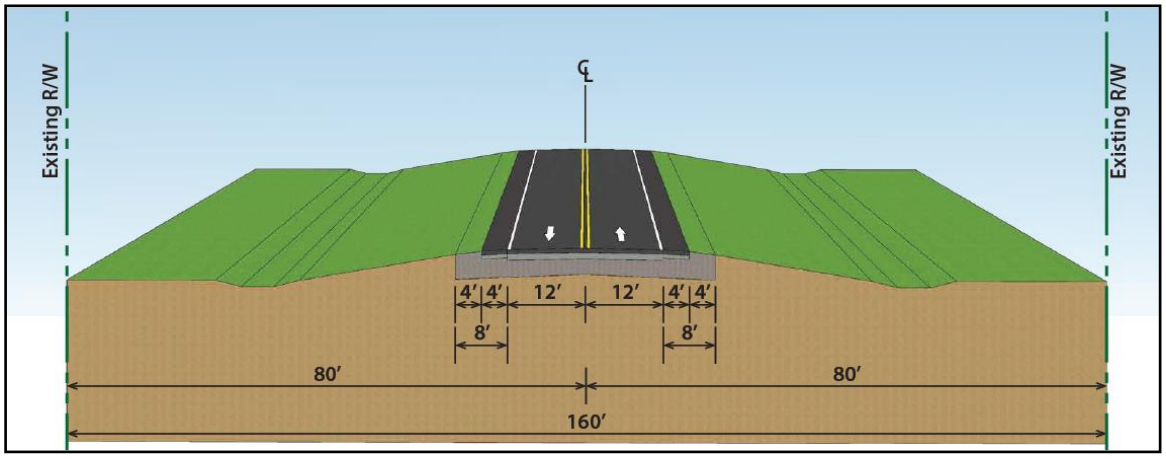


Figure 2-1 Existing US 98 Roadway Typical Section

2.2 RIGHT OF WAY

The existing ROW of US 98 is 160 feet for most of the project length. The one area of exception is in the vicinity of Old Lakeland Highway where it widens to approximately 250 feet. This additional ROW width accommodates the connection from US 98 to Old Lakeland Highway. The ROW width is perpendicular to the centerline of the existing US 98.

2.3 ROADWAY CLASSIFICATION & CONTEXT CLASSIFICATION

The roadway functional classification of the existing US 98 from CR 54 (Mile Post (MP) 0.00) to Old Lakeland Highway (MP 5.093) is Rural Principal Arterial – Other. From Old Lakeland Highway (MP 5.093) to US 301 (MP 8.183), the roadway is functionally classified as an Urban Principal Arterial – Other and is inside the Urban Area. The Context Classification of the roadway is C1 (Natural) from MP 0.00 to MP 1.065. The remainder of the project, from MP 1.065 to 8.177 has a Context Classification of C2 – Rural.

2.4 ADJACENT LAND USE

The majority of the existing adjacent land use is agricultural with some commercial parcels in the area of Old Lakeland Highway and US 301. Additionally, a few parcels are zoned Master Planned Unit

Development just north of Old Lakeland Highway as well as a few parcels zoned residential near Musselman Road/Wilds Road.

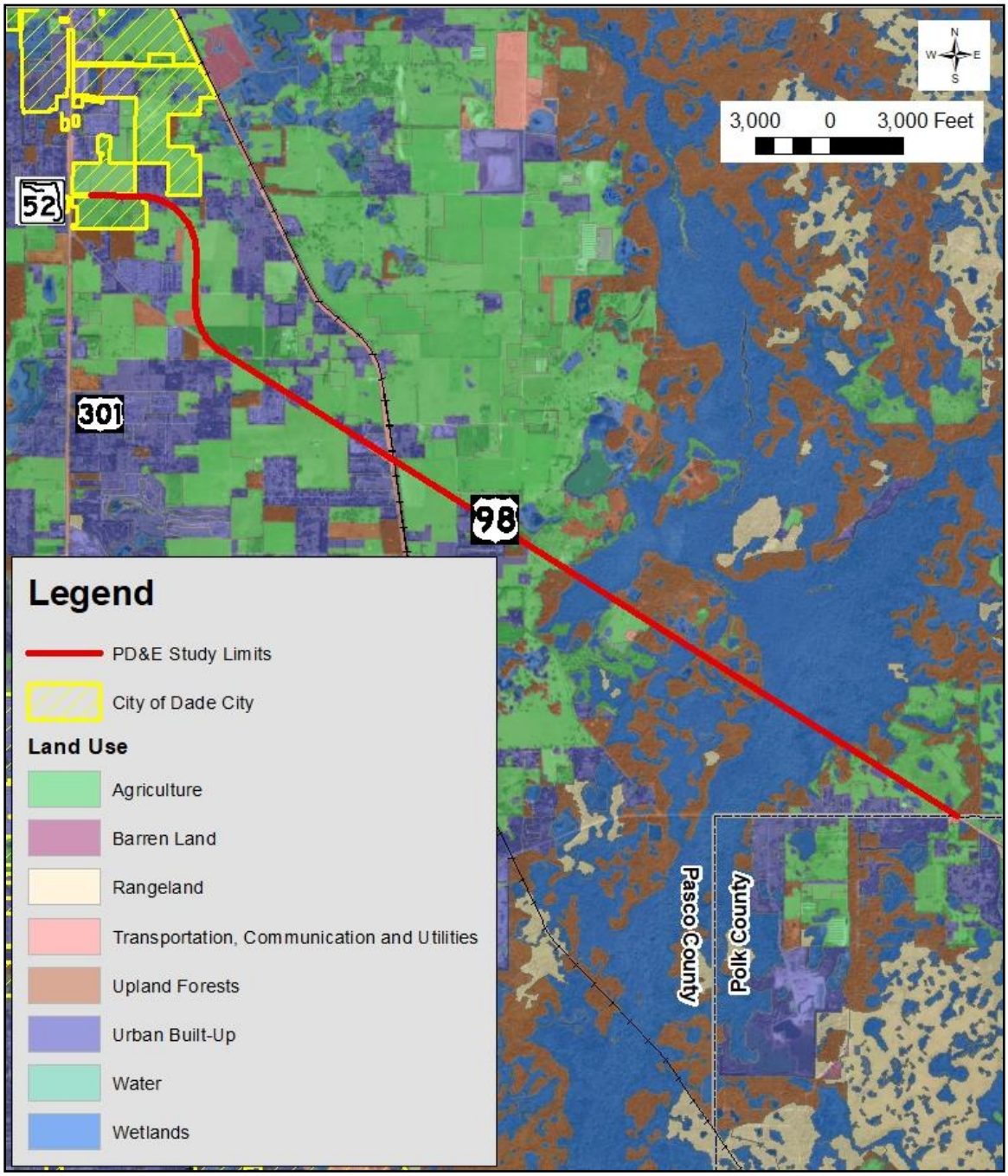


Figure 2-2 Existing Land Use

2.5 ACCESS MANAGEMENT CLASSIFICATION

US 98 from CR 54 (MP 0.00) to US 301 (MP 8.183) is designated an Access Management Class 3. Class 3 has a restrictive type of median with connection spacing of 660 feet for design speed greater than 45 mph. Median opening spacing is 1,320 feet for directional and 2,640 feet for full. Signal spacing is 2,640 feet.

2.6 DESIGN AND POSTED SPEEDS

The posted and design speed along the corridor is 60 mph from CR 54 (MP 0.00) to about 600 feet north of Jim Jordan Road (MP 6.418). The posted and design speed drops to 55 mph at this location and remains until the northern project limit of US 301.

2.7 VERTICAL AND HORIZONTAL ALIGNMENT

The southern terminus of the study is the intersection of US 98 and CR 54. From this intersection, US 98 heads in a northwesterly direction along a tangent for a little over 7 miles. The roadway then curves slightly to the right for nearly a quarter of a mile. The curve is followed by a tangent section approximately a half mile in length until the roadway curves to the left to intersect with US 301. **Table 2-1** provides the curve data based upon the As-Built Plans for the US 98 (SR 35) Resurfacing from CR 54 to US 301 (FPID 416839-1-52-01).

Table 2-1 Existing Horizontal Curve Data

Curve #	Point of Intersection (PI)	Delta	Degree of Curve	Length	e
1	Sta 1327+00.00	12° 36’ 28” RT	1° 00’ 12	1256.67’	NC*

Note: The As-Built indicates that the design speed for this curve is 55 mph. A superelevation of NC does not meet the requirements of FDM 210.9

Utilizing the extracted survey information along the baseline of the existing roadway, a “best fit” profile was created to document the existing vertical alignment for evaluation along each of these roadways. The existing US 98 profile is relatively flat from the southern terminus until approximately (MP 4.0) where the profile is comprised of rolling terrain and grades range from approximately 0.05% to 5.00%. Of the 24 vertical curves, one crest vertical curve and one sag curve do not meet the current Florida Department of Transportation Design Manual (FDM) K value criteria.

2.8 PEDESTRIAN ACCOMMODATIONS

Currently, no pedestrian accommodations exist along the project corridor within the project limits.

2.9 BICYCLE FACILITIES

No dedicated or marked bicycle facilities are present along US 98 within the project limits. However, a four-foot paved shoulder is present that could be utilized.

2.10 TRANSIT FACILITIES

Pasco County Public Transportation (PCPT) provides the transit (bus) service for Pasco County. However, the bus routes do not utilize US 98 within the project study area. Therefore, there are no transit facilities associated with the project.

2.11 PAVEMENT CONDITION

The FDOT All System Pavement Condition Forecast dated February 16, 2021 for District 7 – Pasco County provides Distress Ratings for Cracking and Ride quality along the project corridor. **Table 2-2** contains an excerpt from the Condition Forecast that pertains to the project corridor.

Each section of pavement is rated for cracking, and ride on a 0 to 10 scale with 0 being the worst and 10 is the best. Any crack rating of 6.0 or less is considered deficient pavement. For speed limits greater than 45 MPH, a ride rating of 6.0 or less is considered deficient.

Table 2-2 Pavement Condition Survey Results

Beginning Milepost	Ending Milepost	Most Recent Surveyed Year	Condition Category	Ratings	Year Finished Paving
0.00 (CR 54)	1.627 (Hillsborough River Bridge)	2021	Cracking	7.5	2010
			Ride	8.0	
1.627 (Hillsborough River Bridge)	5.170 (Old Lakeland Hwy Bridge)	2021	Cracking	6.5	2010
			Ride	7.8	
5.170 (Old Lakeland Hwy Bridge)	8.183 (US 301)	2021	Cracking	7.5	2010
			Ride	7.5	

The existing pavement is generally in good condition with the except of the cracking from the Hillsborough River Bridge to the Old Lakeland Hwy Bridge which is projected to have a deficient rating by 2026.

2.12 TRAFFIC VOLUMES AND OPERATIONAL CONDITIONS

2.12.1 Data Collection

Traffic count data was collected for the US 301/US 98/SR 35/SR 700 study area for the development of existing year (2019) traffic volumes. As part of the previously conducted ACE Study, 72-hour bi-directional (approach and departure volumes at 15-minute increments) machine classification counts, 48-hour bi-directional (approach and departure volumes at 15-minute increments) machine counts, 2-hour AM (from 7:00 AM to 9:00 AM) and PM (from 4:15 PM to 6:15 PM) turning movement counts (TMCs), pedestrian, and bicycle counts were collected in April and May of 2019 at the following intersection locations:

- US 98 Access Road at Old Lakeland Highway
- US 98 at US 301
- US 301 at Clinton Avenue

Additionally, 2-hour AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) TMCs were collected at the US 98 and CR 54 intersection on March 4, 2021.

2.12.2 Design Traffic Factors

Design traffic factors, including design hour factor (K), directional factor (D), and design hour truck factor (DHT), were determined using historical traffic data obtained from the FDOT 2020 Florida Traffic Online (FTO) database and field collected counts. DHT is identified by the FDOT Project Traffic Forecasting Handbook (2019) as half of the 24-hour truck percentage (T_{24}). Reported K and D factors and DHT for use in all analysis can be found in **Table 2-3** and **Table 2-4**, respectively.

Table 2-3 Design Traffic Factors

Factor	
Design Hour Factor (K-Factor)	0.09
Directional Factor (D-Factor)	51.5% to 69.3%

Table 2-4 Design Hour Truck Factors

Segment	T_{24}	DHT
US 98		
East of CR 54	13.5%	7.0%
West of CR 54	23.5%	12.0%
East of Old Lakeland Highway	23.9%	12.0%
West of Old Lakeland Highway	15.2%	8.0%
East of US 301	15.2%	8.0%
US 301		
South of US 98	7.1%	4.0%
Between US 98 and Clinton Avenue	5.9%	3.0%
North of Clinton Avenue	6.4%	3.0%
Clinton Avenue		
West of US 301	8.1%	4.0%
East of US 301	5.1%	3.0%
Old Lakeland Highway		
South of US 98	22.7%	11.0%
North of US 98	20.8%	10.0%
CR 54		
West of US 98	5.1%	3.0%

2.12.3 Existing Year (2019) Demand Volume Calculations

Figure 2-3, **Figure 2-4**, and **Figure 2-5** show the existing year (2019) AADT, field turning movement counts, and DDHVs for both the AM and PM peak hours, respectively.

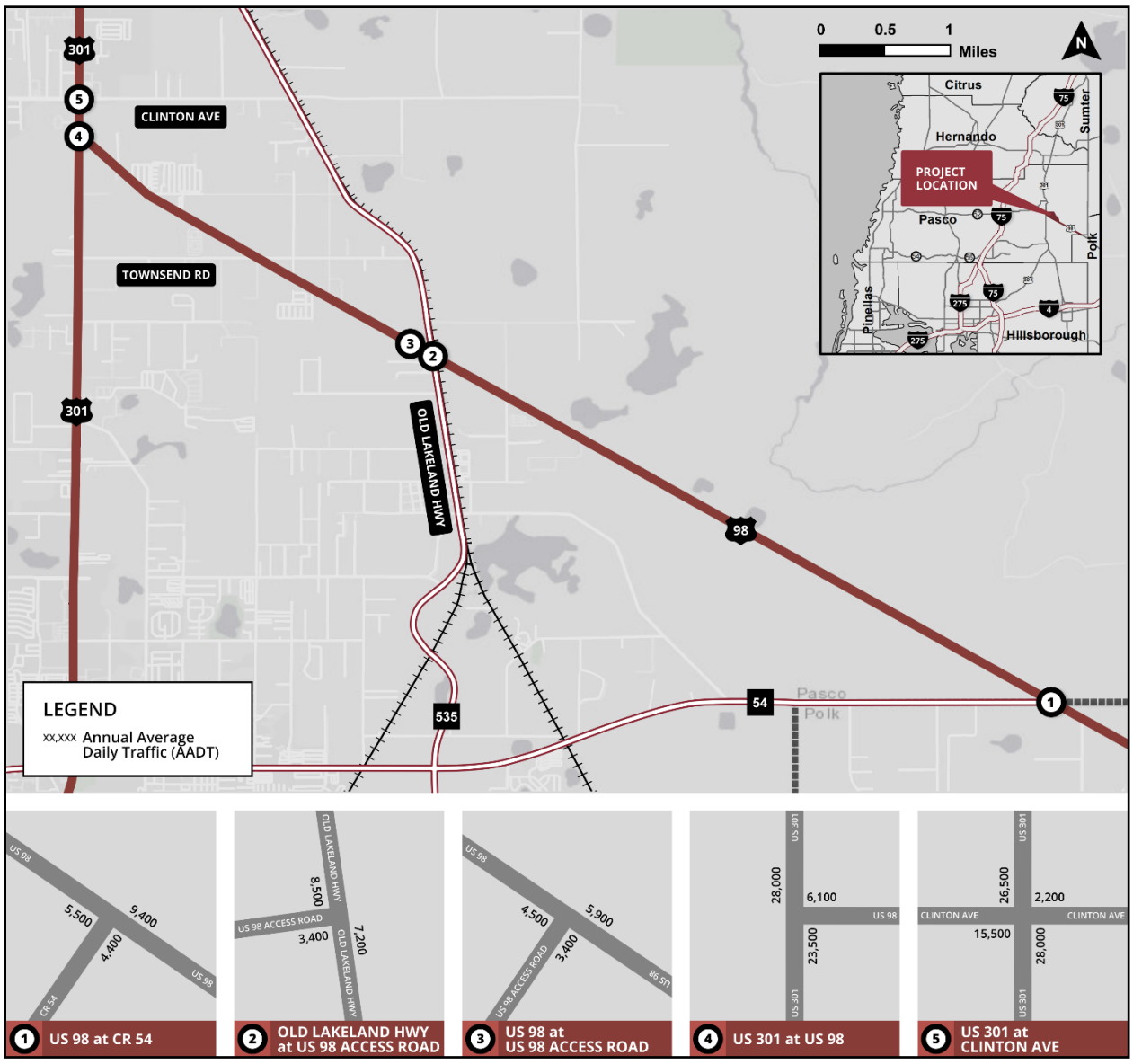


Figure 2-3 Existing Year (2019) AADT's

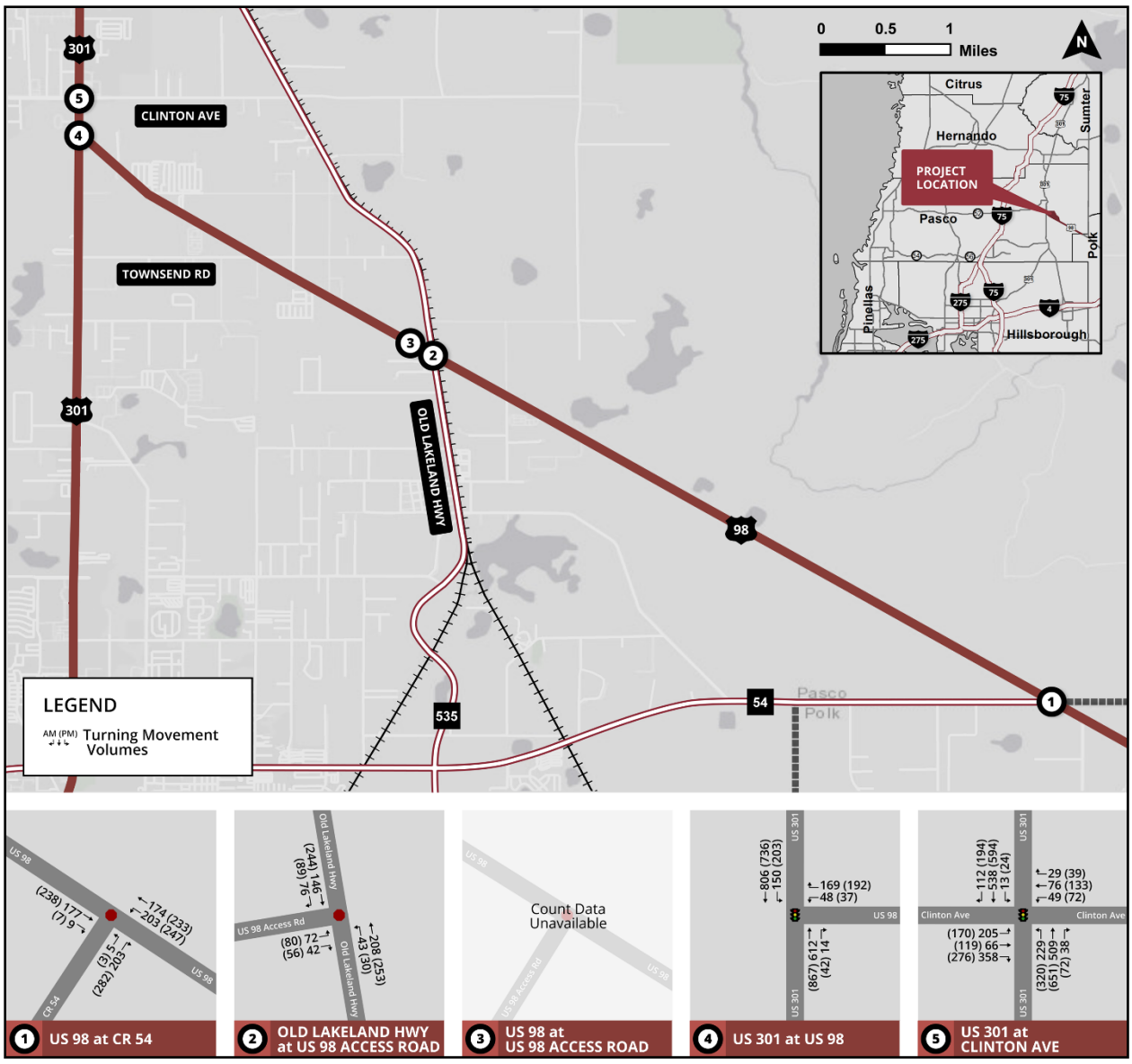


Figure 2-4 Existing Year (2019) Field Turning Movement Volumes

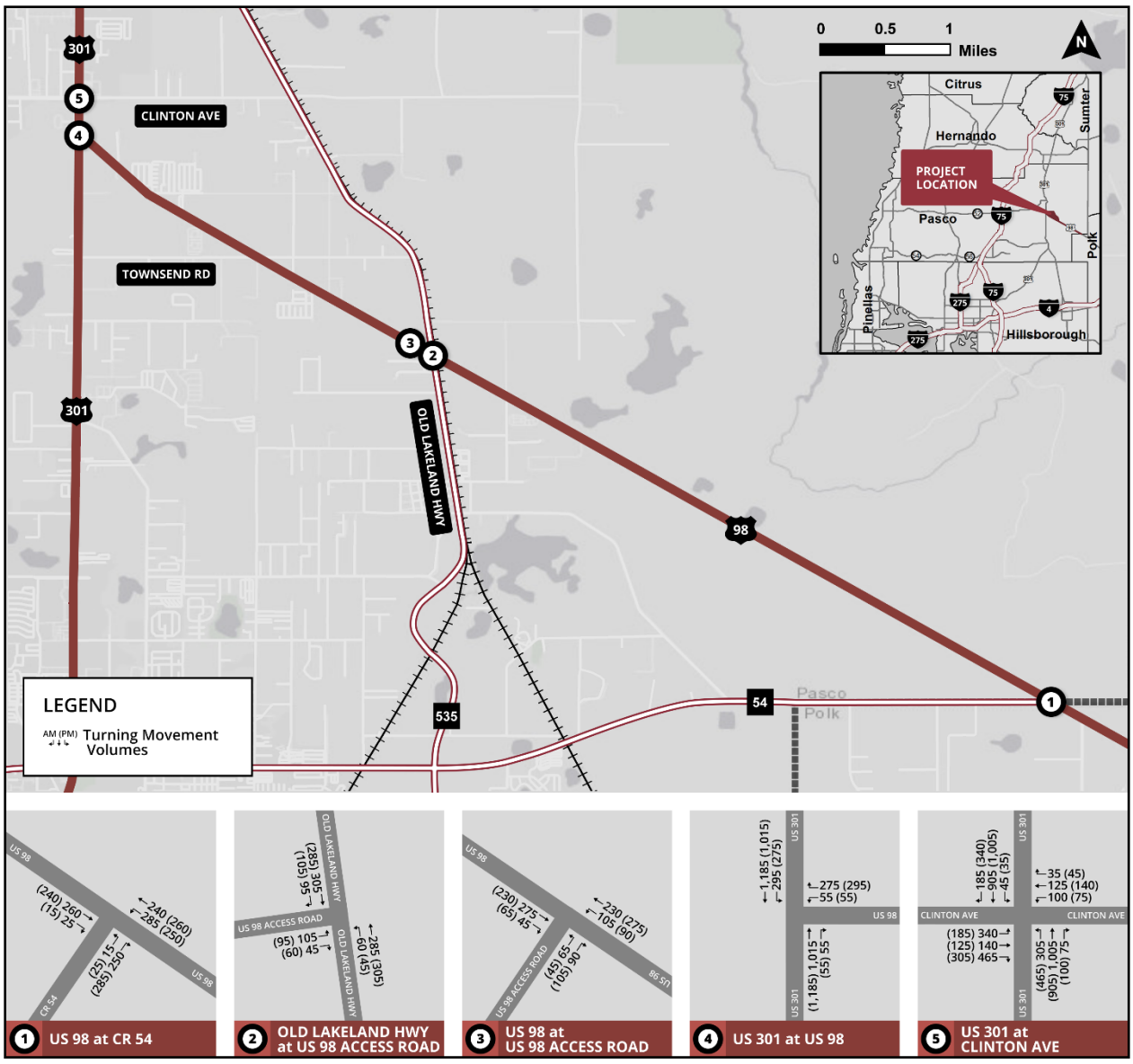


Figure 2-5 Existing Year (2019) Design Turning Movement Volumes

2.12.4 Existing Year (2019) Operational Analysis

Intersection operational analysis was conducted at each of the signalized and stop-controlled intersections in the study area for the existing year (2019). The results of the existing year (2019) intersection analysis for the AM and PM peak hours are shown in **Table 2-5** and **Table 2-6**, respectively

Table 2-5 Existing Year (2019) AM Peak Hour Intersection Operational Analysis

ID	Intersection	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	US 98 and CR 54+	15.6	C	-	-	8.7*	A	7.9*	A	-	-
2	US 98 Access and Old Lakeland Highway	22.2*	C	-	-	8.5*	A	-	-	-	-
3	US 98 and US 98 Access	18.7*	-	-	-	8.3*	A	-	-	-	-
4	US 301 and US 98	-	-	39.5	D	16.7	B	2.7	A	12.1	B
5	US 301 and Clinton Avenue	357.6	F	50.7	D	3.7	A	20.3	C	101.8	F

Note: Red highlight indicates that the delay does not meet the LOS targets, D for Urbanized, C for Rural
[1] Delay in seconds/vehicle
+ Rural intersection with LOS C Target
* Stop controlled left turn movement delay

Table 2-6 Existing Year (2019) PM Peak Hour Intersection Operational Analysis

ID	Intersection	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	US 98 and CR 54+	17.7*	C	-	-	8.5*	A	7.9*	A	-	-
2	US 98 Access and Old Lakeland Highway	20.2*	C	-	-	8.4*	A	-	-	-	-
3	US 98 and US 98 Access	16.8*	C	-	-	8.1*	A	-	-	-	-
4	US 301 and US 98	-	-	42.8	D	19.2	B	4.1	A	15.3	B
5	US 301 and Clinton Avenue	186.4	F	57.0	E	11.8	B	30.4	C	50.7	D

Note: Red highlight indicates that the delay does not meet the LOS targets, D for Urbanized, C for Rural
[1] Delay in seconds/vehicle
+ Rural intersection with LOS C Target
* Stop controlled left turn movement delay

Queue analysis was conducted at each of the signalized and stop-controlled intersections in the study area for the existing year (2019). The results of the existing year (2019) queue analysis for the AM and PM peak hours, rounded to the nearest 25 feet, are shown in **Table 2-7** and **Table 2-8**, respectively.

Table 2-7 Existing Year (2019) AM Peak Hour Queue Analysis

ID	Intersection	Eastbound			Westbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	US 98 and CR 54	75	-	+	-	-	-	25	-	-	-	-	-
2	US 98 Access and Old Lakeland Highway	50	-	25	-	-	-	25	-	-	-	-	+
3	US 98 and US 98 Access	25	-	25	-	-	-	25	-	-	-	-	-
4	US 301 and US 98	-	-	-	75	-	325	-	350	50	100	25	-
5	US 301 and Clinton Avenue	325	100	1675	150	125	+	150	25	25	25	350	150

Note: Red highlight where queues exceed available storage
+ Shared Lanes

Table 2-8 Existing Year (2019) PM Peak Hour Queue Analysis

ID	Intersection	Eastbound			Westbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	US 98 and CR 54	100	-	+	-	-	-	25	-	-	-	-	-
2	US 98 Access and Old Lakeland Highway	50	-	25	-	-	-	25	-	-	-	-	+
3	US 98 and US 98 Access	25	-	25	-	-	-	25	-	-	-	-	-
4	US 301 and US 98	-	-	-	75	-	350	-	450	50	175	25	-
5	US 301 and Clinton Avenue	175	100	900	125	150	+	300	25	25	25	500	350

Note: Red highlight where queues exceed available storage
+ Shared Lanes

Segment analysis was conducted along US 98 and US 301 for the existing year (2019) AM and PM peak hour directional volume and is shown in **Table 2-9** and **Table 2-10**.

Table 2-9 Existing Year (2019) AM Directional Peak Hour Segment Operation Analysis

From	To	Peak Hour Volume		Number of Lanes	LOS D Threshold	FDOT Generalized LOS Table		Arterial LOS		Arterial V/C	
		NB/EB	SB/WB			Area Type	Classification	NB/EB	SB/WB	NB/EB	SB/WB
US 98											
CR 54	US 98 Access Road	255	285	1	450	Rural	Uninterrupted Flow Highways (Rural)	C	C	0.57	0.63
US 98 Access Road	US 301	295	320	1	1200	Urbanized	Uninterrupted Flow Highways	B	B	0.25	0.27
US 301											
South of US 98	US 98	1070	1240	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.54	0.62
US 98	Clinton Avenue	1290	1480	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.65	0.74
Clinton Avenue	North of Clinton Avenue	1380	1135	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.69	0.57

LOS Threshold represents acceptable LOS peak hour demand for LOS C in rural areas and LOS D in urbanized areas

Table 2-10 Existing Year (2019) PM Directional Peak Hour Segment Operation Analysis

From	To	Peak Hour Volume		Peak Hour Volume	LOS D Threshold	FDOT Generalized LOS Table		Arterial LOS		Arterial V/C	
		NB/EB	NB/EB			Area Type	Classification	NB/EB	NB/EB	NB/EB	NB/EB
US 98											
CR 54	US 98 Access Road	285	255	1	450	Rural	Uninterrupted Flow Highways (Rural)	C	C	0.63	0.57
US 98 Access Road	US 301	320	295	1	1200	Urbanized	Uninterrupted Flow Highways	B	B	0.27	0.25
US 301											
South of US 98	US 98	1240	1070	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.62	0.54
US 98	Clinton Avenue	1480	1290	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.74	0.65
Clinton Avenue	North of Clinton Avenue	1135	1380	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.57	0.69

LOS Threshold represents acceptable LOS peak hour demand for LOS C in rural areas and LOS D in urbanized areas

2.13 INTERSECTION LAYOUT AND TRAFFIC CONTROL

The primary intersection within the limits of this project are:

1. US 98 and CR 54 (Stop Controlled)
2. US 98 Access and Old Lakeland Highway (Planned Signal)
3. US 98 and US 98 Access (Stop Controlled)
4. US 98 and US 301 (Existing Signal)
5. US 301 and Clinton Avenue (Existing Signal)

The existing lane geometry for each of the study intersections is shown in **Figure 2-6**.

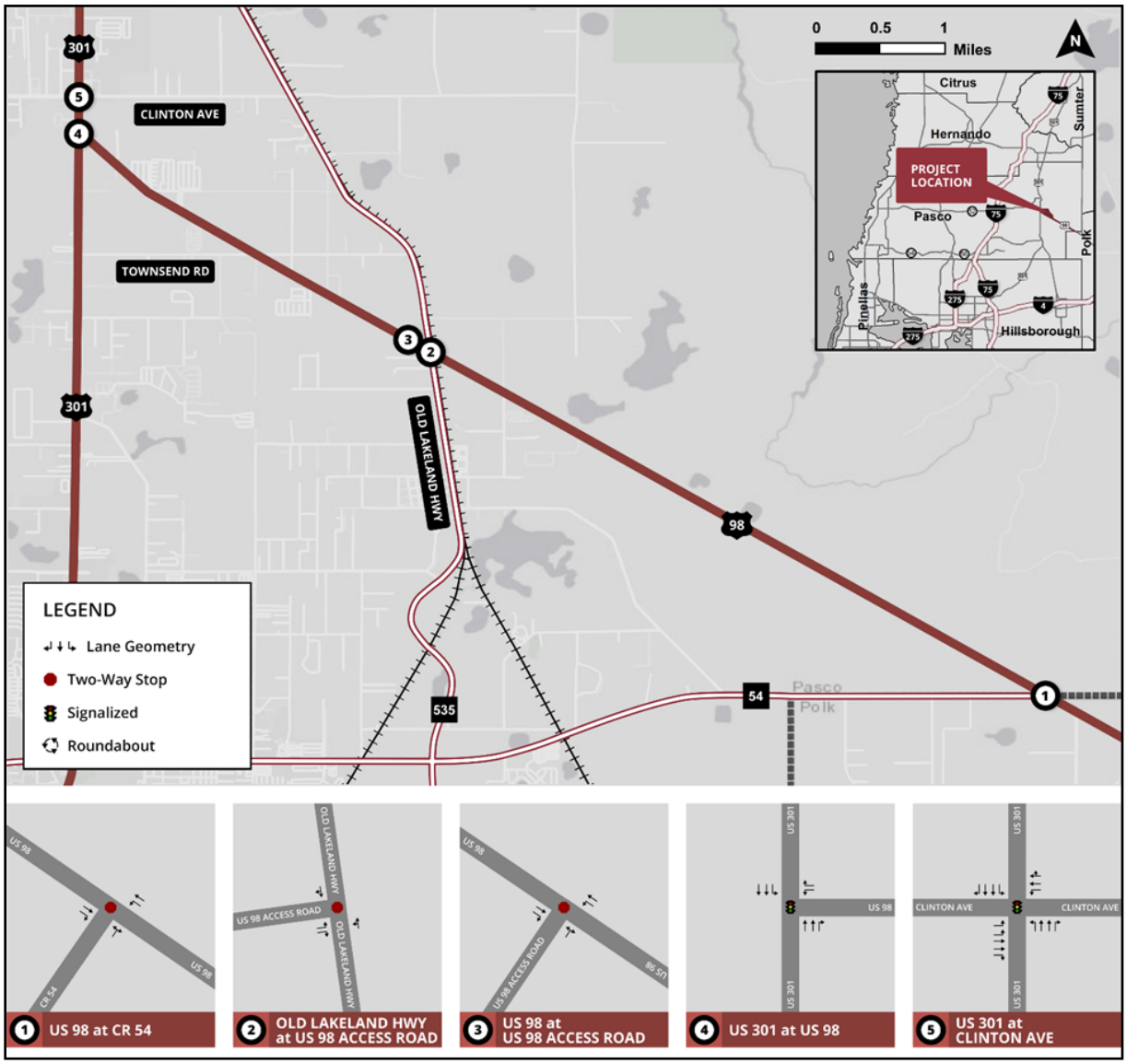


Figure 2-6 Existing Intersection Geometry

2.14 RAILROAD CROSSINGS

US 98 overpasses the CSX Railroad located along the east side of Old Lakeland Highway (CR 35A) at MP 5.104 (Railroad Crossing No. 622739D).

2.15 CRASH DATA AND SAFETY ANALYSIS

2.15.1 Data Collection

Historical crash data within the study area was obtained from FDOT's Crash Analysis Reporting System (CARS) Online and the University of Florida's Signal Four Analytic database for the five-year period from 2014 to 2018. The historical crash data included crashes that occurred on US 98 from CR 54 to US 301 and US 301 from US 98 to Clinton Avenue. The data collected includes crash frequency, type, severity, lighting conditions (day versus night), and pavement surface conditions (wet versus dry).

Crash data is summarized in **Table 2-11**. Approximately 36% of the 211 total crashes over the five-year period were rear end crashes, which is a crash type typically related to "stop-and-go driving" conditions and is indicative of traffic congestion. Left turn movement crashes also made up a significant proportion of total crashes at 29.9%. This is primarily due to the presence of permitted left turns at multiple intersections, including the southbound left turn at US 301 at US 98, and the eastbound US 98 Access Road to northbound Old Lakeland Highway.

Of the 211 total crashes, there were three fatal crashes, 109 crashes involving personal injury, and 99 crashes that were property damage only. All three of the fatal crashes occurred on US 98 between Old Lakeland Highway and CR 54 in close proximity to each other. One fatal crash was the result of a drunk driver striking a motorcycle while attempting to overtake it. Both of the other fatal crashes resulted in the at-fault vehicles coming to rest after striking a tree off of the roadway. In one of these crashes, the vehicle lost control after driving onto the shoulder while attempting to overtake a slower vehicle, and the cause for the other crash was unknown, having involved only a single vehicle with no witnesses. Of the 109 injury crashes, 31 crashes involved severe injury. The intersection of US 301 at US 98 reported 12 severe injury crashes. The second high severity intersection reported 4 severe crashes at US 98 and Old Lakeland Highway.

Roadway segment and spot crash rates were calculated and compared with statewide averages for similar highway facilities throughout the State of Florida. The highest crash locations within the US 98 PD&E study area include US 301 from US 98 to Clinton Avenue and the intersections of US 301 at Clinton Avenue, and US 301 at US 98. **Figure 2-7** shows the crash heat map for crashes within the study area.

Table 2-11 Crash Data Summary

Category	2014	2015	2016	2017	2018	Total	Mean	Percentage
Type								
Angle	1	1	1	5	1	9	1.8	4.27%
Bicycle	0	0	0	0	0	0	0.0	0.00%
Head On	0	0	1	0	2	3	0.6	1.42%
Hit Fixed Object	1	3	1	3	3	11	2.2	5.21%
Hit Non-Fixed Object	1	2	0	0	1	4	0.8	1.90%
Left Turn	20	12	10	11	10	63	12.6	29.86%
Other	2	2	2	2	3	11	2.2	5.21%
Overturn/Rollover	2	2	2	1	1	8	1.6	3.79%
Pedestrian	0	0	1	0	0	1	0.2	0.47%
Ran Off Road	0	0	0	1	1	2	0.4	0.95%
Rear End	18	18	13	11	16	76	15.2	36.02%
Right Turn	0	1	1	1	2	5	1.0	2.37%
Sideswipe	5	3	2	1	4	15	3.0	7.11%
Single Vehicle	1	0	1	0	1	3	0.6	1.42%
Unknown	0	0	0	0	0	0	0.0	0.00%
Total	**51**	**44**	**35**	**36**	**45**	**211**	**42.2**	**100.00%**
Severity								
Fatal	0	2	0	0	1	3	0.6	1.42%
Severe Injury	7	7	7	5	5	31	6.2	14.69%
Moderate Injury	11	5	4	4	9	33	6.6	15.64%
Minor Injury	10	14	4	10	7	45	9.0	21.33%
Property Damage Only	23	16	20	17	23	99	19.8	46.92%
Total	**51**	**44**	**35**	**36**	**45**	**211**	**42.2**	**100.00%**
Lighting Condition								
Day	42	29	25	28	32	156	31.2	73.93%
Dawn	0	1	0	1	2	4	0.8	1.90%
Dusk	1	0	0	0	2	3	0.6	1.42%
Dark - Lighted	5	4	5	4	4	22	4.4	10.43%
Dark - Not Lighted	3	10	5	3	5	26	5.2	12.32%
Total	**51**	**44**	**35**	**36**	**45**	**211**	**42.2**	**100.00%**
Surface Condition								
Dry	49	39	33	29	39	189	38	89.57%
Wet	2	5	2	7	6	22	4	10.43%
Total	**51**	**44**	**35**	**36**	**45**	**211**	**42**	**100.00%**

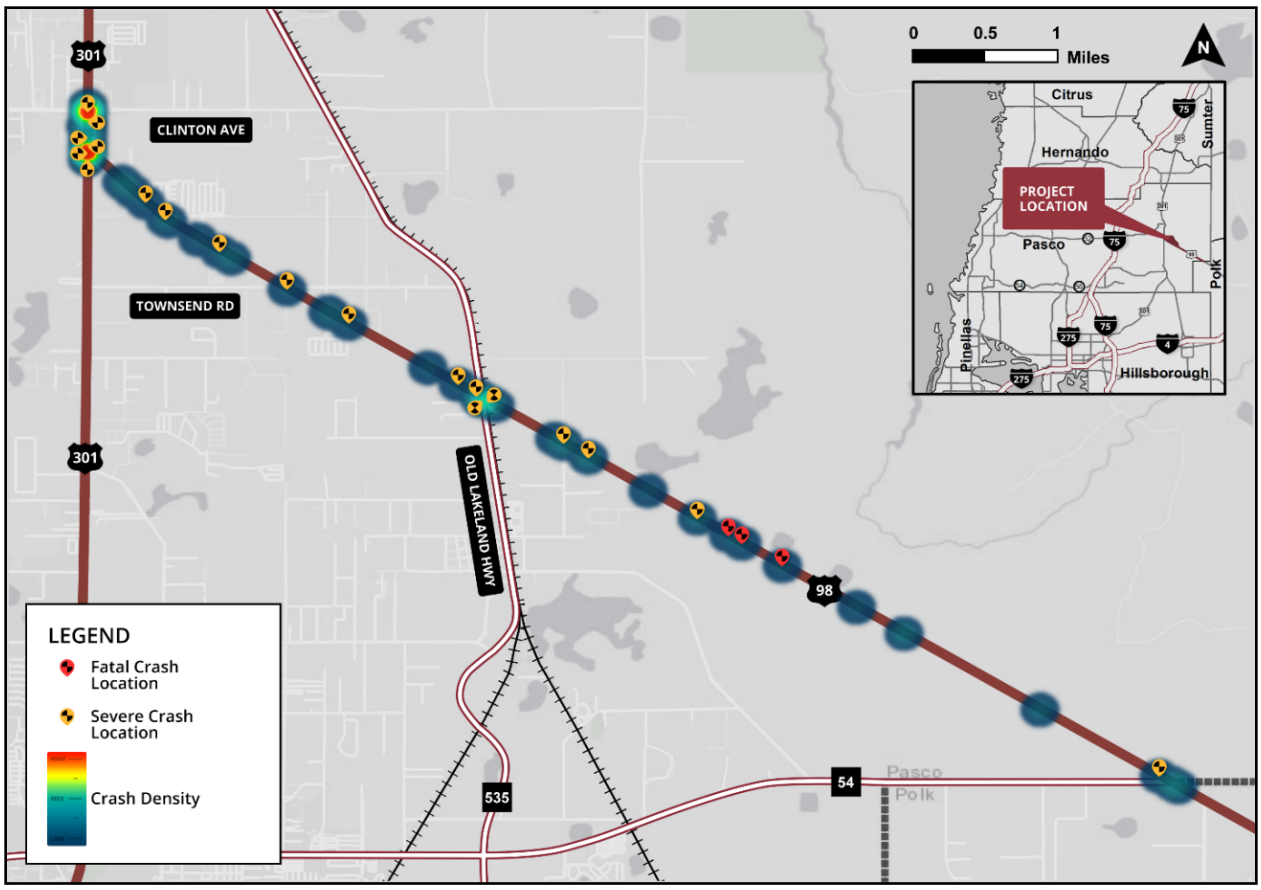


Figure 2-7 Crash Heat Map (2014 to 2018)

2.15.2 Crash Analysis

The roadway segment crash rates for the US 98 PD&E study area are shown in **Table 2-12**. The segment crash rates exclude crashes that occurred within 250 feet of study area intersections. The segment crash rates range from a low of 0.532 crashes per million vehicle miles traveled (MVMT) along US 98 from CR 54 to Old Lakeland Highway to a high of 1.241 crashes per MVMT along US 301 from US 98 to Clinton Avenue. The calculated segment crash rates reveal that all segments in the study area have a crash rate that is lower than the statewide average.

Table 2-12 Segment Data Summary

Location	Total Crashes (5 Years)	Crash Rate*	Statewide Average**	Crash Ratio
Segment: Rural 2-3 Lane 2-way Undivided				
US 98 from CR 54 to Old Lakeland Hwy	24	0.532	0.788	0.675
Segment: Suburban 2-3 Lane 2-way Divided Paved				
US 98 from Old Lakeland Hwy to US 301	16	0.551	2.792	0.197
Segment: Suburban 4-5 Lane 2-way Divided Raised				
US 301 from US 98 to Clinton Ave	14	1.241	1.746	0.711

* Segment crash rate = number of crashes per million vehicle miles traveled

** Source: FDOT Crash Analysis Reporting System (CARS) Online Database

The intersection crash rates for the US 98 PD&E study area are shown in **Table 2-13**. The intersection crash rates range from a low of 0.101 crashes per million entering vehicles (MEV) at US 98 at US 98 access road to a high of 1.826 crashes per MEV at US 98 access road at Old Lakeland Highway. The crash rate at the US 98 access road at Old Lakeland Highway is 1.216 times greater than the statewide average for similar intersection types throughout the State of Florida. The higher-than-expected number of crashes at this location is likely due to the lack of a traffic signal regulating the eastbound left turn, combined with the high speed and poor visibility of oncoming southbound traffic due to bridge supports and structures.

The crash rate at the US 98 and US 301 intersection is 3.022 times greater than the statewide average. The higher-than-expected number of crashes at this location may be due to permitted southbound left turns prior to 2016, after which the southbound left turn was modified to be protected left turn only. Another contributing factor may be congestion at the intersection in the northbound direction combined with high approach speeds to the south of the intersection and spillback queuing into the intersection influence area from the Clinton Avenue intersection to the north.

The crash rate at the Clinton Avenue and US 301 intersection is 2.394 times greater than the statewide average. The higher-than-expected number of crashes at this location may be due to congestion at the intersection contributing to a higher number of rear end crashes along with the close proximity of the US 98 intersection to the south leading to aggressive driving behavior as people attempt to weave between US 98 and Clinton Avenue.

The crash rate at US 98 at CR 54 is approximately 1.769 times greater than the statewide average. However, there are too few crashes at this intersection to infer meaningful crash patterns indicating operational or design issues.

Table 2-13 Intersection Crash Rates

ID	Location	Total Crashes (5 Years)	Crash Rate*	Statewide Average**	Crash Ratio
1	US 98 at CR 54 (Rural 2-3 Lanes 2 way Divided Paved 3 legs)	6	0.483	0.273	1.769
2	US 98 Access Road at Old Lakeland Highway (Rural Ramp 3 Legs)	22	1.826	1.502	1.216
3	US 98 at US 98 Access Road (Suburban 2-3 Lanes 2 way Divided Paved 3 legs)	1	0.101	0.276	0.366
4	US 301 at US 98 (Suburban 4-5 Lanes 2 way Divided Raised 3 legs)	63	0.816	0.270	3.022
5	US 301 at Clinton Avenue (Suburban 4-5 Lanes 2 way Divided Raised 4 legs)	65	1.259	0.526	2.394

* Intersection crash rate = number of crashes per million entering vehicles
** Source: FDOT Crash Analysis Reporting System (CARS) Online Database
Note: Red highlight indicates crash rate higher than the statewide crash average

2.16 DRAINAGE

2.16.1 Topography & Hydrologic Features

The topography of the project area is relatively flat, with a majority of the project draining towards the Hillsborough River and Withlacoochee River. Elevations range from a high of approximately 108.00-feet to a low of 74.50-feet based on the LiDAR contours. The runoff from the nine existing basins ultimately outfalls to Florida waterbody identification numbers WBID 1443A (Hillsborough River Waterbody), WBID 1329F (Withlacoochee Waterbody), WBID 1403B (Clear Lake Outlet Waterbody) and WBID 1445 (Port Lonesome Waterbody).

There are nine (9) existing cross drains and two (2) bridges within the project limits. Runoff is typically divided from the roadway crown and conveyed by roadside ditches and side drains to project low points.

The existing drainage boundaries will be mostly maintained in the future condition. The size and geometry of all cross drains have been verified from the FDOT Straight Line Diagrams (SLD) and during field reconnaissance. See **Table 2-14** for a Summary of Existing Cross Drains and **Table 2-15** for a Summary of Existing Bridges.

Table 2-14 Summary of Existing Cross Drains

Structure Number	Station (US 98)	US 98 Mile Marker	Description
CD-01	963+10	0.567	Single 10’ x 8’ CBC (For cattle crossing, not for stormwater conveyance)
CD-02	1111+04	3.361	Double 36” RCP
CD-03	1130+00	3.719	Single 10’ x 8’ CBC (For cattle crossing, not for stormwater conveyance)
CD-04	1139+03	3.888	Single 36” RCP
CD-05	1236+01	5.725	Single 36” RCP
CD-06	1296+23	6.875	Single 30” RCP
CD-07	1360+28	N/A, on Clinton Ave	Single 30” RCP
CD-08	1390+29	N/A, on Clinton Ave	Single 36” RCP
CD-09	1393+22	N/A, on Clinton Ave	Single 36” RCP

Cross drains “CD-01” and “CD-03” are used for cattle crossings only and do not provide stormwater conveyance through these structures. Cross drains “CD-01” and “CD-03” will be removed since the cattle crossings are no longer used.

Table 2-15 Summary of Existing Bridges

Structure Number	Structure Number from SLD	Station	US 98 Mile Marker	Description
BR-01	BR #0024	1018+44 (US 98)	1.589 to 1.627	200.6’ Bridge (Over the Hillsborough River)
BR-02	BR #0025	1203+78 (US 98)	5.101 to 5.170	364.3’ Bridge (Over the CSX railroad and Old Lakeland Highway)

2.16.2 WBID and Outstanding Florida Waters

The FDEP statewide comprehensive verified list of impaired waters has been reviewed, and it has been identified that WBID 1443A (Hillsborough River Waterbody) is impaired for dissolved oxygen. WBID 1329F (Withlacoochee Waterbody), WBID 1403B (Clear Lake Outlet Waterbody) and WBID 1445 (Port Lonesome Ditches Waterbody) are not impaired. Net improvements will not be required for this project due to none of the receiving waterbodies being impaired for nutrients. Project drainage basins within the Hillsborough River and Withlacoochee River waterbodies outfall directly to Outstanding Florida Waters (OFWs). See **Table 2-16** WBID and OFW Summary for basins within an OFW. Project drainage basins within the Clear Lake Outlet waterbody do not outfall directly to Outstanding Florida Waters (OFWs).

Table 2-16 WBID and OFW Summary

Basin #	WBID Outfall	Impairment	OFW (yes/no), OFW Waterbody
200	1443A, 1445	Dissolved Oxygen (for 1443A)	Yes, Hillsborough River Waterbody
300	1329F,1443A	Dissolved Oxygen (for 1443A)	Yes, Hillsborough River Waterbody, Withlacoochee River Waterbody
400	1329F, 1403B	None	Yes, Withlacoochee River Waterbody, but not directly discharged to.
500	1329F, 1403B	None	Yes, Withlacoochee River Waterbody, but not directly discharged to.
600	1329F	None	Yes, Withlacoochee River Waterbody, but not directly discharged to.
700	1329F, 1403B	None	Yes, Withlacoochee River Waterbody, but not directly discharged to.
800	1403B	None	No
900	1403B	None	No
1000	1403B	None	No

2.16.3 Floodplains

A Location Hydraulics Report (LHR) (July 2022) was prepared for this project detailing floodplain information. The project is located within Federal Emergency Management Agency (FEMA) Insurance Rate Maps (FIRMs) 12101C0280F, 12101C0285F, 12101C0295F, and 12101C0315F in Pasco County, effective 9/26/2014. Refer to **Figure 2-8** for a summary of the firms.

The study limits are within FEMA Flood Zone A and AE. Zone A has a 1% probability of flooding every year and no water elevations have been established. Zone AE has a 1% probability of flooding every year and a determined base flood elevation (BFE). The flood zones within the project area are associated with the Hillsborough River and the Green Swamp with elevations ranging from 82 to 84 feet NAVD. The areas on the south side of US 98 are noted with a BFE of 82. The north side of US 98 ranges between 83 and 84 feet. (An elevation of 84 feet was used for impact and compensation calculations.)

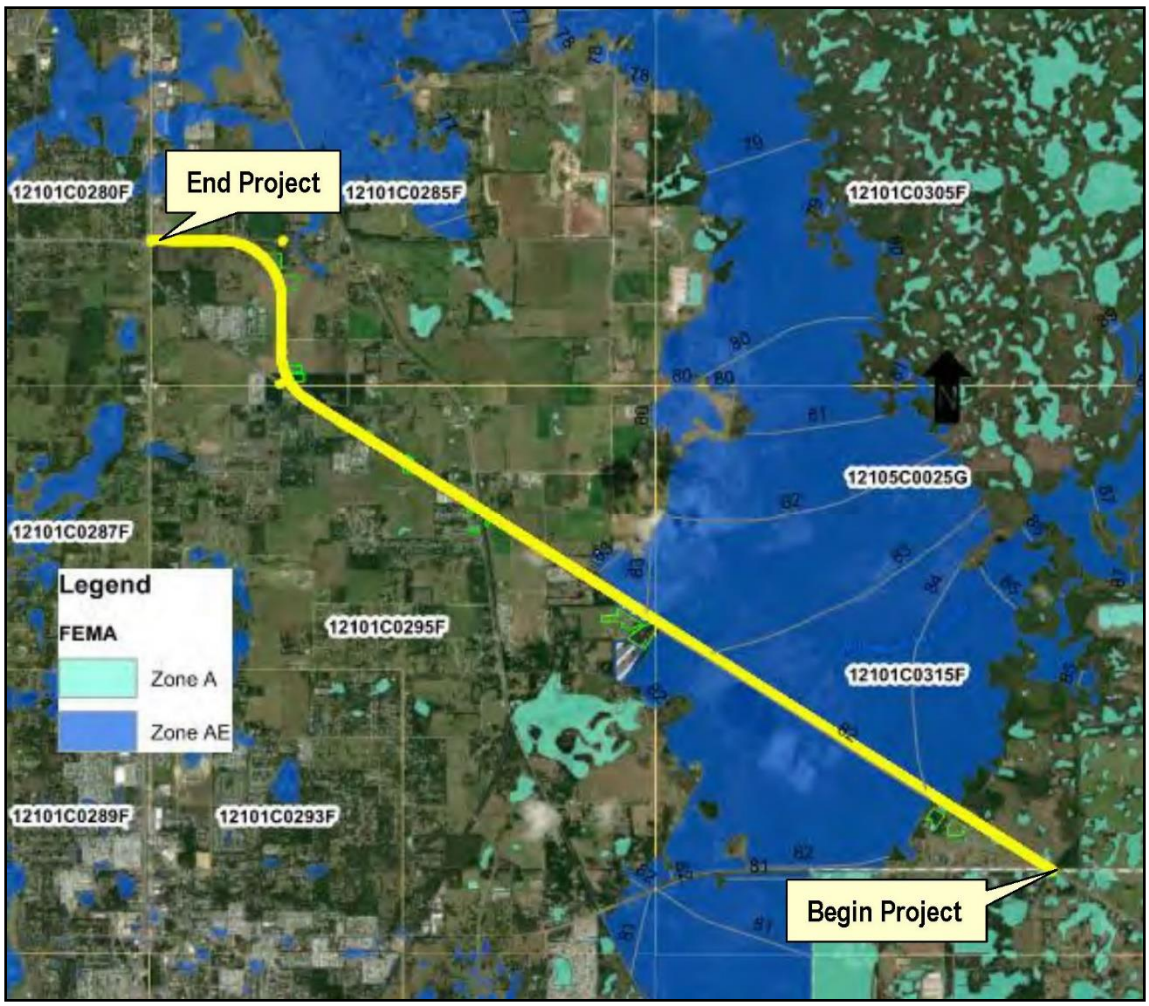


Figure 2-8 FEMA FIRM's Within Project Limits

2.17 SOILS AND GEOTECHNICAL DATA

The US Department of Agriculture, Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for Florida (2021) was reviewed to identify local soil types within the study area, especially hydric soils for the purposes of assessing wetland boundaries. **Table 2-17** lists and details the total area of the soils units present within the study area. The soils are depicted in **Figure 2-9**.

Table 2-17 Soil Data

Soil Series Name Hydric	Hydric Rating	Total Acres	Percent of Study Area
Basinger Fine Sand, Depressional, 0 to 1 Percent Slopes	Hydric	1.44	0.14
Chobee Soils, Frequently Flooded	Hydric	83.98	8.21
Eaton Mucky Fine Sand, Depressional	Hydric	3.71	0.36
Sellers Mucky Loamy Fine Sand	Hydric	5.53	0.54
Zephyr Muck	Hydric	58.18	5.68
Adamsville Fine Sand, 0 to 2 Percent Slopes	Non-Hydric	2.48	0.24
Arredondo Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	104.09	10.17
Candler Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	103.57	10.12
Eaugallie Fine Sand	Non-Hydric	17.52	1.71
Kendrick Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	8.08	0.79
Lake Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	349.97	34.19
Myakka Fine Sands, 0 to 2 Percent Slopes	Non-Hydric	11.81	1.15
Orlando Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	15.82	1.55
Pomona Fine Sand	Non-Hydric	147.56	14.42
Smyrna and Myakka Fine Sands	Non-Hydric	4.37	0.43
Sparr Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	23.01	2.25
Tavares Sand, 0 to 5 Percent Slopes	Non-Hydric	79.1	7.73
Wabasso Fine Sand	Non-Hydric	1.65	0.16
Pits	Unranked	1.18	0.12
Water	Unranked	0.41	0.04
Hydric Soils Sub-Total		*152.84*	*14.93*
Non-Hydric Soils Sub-Total		*869.03*	*84.91*
Unranked Soils Sub-Total		*1.59*	*0.16*
TOTAL		**1,023.46**	**100.00**

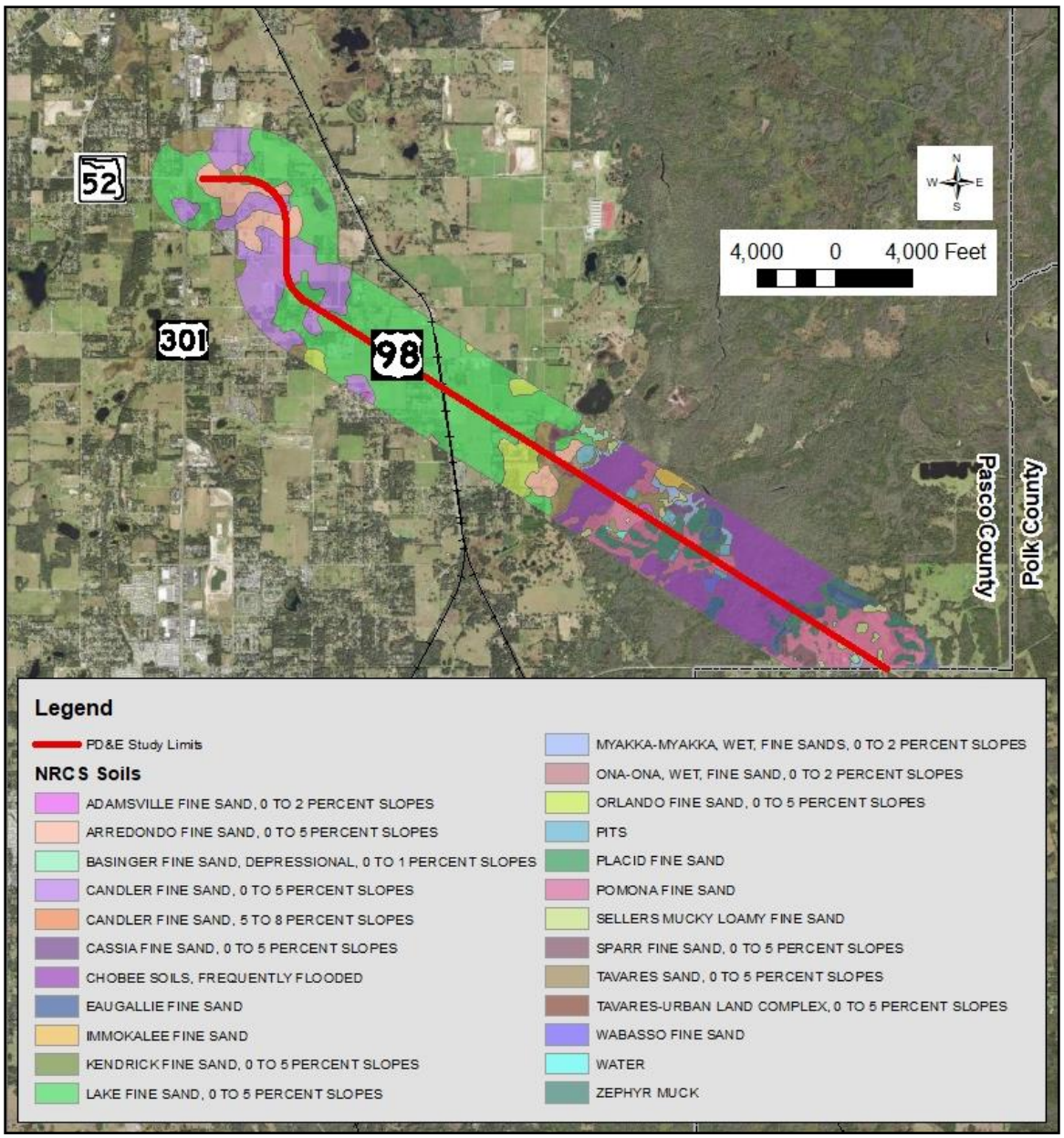


Figure 2-9 Soils Map

2.18 UTILITIES

The preliminary utility coordination and investigation effort was conducted through written and verbal communications with the existing utility owners. A Sunshine State 811 of Florida Design Ticket System listing of existing utility owners was acquired on January 29, 2020.

Initially, verbal communication was made to all utility's owners outlining the investigation effort along with the project limits. The list of utility agencies owners (UAO) known to operate utilities within the project corridor is provided in **Table 2-18**.

Table 2-18 Utility Contact Information

Utility Agency	Utility Contact Name	Utility Contact Phone	Utility Contact Email
Spectrum	Gene Gregory	352-503-6312	Gene.Gregory@charter.com
CenturyLink	Ty Leslie	407-814-5293	michel.t.leslie@centurylink.com
City of Dade City	Jay Sheriden	813-601-4039	jsheridan@dadecityfl.com
Pasco County Traffic	Jack King	727- 847-819	jking@pascocountyfl.net
Pasco County Utilities	Martin Ramirez	813-235-6189	mramirez@pascocountyfl.net
Tampa Electric Company	Jeremy Williams	470-235-6349	Jeremy.williams.contractor@crowncastle.com
TECO Peoples Gas	Mark Foster	813-927-1675	mark.foster@stantec.com
Withlacoochee River Electric Cooperative	Corey Littlefield	352-588-5115 Ext. 1131	rlittlefield@wrec.net

2.19 LIGHTING

Currently lighting does not exist along the corridor within the project limits.

2.20 SIGNS

The signs along the US 98 corridor include single-post, multi-post and overhead trusses. **Table 2-19** summarizes the signs within the project limit.

2.21 AESTHETIC FEATURES

There are no aesthetic features currently along the corridor within the project limits.

Table 2-19 Sign Assemblies

Sign Type	Sign Count	Notes
Single-Post Ground		
Regulatory - White	56	Multiple Signage Types
Warning - Yellow	36	Multiple Signage Types
Guide - Green	107	Multiple Signage Types
General Information - Green	5	Adopt a Highway, Voting Precinct, Bus Stop
General Service - Blue	5	Hospital, Litter
Recreational & Cultural Interest Area -Brown	1	Agent John Van Waters Memorial Highway
Emergency Management	1	Evacuation Route
School Area Signs - Yellow-Green	1	School Bus Stop Ahead
Regulatory (Bicycle Facilities) - White	2	Bike Lane Ends
TOTAL	**214**	
Multi-Post Ground		
Warning - Yellow	3	Multiple Signage Types
Guide - Green	8	Multiple Signage Types
TOTAL	**11**	
Overhead Truss		
Regulatory - White	3	Cantilever - Clinton Ave / US 301, Regulatory Signs
Guide - Green	4	Cantilever - Clinton Ave / US 301, Street Signs
TOTAL	**7**	

2.22 BRIDGES AND STRUCTURES

There are two (2) bridges located within the project limits. One bridge carries US 98 bridges over the Hillsborough River (Bridge No. 140024) and the other carries US 98 over Old Lakeland Highway and the CSX railroad (Bridge No. 140025). **Table 2-20** provides a comprehensive list of existing data for these bridges including year built, span lengths, and minimum vertical clearance. **Table 2-21** provides information on the horizontal clearance of these bridges.

2.22.1 Bridge Conditions

Bridge sufficiency ratings are used to help determine whether a bridge that is structurally or functionally obsolete should be repaired or replaced. This rating considers structural adequacy, functional obsolescence, level of service and essential use for the public. **Table 2-20** catalogs the condition ratings and load ratings of the bridges within the project limits along US 98. All bridges have Operating Load ratings greater than 1.0. The Inventory Rating on all the bridges are greater than 1.0 as required in Section 7.1.1 in the FDOT Structures Design Guidelines.

A Load and Resistance Factor Rating (LRFR) will need to be completed as required by Section 7.1.1.1A of the Structures Design Guideline to ensure that the bridges are suitable for widening.

Table 2-20 Existing Bridge Conditions

Begin Milepost	End Milepost	Location Description	Structure Number	Year Built (Widened/ Deck Replaced)	Structure Type	Skew Angle (deg.)	Structure Length (ft)	Spans	Span Lengths	Beam/Girder/ Box Depth	Out to Out Width (ft)	Travel Lane Widths (ft)	Inside Shoulder Width (ft)	Outside Shoulder Width (ft)	Minimum Vertical Clearance (ft)	Structural Ratings Operating	Structural Ratings Inventory	Sufficiency Rating
1.589	1.627	US-98 Over Hillsborough River	140024	1951 (1994)	Steel Shape	0	200'-0"	4	50'-0", 50'-0", 50'-0", 50'-0"	W24	43'-1"	12'-0" (2)	-	8'-0"	2'-7"	3.60 (HS20 - M)	3.28 (HS20 - M)	97.7
5.101	5.170	US-98 Over CSX Railroad and CR-35A	140025	1951 (1994)	Steel Shape	40.5	363'-0"	8	51'-0", 51'-0", 51'-0", 51'-0", 36'-0", 51'-0", 36'-0", 36'-0"	W18, W24	43'-1"	12'-0" (2)	-	8'-0"	21'-9" (RR) 25'-9" (Road)	3.38 (HS20 - M)	3.14 (HS20 - M)	86.2

Table 2-21 Existing Bridge Horizontal Clearances

Begin Milepost	End Milepost	Location Description	Structure Number	Left Minimum Horizontal Clearance (ft)	Right Minimum Horizontal Clearance (ft)	Bottom Roadway Type	Bottom Roadway Posted Speed or Established Design Speed	Minimum Required Horizontal Clearance Per FDM Section 210 (ft)	Is the minimum standard met?	Comments Regarding the Existing Conditions
1.589	1.627	US-98 Over Hillsborough River	140024	N/A	N/A	River	N/A	N/A	N/A	
5.101	5.170	US-98 Over CSX Railroad and CR-35A	140025	11'-2" (Railroad) 11'-2" (Roadway)	11'-2" (Railroad) 4’-5” (Roadway)	Rural	55mph	16'-0" (Travel Lane) 4'-0" (Face of Curb)	YES (shield)	

2.22.2 Bridge Clearances

The minimum vertical clearance over various facility types, based on standards from FDOT's FDM (Section 260.6), is presented below in **Table 2-22**. Within the project limits, existing bridge clearances over roadways and railroads is 25.75 feet and 21.75 feet, respectively. A list of structures along the project corridor that do not meet minimum vertical clearance standards is provided in **Table 2-23**.

Table 2-22 Minimum Vertical Clearance for Bridges

Facility Type (Freeways, Arterials, Collectors & Others)	Vertical Clearance
Roadway or Railroad Bridge Over Roadway	16.0 ft
Roadway or Pedestrian Bridge Over Railroad	23.5 ft

Table 2-23 Existing Bridge Vertical Clearances (Non-Compliant)

Bridge Number	Location	Vertical Clearance (ft)		
		Existing	Minimum Required	Difference
140025	US-98 Over CSX Railroad and CR-35A	21'-9"	23'-6"	1'-9"

2.22.3 Bridge Condition Summary

In general, the bridges within the project limits are in good condition. **Table 2-20** provides a comprehensive list of existing data including bridge location, bridge number, year built, span lengths, minimum vertical clearance, condition ratings, and load ratings. The US-98 bridge over CSX Railroad (Bridge No. 140025) is considered deficient per FDOT vertical clearance standards.

SECTION 3 PROJECT DESIGN CONTROLS & CRITERIA

3.1 ROADWAY CONTEXT CLASSIFICATION

Within the project study limits, US 98 is comprised of natural lands, sparsely settled lands, residential with long blocks, and agriculture. A Context Classification Determination Memorandum was prepared for this project and is included in **Appendix B**. The memorandum identified the existing Context Classification as C1 (Natural) and C2 (Rural). It determined the Future Context Classification for the same limits could remain the same as existing or move to a C3R (Suburban Residential) classification depending on the amount of development.

The future land use plan identifies a change in land use south of the CSX RR/CR 35A bridge at approximate MP 5.0. The design of the future improvements will utilize a Context Classification of C2 south of MP 5.0 and a Context Classification of C3R north of this point.

3.2 DESIGN CONTROL CRITERIA

The design criteria for the US 98 project will adhere to the Florida Department of Transportation Design Manual (FDM) 2021. The US 98 PD&E Study maintains a design year of 2045. **Table 3-1** below presents the design criteria used.

Table 3-1 Design Criteria

Design Element	Design Criteria	Source
Typical Section		
Design Speed	60 MPH 55 MPH 50 MPH 45 MPH	FDM Table 201.5.1
Travel Lane Widths	12 Ft - ≥ 50 MPH 11 Ft - 45 MPH Same as adjacent - Turn Lanes	FDM Table 210.2.1
Bicycle Lane Widths	7 Ft Buffered (Desired) 4 Ft Minimum	FDM Section 223.2.1.1
Sidewalk Widths	5 Ft - C2 6 Ft - C3R	FDM Table 222.1.1
Shared Use Path Widths	10 Ft - 14 Ft	FDM Table 224.4
Cross Slope	0.02 Minimum 0.04 Maximum (On Tangents) - ≤ 45 MPH 0.03 Maximum (On Tangents) - > 45 MPH	FDM Figure 210.2.1
Shoulders	10 Ft (5 Ft Paved) - Outside 8 Ft (4 Ft Paved) - Inside	FDM Table 210.4.1
Shoulder Cross Slope	0.05 Inside 0.06 Outside	FDM Section 210.4.1
Median Width	40 Ft - ≥ 50 MPH 22 Ft - 45 MPH	FDM Table 210.3.1
Border Width	40 Ft - ≥ 50 MPH 14 Ft - 45 MPH	FDM Table 210.7.1
Clear Zone	36 Ft - 60 MPH 30 Ft - 55 MPH 24 Ft - 50 MPH 24 Ft - 45 MPH	FDM Table 215.2.1
Minimum Lateral Offset Criteria	Outside Clear Zone - Flush Shoulders Table 215.2.2 - Curbed Roadway	FDM Table 215.2.2
Horizontal		
Minimum Stopping Sight Distance	570 Ft - 60 MPH 495 Ft - 55 MPH 425 Ft - 50 MPH 360 Ft - 45 MPH	FDM Table 210.11.1
Maximum Deflection Without Curve	1° 00' 00" - 45 MPH Curbed 0° 45' 00" - ≥ 45 MPH	FDM Section 210.8.1
Length of Horizontal Curve	900 Ft - 60 MPH 825 Ft - 55 MPH 750 Ft - 50 MPH 675 Ft - 45 MPH	FDM Table 210.8.1
Maximum Degree of Curve / Minimum Radius	5° 15' / R=1098 Ft - 60 MPH 6° 30' / R=887 Ft - 55 MPH 8° 15' / R=696 Ft - 50 MPH 10° 15' / R=560 Ft - 45 MPH	FDM Table 210.9.1

Table 3-1 Design Criteria (Continued)

Design Element	Design Criteria	Source
Superelevation Transition	80% On Tangent (50% Minimum) 20% On Curve (50% Maximum) (Minimum L=75' for 5% e_{max}) (Minimum L=100' for 10% e_{max})	FDM Section 210.9.1 & FDM Table 210.9.3
Superelevation Transition Rate	1:225 - 55-60 MPH 1:200 - 50 MPH 1:150 - 45 MPH	FDM Table 210.9.3
Maximum Superelevation Rate	5% - 45 MPH 10% - 50 MPH, 55 MPH & 60 MPH	FDM Table 210.9.1 & FDM Table 210.9.2
Maximum Curvature without Superelevation (Minimum Radii)	11,709 Ft - 60 MPH 9,949 Ft - 50 MPH 8,337 Ft - 50 MPH 2,083 Ft - 45 MPH	FDM Table 210.9.1 & FDM Table 210.9.2

SECTION 4 ALTERNATIVES ANALYSIS

4.1 PREVIOUS PLANNING STUDIES

Two previous PD&E studies and one ACE study have been undertaken in the vicinity of the study area. One other PD&E study is currently being undertaken in the vicinity of the study area. The studies are summarized below and depicted in **Figure 4-1**.

4.1.1 US 301/US 98/Clinton Avenue Intersection Realignment Study

FDOT District 7 utilized the ACE process as part of the US 301/US 98/Clinton Avenue Intersection Realignment Study. The project evaluated potential alternatives for the realignment of US 98 to Clinton Avenue to eliminate the closely spaced intersections of US 301 at US 98 and US 301/US 98 at Clinton Avenue.

4.1.2 SR 52 PD&E Study

FDOT District 7 conducted a PD&E study for the proposed realignment of SR 52 from east of McKendree Road to east of US 301, a distance of approximately 8.25 miles (WPI Segment #435142-1). The study recommended segments of new alignment of roadway and upon completion of construction, the SR 52 designation to follow the new alignment to Fort King Road, then along Clinton Avenue to US 301. The existing SR 52 will be designated a county road and will revert to Pasco County. The realignment is proposed as a new four-lane roadway south of the existing SR 52 that will serve as an additional east-west route in the regional transportation network. The new roadway will have pedestrian and bicycle facilities on both sides of the road. The State Environmental Impact Report (SEIR) was signed in August 2015.

Construction began in November 2019 for segments of this project.

4.1.3 US 301 PD&E Study

FDOT District 7 conducted a PD&E study to evaluate improvements to US 301 (SR 39) from south of CR 54 (Eiland Boulevard) to the US 98 Bypass (SR 533), a distance of approximately 7.6 miles (WPI Segment #408075-1). US 301 is a four-lane divided north-south arterial that connects the cities of Zephyrhills and Dade City. The US 301 roadway provides an important connection to the regional and statewide transportation network linking the Tampa Bay region to the remainder of the state and nation. The preferred build alternative included the widening of US 301 to a six-lane facility from south of CR 54 to north of Kossik Road (south of the ACE Study Area) and from south of US 98 to CR 52A (Clinton Avenue). A Type 2 Categorical Exclusion was approved by the Federal Highway Administration (FHWA) on September 21, 2010. The six lane widening on US 301 from south of US 98 to CR 52A (Clinton Avenue) is not included in the 2045 LRTP.

4.1.4 US 98 PD&E Study (North of West Socrum Loop Road to South of CR 54)

FDOT District 1 is conducting a PD&E study for US 98 from north of West Socrum Loop Road to south of CR 54 (WPI Segment #436673-1). The project will evaluate the potential widening of US 98 up to four lanes.

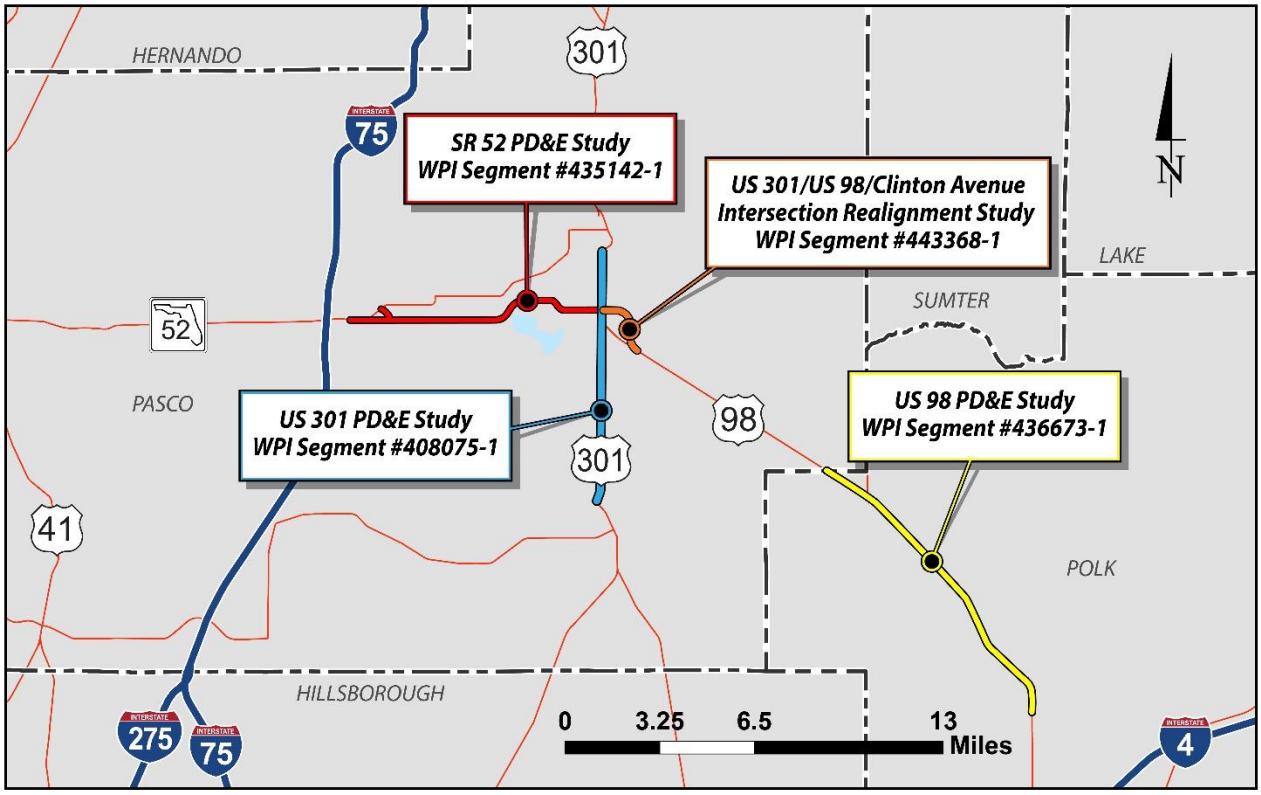


Figure 4-1 Previous Planning Studies

4.2 NO-BUILD (NO-ACTION) ALTERNATIVE

The No-Build Alternative assumes that no action will be taken to improve US 98 within the project limits. This involves leaving the existing roadway as it is, with only routine maintenance as required. The No-Build Alternative requires no additional expenditure of funds, requires no acquisition of additional ROW, and has no environmental impacts. However, the No-Build Alternative fails to fulfill the project's purpose and need and fails to meet the goals of the Pasco County MPO's Long Range Transportation Plan (LRTP). The No-Build Alternative will remain a viable alternative throughout the National Environmental Policy Act (NEPA) process and serve as the basis of comparison for the Build Alternatives.

4.2.1 No-Build Traffic Analysis

The No-Build Alternative maintains the existing year (2019) lane configuration and traffic control at most study intersections and maintains the existing lanes and alignment of US 98 within the study area. The only variation from the existing year (2019) conditions under the No-Build Alternative is the inclusion of

an interim signal at the intersection of Old Lakeland Highway and US 98 Access which was designed by others and planned by Pasco County to be installed in early 2022.

The No-Build scenario design year (2045) AADTs and turning movement volumes can be found in **Figure 4-2** and **Figure 4-3**, respectively.

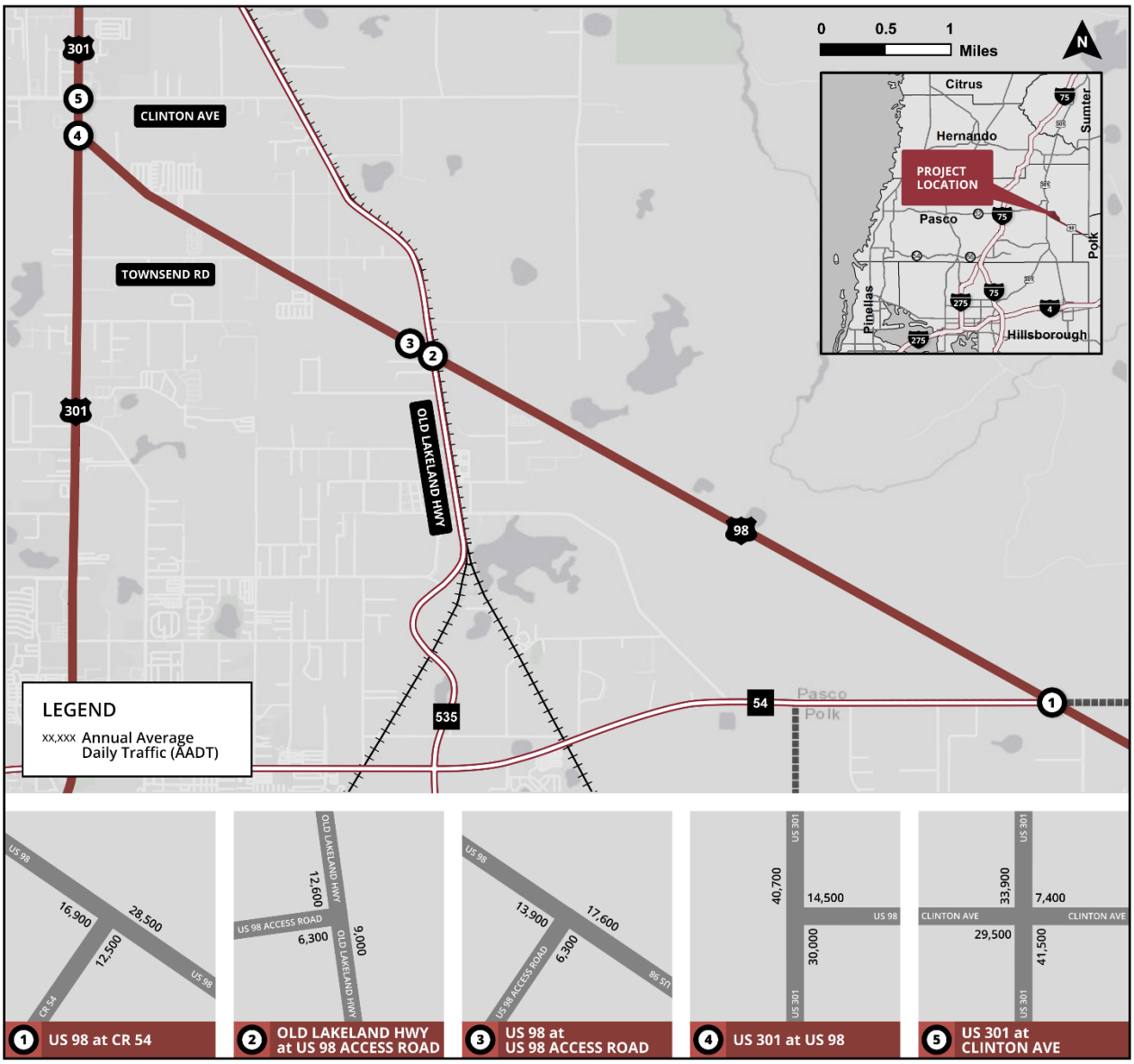


Figure 4-2 Design Year (2045) No-Build AADTs

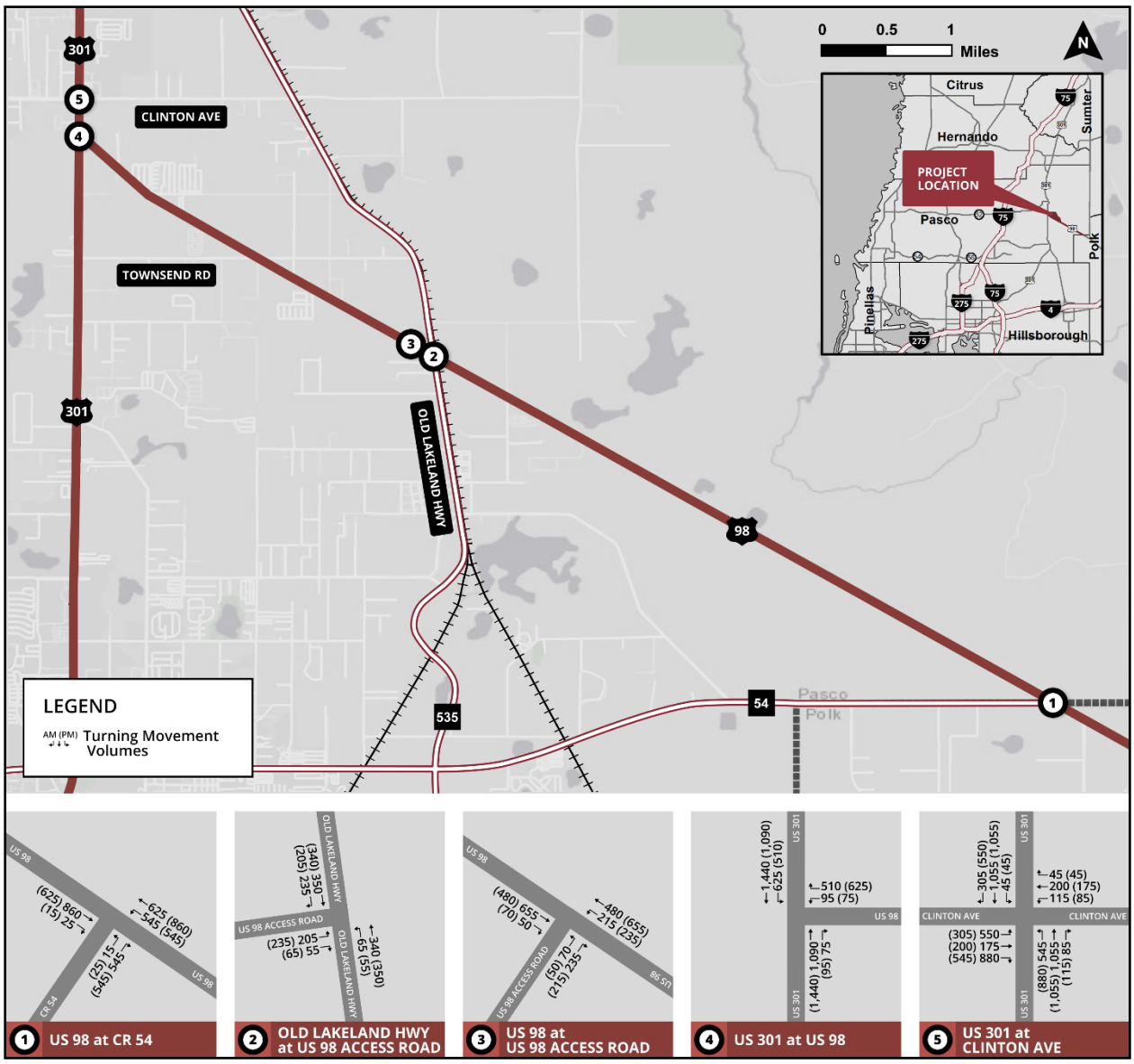


Figure 4-3 Design Year (2045) No-Build Turning Movement Counts

The Synchro/HCS analysis results for the study area for the AM and PM peak hour can be found in **Table 4-1** and **Table 4-2**, respectively. The results indicate that both the intersection of US 301 at Clinton Avenue and US 301 at US 98 fails to meet the LOS target of D in both the AM and PM peak hour under design year (2045) No-Build conditions. The eastbound approach at US 98 and CR 54 intersection and northbound approach at US 98 and US 98 Access Road also experienced LOS F during both AM and PM peak hours. Queuing associated with the observed AM and PM peak hour delays can be found in **Table 4-3** and **Table 4-4**. Queue lengths associated with the failed approaches are also longer than the available storage lengths.

Table 4-1 Design Year (2045) No-Build AM Peak Hour Intersection Operational Analysis

ID	Intersection	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	US 98 and CR 54+	7323.2*	F	-	-	27.1*	D	9.1*	A	-	-
2	US 98 Access and Old Lakeland Highway	54.2	D	-	-	5.5	A	4.8	A	15.6	B
3	US 98 and US 98 Access	307.3*	F	-	-	10.7*	B	-	-	-	-
4	US 301 and US 98	-	-	27.9	C	40.6	D	69.5	E	54.1	D
5	US 301 and Clinton Avenue	967.1	F	52.5	D	37.2	D	34.9	C	332.8	F

Red highlight indicates that the delay does not meet the LOS target, D for Urbanized, C for Rural
[1] Delay in seconds/vehicle
+ Rural intersection with LOS C Target
* Stop controlled left turn movement delay

Table 4-2 Design Year (2045) No-Build PM Peak Hour Intersection Operational Analysis

ID	Intersection	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	US 98 and CR 54+	7574.0*	F	-	-	15.7*	C	10.1*	B	-	-
2	US 98 Access and Old Lakeland Highway	51.6	D	-	-	6.2	A	5.5	A	16.8	B
3	US 98 and US 98 Access	155.6*	F	-	-	9.7*	A	-	-	-	-
4	US 301 and US 98	-	-	49.9	D	58.9	E	86.8	F	68.9	E
5	US 301 and Clinton Avenue	418.6	F	60.5	E	150.5	F	48.4	D	167.5	F

Red highlight indicates that the delay does not meet the LOS target, D for Urbanized, C for Rural
[1] Delay in seconds/vehicle
+ Rural intersection with LOS C Target
* Stop controlled left turn movement delay

Table 4-3 Design Year (2045) No-Build AM Peak Hour Queue Analysis

ID	Intersection	Eastbound			Westbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	US 98 and CR 54	6000	-	+	-	-	-	250	-	-	-	-	-
2	US 98 Access and Old Lakeland Highway	275	-	-	-	-	-	150	-	-	-	100	+
3	US 98 and US 98 Access	250	-	100	-	-	-	50	-	-	-	-	-
4	US 301 and US 98	-	-	-	100	-	450	-	600	75	1175	25	-
5	US 301 and Clinton Avenue	800	125	3675	150	200	+	800	175	50	50	550	325

Red indicates turn bay where queue exceeds available storage
+ Shared Lanes delay

Table 4-4 Design Year (2045) No-Build PM Peak Hour Queue Analysis

ID	Intersection	Eastbound			Westbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	US 98 and CR 54	6150	-	+	-	-	-	125	-	-	-	-	-
2	US 98 Access and Old Lakeland Highway	300	-	-	-	-	-	175	-	-	-	125	+
-	US 98 and US 98 Access	150	-	75	-	-	-	25	-	-	-	-	-
4	US 301 and US 98	-	-	-	100	-	775	-	950	100	1025	25	-
5	US 301 and Clinton Avenue	250	175	2050	125	200	+	2250	150	50	50	600	750

Red indicates turn bay where queue exceeds available storage
+ Shared Lanes delay

Segment analysis was conducted along US 98 and US 301 for the design year (2045) AM and PM peak hour directional volume under No-Build condition and is shown in **Table 4-5** and **Table 4-6**. The result of the analysis indicates that US 98 from CR 54 to US 98 Access Road fails to meet the LOS target C for the rural segments during both AM and PM peak hour under design year (2045) No-Build conditions. Other segments along both facilities operate at LOS D and C targets under the No-Build condition.

Table 4-5 Design Year (2045) No-Build AM Directional Peak Hour Segment Operation Analysis

From	To	Peak Hour Volume		Number of Lanes	LOS D Threshold	FDOT Generalized LOS Table		Arterial LOS		Arterial V/C	
		NB/EB	SB/WB			Area Type	Classification	NB/EB	SB/WB	NB/EB	SB/WB
US 98											
CR 54	US 98 Access Road	640	885	1	450	Rural	Uninterrupted Flow Highways (Rural)	D	E	1.42	1.97
US 98 Access Road	US 301	550	705	1	1200	Urbanized	Uninterrupted Flow Highways	B	C	0.46	0.59
US 301											
South of US 98	US 98	1165	1535	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.58	0.77
US 98	Clinton Avenue	1600	2065	2	2000	Urbanized	State Signalized Arterial (Class I)	C	E	0.80	1.03
Clinton Avenue	North of Clinton Avenue	1650	1405	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.83	0.70

LOS Threshold represents acceptable LOS peak hour demand for LOS C in rural areas and LOS D in urbanized areas
Red highlight indicates that the delay does not meet the LOS targets

Table 4-6 Design Year (2045) No-Build PM Directional Peak Hour Segment Operation Analysis

From	To	Peak Hour Volume		Number of Lanes	LOS D Threshold	FDOT Generalized LOS Table		Arterial LOS		Arterial V/C	
		NB/EB	SB/WB			Area Type	Classification	NB/EB	SB/WB	NB/EB	SB/WB
US 98											
CR 54	US 98 Access Road	885	640	1	450	Rural	Uninterrupted Flow Highways (Rural)	E	D	1.97	1.42
US 98 Access Road	US 301	705	550	1	1200	Urbanized	Uninterrupted Flow Highways	B	C	0.59	0.46
US 301											
South of US 98	US 98	1535	1165	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.77	0.58
US 98	Clinton Avenue	2065	1600	2	2000	Urbanized	State Signalized Arterial (Class I)	E	C	1.03	0.80
Clinton Avenue	North of Clinton Avenue	1405	1650	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.70	0.83

LOS Threshold represents acceptable LOS peak hour demand for LOS C in rural areas and LOS D in urbanized areas
Red highlight indicates that the delay does not meet the LOS targets

4.3 TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS ALTERNATIVE (TSM&O)

The objective of Transportation System Management & Operations (TSM&O) is to identify non-capacity improvement strategies that improve traffic flow, manage congestion and maximize highway operations. TSM&O alternatives should improve safety and reliability of the transportation system while minimizing environmental impacts.

TSM&O options generally include intelligent transportation systems (ITS), traffic management strategies, traffic signal and intersection improvements, auxiliary lanes, access management, and transit improvements. The TSM&O Alternative alone is not considered a viable alternative, however, the incorporation of viable TSM&O improvements will be considered as part of the Build Alternative.

4.4 FUTURE CONDITIONS

4.4.1 Future Land Use

The Future Land Use information was obtained for Pasco County. The majority of the future adjacent land use is residential, agricultural and conservation lands with some retail/office/residential parcels in the area of Old Lakeland Highway. The future land use for the project corridor can be found in **Figure 4-4**.

4.4.2 Travel Demand

The development of future traffic for the project corridor included the analysis of the Bureau of Economic and Business Research's (BEBR) growth trends, historical count trends and the Tampa Bay Regional Planning Model (TBRPM) Social-Economic data. Considering such analyses, future travel demand was determined for the corridor.

The travel demand modeling efforts for this analysis built off the FDOT's efforts on the State Road 56 ACER (WPI Segment No: 443367-1) and is based off the Tampa Bay Regional Planning Model (TBRPM), Version 9.1 with a calibrated base year of 2015 and horizon year of 2045. This analysis began with further refinement of the TBRPM, with an emphasis placed on the area surrounding the US 98 PD&E study area and the resulting forecast AADTs by which the design year (2045) volumes will be developed

Several developments are currently planned along the project corridor. Due to no existing traffic impact analysis associated with these developments being available, Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition, was utilized to understand the additional demand that these developments would place on the corridor under both the opening year (2025) and design year (2045) volume scenarios.

Additional information regarding the travel demand model and analysis can be found in the Project Traffic Analysis Report (PTAR) (June 2022) that has been prepared of this project.

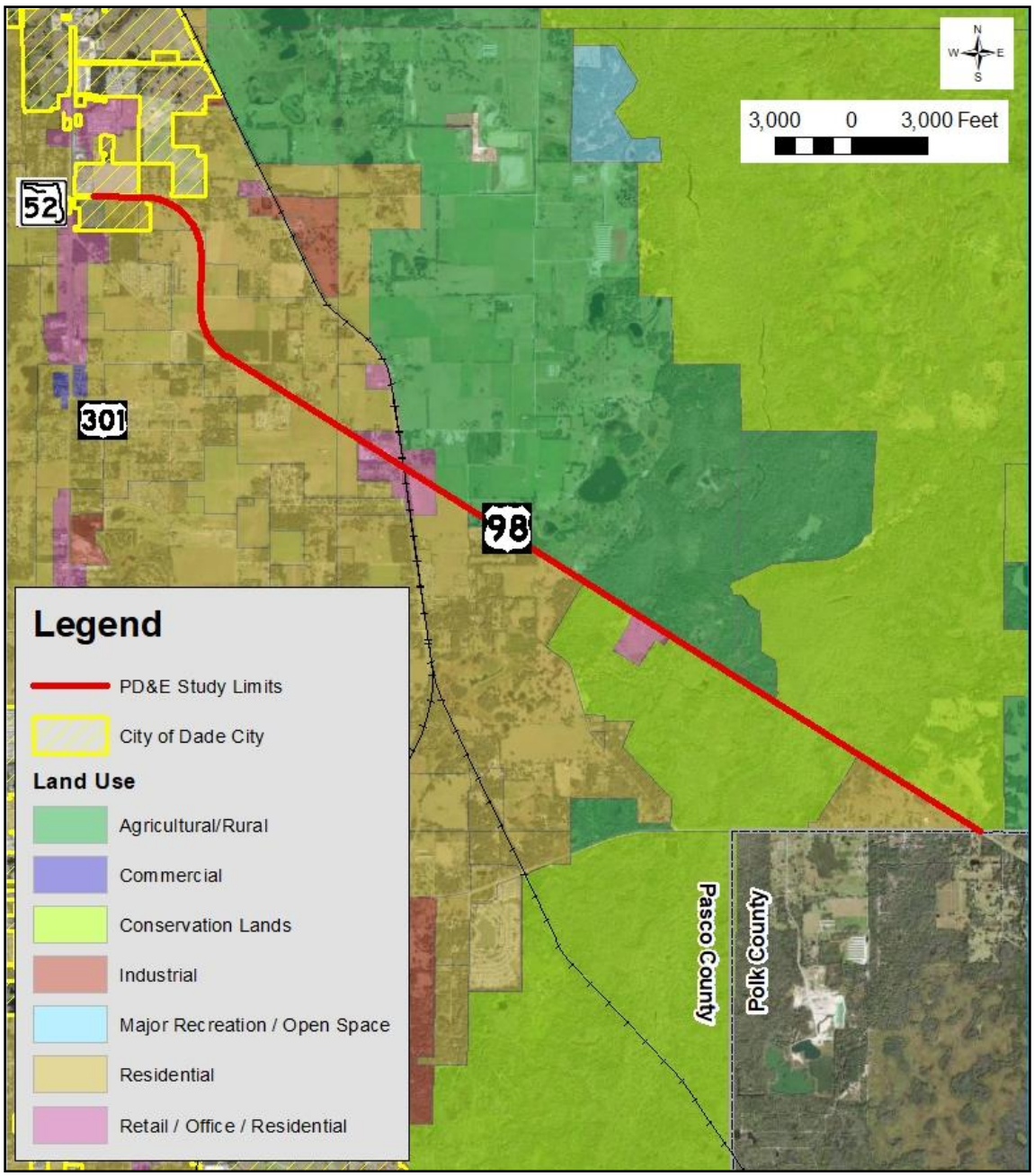
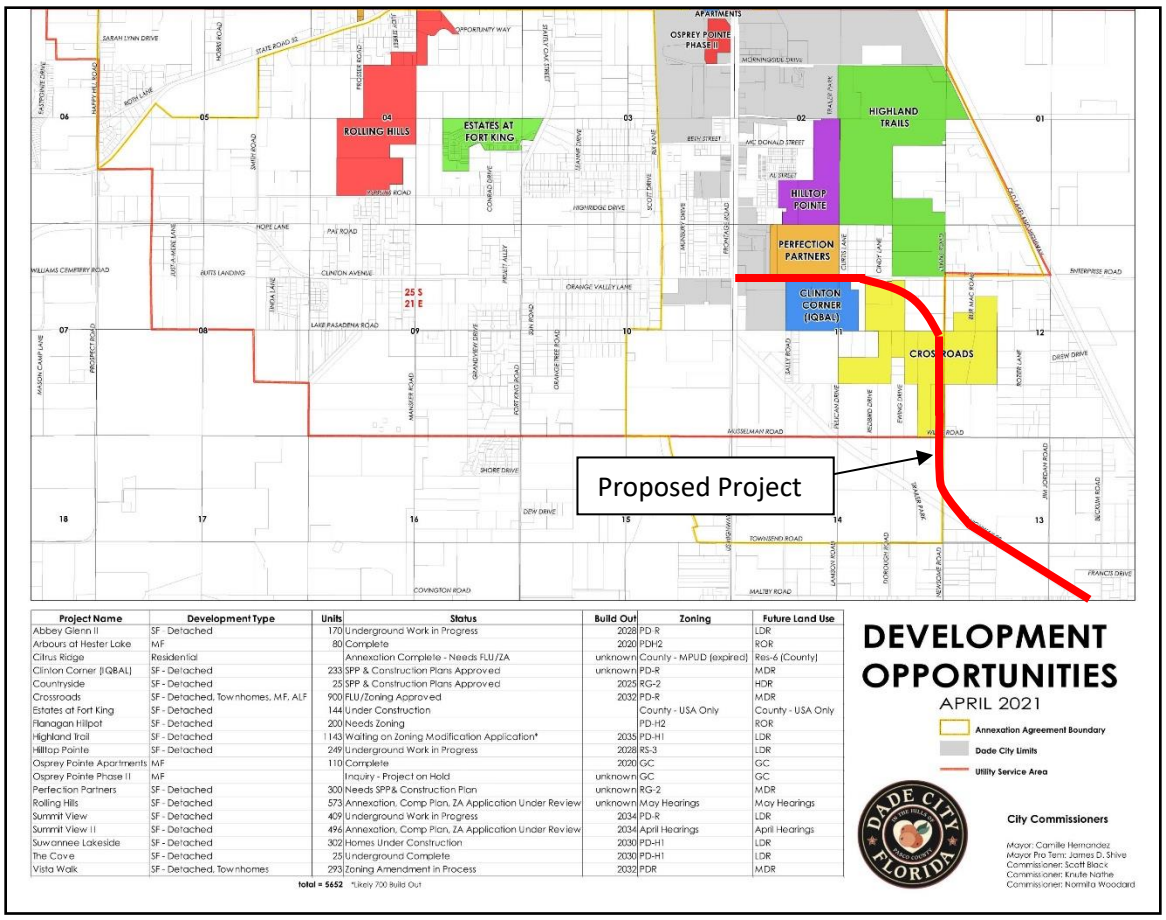


Figure 4-4 Future Land Use

4.4.3 Other Future Development

Several developments are planned in the vicinity of the proposed project. See **Figure 4-5** for the Development Opportunities Map from the City of Dade City dated April 2021.



Project Name	Development Type	Units	Status	Build Out	Zoning	Future Land Use
Abbey Glenn II	SF - Detached	170	Underground Work in Progress	2028	PD-R	LDR
Arbours at Hester Lake	MF	80	Complete	2020	PDH2	ROR
Citrus Ridge	Residential		Annexation Complete - Needs FLU/ZA	unknown	County - MPUD (expired)	Res-6 (County)
Clinton Corner (IQBAL)	SF - Detached	233	SPP & Construction Plans Approved	unknown	PD-R	MDR
Countryside	SF - Detached	25	SPP & Construction Plans Approved	2025	RG-2	HDR
Crossroads	SF - Detached, Townhomes, MF, ALF	900	FLU/Zoning Approved	2032	PD-R	MDR
Estates at Fort King	SF - Detached	144	Under Construction		County - USA Only	County - USA Only
Flanagan Hillpot	SF - Detached	200	Needs Zoning		PD-H2	ROR
Highland Trail	SF - Detached	143	Waiting on Zoning Modification Application*	2035	PD-H1	LDR
Hilltop Pointe	SF - Detached	249	Underground Work in Progress	2028	RS-3	LDR
Osprey Pointe Apartments	MF	110	Complete	2020	GC	GC
Osprey Pointe Phase II	MF		Inquiry - Project on Hold	unknown	GC	GC
Perfection Partners	SF - Detached	300	Needs SPP & Construction Plan	unknown	RG-2	MDR
Rolling Hills	SF - Detached	573	Annexation, Comp Plan, ZA Application Under Review	unknown	May Hearings	May Hearings
Summit View	SF - Detached	409	Underground Work in Progress	2034	PD-R	LDR
Summit View II	SF - Detached	496	Annexation, Comp Plan, ZA Application Under Review	2034	April Hearings	April Hearings
Suwannee Lakeside	SF - Detached	302	Homes Under Construction	2030	PD-H1	LDR
The Cove	SF - Detached	25	Underground Complete	2030	PD-H1	LDR
Vista Walk	SF - Detached, Townhomes	293	Zoning Amendment in Process	2032	PDR	MDR

total = 5652 *Likely 700 Build Out

Figure 4-5 Future Developments

4.5 BUILD ALTERNATIVE(S)

Alternative alignments were evaluated as part of the ACE (WPI No. 443368-1 US 301/US 98/Clinton Avenue Intersection Realignment Study). The build alternative presented is the recommended alternative from that study.

The following steps were utilized to further develop and evaluate viable alternatives:

- Base maps were prepared using all available data, including county GIS data, as-built plans, FDOT ROW maps, and subdivision plats.
- The required number of through lanes and major intersection geometry was determined based on the traffic analysis.
- Potential alternative typical sections were developed based on FDOT design criteria in conjunction with the context classification.
- Alternative alignment was evaluated to minimize impacts on adjacent properties and the need for additional ROW.

- A Preferred Alternative was selected.

4.5.1 Build Typical Sections

There are three (3) proposed roadway typical sections for the project, described below:

Typical Section 1 is for the widening of existing US 98 and includes a 4-lane divided rural facility with a 14 to 36-foot median centered within the existing 160-foot ROW. There will be two 12-foot travel lanes in each direction with 8-foot (4-foot paved) inside shoulders and 10-foot (5-foot paved) outside shoulders. The design speed for Typical Section 1 is 60 MPH from MP 0.000 to MP 4.543 which has a Context Classification of C2 (Rural). The design speed for Typical Section 1 is 55 MPH from MP 4.543 to MP 6.665 which has a Context Classification of C3R (Suburban Residential). Typical Section 1 is depicted in **Figure 4-6**. This typical section will be utilized from CR 54 to north of Townsend Road.

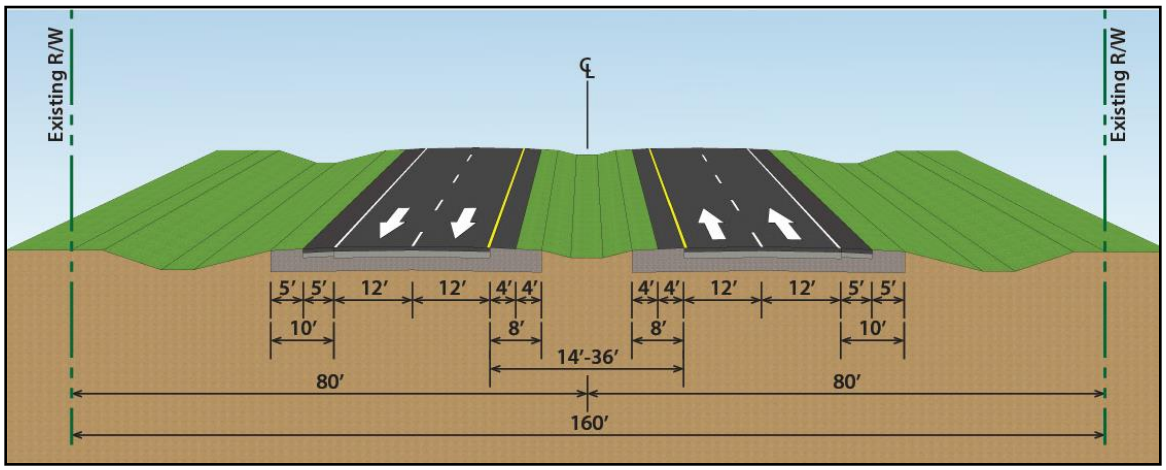


Figure 4-6 Proposed Roadway Typical Section 1 from CR 54 to North of Townsend Road

For most of Typical Section 1, the roadway is sloped to the outside. In some areas, to minimize environmental impacts and support the proposed drainage design, the roadway will be crowned with the inside lanes sloping to the median or all lanes sloping to the median. In the most constrained areas, the median will be paved and guardrail provided.

Typical Section 2 is for the realigned section of US 98 and includes a 4-lane divided suburban facility with a 40-foot raised median within the proposed 245-foot ROW. There will be two 12-foot travel lanes in each direction with 4-foot inside shoulders and ten-foot (5-foot paved) outside shoulders. A 6-foot sidewalk is provided on the east side of the roadway and a 12-foot shared use path is provided on the west side of the roadway. The design speed for Typical Section 2 is 50 MPH from MP 6.665 to MP 7.967 which has a Context Classification of C3R (Suburban Residential). Typical Section 2 is depicted in **Figure 4-7**. This typical section will be utilized from north of Townsend Road to Cindy Lane.

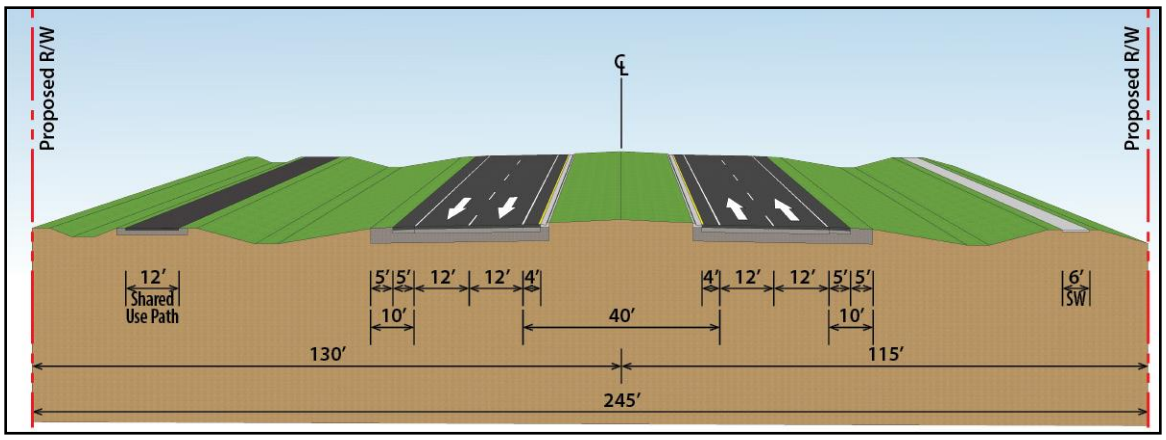


Figure 4-7 Proposed Roadway Typical Section 2 from North of Townsend Road to Cindy Lane

Typical Section 3 includes a 4-lane divided urban facility with a 22-foot raised median within a 140-foot ROW. There will be two 11-foot travel lanes in each direction with 7-foot bicycle lanes. A 6-foot sidewalk is provided on the east side of the roadway and a 10-foot shared use path is provided on the west side of the roadway. The design speed for Typical Section 3 is 45 MPH from MP 7.967 to MP 8.727 which has a Context Classification of C3R (Suburban Residential). Typical Section 3 is depicted in **Figure 4-8**. This typical section will be utilized from Cindy Lane to US 301.

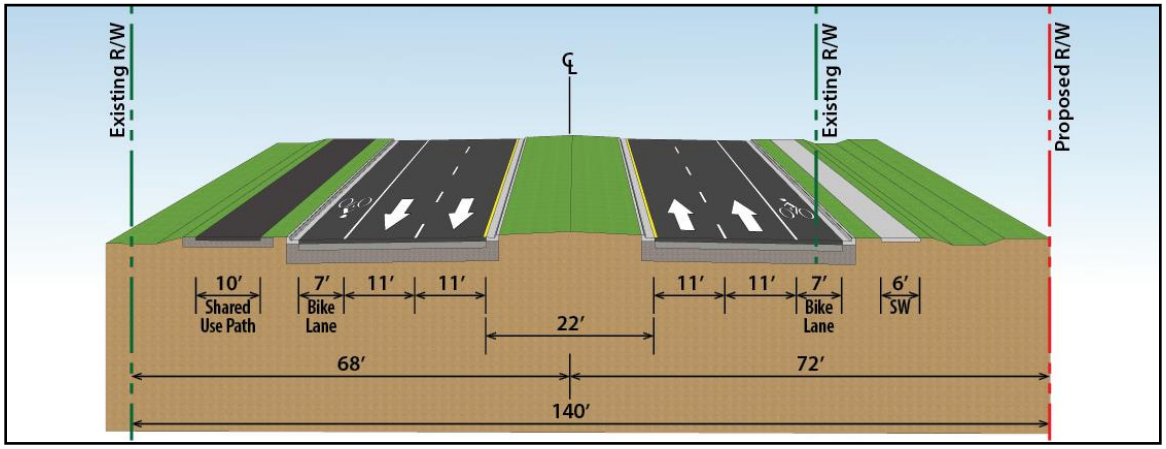


Figure 4-8 Proposed Roadway Typical Section 3 from Cindy Lane to US 301

4.5.2 Bridges and Structures

At both the Hillsborough River and Old Lakeland Highway / CSX Railroad locations, the bridges will be replaced with twin bridges with two 12-foot travel lanes with 6-foot inside shoulders and 10-foot outside shoulders. Both bridges will include barrier separated 10-foot walkway to accommodate future shared use path and/or sidewalk (bicycle and pedestrian) accommodations. The bridges will be located within the existing 160-foot ROW. The proposed bridge typical section is provided in **Figure 4-9**.

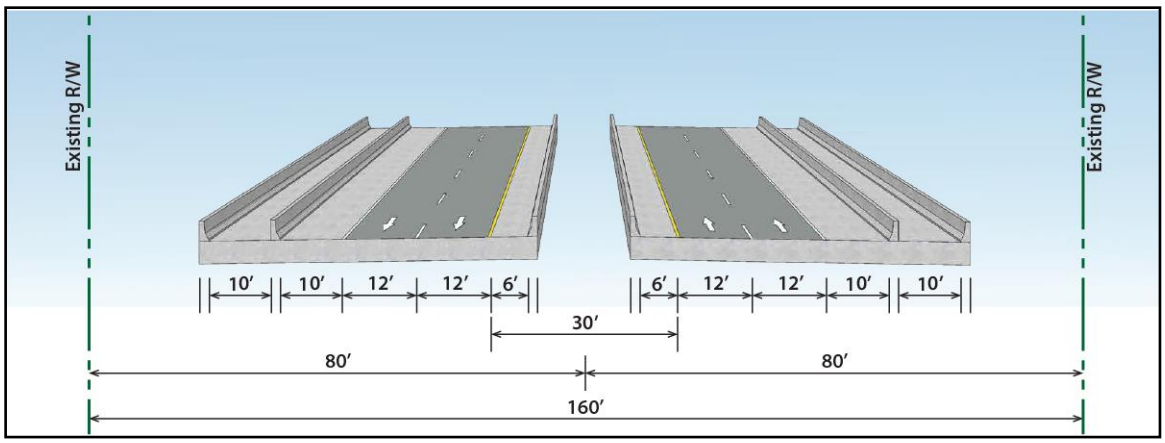


Figure 4-9 Proposed Bridge Typical Section

4.5.3 Build Alignment

The build alternative utilizes the proposed typical sections just discussed. For the first nearly 7 miles to just north of Townsend Road, the centerline of the proposed typical section is placed along the existing roadway centerline and the proposed four-lane facility will be constructed symmetrically around that centerline.

From north of Townsend Road, the Build Alternative leaves the existing alignment of US 98 through a superelevated curve to the right (degree of curve 2° 30', Length of 2,327.84') The proposed alignment continues in a northerly direction on a tangent for 0.38 mile then curves to the left through (degree of curve 2° 23'32", Length of 3,765.20'). It is through this curve that the typical section transitions from a suburban to an urban typical with the roundabout being the means for that transition. The alignment then heads westward on a tangent toward US 301, co-locating the eastbound lanes along the existing lanes of Clinton Avenue. The alignment of the proposed roadway basically follows the alignment of Clinton Avenue until it intersects with US 301. A reverse curve is utilized to tie into the existing four-lane Clinton Avenue just east of the US 301 intersection.

4.5.4 Build Traffic Data and Analysis

An analysis of the US 98 study corridor was conducted to examine the No-Build and Build Alternative under the design year (2045) of the proposed improvements. Intersection control analysis at study intersections will include queue, LOS, and delay. Segment analysis along US 98 and US 301 will include LOS and volume to capacity ratios.

The Build Alternative incorporates the widening of US 98 from two to four lanes and its realignment with the intersection of US 301 and Clinton Avenue. To evaluate the design year (2045) operational characteristics of the study area, operational analyses were conducted using Synchro 10 for signalized intersections, HCS7 for stop-controlled intersections and Sidra 9 for roundabouts. The operational analysis consisted of intersection delay, level of service (LOS), and queue analysis. HCM methodologies were used to estimate the LOS for each study intersection based on the intersection delay resulting from the Synchro and HCS analysis.

The Build scenario design year (2045) AADTs and turning movements that result from this process can be found in **Figure 4-10** and **Figure 4-11**, respectively

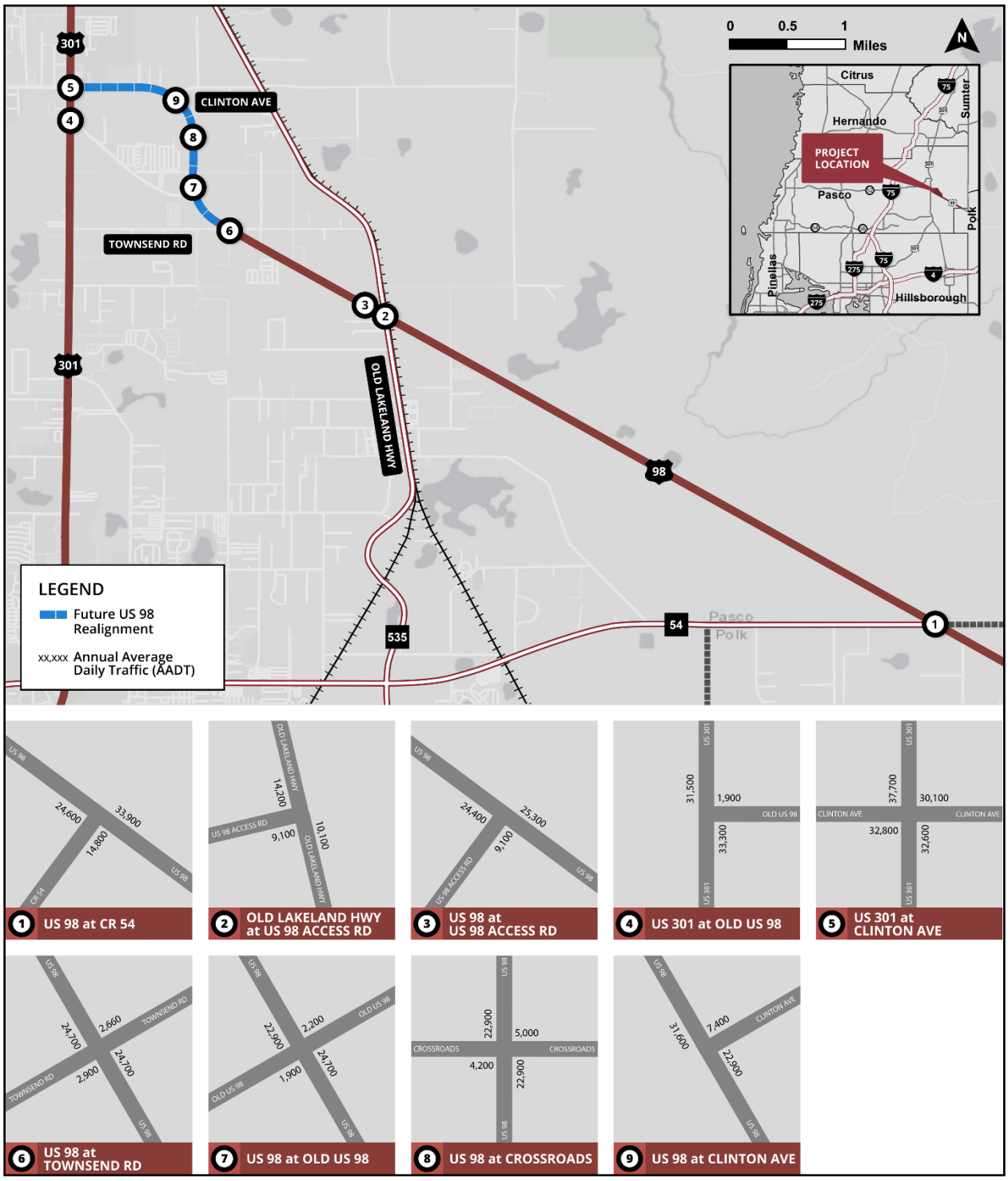


Figure 4-10 Design Year (2045) Build AADTs

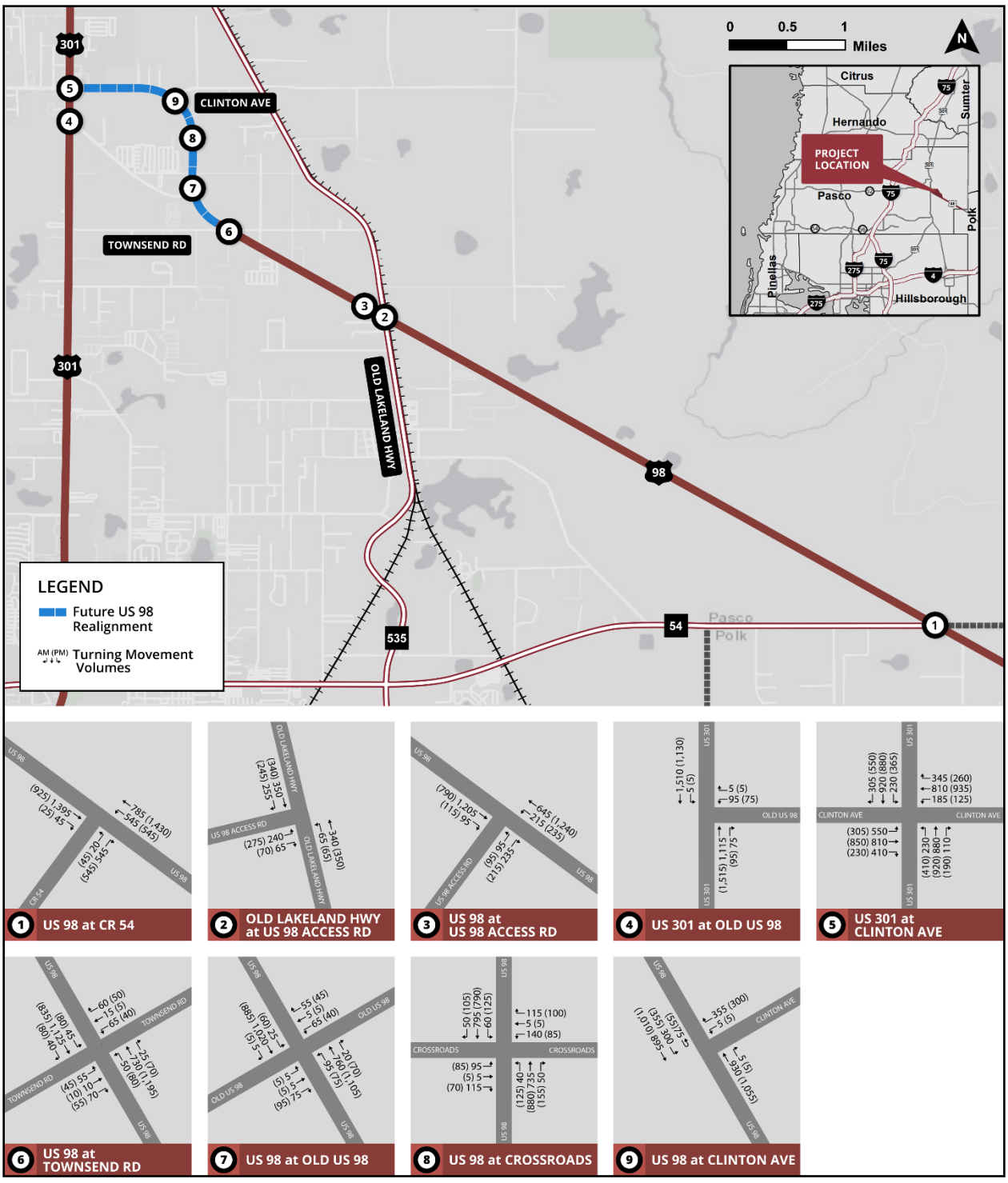


Figure 4-11 Design Year (2045) Build Turning Movement Volumes

The Synchro/HCS/Sidra analysis results for the study area for the AM and PM peak hour can be found in **Table 4-7** and **Table 4-8**, respectively. The results indicate that the intersection of US 301 at Clinton Avenue fails to meet the LOS target of D in both the AM and PM peak hour. The delays reduced

significantly in the Build conditions compared to the No-Build conditions for most of the intersections. Queuing associated with the observed AM and PM peak hour delays can be found in **Table 4-9** and **Table 4-10.** The queues in the Build conditions also reduced significantly comparing to the No-Build conditions

Table 4-7 Design Year (2045) Build AM Peak Hour Intersection Operational Analysis

ID	Intersection	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	US 98 and CR 54+	128.5	F	-	-	22.2	C	26.0	C	40.2	D
2	US 98 Access and Old Lakeland Highway	57.5	E	-	-	5.7	A	11.1	B	20.1	C
3	US 98 and US 98 Access	81.6	F	-	-	5.9	A	11.1	B	18.6	B
4	US 301 and US 98	-	-	58.7	E	15.5	B	0.4	A	8.9	A
5	US 301 and Clinton Avenue	48.0	D	55.6	E	51.8	D	52.3	D	51.6	D
6	US 98 and Townsend Road	14.4	B	8.7	A	6.6	A	9.6	A	8.8	A
7	US 98 and Old US 98	10.2	B	8.7	A	6.3	A	8.9	A	7.8	A
8	US 98 and Crossroads Development	13.6	B	13.1	B	7.2	A	8.0	A	8.8	A
9	US 98 and Clinton Avenue	-	-	26.7	D	11.6	B	8.1	A	12.0	B

Note: Red highlight indicates that the delay does not meet the LOS targets, D for Urbanized, C for Rural

[1] Delay in seconds/vehicle

+ Rural intersection with LOS C Target

Table 4-8 Design Year (2045) Build PM Peak Hour Intersection Operational Analysis

ID	Intersection	Eastbound		Westbound		Northbound		Southbound		Overall	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	US 98 and CR 54+	45.0	D	-	-	17.3	B	15.7	B	19.2	B
2	US 98 Access and Old Lakeland Highway	61.5	E	-	-	6.8	A	12.3	B	23.2	C
3	US 98 and US 98 Access	55.1	E	-	-	6.9	A	11.5	B	14.0	B
4	US 301 and US 98	-	-	62.3	E	16.7	B	0.3	A	11.4	B
5	US 301 and Clinton Avenue	60.8	E	71.9	E	28.3	C	57.6	E	54.1	D
6	US 98 and Townsend Road	9.2	A	13.7	B	11.1	B	7.9	A	9.9	A
7	US 98 and Old US 98	9.4	A	11.4	B	9.0	A	7.5	A	8.5	A
8	US 98 and Crossroads Development	11.4	B	14.5	B	10.8	B	9.4	A	10.6	B
9	US 98 and Clinton Avenue	-	-	25.8	D	14.8	B	9.2	A	13.2	B

Note: Red highlight indicates that the delay does not meet the LOS targets, D for Urbanized, C for Rural

[1] Delay in seconds/vehicle

+ Rural intersection with LOS C Target

Table 4-9 Design Year (2045) Build AM Peak Hour Queue Analysis

ID	Intersection	Eastbound			Westbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	US 98 and CR 54	50	-	875	-	-	-	350	50	-	-	600	-
2	US 98 Access and Old Lakeland Highway	325	-	-	-	-	-	25	125	-	-	200	+
3	US 98 and US 98 Access	150	-	675	-	-	-	100	75	-	-	325	50
4	US 301 and US 98	-	-	-	150	-	25	-	375	50	-	25	-
5	US 301 and Clinton Avenue	400	450	475	200	525	475	175	475	125	225	550	375
6	US 98 and Townsend Road	+	50	+	+	25	+	+	50	+	+	100	+
7	US 98 and Old US 98	+	25	+	+	25	+	+	75	+	+	100	+
8	US 98 and Crossroads Development	+	50	+	+	75	+	+	75	+	+	75	+
9	US 98 and Clinton Avenue	-	-	-	+	150	+	+	125	+	+	100	+

Red indicates turn bay where queue exceeds available storage
+Shared Lanes delay

Table 4-10 Design Year (2045) Build PM Peak Hour Queue Analysis

ID	Intersection	Eastbound			Westbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	US 98 and CR 54	75	-	300	-	-	-	375	125	-	-	325	-
2	US 98 Access and Old Lakeland Highway	400	-	-	-	-	-	25	150	-	-	225	+
3	US 98 and US 98 Access	150	-	575	-	-	-	100	250	-	-	250	75
4	US 301 and US 98	-	-	-	125	-	25	-	525	50	25	25	-
5	US 301 and Clinton Avenue	300	550	300	150	725	350	200	175	75	300	500	825
6	US 98 and Townsend Road	+	25	+	+	25	+	+	125	+	+	75	+
7	US 98 and Old US 98	+	25	+	+	25	+	+	100	+	+	75	+
8	US 98 and Crossroads Development	+	50	+	+	50	+	+	125	+	+	100	+
9	US 98 and Clinton Avenue	-	-	-	+	125	+	+	175	+	+	125	+

Red indicates turn bay where queue exceeds available storage
+Shared Lanes

Segment analysis was conducted along US 98 and US 301 for the design year (2045) AM and PM peak hour directional volume under Build condition and is shown in **Table 4-11** and **Table 4-12**. The result of the analysis indicates that both facilities operate at LOS D and C targets under the design year (2045) Build condition. The LOS improved along the US 98 corridor due to the widening of US 98 from two to four lanes.

Table 4-11 Design Year (2045) Build AM Directional Peak Hour Segment Operation Analysis

From	To	Peak Hour Volume		Number of Lanes	LOS D Threshold	FDOT Generalized LOS Table		Arterial LOS		Arterial V/C	
		NB/EB	SB/WB			Area Type	Classification	NB/EB	SB/WB	NB/EB	SB/WB
US 98											
CR 54	US 98 Access Road	860	1440	2	2350	Rural+	Uninterrupted Flow Highways (Rural)	B	B	0.37	0.61
US 98 Access Road	Townsend Road	805	1300	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.40	0.65
Townsend Road	Old US 98	875	1210	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.44	0.61
Old US 98	Crossroads Development	825	1050	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.41	0.53
Crossroads Development	Clinton Avenue	945	905	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.47	0.45
Clinton Avenue	US 301	1360	1270	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.68	0.64
US 301											
South of US 98	Old US 98	1190	1605	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.60	0.80
Old US 98	Clinton Avenue	1220	1515	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.61	0.76
Clinton Avenue	North of Clinton Avenue	1775	1455	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.89	0.73

LOS Threshold represents acceptable LOS peak hour demand for LOS C in rural areas and LOS D in urbanized areas

Table 4-12 Design Year (2045) Build PM Directional Peak Hour Segment Operation Analysis

From	To	Peak Hour Volume		Number of Lanes	LOS D Threshold	FDOT Generalized LOS Table		Arterial LOS		Arterial V/C	
		NB/EB	SB/WB			Area Type	Classification	NB/EB	SB/WB	NB/EB	SB/WB
US 98											
CR 54	US 98 Access Road	1475	1005	2	2350	Rural	Uninterrupted Flow Highways (Rural)	B	B	0.63	0.43
US 98 Access Road	Townsend Road	1345	930	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.67	0.47
Townsend Road	Old US 98	1290	1020	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.65	0.51
Old US 98	Crossroads Development	1160	950	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.58	0.48
Crossroads Development	Clinton Avenue	1065	1020	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.53	0.51
Clinton Avenue	US 301	1410	1420	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.71	0.71
US 301											
South of US 98	Old US 98	1610	1205	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.81	0.60
Old US 98	Clinton Avenue	1520	1235	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.76	0.62
Clinton Avenue	North of Clinton Avenue	1485	1795	2	2000	Urbanized	State Signalized Arterial (Class I)	C	C	0.74	0.90

LOS Threshold represents acceptable LOS peak hour demand for LOS C in rural areas and LOS D in urbanized areas

4.6 COMPARATIVE ALTERNATIVES EVALUATION

The evaluation summary matrix was developed to compare the No-Build Alternative and the Preferred Build Alternative based on preliminary estimates of costs (ROW acquisition, wetland mitigation, engineering and construction), as well as, environmental factors, as shown in **Table 4-13**. The data for the Preferred Alternative was developed based on the preferred alternative "footprint" along with base map information collected and prepared for this study. The construction cost estimates was prepared using the Department's LRE program.

Table 4-13 Evaluation Matrix

Evaluation Criteria	No Build Alternative	Preferred Alternative
Potential ROW Impacts		
Number of affected parcels	0	52
Area of ROW anticipated to be acquired for US 98 widening and realignment (acres)	0	50.92
Area of ROW anticipated to be acquired for Stormwater Management Facility and Floodplain Compensation Sites (acres)	0	98.45
Area of permanent easement (acres)	0	0.39
Number of residential relocations	0	6
Number of business relocations	0	0
Potential Environmental Impacts		
Archeological/Historical sites	0	2
Section 4(f) sites	0	0
Noise sensitive sites	0	6
Floodplains (acres)	0	37.87
Wetlands (acres)	0	22.44
Other Surface Wasters (acres)	0	13.10
Protected Species Involvement	0	Minimal
Petroleum & hazardous materials sites	0	1 (Medium)
Estimated Costs (Present Day Costs in $ in Millions rounded up to nearest $0.1 Million)		
Construction of Roadway, Bridges & Ponds	$0.0	$148.1
Right of Way for US 98 Roadway Widening and Realignment	$0.0	$7.0
Right of Way for Stormwater Management Facility and Floodplain Compensation Sites	$0.0	$5.2
Wetland Mitigation	$0.0	$1.9
Design & Construction Inspection	$0.0	$29.6
Total Estimate Costs	**$0.0**	**$191.8**

4.7 SELECTION OF PREFERRED ALTERNATIVE

The Build Alternative is the preferred alternative that will be presented at the public hearing. Concept plans are provided in **Appendix A**.

SECTION 5 PROJECT COORDINATION & PUBLIC INVOLVEMENT

Public involvement activities began at the initiation of the ACE (WPI Segment No. 443368-1). A project website (https://fdotd7studies.com/US301US98INT/) was created to provide project information to the public. The website includes a map of the project area, project description, public meeting materials, project schedule and other project information. Links are provided to allow the public to submit comments, sign up to be added to the mailing list, and view and download newsletters and other public notices. The study also utilized an online public engagement (WikiMapping) website, which can be accessed through the main project website. Use of this site offers the public an opportunity to add location-based notes to a map of the study area at any point during the study process.

Newsletters were used to communicate directly with those on the project mailing list, including all residences within the study area. The newsletters contained information about the project, upcoming project activities, the project schedule and who to contact to obtain project information. A newsletter was prepared and distributed prior to the Kick-Off Meeting. A second newsletter was prepared and distributed prior to the Public Information Meeting. It included project updates including data and conclusions from the Draft ACER and an announcement about the Public Information Meeting.

Two (2) public meeting were held as part of the ACE. They included the Elected/Appointed Officials and Agency Kickoff Meeting and the Public Information meeting.

Public involvement activities have continued through the PD&E phase of the project (WPI Segment No. 443368-2). A new project website (https://fdotd7studies.com/projects/us98-cr54-to-us301/) was created to provide additional project information about the PD&E study to the public. The website includes a map of the project area, project description, public meeting materials, project schedule and other project information. Other activities included distribution of another newsletter, presentations to the MPO, and conducting a Public Hearing.

A newsletter was distributed to all residences within the study area. The newsletters contained information about the project, upcoming project activities, the project schedule and who to contact to obtain project information. The newsletter was also used to notify and invite the public to participate in the Public Hearing and included the location of the project documents for review.

5.1 AGENCY COORDINATION

Coordination with federal, state and local agencies was conducted throughout the course of the study. Agency coordination was initiated as part of the ETDM process and documented in the Planning Screen Summary Report that was published on January 28, 2021 and the Programming Screen Summary Report that was published on August 16, 2021, containing comments from the ETAT on the project's effects on various natural, physical, and social resources.

As part of the ACE study, an Elected/Appointed Officials and Agency Kickoff Meeting was held on June 20, 2019 from 10:00 AM to 12:00 PM at the Dade City Hall Council Chambers, 38020 Meridian Avenue, Dade City, FL 33525 for elected officials, agency representatives, and other interested parties. At the Kickoff

Meeting, the study team provided an overview of the study process and project schedule in a PowerPoint presentation. They also discussed how they would work cooperatively with attendees to identify community goals and preferences in the project study area. Copies of the project newsletter were available for attendees with project and contact information. The meeting was advertised in the Florida Administrative Register on June 11, 2019 and invitations were emailed to local, state and federal elected officials representing the area along with stakeholder agency representatives. A total of 26 from the public signed in at the meeting along with five elected officials. During the presentation, questions were asked about truck traffic, beautification and landscaping, and travel patterns. One formal comment was submitted expressing the need to document truck travel on US 98 and SR 35A to US 301 then onto I-75. The formal comment included concerns about the bridge at US 98 and CR 35A needing to be reconstructed.

During the PD&E study, presentations were made to the Pasco Metropolitan Planning Organization (MPO). A presentation to the Citizens Advisory Committee (CAC) was given on October 12, 2021, to the MPO Board on October 14, 2021, and to the Technical Advisory Committee (TAC) on November 8, 2021.

5.2 PUBLIC INVOLVEMENT

As part of the ACE study, a Public Information Meeting was held on November 4, 2020. The purpose of the Public Information Meeting was to present the developed corridor alternatives; share the evaluation of the developed corridors; and, seek public comment on the recommendations of this analysis. The meeting was advertised in the Florida Administrative Register on October 28, 2020, in the Tampa Bay Times on October 28, 2020, and invitations were emailed to local, state and federal elected officials representing the area along with stakeholder agency representatives. A meeting announcement was also included in the newsletter mailed to residences within the study area on October 14, 2020. Due to restrictions associated with COVID-19 safety precautions, the Public Information Meeting was conducted virtually with all information available at the project website. Meeting information included a video that summarized the processes and conclusions of the Draft ACER as well as the project documents. A copy of the project documents were also available for viewing at the FDOT District Seven Headquarters in Tampa (11201 N. McKinley Drive, Tampa, FL 33612) and the Hugh Embry Public Library in Dade City (14215 4th Street, Dade City, FL 33523). The meeting had a 21-day public comment period, and all interested people were encouraged to participate and express their views regarding the project and information presented. During the Public Information Meeting time period, the project website had 163 views by 84 users. Eight (8) people provided multiple comments via the website and/or email. Three (3) comments supported and/or understood the selection of Corridor B while only two (2) were opposed to the project or corridor selection. One (1) comment was also against Corridor E. Five (5) comments questioned intersection and turn lane details, in particular at the County Aire Manor entrance. These details will be evaluated as part of the PD&E study.

5.2.1 Public Hearing

A Public Hearing was conducted at the Pasco County Fairgrounds Clayton Auditorium, 36722 State Road 52, Dade City, FL 33525 on Thursday, December 2, 2021, with an option to attend virtually. The hearing

was held to present information to and receive public input from interested persons regarding the proposed improvements to US 98 in Pasco County.

The hearing consisted of an open house from 5:30 p.m. to 6:30 p.m. and a formal presentation and public comment period beginning at 6:30 p.m., followed by resuming the open house until 7:30 p.m. FDOT staff and its consultants were available at the public hearing to discuss the project and answer questions. A separate group of FDOT staff was also available for the virtual attendees during the public hearing to answer any questions. A continuously running PowerPoint presentation describing the project and the proposed improvements to US 98 was shown during the open house portion of the hearing, and also available for the virtual attendees prior to the formal portion of the public hearing. Display boards were also available for review at the in-person hearing session and for review online. A total of 66 people (excluding FDOT staff) signed in at the in-person public hearing, and total of 14 people (excluding FDOT staff) signed in at the virtual portion of the public hearing. A total of 14 comments were received: 6 written comments, 7 verbal statements made during the formal portion, and 1 virtual comment made in the Question Box.

All comments received are documented in the *Comments and Coordination Report*. The public comments were considered in the development and refinement of final Preferred Alternative.

SECTION 6 DESIGN FEATURES OF THE PREFERRED ALTERNATIVE

6.1 ENGINEERING DETAILS OF THE PREFERRED ALTERNATIVE

6.1.1 Typical Sections

There are three (3) proposed roadway typical sections for the project, described below. The limits of each typical section along US 98 are shown in **Figure 6-1**.

Figure 6-1 Typical Section Limits Map

Typical Section 1 is for the widening of existing US 98 and includes a 4-lane divided rural facility with a 14 to 36-foot median centered within the existing 160-foot ROW. There will be two 12-foot travel lanes in each direction with 8-foot (4-foot paved) inside shoulders and 10-foot (5-foot paved) outside shoulders. The design speed for Typical Section 1 is 60 MPH from MP 0.000 to MP 4.543 which has a Context Classification of C2 (Rural). The design speed for Typical Section 1 is 55 MPH from MP 4.543 to MP 6.665 which has a Context Classification of C3R (Suburban Residential). Typical Section 1 is depicted in **Figure 6-6**. This typical section will be utilized from CR 54 to north of Townsend Road.

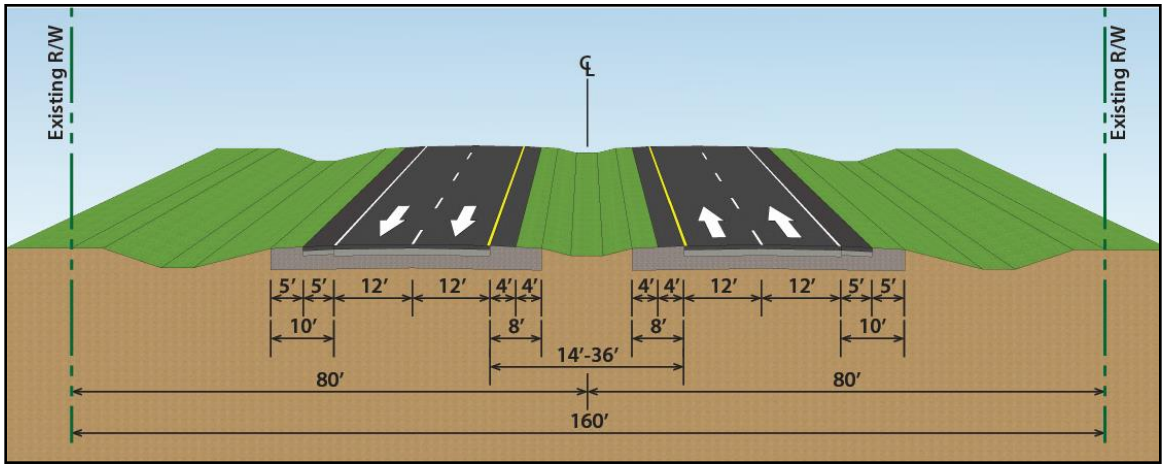


Figure 6-2 Proposed Roadway Typical Section 1 from CR 54 to North of Townsend Road

For most of Typical Section 1, the roadway is sloped to the outside. In some areas, to minimize environmental impacts and support the proposed drainage design, the roadway will be crowned with the inside lanes sloping to the median or all lanes sloping to the median. In the most constrained areas, the median will be paved and guardrail provided.

Typical Section 2 is for the realigned section of US 98 and includes a 4-lane divided suburban facility with a 40-foot raised median within the proposed 245-foot ROW. There will be two 12-foot travel lanes in each direction with 4-foot inside shoulders and ten-foot (5-foot paved) outside shoulders. A 6-foot sidewalk is provided on the east side of the roadway and a 12-foot shared use path is provided on the west side of the roadway. The design speed for Typical Section 2 is 50 MPH from MP 6.665 to MP 7.967 which has a Context Classification of C3R (Suburban Residential). Typical Section 2 is depicted in **Figure 6-3**. This typical section will be utilized from north of Townsend Road to Cindy Lane.

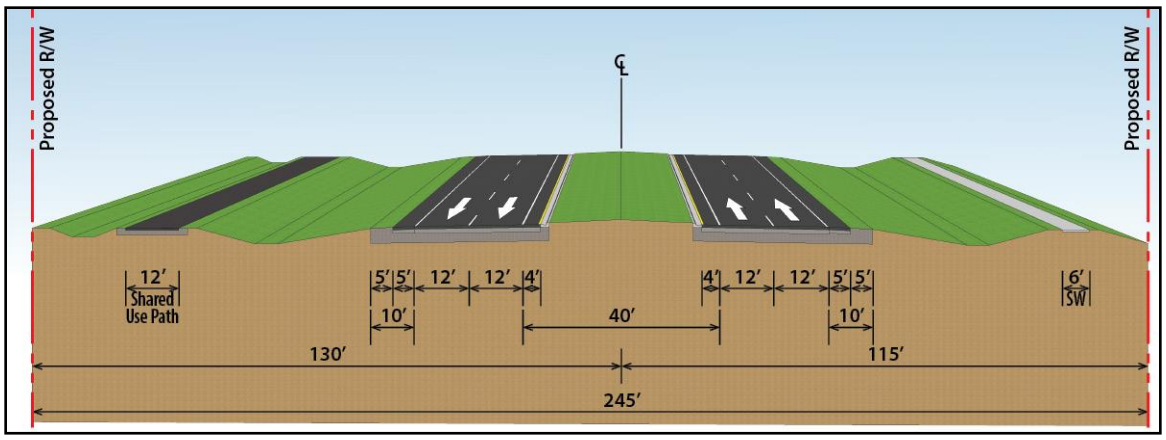


Figure 6-3 Proposed Roadway Typical Section 2 from North of Townsend Road to Cindy Lane

Typical Section 3 includes a 4-lane divided urban facility with a 22-foot raised median within a 140-foot ROW. There will be two 11-foot travel lanes in each direction with 7-foot bicycle lanes. A 6-foot sidewalk is provided on the east side of the roadway and a 10-foot shared use path is provided on the west side of the roadway. The design speed for Typical Section 3 is 45 MPH from MP 7.967 to MP 8.727 which has a Context Classification of C3R (Suburban Residential). Typical Section 3 is depicted in **Figure 6-4**. This typical section will be utilized from Cindy Lane to US 301.

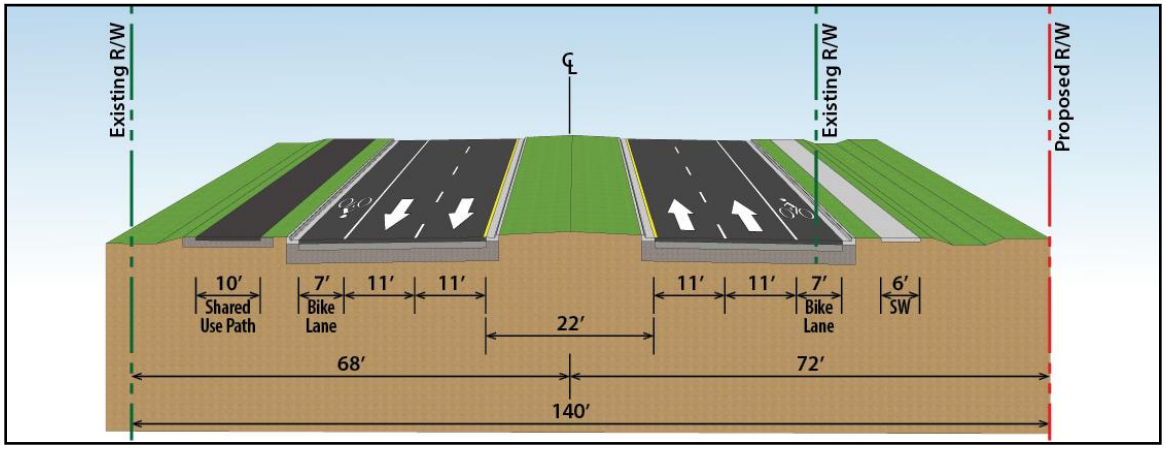


Figure 6-4 Proposed Roadway Typical Section 3 from Cindy Lane to US 301

6.1.2 Bridges and Structures

At both the Hillsborough River and Old Lakeland Highway / CSX Railroad locations, the bridges will be replaced with twin bridges with two 12-foot travel lanes with 6-foot inside shoulders and 10-foot outside shoulders. Both bridges will include barrier separated 10-foot walkway to accommodate future shared use path and/or sidewalk (bicycle and pedestrian) accommodations. The bridges will be located within the existing 160-foot ROW. The proposed bridge typical section is provided in **Figure 6-5**.

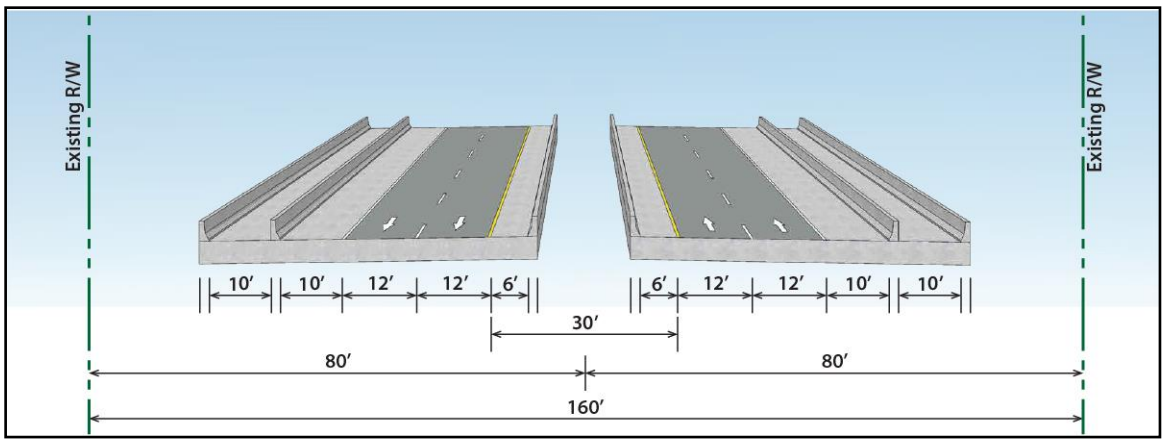


Figure 6-5 Proposed Bridge Typical Section

6.1.3 Right of Way and Relocations

To accommodate the roadway widening and anticipated off site stormwater and floodplain compensation sites, acquisition of additional ROW and permanent easements is anticipated. ROW and permanent easements will need to be acquired from 52 parcels totaling 149.76 acres. The ROW requirement for the roadway realignment and intersection improvements is 50.92 acres. The ROW requirement for constructing and maintaining proposed off-site facilities for stormwater management and floodplain compensation along the project is 98.45 acres. The permanent drainage easement requirement is 0.39 acres. As documented in the *Conceptual Stage Relocation Plan*, this ROW acquisition is anticipated to involve 6 residential relocations and no business relocations.

6.1.4 Horizontal and Vertical Geometry

The proposed horizontal alignment is described in **Section 4.5.3**. The proposed profile will be adjusted to ensure that the vertical alignment meets the design standards but will be modeled after the existing profile of US 98 and Clinton Avenue to provide smooth tie-ins as possible. In the new alignment area, the proposed profile will consider the existing ground profile and will be a "best-fit" to transition from the rural typical section into the urban typical section.

6.1.5 Bicycle and Pedestrian Accommodations

In the realignment section from north of Townsend Road to Cindy Lane, the roadway consists of a suburban typical section within a proposed 245-foot wide ROW and include a 6-foot sidewalk on the east side of the road and a 12-foot shared use path on the west side of the road. Where the new US 98 connects to Clinton Avenue and extends to US 301, the roadway consists of an urban typical section within a 140-foot wide ROW and include a 6-foot sidewalk on the east side of the road and a 10-foot shared use path on the west side of the road that connects to the existing shared use path on US 301

6.1.6 Multi-Modal Accommodations

No additional multi-modal accommodations, beyond the pedestrian and bicycle features noted in the above section will be included in the preferred alternative. The Preferred Alternative would accommodate bus transit, if implemented along this corridor.

6.1.7 Access Management

US 98 from CR 54 to US 301 will remain designated as Access Management Class 3. Class 3 has a restrictive type of median with connection spacing of 660 feet for design speed greater than 45 mph. Median opening spacing is 1,320 feet for directional and 2,640 feet for full. Signal spacing is 2,640 feet.

6.1.8 Intersection and Interchange Concepts

All study intersections under the Build Alternative were examined for geometry and control enhancements to improve operations. Intersections with existing or approved signals will retain their timing plans, but intersection geometrics were examined for improvement. Based on coordination with FDOT District 7, US 98 at CR 54 was only assessed using signal control and geometric improvements at the intersection. The remaining five existing and proposed intersections were assessed using Intersection Control Evaluation (ICE) procedures. The ICE screening can be found in the PTAR (June 2022). Through additional coordination with FDOT District 7, ICE analysis only considered the following intersection control types:

- Two-way stop-control;
- Signalization; and
- Two (2) lane Roundabout with one (1) lane on the minor approach (2L x 1L Roundabout).

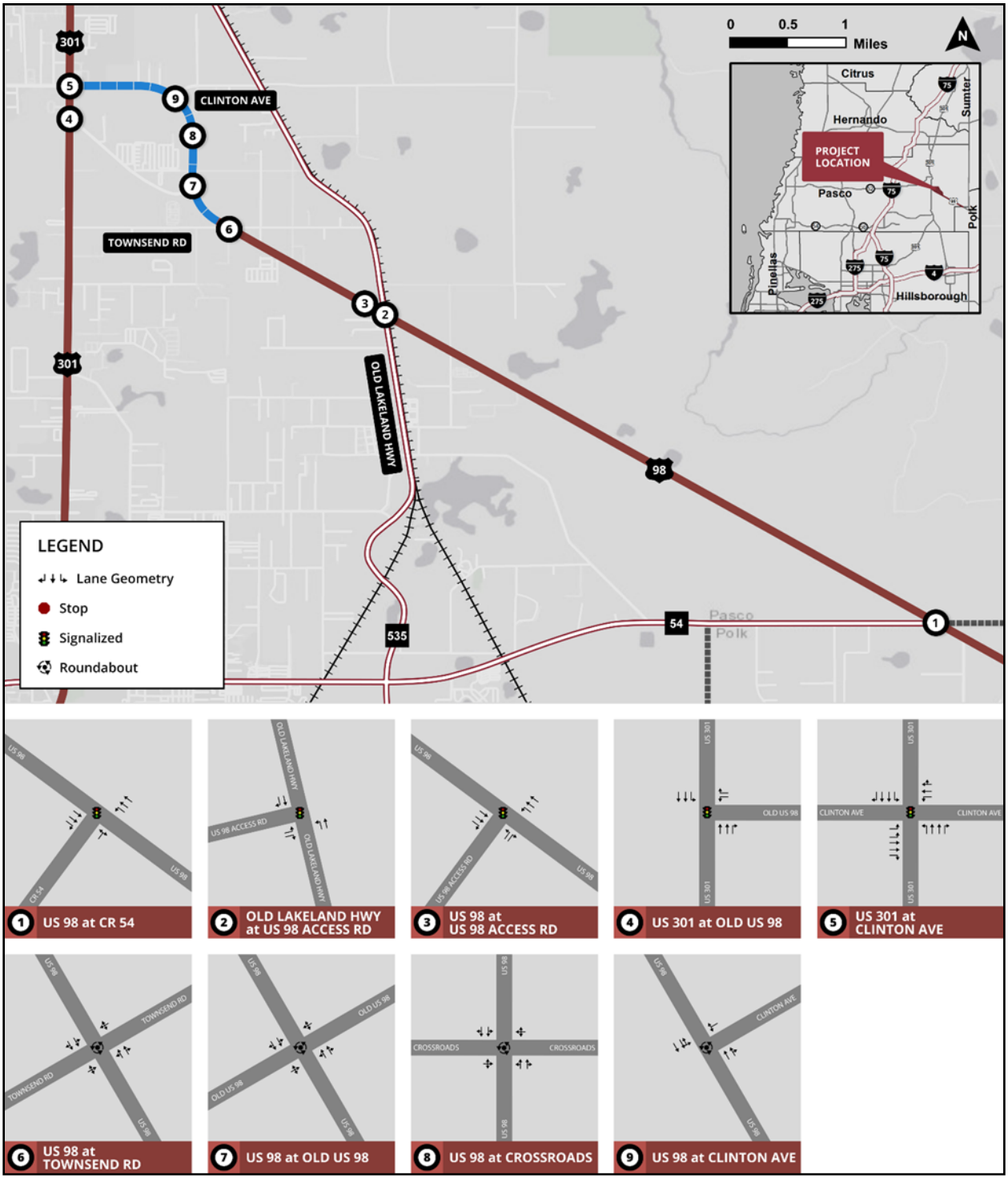
The recommended intersections for the Preferred Alternative is summarized in **Table 6-1**. **Figure 6-6** depicts the intersection lane geometry for the Preferred Alternative.

Table 6-1 Intersection Recommendation Summary

ID	Intersection	Two-Way Stop Control	Traffic Signal	2L x 1L Roundabout
1	US 98 and CR 54		X	
2	US 98 Access and Old Lakeland Highway		X	
3	US 98 and US 98 Access+		X	
4	US 301 and US 98		X	
5	US 301 and Clinton Avenue		X	
6	US 98 and Townsend Road+			X
7	US 98 and Old US 98+			X
8	US 98 and Crossroads Development+			X
9	US 98 and Clinton Avenue+			X

+ Control determined through ICE procedures

Figure 6-6 Preferred Alternative Intersection Lane Geometry



6.1.9 Intelligent Transportation Systems and TSM&O Strategies

TSM&O options generally include intelligent transportation systems (ITS), traffic management strategies, traffic signal and intersection improvements, auxiliary lanes, access management, and transit improvements. There are no recommendations for the installation of ITS equipment along the corridor. However, intersection improvements and access management will be implemented along the corridor.

6.1.10 Utilities

Eight (8) utility agency owners (UAO) have been identified in the project area. Three (3) of the UAO's provided responses. The utilities are summarized below:

City of Dade City: The City of Dade City has provided marked plans showing their facilities both existing and proposed within the project limits. They have a 10" PVC force main (FM) that they propose to run north and south along private drive then turns and goes west on Clinton Avenue then continues west. At approx. sta. 1381+00 they have a 12" Gate valve and 12" water main (WM) that goes west along US 98 where it turns and goes north by the Publix on the north side. The city has an 8" WM that crosses US 98 at approximately Sta.1382+00 and continues south. The city also is proposing a 4" FM that runs east and west along the south side of US 98 with multiple 4" gate valves. The city has an existing 8"PVC Gravity Sewer main that is on the west side of US 301 from Clinton Avenue and runs north.

Pasco County Utilities: Pasco County Utilities owns and operates an 8" PVC WM from Sta. 1210+50 to Sta. 1218+00 on the north side and crosses and turns west and continues on the south side with a 6" PVC WM crossing at approximately Sta. 1214+50. At approximately Sta. 1220+10 they have a 6" PVC WM that crosses the proposed frontage road and goes south along the Heavy Equipment building. From approximately Sta. 1219+00 to Sta. 1265+00 the County has a 12" PVC WM where they have a fire hydrant and a valve pad then a 10" PVC WM continues to Townsend Road and turns and goes SW.

TECO Peoples Gas: TECO Peoples Gas has a 12" Coated Steel (CS) high pressure (HP) Transmission line within the existing ROW and runs along the north side of US 98 from the beginning of the project limits and continues west then crosses the railroad and turns and goes north along the east side of Old Lakeland Hwy.

TECO Peoples Gas has a 6" CS HP GM that runs north and south along the east side of US 301 at Clinton Avenue. and US 301 TECO has a 6" CS HP GM runs north and south along the east side of US 301. There is also a separate 6" CS HP Transmission line that runs along the east side approximately 500 feet and goes south then turns and goes east along Clinton Ave. about 200 ft and then crosses Clinton Ave. to the south and continues east along Clinton Ave. TECO feeds the Publix and Burger King from the north side and has a reg station at the entrance on US 301.

The five (5) non-responsive UAO's were Spectrum, CenturyLink, Pasco County Traffic, Tampa Electric Company, and Withlacoochee River Electric Cooperative.

6.1.11 Drainage and Stormwater Management Facilities

The stormwater runoff from the project limits will be collected and conveyed in roadside ditches or closed drainage systems to the proposed wet or dry detention ponds. The ponds will discharge at or near the same cross drains that carry the roadway runoff in the existing condition basins. The water quality treatment and water quantity attenuation will be achieved through the construction of wet or dry detention ponds, which will require the acquisition of additional ROW. Two alternatives were analyzed for each basin except for the basins where there was no proposed increase in impervious area. The alternative pond sites were evaluated so that one pond could be recommended for each basin

Proposed Ponds

Stormwater runoff will be routed to proposed stormwater ponds for water quality treatment and attenuation purposes. Impervious areas include roadway pavement, curb and gutter sections, and sidewalks/shared use paths. There are (9) roadway drainage basins within the project limits.

Proposed Siting Analysis

The pond siting analysis assumes that ponds in Basin 200 and 300 will be designed using the wet detention pond design criteria due to high SHWT elevations. Ponds in Basins 400, 500, 600, 700, 800 and 900 will be designed as dry ponds due to the low SHWT. Basin 1000 will not require a stormwater pond; as the proposed improvements do not generate a net increase in impervious area within this basin. Wherever possible, the pond control elevation was set above the SHWT elevations. Eighteen parameters were considered in the sizing of potential pond sites and are outlined in the Pond Siting Report (July 2022).

Stormwater Pond Evaluation

See **Table 6-2** for a summary of stormwater pond areas.

Table 6-2 Summary of Recommended Stormwater Pond Areas

Basin #	Pond Name	Minimum Pond Area		ROW Required
		Required (AC)	Provided (AC)	
200	SMF 200-3	6.98	9.81	Yes
300	SMF 300-1	12.37	13.06	Yes
400	SMF 400-1	1.33	2.57	Yes
500	SMF 500-1	1.01	1.66	Yes
600	SMF 600-2	2.41	3.03	Yes
700	SMF 700-1	2.01	2.53	Yes
800	SMF 800-3 East	5.55	2.89	Yes
	SMF 800-3 West		2.21	Yes
900	SMF 900-1 East	8.18	10.56	Yes
	SMF 900-1 West	1.91	3.91	Yes
1000	N/A	N/A	N/A	N/A
	Total	**41.75**	**52.23**	

6.1.12 Floodplain Analysis

The project is located within Flood Insurance Rate Maps (FIRMs) 12101C0280F, 12101C0285F, 12101C0295F, 12101C0315F in Pasco County (Effective Date: 9/26/2014). The study limits are within Federal Emergency Management Agency (FEMA) Flood Zone A and AE. Zone A has a 1% probability of flooding every year and no water elevations have been established. Zone AE has a 1% probability of flooding every year and a determined base flood elevation (BFE). The flood zones within the project area are associated with the Hillsborough River and the Green Swamp with elevations ranging from 82 to 84 feet NAVD. The areas on the south side of US 98 are noted with a BFE of 82. The north side of US 98 ranges between 83 and 84 feet. (An elevation of 84 feet was used for impact and compensation calculations.) There are 25.72 acres of estimated impacts to floodplain which result in approximately 119.45 acre-feet of volumetric impacts based on the flood elevation and the SHW values.

These impacts are transverse and unavoidable as the floodplain extends well outside of the corridor. Development within the 100-year floodplain has the potential or placing citizens and property at risk of flooding and producing changes in floodplain elevations. Improvements within floodplains increase the potential for flooding by limiting flood storage capacity. Development also reduces vegetated buffers that protect water quality and impacts important habitats for fish and wildlife.

Floodplain impacts are proposed to be mitigated for in offsite floodplain compensation sites on a cup-for-cup basis. The calculated sizes of the floodplain compensation areas (FPC) were designed to be at least 5% larger than those of the impact areas to account for increases due to maintenance access and tying back into existing ground. The area of proposed FPCs is 39.95 acres and 130.92 acre-feet.

6.1.13 Transportation Management Plan

The TMP involves strategies to manage the work zone impacts of a project and may include the following three components:

- Temporary Traffic Control Plan
- Transportation Operations Plan
- Public Information Plan

Temporary Traffic Control Plan (TTC)

The TTC will be discussed in three sections, the reconstruction of US 98, the new independent alignment and reconstruction of Clinton Avenue.

The following conceptual reconstruction sequence for US 98, outside of the bridge over Old Lakeland Highway will assist in maintaining traffic operations:

- Maintain traffic along the existing roadway and construct the outside northbound and southbound travel lanes, outside shoulders and half of the inside lanes (for barrier to separate new traffic lane from subsequent construction)

- In transition areas, widen the existing roadway while maintaining existing traffic on a combination of existing pavement and newly constructed or temporary pavement
- Shift traffic to the newly constructed outside travel lanes and construct the remaining inside lane and median areas
- Construct remainder of pavement in transition areas and at intersections
- Remove temporary pavement where applicable and finalize medians and turn lanes where applicable

The following conceptual reconstruction sequence for US 98, in the area of the bridge over Old Lakeland Highway will assist in maintaining traffic operations:

- Maintain traffic along the existing roadway by narrowing to eleven-foot travel lanes and shifting to eastbound shoulder. Partially remove existing bridge and construct the north bridge
- In transition areas, widen the existing roadway while maintaining existing traffic on a combination of existing pavement and newly constructed or temporary pavement
- Shift traffic to the newly constructed north bridge and construct the south bridge
- Construct remainder of pavement in transition areas
- Remove temporary pavement where applicable and finalize medians where applicable

The following conceptual construction sequence for new independent alignment can be constructed at the contractor's discretion:

- Construct full typical section including travel lanes, shoulders, medians, sidewalks, shared use paths, and roundabout

The following conceptual reconstruction sequence for Clinton Avenue will assist in maintaining traffic operations:

- Maintain traffic along the existing roadway and construct the northbound/westbound travel lanes, curb and gutter and sidewalk
- In transition areas, widen the existing roadway while maintaining existing traffic on a combination of existing pavement and newly constructed or temporary pavement
- Shift traffic to the newly constructed northbound/westbound travel lanes and construct the southbound/eastbound travel lanes, curb and gutter and sidewalk
- Construct remainder of pavement in transition areas and at intersections
- Remove temporary pavement where applicable and finalize medians and turn lanes where applicable

Transportation Operations Plan (TOP)

The Transportation Operations Plan (TOP) examines strategies to improve mobility, work zone access, and safety. The strategies typical fall within four categories, demand management, corridor/network management, work zone traffic management and safety management and enforcement. Given the nature of the corridor, the two categories that the strategies are anticipated to fall into are work zone traffic management and safety management and enforcement. These strategies can range from utilizing messaging signs to inform of public of construction activates/impacts to messaging signs with speed displays to warning lights.

Public Information Plan

The Public Information Plan would have similarities to the one prepared for this PD&E Study. The FDOT Public Information Office would notify the public of important construction elements such as lane closures and detours

6.1.14 Special Features

The following special features are included with the Preferred Alternative:

- The placement and maintenance of any landscaping shall comply with the required clear zone and sight distance at intersections
- No other provisions or commitments have been made yet regarding special aesthetic features
- Based on the Noise Study Report, no noise barriers are required

6.1.15 Design Variations and Design Exceptions

The potential design variations anticipated for the Preferred Alternative are associated with the proposed four-lane typical section along the existing alignment with a constrained 160’ ROW width. Typical section elements requiring design variations from CR 54 to North of Townsend Road (Typical Section 1) include:

- Border width – FDM minimum criteria is 40 Ft / Proposed is 32 Ft
- Median width – FDM minimum criteria is 40 Ft / Proposed varies between 24 Ft and 30 Ft
- Ditch front slope – FDM minimum criteria is 1:6 / Proposed is 1:4
- Ditch back slope – FDM minimum criteria is 1:4 / Proposed is 1:3

6.1.16 Cost Estimates

An evaluation of project costs comparing the No Build and Preferred alternatives is provided in **Table 6-3**. This comparison includes preliminary present day costs for ROW acquisition, wetland mitigation, engineering and construction.

Table 6-3 Cost Estimate

Item Description	No Build Alternative	Preferred Alternative
Present Day Costs in $ in Millions rounded up to nearest $0.1 Million		
Construction of Roadway, Bridges & Ponds	$0.0	$148.1
Right of Way for US 98 Roadway Widening and Realignment	$0.0	$7.0
Right of Way for Stormwater Management Facility and Floodplain Compensation Sites	$0.0	$5.2
Wetland Mitigation	$0.0	$1.9
Design & Construction Inspection	$0.0	$29.6
Total Estimate Costs	**$0.0**	**$191.8**

6.2 SUMMARY OF ENVIRONMENTAL IMPACTS OF THE PREFERRED ALTERNATIVE

6.2.1 Future Land Use

The Future Land Use Map for Pasco County (2045) shows the future land uses as remaining similar to the existing land uses throughout the project limits with Conservation (22.75%), Residential Low (21.74%), Residential Very Low (20.40%), Agriculture (16.84%), Mixed Use General (9.74%), Residential Medium (5.81%), and Commercial (2.17%) future land uses.

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

6.2.2 Section 4(f)

Two Section 4(f) resources have been identified within the project study area: the Upper Hillsborough Preserve and the Green Swamp Wilderness Preserve.

The Preferred Alternative does not propose any use of the Upper Hillsborough Preserve or the Green Swamp Wilderness Preserve. There will be no acquisition of Section 4(f) land, and no temporary or permanent impacts are anticipated to either resource. No meaningful proximity impacts to protected properties, and no impacts to the access and usage of protected properties is anticipated.

There will be no significant impacts to Section 4(f) resources as a result of this project.

A Section 4(f) No Use Determination was approved by OEM on November 17, 2021.

6.2.3 Cultural Resources

A Cultural Resource Assessment Survey (CRAS) (October 2021), conducted in accordance with 36 CFR Part 800, was performed for the project.

As a result of historic field survey and background research, a total of 40 historic resources were identified within the Area of Potential Effect (APE). Of the 40 identified historic resources, 38 appear ineligible for listing in the National Register of Historic Places (NRHP) either individually or as part of a historic district. The two historic resources, within the APE that appear eligible for listing in the NRHP include a segment of the South Florida Railroad - Pemberton Ferry Branch/Richloam Railroad (8PA02802) and the Polk-Pasco County Line Obelisk (8PA03346).

The segment of South Florida Railroad - Pemberton Ferry Branch/Richloam Railroad (8PA02802) within the APE appears eligible for listing in the NRHP at the local level under Criterion A in the areas of Community Planning & Development and Transportation. Within the APE, Bridge No. 140025 carries US 98 over the railroad. The proposed project includes widening the east and west bound lanes of the bridge to accommodate the US 98 road widening from a two-lane facility to a four-lane facility and replacing the existing bridge with a twin bridge structure. Based on the scope of work, the undertaking will not affect the historical alignment or the integrity of the railroad as a whole. Therefore, the proposed undertaking will have no adverse effect on the South Florida Railroad - Pemberton Ferry Branch/Richloam Railroad (8PA02802).

The Polk-Pasco County Line Obelisk (8PA03346) appears eligible for listing in the NRHP at the local level under Criterion A in the areas of Transportation and Local History. The Obelisk is located over the Polk County line in Pasco County at the northeast intersection of US 98 and CR 54. The roadway improvements are being performed within the existing ROW and centered on the centerline of the roadway. While this will result in the roadway shifting closer to the obelisk, the obelisk will not be impacted and will maintain its current location. Based on the scope of work, the undertaking will not adversely result in physical destruction, damage, or alteration of all or part of the of the Obelisk. Therefore, the proposed undertaking will have no adverse effect on the Polk-Pasco County Line Obelisk (8PA03346).

No archaeological sites that are listed, eligible for listing, or that appear potentially eligible for listing in the NRHP were located within the APE.

A CRAS Technical Memorandum (November 2021) was prepared for the proposed eight (8) off-site stormwater management facility (SMF) and two (2) floodplain compensation (FPC) sites. No new historic or prehistoric archaeological sites were found during the field survey. No historic resources within the APE appear eligible for listing in the NRHP.

A CRAS Technical Memorandum Addendum (May 2022) was prepared for additional ROW requirements associated with conceptual design modifications made after the Public Hearing. No new historic or prehistoric archaeological sites were found during the field survey. No historic resources within the APE appear eligible for listing in the NRHP.

A Cultural Resource Assessment Desktop Analysis (September 2022) was prepared for the milling and resurfacing of the remaining approximately 1.0-mile segment of US 98 between the new US 98 connection and US 301. No new historic or prehistoric archaeological sites were found during the field survey. No archaeological sites or historic resources within the APE appear eligible for listing in the NRHP.

The State Historic Preservation Officer (SHPO) provided review and concurrence of the Cultural Resources Assessment Survey (CRAS) on November 18, 2021, the CRAS Technical Memorandum on November 30, 2021, the CRAS Technical Memorandum Addendum on June 7, 2022. and the Cultural Resource Assessment Desktop Analysis on October 28, 2022.

6.2.4 Wetlands

The proposed project will impact 20.23 acres of wetlands (9.29 acres of direct wetland impacts and 10.94 acres of secondary wetland impacts) from roadway improvements and 2.21 acres of wetlands (2.19 acres of direct wetland impacts and 0.02 acres of secondary wetland impacts) from a stormwater management facility (SMF). Transportation safety standards for additional lanes and widths, side slopes, turn radius, clear zone, sight distance and stormwater treatment requirements necessitate these impacts. Impacts will result mostly from placement of fill material for the roadway and excavation for the SMF.

The wetland impacts from the project mainline (20.23 acres) will result in an estimated functional loss of 7.86 units. The wetland impacts associated with the SMF site (2.21 acres) are estimated to result in 1.54 units of functional loss.

In addition, approximately 13.10 acres of impacts to man-made other surface waters are anticipated from the construction of the roadway improvements and SMFs. The unavoidable wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, Florida Statutes (F.S.), to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 USC. 1344. The project anticipates using commercially available mitigation credits from agency-approved banks with an appropriate geographic service area to provide compensatory mitigation sufficient to offset unavoidable project impacts to wetlands and wetland-dependent species habitat. The mitigation banks within the Hillsborough River Basin include the Hillsborough River Mitigation Bank, the Hillsborough River Phase II Mitigation Bank, Wiggins Prairie Mitigation Bank, and the North Tampa Mitigation Bank. The mitigation banks within the Withlacoochee River Basin include the Green Swamp Mitigation Bank, the Withlacoochee Mitigation Bank, the Crooked River Mitigation Bank, and the Hilochee Mitigation Bank. The entire roadway project is located within the Boarshead Ranch Mitigation Bank. Wetland mitigation will be offset within the watershed basin where the wetland impact is located.

6.2.5 Protected Species and Habitat

Eight (8) federally listed species were determined to have potential involvement with the project. The proposed project is located within the consultation area of the Florida scrub jay and Audubon's crested caracara. Based on species habitat requirements and anticipated project impacts, effect determinations are provided in **Table 6-4.**

Table 6-4 Effect Determinations for Federally-Listed Species

Scientific Name	Common Name	Federal Listing Status	Effect Determination
Reptiles			
Drymarchon corais couperi	Eastern Indigo Snake	Threatened	**May affect, not likely to adversely affect**
Eumeces egregius lividus	Bluetail Mole Skink	Threatened	**No effect**
Birds			
Aphelocoma coerulescens	Florida Scrub-Jay	Threatened	**No effect**
Charadrius melodus	Piping Plover	Threatened	**No effect**
Lateralus jamaicensis jamaicensis	Eastern Black Rail	Threatened	**May affect, not likely to adversely affect**
Mycteria americana	Wood Stork	Threatened	**May affect, not likely to adversely affect**
Picoides borealis	Red Cockaded Woodpecker	Threatened	**No effect**
Polyborus plancus audubonii	Audubon's Crested Caracara	Threatened	**No effect**

Eighteen (18) state listed species were determined to have potential involvement with the project. Based on species habitat requirements and anticipated project impacts, effect determinations are provided in **Table 6-5.**

Table 6-5 Effect Determinations for State-Listed Species

Scientific Name	Common Name	State Listing Status	Effect Determination
Plants			
Nemastylis floridana	Celestial Lily	Endangered	**No effect anticipated**
Triphora rickettii	Craighead's Nodding Caps	Endangered	**No effect anticipated**
Salix floridana	Florida Willow	Endangered	**No effect anticipated**
Pecluma plumula	Plume Polypody	Endangered	**No adverse effect anticipated**
Litsea aestivalis	Pondspice	Endangered	**No effect anticipated**
Monotropsis reynoldsiae	Pygmy Pipes	Endangered	**No effect anticipated**
Centrosema arenicola	Sand Butterfly Pea	Endangered	**No effect anticipated**
Tillandsia fasciculata	Stiff-leaved Wild Pine	Endangered	**No adverse effect anticipated**
Reptiles			
Goperus polyphemus	Gopher Tortoise	Threatened	**No adverse effect anticipated**
Pituophis melanoleucus mugitis	Florida Pine Snake	Threatened	**No adverse effect anticipated**
Lampropeltis extenuate	Short-tailed Snake	Threatened	**No effect anticipated**
Birds			
Rhynchops nigers	Black Skimmer	Threatened	**No effect anticipated**
Athene cunicularia floridana	Florida Burrowing Owl	Threatened	**No adverse effect anticipated**
Antigone canadensis pratensis	Florida Sandhill Crane	Threatened	**No adverse effect anticipated**
Sternula antillarum	Least Tern	Threatened	**No effect anticipated**
Egretta caerulea	Little Blue Heron	Threatened	**No adverse effect anticipated**
Egretta rufescens	Reddish Egret	Threatened	**No adverse effect anticipated**
Platalea ajaja	Roseate Spoonbill	Threatened	**No adverse effect anticipated**
Falco sparverius paulus	Southeastern American Kestrel	Threatened	**No adverse effect anticipated**
Egretta tricolor	Tricolored Heron	Threatened	**No adverse effect anticipated**

The bald eagle is protected under the federal Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, and has a "No effect anticipated" determination. The Florida black bear is protected under the Florida Black Bear Conservation Rule, 68A-4.009, Florida Administrative Code (F.A.C.) and has a "No adverse effect anticipated" determination.

No designated critical habitat for any federal listed species occurs within or immediately adjacent to the project study area. Therefore, the project will not result in the destruction or adverse modification of Critical Habitat.

The proposed project will replace the US 98 bridge over the Hillsborough River. With public conservation lands present on both sides of US 98 in this location, the Southwest Florida Water Management District (SWFWMD) Upper Hillsborough Preserve to the south and the SWFWMD Green Swamp Wilderness Preserve to the north, the FDOT is proposing a wildlife feature be incorporated into the bridge replacement. The wildlife feature is expected to include 10-foot shelves on each side of the river for wildlife use. Due to ROW, drainage and environmental lands constraints, the profile of the roadway and bridge is not expected to be raised above the existing condition. Therefore, the vertical clearance for the feature is anticipated to be a minimum of 3 feet, similar to what exists today. The target species for this wildlife feature will be non-listed amphibians, reptiles and small mammals.

The Natural Resources Evaluation (NRE) (October 2021) was submitted to the US Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Agriculture and Consumer Services (FDACS), SWFWMD, and Florida Department of Environmental Protection (FDEP) on October 27, 2021. USFWS concurred with the findings of the NRE on November 19, 2021. FWC concurred with the findings of the NRE on November 18 2021.

A NRE Technical Memorandum (August 2022) was prepared for additional ROW requirements associated with conceptual design modifications made after the Public Hearing. As the design modifications reduced wetland impacts without changing the permitting requirements for the project and species effect determinations remained the same or were reduced, additional agency coordination was not required.

6.2.6 Essential Fish Habitat

There is no Essential Fish Habitat (EFH) in the project area.

6.2.7 Highway Traffic Noise

A Noise Study Report (NSR) (September 2022) was prepared for this project. Existing and future highway traffic noise with and without the Preferred Alternative were evaluated at ninety-six noise sensitive receptors (i.e., discrete representative locations on a property that has noise sensitive land uses), which represented 95 residences and a recreational area (a shuffleboard court).

The results of the analysis indicate that with the proposed improvements, six of the 95 residences would be impacted by highway traffic noise. Traffic management measures, modifications to the roadway alignment, buffer zones, and noise barriers were considered as abatement measures. Based on the results of the noise analysis performed, there appear to be no feasible and reasonable solutions available to mitigate the predicted impacts.

6.2.8 Contamination

A Level I contamination evaluation was conducted for the study and a Contamination Screening Evaluation Report (CSER) (September 2022) was prepared. Of a total of fourteen (14) sites along the corridor investigated, the following risk ratings have been applied: one (1) "Medium" ranking site, six (6) "Low" ranking sites, and seven (7) sites ranked "No" for potential contamination concerns.

No sites within the PD&E Study area had a "High" ranking.

Medium Ranked Site:

- Site No. 10 - Circle K #2705931, 11715 US Hwy 301: This facility is an active Circle K gas station. Two 12,000-gallon unleaded gasoline underground storage tanks (UST) and one 10,000-gallon diesel fuel UST were removed from the site in March 2012. One 30,000-gallon unleaded gasoline UST is currently in service. One discharge was reported on April 5, 2004 and was issued a Site Rehabilitation Completion Order (SRCO) on August 6, 2012. No current contamination concerns are reported. Due to its use as an active gas station in close proximity to the project, this site is assigned a risk rating of Medium.

Based on the conclusions of the study and the risk ratings noted above, the following recommendations are made for this project:

- For the sites ranked "No" and "Low" for potential contamination, no further action is recommended. These sites have been evaluated and determined not to have any potential environmental risk to the proposed project at this time.
- For the site ranked "Medium" for potential contamination, a potential contamination impact to the project has been identified. These potential impacts may include hazardous material surveys, soil borings, monitor well installation, and soil and/or groundwater sampling and laboratory testing. Further evaluation and Level II testing may be appropriate, if deemed necessary by the District Contamination Impact Coordinator.

This site is not expected to adversely affect the project.

APPENDICES

Appendix A Preferred Alternative Concept Plans

Appendix B Context Classification Determination Memorandum

APPENDIX A

Preferred Alternative Concept Plan

POLK COUNTY
PASCO COUNTY
COUNTY LINE
EXISTING RW
EXISTING RW
MATCH PD&E STUDY
FPID: 436673-1-22-01
C.R. 54
PROPOSED RW
EXISTING RW
930
935
940
945
950
955
98
PROPOSED SIGNAL
EXISTING RW
POLK COUNTY
PASCO COUNTY
COUNTY LINE
N
0 50 200
Feet
MATCHLINE – 959+22.00

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

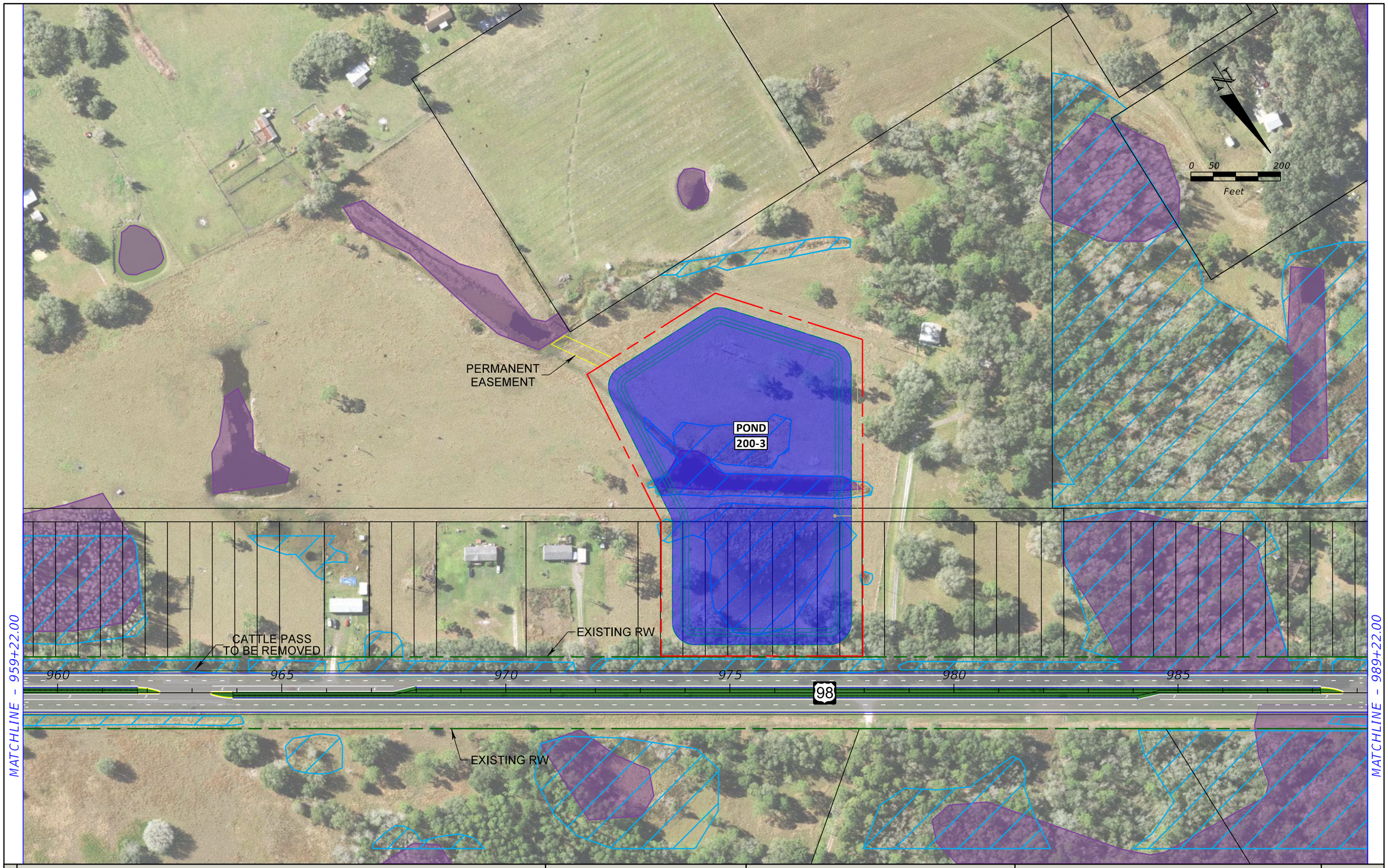
US 98 FROM CR 54
TO US 301
PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 1



LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54 TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 2

N

0 50 200

Feet

SWFWMD

UPPER HILLSBOROUGH PRESERVE

HILLSBOROUGH RIVER

EXISTING RW

990 995 1000 1005 1010 1015

98

EXISTING RW

MATCHLINE - 989+22.00

MATCHLINE - 1019+22.00

SWFWMD

GREEN SWAMP WILDERNESS PRESERVE

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54
TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 3

MATCHLINE - 1019+22.00

MATCHLINE - 1049+22.00

N

0 50 200

Feet

1020 1025 1030 1035 1040 1045

EXISTING RW

98

EXISTING RW

SWFWMD

GREEN SWAMP WILDERNESS PRESERVE

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54
TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 4

MATCHLINE - 1049+22.00

MATCHLINE - 1079+22.00

N

0 50 200

Feet

SWFWMD

UPPER HILLSBOROUGH PRESERVE

EXISTING RW

1050 1055 1060 1065 1070 1075

98

EXISTING RW

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54
TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
PASCO COUNTY, FLORIDA

FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 5

MATCHLINE - 1079+22.00

MATCHLINE - 1109+22.00

N

0 50 200

Feet

SWFWMD

UPPER HILLSBOROUGH PRESERVE

EXISTING RW

1080 1085 1090 1095 1100 1105

98

EXISTING RW

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54
TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
PASCO COUNTY, FLORIDA

FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 6

MATCHLINE – SHEET 7A

MATCHLINE – 1109+22.00

MATCHLINE – 1139+22.00

POND
300-1
SOUTH

TARA OAKS
PLANTATION

STANTON HALL DRIVE

N

0 50 200
Feet

EXISTING RW

CATTLE PASS
TO BE REMOVED

1110 1115 1120 1125 1130 1135

98

EXISTING RW

BOARSHEAD RANCH

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54
TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
PASCO COUNTY, FLORIDA

FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 7

MATCHLINE – SHEET 7

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54
TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
PASCO COUNTY, FLORIDA

FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO.

7A

MATCHLINE - 1139+22.00

MATCHLINE - 1167+22.00

CITRUS HILL RV RESORT

N

0 50 200

Feet

EXISTING RW

1140 1145 1150 1155 1160 1165

98

EXISTING RW

PERMANENT EASEMENT

BOARSHEAD RANCH

FPC 300-1 NORTH

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54 TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY

PASCO COUNTY, FLORIDA

FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 8

MATCHLINE - 1167+22.00

MATCHLINE - 1197+22.00

JANMAR RD

EXISTING RW

1170 1175 1180 1185 1190 1195

98

EXISTING RW

JANMAR RD

POND
400-1

N

0 50 200
Feet

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54
TO US 301

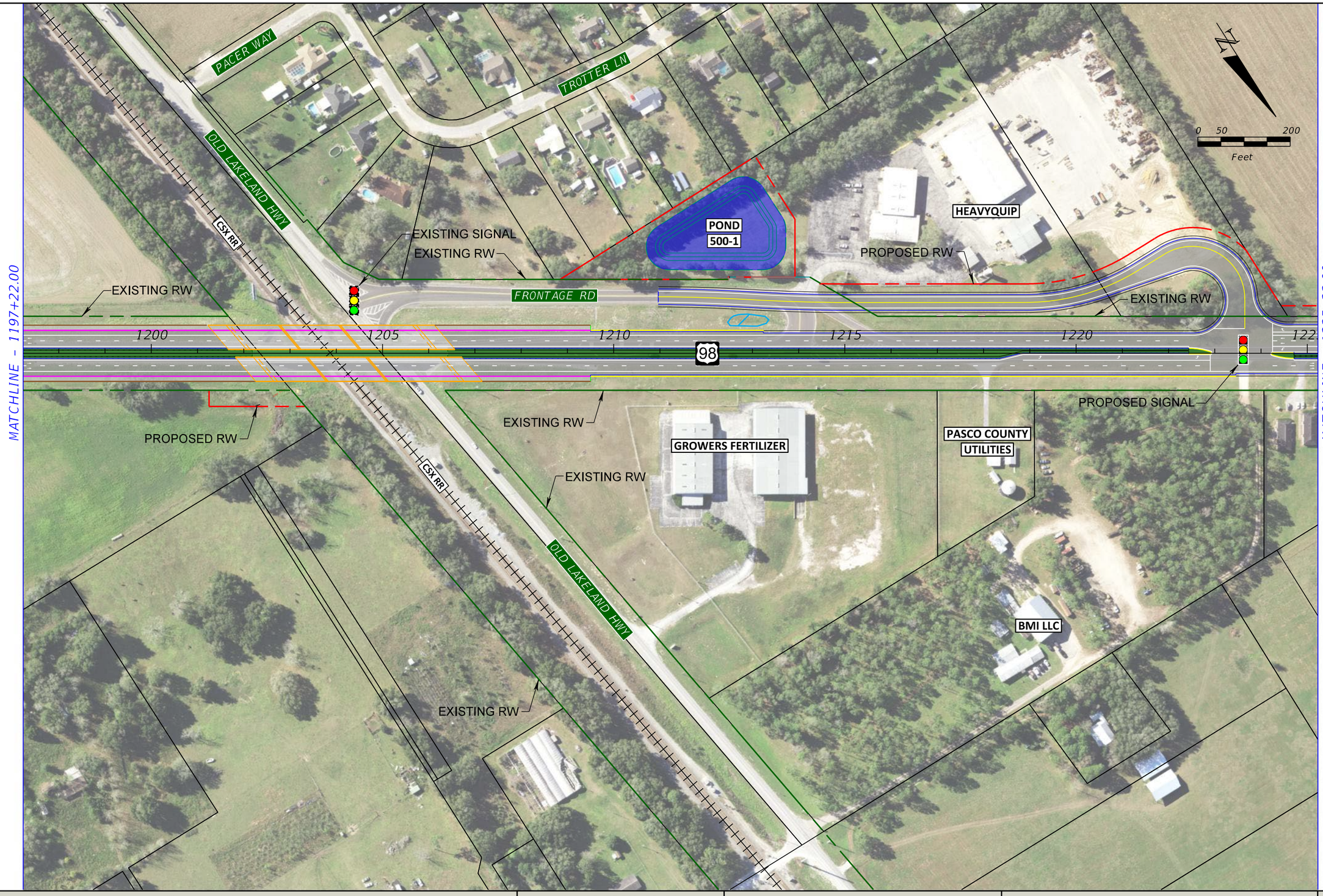
PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 9



LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54
TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 10

MATCHLINE - 1225+22.00

MATCHLINE - 1251+22.00

PROPOSED RW

PERMANENT EASEMENT

EXISTING RW

1230

1235

1240

1245

1250

98

EXISTING RW

POND 600-2

FRANCIS RD

N

0 50 200

Feet

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54 TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY

PASCO COUNTY, FLORIDA

FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 11

MONDO DRIVE
STERLING AVENUE
WELINGTON AVENUE
FAIRVIEW DRIVE
HAMP DR
COUNTRY-AIRE MANOR
FISHER ACRES
CONNERLY RD
CRESTON STREET
N
0 50 200
Feet
PERMANENT EASEMENT
EXISTING RW
PROPOSED 12' SHARED USE PATH
PROPOSED RW
MATCHLINE - 1251+22.00
1255 1260 1265 1270 1275 1280
98
MATCHLINE - 1281+22.00
PROPOSED RW
POND 700-1
BECKUM RD
EXISTING RW
PROPOSED RW
JIM JORDAN RD
PROPOSED RW
PROPOSED 6' SIDEWALK
PROPOSED RW
TOWNSEND RD

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54 TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 12

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54 TO US 301

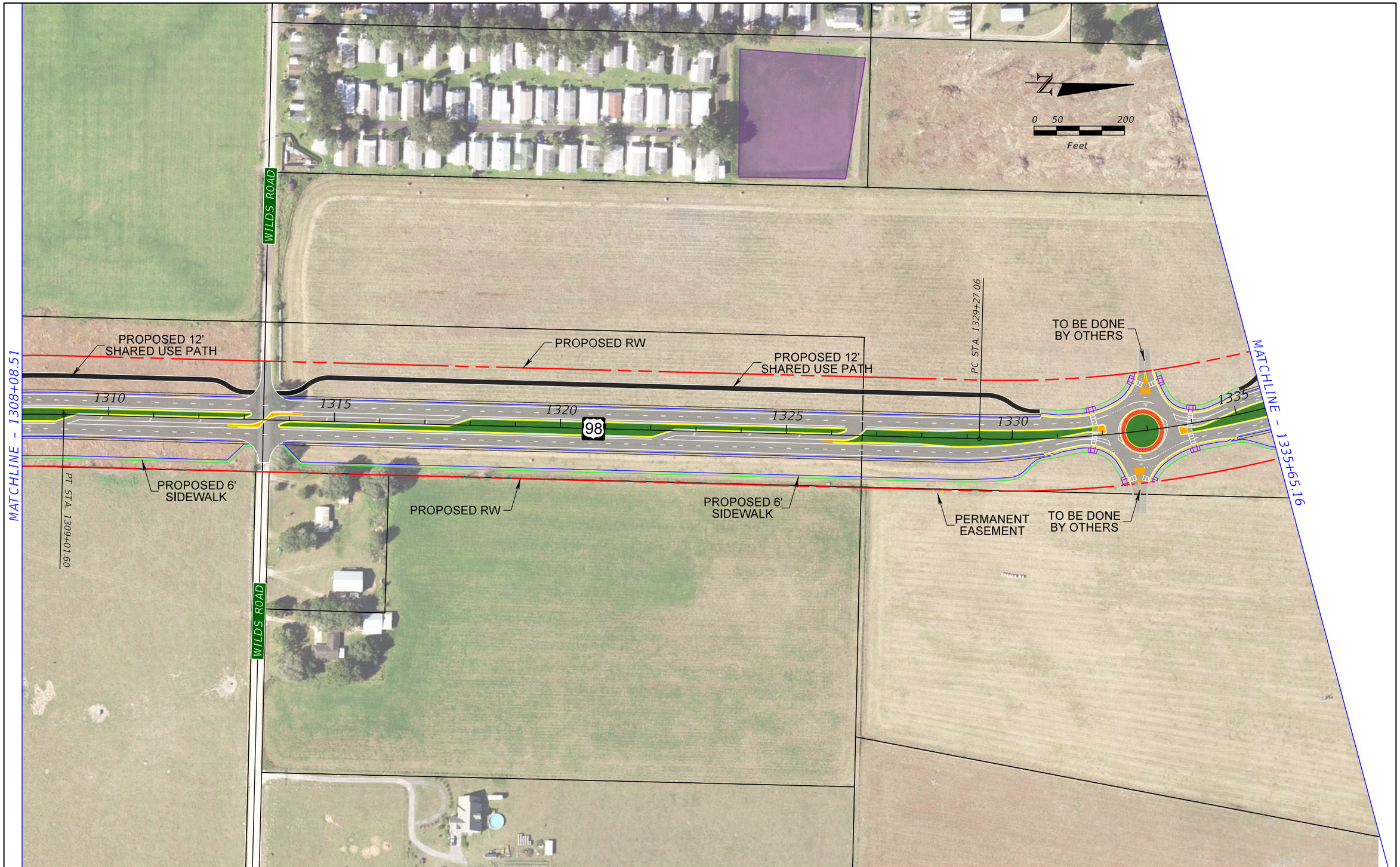
PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 13



LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54 TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 14

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

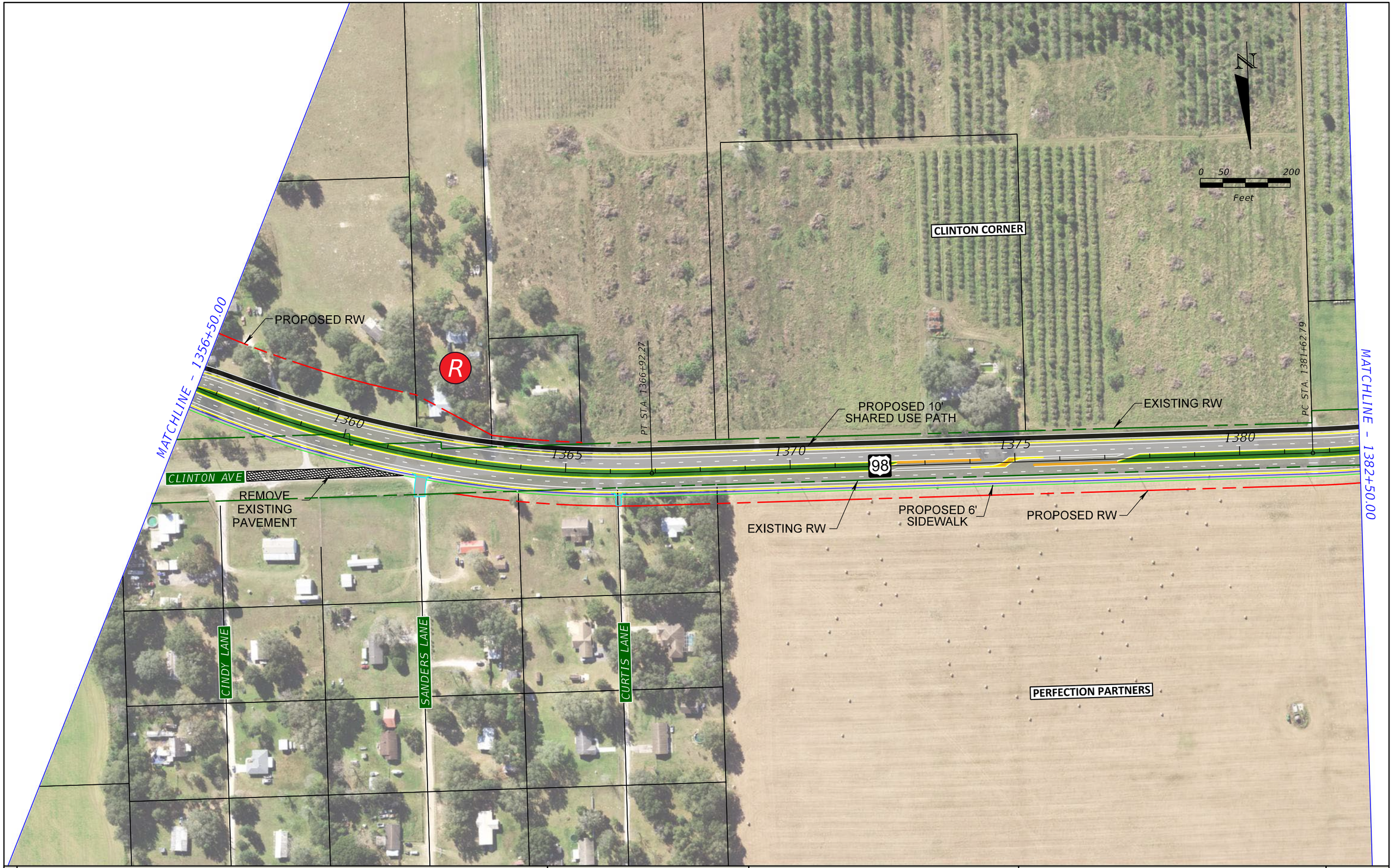
US 98 FROM CR 54
TO US 301
PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 15



LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54 TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 16

MATCHLINE - 1382+50.00

301

ADD ADDITIONAL LEFT TURN LANE

EXISTING SHARED USE PATH

10

CIRCLE K

SUNTRUST

PRC STA. 1384+51.46

PI STA. 1385+96.03

EXISTING RW

CLINTON AVE

PROPOSED 10' SHARED USE PATH

1385

1390

98

POT STA. 1394+93.79

EXISTING SIGNAL

FUTURE

52

CLINTON AVE

N

0 50 200

Feet

PI STA. 1383+07.36

PROPOSED 6' SIDEWALK

PROPOSED RW

PT STA. 1387+40.13

PROPOSED 6' SIDEWALK

BURGER KING

ADD ADDITIONAL LEFT TURN LANE

EXISTING SHARED USE PATH

PUBLIX

PERFECTION PARTNERS

301

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54 TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY

PASCO COUNTY, FLORIDA

FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 17

MATCHLINE – 1311+22.00

MATCHLINE – 1341+53.00

MILL & RESURFACE EXISTING PAVEMENT

EXISTING RW

EXISTING RW

MUSSELMAN RD

TUMBLEWEED DR

WILDS RD

MELODY LN

OLD 98

1315 1320 1325 1330 1335 1340

N

0 50 200

Feet

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54 TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY

PASCO COUNTY, FLORIDA

FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 18

MATCHLINE – 1341+53.00

MILL & RESURFACE
EXISTING PAVEMENT

EXISTING RW

EXISTING RW

1345

1350

1355

1360

1365

645

650

655

SALLY RD

OLD
98

US 301

US 301

US 301

US 301

N

0 50 200
Feet

LEGEND

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- CSX Railroad
- Curb and Gutter
- Bridge
- Milling & Resurfacing
- Roadway Pavement
- Traffic Separator
- Pavement Removal
- Concrete Sidewalk
- Shared Use Path
- Wetlands
- Floodplains
- Proposed FPC Site
- Proposed Pond Site
- Grass
- Permanent Easement
- Barrier Wall
- MSE Wall
- Contamination Sites
- Residential Relocation

US 98 FROM CR 54
TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
PASCO COUNTY, FLORIDA
FPID: 443368-2-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR35 / SR700	PASCO	443368-2-22-01

PREFERRED ALTERNATIVE CONCEPT PLAN SHEET

SHEET NO. 20

APPENDIX B

Context Classification Determination Memorandum

MEMORANDUM

DATE: 10/5/2020

TO: Craig Fox

FROM: Brian L Shroyer, Multimodal Project Manager

COPIES: PLEMO File

SUBJECT: Context Classification Determination for Item Segment 443368-2 US-98 From CR-54 to US-301/SR-39

The District Seven Planning & Environmental Management Office has reviewed the subject project location and has made the following determination.

Context Classification Summary Table	
Item Segment	443368-2
Primary Work Mix	PD&E Study
Roadway Name	US-98
Roadway Limits	From CR-54 to US-301/SR-39
Section No. & Milepost Limits	14070000; 0.00 to 8.173
Context Classification (existing)	See table below
Comments	Future Context Classification for the same limits could remain the same as existing or move to a C3R Suburban Residential classification depending on the amount of development.

Additional documentation is provided below to support this determination. This context classification determination shall apply to the design phase of the subject project only and only information available at the time of this analysis was used to support this determination. Changes to the project scope, location and roadway limits may trigger a change in this determination. Any changes should be coordinated with the PLEMO Office.

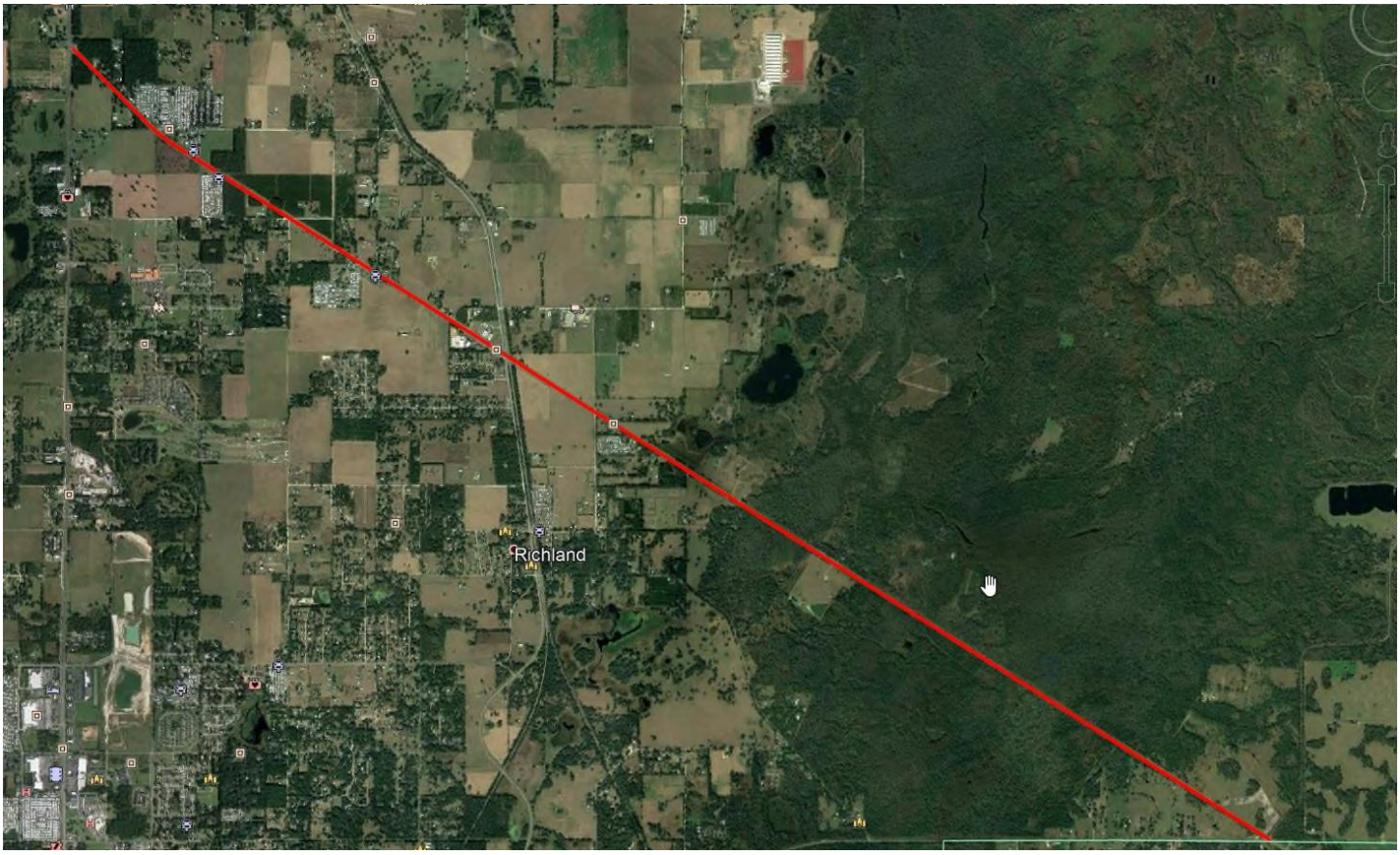
Primary Measures

Context Classification	Segment	Land Use	Roadway Connectivity		
			Intersection Density	Block Perimeter	Block Length
		Description	Intersections/ square mile	Feet	Feet
C1	0.00 to 1.065	Natural lands.	0	5117.6	32621.8
C2	1.065 to 3.528	Sparsely settled lands	0	51900.1	-999.0
C2	3.528 to 4.544	Sparsely settled lands	26.6	10988.3	-9999.0
C2	4.544 to 5.932	Sparsely settled lands	28.1	10988.3	2849.2
C2	5.932 to 6.591	Sparsely settled lands	56.5	5316.0	1508.6
C2	6.591 to 7.065	Sparsely settled lands	48.5	11572.6	-9999.0
C2	7.065 to 7.547	Sparsely settled lands	77.7	11572.6	845.6
C2	7.547 to 8.177	Residential with long blocks. Agricultural	23.6	9479.1	-9999.0

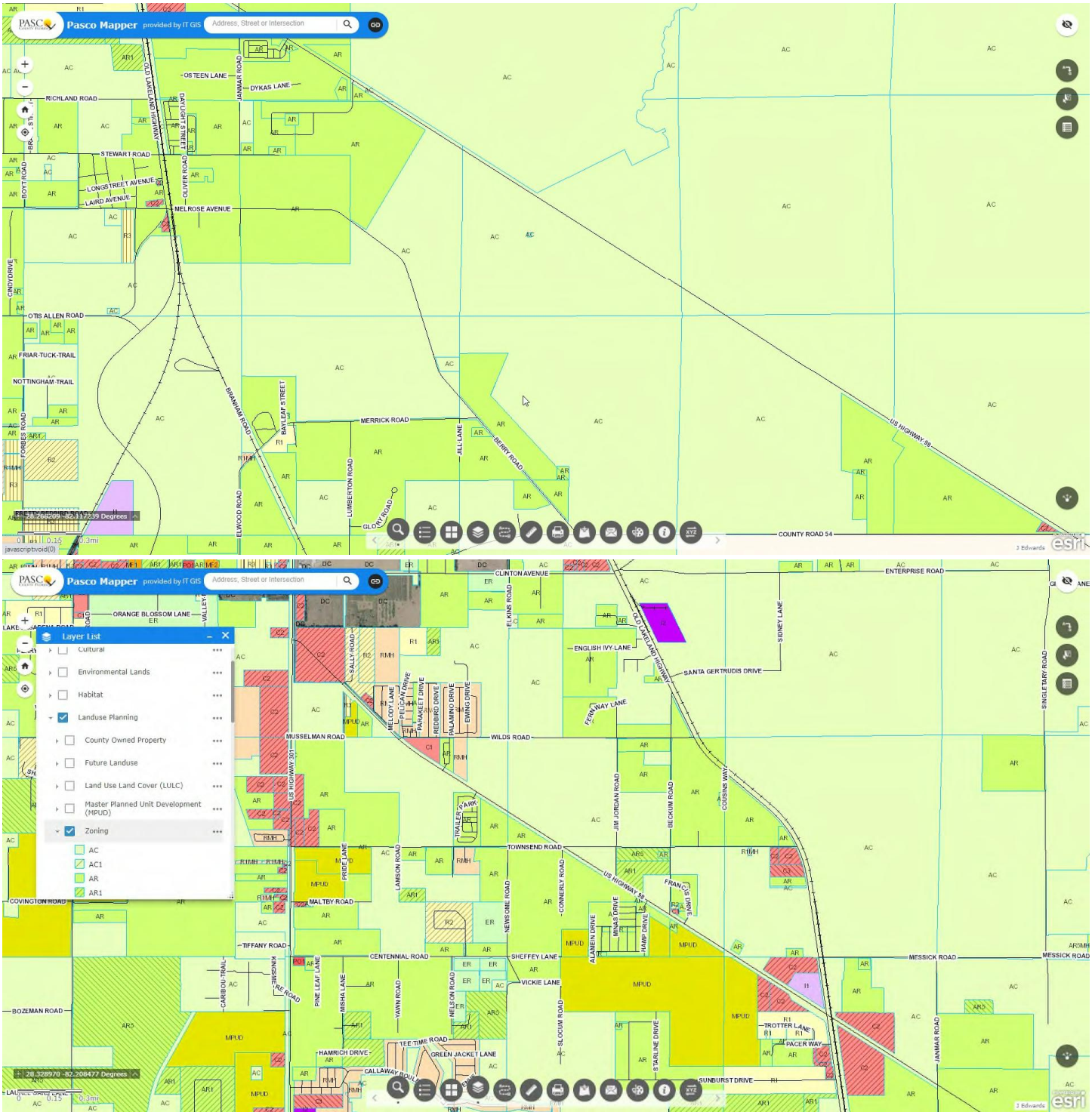
2020 FDOT Design Manual Design Criteria

DESIGN CONTROL	C1	C2
Allowable Design Speed Range (mph)	55-70	55-70
SIS Minimum Design Speed (mph)	65	65
Minimum Travel & Auxiliary Lane Width	12	12
Two-Way Left Turn Lane	N/A	N/A
Median Width	High Speed Curbed 50-55, 30 ft Flush Shoulder, 40 ft	High Speed Curbed 50-55, 30 ft Flush Shoulder, 40 ft
Sidewalk Width	5	5

Project Location



Existing Land Use



Future Land Use