

US 41 (SR 45)

Project Development and Environment (PD&E) Study

From 12th Street to Kracker Avenue

State Environmental Impact Report/Project Development Summary Report (SEIR/PDSR)

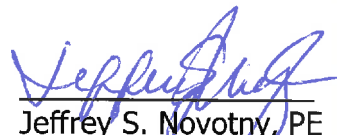
WPI Segment No: 421140 8; ETDM# 9511
Hillsborough County

Prepared for the
Florida Department of Transportation
District Seven

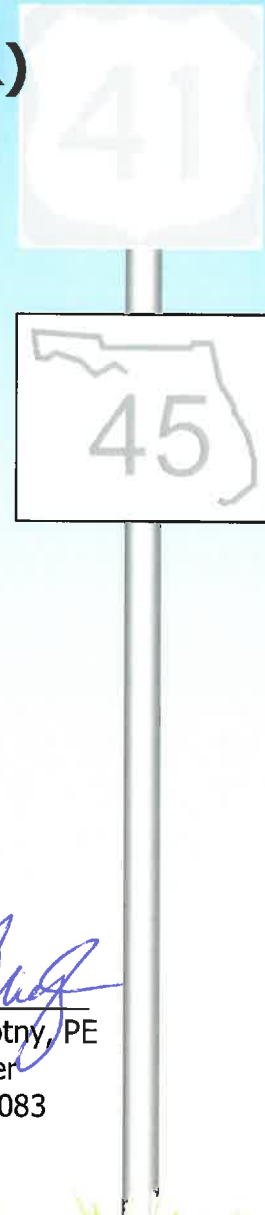


Prepared by
American Consulting Engineers of Florida, LLC




Jeffrey S. Novotny, PE
Project Manager
Florida PE# 51083

September 2009



**Florida Department of Transportation
STATE ENVIRONMENTAL IMPACT REPORT**

1. GENERAL INFORMATION

Project Name: US 41 (SR 45) Project Development and Environment (PD&E) Study
Project Limits: 12th Street to Kracker Avenue
WPI Segment No.: 4211408

2. PROJECT DESCRIPTION

a. Existing Conditions:

US 41 currently has a 4-lane divided rural typical section (**Figure 4-1**). The existing roadway has 11.5 to 12.0 ft travel lanes, 4-ft paved inside and outside shoulders, and a 40-ft grassed median. The posted speed limit is 55 miles per hour (mph) except for a short segment on either side of Big Bend Road, which is posted at 45 mph. The existing right-of-way typically varies from 182 ft to 227 ft.

b. Proposed Improvements:

Expected improvements include widening to six lanes as well as intersection improvements and construction of stormwater management facilities and bicycle and pedestrian facilities. In addition to six basic lanes, auxiliary lanes are also proposed in the vicinity of Apollo Beach Boulevard and Big Bend Road (CR 672). Preliminary recommended roadway typical sections are shown in **Figure 4-1**. A "No-Build" Alternative will also be considered. The proposed project is not funded in FDOT's current 5-year work program.

3. APPROVED FOR PUBLIC AVAILABILITY (Prior to Public Hearing)


Responsible Officer

3/5/09
Date

A Public Hearing was held on 3/30/09.

4. APPROVAL OF FINAL DOCUMENT (After Public Hearing)


District Secretary or Designee

11/10/09
Date

SCOTT W. COLUSTOR, DISTRICT SECRETARY

**Florida Department of Transportation
STATE ENVIRONMENTAL IMPACT REPORT**

5. IMPACT EVALUATION

Topical Categories	S*	NS*	N*	NI*	Basis for Decision
A. SOCIAL IMPACTS					
1. Land Use Changes	[]	[]	[X]	[]	<u>See Section 6.3.1 of PDSR</u>
2. Community Cohesion	[]	[]	[X]	[]	<u>See Section 6.3.4</u>
3. Relocation Potential	[]	[X]	[]	[]	<u>See Section 6.3.3</u>
4. Community Services	[]	[]	[X]	[]	<u>See Section 6.3.4</u>
5. Title VI Consideration	[]	[]	[X]	[]	<u>See Section 8.8.8</u>
6. Controversy Potential	[]	[X]	[]	[]	<u>See Section 6.3.2</u>
7. Bicycles and Pedestrians	[]	[]	[X]	[]	<u>See Section 5.9</u>
8. Utilities and Railroads	[]	[X]	[]	[]	<u>See Section 5.11</u>
B. CULTURAL IMPACTS					
1. Historical Sites / Districts	[]	[]	[X]	[]	<u>See Section 6.2.1</u>
2. Archaeological Sites	[]	[]	[]	[X]	_____
3. Recreation Sites/Section 4(f)	[]	[]	[]	[X]	_____
C. NATURAL ENVIRONMENT					
1. Wetlands	[]	[X]	[]	[]	<u>See Section 6.1.4</u>
2. Aquatic Preserves	[]	[]	[]	[X]	_____
3. Water Quality	[]	[]	[]	[X]	_____
4. Outstanding Fla. Waters	[]	[]	[]	[X]	_____
5. Wild and Scenic Rivers	[]	[]	[]	[X]	_____
6. Floodplains	[]	[X]	[]	[]	<u>See Section 6.1.3</u>
7. Coastal and Marine	[]	[]	[X]	[]	<u>See Section 6.1.6</u>
8. Wildlife and Habitat	[]	[X]	[]	[]	<u>See Section 6.1.5</u>
9. Essential Fish Habitat	[]	[]	[]	[X]	_____
10. Farmlands	[]	[]	[]	[X]	_____
D. PHYSICAL IMPACTS					
1. Noise	[]	[X]	[]	[]	<u>See Section 6.3.5</u>
2. Air	[]	[]	[X]	[]	<u>See Section 6.1.1</u>
3. Construction	[]	[X]	[]	[]	<u>See Section 6.3.6</u>
4. Contamination	[]	[X]	[]	[]	<u>See Section 6.1.2</u>
5. Navigation	[]	[]	[]	[X]	_____

*S = Significant; NS = Not Significant; N = None; NI = No Involvement. Basis of decision will be a reference to the Project Development Summary Report following this checklist.

E. PERMITS REQUIRED

It is anticipated that the following permits may be required:

- Environmental Resource Permit – Southwest Florida Water Management District (SWFWMD)
- Dredge and Fill Permit – US Army Corps of Engineers (USACE).
- National Pollutant Discharge Elimination System (NPDES) Permit – Florida Department of Environmental Protection (FDEP).

**Florida Department of Transportation
STATE ENVIRONMENTAL IMPACT REPORT**

6. COMMITMENTS AND RECOMMENDATIONS

Commitments

Gopher tortoise surveys shall be conducted within six (6) months of construction, at which point proper permitting with the Florida Fish and Wildlife Conservation Commission (FWC) shall be coordinated if necessary.

Recommendations

It is recommended that the proposed improvements as described in Section 2.6 of this document be approved for advancement to future phases of project development (i.e. design, right of way acquisition, and construction) as funding becomes available.

PROFESSIONAL ENGINEER CERTIFICATE

I hereby certify that I am a registered professional engineer in the State of Florida practicing with American Consulting Engineers of Florida, LLC, a Florida Corporation, authorized to operate as an engineering business, Certificate of Authorization No. 9302, by the State of Florida Department of Professional Regulation, and that I have prepared or approved the evaluation, findings, opinions, conclusions, or technical advice hereby reported for:

Financial Project ID: 421140-8-22-01
FAP Project Number: (Not Applicable)
Project: US 41 (SR 45) PD&E Study
12th Street to Kracker Avenue
County: Hillsborough
FDOT Project Manager: Manuel Santos, E.I.

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.

SIGNATURE: 

NAME: Jeffrey S. Novotny, P.E.

FIRM: American Consulting Engineers of Florida, LLC

P.E. No.: 51083

DATE: October 27, 2009

Project Development Summary Report (PDSR)

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Section 1 - EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) conducted a Project Development and Environment (PD&E) Study to evaluate alternative improvements to US 41 (SR 45). This project involves a 6.2 mile segment of US 41 from 12th Street extending north to Kracker Avenue in Hillsborough County (**Figure 2-1**). The highway is to be improved from an existing four-lane rural facility to an urban and suburban six-lane divided facility. There are no bridge structures located within this study segment; however, bridge culvert widening/replacement is anticipated over Wildcat Creek and Newman's Branch. The proposed improvements will include construction of stormwater management facilities and various intersection improvements, in addition to bicycle and pedestrian facilities.

Section 2 explains the Environmental Transportation Decision Making (ETDM) process and the Project Development and Environment (PD&E) Study process, the purpose of this report, and the scope of the proposed improvements. The purpose of the proposed project is to provide additional highway capacity to better meet future transportation demand in this rapidly developing area of Hillsborough County. US 41 runs parallel to and west of I-75 and is a major north-south urban principal arterial that connects numerous communities along the west coast of Florida, including Ruskin, Apollo Beach and Gibsonton.

Section 3 lists the recommendations and commitments that are being developed throughout the PD&E Study. The recommendations section will describe the reasoning for the selection of the Recommended Alternative while the commitments section lists items that will be adhered to during the final design/construction phases.

Section 4 describes the No-Build and Build Alternatives considered. Access management and roadway design criteria are presented. Typical sections considered included urban, rural, and suburban. For most areas, a 6-lane suburban typical section with a 40-ft median is proposed, which will fit within the existing 182-ft (minimum) right-of-way. Two areas located near major intersections (at Apollo Beach Boulevard and at Big Bend Road) will require auxiliary thru lanes on US 41 to maximize the intersection capacity and reduce delays; this will require an urban typical section to minimize right-of-way acquisition and impacts to adjacent properties.

Section 5 describes the Recommended Alternative relative to engineering requirements for geometric design, drainage requirements, traffic, access management and utilities. Preliminary estimates for stormwater management facilities (ponds) are provided. The

FDOT Work Program schedule and estimated costs are also included. The current (preliminary) cost estimate includes:

Construction	\$43,000,000
Design	\$4,500,000
Inspection	\$4,500,000
Right-of-Way Acquisition - Roadway	\$11,000,000
ROW Acquisition – Stormwater Ponds & Floodplain Compensation Sites	\$104,000,000
TOTAL	\$167,000,000

One expected relocation is currently identified: a small plant nursery located south of Big Bend Road.

Section 6 summarizes the environmental impacts including those related to the natural environment, cultural environment and community effects of construction of the Recommended Alternative. A high percentage of the project area is located within the 100-year floodplain, and cup-for-cup compensation is expected to be required. A total of 0.47 acres of wetland and 2.77 acres of other surface waters are anticipated to be impacted due to the construction of the proposed project. Wetland impacts due to the construction of this proposed project are anticipated to be mitigated pursuant to § 373.4137, F.S., or by the creation, enhancement, or preservation of wetlands within the project’s watershed. Other impact areas discussed include cultural resources, noise, contamination, land use and mobility. Although five noise-sensitive sites are expected to experience small increases in noise due to the proposed project, it was determined that construction of noise barriers for these sites is not a feasible and cost-reasonable method of reducing predicted traffic noise impacts. Regarding contamination, 23 sites were evaluated, with 2 sites ranked “high risk”, 11 as “medium risk”, and 10 as “low risk”.

Section 7 lists the anticipated permits that will be required for the project. The following permits are expected to be required:

- Environmental Resource Permit from Southwest Florida Water Management District (SWFWMD)
- Dredge and Fill Permit from US Army Corps of Engineers (USACE).
- National Pollutant Discharge Elimination System (NPDES) Permit from Florida Department of Environmental Protection (FDEP).

Section 8 summarizes the agency and public involvement activities undertaken to date. These have included the ETDM screening process, the Advance Notification, and a kick-off newsletter. In addition, a Public Hearing was held on March 30, 2009.

Section 2 - INTRODUCTION

2.1 *Study Purpose and PD&E Process*

The objective of the Project Development and Environment (PD&E) Study process is to provide the documentation necessary to reach a decision on the type, conceptual design, and specific location of the improvements identified as being needed. Factors considered include transportation needs, socioeconomic and environmental impacts, and engineering requirements. In general terms, the process involves the following steps:

- (1) the establishment of project need
- (2) the gathering and analysis of detailed information regarding the natural and cultural features of the study area
- (3) the development of a number of alternatives for meeting the project need
- (4) the selection of a Recommended Alternative, and
- (5) documenting the entire process in a series of reports

During the process, communication with the affected public is accomplished directly, through public meetings, and indirectly, through interaction with elected officials and agency representatives.

The FDOT's Efficient Transportation Decision Making (ETDM) Process provides agencies and the public access to project planning information, as well as potentially affected environmental resources through use of the internet via the Environmental Screening Tool (EST). The tool allows interaction among transportation planners, regulatory agencies and affected communities to provide input on projects. The agency representatives involved in the interaction are referred to as the Environmental Technical Advisory Team, or ETAT members. The team provides a review of the projects on a variety of areas such as environmental and community impacts. Key features of the ETDM Process include:

- early agency and community involvement
- early identification of avoidance and mitigation strategies
- access to comprehensive data in standardized formats
- reviews and studies focused on key issues
- permit issuance linked to National Environmental Policy Act (NEPA) reviews
- maximized use of technology for coordination, project scoping and communication

ETDM provides the ability for early agency interaction and coordination during project development, which can improve the quality of decisions and reduce cost and time delays during the PD&E Study.

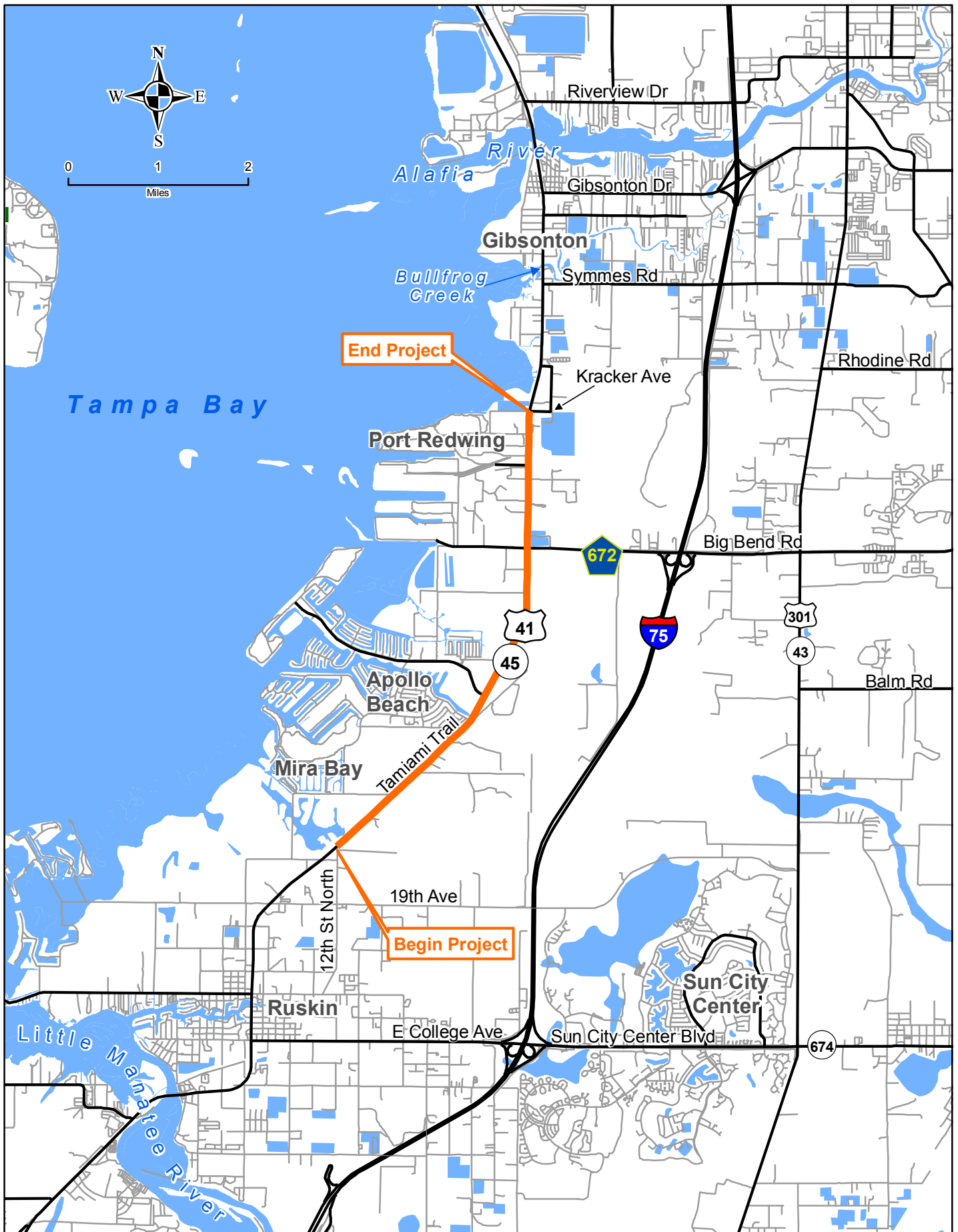
2.2 Project Description

The Florida Department of Transportation (FDOT) conducted a Project Development and Environment (PD&E) Study to evaluate alternative improvements to US 41 (SR 45). This project involves a 6.2 mile segment of US 41 from 12th Street extending north to Kracker Avenue in Hillsborough County (**Figure 2-1**). The highway is to be improved from an existing, four-lane rural facility to an urban and suburban six-lane divided facility. There are no bridge structures located within this segment of US 41; however, bridge culvert widening or replacement is anticipated over Wildcat Creek and Newmans Branch. The proposed improvements will include construction of stormwater management facilities and various intersection improvements, in addition to bicycle and pedestrian facilities. The study area is located in Township 31, Range 19, and Sections 2, 3, 10, 11, 14, 15, 22, 27, 28, 32 and 33.

2.3 Project Purpose and Need

The purpose of the proposed project is to provide a higher capacity and safer facility to better meet future transportation demand in this rapidly developing area of Hillsborough County. US 41 runs parallel to and west of I-75. US 41 is a major north-south urban principal arterial that connects numerous communities along the west coast of Florida, including Ruskin, Apollo Beach and Gibsonton. This anticipated traffic growth and existing high levels of congestion create a need to analyze the corridor for necessary improvements to ensure this facility does not continue to deteriorate resulting in unacceptable levels of service. The PD&E Study will also include the consideration of a No-Build Alternative.

US 41 is functionally classified as an “urban principal arterial – other”. While US 41 is not on the Strategic Intermodal System (SIS), a short (0.92 miles) segment of US 41 between Pembroke Road and Big Bend Road (CR 672) is part of a SIS connector, which connects the Port of Tampa to I-75, both of which are SIS facilities. The Strategic Intermodal System (SIS) is a statewide network of highways, railways, waterways and transportation hubs that handle the bulk of Florida’s passenger and freight traffic. This project is included in the Hillsborough County Metropolitan Planning Organization’s (MPO) Year 2025 Long-Range Transportation Plan (LRTP) as an unfunded need. The West Central Florida MPO Chair’s Coordinating Committee (CCC) has classified US 41 as a “regional road” and as an “unfunded need” on the “regionally significant road

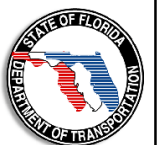


US 41 (SR 45) PD&E Study

from 12th Street to Cracker Avenue
 Hillsborough County, FL
 WPI Segment No. 421140-8

Project Location Map

Figure X-X



Source: FGDL

network” in west central Florida. This corridor is also designated as an emergency evacuation route.

A longer segment of US 41 was evaluated in the Programming Screen of the Efficient Transportation Decision Making (ETDM) process (project #9511) in 2008, for a larger area along US 41, from 19th Avenue NE to Gibsonton Drive. This process established the Class of Action as a State Environmental Impact Report (SEIR).

Section 3 - COMMITMENTS AND RECOMMENDATIONS

3.1 *Commitments*

Gopher tortoise surveys shall be conducted within six (6) months of construction, at which point proper permitting with the Florida Fish and Wildlife Conservation Commission (FWC) shall be coordinated if necessary.

3.2 *Recommendations*

It is recommended that the proposed improvements as described in Section 2.6 of this document be approved for advancement to future phases of project development (i.e. design, right of way acquisition, and construction) as funding becomes available.

Section 4 – ALTERNATIVES CONSIDERED

4.1 *No-Build Alternative*

The No-Build Alternative would involve postponing major improvements to the existing roadway beyond the design year 2030. This involves leaving existing US 41 as-is, providing only routine maintenance and safety improvements as required.

The *advantages* of the No-Build Alternative include the following:

- No new construction costs
- No disruption to existing land use due to construction
- No disruption to traffic due to construction activities
- No right-of-way acquisition or relocations, and
- No disturbance to natural resources

The *disadvantages* of the No-Build Alternative include the following:

- Increase in roadway maintenance and user costs
- Increase in traffic congestion
- Increase in potential for traffic crashes
- Deterioration of air quality, and
- Inconsistency with local transportation plans

These advantages and disadvantages, along with other criteria established, will be used in the evaluation process with the Build Alternatives. The No-Build Alternative will remain a viable alternative throughout the PD&E Study process.

4.2 *Transportation System Management*

Transportation Systems Management (TSM) are actions designed to achieve short-range cost-effective transportation improvements. TSM improvements can include:

- Improve the efficiency of an existing roadway;
- Reduce vehicle use in congested areas;
- Improve transit service; and
- Improve internal transit management efficiency

While Transportation System Management (TSM) measures such as signal timing improvements, signing and marking improvements, intersection improvements, and travel demand management strategies could result in small operational improvements, TSM measures alone would not adequately address the major need for the project, which

is to increase the roadway capacity to meet projected future travel demand. Therefore, the TSM Alternative is not considered viable as a replacement for the Build Alternatives. As development continues to occur, however, some TSM improvements could be prudent for the county/FDOT to include in development orders, or include as potential interim improvements, since construction of the Build Alternative is not currently funded.

4.3 Build Alternatives

The following steps were utilized to develop and evaluate viable Build Alternatives:

- Base concept plans were prepared using all available data regarding existing right of way (ROW) including county geographic information systems (GIS), FDOT ROW maps, and subdivision plats as well as planned or proposed ROW dedications by developers
- The required number of through lanes was determined based on the traffic analysis summarized in Section 5.6
- Typical sections were developed based on standard design criteria
- Alternative alignments were analyzed to minimize right-of-way costs
- One basic Build Alternative was developed (consistent with the project's scope of services) and an additional alignment alternative was developed for the area near Big Bend Road to potentially reduce right-of-way costs.
- The Recommended Alternative is described in Section 5, and conceptual design plans for it are included at the back of this report

4.3.1 Design Criteria

The proposed roadway design standards are summarized in the two tables below. **Table 4-1** gives the access management standards that must be followed for this existing Access Management Class 3 facility. **Table 4-2** gives general roadway design criteria, based primarily on FDOT's *Plans Preparation Manual* (PPM) and the American Association of State Highway and Transportation Official's (AASHTO) *A Policy of Geometric Design of Highways and Streets* (the "Green Book").

Table 4-1. FDOT's Access Management Standards

Access Class	Facility Design Features	Minimum Median Opening Spacing			Minimum Signal Spacing	Minimum Connection Spacing
	Median Treatment & Service Roads	Units	Directional (Prohibits left turns from side streets)	Full		>45 mph / ≤ 45 mph (posted speed)
2	Restrictive with Service Roads	ft	1,320	2,640	2,640	1,320/660
		mi	0.25	0.5	0.5	0.25/0.125
3	Restrictive *	ft	1,320	2,640	2,640	660/440
		mi	0.25	0.5	0.5	0.125/0.0833
4	Non-Restrictive	ft	N/A	N/A	2,640	660/440
		mi	N/A	N/A	0.5	0.125/0.0833
5	Restrictive	ft	660 ft	Over 45 mph / ≤ 45 mph 2,640/1320	2,640/1320	440/245
		mi	0.125	0.5/0.25	0.5/0.25	0.0833/0.0464
6	Non-Restrictive	ft	N/A	N/A	1320	440/245
		mi	N/A	N/A	0.25	0.0833/0.0464
7	Both Median Types	ft	330	660	1320	125
		mi	0.0625	0.125	0.25	0.0237

* Restrictive means medians which prevent vehicles from crossing due to curbs, grass, or other barriers.

Source: Florida Department of State, Florida Administrative Code, FDOT Rule Chapter 14-97.

Table 4-2. US 41 Roadway Design Criteria

DESIGN ELEMENT	6L Suburban Typical Section	6L Urban With Auxiliary Lanes	6L High-Speed Urban with Auxiliary Lanes	SOURCE
Functional Classification	Urban Principal Arterial	Urban Principal Arterial	Urban Principal Arterial	FDOT SLD
Design Year	2030	2030	2030	Traffic Report
Design Speed	50 mph	45 mph	50 mph	(2) Sections 2.16.1, 1.9.1 and 2.17.1
Design Vehicle	WB-62FL	WB-62FL	WB-62FL	(2) Section 1.12
Horizontal Alignment				
Maximum Superelevation	0.05 (use 0.10 table)	0.05	0.05 (use 0.10 table)	(2) Table 2.9.1, Table 2.8.3 & Section 2.16.8 & Section 2.17.10
Maximum Curvature	6° 30'	8° 15'	8° 15'	(2) Table 2.9.1, Table 2.8.3
Maximum Curvature w/o Superelevation	0° 30'	2° 45'	0° 30'	(2) Table 2.8.4
Max. Deflection w/o Horizontal Curve	0° 45' 00"	1° 00'	1° 00'	(2) Table 2.8.1a
Minimum Length of Horizontal Curve	825' Desirable, 400' Minimum	675' Desirable, 400' Minimum	750' Desirable, 400' Minimum	(2) Table 2.8.2a
Superelevation Rate	1 :180	1 :160	1 :160	(2) Table 2.9.3 & 2.9.4
Vertical Alignment				
Maximum Grade	5.00%	6.00%	6.00%	(2) Table 2.6.1, Section 2.16.6, & Section 2.17.8
Minimum Grade	0.30%	0.30%	0.30%	(2) Table 2.6.4
Min. Distance Between VPI's	250 ft	250 ft	250 ft	(2) Table 2.6.4
Min. K Value for Crest Vertical Curves	185	98	136	(2) Table 2.8.5 & Table 2.6.2
Min. K Value for Sag Vertical Curves	115	79	96	(2) Table 2.8.6
Minimum Curve Length	Crest: 350 ft Sag: 250 ft	Crest & Sag: 135 ft (min 3V)	Crest: 300 ft Sag: 200 ft	(2) Table 2.8.5 & 2.8.6
Max. Change In Grade w/o Vertical Curve	0.50%	0.70%	0.60%	(2) Table 2.6.2
Clearance for the Roadway Base Course above the Base Clearance Water Elevation	1'	1'	1'	(2) Table 2.6.3
Roadway Cross-Section				
Lane Widths	12' (Desirable) 11' (Min)	12' (Desirable) 11' (Min)	12' (Desirable) 11' (Min)	(2) Table 2.1.1
Cross Slopes (Roadway)	2% two inside lanes 3% outside lanes	2% two inside lanes 3% two outside lanes	2% two inside lanes 3% two outside lanes	(2) Figure 2.1.1
Cross Slopes (Shoulder)	6% (Shoulder)	-----	-----	(2) Section 2.3.2
Median Width	30'	22' Minimum; 30' for dual left turns	30'	(2) Section 2.16.3, Table 2.2.1, & Section 2.17.4
Shoulders	Full Width 8' Paved Width 5'	-----	Full Width 8' Paved Width 6.5'	(2) Section 2.3.2 (2) Table 2.3.2 and Section 2.17.5
Horizontal Clearance	30' from travel lane	24' from travel lane	24' from travel lane	(2) Table 2.11.11
Slopes				(2) Section 2.4
Front	1 :6 to edge of HC, then 1:3	1 :6 to edge of HC, then 1:3	1:2, not flatter than 1:6	
Back	1 :4 when R/W permits or 1:3	1 :4 when R/W permits or 1:3	1:2, not flatter than 1:6	
Minimum Border Width	35'	12' with bike lanes; 14' without bike lanes	29'	(2) Section 2.16.5, Table 2.5.2 & Section 2.17.7
Access Classification				
Proposed	Class 3	Class 3	Class 3	FDOT's Roadway Characteristics Inventory (RCI)
Minimum Level Of Service	D	D	D	(4) FDOT's LOS Standards

- SOURCES**
- (1) AASHTO "Policy On Geometric Design Of Highways And Streets" (2004)
 - (2) FDOT Plans Preparation Manual, Volume I English (Revised January 2009)
 - (3) Roadway Typical Sections
 - (4) 2007 LOS Issue Papers (2002 LOS Handbook Addendum) and 2007 Generalized Q/LOS Tables

4.3.2 Typical Sections

Both rural and suburban typical sections were initially considered, given that the existing roadway is 4-lane rural, and the minimum existing right-of-way is 182 feet in width. A 6-lane rural typical section isn't practical as it would require 224 ft (+/-) of right-of-way, which would result in the need for additional right-of-way for most of the project limits. A 6-lane suburban typical section requires a minimum 182 feet of right-of-way, so it was determined to be the Recommended typical so as to minimize right-of-way costs and impacts to adjacent properties and the natural environment.

As a result of the intersection traffic analysis conducted (Reference: *Draft Traffic Technical Memorandum, June 2008*), it was determined that auxiliary thru lanes would be needed in the vicinity of US 41 at Apollo Beach Boulevard and at Big Bend Road, to help improve the future intersection levels of service. This required consideration of an 8-lane *urban* typical section in order to minimize right-of-way costs and impacts. In addition, a 0.92-mile segment of US 41 between Big Bend Road and Pembroke Road is part of a Strategic Intermodal System (SIS) connector route which connects the Port of Tampa to I-75. SIS standards call for a design speed of 50 miles per hour or higher for urban typical sections. This necessitated consideration of a "high-speed urban" typical section for the SIS connector segment. Existing and proposed typical sections are shown in **Figure 4-1**. All typical sections considered include facilities for nonmotorized users (bicyclists, pedestrians, etc.).

4.3.3 Selection of Recommended Alternative

The Recommended Build Alternative includes a 6-lane suburban typical section in most areas and a 6-lane urban with auxiliary lanes typical section in the vicinity of Apollo Beach Boulevard and Big Bend Road. Construction of stormwater management facilities are also included as part of the proposed project. Some revisions to proposed median opening locations may occur as a result of public comments to be received at the future public hearing. The Recommended Alternative is described in greater detail in the following section.

The *advantages* of the Recommended Build Alternative include the following:

- Improved regional connectivity
- Reduced traffic congestion
- Improved safety
- Consistency with the Hillsborough County MPO's Year 2025 Long Range Transportation Needs Plan, and
- Aesthetic improvement opportunities

The *disadvantages* of the Recommended Build Alternative include the following:

- Costs associated with design, right-of-way acquisition and construction
- Potential relocations of businesses
- Temporary traffic disruptions, and
- Environmental effects

Section 5 - RECOMMENDED ALTERNATIVE

5.1 Typical Section

Figure 4-1 shows both the existing and proposed roadway typical sections for the proposed project (Recommended Build Alternative). The basis for the development of these typical sections is discussed in Section 4.3.2.

5.2 Horizontal Alignment

The proposed roadway alignment follows the existing roadway alignment with minor shifts from side to side to minimize right-of-way acquisition requirements. In most areas, the existing 4-lane rural highway is *not centered* in the existing right-of-way; therefore, it was not possible to simply add additional lanes on the outside of the existing roadway without requiring long strips of additional right-of-way to be acquired in most areas.

Existing horizontal curves are shown in Table 5-1. The degrees of curves for the proposed alignment are generally very close to the existing degrees of curves. Most of the existing curves meet minimum standards for a 55 mph design speed. For curve #8, Table 2.9.1 from FDOT's Plans Preparation Manual shows that a superelevation rate of 0.037 would yield a design speed of 55 mph. Therefore, curve #8 would need to have slight pavement overbuild to meet the current criteria.

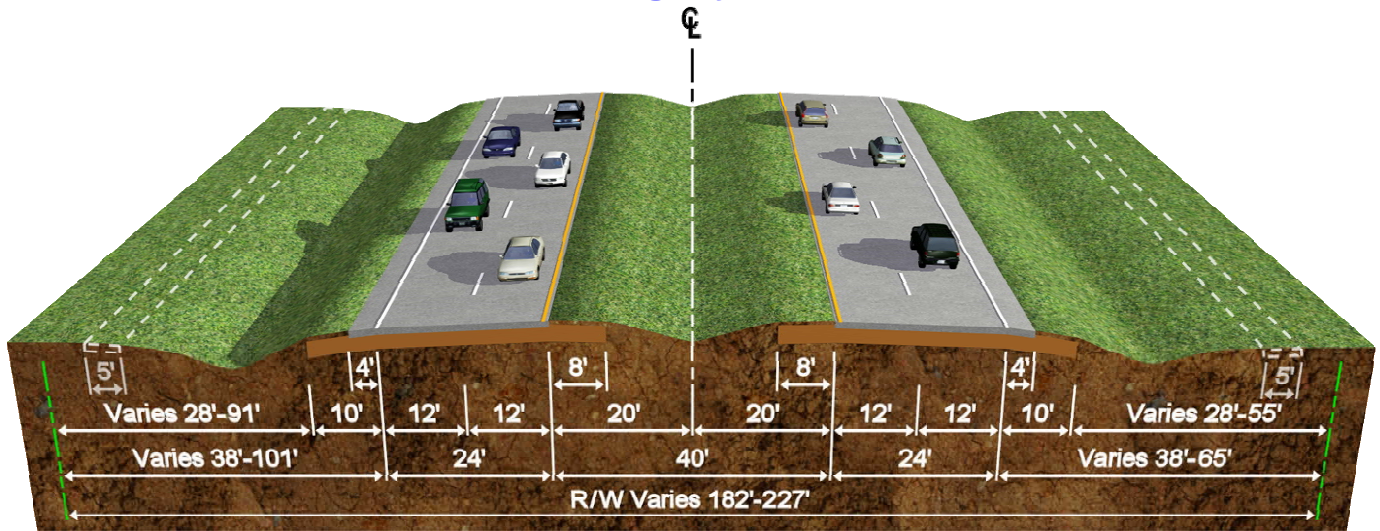
Table 5-1. Existing Horizontal Curves

Curves for Centerline of Construction, from 2007 Resurfacing Plans

Curve #	PI Station	Degree of Curve	Length	Super-elevation	Design Speed based on current standards
C3	167+69.92	0° 29' 55"	1,100.49'	NC	55 mph
C4	249+03.61	0° 19' 59"	1,050.23	NC	55 mph
C5	259+52.62	0° 20' 01"	1,047.79	NC	55 mph
C6	281+62.23	2° 01' 21"	919.73	0.048	55 mph
C7	349+86.56	2° 32' 07"	1,099.07	0.058	55 mph
C8	471+36.79	1° 23' 21"	1,047.74	0.036	54.17 mph

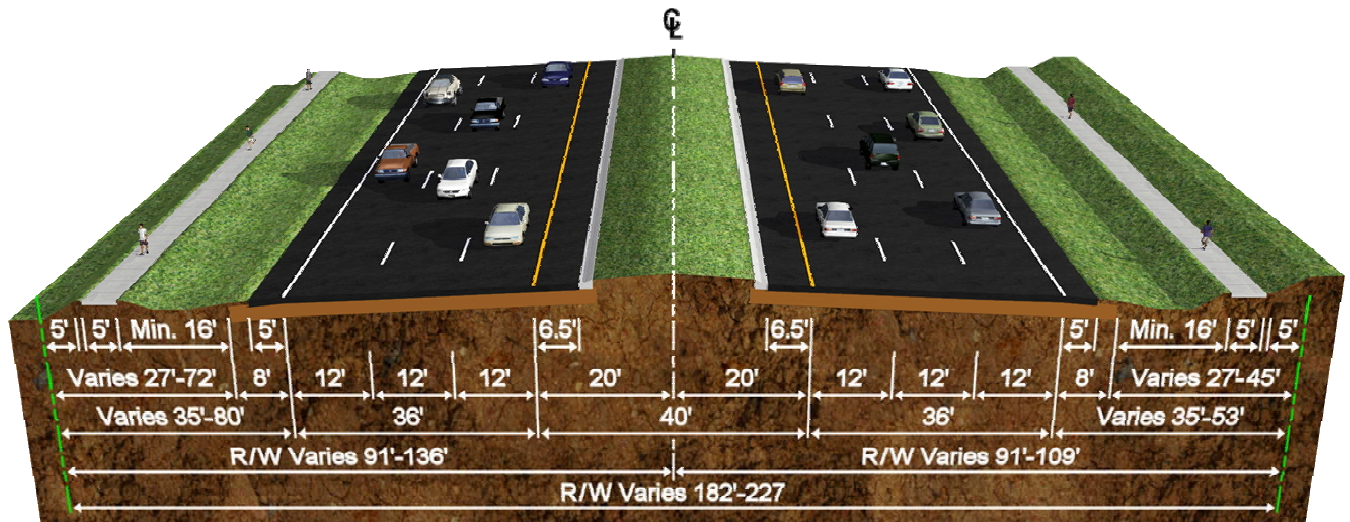
NC = normal crown

US 41 Existing Typical Section



(Existing 5-ft sidewalks are intermittent)

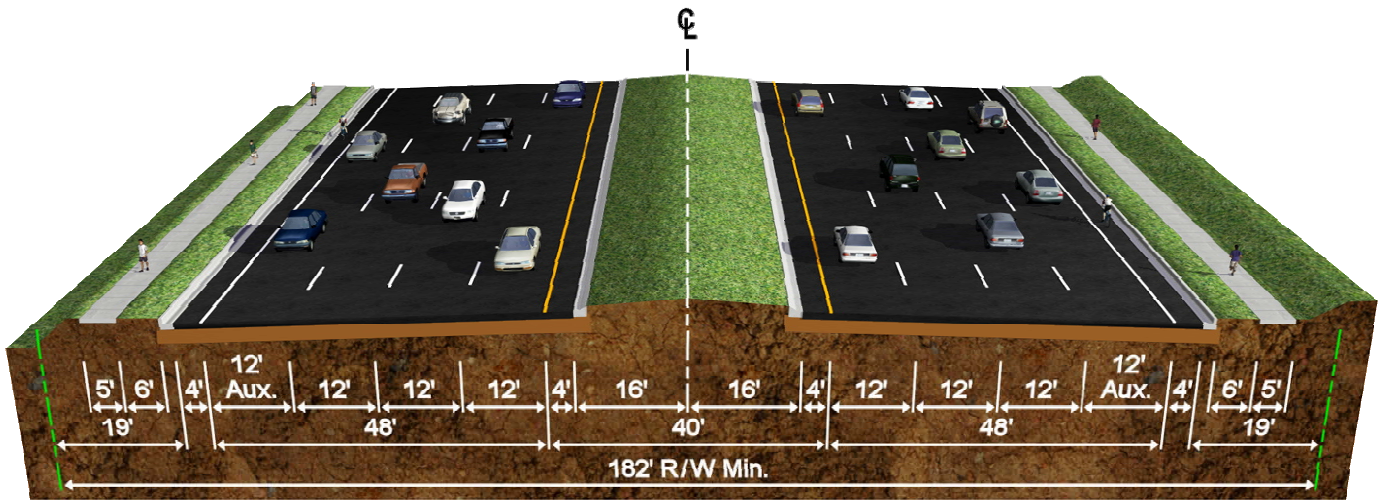
US 41 Proposed Suburban Typical Section



6-Lane Suburban

Design Speed = 50 MPH

Rev. 7/30/09

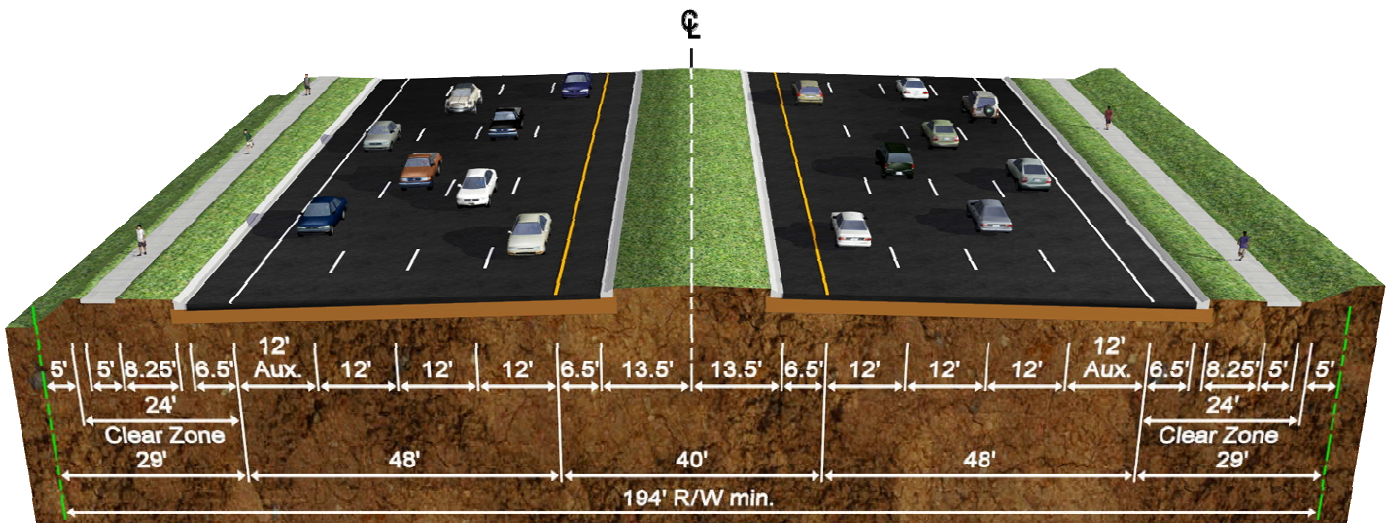


6-Lane Urban with Auxiliary Lanes*

Design Speed = 45 MPH

*This typical section applies to two segments:

1. From Flamingo Drive to approximately 1000 ft north of Apollo Beach Blvd
2. Approximately 1000 ft south of Big Bend Road to Big Bend Road



6-Lane High-Speed Urban with Auxiliary Lanes**

Design Speed = 50 MPH

**This typical section applies to US 41 from Big Bend Road to Pembroke Road, which is part of a Strategic Intermodal System (SIS) connector route which connects the Port of Tampa to I-75.

Rev. 2/27/09

5.3 Vertical Alignment

The existing roadway profile is generally flat due to the proximity to Tampa Bay. Roadway elevations vary from approximately 6 feet to 12 feet (NGVD 1929) based on a review of cross sections and drainage map topographic information. No overpasses along US 41 are proposed. Existing minimum and maximum grades are unknown but appear to be very flat. Proposed grades will generally match existing grades, except that they will be modified for the proposed urban typical section segments to provide a minimum longitudinal grade of 0.3 percent, for drainage purposes.

5.4 Drainage

Drainage and stormwater management improvements will be required in order to comply with regulatory requirements for environmental permitting due to the addition of impervious area for the proposed roadway widening. The required drainage improvements will include the addition of a closed drainage system consisting of a combination of shallow swales with ditch-bottom inlets and underground pipes. The required stormwater management improvements will provide water quality treatment for the additional impervious area and discharge attenuation for same. Existing drainage patterns and points of discharge will be maintained and water quality will not be adversely impacted. The limits of the proposed project traverse seven regional sub basins within the Alafia River Regional Basin (**Table 5-2**).

A Draft Pond Sizing Analysis Memorandum was prepared for this proposed project. The pond sizing analysis identified potential stormwater management and floodplain compensation site requirements to serve the proposed improvements. The calculations summarized below from the *Memorandum* are preliminary and help in estimating the preliminary size of the pond site facilities for each basin. Conceptual calculations are included in the *Memorandum* appendices.

The stormwater management requirements were estimated based on the difference between the existing condition and the conceptual improvements estimated runoff volumes (non-routing method). Water quality requirements are also estimated based on both standard water quality and Total Maximum Daily Load (TMDL) requirements. Facilities can be combined, where possible, to reduce the number of pond sites and realize efficiencies in maintenance and access areas. Preliminary estimates of pond size requirements are included in **Table 5-2**.

Table 5-2. Drainage Basin Data & Stormwater Management Requirements

Regional Drainage Basin	Regional Sub Basins	Project Basin No.	Project Basin Boundaries	Project Basin Acreage	Outfall Location & Side	Wet Detention Area (ac)	Dry Retention Area (ac)	SWF Total Area (ac)
Alafia River	Wolf Branch Cutoff Canal	1A	Sta 162+50 to Sta 173+72	5.07	Sta 169+50 LT	1.34	0.45	1.79
		1	Sta 173+72 to Sta 189+03	6.32	Sta 180+60 LT	1.73	0.54	2.27
		2	Sta 189+03 to Sta 230+00	17.15	Sta 199+33 LT	4.70	1.45	6.15
	Golf Course Drain	3	Sta 230+00 to Sta 253+08	9.66	Sta 237.09 LT	2.65	0.82	3.47
	Apollo Beach Canal	4	Sta 253+08 to Sta 275+41	9.33	Sta 260+81 LT	2.56	0.79	3.35
	Newman Branch	5	Sta 275+41 to Sta 321+87	19.47	Sta 284+03 LT	5.34	1.65	6.99
	Big Bend Bayou	6	Sta 321+87 to Sta 340+33	7.69	Sta 324+50 LT	2.11	0.65	2.76
		7	Sta 340+33 to Sta 372+72	14.62	Sta 365+19 LT	4.01	1.25	5.26
		8	Sta 372+72 to Sta 391+30	6.76	Sta 382+64 LT	1.85	0.57	2.42
		9	Sta 391+30 to Sta 402+23	4.52	Sta 395+95 LT	1.24	0.38	1.62
		10	Sta 402+23 to Sta 411+94	4.10	Sta 407+04 LT	1.13	0.35	1.48
		11	Sta 411+94 to Sta 439+78	11.61	Sta 418+32 LT	3.18	0.98	4.16
		12	Sta 439+78 to Sta 444+27	1.88	Sta 442+57 LT	0.52	0.16	0.68
	Kitchen Branch	13	Sta 444+27 to Sta 458+13 (west of centerline)	2.90	Sta 451+34 LT	0.80	0.25	1.05
	Direct Runoff to Bay	14	Sta 444+27 to Sta 471+26 (east of centerline)	5.64	Sta 471+26 RT	1.55	0.48	2.03
15		Sta 458+13 to Sta 471+26 (west of centerline)	2.73	Sta 471+26 LT	0.75	0.23	0.98	
Totals				129.45	--	35.46	11.00	46.46

Note: stations are shown on the concept plans included at the back of the report

5.5 Structures

There are no bridge structures located within the proposed project limits; however, there are two large bridge culverts as shown in **Table 5-3**. Determination of widening verses replacement will be made during the final design phase, assuming extending them is hydraulically reasonable.

Table 5-3. Existing Bridge Culverts

Stream Crossing & Structure #	Approx. Station	Type of Structure	Dimensions	Year Built	Inspection Date & Sufficiency Rating
Wildcat Creek 100091	261+00	Concrete Box Culvert	Triple 12' x 8'	1962	3/7/07 Rating: 69
Newman's Branch 100092	324+50	Concrete Box Culvert	Double 6' x 10'	1962	3/7/07 Rating: 69

Sources: Straight Line Diagram Inventory, RCI Database, and Florida Bridges Information; stations are shown on the concept plans included at the back of the report

5.6 Design Traffic Volumes

5.6.1 Traffic Projections

For traffic analysis purposes, the following traffic years were agreed on with District Seven staff; in addition, recommended traffic “design factors” are summarized in **Table 5-4**.

Existing Year: 2007

Opening Year: 2010

Mid Year: 2020

Design Year: 2030 (Build & No-Build Scenarios)

Table 5-4. Recommended Traffic Design Factors

Factor	Recommended Value
K ₃₀	9.7%
D ₃₀	55.78%
¹ T ₂₄	8.0%
² T ₂₄	13.0%
PHF	0.95

¹ South of Big Bend Road

² North of Big Bend Road

Year 2007 traffic volumes along the corridor ranged from a low of 17,400 Vehicles Per Day (VPD) south of 19th Avenue to a high of 31,100 VPD north of Flamingo Drive. Future traffic projections were developed using the Tampa Bay Regional Planning Model (TBRPM) as a baseline guide. The 2030 design year projected traffic volumes range from a low of 36,400 VPD south of 19th Avenue to a high of 57,800 VPD south of Gibsonton Drive. The annual average daily traffic (AADT) for year 2007 as well as year 2030 is shown in **Figure 5-1**. The directional design hour volumes (DDHVs) for the year 2030 Build alternative are shown in **Figure 5-2**. DDHVs for the future No-Build alternative and for the interim years of 2010 and 2020 are included in the *Traffic Technical Memorandum*.

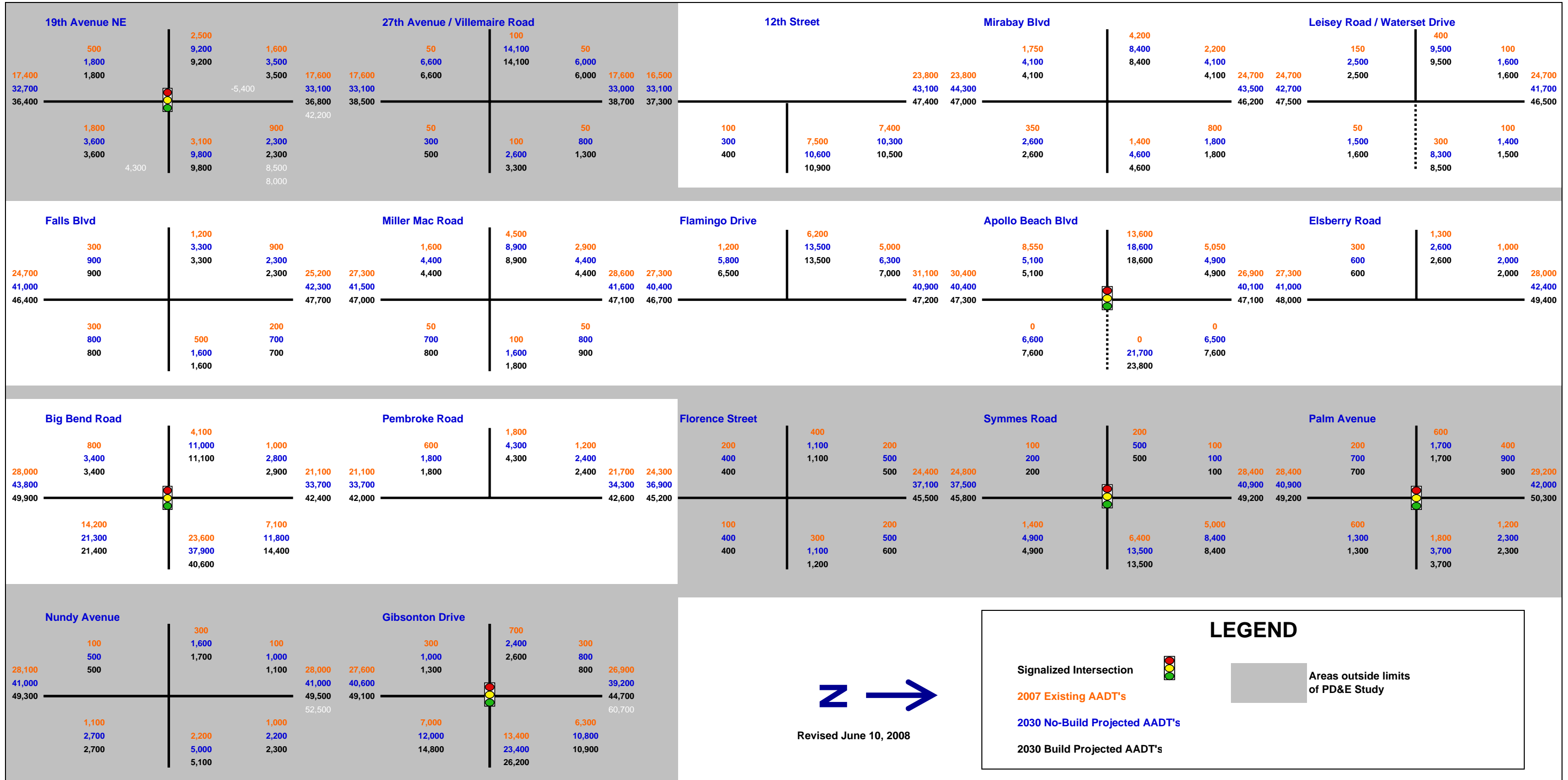
5.6.2 Future Levels of Service

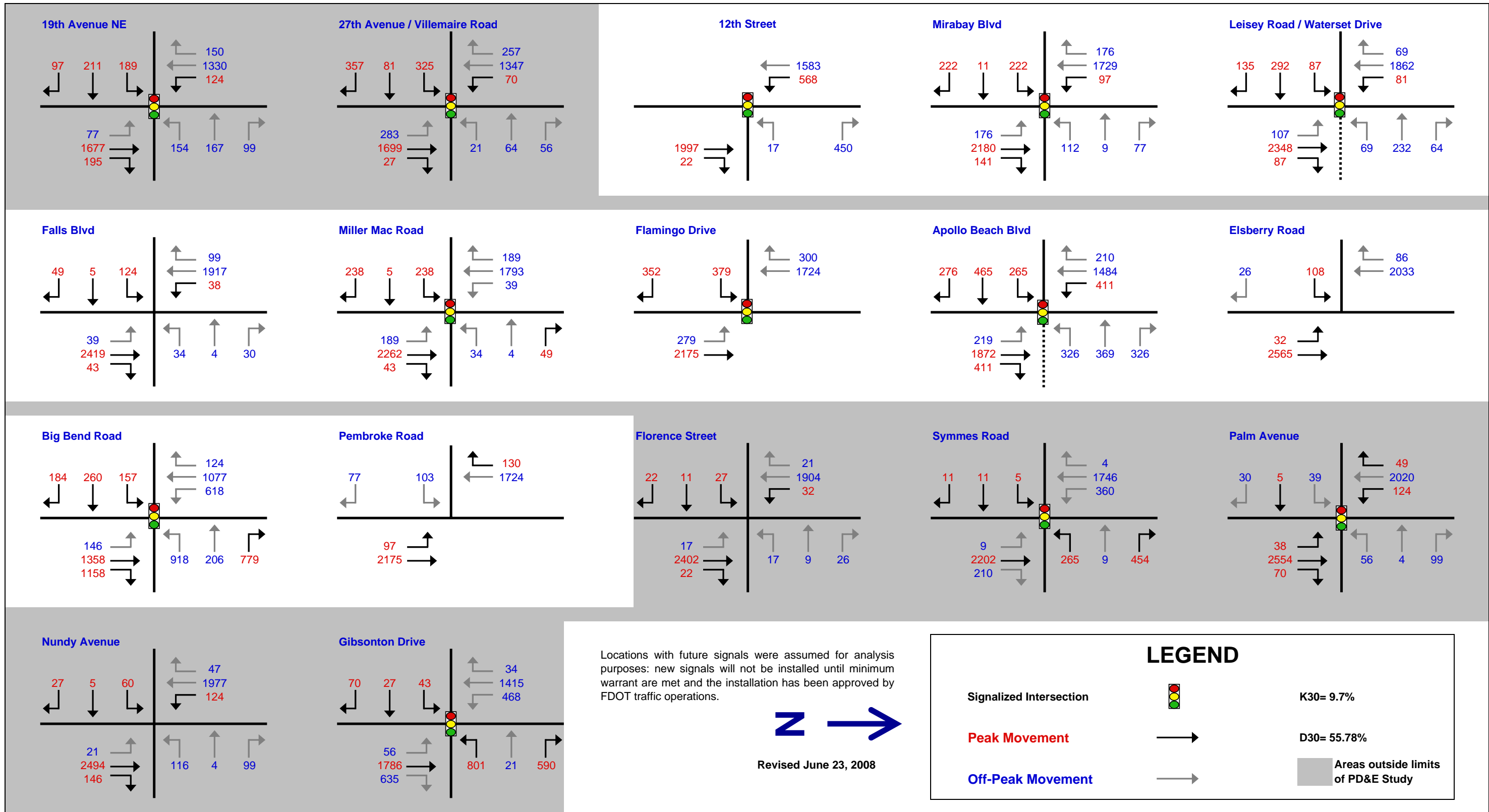
Future projected levels of service (LOS) for the major intersections within the study limits are shown in **Table 5-5**, based on the proposed intersection laneage described in Section 5.7. The LOS results were determined from SYNCHRO (version 7) and the Highway Capacity Software (HCS+, version 5.21), based on the projected DDHV. With the intersection laneage proposed, all of the proposed signalized intersections are predicted to operate at LOS B or D in the a.m. and p.m. peak periods in the design year 2030. For the unsignalized intersections, the predicted side street LOS ranges from B to F.

The following additional locations are recommended for signalization in the future, when warranted by traffic and crash data:

- US 41 at 27th Avenue/Villemare Road
- US 41 at 12th Avenue
- US 41 at Mirabay Boulevard
- US 41 at Leisey Road/Waterset Drive
- US 41 at Miller Mac Road
- US 41 at Flamingo Drive

Locations with future traffic signals were assumed for analysis purposes; new signals will not be installed until minimum warrants are met and the installation has been approved by FDOT traffic operations. Without signalization, the LOS for the side streets at these six intersections would be LOS F, and these intersections would need to accommodate high numbers of U-turns due to the proposed directional median openings to be located on either side of each of these intersections.





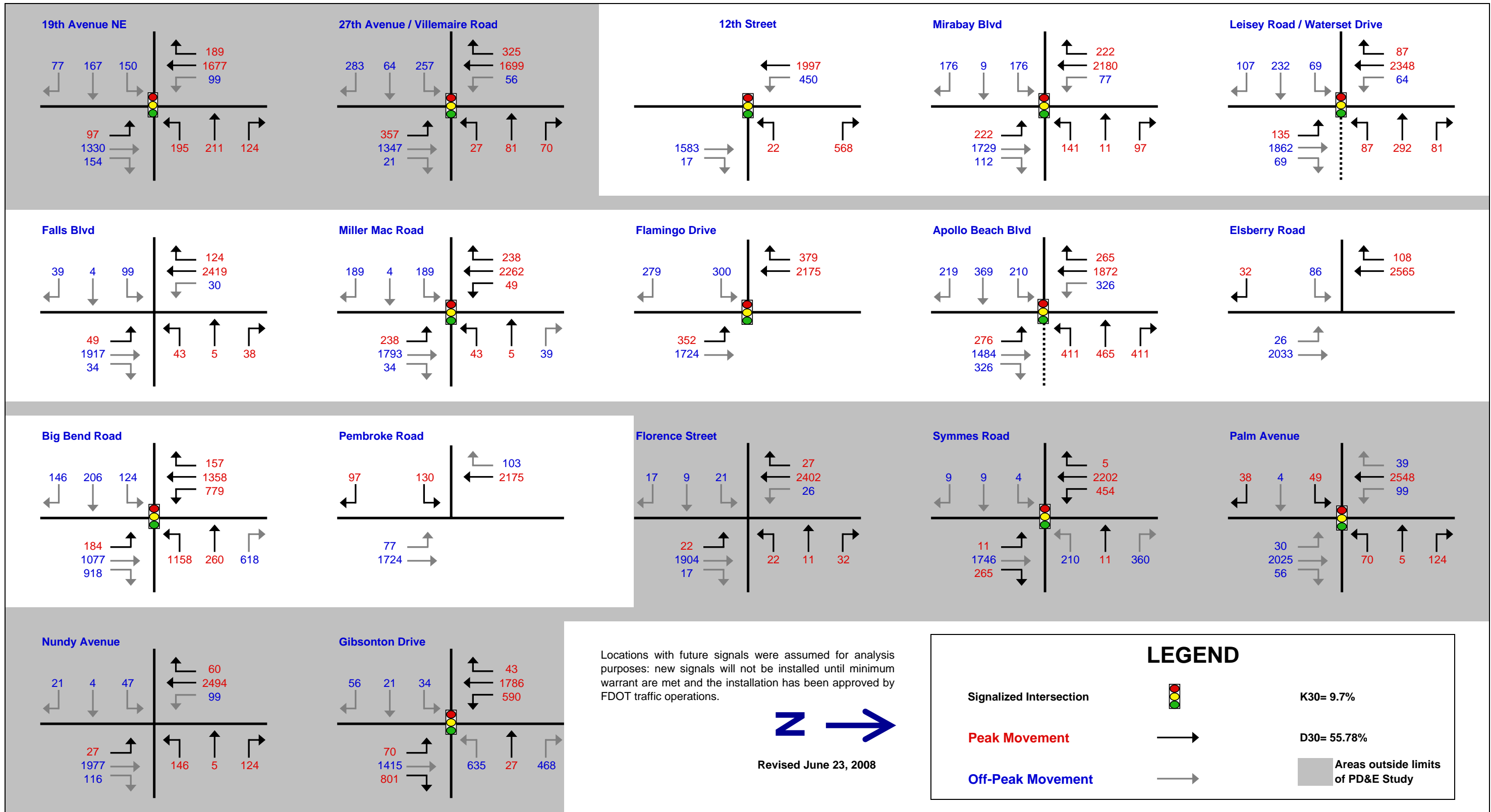


Table 5-5. Year 2030 Build Alternative Levels of Service

Existing and Potential Signalized Intersection LOS & Delay (sec./veh)										
Intersection	AM					PM				
	LOS (Delay)					LOS (Delay)				
	EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
US 41 at Gibsonton Drive	D (41.3)	D (39.3)	D (42.2)	C (32.6)	D (38.4)	D (38.7)	D (41.1)	C (31.0)	D (51.0)	D (41.2)
US 41 at Palm Avenue	E (61.5)	C (33.8)	C (30.1)	C (21.5)	C (27.0)	E (79.6)	C (33.9)	C (30.3)	D (39.2)	D (36.1)
US 41 at Symmes Road	D (51.5)	D (34.2)	D (48.9)	B (16.3)	C (33.9)	C (27.4)	C (25.2)	C (20.7)	B (16.2)	B (18.9)
US 41 at Big Bend Road	E (60.5)	D (39.9)	D (40.6)	C (32.8)	D (40.1)	D (37.2)	D (40.9)	C (32.7)	D (41.7)	D (38.3)
US 41 at Apollo Beach Blvd	E (59.2)	D (47.9)	D (42.0)	C (30.2)	D (41.8)	C (32.9)	D (49.7)	D (47.1)	D (41.3)	D (43.7)
US 41 at Flamingo Drive ¹	D (51.5)		B (14.8)	A (8.0)	B (17.3)	C (33.3)		B (15.6)	A (7.1)	B (13.4)
US 41 at Miller Mac Road ¹	D (42.7)	C (21.6)	C (24.5)	B (19.8)	C (24.3)	D (41.7)	C (27.8)	B (18.8)	D (41.0)	C (31.8)
US 41 at Leisey Road ¹	D (47.1)	D (38.0)	D (35.9)	C (23.3)	C (32.4)	D (48.6)	E (60.4)	C (20.7)	D (49.8)	D (39.5)
US 41 at Mirabay Boulevard ¹	C (31.8)	D (42.8)	C (30.7)	C (21.2)	C (28.1)	C (25.4)	C (25.4)	B (17.0)	C (19.3)	B (19.1)
US 41 at 12th Street ¹		C (28.9)	C (21.1)		C (28.5)		C (25.3)	C (20.0)		C (25.2)
US 41 at 27 th Avenue NE ¹	D (50.1)	E (75.3)	D (41.4)	C (28.4)	D (39.1)	D (38.9)	D (54.4)	C (25.7)	D (36.5)	C (33.5)
US 41 at 19 th Avenue NE	E (72.0)	B (17.4)	C (28.9)	C (21.2)	C (29.9)	E (55.3)	B (19.8)	B (16.8)	C (24.5)	C (23.9)

Un-Signalized Intersection (Two-Way Stop Controlled) LOS & Delay (sec./veh)										
Intersection ²	AM					PM				
	LOS (Delay)					LOS (Delay)				
	EB	WB	NB (Lt)	SB (Lt)	Overall	EB	WB	NB (Lt)	SB (Lt)	Overall
US 41 at Nundy Avenue			C (20.4)	F (133.7)	N/A			F (69.0)	D (33.8)	N/A
US 41 at Florence Street	F (N/A)	F (N/A)	C (21.3)	E (37.3)	N/A	F (N/A)	F (N/A)	D (34.9)	C (21.9)	N/A
US 41 at Pembroke Road	F (10360)		C (23.8)		N/A	F (19283)		E (38.8)		N/A
US 41 at Elsberry Road	F (17081)		C (23.3)		N/A	F (20361)		E (38.2)		N/A
US 41 at Falls Boulevard	D (27.7)	F (N/A)	C (21.6)	E (37.5)	N/A	E (42.5)	F (N/A)	E (38.9)	C (21.5)	N/A

Arterial LOS & Speed (mph)						
Arterial LOS Segment US 41	AM			PM		
	LOS (Speed)			LOS (Speed)		
	NB	SB		NB	SB	
South of 19th Avenue NE	E (16.5)			D (21.9)		
From 19th Avenue to 27th Avenue NE	C (29.4)	B (37.1)		B (36.6)	B (34.6)	
From 27th Avenue NE to 12th Street	F (11.3)	F (9.7)		F (11.7)	F (8.2)	
From 12th Street to Mirabay Boulevard	E (17.5)	F (12.6)		D (25.1)	F (14.6)	
From Mirabay Boulevard to Leisey Road	C (27.0)	C (34.0)		B (35.7)	B (34.3)	
From Leisey Road to Miller Mac Road	A (43.7)	B (41.7)		A (46.5)	C (32.1)	
From Miller Mac Road to Flamingo Drive	E (19.9)	F (15.9)		D (23.2)	F (10.1)	
From Flamingo Drive to Apollo Beach Blvd	F (13.9)	C (28.9)		F (12.7)	C (29.7)	
From Apollo Beach Blvd to Big Bend Road	B (38.6)	A (43.9)		B (37.9)	B (39.0)	
From Big Bend Road to Symmes Road	A (44.3)	A (46.5)		A (48.6)	A (43.1)	
From Symmes Road to Palm Avenue	D (22.5)	C (33.4)		D (22.4)	C (33.1)	
From Palm Avenue to Gibsonton Drive	D (22.2)	C (34.0)		D (25.7)	D (25.8)	
North of Gibsonton Drive		D (23.1)			E (16.2)	
Overall Average	C (31.0)	B (35.1)		B (34.3)	C (30.9)	

= Areas outside the limits of this PD&E Study

¹ Locations with future traffic signals were assumed for analysis purposes; new signals will not be installed until minimum warrants are met and the installation has been approved by FDOT traffic operations.

² At two-way stop controlled (TWSC) intersections, the critical movement often the minor-street left turn, may control the overall performance of the intersection. Therefore, the results of the Highway Capacity Software (HCS) analysis showed only the Level of Service (LOS) of that critical approach or movement.

Table 5-5 also shows the overall projected arterial LOS for the 2030 Build Alternative. Arterial LOS was derived from ARTPLAN. For the year 2030 Build Alternative, the overall arterial peak period LOS is predicted to be LOS B for both directions for both peak periods, as shown in the table. In the vicinity of Apollo Beach Boulevard and Big Bend Road, widening US 41 to 6 plus 2 auxiliary thru lanes will be needed, based on the future traffic projections and SYNCHRO analysis.

5.7 Intersection Requirements

Future recommended laneage at major intersections is shown in **Figure 5-3**, based on design year projected a.m. and p.m. peak hour turning volumes. Several new traffic signals are proposed, as mentioned in the previous section.

Preliminary recommendations for lengths of left-turn and right-turn auxiliary lanes are shown in **Table 5-6**. Two different methods were compared and utilized to determine predicted queue lengths: a common “red time formula” and the *SYNCHRO* model. In most cases, the *SYNCHRO* queue lengths were used, in combination with the required deceleration distances based on FDOT’s Standard Index 301. Prior to the end of the future design phase, these auxiliary lane lengths should be reevaluated based on updated design hour volumes for both the a.m. and p.m. peak periods.

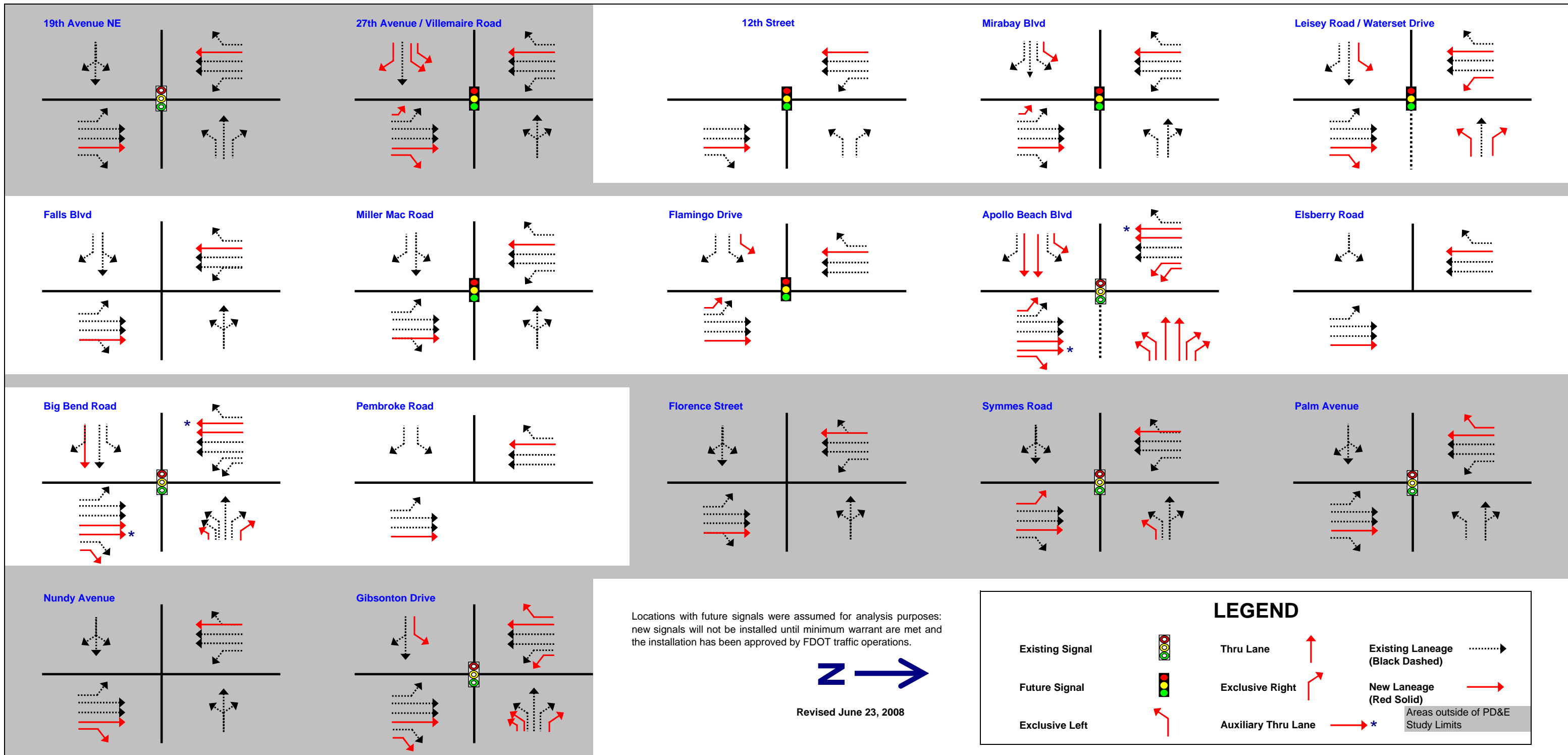


Table 5-6. Recommended Auxiliary Lane Lengths

Based on Year 2030 Peak Directional Design Hour Volumes

Intersection Approach & Lane Group	(1) Peak Hour Traffic (VPH)	(2) Cycle Length (Sec.)	(3) (1- g/c)	(4) No. of Prop. Lanes	(5) Random Arrival Factor K	(6) Req Queue (ft)		(7) Design Speed (mph)	(8) "L" Distance From Index No. 301 (ft)	(9) Column (6) + Column (8) (feet)	(10) Recommended Lane Lengths ¹ (ft.)	Notes
						From ITE Formula						
US 41 & 12th Street Intersection												
WB Left	22	90	0.88	1	1.5	23		30	145	168	175	2
Right	568	130	0.51	1	1.5	404		30	145	549	550	2
Thru	1997	130	0.55	3	1.5	535		55	0	535	550	
NB Right	22	130	0.55	1	1.5	18		55	350	368	375	5
Left	568	130	0.60	1	1.5	498		55	350	848	850	5
US 41 & Mirabay Boulevard Intersection												
EB Left	222	120	0.84	1	1.5	238		30	145	383	400	2
Thru	11	120	0.92	1	1.5	13		30	0	13	25	
Right	222	120	0.92	1	1.5	260		30	145	405	425	2
WB Left	141	120	0.82	1	1.5	153		30	145	298	300	2
Left	222	100	0.90	2	1.5	112		55	350	462	475	5
Thru	2180	120	0.48	3	1.5	471		55	0	471	475	
Right	141	120	0.31	1	1.5	59		55	350	409	425	5
Left	97	120	0.88	1	1.5	115		55	350	465	475	5
Thru	2180	100	0.44	3	1.5	360		55	0	360	375	
Right	222	120	0.31	1	1.5	93		55	350	443	450	5
US 41 & Leisey Road/Wateret Drive Intersection												
EB Left	87	90	0.78	1	1.5	65		30	145	210	225	2
Thru	292	90	0.81	1	1.5	226		30	0	226	225	
Right	135	90	0.66	1	1.5	94		30	145	239	250	2
WB Left	87	100	0.79	1	1.5	73		30	145	218	225	2
Thru	292	100	0.82	1	1.5	254		30	0	254	275	
Right	81	100	0.82	1	1.5	71		30	145	216	225	2
Left	135	100	0.87	1	1.5	132		55	350	482	500	5
Thru	2348	90	0.47	3	1.5	372		55	0	372	375	
NB Right	87	90	0.47	1	1.5	41		55	350	391	400	5
Left	81	90	0.90	1	1.5	74		55	350	424	425	5
Thru	2348	100	0.50	3	1.5	440		55	0	440	450	
Right	87	100	0.42	1	1.5	41		55	350	391	400	5
US 41 & Miller Mac Road Intersection												
EB Right	238	120	0.78	1	1.5	237		30	145	382	400	2
Left	238	120	0.82	1	1.5	263		55	350	613	625	5
Left	49	120	0.94	1	1.5	62		55	350	412	425	5
Thru	2262	120	0.50	3	1.5	509		55	0	509	525	
Right	238	120	0.50	1	1.5	161		55	350	511	525	5

Locations with future signals were assumed for analysis purposes: new signals will not be installed until minimum warrant are met and the installation has been approved by FDOT traffic operations.

Table 5-6. Recommended Auxiliary Lane Lengths

Based on Year 2030 Peak Directional Design Hour Volumes

Intersection Approach & Lane Group	(1) Peak Hour Traffic (VPH)	(2) Cycle Length (Sec.)	(3) (1- g/c)	(4) No. of Prop. Lanes	(5) Random Arrival Factor K	(6) Req Queue (ft)		(7) Design Speed (mph)	(8) "L" Distance From Index No. 301 (ft)	(9) Column (6) + Column (8) (feet)	(10) Recommended Lane Lengths ¹ (ft.)	Foot Notes
						From ITE Formula						
US 41 & Flamingo Drive Intersection												
EB Left	379	120	0.86	2	1.5	208	30	145	353	375	2	
EB Right	352	120	0.65	1	1.5	303	30	145	448	450	2	
NB Left	352	90	0.84	2	1.5	150	45	185	335	350	5	
NB Thru	2175	120	0.42	3	1.5	411	45	0	411	425		
SB Thru	2175	90	0.45	3	1.5	330	45	0	330	350		
SB Right	379	90	0.25	1	1.5	96	45	185	281	300	5	
US 41 & Apollo Beach Boulevard Intersection												
EB Left	265	120	0.87	2	1.5	147	30	145	292	300	2	
EB Thru	465	120	0.85	2	1.5	252	30	0	252	275		
EB Right	276	120	0.68	1	1.5	239	30	145	384	400	2	
WB Left	411	90	0.87	2	1.5	171	30	145	316	325	2	
WB Thru	465	120	0.86	2	1.5	255	30	0	255	275		
NB Right	411	90	0.85	2	1.5	167	30	145	312	325	2	
NB Left	276	90	0.88	2	1.5	123	45	185	308	325	3	
NB Thru	1872	120	0.64	4	1.5	404	45	0	404	425		
SB Right	411	120	0.47	1	1.5	261	45	185	446	450	3	
SB Left	411	120	0.82	2	1.5	227	45	185	412	425	3	
SB Thru	1872	90	0.67	4	1.5	317	45	0	317	325		
SB Right	265	90	0.45	1	1.5	121	45	185	306	325	3	
US 41 & Big Bend Road Intersection												
EB Left	157	110	0.87	1	1.5	169	45	185	354	375	3	
WB Left	1158	90	0.74	3	1.5	273	45	185	458	475	3	
WB Thru	260	110	0.79	1	1.5	275	45	0	275	275		
WB Right	779	110	0.55	2	1.5	263	45	185	448	450	3	
NB Left	184	90	0.84	1	1.5	164	55	350	514	525	5	
NB Thru	1358	110	0.72	4	1.5	316	55	0	316	325		
NB Right	1158	110	0.72	2	1.5	540	55	350	890	900	5	
SB Left	779	90	0.79	2	1.5	326	50	290	616	625	4	
SB Thru	1358	90	0.74	4	1.5	266	50	0	266	275		
SB Right	157	90	0.56	1	1.5	93	50	290	383	400	4	

Locations with future signals were assumed for analysis purposes: new signals will not be installed until minimum warrant are met and the installation has been approved by FDOT traffic operations.

Notes: (The distance "L" in column 6 is the total deceleration distance)

¹ All recommendations rounded to nearest 25 ft. ² The 145 ft from Index 301, based on design speed of 35 mph. ³ The 185 ft from Index 301, based on design speed of 45 mph.

⁴ The 290 ft from Index 301, based on design speed of 50 mph. ⁵ The 350 ft from Index 301, based on design speed of 55 mph.

The ITE "red-time" formula is: $L = \frac{(1-G)(Volume)(1+\% trucks)(K)(25 ft/vehicle)}{(\# cycles per hour)(\# traffic lanes)}$ where G = Green time, C = cycle length, and K = random arrival factor (1.5 was used)

Source: ITE's Traffic Engineering Handbook, 1999.

Table 5-6. Recommended Auxiliary Lane Lengths

Based on Year 2030 Peak Directional Design Hour Volumes

Intersection Approach & Lane Group	(1) Heavier of AM or PM (VPH)	(2) Design Speed (mph)	(3) No. of Prop. Lanes	(4) Storage Length (ft) From ITE ²	(5) Storage Length (ft) From FDOT Florida Greenbook ³	(6) Total Deceleration Length ⁴ (ft)	(7) Column (4) + Column (6) (feet)	(8) Column (5) + Column (6) (feet)	(9) Recommended Lane Lengths ¹ (ft.)	Foot Notes
US 41 & Falls Boulevard Intersection										
NB	49	55	1	500	50	350	850	400	400	5,6
US 41 & Elsberry Road Intersection										
NB	32	55	1	500	50	350	850	400	400	5,6
SB	108	55	1	--	100	350	--	450	450	5,6
US 41 & Pembroke Road Intersection										
NB	97	50	1	500	100	290	790	390	400	4,6
SB	130	55	1	--	125	350	--	475	475	5,6
US 41 & Florence Street Intersection										
NB	22	55	1	500	25	350	850	375	375	5,6
SB	32	55	1	500	50	350	850	400	400	5,6
US 41 & Nundy Avenue Intersection										
NB	27	50	1	500	25	290	790	315	325	4,6
Right	146	50	1	--	150	290	--	440	450	4,6
SB	124	50	1	500	125	290	790	415	425	4,6

Notes: (The length in column 4 is the total storage queue length)

¹ All recommendations rounded to nearest 25 ft.

²The storage length is from M.D. Hamerlink Curve from Institute of Transportation Engineers (ITE) Traffic Engineering Handbook.

³The storage length is from FDOT's Florida Greenbook.

⁴The 290 ft total deceleration length from Design Standards Index #301, based on design speed of 50 mph.

⁵The 350 ft total deceleration length from Design Standards Index #301, based on design speed of 55 mph.

⁶The storage values calculated from the Florida Greenbook are recommended as they appear more reasonable.

Locations with future signals were assumed for analysis purposes: new signals will not be installed until minimum warrant are met and the installation has been approved by FDOT traffic operations.

5.8 Access Management

The corridor access management has been evaluated based on Florida Statute 335.18 Rule 14-96 and 14-97, in addition to the FDOT's adopted Median Opening and Access Management Decision Process (Topic No. 625-010-021). US 41 is currently classified as "Access Class 3 (restrictive)" according to FDOT's RCI database. Standards for this access class are included in **Table 4-1**.

The existing and proposed access management and signal spacing is shown in **Table 5-7**. Of the 28 existing median openings located within the study limits, proposed changes include:

- No changes to 14 openings (50 percent of 28)
- Closing 6 openings (21 percent)
- Changing 8 full openings to directional openings (29 percent)

The spacing of potential signalized intersection at two areas does not meet appropriate spacing requirements. These two areas are:

1. Between 27th Avenue/Villemare Road and 12th Street, and
2. Between Miller Mac Road, Flamingo Drive and the existing signal at Apollo Beach Boulevard.

In the 12th Street area, by not showing a signal, a heavy southbound left turn volume will be present. That volume will result in an unacceptable level of service, by further restricting access at 12th Street. Some of the intersection turning volumes at 12th Street were combined with those at 27th Avenue/Villemare Road. The a.m. and p.m. LOS at 27th Avenue /Villemare Road remained acceptable while the LOS at 12th Street is not acceptable.

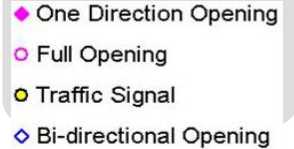
The signal at Flamingo Drive was considered for removal. However, without the proposed signal, the intersection LOS is unacceptable in the a.m. and p.m. peak periods. Coordination is ongoing with the Department's Access Management Unit.

Table 5-7. US 41 Access Management Evaluation

Access Class: **Access Classification 3 (Rule 14-97)**
 Min. Median Spacing: **Directional: 1320 feet; Full: 2640 feet; Signal: 2640 feet**

Note: Proposed future traffic signals would only be installed when warranted and after approval by the District Traffic Operations Engineer

Station on Concept Plans	Intersecting Street or Driveway	Distance from Begin Job		Existing Conditions	Proposed Conditions	Proposed Conditions						Comments		
		Feet	Miles			Directional Openings		Full Openings		Traffic Signals				
						Distance Between Openings	Meets Std or % Deviation	Distance Between Openings	Meets Std or % Deviation	Distance Between Signals	Meets Std or % Deviation			
471.2	Kracker Ave (North end of Job)	30,870	5.85											
458	Adamsville Rd	29,550	5.60			1,320	Meets	3,130	Meets	Greater Than 7,980	Meets			
448	Hanson Pipe	28,550	5.41			1,810	Meets							
439.9	Pembroke Rd	27,740	5.25											
431.6	Powell Rd	26,910	5.10			2,300	Meets	2,300	13%					
416.9	HC solid waste DW	25,440	4.82			1,470	Meets			2,550	3%		Provides southbound left turns and U-turns only	
402.2	So Front. Rd to Maronda (E side)	23,970	4.54			1,080	18%							
391.4	Big Bend Rd	22,890	4.34			1,260	4.5%							
378.8	Proposed Future Development	21,630	4.10			620	33%	6,950	Meets	9,280	Meets		Existing Traffic Signal	
372.6	Bradco Supply	21,010	3.98			1,530	Meets							
362.5	Pacific Tomato Growers	20,000	3.79			1,700	Meets			2,330	12%		Rev. 7/09	
357.3	Pacific Tomato Growers	19,480	3.69			1,840	Meets							
340.3	Dirt driveway on west side - farm	17,780	3.37			1,440	Meets			1,710	35%	1,710	35%	Future Proposed Traffic Signal, when warranted
321.9	Elsberry Rd	15,940	3.02			890	33%							
313.8	Shopping Cntr	15,130	2.87			760	33%			620	77%	620	77%	Future Proposed Traffic Signal, when warranted
307.5	Shopping Cntr	14,500	2.75			950	28%							
298.6	Apollo Bch Blvd	13,610	2.58			2,230	Meets			5,770	Meets		Future Proposed Traffic Signal, when warranted	
291	Winn Dixie Shopping Cntr	12,850	2.43			1,400	Meets							
281.5	Flamingo Dr	11,900	2.25			2,140	Meets			2,860	Meets	2,860	Meets	Provides southbound left turns and U-turns only
275.3	Miller Mac Rd	11,280	2.14			1,510	Meets							
264	Ruskin Vegetable Corp.	10,150	1.92			800	21%			1,510	43%	1,510	43%	Future Proposed Traffic Signal, when warranted
253	Falls Blvd	9,050	1.71			1,140	14%							
239	Tomato Stake Rd	7,650	1.45			2,060	Meets			1,140	57%	1,140	57%	Future Proposed Traffic Signal, when warranted
230	For U-turns only	6,750	1.28			1,510	Meets							
217.6	Leisey Road/Prop Waterset Dr	5,510	1.04			1,140	14%			30,870	30,870	30,870	Distance checks	
197	Future Marketplace at Apollo Beach	3,450	0.65			30,870	Distance checks							
189	Mirabay Blvd/Spindle Shell Way	2,650	0.50											
173.9	12th Street	1,140	0.22											
162.5	Villemaire Rd/27th Ave (Begin Job)	-	0.00											



Existing/Proposed Traffic Signal

5.9 Pedestrian and Bicycle Facilities

All proposed typical sections include sidewalks on both sides as well as either undesignated bicycle lanes or 5-ft paved shoulders which can be used by bicyclists. A resurfacing project (FPID# 413399-1-52-01) underway in 2008 was adding sidewalks in several areas.

5.10 Right Of Way Requirements/Relocations

According to the right-of-way and relocation cost estimate, the proposed project would require the acquisition of approximately 47 acres of land for stormwater management facilities (mostly ponds and outfalls), 69 acres for floodplain compensation sites, and 0.88 acres for mainline parcels.

Potential relocations include a small plant nursery located south of Big Bend Road. In addition, there may be some relocation of signs and personal property at various locations.

5.11 Utilities and Lighting

The following utility companies have facilities located near or within the study limits:

- Hillsborough County Utilities
- Hillsborough County Traffic Services
- Bright House Networks
- Verizon Florida, Inc.
- TECO Peoples Gas
- Tampa Electric (Transmission & Distribution)
- Level Three Communications

Utilities shown on the 2007 resurfacing plans include a 20 to 24-inch DIP water main on the west side of US 41 and reclaimed water mains of various sizes on both sides, as well as a 6-inch gas line on the east side, in addition to buried telephone lines on both sides. Several areas also have PVC sanitary sewer force mains of various sizes on either or both sides of US 41.

In addition to numerous utilities, there is an industrial railroad spur crossing located north of Pembroke Road, at milepost 15.282. According to the SLD, the crossing number is designated as 624780-C. According to the Districts' railroad coordinator, this is a

permanent crossing owned by TECO. Half of it was replaced by TECO’s contractor in conjunction with the milling and resurfacing job in 2008. The crossing is used by a Mosaic Phosphate. TECO doesn’t use the crossing even though they own it. Coordination with CSX Transportation and all utility owners will be required during the design phase to avoid and minimize utility conflicts.

5.12 Traffic Control Plan

A maintenance of traffic analysis will be prepared during final design of the project.

5.13 Production Schedule

The current project production schedule is shown in **Table 5-8**.

Table 5-8. Work Program Schedule

Activity in Current 5-Year Work Program	Fiscal Year
PD&E Study	2007-2009
Right-of-Way Acquisition	Not funded
Construction	Not funded

5.14 Project Cost Estimates

Current cost estimates for the proposed project are shown in **Table 5-9**. Estimates for stormwater ponds are very preliminary at this point as specific alternative sites have not yet been identified.

Table 5-9. Recommended Alternative Project Costs

Cost Category	Preliminary Cost Estimate
Construction*	\$43,000,000
Design	\$4,500,000
Inspection	\$4,500,000
Right-of-Way Acquisition - Roadway	\$11,000,000
ROW Acquisition – Stormwater Ponds & Floodplain Compensation Sites	\$104,000,000
TOTAL	\$167,000,000

*based on April 2009 LRE with 25% unknowns added

Section 6 - ENVIRONMENTAL IMPACTS SUMMARY

6.1 *Natural Environment*

6.1.1 Air Quality

The proposed project is located in Hillsborough County and is currently designated as *attainment* for the following criteria air pollutants: ozone, nitrogen dioxide, particulate matter (2.5 microns and 10 microns in size), sulfur dioxide, carbon monoxide, and lead.

The project was subjected to a carbon monoxide (CO) screening model that makes various conservative worst-case assumptions related to site conditions, meteorology and traffic. The FDOT's screening model, CO Florida 2004 (released September 7, 2004) uses the latest US EPA-approved software (Mobile 6 and CAL3QMC) to produce estimates of 1-hour and 8-hour CO at default air quality receptor locations. The 1-hour and 8-hour estimates can be directly compared to the 1-and 8-hour National Ambient Air Quality Standards (NAAQS) for CO that are 35 parts per million (ppm) and 9 parts per million (ppm), respectively.

The intersection forecasted to have the highest total traffic volume was US 41 at Big Bend Road (CR 672). The opening year (2010) and the design year (2030) were evaluated. Estimates of CO were predicted for the default receptors which are located 10 feet to 150 feet from the edge of the roadway. Based on the results from the screening model, the highest project-related CO 1- and 8-hour levels are not predicted to meet or exceed the 1- or 8-hour NAAQS for the pollutant with either the No-Build or Build alternatives. As such, the project "passes" the screening model.

The project is located in an area that has been designated as *attainment* for the 8-hour NAAQS for ozone under the criteria provided in the Clean Air Act and therefore, transportation conformity requirements do not apply.

6.1.2 Contamination

A *Limited Level I Hazardous Material and Contamination Investigation* report was prepared pursuant to the FDOT's PD&E Manual, Part 2, Chapter 22. According to the report, a total of 23 sites of potential environmental concern were investigated within the study limits through site reconnaissance and review of regulatory records, etc. Ten (10) sites were ranked "low risk"; 11 sites were ranked "medium risk", and 2 sites were ranked "high risk", as shown in **Table 6-1**. Recommendations for further action are included in the table in addition to the risk ratings.

Table 6-1. Potentially Contaminated Sites

Site #	Site Name	Site Address	Databases/ FID Numbers	Contaminant Concerns	Active Storage Tanks	Distance from US 41 ROW/ construction activities	Notes	Risk Rating
1	84 Lumber - Gibsonton	6225 Powell Road	FINDS	None	No	Sta 431 +00 RT 1,000 ft east of roadway	No indication of any hazardous waste or contamination present on the site. No further environmental assessment is recommended.	LOW
2	National Gypsum Apollo Beach Plant/ New NGC, Inc.	12949 US Hwy 41 South	TIER 2, AIRS, FINDS, NPDES, ERNS, TRIS, SPILLS	Multiple Chemical Products	No	Sta 419+00 to 439+30 LT 400 ft from roadway	The National Gypsum Apollo Beach Plant/New NGC, Inc. is an active gypsum manufacturing facility. Numerous chemical compounds are stored at this site, including boric acid, gypsum, calcium hydroxide, sodium hydroxide, DL tartaric acid, dextrose, zinc stearate, ethyl alcohol, fiberglass, fuel oil, propane, sulfuric acid, potassium sulfate, rhodoline, starch, sodium naphthalene sulfonate, sodium phosphate, paraffin wax fume, polyvinyl alcohol, styrene/butadiene copolymer, liquefied petroleum gas, and hydrotreated paraffinic light petroleum oil. The ERNS, TRIS and SPILLS databases indicate that a sulfuric acid spill was reported on the site on 10/01/02. The spilled material was contained and neutralized. Based on a site visit by Shaw on 01/16/09, the facility operations are located at least 400 ft from the US 41 ROW. Based on the facility operations, tanks and previously reported releases, it is possible that environmental conditions at this site will impact construction activities. Further environmental assessment is recommended.	MED
3	National Gypsum Wheel Wash	12979 US Hwy 41 S	FINDS, NPDES	None	No	Sta 419+00 to 439+30 LT 400 ft from roadway	Active wheel wash for delivery vehicles associated with the National Gypsum Plant at Apollo Beach located approximately 400 ft west of the US 41 ROW. The wheel wash is a closed-loop system with no discharge. No violations have been reported for this site. No further environmental assessment is recommended.	LOW
4	Hillsborough County Solid Waste Expansion/ South County Transfer Station	13000 US Hwy 41 S	AST 29-8624944, SWF/LF	Petroleum, Solid Waste	No	Sta 415+00 to 431+20 RT 500 ft east of roadway	The HCSWE/SCTS is an active solid waste transfer station, this property is NOT a landfill. The waste transfer area is more than 400 ft away from US 41. Based on the facility operations as a solid waste management facility, it is possible that environmental conditions at this site may impact construction activities. Further environmental assessment is recommended.	MED
5	Waterberry Farms/ Elsberry Partnership	101 Big Bend Road 103 Big Bend Road	UST 29-8625395 UST 29-8839762 AST 29-8625390	Petroleum	No	Sta 390+60 to 394+50 LT Adjacent to roadway	Waterberry Farms is an open, agricultural facility. Four ASTs and four USTs have been removed from the property. Due to the operations of the property as a fuel user adjacent to US 41, petroleum contamination may be present in the vicinity of construction activities. Further environmental assessment is recommended.	MED
6	7-Eleven Store No. 32972	13150 US Hwy 41 S	UST 29-9802938	Petroleum	Yes	Sta 392+00 to 394+40 RT 80 ft east of roadway	Open convenience store and retail gasoline station. The tank area is 80 ft away from US 41. There are two gasoline USTs in service on this property. The site was awarded a cleanup score of 6 for an unleaded gasoline discharge dated 04/26/06. Cleanup of the site was required. Shaw submitted a SAR to the EPCHC on 01/18/07. The SAR was approved, according to review comments from the EPCHC dated 06/20/07. Site cleanup activities were completed on 05/01/08, with a SRCO being issued by the EPCHC. As the tank area is 80 ft away from US 41, it is anticipated that operations or possible contamination at this site would affect the proposed construction activities. Further environmental assessment is recommended.	HIGH
7	Lil' Champ Food Store No. 6544	6005 Big Bend Road	UST 29-9102583 FINDS, RCRA-SQG	Petroleum	Yes	Sta 388+20 to 390+80 RT 100 ft east of roadway	Open convenience store and retail petroleum station. The tank area is 100 ft away from US 41. There are three USTs in service on this property: There are two "Minor Out of Compliance" inspection results for this facility; 1) water in the product sump above the level of the piping, discovered 03/20/07, and 2) incorrectly positioned leak sensors, discovered 11/14/08. The site has no reported petroleum discharge. There are no violations reported for this site as a RCRA-SQG. Based on the site operations as a gasoline station, petroleum contamination may be present in the vicinity of construction activities. Further environmental assessment is recommended.	MED
8	Cemex Construction Materials/ RMC Ewell – Big Bend Facility	6002 Big Bend Road	AST 29-9808110, AST 29-8736687 FINDS, TIER 2, SPILLS, NPDES, AIRS	Petroleum, Multiple Chemical Products	Yes	Sta 392+00 to 395+00 RT 1,000 ft east of roadway	Open, cement and aggregate product manufacturing facility. According to the FDEP Storage Tank program, the tank area is more than 1,000 ft away from US 41. There are 2 ASTs on the property. As the site is more than 1,000 ft away from the US 41 ROW, it is not anticipated that operations or any possible contamination at this site would affect the proposed construction activities. No further environmental assessment is recommended.	LOW
9	Segrest Farms	6180 Big Bend Road	FINDS	Unknown	No	Sta 400+00 to 405+00 RT 800 ft east of roadway	As the site is more than 800 ft away from the US 41 ROW, it is not anticipated that operations or any possible contamination at this site would affect construction activities. No further environmental assessment is recommended.	LOW
10	Pacific Tomato Growers	6855 US Hwy 41 N	AST 29-9801601	Petroleum	No	Sta 352+00 to 364+80 RT 300 ft east of roadway	Closed vegetable packing facility. The facility had two ASTs on the property; both removed. According to regulatory file information, a petroleum discharge was reported on 04/10/97; soil staining was observed. The contaminated soil was removed on 05/12/88; contaminated groundwater was discovered on the same date. NFA order was issued on 11/10/99. The discharge was located approximately 300 ft east of the US 41 ROW. Based on the past petroleum discharge, soil contamination, and proximity to the ROW, impacts to construction activities are possible. Further environmental assessment is recommended.	MED

Table 6-1. Potentially Contaminated Sites

Site #	Site Name	Site Address	Databases/ FID Numbers	Contaminant Concerns	Active Storage Tanks	Distance from US 41 ROW/ construction activities	Notes	Risk Rating
11	Tampa Electric (TECO) Production Service Center/ BRADCO Supply	6944 US Hwy 41 N/ 6820 Tamiami Trail	UST 29-8624793 FINDS, RCRA-NonGen	Petroleum	No	Sta 373+00 to 378+00 LT Adjacent to roadway	Former supply storage facility and office. The building is vacant and for lease. According to the 2009 EDR Report, the site is located at 6944 US 41. Based on available regulatory files, the TECO site is located at 6820 Tamiami Trail/6944 US 41. The site is located on the west side of US 41, approximately 1,200 ft south of Big Bend Road. There were three USTs previously in service on the property, with 2 removed and one closed in place. According to regulatory file information, a discharge was recorded on 09/21/87, with a CAR submitted on 03/03/90. Contaminated soil was removed from the site in October 1987 during UST upgrade activities. The excavated area was approximately 1,800 ft south of Big Bend Road and 500 ft west of US 41. An NFA was issued for the site on 12/03/90. The facility is also permitted to handle hazardous waste under a RCRA permit. No violations have been reported for the site under RCRA. Based on the past petroleum release and presence of hazardous materials at the site, impacts to construction activities are possible. Further environmental assessment is recommended.	MED
12	Publix Supermarket	6434 US Hwy 41 N	AST 29-9809877	Petroleum	Yes	Sta 305+80 to 308+80 LT 500 ft west of roadway	Open grocery store. One AST is located on the property; used for an emergency backup generator for the supermarket. As the storage tank area is more than 500 ft away from the US 41 ROW, it is not likely that this site will impact construction activities. No further environmental assessment is recommended.	LOW
13	Touch of Class Dry Cleaners/ Apollo Beach Cleaners	6402 US Hwy 41 N	AST 29-9500418, PRIORITY CLEANERS, DRYCLEANERS, FINDS, RCRA- CESQG	Drycleaning Solvents	Yes	Sta 303+40 to 304+00 LT 500 ft west of roadway	This site is an open drycleaners with onsite cleaning equipment. As the site operations and ASTs are over 500 ft from the US 41 ROW, it is not likely that contamination or operations at this site would affect construction activities; therefore, a Low risk rating is assigned to this site. No further environmental assessment is recommended.	LOW
14	CVS Pharmacy/ Former Chevron	6202 US Hwy 41 N	UST 29-8625299 LUST	Petroleum	No	Sta 299+00 to 303+00 LT 100 ft west of roadway	Active pharmacy and convenience store, previously a retail petroleum station. All of the USTs have been removed: On 07/06/88 a petroleum discharge was reported due to the detection of petroleum odors at a compliance well. The site was assigned a priority score of 51 by the FDEP and was placed in the EDI program. A SAR was submitted, no contamination was detected, and the site received an NFA order dated 03/10/93. On 12/29/95, a petroleum discharge was reported due to the detection of petroleum contamination in a groundwater sample. A SAR was submitted in June 2000. The USTs were removed in March 2001 and a source removal was conducted during UST removal activities. New USTs were not installed. A SRCO was issued for the site on 08/01/08. Based on the past petroleum release, facility operations, and distance of USTs from the US 41 ROW, impacts to construction activities are possible. Further environmental assessment is recommended.	MED
15	Radiant Food Store No. 209/ Amoco Split Second	6190 US Hwy 41 N	UST 29-9102568, LUST, FINDS, RCRA-SQG	Petroleum	Yes	Sta 295+80 to 298+20 LT 100 ft west of roadway	Active retail petroleum station. No violations were reported for the site as a hazardous waste small-quantity generator. The site had three unleaded gasoline USTs. A petroleum discharge was reported on 12/15/00. A NFA order was issued on 12/06/01. A second petroleum discharge was reported on 09/04/03. A SAR was submitted on 06/28/04, and a RAP was submitted on 11/03/05. The site is undergoing NAM. Monitor well MW-5 had MTBE concentrations in excess of action levels for the June and September 2008 sampling events. MW-5 is located 200 ft from the US 41 ROW. Based on the facility operations and past petroleum release, impacts to construction activities are likely. Further environmental assessment is recommended.	HIGH
16	Apollo Beach Hardware	268 Apollo Beach Blvd.	SSTS, FINDS	Chlorine	No	Sta 298+10 to 300+60 LT More than 600 ft from roadway	Open hardware store. As the site is more than 600 ft away from the US 41 ROW, it is not anticipated that operations or any possible contamination at this site would affect the proposed construction activities. No further environmental assessment is recommended.	LOW
17	Winn Dixie Shopping Plaza/ Former Tillett Farms	W Side of US 41, South of Apollo Beach Blvd. 6188 US Hwy 41	UST 29-8733876	Petroleum	No	Sta 285+00 to 295+00 LT	Former agricultural property. According to the January 2009 EDR report, the former farm was located in the vicinity of the current Winn Dixie shopping plaza. The EDR report lists two USTs previously on this site. No discharges have been reported. The tanks location is more than 1,000 ft from the US 41 corridor. No further environmental assessment is recommended.	LOW
18	Ruskin Vegetable Corporation	5909 US Hwy 41 S	UST 29-28943981, NPDES	Petroleum	No	Sta 260+60 to 281+20 RT 200 ft east of roadway	Seasonally active vegetable packing house. There was one UST previously on the site; removed in July 1989. A discharge from the UST was recorded on 06/22/89. The site was assigned a cleanup priority score of 31. The site is undergoing cleanup. Due to the ongoing cleanup status of the property, petroleum contamination may be present in the vicinity of construction activities. Further environmental assessment is recommended.	MED
19	A Child's Adventure Daycare	5931 Frond Way	FINDS, NPDES	None	No	Sta 265+10 to 267+80 LT 200 ft from roadway	Active daycare facility. The property line is approximately 200 ft west of US 41. No further environmental assessment is recommended.	LOW

Table 6-1. Potentially Contaminated Sites

Site #	Site Name	Site Address	Databases/ FID Numbers	Contaminant Concerns	Active Storage Tanks	Distance from US 41 ROW/ construction activities	Notes	Risk Rating
20	Stake Tomatoes/ DiMare of Ruskin, Inc.	5715 US Hwy 41 N	TIER 2, NPDES	Pesticides/ Herbicides	No	Sta 239+20 to 258+00 RT Adjacent to roadway	Seasonally active Vegetable packaging facility. It is listed in the NPDES database for active industrial wastewater discharge with Permit No. FLA177342, issued 04/25/07 and expires 04/24/12. It is listed in the TIER 2 database for onsite storage of acephate-met, endosulfan, paraquat dichloride, oxamyl, bromomethane, and azinphos-methyl. There are no reports of any known chemical releases. Because the site uses and stores a variety of pesticides and herbicides, and is located adjacent to the US 41 ROW, environmental conditions on this site may affect construction activities. Further environmental assessment is recommended.	MED
21	Mira Bay, LLC	US Hwy 41 S and Leisey Road	UST 29-9805663	Petroleum	No	Sta 214+00 to 217+00 LT 1,000 ft west of roadway	Closed UST site, located within the Mira Bay residential subdivision. Mira Bay is a residential subdivision that contains canals that drain to Tampa Bay. Petroleum contamination was discovered on the site on 12/18/02 during an earth works project. As the location of the petroleum discharge was more than 1,000 ft west of US 41, it is not likely that operations at this site will impact construction activities. No further environmental assessment is recommended.	LOW
22	Former Artesian Farms	5355 US Hwy 41 N	AST 29-8624890, LUST	Petroleum	No	Sta 172+40 to 176+00 RT Adjacent to roadway	Vacant property. There were three ASTs previously on this property; all three now removed. There were two DRFs filed for this site, one on 10/25/88 and the second on 08/23/02. A SAR was completed for the release of 08/23/02. The site was issued a SRCO on 02/14/03. Based on the past petroleum releases and proximity to the US 41 ROW, possible groundwater contamination may affect construction activities. Further environmental assessment is recommended.	MED
23	Dunkel Motor Services	5301 US Hwy 41 N	UST 29-8625882	Petroleum	No	Sta 164+80 to 169+00 RT 100 ft east of roadway	Active auto sales and repair facility. The property is located adjacent to the east side of US 41. Two USTs were present on this property; both now removed. As this site is an active auto repair facility located adjacent to the US 41 ROW, environmental conditions at the site may impact construction activities. Further environmental assessment is recommended.	MED

Source: Abbreviated version of Table 1 from the Limited Level I Hazardous Material and Contamination Investigation Report dated 2/27/09, prepared by Shaw Environmental, Inc.

- Notes:**
- AST = Above Ground Storage Tank
 - CAR = Contamination Assessment Report
 - DRF = Discharge Report Form
 - EDI = Early Detection Incentive
 - EPCHC = Environmental Protection Commission of Hillsborough County
 - FDEP = Florida Department of Environmental Protection
 - HCPA = Hillsborough County Property Appraiser
 - HCSWE = Hillsborough County Solid Waste Expansion
 - mg/kg = milligrams per kilogram
 - MTBE = methyl tertiary butyl ether
 - NAM = natural attenuation monitoring
 - NFA = No Further Action
 - PCE = Tetrachloroethylene
 - RAP = Remedial Action Plan
 - ROW = right-of-way
 - SAR = Site Assessment Report
 - SCTLs = Soil Cleanup Target Levels
 - SCTS = South County Transfer Station
 - SRCO = Site Rehabilitation Completion Order
 - TECO = Tampa Electric
 - UST = Underground Storage Tank

The State of Florida has evaluated the proposed right-of-way and has identified potentially contaminated sites for the various proposed alternatives. Results of this evaluation will be utilized in the selection of a preferred alternative. When a specific alternative is selected for implementation, a site assessment will be performed to the degree necessary to determine levels of contamination and, if necessary, evaluate the options to remediate along with the associated costs. Resolution of problems associated with contamination will be coordinated with appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, where applicable.

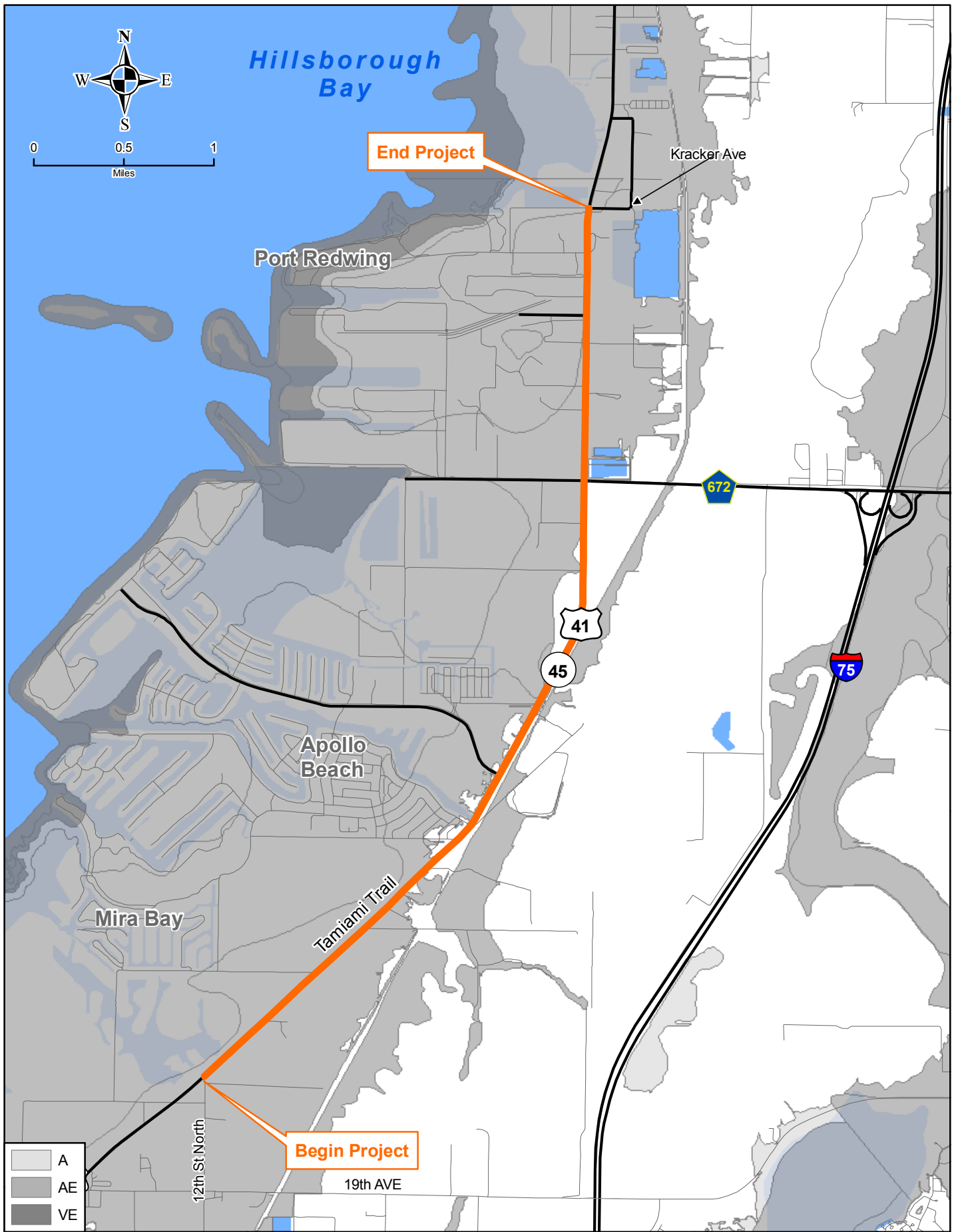
6.1.3 Floodplain

A *Draft Location Hydraulic Report* was prepared to address base floodplain encroachments and to evaluate the impacts of the proposed improvements on each floodplain in accordance with Chapter 24 of the FDOT PD&E Manual. The proposed project traverses seven sub basins within the Alafia River regional basin (previously shown in **Table 5-2**), and there are 15 cross drains which serve each sub basin (**Table 6-2**).

Table 6-2. Existing Cross Drains

Cross Drain No.	Station	Pipe Size and Type
1A	169+50	(2) 6' x 4' CBC
1	180+60	36" RCP
2	199+33	8' x 4' CBC
3	237+09	10' X 5' CBC
4	260+81	(3) 12' x 8' CBC (Wildcat Creek)
5	284+03	54" RCP
6	302+48	36" RCP
7	324+50	(2) 10' x 6' CBC (Newman's Branch)
8	355+71	36" RCP
9	365+19	8' x 5' CBC
10	382+64	10' x 4' CBC
11	395+95	34" x 53" ERCP
12	407+04	36" RCP
13	422+90	36" RCP
14	442+57	(2) 10' x 4' CBC

As a result of field inspections and coordination with local maintenance personnel, no flooding problems associated with existing drainage conditions were identified within the length of the study limits. All expected floodplain encroachments are longitudinal, as shown in **Figure 6-1**. **Table 6-3** summarizes the floodplain encroachments and impacts within each project basin. Despite the lack of evidence of potential flooding concerns as noted above, floodplain compensation (FPC) sites will be provided for volume



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FEMA Flood Zones Map
 Source: FGDL, FEMA

Figure X-X



compensation (cup for cup) for all floodplain impacts as a result of the floodplain encroachments. The estimated 100-year floodplain elevations were used with SWFWMD 1-ft contour topographic maps, 2-ft LIDAR electronic data points, and the proposed alignment to estimate the preliminary encroachment areas; more refined encroachment areas will be determined during the subsequent design phase.

Table 6-3. Floodplain Encroachment and Compensation Summary

Regional Drainage Basin	Regional Sub Basins	Project Basin No.	Project Basin Boundaries	Zone AE 1% annual chance flood EL (ft –NAVD)	Estimated Floodplain Encroachment Area (ac)
Alafia River	Wolf Branch Cutoff Canal	1A	Sta 162+50 to Sta 173+72	9.0	4.63
		1	Sta 173+72 to Sta 189+03	9.0	6.32
		2	Sta 189+03 to Sta 230+00	9.0	17.15
	Golf Course Drain	3	Sta 230+00 to Sta 253+08	9.0	6.99
	Apollo Beach Canal	4	Sta 253+08 to Sta 275+41	9.0	1.80
	Newman Branch	5	Sta 275+41 to Sta 321+87	9.0	2.43
	Big Bend Bayou	6	Sta 321+87 to Sta 340+33	9.0	0.83
		7	Sta 340+33 to Sta 372+72	10.0	0.04
		8	Sta 372+72 to Sta 391+30	10.0	1.61
		9	Sta 391+30 to Sta 402+23	10.0	3.09
		10	Sta 402+23 to Sta 411+94	10.0	4.10
		11	Sta 411+94 to Sta 439+78	10.0-11.0	11.61
	Kitchen Branch	12	Sta 439+78 to Sta 444+27	10.0-11.0	1.88
		13	Sta 444+27 to Sta 458+13 (west of centerline)	10.0-11.0	2.90
	Direct Runoff to Bay	14	Sta 444+27 to Sta 471+26 (east of centerline)	10.0-11.0	5.64
15		Sta 458+13 to Sta 471+26 (west of centerline)	10.0-11.0	2.73	
Total					73.75

1 .The estimated 100-year floodplain elevations are taken from the Revised Preliminary FIRMs for Hillsborough County, panel numbers 0656H, 0493H, 0494H, 0492H and 0484H. It is anticipated that the Revised Preliminary FIRMs will supersede the Current Effective FIRMs on August 28, 2008.

Based on the FDOT’s floodplain categories, this project falls under Category 3: “projects involving modification to existing drainage structures.” The modifications to drainage structures included in this project will result in an insignificant change in their capacity to carry floodwater. This change will cause minimal increases in flood heights and flood limits. These minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant change in flood risks or damage. There will not be a significant change in the potential for interruption or

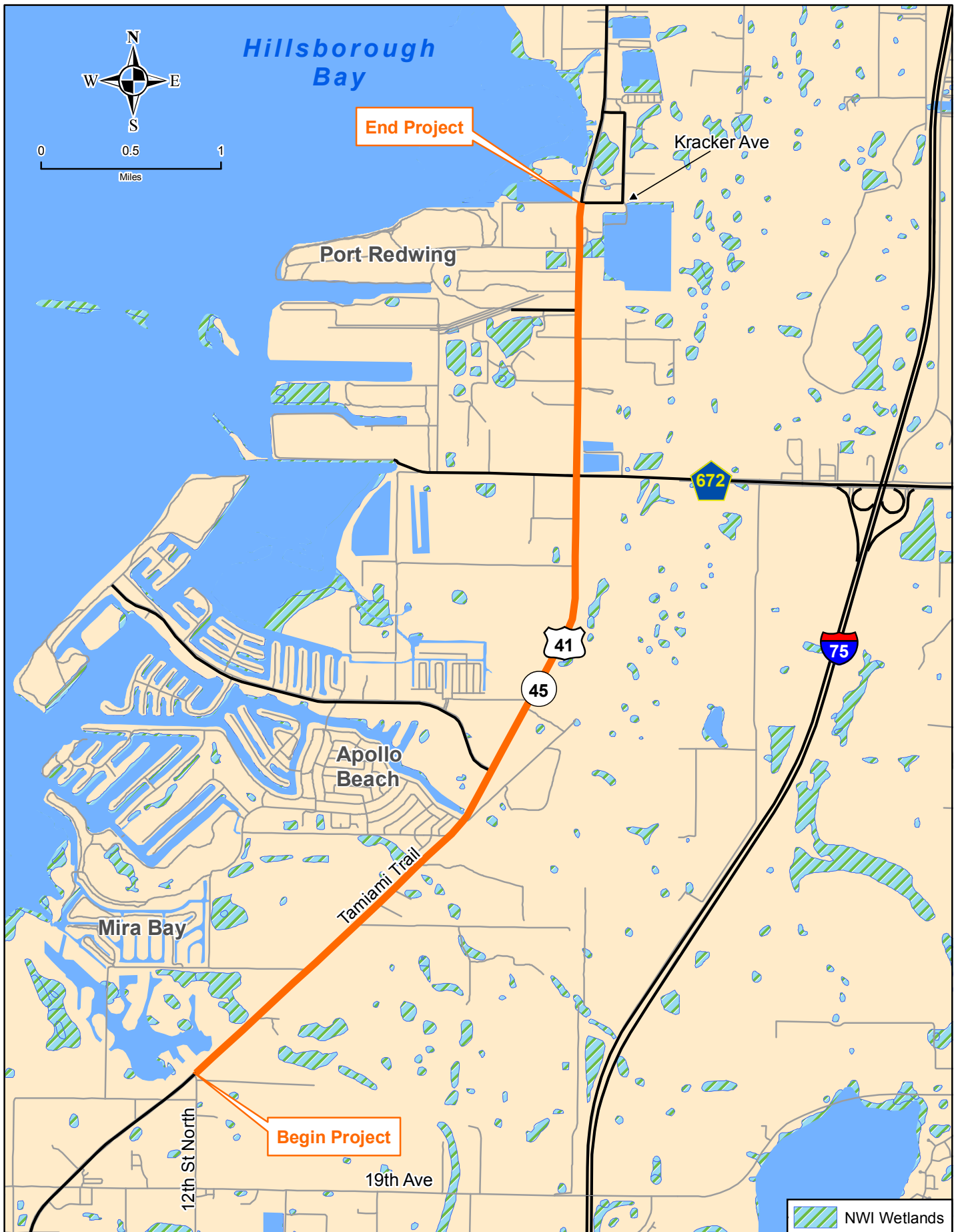
termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

6.1.4 Wetlands/Surface Waters

A *Wetland Evaluation Biological Assessment Report (WEBAR)* was prepared for this proposed project. Wetlands and surface waters were identified using the U.S. Army Corps of Engineer's *Manual for Identifying and Delineating Jurisdictional Wetlands*, 1987, and the Florida Department of Environmental Protection's *The Florida Wetland Delineation Manual*, 1995 (Chapter 62-340, FAC). Methodologies for identifying wetlands and surface waters included aerial interpretation, 2006 National Wetlands Inventory (NWI) data, Natural Resource Conservation Service (NRCS) soil surveys, and field observation (ground truthing). Wetlands were evaluated for size, quality, contiguity with other wetlands and surface waters, community structure, adjacent land uses, hydrologic function, and ability to support wildlife. Generalized wetland locations are shown in **Figure 6-2**; specific wetlands are shown on detailed maps included in the *WEBAR*.

A total of 48 wetlands and surface waters were identified along the project corridor, with direct impacts to 37 expected (31 of which are surface waters) ranging from 0.01 to 0.48 acre of impact. Most of the proposed project's impacts will occur within other surface waters (OSWs), which are mainly ditches used to convey stormwater runoff or were once used for agricultural purposes. A total of 0.48 acres of wetland and 2.77 acres of OSW are anticipated to be impacted due to the construction of the proposed project. Wetland impacts due to the construction of this proposed project are anticipated to be mitigated pursuant to § 373.4137, F.S., or by the creation, enhancement, or preservation of wetlands within the project's watershed.

The Uniform Mitigation Assessment Method (UMAM) was conducted to assess preliminary wetland functions and values for the representative wetlands within the study corridor. The final rating (delta value) is expressed numerically with a number between 0 and 1, with 1 representing the highest quality wetland, and 0 reflecting the lowest quality wetland. Representative UMAMs were conducted for many of the wetlands/surface waters since they were similar in type and vegetative cover. The delta values ranged from 0.20 to 0.73. The functional loss of a wetland system is the estimated loss of wetland function by the proposed impacts and is calculated by multiplying the delta value by the impact acreage. The functional loss values ranged from 0.014 to 0.82. A summary of the assessments are shown below in **Table 6-4**.



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NWI Wetlands Map

Source: FGDL, NWI

Figure X-X

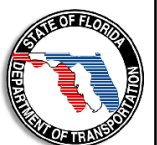


Table 6-4. Estimated Wetland Impacts

Wetland/Surface Water	Impact Acreage	Delta Value	Functional Loss
PEM1C/PEM2C	0.03	0.47	0.01
PSS6C	0.22	0.60	0.56
PFO6C	0.12	0.60	0.07
E1OW	0.11	0.73	0.08
PUBCx	2.77	0.20	0.56

6.1.5 Wildlife and Habitat

The *WEBAR* prepared for the proposed project also included an evaluation of potentially affected species. Field observations, literature reviews, and agency database searches were conducted to identify federal- and state-listed species and to identify potential critical habitat for these species in accordance with 50 CFR Part 402 of the Endangered Species Act of 1973, as amended, and Part 2, Chapter 27 of the FDOT's *PD&E Manual: Wildlife and Habitat Impacts*. Information sources and databases include U.S. Fish and Wildlife Service (USFWS), Florida Natural Areas Inventory (FNAI), and Florida Fish and Wildlife Conservation Commission (FWC).

Impacts to foraging habitat suitable for the wood stork and other wading birds, which can include ditches and swales, should be mitigated for within the 15-mile core foraging area (CFA) of the wood stork. Gopher tortoise surveys shall be conducted within six (6) months of construction, at which point proper permitting with FWC shall be coordinated if necessary. The contractor should be aware of the potential of encountering other listed species and the proper techniques to handle an encounter with a listed species. This should be handled by providing proper education to the contractor and providing the appropriate notes in the construction plans.

Based on field reviews, literature reviews and agency coordination, the proposed roadway improvements are not anticipated to adversely impact any federal- or state-listed species or their critical habitat. Impacts to federally-listed species are as follows: the proposed roadway improvements will not affect the bald eagle, but may affect the wood stork, eastern indigo snake and the American alligator. Impacts to state-listed species are as follows: the proposed roadway improvements will not affect the peregrine falcon, gopher tortoise, Florida pine snake or the Florida long-tailed weasel, but may affect the snowy egret, white ibis, little blue heron, tricolored heron, and Florida sandhill crane.

Impacts to critical habitat for any federal-listed or state-listed species will be addressed during the design phase of this project.

6.1.6 Coastal and Marine

US 41 crosses a few minor waterways that connect to Tampa Bay and Hillsborough Bay within the limits of the proposed project, including Sims Branch, Jackson Branch, Newman Branch, the Apollo Beach Canal, and Wildcat Creek. There are minimal mangrove wetlands and no coastal wetlands located within the project study limits. The only mangroves were observed at the Apollo Beach Canal. No essential fish habitat (EFH) is located within the study limits.

Tampa Bay is the outfall point for the streams and canals listed above. According to SWFWMD in the ETDM Summary Report, Tampa Bay is a top priority SWIM Program water body and is a Category 1 under the State of Florida Unified Watershed Assessment and Watershed Restoration Priorities. Tampa Bay is also listed as an estuary of Federal Significance and is included in the Tampa Bay Estuary Program.

Coordination with SWFWMD is ongoing for stormwater management for the proposed roadway improvements. Stormwater runoff is being evaluated to avoid increasing runoff into Tampa Bay and the adjacent streams and canals that cross the project corridor.

6.2 Cultural Resources (Historic/Archaeological)

A *Cultural Resource Assessment Survey (CRAS) Report* has been prepared for the proposed project. The purpose of this effort was to locate and identify any cultural resources within the project's Area of Potential Effect (APE) and to assess their significance in terms of eligibility for listing in the *National Register of Historic Places* (NRHP).

According to the CRAS Report, background research and field survey indicated that no archaeological and 23 historic resources are located within the project APE. The historic sites include three resource groups and 20 historic structures. Of these sites, one resource group and two structures are considered potentially eligible for listing in the NRHP. Of the 20 other resources, one resource group and 18 historic buildings are considered ineligible, and one resource group was not evaluated due to insufficient information. The Ruskin Vegetable Corporation Resource Group (8HI11317), the Ruskin Vegetable Corporation Office (8HI1010) and the ca. 1958 Modern-style commercial building (8HI11364) may potentially be affected by the proposed project. A letter from the State

Historic Preservation Officer dated January 5, 2009 concurred that no historic properties will be affected by the proposed project. A copy of the letter is included in **Appendix C**.

6.3 Community Effects

6.3.1 Land Use

The study corridor, located in south Gibsonton, Apollo Beach and north Ruskin is primarily agricultural with commercial, residential and industrial areas. The industrial areas are located mainly in the northern portion of the study limits, south and north of Big Bend Road. The Florida Land Use, Cover and Forms Classification System (FLUCCS) from SWFWMD, together with aerial photographs and wetland data from the National Wetland Inventory (NWI), were utilized to determine current land use and habitat types within the corridor. These land uses and habitat types were subsequently ground-truthed for verification during field visits. **Figure 6-3** shows the existing land use within the corridor. Due to the large areas of agricultural land, commercial development, industrial sites and newer residential development, there is very little natural landscape found along the project corridor.

According to the 2004 existing FLUCCS land use data, the land use codes found along the corridor include: Residential medium density (120); Residential high density (130); Commercial and services (140); Industrial (150); Recreational (180); Cropland and pastureland (210); Row crops (214); Nurseries and vineyards (240); Hardwood conifer mixed (434); Pine flatwoods (411); Reservoirs (530); Wetland forested mixed (630); and Utilities (830).

According to the Hillsborough County Future Land Use Map (2015), the entire project corridor is transitioning from a dominantly agricultural area with some residential and commercial development to a predominantly residential and commercial/mixed urban area with some industrial and natural preservation lands (**Figure 6-4**). This transformation is currently taking place as many of the existing agricultural areas along this stretch of US 41/SR 45 are being converted to residential subdivisions and retail/office development. Numerous Developments of Regional Impact (DRIs) are approved along or near the project corridor and include the following: Big Bend Terminal, Southbend, Apollo Beach, Wolf Creek Branch, Harbor Bay, and South Shore Corporate Park (**Figure 6-5**). These approved DRIs will play a major role in the conversion of this area from its existing land use to predominantly residential and commercial/urban mixed land uses.



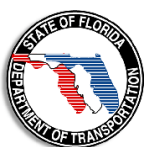
US 41 (SR 45) PD&E Study

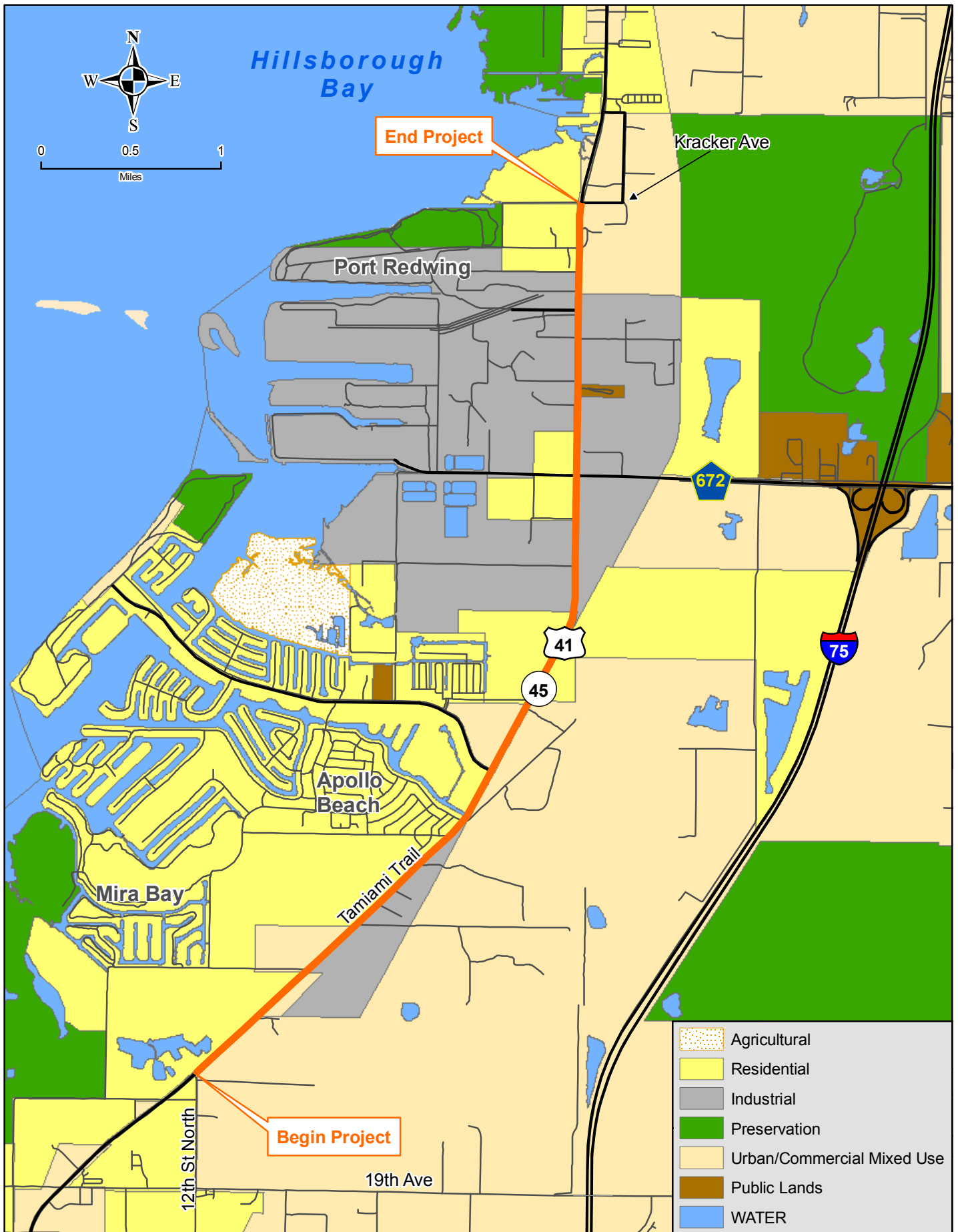
from 12th Street to Kracker Avenue
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Existing Land Use Map

Source: FGDL, SWFWMD

Figure X-X





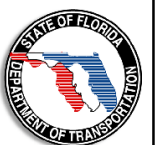
US 41 (SR 45) PD&E Study

from 12th Street to Kracker Avenue
 Hillsborough County, FL
 WPI Segment No. 421140-8

Source: FGDL, SWFWMD

**Future Land Use Map
 2015**

FIGURE X-X





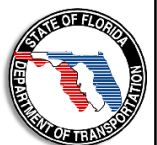
US 41 (SR 45) PD&E Study

from 12th Street to Kracker Avenue
 Hillsborough County, FL
 WPI Segment No. 421140-8

**Developments of Regional
 Impact (DRI) Map**

Source: FGDL

FIGURE



6.3.2 Mobility

The proposed project would change a number of the existing median openings due to access management requirements. Most of the existing median openings are *full openings*; many of these will be converted to *directional openings* or, in some cases, be closed, depending on the spacing between openings. The proposed changes are summarized in Section 5.8 and are shown on the conceptual design plans included at the back of this report. This is expected to generate some controversy with the adjacent property owners.

Except for minor changes due to median opening revisions, travel patterns are expected to remain the same as existing patterns. New traffic signals are recommended at several locations, which will facilitate access to/from side street developments (any proposed traffic signal will need to meet minimum volume and crash warrants and be approved by the District Traffic Operations Engineer prior to installation). Mobility during construction may be temporarily inhibited due to temporary lane closures; however this is a temporary situation.

Pedestrian and bicyclist mobility is expected to improve with the addition of the sidewalks and bicycle lanes/paths throughout the corridor.

6.3.3 Relocation

Specific potential relocations (of businesses) are discussed in Section 5.10.

In order to minimize the unavoidable effects of Right of Way acquisition and displacement of people, the Florida Department of Transportation will carry out a Right of Way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646 as amended by Public Law 100-17).

The Florida Department of Transportation provides advance notification of impending Right of Way acquisition. Before acquiring Right of Way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

No person lawfully occupying real property will be required to move without at least 90 days written notice of the intended vacation date and no occupant of a residential property will be required to move until decent, safe and sanitary replacement housing is made available. "Made available" means that the affected person has either by himself

obtained and has the right of possession of replacement housing, or that the Florida Department of Transportation has offered the relocatee decent, safe and sanitary housing which is within his financial means and available for immediate occupancy.

At least one relocation specialist is assigned to each highway project to carry out the relocation assistance and payments program. A relocation specialist will contact each person to be relocated to determine individual needs and desires, and to provide information, answer questions, and give help in finding replacement property.

Relocation services and payments are provided without regard to race, color, religion, sex, or national origin. All tenants and owner-occupant displacees will receive an explanation regarding all options available to them, such as (1) varying methods of claiming reimbursement for moving expenses; (2) rental replacement housing, either private or publicly subsidized; (3) purchase of replacement housing; and (4) moving owner-occupied housing to another location.

Financial assistance is available to the eligible relocatee to:

1. Reimburse the relocatee for the actual reasonable costs of moving from homes, businesses, and farm operations acquired for a highway project;
2. Make up the difference, if any, between the amount paid for the acquired dwelling and the cost of a comparable decent, safe and sanitary dwelling available on the private market;
3. Provide reimbursement of expenses, incidental to the purchase of a replacement dwelling;
4. Make payment for eligible increased interest cost resulting from having to get another mortgage at a higher interest rate. Replacement housing payments, increased interest payments, and closing costs are limited to \$22,500 combined total.

A displaced tenant may be eligible to receive a payment, not to exceed \$5,250, to rent a replacement dwelling or room, or to use as down payment, including closing costs, on the purchase of a replacement dwelling.

The brochures that describe in detail the Department's relocation assistance program and Right of Way acquisition program are "Your Relocation: Residential", "Your Relocation: Business, Farms and Nonprofit Organizations", "Your Relocation: Signs" and "The Real Estate Acquisition Process". All of these brochures are distributed at all public hearings and made available upon request to any interested persons.

6.3.4 Social/Community Services

The roadway improvements will have minimal to no impacts on social and community services located along the project corridor. According to GIS data from the Florida Geographic Data Library (FGDL) and review of the ETDM Summary Report, there are 3 social/community services located within the project corridor. This includes a counseling center, post office and Sheriff's Community Station. There are other social/community services located outside of the project corridor and/or away from the project corridor that will not be impacted by the proposed project.

There are no schools, religious centers, cemeteries, special needs residential communities, hospitals or medical centers, libraries, community centers, or day care facilities that would be impacted by the proposed roadway improvements.

6.3.5 Traffic Noise

A *Noise Study Report* (NSR) was prepared for the proposed project. The objectives of this Noise Study Report (NSR) were to identify noise-sensitive sites adjacent to the project corridor, to evaluate the significance of existing and future traffic noise levels at the sites with the improvements, and to evaluate the need for and effectiveness of noise abatement measures. Additional objectives include the evaluation of construction noise impacts and the identification of noise level "contours" adjacent to the corridor.

The analysis was performed following FDOT procedures that comply with Title 23 Code of Federal Regulations (CFR), Part 772 (*Procedures for Abatement of Highway Traffic Noise and Construction Noise*). The prediction of future traffic noise levels with the proposed roadway improvements was performed using the Federal Highway Administration's (FHWA's) Traffic Noise Model (TNM Version 2.5). The TNM propagates sound energy, in one-third octave bands, between highways and nearby receivers, taking into account the intervening ground's acoustical characteristics and topography, and rows of buildings.

Seventy nine (79) receivers were modeled representing 122 noise sensitive sites. All but 2 sites are single family residences. Those 2 sites are the Calvary Evangelical Lutheran Church and A Child's Adventure child care facility. The results of the analysis indicate that "existing" (2007) exterior traffic noise levels are predicted to range from 50.6 dBA to 67.1 dBA with levels predicted to approach, meet, or exceed FHWA's Noise Abatement Criteria (NAC) at 1 site. The year 2030 No-Build exterior traffic noise levels are predicted to range from 51.8 dBA to 69.1 dBA, with levels predicted to approach, meet, or exceed the NAC at 3 of the sites. In year 2030 with the proposed improvements

to US 41, exterior traffic noise levels are predicted to range from 53.9 to 71.7 dBA, with levels predicted to approach, meet, or exceed the NAC at 5 of the sites.

When compared to the existing condition, exterior traffic noise levels are predicted to increase between 1.9 and 4.9 dBA with the proposed improvements to US 41. When compared to the No-Build condition, exterior traffic noise levels are predicted to increase between 1.2 and 3.5 dBA with the proposed improvements to US 41. As such, none of the sites are predicted to experience a *substantial increase* (15 dBA or more) in traffic noise as a result of the proposed project.

Noise abatement measures were evaluated for the noise-sensitive areas predicted to be affected by the proposed project. The measures were traffic management, alignment modifications, property acquisition, land use controls, and noise barriers. Although feasible, traffic management, alignment modifications, property acquisitions, and land use controls were determined to be unreasonable methods to reduce the predicted traffic noise impacts for the affected sites.

Based on the results of the analysis, construction of noise barriers for the 5 sites predicted to be affected by the proposed project is not a feasible and cost-reasonable method of reducing predicted traffic noise impacts. Barriers could not be designed to effectively reduce noise levels by at least 5 dBA and still meet cost criteria.

6.3.6 Construction

Entrances to all businesses will be maintained to the maximum extent possible during project construction. Some driveway profiles may require adjustment due to changes in vertical profile of the road. A Maintenance of Traffic (MOT) plan will be developed for the implementation of the Recommended Alternative.

Construction activities for the proposed project will have temporary air, noise, water quality, traffic flow, and visual effects for the residents and travelers within the immediate vicinity of the project. These effects will be minimized through the application of the Department's *Standard Specifications for Road and Bridge Construction* and *Best Management Practices*.

Section 7 - PERMITS AND MITIGATION SUMMARY

7.1 Permits

The following permits are expected to be required for this proposed project:

- Environmental Resource Permit from Southwest Florida Water Management District (SWFWMD)
- Dredge and Fill Permit from US Army Corps of Engineers (USACE).
- National Pollutant Discharge Elimination System (NPDES) Permit from Florida Department of Environmental Protection (FDEP).

7.2 Avoidance/Minimization/Mitigation

Other than the No-Build Alternative, it is not possible to completely avoid impacts. Any Build Alternative will result in impacts to jurisdictional wetlands and surface waters. The resulting impacts will be minimized by the use of silt screens, rock bags, turbidity barriers and other erosion prevention measures during construction; thus resulting in minimal impact outside of the footprint of the proposed roadway improvements. Additionally, Stormwater runoff will also be treated prior to discharge into any existing wetlands and/or surface waters, reducing the pollutant load entering these wetlands and surface waters. Opportunities to avoid and minimize impacts to jurisdictional waters, including wetlands, will continue to be evaluated during the project's design phase. FDOT will incorporate all practicable measures to further avoid or minimize jurisdictional impacts during design, and all unavoidable impacts will be appropriately mitigated. The use of off-site regional mitigation banks, or the transfer of the proper amount of funds for use by the Water Management District, as provided in Florida Statute 373.4137, are viable options for mitigation of wetland impacts for this project. Also, on-site mitigation, either by creation, enhancement, or conservation of wetlands, is another alternative, although the costs for acquisition of additional right-of-way may make this option less feasible.

Section 8 - PUBLIC INVOLVEMENT SUMMARY

8.1 Public Involvement Program

A Public Involvement Program was developed for the project in accordance with FDOT's PD&E Manual, Part 1, Chapter 8, and Florida Statutes Sections 120.525 and 399.155. The program identified federal, state, regional and local agencies that have involvement with the project due to jurisdictional review or expressed interest. The program also included coordination with those on the ETDM's Environmental Technical Advisory Team (ETAT), the formal review committee.

The following sections summarize the public involvement activities that have taken place throughout the study.

8.2 ETDM Screening

A longer section of US 41 (ETDM #9511) was evaluated in the Programming Screen of the Efficient Transportation Decision Making (ETDM) process in 2008, from 19th Avenue NE to Gibsonton Drive and was subjected to the ETDM Screening tool under the following elements:

ETDM Project No.:	#9511 (current study limits are shorter)
Planning Organization:	FDOT District 7
ETDM Stage:	Programming Screen
Project Status:	ETAT Review Complete
Project Type:	Widening
Project County:	Hillsborough County
District No.:	7

The following information was included for review under the screening process:

- Project Description
- Purpose and Need Statement
- Alternative Description
- Class of Action Determination
- Segment Details
- Project Effects
- General Project Commitments
- Required Permits
- Required Technical Studies

- Dispute Resolution Activity Log
- Agency-Assigned Degrees of Effect and FDOT Feedback

The Final Programming Summary Report was published on November 18, 2008, and resulted in this State Environmental Impact Report (SEIR) class of action.

8.3 Advance Notification

The Advance Notification (AN) was forwarded to the Florida State Clearinghouse – Florida Department of Environmental Protection on June 25, 2008 in accordance with Executive Order 95-359. The package specified that the project had been screened through the ETDM process and that the Class of Action was determined to be a State Environmental Impact Report (SEIR) by FDOT based upon in-house environmental evaluations and comments received through coordination with other agencies through the ETDM Environmental Screening Tool. The AN package consisted of:

- AN Transmittal Letter
- Mailing List
- ETDM Final Programming Summary Report
- Project Location Map

8.4 Agency Kick-Off Meeting

Not conducted for this project.

8.5 Public Kick-Off Newsletter

A project kick-off newsletter was prepared and mailed on August 29, 2008 to federal, state, and local agencies, elected officials, interested parties, and property owners within 300 feet of the project centerline. The purpose of the newsletter was to introduce the project and the study objectives. The newsletter announced the start of the project study, gave an overview of the proposed improvements, provided information on how to submit comments, and included the name and contact information for the District's Project Manager.

8.6 Alternatives Public Workshop

Not conducted for this project.

8.7 Small Group Meetings

To date, there have been no small group meetings with residents; however, several meetings have been held with representatives from Hillsborough County, FDOT and various developers with respect to traffic-related issues and potential median openings locations.

8.8 Public Hearing

A public hearing was held on Monday, March 30, 2009 from 5:00 p.m. to 7:00 p.m. at the Resort & Club at Little Harbor in Ruskin Florida. Prior to the hearing, a notice was published in the Florida Administrative Weekly. A legal display ad was published in two separate issues of the Tampa Tribune on March 9th and 18th, 2009.

Approximately 600 affected property owners, agencies, and interested citizens were sent a newsletter invitation prior to the hearing. Approximately 21 citizens attended the hearing in addition to approximately 20 Department staff and representatives.

The informal session of the public hearing was held at the clubhouse from 5:00 p.m. to 6:00 p.m. The format was “open-house”, during which citizens were given an opportunity to review a handout, various exhibits, and the study documents. In addition, a PowerPoint presentation ran continuously in one side of the room. FDOT and their representatives were available for one-on-one questions and answers. A court reporter was present throughout the hearing to record verbal comments as well. In addition, tables with FDOT representatives were set-up for right-of-way, access management, and noise to allow the public to direct comments to those specialists.

The formal portion of the hearing began at 6:00 p.m., and it was moderated by Mr. Ming Gao, the Department Head of Intermodal Systems Development. His presentation covered the following topics:

- Introductions of FDOT and consultant staff and recognition of local public officials;
- Described the purpose of hearing;
- Reference to the exhibit with state and federal laws cited; and
- Indicated methods by which the public can provide comments

Following the formal presentation, attendees were given an opportunity to make oral statements for the record. One person spoke publicly. Following this segment, the formal session was adjourned at approximately 6:10 p.m., and the informal session resumed until 7:00 p.m. A transcript of the oral presentation and all statements made to the court reporter are included in **Appendix D** of this report. Copies of other hearing materials are included in the *Public Hearing Scrapbook*.

Reports on display at the public hearing included:

- Limited Level I Hazardous Material and Contamination Investigation (submitted by Shaw)
- Draft Noise Study Report
- Draft Wetland Evaluation and Biological Assessment Report
- Draft Location Hydraulics Report
- Traffic Technical Memorandum
- Draft Pond Sizing Analysis Memorandum
- Final Cultural Resource Assessment Survey
- Draft State Environmental Impact Report / Project Development Summary Report (SEIR/PDSR)

Prior to the hearing a total of 5 comments were received; 6 written comments were received at the hearing, and 4 written comments were received following the hearing. Of the 15 written comments received, 4 involved requests for copies of the plans or documents, and the other comments included:

- "Make the developers pay their fair share for the improvements"
- A Mira Bay resident opposes the project, saying that the project will result in "more traffic and higher speeds"
- "Please add Ruskin Chamber of Commerce to the mailing list"
- "The project will result in higher traffic noise"
- A question was asked regarding access to US 41 from Falls Boulevard
- A citizen questioned the location of the southern study limits boundary and requested consideration for additional traffic signals at several locations
- A citizen requested consideration of a traffic signal at Falls Boulevard and installation of street lighting
- A citizen requested consideration for including off-road bike trails
- Both the Hillsborough County Metropolitan Planning Organization (MPO) and the Hillsborough County City-County Planning Commission wrote letters expressing concerns regarding the proposed use of a suburban typical section and other issues; copies of their letters and the Department's responses are included in **Appendix C**.

Section 9 - APPENDICES

A. Conceptual Design Plans

B. List of Supporting Documents

C. Agency Coordination

D. Public Hearing Transcript

APPENDIX A

Conceptual Design Plans

APPENDIX B

List of Supporting Documents

List of Supporting Documents

Engineering

Traffic Technical Memorandum
Location Hydraulics Technical Memorandum
Pond Sizing Analysis Technical Memorandum

Environmental

ETDM Programming Screen Summary Report
Cultural Resources Assessment Survey Report
Wetland Evaluation and Biological Assessment Report
Noise Study Report
Air Quality Technical Memorandum
Contamination Screening Evaluation Report

Public Involvement

Advance Notification Package
Public Involvement Plan
Public Hearing Scrapbook & Transcript

APPENDIX C

Agency Coordination

APPENDIX D
Public Hearing
Transcript