

**Final
Location Hydraulic Report**

**US 301 (Gall Boulevard)
From Fowler Avenue to SR 56
Project Development & Environment (PD&E) Study**



**Florida Department of Transportation
District 7**

Work Program Item Segment No. 255796-1

ETDM Project No. 14194

Hillsborough and Pasco Counties, Florida

July 2023

Final Location Hydraulic Report

US 301 (Gall Boulevard) From Fowler Avenue to SR 56 Project Development & Environment (PD&E) Study

Work Program Item Segment No. 255796-1
ETDM Project No. 14194
Hillsborough and Pasco Counties, Florida

Prepared for:



Florida Department of Transportation
District Seven

Prepared by:

Inwood Consulting Engineers, Inc.
Oviedo, FL

Sub-consultant to:

AIM Engineering and Surveying, Inc.
201 E. Kennedy Blvd. Suite 1800
Tampa, FL 33602

July 2023

Professional Engineer Certificate

I hereby certify that I am a registered professional engineer in the State of Florida practicing with Inwood Consulting Engineers, Inc., a corporation authorized to operate as an engineering business, FEID No. 59-3216593, by the State of Florida, Department of Professional Regulation, and Board of Professional Engineers. I have reviewed or approved the evaluation, findings, opinions and conclusions as reported in this Location Hydraulic Report.

The Final Location Hydraulic Report includes a summary of data collection efforts and design analysis for the US 301 PD&E Study from Fowler Avenue to the proposed SR 56. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of civil engineering as applied through design standards and criteria set forth by the federal, state, and local regulatory agencies as well as professional judgment and experience.

Draft

Signature: _____

Name: Renato Chuw, P. E.

P.E. Number: 56050

Date: July 07, 2023

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District Seven is conducting a Project Development and Environment (PD&E) study along US Highway 301 (US 301)/State Road 41 (SR 41) in Hillsborough and Pasco Counties to evaluate alternative roadway improvements along the corridor. The study limits are from Fowler Avenue/SR 582 in Hillsborough County to SR 56 in Pasco County, a distance of approximately 13.1 miles. The study involves widening this section of US 301 from a two-lane undivided roadway to a four-lane divided roadway and includes pedestrian and bicycle accommodations. This study also includes intersection improvements and access management recommendations. The proposed improvements are anticipated to increase safety along this segment of US 301 for all users and enhance the functionality of this important regional freight route.

The PD&E study objectives include the following: determine proposed typical sections and develop preliminary conceptual design plans for the proposed improvements, while minimizing impacts to the environment; consider agency and public comments; and ensure project compliance with all applicable federal and state laws. Federal funds are not planned to be used for the project, so this study is being conducted in accordance with the FDOT PD&E Manual, Part 1, Chapter 10, which addresses non-federal projects. A State Environmental Impact Report (SEIR) is being prepared as the environmental document for this study. The proposed improvements will include construction of stormwater management facility (SMF) and floodplain compensation (FPC) sites.

The project is located within the Hillsborough River Watershed (Hillsborough River, Flint Creek, Hollomans Branch, Clay Gully, Two Hole Branch, Indian Creek sub-basins).

The purpose of this Location Hydraulic Report is to address base floodplain encroachments resulting from the roadway improvements evaluated in the PD&E Study. In accordance with Executive Order 11988 "Floodplain Management", USDOT Order 5650.2, "Floodplain Management Protection", and Federal-Aid Policy Guide 23 CFR 650A, Floodplains must be protected. The intent of these regulations is to avoid or minimize highway encroachments within the 100-year (base) floodplains and to avoid supporting land use development incompatible with floodplain values.

Floodplain encroachments areas resulting from the proposed US 301 roadway widening were quantified. It is determined that impacts will occur to the floodplain associated with the proposed widening throughout the project limits and the extension of cross drains CD-1, CD-3, CD-4, CD-7, CD-8, CD-9, CD-10, Bridge #100951, CD-11, CD-12, Bridge #100052, CD-13, CD-14, CD-15, Bridge # 100053, CD-16, CD-17, CD-18, CD-19, Bridge Culvert # 100504, CD-20, CD-21, CD-22, CD-23, CD-24, CD-25, CD-26, Bridge # 100434, CD-30, CD-32 and CD-33.

The 100-year base flood stage (Zone AE) was available from a variety of sources including FEMA flood Maps, the Hillsborough River and Tampa Bypass Canal Stormwater Management Master Plan, and the New River/Upper Hillsborough River Watershed Model. The latter two contain the most recently updated flood elevations. Additionally, there are five (5) federally regulated floodways within the project limits located at Flint Creek, Flint Creek Relief, Hollomans Branch, Two Hole Branch and the Hillsborough River. It was concluded that the project will impact approximately 123.32 ac-ft of floodplain volume based on the proposed roadway alignment. However, due to the extent of the floodplain and measures taken to mitigate these floodplain impacts, it was determined that the floodplain encroachment is classified as “minimal”. Minimal encroachments on a floodplain occur when there is a floodplain involvement, but the impacts on human life, transportation facilities, and natural and beneficial floodplain values are not significant and can be resolved with minimal efforts. Please refer to **Section 3.4** for additional information.

In conclusion, the following floodplain statement is a slightly modified version of statement Number 4 in the FDOT PD&E Manual, tailored for this project:

“The proposed cross drains and floodplain compensation areas will perform hydraulically in a manner equal to or greater than the existing condition, and backwater surface elevations are not expected to increase. As a result, there will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or in emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.”

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Professional Engineer Certificate	i
Executive Summary	1
Section 1.0 Introduction.....	1-3
1.1 PD&E Study Purpose	1-3
1.2 Project Purpose and Need	1-3
1.3 Project Description	1-4
1.4 Existing Facility and Proposed Improvements	1-6
1.4.1 Existing Facility	1-6
1.5 Proposed Improvements	1-6
1.6 Purpose of Report	1-7
Section 2.0 Data Collection	2-1
Section 3.0 Existing Drainage Conditions.....	3-1
3.1 Topography & Hydrologic Features	3-1
3.2 Bridge Inspection Reports	3-3
3.3 Soils Data and Geotechnical Investigations.....	3-4
3.4 Floodplains/Floodways.....	3-9
3.4.1 Flooding History and Maintenance Concern.....	3-12
Section 4.0 Proposed Conditions	4-1
4.1 Longitudinal & Transverse Floodplain Impacts	4-1
4.2 Project Classification	4-1
4.3 Risk Evaluation	4-2
4.4 PD&E Manual Requirements with Minimal Encroachment	4-2

LIST OF FIGURES

Figure 1-1 Project Location Map 1-5
Figure 1-2 Existing Roadway Typical Section..... 1-6
Figure 1-3 Proposed Urban Typical Section 1-7
Figure 1-4 Proposed Suburban Typical Section 1-7
Figure 3-1: Floodplain Impact Areas (FIAs) 3-11

LIST OF TABLES

Table 1 – Summary Existing Cross Drains, Bridges and Bridge Culverts 3-1
Table 2 – Existing Bridge Data 3-3
Table 3 – Summary of Bridge Performance..... 3-4
Table 4 – USDA NRCS Soil Survey Information: Hillsborough County 3-5
Table 5 – USDA NRCS Soil Survey Information: Pasco County 3-7

LIST OF APPENDICES

Appendix A Exhibits
Appendix B Correspondence

SECTION 1.0 INTRODUCTION

1.1 PD&E Study Purpose

The objective of the Project Development and Environment (PD&E) study is to assist the Florida Department of Transportation (FDOT) District Seven in reaching a decision on the type, location, and conceptual design of the proposed improvements for the widening of US 301 from Fowler Avenue to State Road (SR) 56, including stormwater management facility (SMF) and floodplain compensation (FPC) sites. This study documents the need for the improvements as well as the procedures utilized to develop and evaluate various improvements, including proposed typical sections, preliminary horizontal alignments, and intersection enhancement alternatives.

Federal funds are not planned to be used for the project, so this study is being conducted in accordance with the FDOT PD&E Manual, Part 1, Chapter 10, which addresses non-federal projects. The PD&E study satisfies all applicable requirements for a state funded project, and a State Environmental Impact Report (SEIR) is the environmental document for the project. This project was screened through the FDOT's Efficient Transportation Decision Making (ETDM) process as ETDM Project No. 14194. The ETDM Final Programming Screen Summary Report was published on April 21, 2015, containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical, and social resources.

1.2 Project Purpose and Need

The purpose of this project is to provide additional roadway capacity and improve safety on this portion of US 301 in unincorporated Hillsborough and Pasco Counties. US 301 is a major north-south roadway near the City of Temple Terrace at the southern project limit in Hillsborough County, and the City of Zephyrhills at the northern project limit in Pasco County. This roadway extends from the Sarasota-Bradenton-Venice Metropolitan Statistical Area to the Georgia state line northwest of Jacksonville, thus providing a regional route between the Tampa Bay area and Jacksonville/I-95 corridor. US 301 serves both regional and local travel and connects residential centers in the Temple Terrace and Zephyrhills areas with employment centers in the Tampa area. It provides regional connectivity with I-75, I-4, SR 56, SR 54, and SR 52. US 301 has been designated by both Hillsborough and Pasco Counties' Emergency Management as an emergency evacuation route. In addition to increasing capacity, this project will add or enhance the multimodal facilities in this corridor.

The proposed widening of this portion of US 301 is expected to have positive mobility impacts. The Hillsborough Transportation Planning Organization's (TPO) It's Time Hillsborough 2045 Long Range Transportation Plan (LRTP) socioeconomic projections (November 2019) contain both population and employment projections. These projections show Hillsborough County's

population increasing from 1,292,800 to 2,006,200 (a 55% increase) between 2015 and 2045. Employment is projected to increase from 830,800 to 1,705,400 (a 105% increase) between 2015 and 2045, mostly within the urban service area. The Pasco Metropolitan Planning Organization's (MPO) Mobility 2045 LRTP (March 2020) also documents socioeconomic projections. These projections show Pasco County's population increasing from 487,588 to 795,600 (a 63% increase) between 2015 and 2045. Employment is projected to increase from 157,500 to 266,592 (a 69% increase) between 2015 and 2045. Based on projected population and employment growth, the existing study corridor would experience failing levels of service in the future.

US 301 is a truck route that provides north-south access within eastern Hillsborough and Pasco Counties and connections to the surrounding Tampa Bay area. There is no existing bus service within the study corridor; however, the Tampa Bay Area Regional Transportation Authority (TBARTA) Regional Transit Development Plan (adopted June 2020) shows future Regional Commuter Express Bus Service north of the project from SR 56 to Zephyrhills.

Safety within the US 301 corridor is also projected to improve with an increase in capacity and a corresponding reduction in congestion, as well as with the provision of a median, thereby reducing potential vehicle conflicts.

1.3 Project Description

The proposed action involves widening US 301 from the existing two-lane undivided roadway to a four-lane divided roadway and includes pedestrian and bicycle accommodations. The project is located in both Hillsborough and Pasco Counties and is approximately 13.1 miles long. A project location map is provided in **Figure 1-1**.

The widening of the Hillsborough County portion of the study corridor (from Fowler Avenue to the County line) is not identified in the Hillsborough TPO's 2045 LRTP. The widening of the Pasco County portion of the study corridor (from the County line to SR 56) is not identified in the Pasco MPO's 2045 LRTP Cost Feasible Plan but is identified in the 2045 Needs Plan.

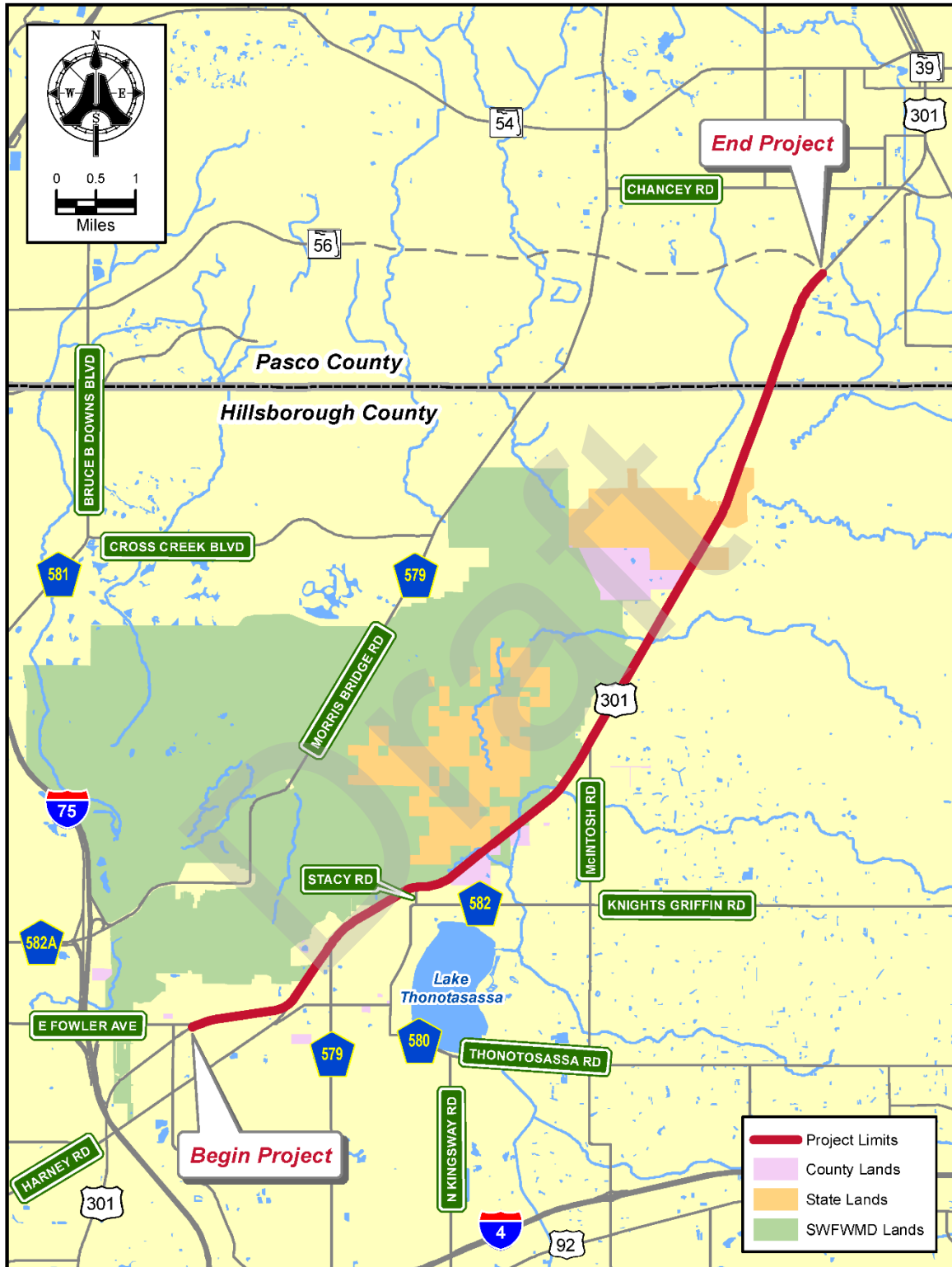


Figure 1-1 Project Location Map

1.4 Existing Facility and Proposed Improvements

1.4.1 Existing Facility

The existing US 301 roadway has a two-lane undivided rural typical section from Fowler Avenue to SR 56. The roadway is functionally classified by FDOT as an Urban Other Principal Arterial from Fowler Avenue to just north of CR 579 (Mango Road) and from the County line to SR 56. The remaining portion of the project is classified as a Rural Other Principal Arterial. The posted speed limits within the study corridor are 55 miles per hour (mph) from Fowler Avenue to Flint Creek and 60 mph from Flint Creek to SR 56.

The existing typical section consists of one 12-foot travel lane and a 5-foot paved shoulder in each direction and a 2.2-mile, variable width, shared-use path (known as the Old Fort King Trail) running along the east side of US 301 beginning just north of Stacy Road. The shared-use path crosses US 301 at two locations. Drainage is collected in roadside ditches and is ultimately conveyed to the Hillsborough River. The existing right-of-way (ROW) width ranges from 100 feet to 200 feet. The existing typical section is illustrated in **Figure 1-2**.

There are also eight structures located within the study corridor. Five of the structures are roadway bridges located over rivers/streams/creeks including Flint Creek, Flint Creek Relief, Holloman's Branch, Two Holes Branch and the Hillsborough River. The Old Fort King Trail also has three pedestrian bridges over Flint Creek, Flint Creek Relief and Holloman's Branch.

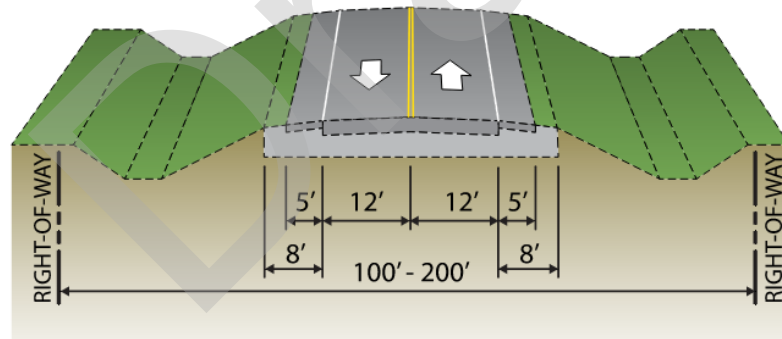
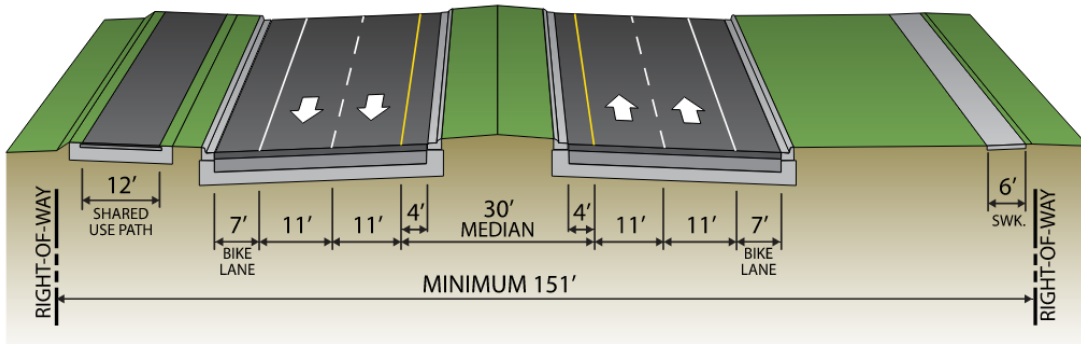


Figure 1-2 Existing Roadway Typical Section

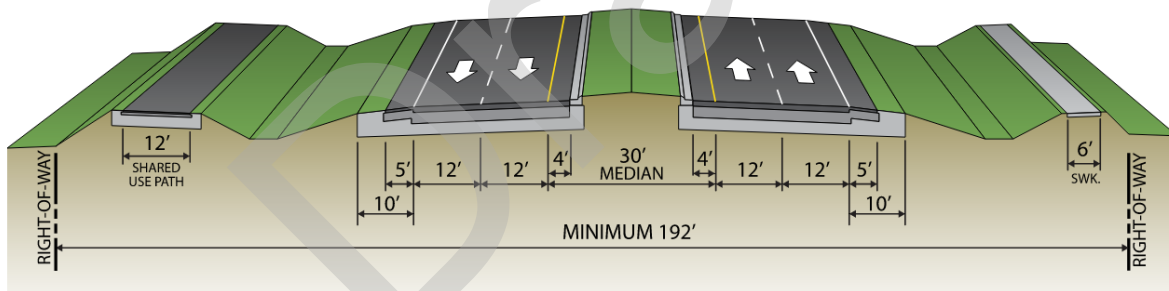
1.4.2 Proposed Improvements

The proposed Build Alternative is composed of two typical sections. An urban typical section with a target/design speed of 45 mph is proposed from Fowler Avenue to Stacy Road. This typical section has two 11-foot travel lanes in each direction, a 30-foot raised median including 4-foot paved inside shoulders, and 7-foot buffered bike lanes in each direction. There is a 6-foot sidewalk on the east side of the roadway and a 12-foot shared use path on the west side of the roadway, as illustrated in **Figure 1-3**. The proposed ROW width varies from 151 feet to 200 feet.



**Figure 1-3 Proposed Urban Typical Section
Fowler Ave to Stacy Road**

A suburban typical section with a target/design speed of 55 mph is proposed from Stacy Road to SR 56. This typical section has two 12-foot travel lanes in each direction, a 30-foot raised median including 4-foot paved inside shoulders, and 10-foot outside shoulders (5-foot paved). There is a 6-foot sidewalk on the east side of the roadway and a 12-foot shared use path on the west side of the roadway, as illustrated in **Figure 1-4**. The proposed ROW width varies from 192 feet to 230 feet. Where possible, pavement savings will be achieved by converting the existing two-lane roadway to southbound only operation.



**Figure 1-4 Proposed Suburban Typical Section
Stacy Road to SR 56**

1.5 Purpose of Report

The purpose of this report is to address base flood encroachments resulting from the roadway improvements evaluated in the PD&E Study. In accordance with Executive Order 11988 “Floodplain Management”, USDOT Order 5650.2, “Floodplain Management Protection”, and Federal-Aid Policy Guide 23 CFR 650A, Floodplains must be protected. The intent of these regulations is to avoid or minimize highway encroachments within the 100-year (base) floodplains and to avoid supporting land use development incompatible with floodplain values.

SECTION 2.0 DATA COLLECTION

The following data sources were used to prepare this report:

- FDOT Drainage Manual, January 2023
- FDOT Drainage Design Guide, January 2023
- SWFWMD Permit No. 32128 – US 301 South of Tampa Bypass Canal to North Fowler Avenue
- SWFWMD Permit No. 27321 – SR 41 from Old Harney to North Hollomans
- SWFWMD Permit No. 20875 – SR 41 US HWY 301 McIntosh Road
- SWFWMD Permit No. 27103 – Riverwood Intersection Improvement/US 301
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel Nos. 12057C0240H, 12057C0245H, 12057C0235H, 12057C0234H, 12057C0251H, 12057C0115H for Hillsborough County, Effective Date 8/28/2008
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel Nos. 12101C0465F, 12101C0461F, 12101C0462F for Hillsborough County, Effective Date 9/26/2014
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel Nos. 12057C0115H for Pasco County, Effective Date 8/28/2008
- Hillsborough River and Tampa Bypass Canal Stormwater Management Master Plan, Update No.1, August 2011
- New River/Upper Hillsborough River Watershed Model, 2014
- United State Geological Survey (USGS) Quadrangle Maps
- U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soils Survey of Hillsborough County, Florida, 1989
- U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soils Survey of Pasco County, Florida, 1982
- 1-foot contours from Hillsborough County, 2015
- 1-foot contours from Pasco County, 2015
- Hillsborough County Property Appraiser's Website (GIS parcel Lines), 2015
- Pasco County Property Appraiser's Website (GIS parcel Lines), 2015
- FDOT Straight Line Diagrams (SLD's) of road inventory for US 301
- Field Reconnaissance (August 2015)

SECTION 3.0 EXISTING DRAINAGE CONDITIONS

3.1 Topography & Hydrologic Features

The topography of the project area consists of rolling terrain and roadway elevations range from a high of 68 feet to a low of 37 feet NAVD 88. Please refer to the **USGS Quadrangle Map, Exhibit 2** in **Appendix A**. There are thirty three (33) existing cross drains, four (4) existing bridges and one (1) existing bridge culvert within the project limits allowing for conveyance of offsite and onsite runoff to flow to the Hillsborough River. The size and geometry of all cross drains and bridges have been verified from the FDOT SLD's, 1-foot LiDAR contours, US 301 plans, as well as during field reconnaissance. Please refer to **Table 1** for a **Summary of Existing Cross Drains, Bridges and Bridge Culverts**.

Table 1 – Summary Existing Cross Drains, Bridges and Bridge Culverts

Structure No.	FDOT Milepost	Station	Description	Remarks
CD-1	5.162	1371+80	Single 18" RCP	
CD-2	5.400	1384+30	Single 18" RCP	
CD-3	5.693	1399+80	Single 18" RCP	
CD-4	0.422	1435+10	Single 30" RCP	
CD-5	0.656	1447+90	Single 30" RCP	
CD-6	1.066	1469+10	Single 30" RCP	
CD-7	1.844	1509+80	Single 30" RCP	
CD-8	2.453	1542+50	N/A	Unable to locate in field
CD-9	2.784	1559+70	Single 30" RCP	Unable to locate in field
CD-10	2.960	1568+70	Single 15" RCP	Unable to locate in field
Bridge-1 (#100951)	3.159-3.177	1580+00	95' Bridge	Flint Creek
CD-11	3.351	1589+80	Single 15" RCP	
CD-12	3.541	1599+80	Single 15" RCP	
Bridge-2 (#100052)	3.727-3.737	1609+60	52' Bridge	Flint Creek Relief
CD-13	3.919	1619+80	Single 15" RCP	
CD-14	4.089	1628+80	Single 15" RCP	
CD-15	4.176	1633+40	Single 30" RCP	
Bridge-3 (#100053)	4.403-4.421	1645+50	95' Bridge	Hollomans Branch
CD-16	4.932	1673+50	Single 4'x2' CBC	
CD-17	5.863	1722+60	Single 10'x6' CBC	

SECTION 3.0
EXISTING DRAINAGE CONDITIONS

Structure No.	FDOT Milepost	Station	Description	Remarks
CD-18	5.940	1726+60	Single 9'x6' CBC	
CD-19	6.302	1745+70	Single 6'x4' CBC	
Bridge Culvert-1 (#100504)	6.559-6.566	1759+70	36' Bridge	Two Hole Branch
CD-20	6.659	1763+75	Single 6'x4' CBC	
CD-21	7.109	1788+20	Single 4'x3' CBC	
CD-22	7.393	1803+20	Single 4'x3' CBC	
CD-23	7.595	1812+80	Single 30" RCP	
CD-24	7.724	1820+60	Single 4'x3' CBC	
CD-25	7.899	1829+80	Single 30" RCP	
CD-26	8.320	1853+20	Single 4'x3' CBC	
Bridge-4 (#100434)	8.539-8.624	1865+00	448' Bridge	Hillsborough River
CD-27	8.631	1868+70	Single 15" RCP	Shoulder gutter inlet
CD-28	8.712	1872+70	Single 15" RCP	Shoulder gutter inlet
CD-29	8.798	1877+20	Single 15" RCP	Shoulder gutter inlet
CD-30	9.330	1905+30	Single 30" RCP	
CD-31	9.532	1915+90	Single 30" RCP	
CD-32	9.911	1935+95	Single 30" RCP	
CD-33	1.146	2010+00	Single 4'x3' CBC	Unable to locate in field

3.2 Bridge Inspection Reports

The bridges over Flint Creek, Flint Creek Relief, and Hollomans Branch were constructed in 1972, while the bridge culvert for Two Hole Branch and the Bridge over the Hillsborough River were constructed in 1985. Information gathered from the Bridge inspection reports was used to provide some of the parameters as summarized in Table 2.

Table 2 – Existing Bridge Data

Category	Bridge No. 100951	Bridge No. 100052	Bridge No. 100053	Bridge No. 100504	Bridge No. 100434
Year Constructed	1972	1972	1972	1985	1985
Structure Name	US-301 Over Flint Creek	US-301 Flint Creek Relief	US-301 Hollomans Branch	US-301 Over Two Hole Branch	US-301 Hillsborough River
Section Number	10 210 000	10 210 000	10 210 000	10 210 000	10 210 000
Mile Post (MP) Marker	3.159	3.727	4.403	6.559	8.539
Facility Carried	US-301 (SR 41)	US-301 (SR 41)	US-301 (SR 41)	US-301 (SR 41)	US-301 (SR 41)
Approximate Location	2.4 miles north of CR 579	3.0 miles north of CR 579	3.6 miles north of CR 579	5.7 miles north of CR 579	5.2 Miles south of SR 39
Owner/Maintenance Agency	FDOT	FDOT	FDOT	FDOT	FDOT
Crossing/Waterway/ Canal ID	Flint Creek	Relief for waterway	Hollomans Branch	Two Hole Branch	Hillsborough River
Bridge Length	95.8 ft	90 ft	96.9 ft	34.4 ft	491.4 ft
Number of Traffic Lanes	2	2	2	2	2
Number of Spans	3	2	3	4	6
Structure Type	Pre-Stressed Concrete	Reinforced Concrete	Pre-Stressed Concrete	Reinforced Concrete	Pre-Stressed Concrete
Pile Type	N/A	N/A	N/A	N/A	N/A
Navigable Vertical Clearance	0	0	0	0	0
Navigable Horizontal Clearance	0	0	0	0	0
Channel Depth	6.299 ft	N/A	N/A	1.001 ft	7.402 ft
Deck Skew	0	0	0	0	0

SECTION 3.0
EXISTING DRAINAGE CONDITIONS

Category	Bridge No. 100951	Bridge No. 100052	Bridge No. 100053	Bridge No. 100504	Bridge No. 100434
Deck Type	Concrete Precast Panel	Concrete Cast-in- place	Concrete Precast Panel	No Deck	Concrete Cast-in-place

Bridge Inspection Reports (BIRs) were prepared by Kissinger Campo & Associates on March 19, 2015 (Bridge Nos. 100053, 100434 and 100504) and March 20, 2015 (Bridge Nos. 100951 and 100052) for FDOT. **Table 3** below shows a **Summary of Bridge Performance** as indicated by the most recent BIRs.

Table 3 – Summary of Bridge Performance

Bridge Number	Existing Waterway	Channel Rating	Sufficiency Rating
100951	Flint Creek	7 – Minor Damage	92.2
100052	Flint Creek Relief	7 – Minor Damage	92.2
100053	Hollomans Branch	7 – Minor Damage	92.2
100504	Two Hole Branch	7 – Minor Damage	92.3
100434	Hillsborough River	7 – Minor Damage	93.3

3.3 Soils Data and Geotechnical Investigations

The soil survey of Hillsborough County, Florida (dated 1989) and the soil survey of Pasco County, Florida (dated 1982) published by the USDA NRCS has been reviewed within the project vicinity. USDA SSURGO was also obtained from SWFWMD to create a soils map for the project limits using GIS ArcMap. SSURGO data was compared to the soil survey by USDA NRCS and found no deviation. The soil survey map for the project vicinity is illustrated in **Exhibit 3A** and **3B** of **Appendix A**.

The soils encountered along the project limits are mostly Hydrologic Soil Group (HSG) A, A/D, B/D and C/D. Group A soils have low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sand or gravel and have a high rate of water transmission. Group C soils have low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine to fine texture. Group D soils have high runoff potential. They have very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very low rate of water transmission. If a soil is assigned to a dual HSG, the first

SECTION 3.0
EXISTING DRAINAGE CONDITIONS

letter is for drained areas and the second is for un-drained areas. Only the soils that in their natural condition are in group D are assigned to dual classes. According to the Soil Survey, there are twenty seven (27) different soil types located along the project limits within Hillsborough County and eleven (11) different soil types located along the project limits within Pasco County. **Table 4 – USDA NRCS Soil Survey Information: Hillsborough County** and **Table 5 – USDA NRCS Soil Survey Information: Pasco County** summarizes and lists the soil types and relevant information. The ground water depth varies from 0-1’ to greater than 6’ along the project.

Table 4 – USDA NRCS Soil Survey Information: Hillsborough County

Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification		
		Depth* (feet)	Duration (months)		Depth (inches)	Unified	AASHTO
3	Archbold fine sand	3.5-6.0	Jun-Nov	A	0-4	SP	A-3
					4-80	SP, SP-SM	A-3
4	Arents	2.3	---	B	>6.6	SP	A-3
5	Basinger	+2.0-1.0	Jun-Feb	D	0-7	SP	A-3
					7-28	SP, SP-SM	A-3, A-2-4
					28-42	SP, SP-SM	A-3, A-2-4
					42-80	SP, SP-SM	A-3, A-2-4
5	Holopaw	+2.0-1.0	Jun-Apr	D	0-6	SP, SP-SM	A-3
					6-52	SP, SP-SM	A-3
					52-80	SM, SM-SC	A-2-4
5	Samsula	+2.0-1.0	Jan-Dec	D	0-34	PT	A-3
					34-80	SP-SM, SM, SP	A-3, A-2-4
7	Candler fine sand	> 6.0	---	A	0-6	SP, SP-SM	A-3
					6-72	SP, SP-SM	A-3
					74-80	SP-SM	A-3, A-2-4
8	Candler fine sand	> 6.0	---	A	0-6	SP, SP-SM	A-3
					6-74	SP, SP-SM	A-3
					74-80	SP-SM	A-3, A-2-4
12	Chobee Sandy Loam	0-1.0	Feb-Jun	B/D	0-15	SP-SM, SM	A-2-4
					15-60	SC	A-2-6, A-2-7, A-6, A-7
					60-80	SP-SM, SM, SC, SM-SC	A-2-4, A-2-6, A-6, A-7
15	Felda Fine Sand	0-1.0	Jul-Mar	B/D	0-22	SP, SP-SM	A-3
					22-45	SM, SM-SC, SC	A-2-4, A-2-6
					45-80	SP, SP-SM	A-3, A-2-4
16	Felda fine sand	0-1.0	Jul-Mar	B/D	0-22	SP, SP-SM	A-3
					22-38	SM, SM-SC, SC	A-2-4, A-2-6
					38-80	SP, SP-SM	A-3, A-2-4
19	Gainesville loamy fine sand	>6.0	---	A	0-80	SM	A-2-4
21		0-1.0	Jun-Nov	B/D	0-8	SP, SP-SM	A-3

SECTION 3.0
EXISTING DRAINAGE CONDITIONS

Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification		
		Depth* (feet)	Duration (months)		Depth (inches)	Unified	AASHTO
	Immokalee Fine Sand				8-36	SP, SP-SM	A-3
					36-80	SP-SM, SM	A-3, A-2-4
23	Kendrick Fine Sand	>6.0	---	A	0-35	SP-SM, SM	A-3, A-2-4
					35-68	SC, SM-SC	A-2-6, A-2-4
					68-80	SC	A-2-6, A-6
25	Lake fine sand	> 6.0	---	A	60-80	SP-SM	A-3, A-2-4
26	Lochloosa Fine Sands	2.5-5.0	Jul-Oct	C	0-28	SP-SM, SM	A-2-4, A-3
					28-35	SM, SM-SC	A-2-4
					35-69	SC, SM-SC	A-2, A-4, A-6
					69-80	SC, SM-SC	A-2, A-4, A-6
26	Miconopy Fine Sands	1.5-2.5	Jul-Nov	C	0-15	SM, SP-SM	A-2-4
					15-25	SC	A-2, A-6, A-7
					25-59	CH	A-7
					59-80	CH, SC	A-7, A-6
27	Malabar Fine Sand	0-1.0	Jun-Nov	B/D	0-12	SP, SP-SM	A-3
					12-30	SP, SP-SM	A-3, A-2-4
					30-50	SP, SP-SM	A-3
					50-66	SC, SM-SC, SM	A-2, A-4, A-6
					66-80	SP-SM, SM	A-3, A-2-4
29	Myakka fine sand	0-1.0	Jun-Nov	B/D	0-20	SP, SP-SM	A-3
					20-30	SM, SP-SM	A-3, A-2-4
					30-80	SP, SP-SM	A-3
33	Ona fine sand	0-1.0	Jun-Nov	B/D	0-4	SP-SM, SP	A-3
					4-22	SP-SM, SM	A-3, A-2-4
					22-80	SP-SM, SP	A-3
35	Orlando fine sand	> 6.0	---	A	0-20	SP, SP-SM	A-3, A-2-4
					20-80	SP, SP-SM	A-3, A-2-4
37	Paisley Fine Sand	+2-1.0	Jun-Feb	D	0-4	SP-SM	A-2-4, A-3
					4-80	CH, CL	A-7
43	Quartzipsaments	> 6.6	---	A	>6.6	SP	A-3
46	St. Johns fine sand	0-1.0	Jun-Apr	B/D	0-12	SP, SP-SM	A-3
					12-29	SP, SP-SM	A-3
					29-46	SP-SM, SM	A-3, A-2-4
					46-80	SP, SP-SM	A-3
47	Seffner fine sand	1.5-3.5	Jun-Nov	C	0-13	SP-SM, SP	A-3, A-2-4
					13-21	SP-SM, SP	A-3, A-2-4
					21-80	SP-SM, SP	A-3, A-2-4
53	Tavares	3.5-6.0	Jun-Dec	A	0-6	SP, SP-SM	A-3
					6-80	SP, SP-SM	A-3
53	Millhopper	3.5-6.0	Aug-Feb	A	0-57	SP-SM, SM	A-3, A-2-4
					57-80	SM, SM-SC, SC	A-2-4, A-4
54	Tavares	3.5-6.0	Jun-Dec	A	0-3	SP, SP-S, M	A-3
					3-80	SP, SP-SM	A-3
54	Millhopper	3.5-6.0	Aug-Feb	A	0-54	SP-SM, SM	A-3, A-2-4
					54-68	SM	A-2-4
					68-80	SM, SM-SC, SC	A-2-4, A-4
57		0-1.0	Jun-Oct	B/D	0-29	SP, SP-SM	A-3

SECTION 3.0
EXISTING DRAINAGE CONDITIONS

Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification		
		Depth* (feet)	Duration (months)		Depth (inches)	Unified	AASHTO
	Wabasso Fine Sand				29-38	SP, SP-SM	A-3
					38-60	SP, SP-SM	A-3
					60-80	SC, SM-SC	A-2-4, A-2-6
59	Winder Fine Sand	0-1.0	Jun-Dec	B/D	0-10	SP, SP-SM	A-3, A-2-4
					10-14	SM	A-2-4
					14-30	SC	A-2-4, A-2-6
					30-80	SM, SM-SC, SC	A-2-4
					0-14	SP, SP-SM	A-3, A-2-4
60	Winder Fine Sand	0-1.0	Jun-Dec	B/D	14-17	SM	A-2-4
					17-33	SM, SM-SC, SC, GM-GC	A-2-4, A-2-6, A-1-B
					33-80	SP, SP-SM, SM	A-3, A-2-4, A-1-B
					0-3	SP-SM	A-3, A-2-4
61	Zolfo fine sand	2.0-3.5	Jun-Nov	C	3-60	SP-SM, SM	A-3, A-2-4
					60-80	SP-SM, SM	A-3, A-2-4

Seasonal High Ground water table: Depth is referenced below existing grade, except where indicated as "+".

Table 5 – USDA NRCS Soil Survey Information: Pasco County

Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification		
		Depth* (feet)	Duration (months)		Depth (inches)	Unified	AASHTO
1	Wauchula Fine Sand	0-1.0	Jun-Feb	B/D	0-8	SP-SM	A-3, A-2-4
					8-19	SP-SM, SM	A-3, A-2-4
					19-26	SP-SM, SM	A-3, A-2-4
					26-34	SP-SM, SM	A-3, A-2-4
					34-80	SM, SM-SC, SC	A-2-4, A-2-6, A-4, A-6
2	Pomona Fine Sand	0-1.0	Jul-Sep	B/D	0-6	SP, SP-SM	A-3, A-2-4
					6-22	SP, SP-SM, SM	A-3, A-2-4
					22-36	SP-SM, SM	A-3, A-2-4
					36-52	SP, SP-SM	A-3, A-2-4
					52-60	SC, SM-SC, SM	A-2-4, A-4, A-6
7	Sparr Fine Sand	1.5-3.5	Jul-Oct	C	0-6	SP-SM	A-3, A-2-4
					6-43	SP-SM	A-3, A-2-4,
					43-48	SM-SC, SC, SM	A-2
					48-59	SC, SC-SM	A-2, A-4, A-6
					59-80	SC, SM-SC, SM	A-2, A-4, A-6
16	Zephyr Muck	+2-1.0	Jun-Feb	D	13-0	Pt	A-8

SECTION 3.0
EXISTING DRAINAGE CONDITIONS

Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification		
		Depth* (feet)	Duration (months)		Depth (inches)	Unified	AASHTO
					0-18	SP-SM, SM	A-3, A-2-4
					18-48	SM, SM-SC, SC	A-2-4, A-2-6
					48-67	SM, SM-SC, SC	A-2-4, A-4
18	Electra Variet Fine Sand	2.0-3.5	Jul-Oct	C	0-5	SP, SP-SM	A-3
					5-39	SP, SP-SM	A-3
					39-51	SP-SM, SM	A-3, A-2-4
					51-70	SP, SP-SM	A-3
					70-78	SM, SM-SC, SC	A-2-4, A-2-6
21	Smyrna Fine Sand	0-1.0	Jul-Oct	A/D	0-13	SP, SP-SM	A-3
					13-25	SM, SP-SM	A-3, A-2-4
					25-80	SP, SP-SM	A-3
23	Basinger Fine Sand	+2-1.0	Jun-Feb	A/D	0-10	SP	A-3
					10-30	SP, SP-SM	A-3, A-2-4
					30-80	SP, SP-SM	A-3, A-2-4
26	Narcoossee Fine Sand	2-3.5	Jun-Nov	C	0-3	SP-SM	A-3
					3-9	SP, SP-SM	A-3
					9-12	SP-SM, SM	A-3, A-2-4
					12-75	SP, SP-SM, SM	A-3
39	Chobee Soils	0-1.0	Jun-Feb	B/D	0-11	SP-SM, SM	A-2-4
					11-56	SC	A-2-6, A-2-7, A-6, A-7
					56-80	SP-SM, SM, SC, SM-SC	A-2-4, A-2-6, A-6, AA-7
46	Cassia Fine Sand	1.0-3.5	Jul-Jan	C	0-18	SP, SP-SM	A-3
					18-31	SP-SM, SM	A-3, A-2-4
					31-65	SP, SP-SM	A-3
60	Palmetto	+2-1.0	Jun-Feb	D	0-10	SP, SP-SM	A-3, A-2-4
					10-46	SP-SM	A-3, A-2-4
					46-80	SM, SM-SC, SC	A-2-4, A-4, A-6
60	Zephyr	+2-1.0	Jun-Feb	D	13-0	Pt	A-8
					0-18	SP-SM, SM	A-3, A-2-4
					18-48	SM, SM-SC, SC	A-2-4, A-2-6
					48-67	SM, SM-SC	A-2-4, A-4
60	Sellers	+2-0	Jun-Mar	B/D	0-5	SP-SM, SM	A-3, A-2-4
					5-28	SP-SM, SM	A-3, A-2-4
					28-80	SP-SM, SM	A-3, A-2-4

Seasonal High Ground water table: Depth is referenced below existing grade, except where indicated as "+".

3.4 Floodplains/Floodways

According to the Federal Emergency Management Agency (FEMA) the relevant Flood Insurance Rate Map (FIRM) panel numbers are 12057C0240H, 12057C0245H, 12057C0235H, 12057C0234H, 12057C0251H, 12057C0115H for Hillsborough County, dated August 28, 2008; 12101C0465F, 12101C0461F, 12101C0462F for Hillsborough County, dated September 26, 2014; and 12057C0115H for Pasco County, dated August 28, 2008. In addition to the FEMA FIRMs, the Hillsborough River and Tampa Bypass Canal Stormwater Management Master plan and New River/Upper Hillsborough River Watershed Model have been reviewed for relevant flood elevations. According to all three sources, much of the project is within Zone AE of the 100-year floodplain which have a 1% probability of flooding every year, and where predicted flood water elevations have been established. There are five (5) federally regulated floodways within the project limits located at Flint's Creek, Clay Gully, Hollomans Branch, Two Hole Branch and the Hillsborough River. During design, a FEMA "No Rise" certification will have to be obtained for each of these crossings. Please refer to **Exhibit 4, Appendix A** for the **FEMA FIRM Map**.

General comments relating to floodplains include the fact that any development within the 100-year floodplain has the potential for placing citizens and property at risk of flooding and producing changes in floodplain elevations and plan view extent. Development (such as roadways, housing developments, strip malls and other commercial facilities) within floodplains increases the potential for flooding by limiting flood storage capacity and exposing people and property to flood hazards. Development also reduces vegetated buffers that protect water quality and destroys important habitats for fish and wildlife. The area surrounding the proposed roadway widening project has and will continue to experience growth.

Whenever it is determined that the proposed project will involve a regulatory floodway, the District Drainage Engineer, or designee, must work with local agencies and the Federal emergency Management Agency (FEMA), as required, to ensure the project is developed consistent with local floodway plans and floodplain management programs. Because this project has involvement with federally regulated floodways, during design a FEMA "No Rise" Certification must be acquired for each floodway.

Any floodplain impacts will be mitigated for in offsite floodplain compensation sites, or cut ditch sections on a cup for cup basis. From the available data, approximate Floodplain Impact Areas (FIA) have been determined based on areas in which the Zone AE 100-year floodplain lies within the proposed right-of-way. Within the project limits, six (6) FIA have been identified.

Floodplain impacts were quantified by cutting existing ground cross sections at critical junctures as well as 500-foot intervals along each FIA. Existing ground cross sections were developed from the 1-ft LiDAR data. Then, the floodplain elevation was drawn upon the cross

sections. Using the average end-area method, volumetric impacts were quantified conservatively as the average area between the 100-year flood elevation and the existing ground for two consecutive cross sections and then multiplied by the distance between the two cross sections. The analysis data indicate that approximately 123.32 ac-ft of 100-year floodplain volume is impacted within the project limits. The project has the potential to impact floodplains and their functions in the area.

During design, a more practical approach to floodplain impacts and compensation would be to utilize the existing floodplain models to model the proposed impacts and their effects on the existing flood elevations. This approach should be investigated during the design phase of this project and it is consistent with SWFWMD guidelines. For the purpose of this study, a conservative cup for cup approach was taken to provide FDOT with right-of-way estimates for funding projections. Please refer to the Preliminary Stormwater Management Facility Report prepared for this study for more information

Draft

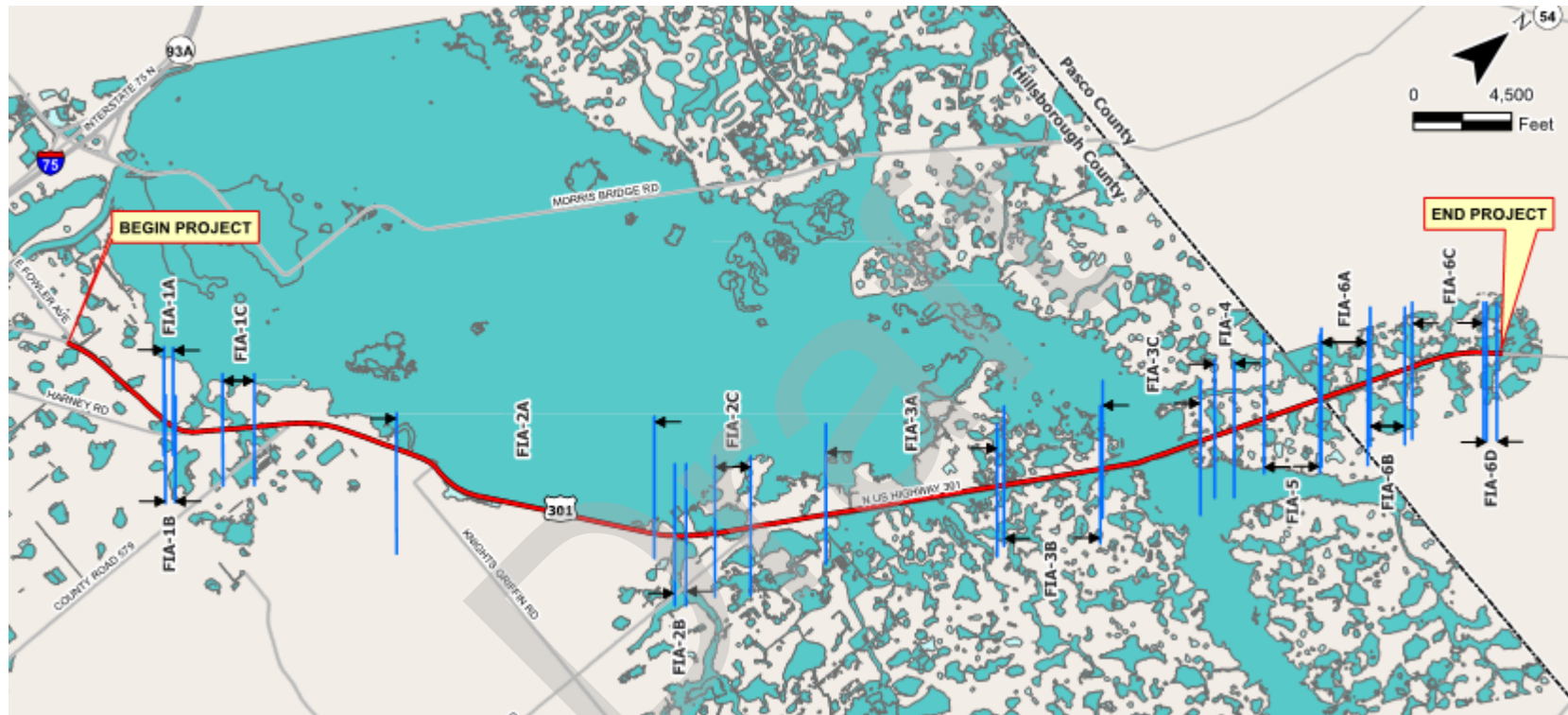


Figure 3-1: Floodplain Impact Areas (FIAs)

3.4.1 Flooding History and Maintenance Concern

FDOT District 7 Maintenance offices in Hillsborough County and Pasco County were contacted to discuss any flooding history and maintenance concerns. Coordination with Hillsborough County Maintenance is ongoing, however, based on previous discussions, there are a few known areas of historical flooding near the beginning of the project which occurred in January of 1998 and during Hurricane Frances in 2004. Please see **Exhibit 5** in **Appendix A** for these locations.

The study area in Pasco County is at the headwater of the Hillsborough River and is predominantly wet and can remain that way for extended periods of time. The Maintenance Office has not had a significant number of complaints, drainage concerns or pavement issues in this area.

Draft

SECTION 4.0 PROPOSED CONDITIONS

The stormwater runoff from the project limits will be collected and conveyed in roadside ditches to the proposed offsite wet detention and dry retention SMFs. The SMFs will discharge at or near the same cross drains that carry the roadway runoff in the existing condition. The proposed SMFs have been sized to achieve the required water quality treatment and water quantity attenuation and serve as a budget tool for right-of-way estimation for the project to the Department.

4.1 Longitudinal & Transverse Floodplain Impacts

The project will impact the 100-year floodplain in three (3) different ways;

- 1) Longitudinal impacts resulting from filling the floodplain areas along the edges of the roadway and associated with proposed roadway widening within the project limits, isolated wetlands, wetland systems, and depressional areas.
- 2) Transverse impacts resulting from the floodplain crossing the roadway and the extension and replacement of the existing cross drain culverts.
- 3) Transverse impacts resulting from the floodplain crossing the roadway and the proposed widening of the bridge culvert and bridges.

The longitudinal impacts are a result of the widening of US 301 along the floodplain edges within the study limits.

The transverse impacts resulting from the extension or replacement of the culverts have not been analyzed in this report. To minimize upstream impacts, FDOT design criteria for conveyance systems (e.g. culverts) allow no significant rise in flood stages at the upstream end of the structures. During design, efforts should be made to ensure that proposed base headwater elevations do not surpass 0.1 feet of rise from the existing condition, and every necessary action should be taken to minimize upstream impacts.

4.2 Project Classification

The floodplain is located in a low density, non-urbanized area, and the encroachment area is classified as “minimal”. Minimal encroachments on a floodplain occur when there is a floodplain involvement, but the impacts on human life, transportation facilities, and natural and beneficial floodplain values are not significant and can be resolved with minimal efforts. Normally, these minimal efforts to address the impacts will consist of applying the Departments drainage design standards and following the Water Management District’s procedures to achieve results that will not increase or significantly change the flood elevations and/or limits.

4.3 Risk Evaluation

There is no change in flood “Risk” associated with this project. The encroachments will not have a significant potential for interruption or termination of transportation facilities needed for emergency vehicles or used as an evacuation route. In addition, no significant adverse impacts on natural and beneficial floodplain values are anticipated and no significant impacts to highway users are expected.

4.4 PD&E Manual Requirements with Minimal Encroachment

Chapter 13 Floodplains of the FDOT’s PD&E Manual, Part 2, defines four categories of encroachments as they pertain to base floodplain involvement; significant, minimal, none and no involvement, and also lists the report criteria corresponding to these encroachment categories. The FDOT has different requirements based on the category of encroachment. The proposed US 301 widening project was determined to have minimal encroachments and as a result, the requirements for this category are listed as follows:

- a) General description of the project including location, length, existing and proposed typical sections, drainage basins, and cross drains.**
See Sections 1.0 through 4.2 of this LHR for general project information and the Preliminary Stormwater Management Facility Report for drainage basin descriptions.

- b) Determination of whether the proposed action is in the base floodplain.**
It has been determined that improvements associated with the widening of US 301 will encroach on the Zone AE 100-year floodplain as established by the most recent FEMA maps dated 8/28/2008 and 9/26/2014.

- c) The history of flooding of the existing facilities and/or measures to minimize any impacts due to the proposed project improvements.**
According to Hillsborough County and Pasco County FDOT maintenance staff, there are no areas of flooding concern along US 301 within the project limits. Floodplain Compensation areas will be constructed to mitigate loss of storage in the floodplain due to the project improvements. In addition, stormwater treatment areas are proposed to attenuate runoff. The project will have no adverse impact on the existing condition.

- d) Determination of whether the encroachment is longitudinal or transverse, and if it is a longitudinal encroachment an evaluation and discussion of practicable avoidance alternatives.**
With the increase in the number of travel lanes proposed, there will be longitudinal and transverse impacts to the floodplain. Longitudinal impacts will be minimized by utilizing the maximum allowable roadway embankment slope.

The transverse floodplain impacts from the project occur due to the extension or replacement of the existing cross drains and widening of the bridge structures. The

impacts at these locations are not analyzed during this study and will need to be addressed during the design phase.

The existing roadway bisects the floodplain. There are no economically feasible avoidance alternatives.

e) The practicability of avoidance alternatives and/or measures to minimize impacts.

The project will take every effort to minimize floodplain impacts resulting from the roadway fill. The maximum allowable roadway embankment slope will be used within the floodplain area to minimize the floodplain impacts. Floodplain compensation (FPC) sites are also proposed to mitigate these floodplain impacts.

f) Impact of the project on emergency services and evacuation.

The proposed cross drain, bridge culverts and bridges will perform hydraulically in a manner equal to or greater than the existing condition, and backwater elevations are not expected to increase. As a result, there will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or in emergency evacuation routes.

g) Impacts of the project on the base flood, likelihood of flood risk, overtopping, location of overtopping, backwater.

The proposed cross drain, bridge culverts and bridges will perform hydraulically in a manner equal to or greater than the existing condition. As a result, there will be no significant change in flood risk or overtopping.

h) Determination of the impact of the proposed improvements on regulatory floodways, if any, and documentation of coordination with FEMA and local agencies to determine the project's consistency with the regulatory floodway.

A FEMA "No Rise" Certification for each regulatory floodway will be required during design.

i) The impacts on natural and beneficial floodplain values, and measures to restore and preserve these values (this information may also be addressed as part of the wetland impact evaluation and recommendations).

The proposed stormwater ponds and floodplain compensation sites were evaluated for environmental impacts and risk rating range from low to high. Sites will be recommended to avoid and minimize environmental impacts to the greatest extent possible. Mitigation of unavoidable wetland impacts will be proposed. Floodplain compensation sites are proposed to mitigate for the proposed floodplain encroachments. Additional information can be found in the Natural Resource Evaluation Report and the Preliminary Stormwater Management Facility Report.

- j) Consistency of the project with the local floodplain development plan or the land use elements in the Comprehensive Plan, and the potential impacts of encouraging development within the 100-year base floodplain.**

The project will remain consistent with local floodplain development plans. The project will not support base floodplain development that is incompatible with existing floodplain management programs.

- k) Measures to minimize floodplain impacts associated with the project, and measures to restore and preserve the natural and beneficial floodplain values impacted by the project.**

The project will take every effort to minimize floodplain impacts resulting from the roadway fill. The maximum allowable roadway embankment slope will be used within the floodplain area to minimize the floodplain impacts and floodplain compensation (FPC) sites will be provided as needed. Mitigation of unavoidable wetland impacts will be proposed.

- l) A map showing project, location and impacted floodplains. Copies of applicable maps should be included in the appendix.**

See Exhibit 4 in Appendix A and Figure 3-1.

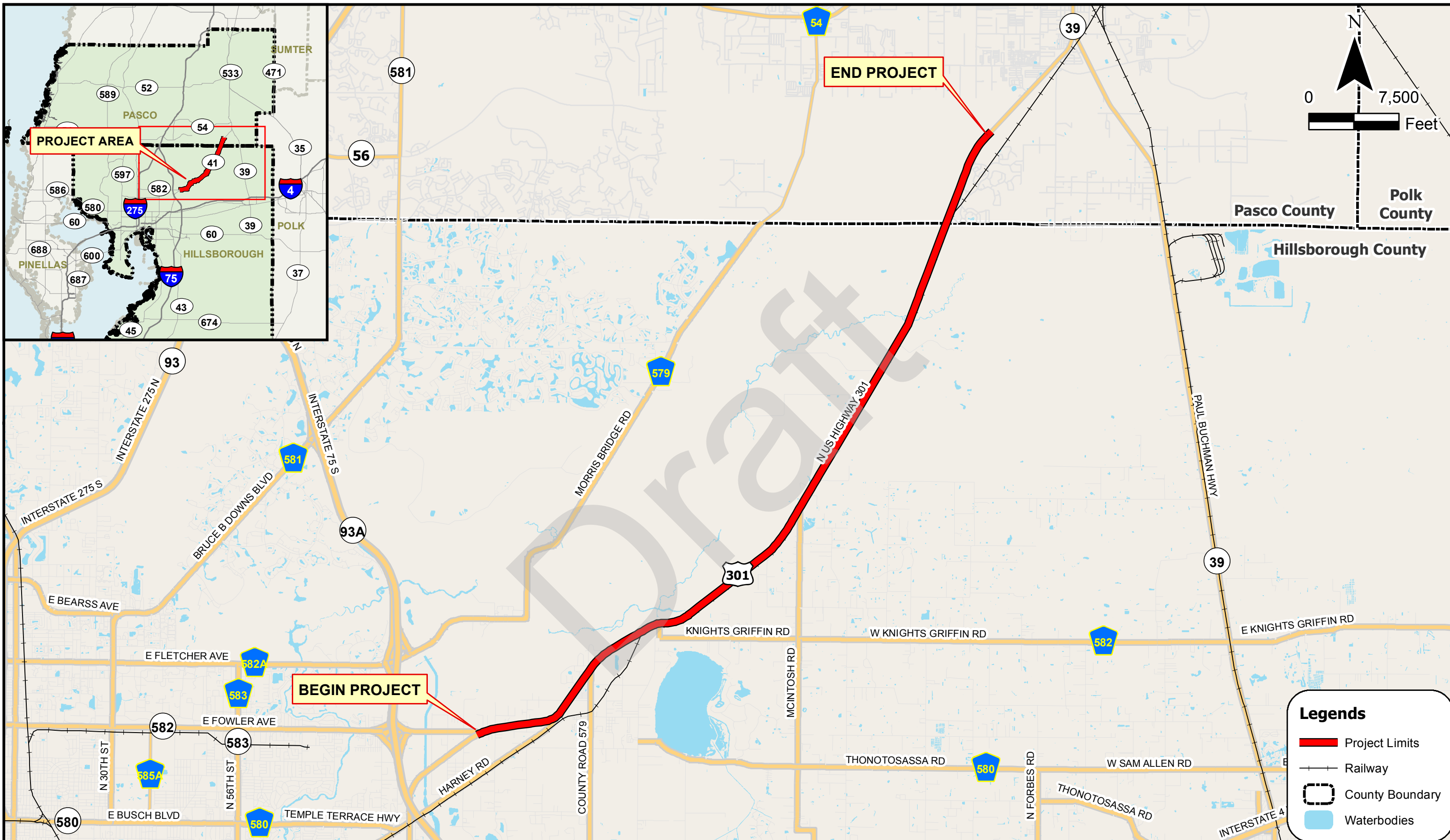
- m) Results of any and all project risk assessments performed.**

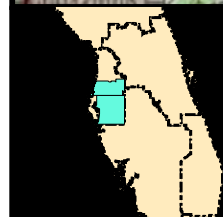
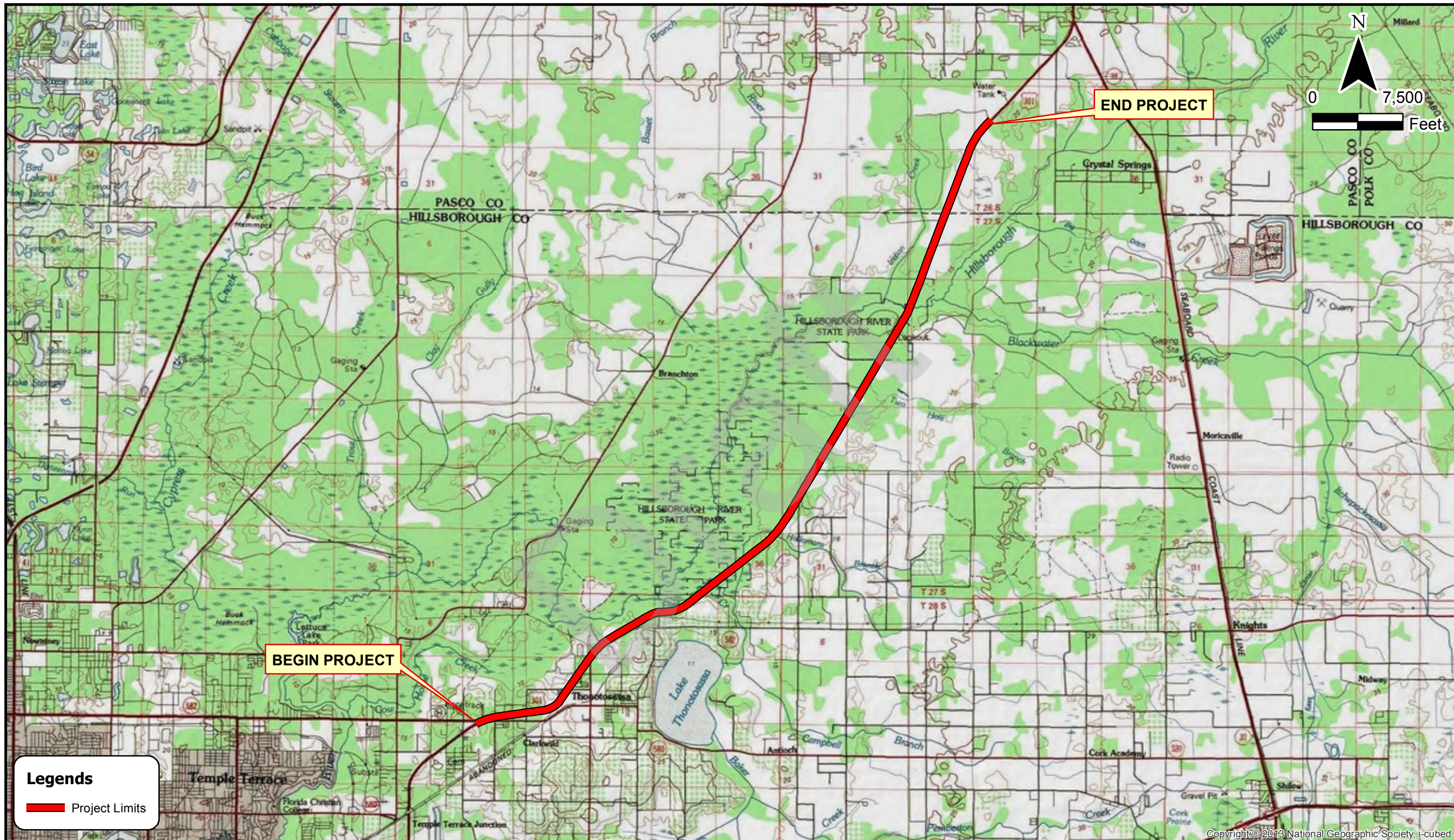
The proposed cross drain, bridge culverts and bridges will perform hydraulically in a manner equal to or greater than the existing condition. As a result, there will be no significant change in flood risk.

APPENDIX A

Exhibit

Draft





Florida Department of Transportation
 District 7

US 301 PD&E Study
 from Fowler Avenue to Proposed SR 56
 Hillsborough and Pasco Counties, Florida
 Financial Project ID: 255796-1-22-01

USGS QUADRANGLE MAP

**EXHIBIT
 2**

SOIL NAMES

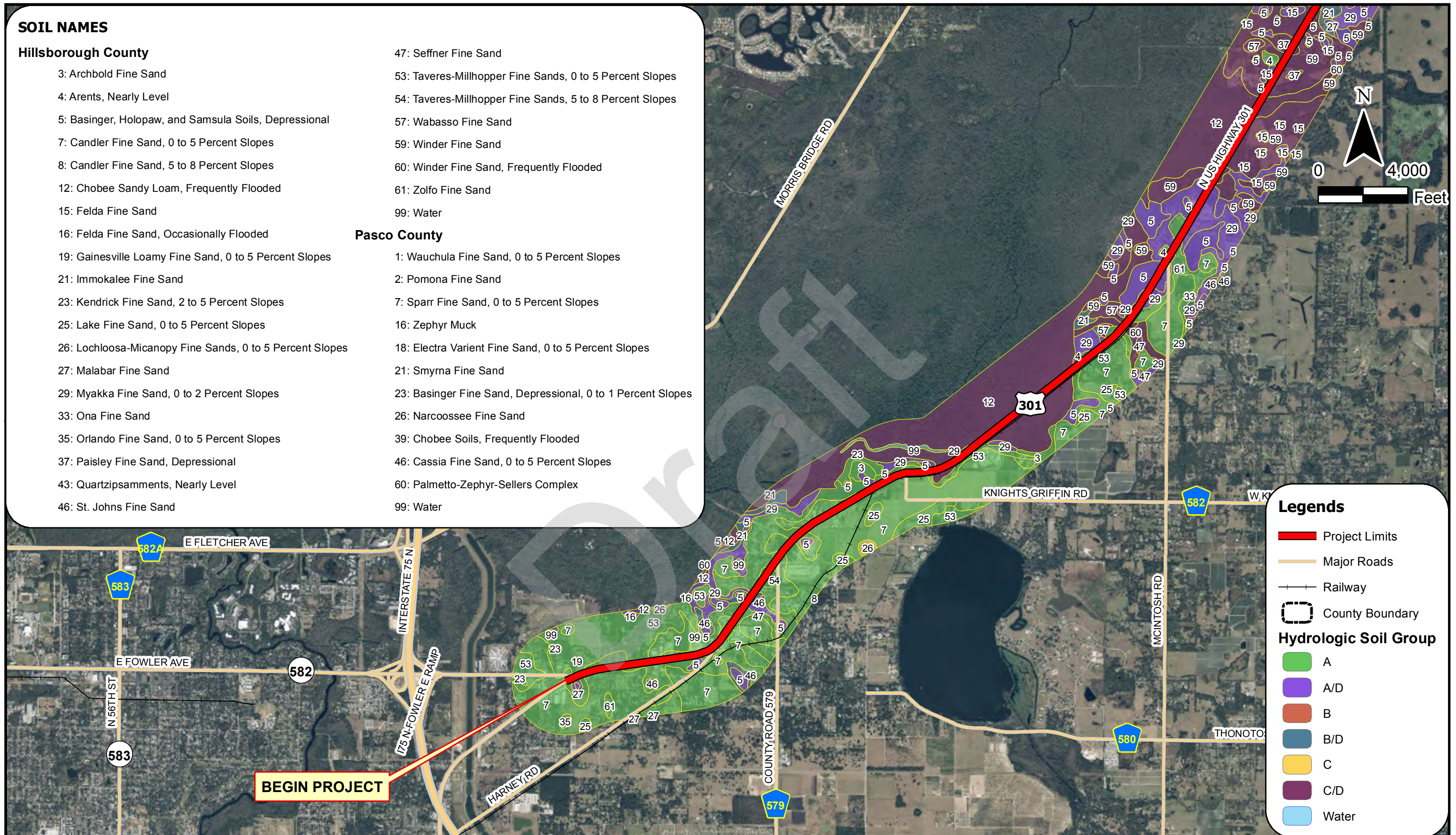
Hillsborough County

- 3: Archbold Fine Sand
- 4: Arents, Nearly Level
- 5: Basinger, Holopaw, and Samsula Soils, Depressional
- 7: Candler Fine Sand, 0 to 5 Percent Slopes
- 8: Candler Fine Sand, 5 to 8 Percent Slopes
- 12: Chobee Sandy Loam, Frequently Flooded
- 15: Felda Fine Sand
- 16: Felda Fine Sand, Occasionally Flooded
- 19: Gainesville Loamy Fine Sand, 0 to 5 Percent Slopes
- 21: Immokalee Fine Sand
- 23: Kendrick Fine Sand, 2 to 5 Percent Slopes
- 25: Lake Fine Sand, 0 to 5 Percent Slopes
- 26: Lochloosa-Micanopy Fine Sands, 0 to 5 Percent Slopes
- 27: Malabar Fine Sand
- 29: Myakka Fine Sand, 0 to 2 Percent Slopes
- 33: Ona Fine Sand
- 35: Orlando Fine Sand, 0 to 5 Percent Slopes
- 37: Paisley Fine Sand, Depressional
- 43: Quartzsammets, Nearly Level
- 46: St. Johns Fine Sand

- 47: Seffner Fine Sand
- 53: Taveres-Millhopper Fine Sands, 0 to 5 Percent Slopes
- 54: Taveres-Millhopper Fine Sands, 5 to 8 Percent Slopes
- 57: Wabasso Fine Sand
- 59: Winder Fine Sand
- 60: Winder Fine Sand, Frequently Flooded
- 61: Zolfo Fine Sand
- 99: Water

Pasco County

- 1: Wauchula Fine Sand, 0 to 5 Percent Slopes
- 2: Pomona Fine Sand
- 7: Sparr Fine Sand, 0 to 5 Percent Slopes
- 16: Zephyr Muck
- 18: Electra Variet Fine Sand, 0 to 5 Percent Slopes
- 21: Smyrna Fine Sand
- 23: Basinger Fine Sand, Depressional, 0 to 1 Percent Slopes
- 26: Narcoossee Fine Sand
- 39: Chobee Soils, Frequently Flooded
- 46: Cassia Fine Sand, 0 to 5 Percent Slopes
- 60: Palmetto-Zephyr-Sellers Complex
- 99: Water



SOIL NAMES

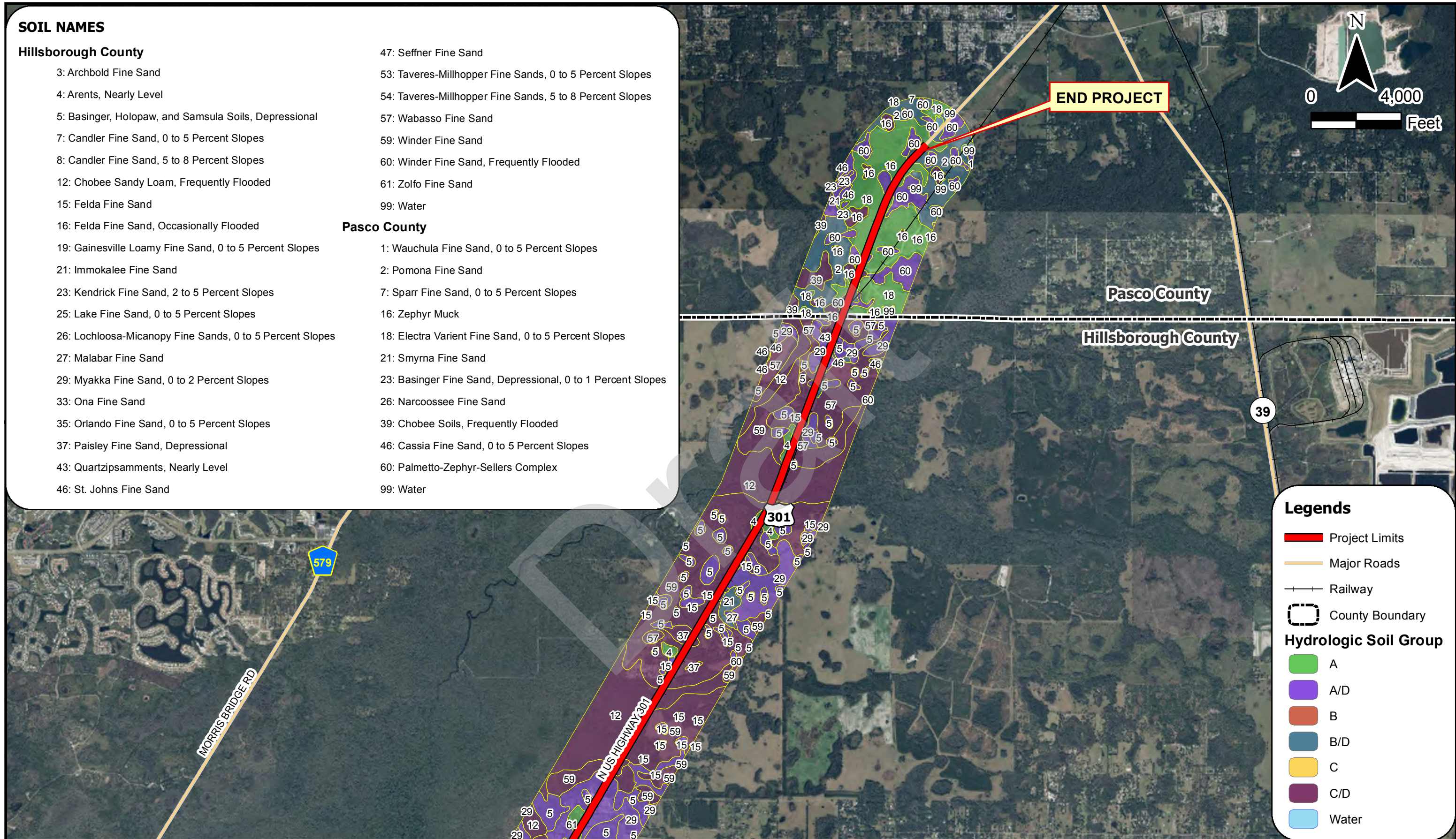
Hillsborough County

- 3: Archbold Fine Sand
- 4: Arents, Nearly Level
- 5: Basinger, Holopaw, and Samsula Soils, Depressional
- 7: Candler Fine Sand, 0 to 5 Percent Slopes
- 8: Candler Fine Sand, 5 to 8 Percent Slopes
- 12: Chobee Sandy Loam, Frequently Flooded
- 15: Felda Fine Sand
- 16: Felda Fine Sand, Occasionally Flooded
- 19: Gainesville Loamy Fine Sand, 0 to 5 Percent Slopes
- 21: Immokalee Fine Sand
- 23: Kendrick Fine Sand, 2 to 5 Percent Slopes
- 25: Lake Fine Sand, 0 to 5 Percent Slopes
- 26: Lochloosa-Micanopy Fine Sands, 0 to 5 Percent Slopes
- 27: Malabar Fine Sand
- 29: Myakka Fine Sand, 0 to 2 Percent Slopes
- 33: Ona Fine Sand
- 35: Orlando Fine Sand, 0 to 5 Percent Slopes
- 37: Paisley Fine Sand, Depressional
- 43: Quartzipsamments, Nearly Level
- 46: St. Johns Fine Sand

- 47: Seffner Fine Sand
- 53: Taveres-Millhopper Fine Sands, 0 to 5 Percent Slopes
- 54: Taveres-Millhopper Fine Sands, 5 to 8 Percent Slopes
- 57: Wabasso Fine Sand
- 59: Winder Fine Sand
- 60: Winder Fine Sand, Frequently Flooded
- 61: Zolfo Fine Sand
- 99: Water

Pasco County

- 1: Wauchula Fine Sand, 0 to 5 Percent Slopes
- 2: Pomona Fine Sand
- 7: Sparr Fine Sand, 0 to 5 Percent Slopes
- 16: Zephyr Muck
- 18: Electra Variet Fine Sand, 0 to 5 Percent Slopes
- 21: Smyrna Fine Sand
- 23: Basinger Fine Sand, Depressional, 0 to 1 Percent Slopes
- 26: Narcoossee Fine Sand
- 39: Chobee Soils, Frequently Flooded
- 46: Cassia Fine Sand, 0 to 5 Percent Slopes
- 60: Palmetto-Zephyr-Sellers Complex
- 99: Water

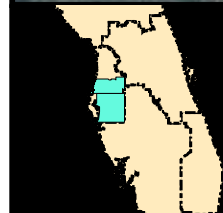


Legends

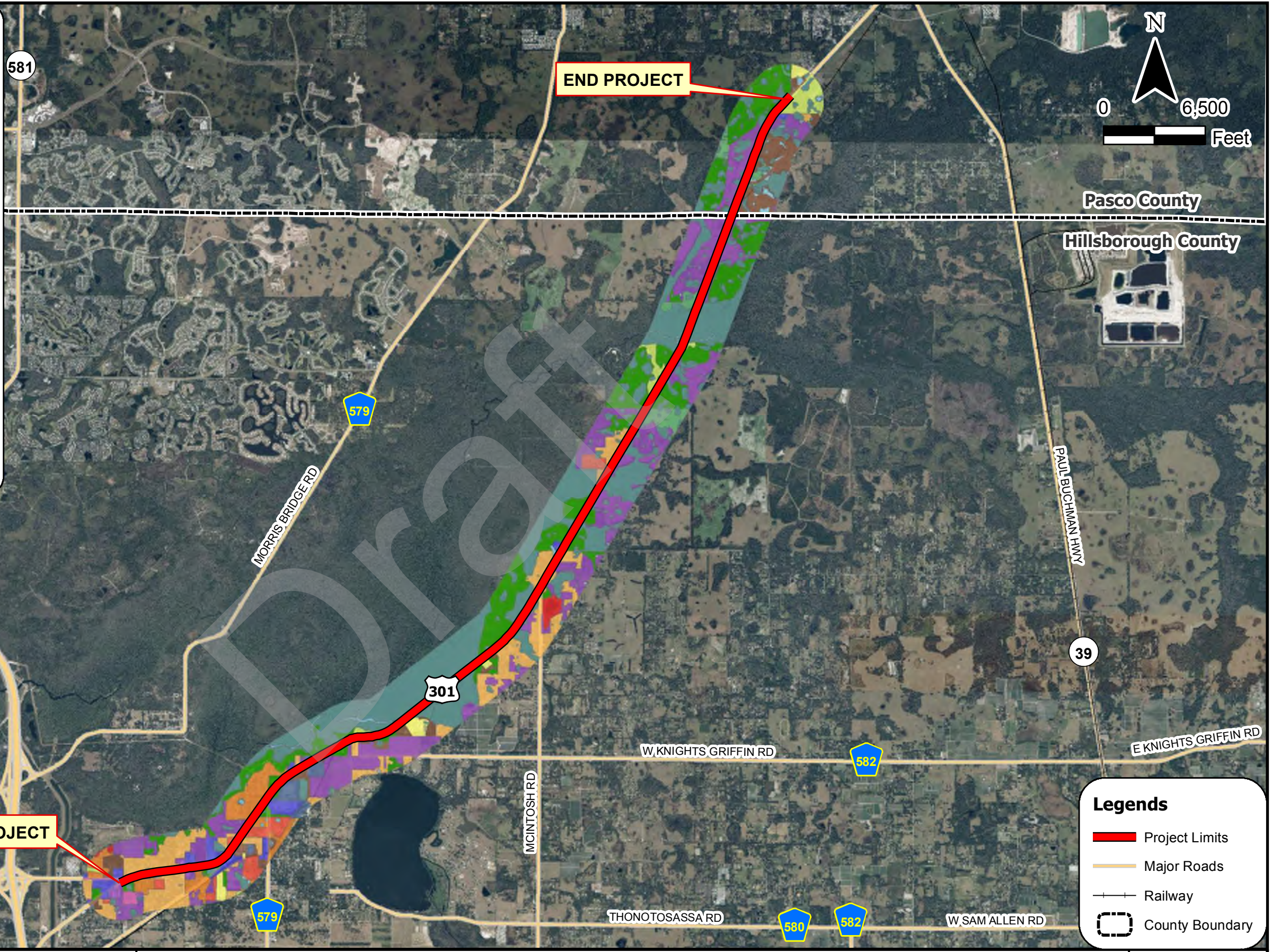
- █ Project Limits
- █ Major Roads
- Railway
- County Boundary

Hydrologic Soil Group

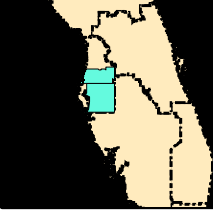
- █ A
- █ A/D
- █ B
- █ B/D
- █ C
- █ C/D
- █ Water

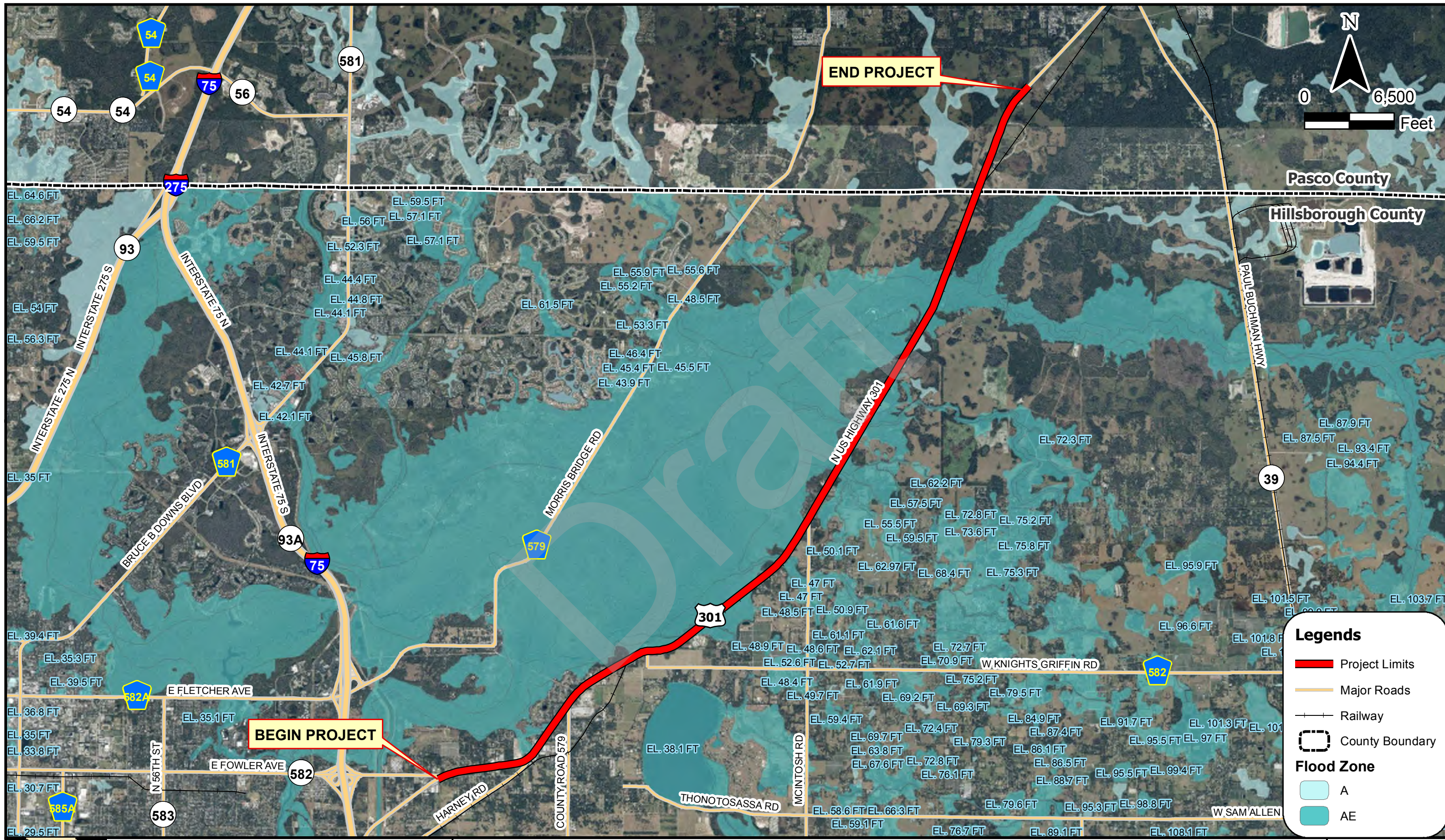


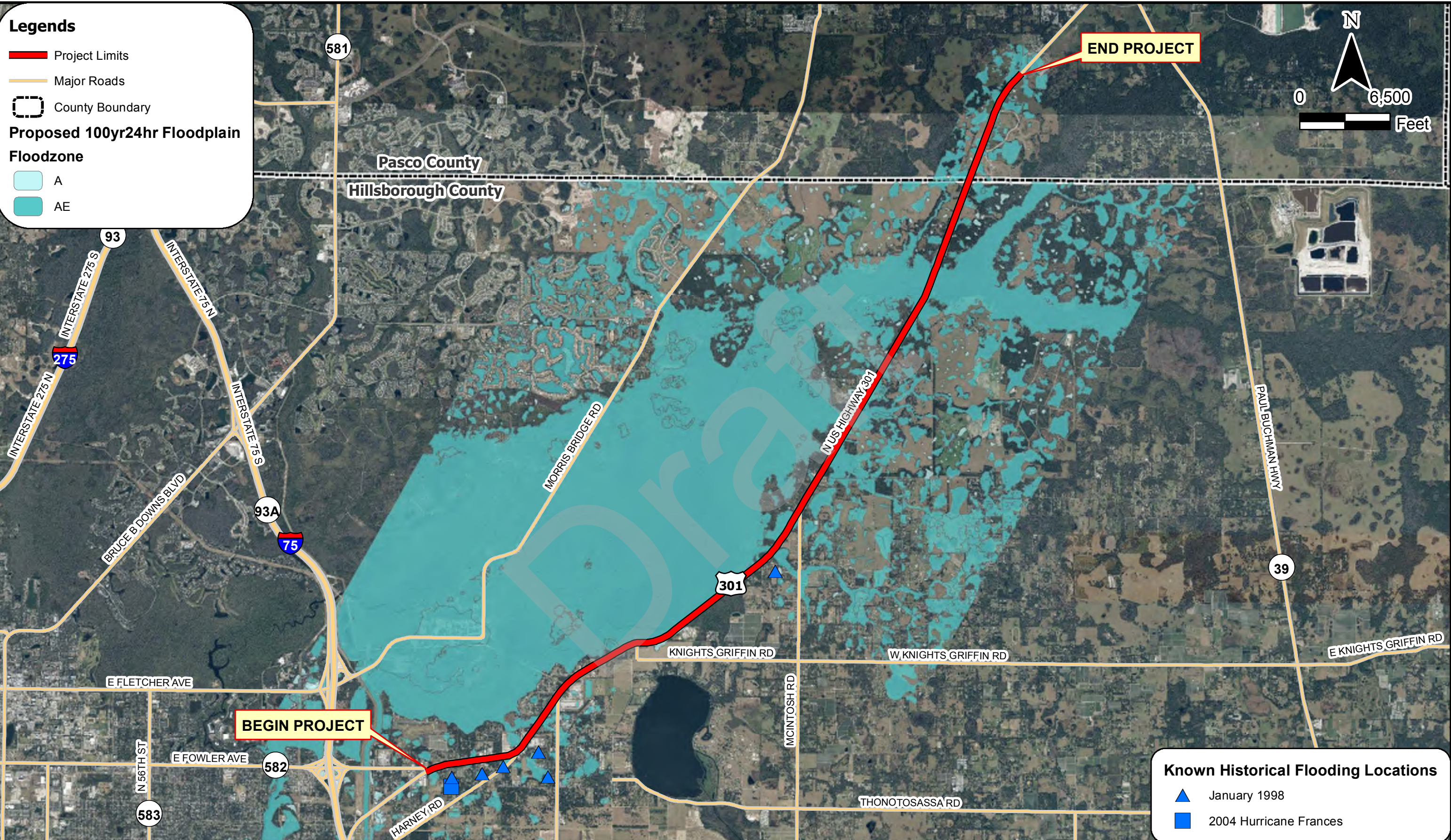
- ### Land Use Descriptions
- AG: Agricultural
 - COM: Commercial
 - EXTR: Extractive
 - F: Upland Forest
 - HDR: High Density Residential
 - IND: Industrial
 - INST: Institutional
 - LDR: Low Density Residential
 - MDR: Medium Density Residential
 - OPL: Open Land
 - REC: Recreational
 - RNG: Rangeland
 - TCU: Transportation, Communication & Utilities
 - WET: Wetlands
 - Water



- ### Legends
- Project Limits
 - Major Roads
 - Railway
 - County Boundary







APPENDIX B

Correspondence

Draft

Sean Carrigan

From: Guthrie, JoEllyn <JoEllyn.Guthrie@dot.state.fl.us>
Sent: Monday, October 12, 2015 9:22 PM
To: Sean Carrigan
Cc: Renato Chuw; Zach Evans; Hunt, Harvey; Leipski, Andrew J; Montjoy, Anita W; Greif, Charles
Subject: RE: US 301 PD&E Study | WPI Segment No. 255796-1 | From Fowler Avenue to Proposed SR 56

Sean:

As this area in Pasco County is at the headwater of Hillsborough River Watershed, the area is predominantly wet and can remain that way for extended periods of time. The pavement design should take this into consideration and be built accordingly. US 301 is the only state roadway in this area of Pasco County and our maintenance office has not had a significant number of complaints, drainage concerns or pavement issues in this area. If you have specific questions, please do not hesitate to contact me.

Jo Ellyn M. Guthrie, P.E.
Operations Engineer



FDOT - Brooksville Operations
16411 Spring Hill Drive
Brooksville, FL 34604
JoEllyn.Guthrie@dot.state.fl.us

NOTE NEW TELEPHONE/FAX NUMBERS

voice: 352 848-2600
fax: 352 544-5400

From: Sean Carrigan [mailto:scarrigan@inwoodinc.com]
Sent: Monday, October 12, 2015 11:00 AM
To: Guthrie, JoEllyn
Cc: Renato Chuw; Zach Evans; Hunt, Harvey; Leipski, Andrew J; Montjoy, Anita W; Greif, Charles
Subject: RE: US 301 PD&E Study | WPI Segment No. 255796-1 | From Fowler Avenue to Proposed SR 56

Please find attached the project location map.

Thank you,

Sean Carrigan, P.E.

INWOOD CONSULTING ENGINEERS

P: 407-971-8850 ext. 6584

From: Guthrie, JoEllyn [<mailto:JoEllyn.Guthrie@dot.state.fl.us>]
Sent: Monday, October 12, 2015 10:57 AM
To: Sean Carrigan
Cc: Renato Chuw; Zach Evans; Hunt, Harvey; Leipski, Andrew J; Montjoy, Anita W; Greif, Charles
Subject: RE: US 301 PD&E Study | WPI Segment No. 255796-1 | From Fowler Avenue to Proposed SR 56

Please provide a map to review. Without additional information, it will be difficult to tell you our maintenance concerns.

Jo Ellyn M. Guthrie, P.E.
Operations Engineer



FDOT - Brooksville Operations
16411 Spring Hill Drive
Brooksville, FL 34604

JoEllyn.Guthrie@dot.state.fl.us

NOTE NEW TELEPHONE/FAX NUMBERS

voice: 352 848-2600

fax: 352 544-5400

From: Sean Carrigan [<mailto:scarrigan@inwoodinc.com>]
Sent: Monday, October 12, 2015 10:23 AM
To: Hunt, Harvey; Leipski, Andrew J; Montjoy, Anita W; Guthrie, JoEllyn; Greif, Charles
Cc: Renato Chuw; Zach Evans
Subject: US 301 PD&E Study | WPI Segment No. 255796-1 | From Fowler Avenue to Proposed SR 56

Good Morning,

I am working on the US 301 PD&E Study from Fowler Avenue in Hillsborough County to the proposed SR 56 in Pasco County, and wanted to discuss any history of flooding or any other available information regarding maintenance concerns in these areas.

Please let me know when it would be a good time to contact you to discuss. I appreciate your help with this matter.

Thank you,

Sean Carrigan, P.E.

Project Engineer

INWOOD CONSULTING ENGINEERS

3000 Dovera Dr., Suite 200, Oviedo, FL 32765

P: 407-971-8850 ext. 6584

F: 407-971-8955

inwoodinc.com

Zach Evans

From: Keller, Paul <Paul.Keller@dot.state.fl.us>
Sent: Thursday, January 06, 2022 2:58 PM
To: Zach Evans
Cc: Renato Chuw
Subject: RE: FPID 255796-1-22-01 US 301 PD&E Maintenance/Drainage Concerns

Zach,

The team has reported that there are no specific concerns for maintenance or drainage within the project limits. Our records from the past 6 months include only 7 work needs in the area, and they were routine sign maintenance, tree trimming, litter pick-up, and one ditch cleaning. A long-time Supervisor recalls a pipe replacement a while back, but no issues since. Seems we really have nothing to add to your priority list beyond what's already implied in the scope. Thanks for the opportunity to provide our input.

Sincerely,

Paul Keller
Maintenance Manager/Field Operations – Tampa Opns
(o) 813-612-3255
(c) 813-323-1161
paul.keller@dot.state.fl.us

"Train hard. Work safe. Retire healthy."

From: Zach Evans <zevans@inwoodinc.com>
Sent: Wednesday, January 5, 2022 3:06 PM
To: Keller, Paul <Paul.Keller@dot.state.fl.us>
Cc: Renato Chuw <rchuw@inwoodinc.com>
Subject: FPID 255796-1-22-01 US 301 PD&E Maintenance/Drainage Concerns

EXTERNAL SENDER: Use caution with links and attachments.

Good afternoon, Paul,

We spoke earlier today regarding existing maintenance and drainage concerns along the US 301 corridor from E Fowler Avenue to the Pasco County line. You mentioned you would discuss the area with some of your experts and get back to us. I have attached a project location map to assist in clarifying the limits of the study.

Thanks again and Happy New Year,
Zach

Zach Evans, PE
PROJECT ENGINEER

INWOOD CONSULTING ENGINEERS