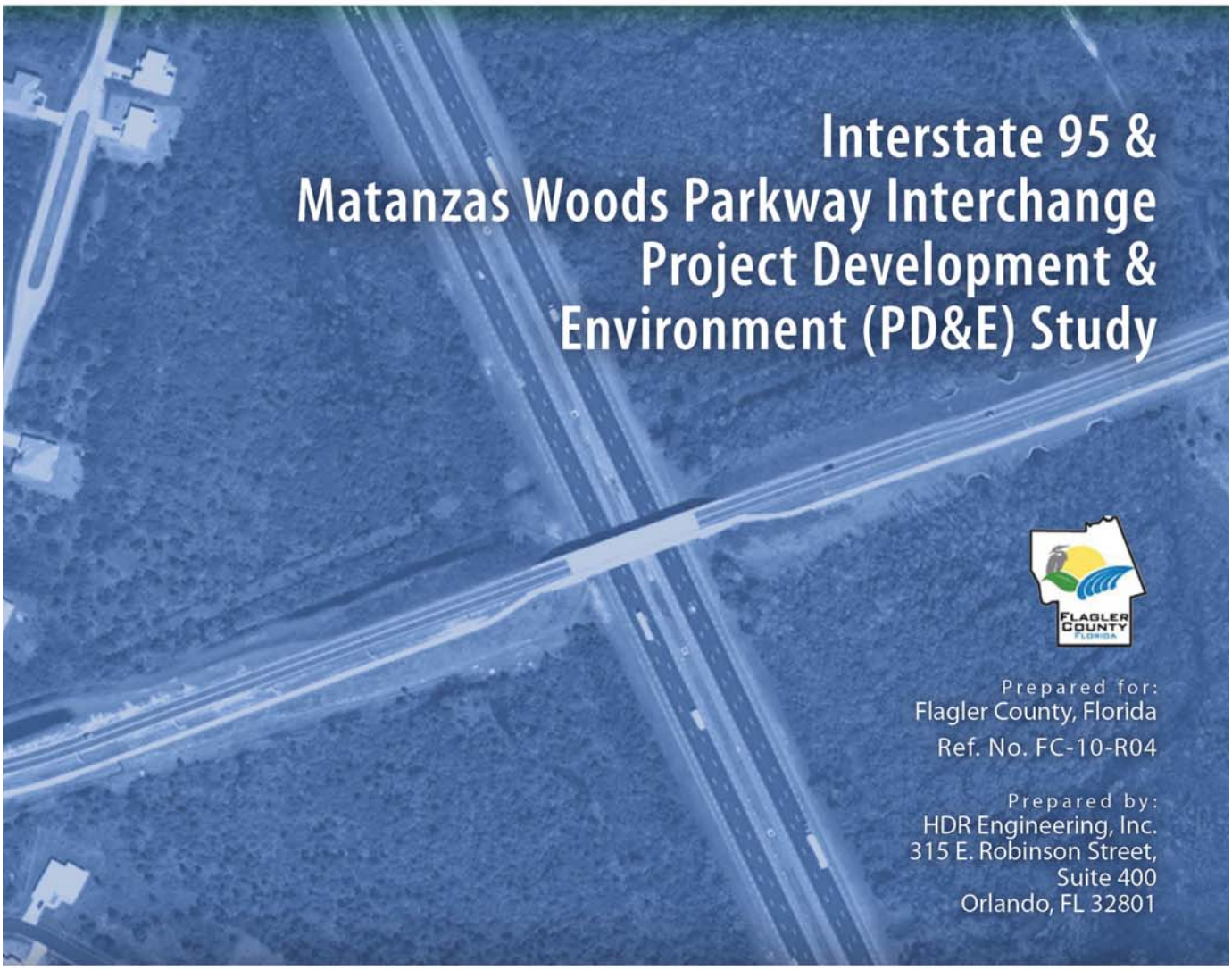

FINAL

Project Development Summary Report

May 2012

PROFESSIONAL ENGINEER CERTIFICATE

I hereby certify that I am a registered professional engineer in the State of Florida practicing with HDR Engineering, Inc., a corporation, authorized to operate as an engineering business, FEID No. F47-0680568, by the State of Florida, Department of Professional Regulation, Board of Professional Engineers, and that I have reviewed or approved the evaluation, findings, opinions, conclusions, or technical advice hereby reported for:

Project:	Interstate 95 & Matanzas Woods Parkway Interchange from US 1 to Old Kings Road PD&E Study
FIN:	411959-2-28-01
FAP:	SFT1-231-R
Location:	Flagler County, Florida
Client:	Flagler County in cooperation with FDOT – District 5

This Project Development Summary Report includes a summary of data collection efforts and conceptual design analyses for the Interstate 95 & Matanzas Woods Parkway Interchange from US 1 to Old Kings Road PD&E Study. 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 and planning as applied through professional judgment and experience.

Name:	Brian Ribaric, P.E.
Signature:	
P.E. Number:	59478
Date:	

Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Blvd.
DeLand, FL 32720

ANANTH PRASAD, P.E.
SECRETARY

June 18, 2012

Mr. Martin C. Knopp
Division Administrator
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Attention: District/Area Transportation Engineer

Dear Mr. Knopp:

Subject: Interstate 95 and Matanzas Woods Parkway Interchange
Project Development & Environment Study
Type 2 Categorical Exclusion with Project Location and Design Concepts
Financial Project No. 411959-2-28-01
Federal-Aid Project No. – SFT1-231-R
Interstate 95 and Matanzas Woods Parkway Interchange,
From US 1 to Old Kings Road
Flagler County, 32137

Enclosed are copies of the Project Development Summary Report, which includes the Summary of Environmental Impacts Checklist for Type 2 Categorical Exclusions, and a transcript of the public hearing held for this project. Upon your review and acceptance of these documents, we request your concurrence that this project is properly classified as a categorical exclusion as described in 23 CFR 771.115 and 771.117, and that the general project location and design concepts described in these documents are acceptable as allowable in 23 CFR 771.113. Please acknowledge your concurrence with these finding by signing and dating this request in the space provided below, and then returning a signed copy for the project files.

Sincerely,

William G. Walsh
Environmental Administration/
Project Manager
District Environmental Management Office

Concurrence by FHWA:

_____ ___ / ___ / ___
FHWA Division Administrator Date

Summary of Environmental Impacts Checklist
For Type 2 Categorical Exclusions

Topical Categories	S	NS	N	NI	Basis for Decision *
A. NATURAL ENVIRONMENT					
1. Air Quality	[ ]	[ ]	[X]	[ ]	See Page 3-1
2. Coastal and Marine	[ ]	[ ]	[ ]	[X]	See Page 3-1
3. Contaminated Sites	[ ]	[ ]	[X]	[ ]	See Page 3-1
4. Farmlands	[ ]	[ ]	[X]	[ ]	See Page 3-2
5. Floodplains	[ ]	[X]	[ ]	[ ]	See Page 3-2
6. Infrastructure	[ ]	[X]	[ ]	[ ]	See Page 3-2
7. Navigation	[ ]	[ ]	[ ]	[X]	See Page 3-4
8. Special Designations	[ ]	[X]	[ ]	[ ]	See Page 3-4
9. Water Quality/Quantity	[ ]	[X]	[ ]	[ ]	See Page 3-4
10. Wetlands	[ ]	[X]	[ ]	[ ]	See Page 3-4
11. Wildlife and Habitat	[ ]	[X]	[ ]	[ ]	See Page 3-6
B. CULTURAL IMPACTS					
1. Historic /Archaeological	[ ]	[ ]	[X]	[ ]	See Page 3-9
2. Recreation Areas	[ ]	[ ]	[X]	[ ]	See Page 3-9
3. Section 4(f) Potential	[ ]	[ ]	[X]	[ ]	See Page 3-10
C. COMMUNITY IMPACTS					
1. Aesthetics	[ ]	[X]	[ ]	[ ]	See Page 3-10
2. Economic	[ ]	[X]	[ ]	[ ]	See Page 3-11
3. Land Use	[ ]	[ ]	[X]	[ ]	See Page 3-12
4. Mobility	[ ]	[X]	[ ]	[ ]	See Page 3-12
5. Relocation	[ ]	[X]	[ ]	[ ]	See Page 3-12
6. Social	[ ]	[X]	[ ]	[ ]	See Page 3-13
D. OTHER IMPACTS					
1. Noise	[ ]	[X]	[ ]	[ ]	See Page 3-14
2. Construction	[ ]	[X]	[ ]	[ ]	See Page 3-19

* S = Significant; NS = Not Significant; N = None; NI = No Involvement. Basis of decision will be a reference to the Programming Summary Report, or summary following this checklist that is included in the Project Development Summary Report.

Prepared By: _____ Date: _____
Brian P. Ribaric, P.E. – HDR Engineering, Inc.

Reviewed By:
Signature: _____ Date: _____
District Environmental Administrator

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1.0 Location and Needs Summary

1.0 Location and Needs Summary

1.1 Introduction

Flagler County's Interchange Justification Report (IJR) identified the need for an interchange on Interstate 95 (I-95) at Matanzas Woods Parkway. Flagler County has also identified through the IJR the need to widen Matanzas Woods Parkway for a length of approximately 3.25 miles from two to four lanes between United States (US) Highway 1 to Old Kings Road. These improvements would provide an evacuation route and provide traffic relief in northern Flagler County. Potential improvements to this area are also recognized by local and regional long range plans. Flagler County began a Project Development and Environment (PD&E) Study to continue the efforts from the IJR to evaluate alternatives for adding the interchange ramps at the existing overpass and capacity to the Matanzas Woods Parkway corridor between US 1 and Old Kings Road in Flagler County. The purpose of this study is to identify the improvements needed to accommodate projected future traffic while providing access, connectivity, enhanced safety and minimizing environmental impacts.

1.2 Project Location

Matanzas Woods Parkway is a key component of Flagler County's roadway network. It provides an east-west linkage for northern Flagler County and serves as an alternate route across I-95 for the City of Palm Coast, shown on **Figure 1-1**. Due to the length of the project, varying roadway conditions, and adjacent land uses, the Matanzas Woods Parkway corridor has been divided into three segments. The segments are defined as follows:

Segment 1

Segment 1 is defined as the segment extending east from US 1 to the proposed southbound interchange ramps and is approximately two miles in length.

Segment 2

Segment 2 is defined as the segment extending east from the proposed southbound interchange ramps across Interstate 95 (I-95) to the proposed northbound interchange ramps and includes the proposed interchange with I-95 and is approximately half mile in length.

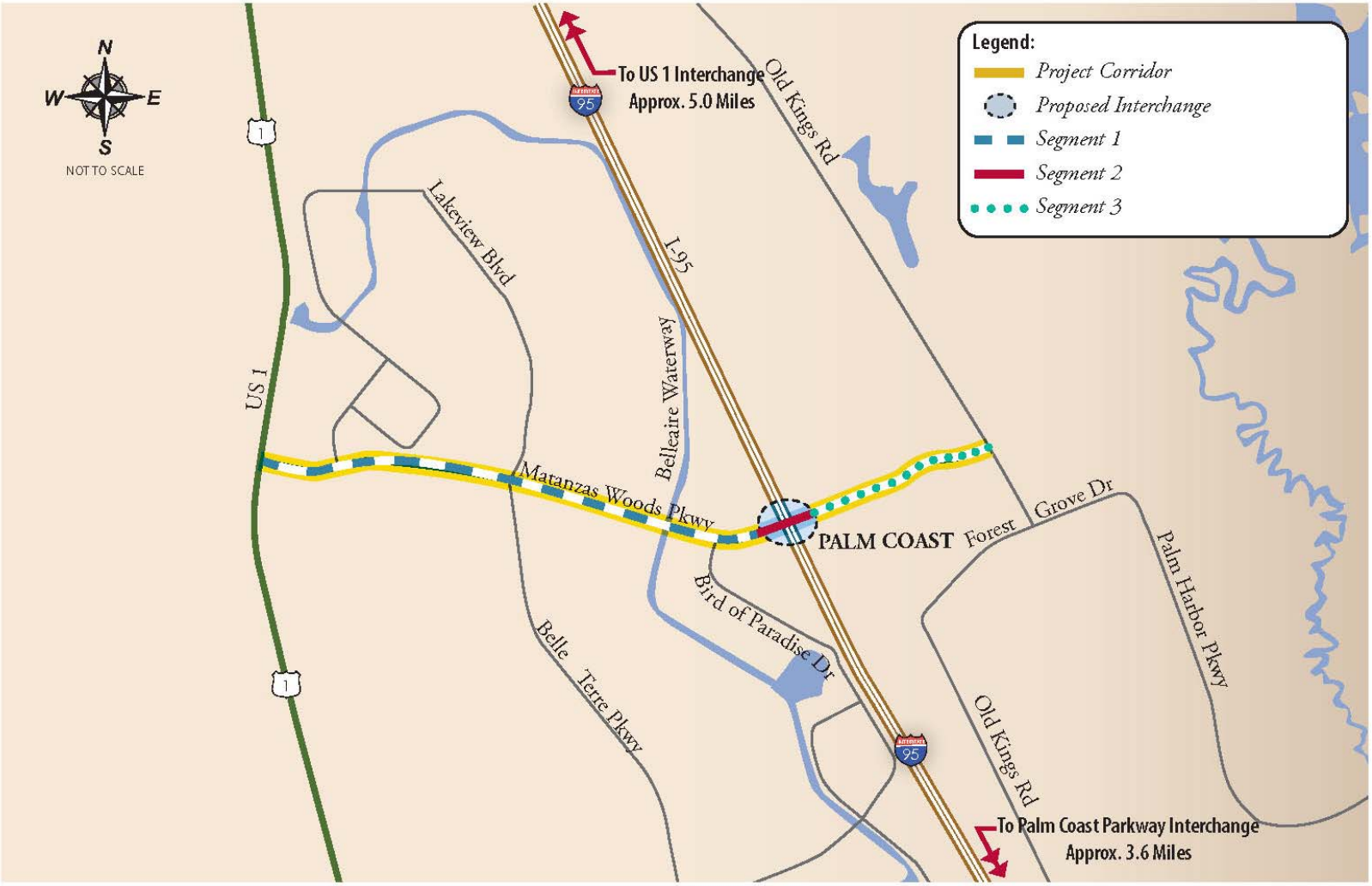
Segment 3

Segment 3 is defined as the segment extending east from the proposed northbound interchange ramps to Old Kings Road and is approximately 0.75 miles in length.

1.3 Project Need

Flagler County has been regularly cited by the U.S. Census as the one of the fastest growing counties in the United States. Safety issues and delays on Matanzas Woods Parkway as traffic volumes increase are considered to be a transportation concern for northern Flagler County. The recently completed I-95 and

Figure 1-1: Project Location



Matanzas Woods Parkway Interchange Justification Report (IJR) in February 2011 identified the need for a new interchange on I-95 in northern Flagler County.

1.3.1 Deficiencies

Access to I-95 for northern Flagler County is limited for traffic demands and emergency evacuation. As the travel demands within the study area increase, it is anticipated that Matanzas Woods Parkway will be operating at an unacceptable service level, by the traffic design year 2035.

The design traffic volume projection for Matanzas Woods Parkway will build to a point where the 2-lane roadway cannot accommodate the traffic. Since there are limited parallel (east-west) roadways in the northern Flagler County, the increased traffic volumes will impact because increasing delays for the users who use the Matanzas Woods Parkway for their primary access to and from their residences.

The existing Matanzas Woods Parkway facility was compared against current minimum roadway design criteria (Florida Greenbook) and was found to have several deficiencies, including superelevation, curve length, curve radius, paved shoulder (bike lane), profile grade and traffic capacity.

The corridor does not have any existing pedestrian facilities from US 1 to Bird of Paradise Drive. Flagler County has plans to construct a ten foot sidewalk along the south side of Matanzas Woods Parkway between US 1 and Bird of Paradise Drive. When constructed, this proposed project will provide sidewalk connectivity.

1.3.2 System Linkage

There are three existing interchanges on I-95 within Flagler County, one at Old Dixie Highway near Volusia County, one at SR 100, and one at Palm Coast Parkway. The next interchange is 9 miles north at US 1 in St Johns County. The City of Palm Coast Comprehensive Plan identifies SR 100 and Palm Coast Parkway as existing evacuation routes to I-95. These are the only two east/west evacuation routes from the Atlantic Coast in Flagler County. The City of Palm Coast Comprehensive Plan also identifies the Matanzas Woods Parkway as a future evacuation route. In addition, the two currently designated evacuation routes, Palm Coast Parkway and SR 100 (Moody Boulevard), currently operate at LOS “F” (peak hour) according to the City of Palm Coast Comprehensive Plan. As this area of Flagler County continues to grow, these interchanges will experience increasing congestion, which further complicates any evacuations made necessary by a natural or other disaster. Providing an additional access to I-95 within this municipality should help to relieve congestion at the existing interchanges, both generally and in the case of emergency evacuations.

1.3.3 Safety

Palm Coast and Flagler County recently experienced emergency evacuations when wildfires swept through the Palm Coast area in 1985 and again in 1998. During the evacuations, the road system was overwhelmed with traffic due to evacuating residents, resulting in traffic delays of several hours at some locations. One of the main traffic bottlenecks occurred at the intersection of Palm Coast Parkway and Old Kings Road. The bottleneck on these two roads occurred because they represent the main access routes to I-95 and US 1, the major arteries in and out of the Palm Coast area. The two designated evacuation routes with interchanges in

the area, Palm Coast Parkway and SR 100, currently operate at LOS "F" (peak hour). These two roads provide the only points of access between east Palm Coast, located east of I-95 and west Palm Coast, located west of I—95. This project will improve emergency evacuation by diverting evacuees from the US 1 and Palm Coast Parkway interchanges.

The addition of the interchange will reduce the vehicle miles traveled, which would limit the exposure to accidents. The reduction of accidents is a benefit to both emergency services and the vehicular users.

Therefore, the main purpose of this project is to provide access to I-95 and enhanced east-west travel between Palm Coast Parkway to the south and Old Kings Road to the north.

1.3.4 Consistency with Regional and Local Transportation Planning

The City of Palm Coast adopted their 2035 Comprehensive Plan in July 2010. The City adopted the updated Comprehensive Plan in July 2011. There are no changes to the FLUM in this area. The '2035 Transportation Facilities Map' shows the future interchange at I-95 & Matanzas Woods Parkway, and shows Matanzas Woods Parkway as an 'Improved Road' from US 1 to Old Kings Road. However the '2035 Number of Lanes' map shows Matanzas Woods Parkway as four lanes from US 1 to I-95, and two lanes from I-95 to Old Kings Road.

The proposed build alternative is consistent with the '2035 Transportation Facilities Map' as it includes the new interchange, and improving Matanzas Woods Parkway to 4 lanes from US 1 to Old Kings Road. The Proposed Build alternative is inconsistent with the '2035 Number of Lanes' Map. The design traffic indicates that improvements to widen Matanzas Woods Parkway to four lanes from I-95 to Old Kings Road are needed by 2027. The no-build alternative is not consistent with either of the adopted maps. Should the No Build Alternative be selected, the maps would need to be amended to show Matanzas Woods Parkway as a two lane facility with no interchange as part of a future update.

1.3.5 Social Demands and Economic Developments

Due to growth in the vicinity of the study area over the years, the existing interchanges operate over capacity in this region. Deficiencies will increase as traffic volumes continue to grow. Degrading traffic conditions in the region can inhibit future development within this area as well as response times for emergency services. Traffic projections for this area indicate the existing network will require improvements via additional I-95 access, widening, expansion, or alternate routes to accommodate the needs of this region.

The proposed improvements would complement and enhance the region's ability to reduce traffic congestion and attract new development, as well as support existing uses. The reduced congestion would facilitate and accommodate future growth. Tax revenues from increased growth will add to the region's income and allow for other future infrastructure improvements. Productivity will also be increased within the surrounding area as a result of decreased traffic delays with the addition of the proposed I-95 interchange and Matanzas Woods Parkway improvements.

1.3.6 Other Related Studies and Design

Several other transportation studies and design projects are currently planned and/or recently completed within and/or adjacent to the project corridor, including:

- **Old Kings Road PD&E Study (by City of Palm Coast) –** This project proposed the extension of Old Kings Road from Forest Grove Drive to north of Matanzas Woods Parkway. The study recommended a new intersection of Old Kings Road and Matanzas Woods Parkway between I-95 and the existing Old Kings Road intersection, shown on **Figure 1-2**. As of January 2012, the PD&E study was being submitted to FHWA for review.
- **Palm Harbor Parkway Extension Final Design (by City of Palm Coast) –** The project proposes the extension of Palm Harbor Parkway from the Forest Grove intersection to the Matanzas Woods Parkway and Old Kings Road intersection, shown on **Figure 1-2**. As of January 2012, the design is complete and is not funded for construction.
- **Matanzas Woods Parkway Sidewalk Project (by Flagler County) –** The project proposes a ten foot wide sidewalk on the south side of Matanzas Woods Parkway from US 1 to Bird of Paradise Drive, shown on **Figure 1-2**. This will include a pedestrian bridge across the Bellaire Waterway. Construction is anticipated to begin in mid-2012.

1.3.7 Modal Interrelationships

The project study area is served by different modes of travel including public transit service, rail service, and airports. Increasing the connectivity for bicycle, pedestrian and transit users is an objective of the project.

1.3.7.1 Transit

Flagler County Public Transportation (FCPT) provides public transportation service within the Flagler County. This is a pre-scheduled, demand-response transportation system. Demand for the service centers on transportation for employment, education, non-emergency medical transportation, and quality of life trips. Specialized services include general passenger assistance and wheelchair assistance.

FCPT continues to maximize transportation benefits to the general public with a focus on elderly persons and persons with disabilities. Normal hours are Monday through Friday from 7:00 am to 5:00 pm, but weekend transportation service is scheduled as required.

1.3.7.2 Railroad

AMTRAK currently provides passenger rail service in the region. AMTRAK does not directly serve Flagler County. The closest AMTRAK rail service is through Palatka and DeLand with AMTRAK bus service to Daytona Beach. There are no existing active railroad lines located within the project study area.

Figure 1-2: Other Projects

1.3.7.3 Airports

The Flagler County Airport, which is approximately twelve miles south of the project, is a county-owned, public use, general aviation airport. The airport primarily serves corporate aviation and general aviation activity. There are no scheduled airlines providing service at the airport.

Daytona Beach International Airport, which is approximately thirty-seven miles south of the project, offers both domestic and international service to local and business travelers while providing charter flights, ground handling, and cargo services.

There are no existing airports located within the project limits.

1.3.7.4 Ports

There are no ports in Flagler County. The Port of Jacksonville is the closest port approximately sixty miles to the north of the project study area.

1.3.7.5 Non-Vehicular Modes

The existing accommodation for bicycles and pedestrians within the project study area is the eight foot wide sidewalk on the south side of Matanzas Woods Parkway from Bird of Paradise Drive to Old Kings Road. Flagler County currently has plans to add a ten foot pedestrian/bicycle pathway on Matanzas Woods Parkway from US 1 to Bird of Paradise Drive, and the extensions of Palm Harbor Parkway to Matanzas Woods Parkway and Old Kings Road across Matanzas Woods Parkway will also include multi-use paths. Planned sidewalk facilities, bicycle lanes, and paved shoulders will provide additional connections to the community from corridors intersecting Matanzas Woods Parkway, which are further described in **Section 2**.

2.0 Alternatives Considered

2.0 Alternatives

2.1 Alternatives Considered

The analysis described herein adheres to the project development process by examining the various alternatives considered for this project. These alternatives include No Project (No Build), Transportation System Management, and Study (Build) Alternatives. The design concepts for this project address the needs of Matanzas Woods Parkway from US 1 to Old Kings Road and the proposed interchange with I-95 through the Design Year (2035).

2.1.1 No Project (No Build) Alternative

The No Project (No Build) Alternative assumes no changes to the transportation facilities within the project study area beyond currently planned and programmed projects already committed within the existing transportation plans of Flagler County, City of Palm Coast and the Florida Department of Transportation. The No Project Alternative forms the basis of the comparative analysis for each of the viable Study Alternatives.

The benefits of the No Project Alternative are the absence of construction-related and short-term operational impacts associated with the Study Alternatives. However, long-term benefits accrued from serving future traffic demands will not be realized with this alternative.

Specifically, the No Project Alternative will offer no benefits to the future operating conditions anticipated within the project study area. Distinct advantages and disadvantages associated with this alternative are listed below.

Advantages

- No impedance to traffic flow during construction;
- No expenditure of funds for right-of-way acquisition, engineering, design or construction;
- No impact on the adjacent natural, physical, and human environments; and
- No disruption to existing land uses due to construction-related activities.

Disadvantages

- Potential increase in safety-related accidents due to less than desirable levels of service at the intersections of US 1 and Matanzas Woods Parkway, and Belle Terre Parkway / Lakeview Boulevard and Matanzas Woods Parkway;
- No improvement or relief to the operation of Palm Coast Parkway;
- Increase in maintenance costs due to roadway and structure deterioration;
- Potential increase in emergency service response time due to increased congestion;
- Potential increase in evacuation time during emergency situations due to increase in safety-related accidents; and
- No reduction in traffic delay along Matanzas Woods Parkway.

The No Project Alternative will remain viable throughout the study process until the selection of a preferred alternative has been recommended. The final selection of an alternative will not be made until all impacts are considered and responses to the Public Hearing comments have been evaluated.

2.1.2 Transportation System Management

Transportation System Management (TSM) alternatives are defined as low capital cost transportation improvements designed to maximize the utilization and efficiency of the existing transportation system through improved system management. The various forms of TSM activities include:

- Traffic signal improvements;
- Intersection improvements;
- Widening of parallel arterials;
- Ridesharing programs;
- HOV lanes;
- Transit;
- Intelligent Transportation Systems (ITS); and
- Improvements to signing, marking, and roadway lighting.

Although the implementation of TSM improvements could aid in localized operation of the roadway, it does not address the fact that the existing roadway facility would operate at or near constrained conditions in the Design Year (2035). As development and growth continue within the area, it can be expected that increased traffic in the corridor will result in the roadway operating below an acceptable level of service standard, as presented in **Section 2.3.5**. In addition, the specific objectives intended by this study, as previously discussed in **Section 1**, are not addressed though TSM strategies. Therefore, no further evaluation of the TSM alternative will be conducted during this study.

2.1.3 Study (Build) Alternatives

The project objective is to develop alternatives to increase the capacity of Matanzas Woods Parkway and the overall transportation network to accommodate the Design Year (2035) traffic safely and efficiently. The build alternatives were developed to alleviate traffic demands, improve safety, and serve existing and future land uses along the corridor.

2.1.3.1 Alternative Corridors

This project consists of widening an existing alignment in an urbanized area with the inclusion of an interchange with I-95, consistent with the recommendations of the *Interchange Justification Report* (February 2011). The relocation of Matanzas Woods Parkway from the existing corridor would require significant acquisition of right-of-way for the new facility with associated impacts to existing community services, cultural resources, and natural features. Therefore, alternative corridors have not been considered.

2.1.3.2 Design Speed

The typical section alternatives recommended for Matanzas Woods Parkway consisted of an urban typical section with a design speed of 45 mph between US 1 and the proposed northbound ramps, and a suburban typical section with a design speed of 50 mph between the proposed northbound ramps and Old Kings Road. The existing design speed for I-95 in the vicinity of Matanzas Woods Parkway is 70 mph.

The geometrics of the interchange study alternatives are dependent upon the design speed of the interchange ramps. The design criteria for each design speed produced different geometric layouts based on the allowed degree of curvature, the required superelevation, the required lengths for superelevation transition, and required length of curve. The design speeds that were evaluated ranged from 30 to 50 mph. After consideration of the existing conditions, potential impacts to right-of-way, and coordination with Flagler County and FDOT, it was determined that the interchange configuration alternatives should utilize a 40 mph design speed for any directional ramps and a 30 mph design speed for any loop ramps.

2.1.3.3 Typical Section Alternatives

Typical section alternatives were developed for each segment of Matanzas Woods Parkway and the proposed interchange ramps. The design criteria for Matanzas Woods Parkway, a County facility, was developed from Flagler County standards and the Department of Transportation's Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (Florida Greenbook). The interchange ramps and associated improvements design criteria was developed based on the Florida Department of Transportation's Plans Preparation Manual and Design Standards.

Segment 1

Based on the available right-of-way (approximately 124 feet wide) for Matanzas Woods Parkway and the adjacent land-use characteristics in Segment 1, an urban typical section, shown on **Figure 2-1**, was developed for the widening of the existing two-lane roadway to a four-lane, divided roadway. The urban typical section would consist of two 12-foot wide travel lanes, a four-foot wide bicycle lane in each direction, curb and gutter on the outside of the bicycle lanes, and a 22-foot wide raised median with curb and gutter. The urban typical section would also include a five-foot wide sidewalk along the north side of the roadway and a 10-foot wide sidewalk along the south side of the roadway. The existing pavement in order to establish the appropriate longitudinal grade for the urban typical section would require either resurfacing and overbuild or complete reconstruction of the corridor.

Segment 2

Based on the roadway typical sections suggested for the adjacent segments and the proposed interchange configuration alternatives in Segment 2, an urban typical section, shown on **Figure 2-2**, was developed for the widening of the existing two-lane roadway to a four-lane, divided roadway. The urban typical section would consist of two 12-foot wide travel lanes, a four-foot wide bicycle lane in each direction, curb and gutter on the outside of the bicycle lanes, and a 22-foot wide raised median with curb and gutter. The urban typical section would also include a five-foot wide sidewalk along the north side of the roadway and the existing eight-foot wide

Figure 2-1: Proposed Typical Section Matanzas Woods Parkway Segment 1

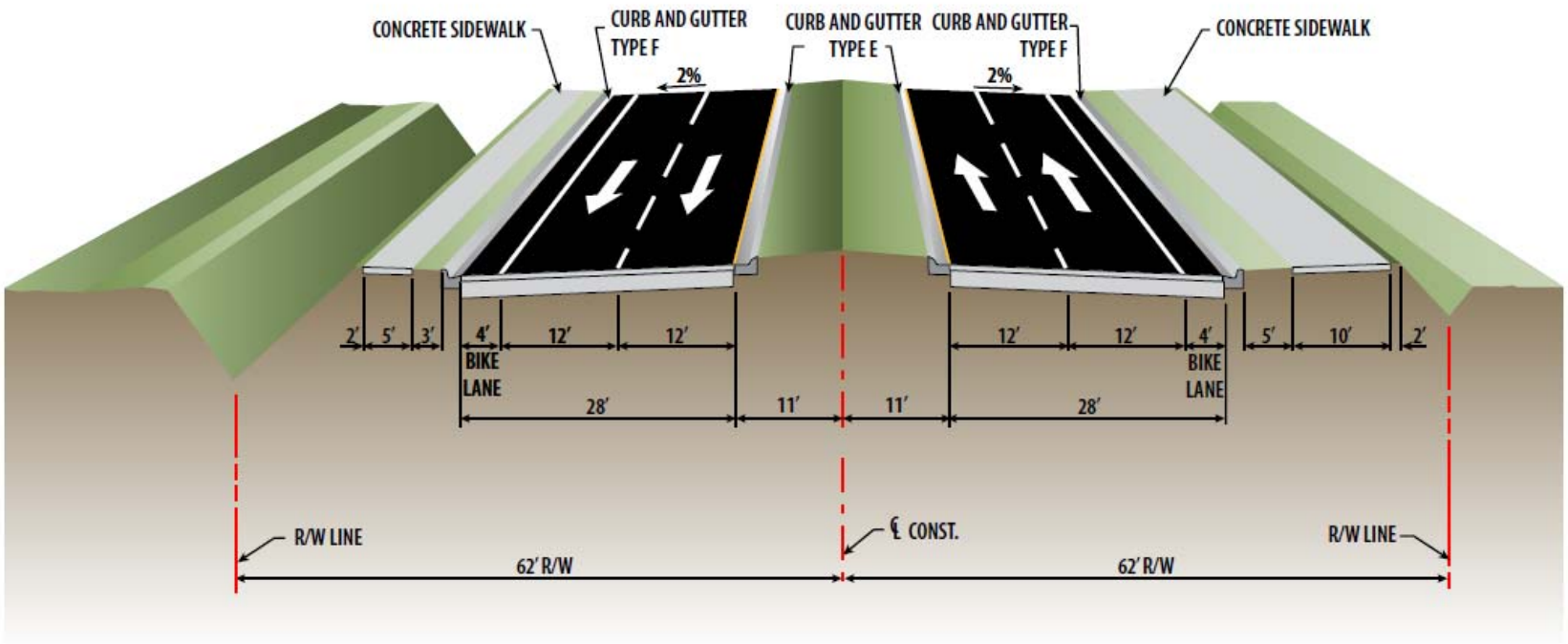
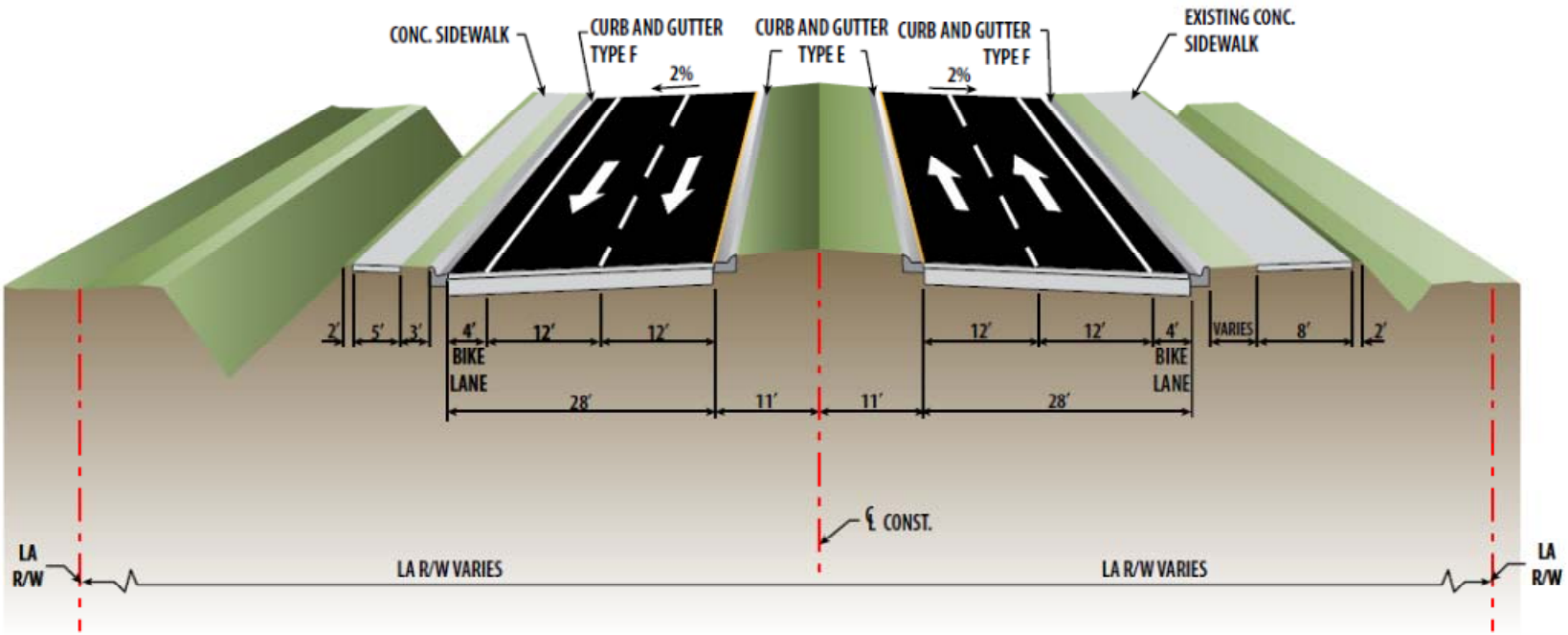


Figure 2-2: Proposed Typical Section Matanzas Woods Parkway Segment 2



sidewalk along the south side of the roadway would remain. The urban typical section would require resurfacing and widening of the existing pavement to establish the proposed eastbound lanes.

Segment 3

Based on the available right-of-way for Matanzas Woods Parkway and the adjacent land-use characteristics in Segment 3, a suburban typical section, shown on **Figure 2-3**, was developed for the widening of the existing two-lane roadway to a four-lane, divided roadway. The suburban typical section would consist of two 12-foot wide travel lanes in each direction with eight-foot outside shoulders (five feet paved), and a 30-foot wide raised median with four-foot paved inside shoulders and curb and gutter. The suburban typical section would also include a five-foot sidewalk along the north side of the roadway with the existing eight-foot sidewalk remaining along the south side of the roadway.

In the portions of Segment 3, where the horizontal alignment will remain, the suburban typical section would require resurfacing and widening of the existing pavement to become the proposed eastbound lanes.

One-Lane Ramps

The typical section for the proposed one-lane interchange ramps, shown on **Figure 2-4**, consist of one 15-foot travel lane with six-foot inside shoulders (two feet paved) and six-foot outside shoulders (four feet paved) and an open drainage system.

Two Lane Ramps

The typical section for the proposed two-lane interchange ramps, shown on **Figure 2-5**, consist of two 12-foot travel lanes with eight-foot inside shoulders (four feet paved) and 12-foot outside shoulders (10 feet paved) and an open drainage system.

2.1.3.4 Matanzas Woods Parkway Alignment Alternatives

The existing pavement of Matanzas Woods Parkway is offset from the centerline of the existing right-of-way, as the original two-lane roadway was constructed to be half of a future four-lane divided roadway in each existing segment. Each segment has different horizontal and vertical alignment deficiencies which are addressed through the alternatives presented in this section.

Segment 1

The majority of the existing pavement in Segment 1 is offset to the north within the existing right-of-way. Ideally, the existing pavement could be milled, resurfaced, and widened to become the proposed westbound lanes with the eastbound lanes constructed on the south side of the existing right-of-way. However, the existing profile grade is insufficient for curb and gutter. Two alternatives were developed to correct this deficiency, as described below.

<u>Alternative 1-A – Milling, Resurfacing, and Overbuild of Existing Pavement</u>

This alternative would mill, resurface, and overbuild the existing pavement using a variable pavement thickness to achieve an acceptable gutter grade for the proposed westbound lanes. This can be done by rotating the pavement cross slope from the existing three percent cross slope to a more typical two

Figure 2-3: Proposed Typical Section Matanzas Woods Parkway Segment 3

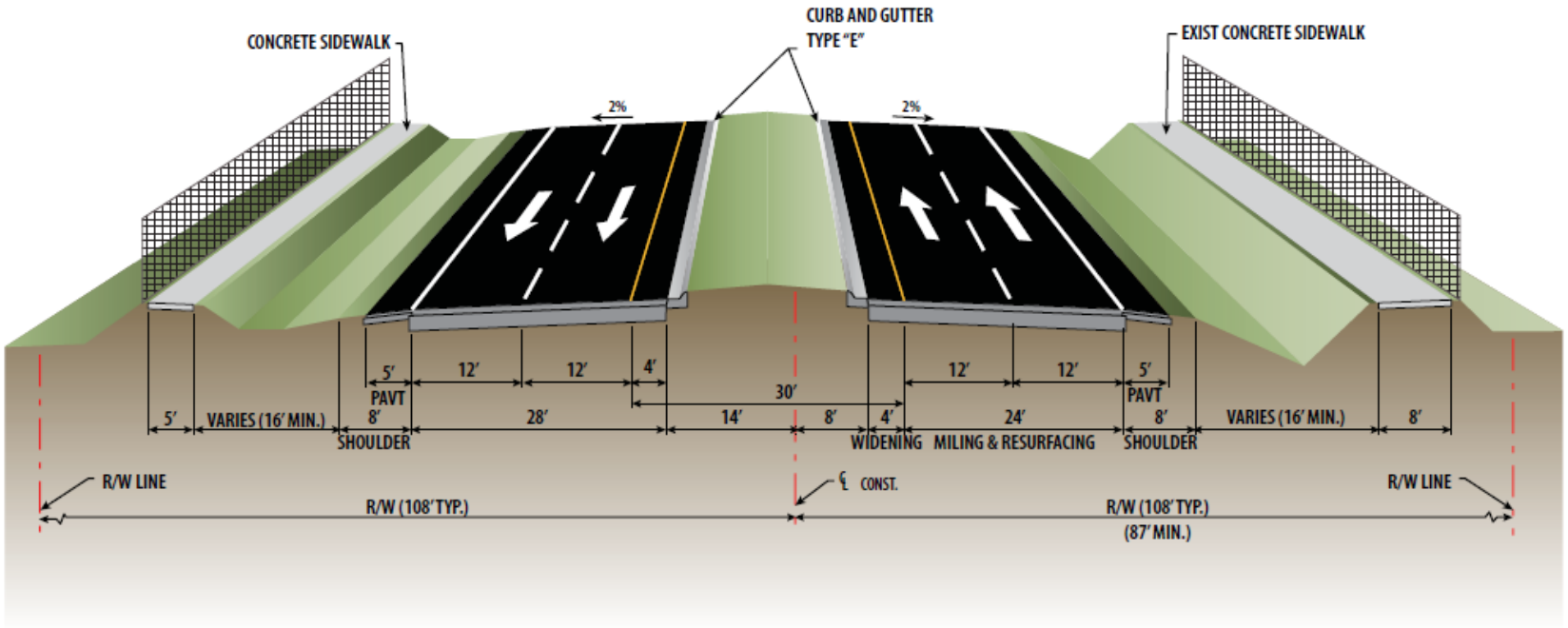


Figure 2-4: Proposed Typical Section One Lane Ramp

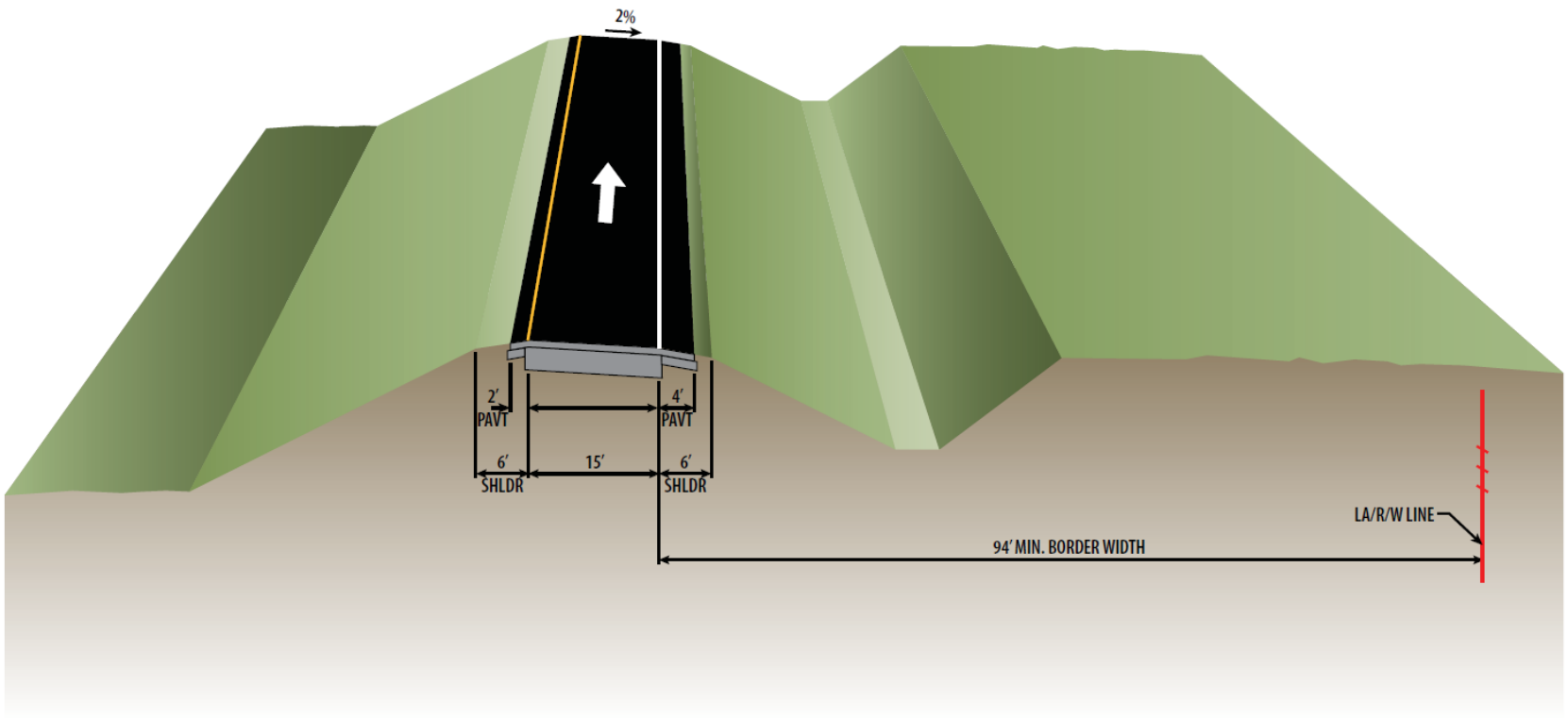
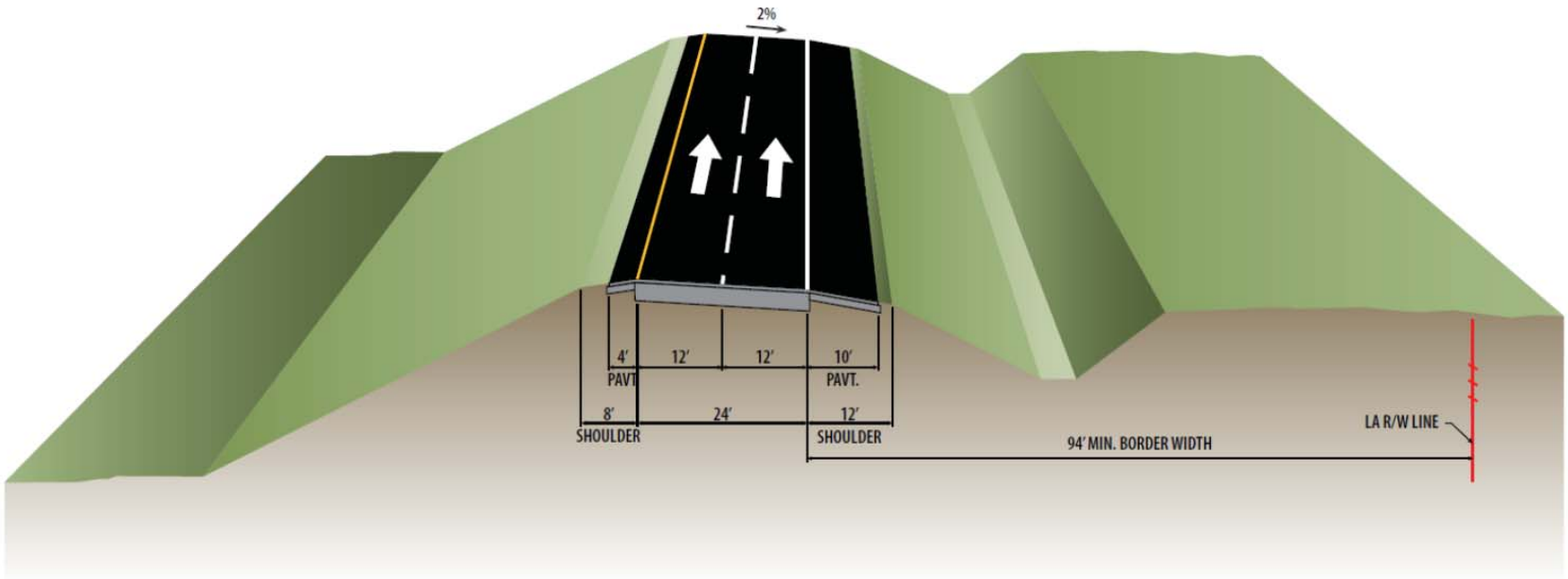


Figure 2-5: Proposed Typical Section Two Lane Ramp



percent cross slope. This warping of the travel lanes would allow for the curb and gutter to be used with an inlet spacing of approximately 186 feet. The proposed eastbound lanes would be new construction.

Alternative 1-B – Reconstruction of the Existing Pavement

This alternative would involve the removal of the existing pavement and the construction of a completely new four-lane roadway. This would allow for the pavement to maintain a more consistent cross slope and avoid some of the potential errors that could occur during construction of a variable pavement thickness operation. In addition, the travel lanes would ride more smoothly than the warped section.

In addition, the horizontal curve west of Belle Terre Parkway / Lakeview Boulevard would require lengthening to resolve the existing minimum curve length deficiency. This lengthening can be achieved through additional pavement transition to the south. The existing roadway superelevation exceeds the minimum required for each horizontal curve, but remains within the acceptable criteria for an urban roadway.

The existing pavement between Luther Drive and the proposed southbound ramps would require complete reconstruction as the existing pavement transitions from a northern offset through the majority of Segment 1 to a southern offset in Segment 2. The application of an urban typical section in Segment 1 would require either reconstruction of the majority of the existing pavement, or the inclusion of overbuild in the resurfacing of the existing pavement to achieve an acceptable gutter grade.

Segment 2

The existing pavement in Segment 2 is offset to the south within the existing right-of-way. This existing pavement can be milled, resurfaced, and widened to become the proposed eastbound lanes with the westbound lanes constructed north of the existing pavement. The existing profile grade is sufficient for the urban curb & gutter.

Segment 3

The existing pavement in Segment 3 between the northbound ramps and the proposed Old Kings Road Extension is offset to the south within the existing right-of-way. This existing pavement can be milled, resurfaced, and widened to become the proposed eastbound lanes with the westbound lanes constructed on the northern portion of the existing right-of-way. The existing horizontal alignment between the proposed Old Kings Road Extension and Old Kings Road has several deficiencies that cannot accommodate the proposed suburban typical section, including insufficient curve lengths, curve radii, and superelevation exceeding the maximum allowable standards for a suburban typical section, as well as a deficient profile grade for curb and gutter. In addition, the proposed Palm Harbor Parkway Extension proposes a realignment of the intersection of Old Kings Road and Matanzas Woods Parkway. Therefore, a realignment of Matanzas Woods Parkway is required to correct the existing geometric deficiencies and provide a smoother connection to the proposed Palm Harbor Parkway Extension. The realignment needs to minimize impacts to the Matanzas High School property on the south side of Matanzas Woods Parkway, while utilizing the suburban typical section and a 50 mph design speed. The realignment alternative would require a reconstruction of the existing drainage pond on the north side of Matanzas Woods Parkway and a small area of right-of-way acquisition on the southwest corner of the intersection of Matanzas Woods Parkway and Old Kings Road.

2.1.3.5 Interchange Configuration Alternatives

Two alternatives were evaluated for the proposed interchange for Matanzas Woods Parkway and I-95, a diamond configuration and a partial cloverleaf configuration. These interchange alternatives were recommended from the *Interchange Justification Report* (February 2011) and have been developed to minimize impacts to floodplains, wetlands, right-of-way, and other known environmental factors. The alignments were developed using FDOT design standards for interstate ramps and will minimize impacts to the existing right-of-way while maximizing the infield areas to allow for the stormwater management facilities on the west side of I-95 and to allow for the conveyance of floodwaters and wetlands on the east side of I-95.

Alternative IC-1 - Diamond Interchange Configuration

The diamond interchange configuration, shown on **Figure 2-6**, consists of one-lane ramps connecting onto and off of I-95 to intersect with Matanzas Woods Parkway with one-lane, two-lane, or three lane ramp terminal connections. The ramp alignments were developed with a design speed of 40 mph.

Alternative IC-2 - Partial Cloverleaf Interchange Configuration

The partial cloverleaf configuration, shown on **Figure 2-7**, consists of one-lane directional ramps for the northbound on-ramp and southbound off-ramp to I-95, each with two-lane ramp terminal connections to Matanzas Woods Parkway, and loop ramps for the southbound on-ramp and northbound off-ramp. The southbound on-ramp is a one-lane ramp connection to I-95 with a two-lane ramp terminal connection to Matanzas Woods Parkway. The northbound off-ramp is a two-lane ramp from I-95 to Matanzas Woods Parkway. The loop ramp design speeds are 30 mph while the directional ramp design speeds are 40 mph.

2.1.3.6 Luther Drive Intersection Alternatives

The existing intersections on Matanzas Woods Parkway with Luther Drive and Bird of Paradise Drive in Segment 1 are spaced approximately 260 feet apart, which does not meet the Flagler County criteria for median opening spacing for the proposed design speed of 45 mph. The intersection with Bird of Paradise Drive serves more residents in the neighborhoods to the south of Matanzas Woods Parkway. However, Luther Drive serves as the only access point to a group of about 60 residences and access should be maintained. Two scenarios were developed to resolve this access deficiency without creating an unsafe intersection condition: a new connection for Luther Drive and a new median opening for a u-turn to the west of the Belleaire Waterway.

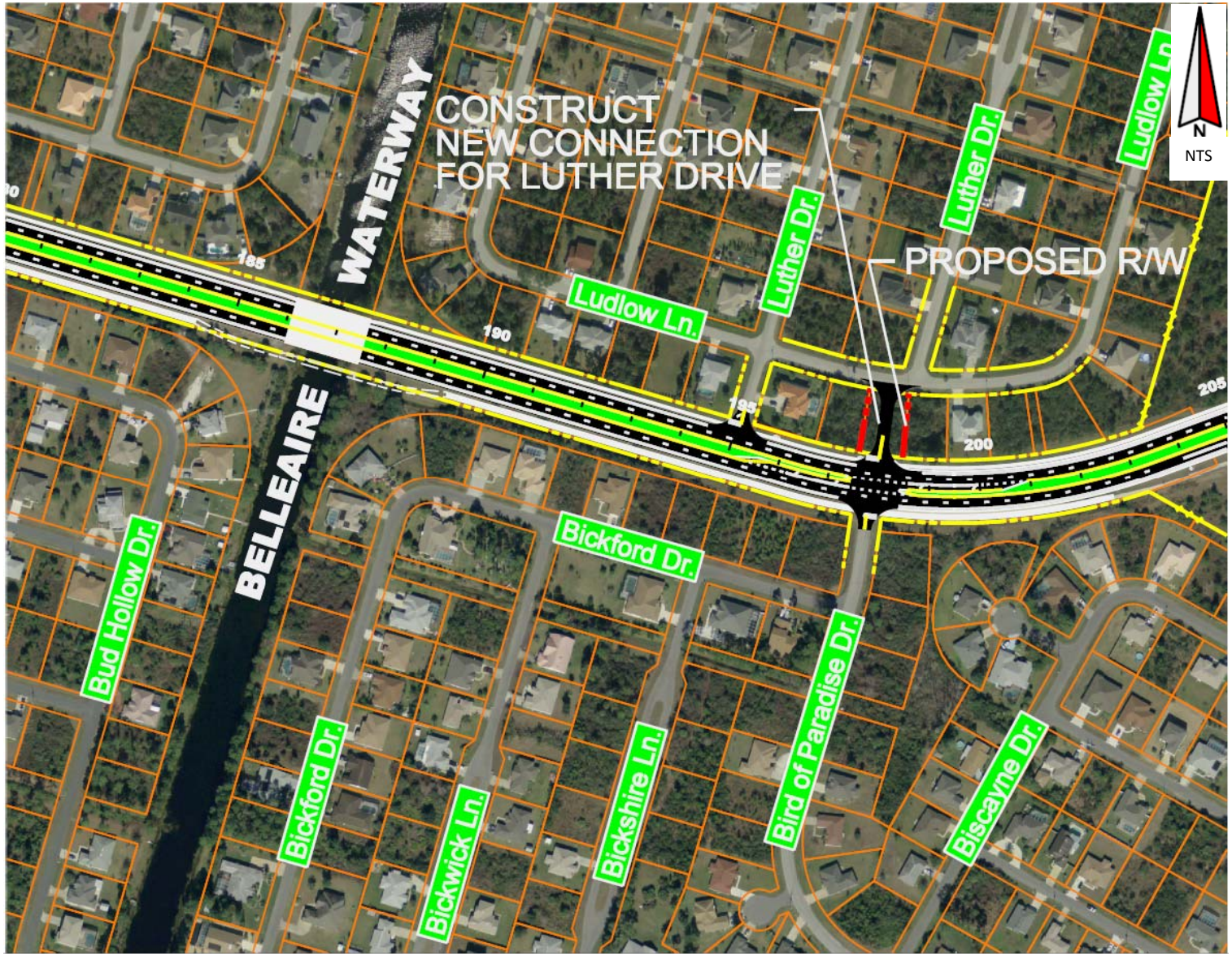
Alternative L-1 - New Connection

Alternative L-1 includes the construction of a new connection to Luther Drive using vacant property immediately north of the Matanzas Woods Parkway and Bird of Paradise Drive intersection, shown on **Figure 2-8**. This new connection would utilize the proposed full access median opening for Bird of Paradise Drive to provide ingress and egress to the subdivision for both directions at Matanzas Woods Parkway and would require the right-of-way acquisition of one vacant parcel. The existing connection of Luther Drive would remain as a right-in / right-out only connection to / from westbound Matanzas Woods Parkway.

Figure 2-6: Diamond Interchange Configuration

Figure 2-7: Partial Cloverleaf Interchange Configuration

Figure 2-8: Luther Drive Alternative L-1



Alternative L-2 – Existing Connection

Alternative L-2 includes the construction of a directional median opening for Luther Drive, shown on **Figure 2-9**, to allow for left turns for eastbound traffic on Matanzas Woods Parkway to enter Luther Drive. The proposed opening at Laramie Drive would also allow for u-turns so those leaving Luther Drive wishing to drive eastbound on Matanzas Woods Parkway could drive westbound and make a u-turn. The proposed connection at Luther Drive would restrict movements to eastbound Matanzas Woods Parkway.

2.1.3.7 Palm Coast Parkway Interchange Alternatives

As part of the recommendations from the *Interchange Justification Report* (February 2011), the southbound off ramp of the I-95 and Palm Coast Parkway interchange would require an additional left turn lane to accommodate the projected traffic resulting from the new interchange at Matanzas Woods Parkway needed in 2026. The existing configuration consists of an approximately 400-foot long right turn lane adjacent to the left turn lane. The IJR recommended 450-foot long dual left turn lanes. The alternatives considered widening the existing ramp to the left, right, or a combination of left and right widening to develop the additional left turn lane.

Figure 2-9: Luther Drive Alternative L-2

2.2 Evaluation of Alternatives

Since the majority of the concepts developed for this project were limited by various environmental and geometric factors, the evaluation of alternatives consisted only of evaluating the options for construction of Matanzas Woods Parkway and the interchange configuration alternatives.

2.2.1 Environmental Considerations

Various environmental studies were performed to assess the build alternatives and no-build alternative impacts in the vicinity of the study corridor.

Contamination

A *Contamination Screening Evaluation Report* (CSER) (August 2011) was conducted for both the project corridor and the proposed pond sites. The CSER concluded that there are no contamination sites adjacent to the project corridor or proposed pond sites.

Cultural Resources

A *Cultural Resource Assessment Survey* (CRAS) (August 2011) was conducted for both the project corridor and the proposed pond sites. The CRAS concluded that no artifacts, cultural material, or other cultural resources eligible for listing with the National Register of Historic Places were within the project's area of potential effects.

Air Quality

An *Air Quality Study* (August 2011) was conducted for the project corridor. The analysis concluded that there were no air quality receptors within ten feet of the travel lanes and the project will not have a significant effect on air quality.

Noise Quality

A *Noise Study* (August 2011) was conducted for the project corridor. The analysis identified 72 potentially impacted noise sensitive sites within the project area. Each alternative was evaluated for the impacts to these noise sensitive sites. See **Section 3.4.1** for a summary of the results.

Wetlands

A *Wetlands Evaluation Report* (August 2011) was conducted for the project corridor and the proposed pond sites. The report concluded that there were potential impacts to wetlands depending upon the alternative chosen which would require mitigation. See **Section 3.1.11** for a summary of the results.

Threatened and Endangered Species

An *Endangered Species Biological Assessment* (August 2011) was conducted for the project corridor and the proposed pond sites. The report concluded that there were no threatened or endangered species observed, but that the project area was suitable habitat for the gopher tortoise, the gopher frog, the Florida mouse, the Florida pine snake, and the eastern indigo snake, as well as suitable foraging habitat for several species of wading birds. The report recommended further observation of the project site prior to construction approaches as the area is suitable habitat for the above mentioned species. See **Section 3.1.12** for a summary of the results.

2.2.2 Evaluation Summary

2.2.2.1 Evaluation Criteria

The No Build and Build Alternative concepts were evaluated to provide a basis for selecting the Preferred Alternative for each segment. The elements evaluated include alignment length, natural environment, cultural resources, social environment, physical environment, engineering, and project costs. The impact evaluations for each segment and interchange configuration are shown on **Table 2-1** through **Table 2-4**.

Length of Alignment

The overall length of alignment was based upon the overall length of the proposed improvements. The length of new construction and the length of milling & resurfacing were the items quantified in the length of alignment category. The length of new construction was based upon the length of each lane of the proposed roadway to be either constructed or reconstructed. The length of milling and resurfacing was based upon the length of each lane of the existing roadway which would be resurfaced only.

Natural Environment

The area of wetland impacts and the number of threatened and endangered species are the items quantified for the Natural Environment category. The wetland impacts were based on the area in acres for which mitigation would be required. The number of threatened and endangered species was based upon field observations of existing habitats within the project corridor.

Cultural Resources

Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303(c)) allows for publicly owned parks and recreation areas, wildlife or waterfowl refuges, or significant historic sites to be "used" for transportation purposes only if there is no feasible and prudent alternative to the use of the land, and the action includes all possible planning to minimize harm resulting from such use. Use can be defined in three ways: Actual Use, Temporary Occupancy, or Constructive Use (23 CFR 774). Actual Use constitutes permanent incorporation of the resource into the project, such as land acquisition or demolition of a resource. Temporary Occupancy would be the extended intrusion into the property during construction, where construction would physically alter the land, or where full restoration of the resource could not be possible after construction. A Constructive Use determination could apply if a resource would experience ancillary impacts, despite the lack of a physical intrusion

The number of Section 4(f) impacts and the number of historical sites within 300 feet of the right-of-way are the subcategories quantified for the Cultural Resources category. The number of Section 4(f) impacts was based upon the number of parcels classified public parks and recreation lands, wildlife and waterfowl refuges, and historic sites affected by the alternatives. The number of historical sites within 300 feet of the right-of-way was based upon previously recorded historical sites in the Florida Master Site File at the State Historical Preservation Office.

Table 2-1: Evaluation Matrix – Matanzas Woods Parkway Segment 1

Evaluation Criteria	No-Build	Alt. 1-A 4-Lane Urban (Overbuild)	Alt. 1-B 4-Lane Urban (Reconstruction)
Length of Alignment (Miles)	1.99	1.99	1.99
Length of New Construction (Lane Miles)	-	4.27	7.90
Length of Milling & Resurfacing (Lane Miles)	-	3.69	0.06
Natural Environment			
Area of Wetland Impacts (Acres)	-	0.25	0.25
Number of Threatened and Endangered Species within 300 ft of R/W	-	0	0
Cultural Resources			
Number of Section 4(f) Impacts	-	0	0
Number of Archaeological Sites within 300 feet of R/W	-	0	0
Number of Historic Architectural Sites within 300 feet of R/W	-	0	0
Number of NRHP-Eligible Sites within 300 feet of R/W	-	0	0
Number of Historical Sites within 300 Feet of R/W	-	0	0
Social Environment			
Number of Existing Buildings Impacted	-	0	0
Number of Proposed Buildings Impacted	-	0	0
Number of Parcels Impacted (for Roadway Construction)	-	3	3
Number of Parcels Impacted (for Pond Construction)	-	1	1
Roadway Right-of-Way Area Required (Acres)	-	0.41	0.41
Ponds Right-of-Way Area Required (Acres)	-	5.42	5.42
Total R/W Acquisition Area (acres)	-	5.83	5.83
Right-of-way Costs (Qualitative)	-	Medium	Medium
Physical Environment			
Volume of 100yr Floodplain Encroachment (Acre-Feet)(1)	-	0.24	0.24
Number of Impacted Potential Contamination Sites	-	0	0
Number of Impacted Noise Sensitive Sites	29	49	49
Bridges			
Number of Bridges	-	1	1
Total Area of Bridges (Square Feet)	-	13,500	13,500
Preliminary Project Cost Estimates			
Preliminary Roadway and Pond Construction Cost (2011$)(2)	$ -	$ 11,960,000	$ 12,528,000
Construction Engineering Inspection (2011$)(3)	$ -	$ 1,196,000	$ 1,253,000
Engineering Costs (2011$)(4)	$ -	$ 1,794,000	$ 1,879,000
Wetland Mitigation Costs (20011$)(5)	$ -	$ 28,000	$ 28,000
Total Preliminary Project Cost Estimate (2011$)(6)	**$ -**	**$ 14,978,000**	**$ 15,688,000**

Notes:

(1) Estimated based on GIS data.

(2) Based on FDOT Long Range Estimating (LRE)

(3) 10% of Construction Costs.

(4) 15% of Construction Costs.

(5) Based on $110,000 per acre.

(6) Does not include costs for right-of-way acquisition

Table 2-2: Evaluation Matrix – Matanzas Woods Parkway Segment 2

Evaluation Criteria	No-Build	Build Alternative 4-Lane Urban
Length of Alignment (Miles)	0.28	0.28
Length of New Construction (Lane Miles)	-	0.54
Length of Milling & Resurfacing (Lane Miles)	-	0.54
Natural Environment		
Area of Wetland Impacts (Acres)	-	*
Number of Threatened and Endangered Species within 300 ft of R/W	-	0
Cultural Resources		
Number of Section 4(f) Impacts	-	0
Number of Archaeological Sites within 300 feet of R/W	-	0
Number of Historic Architectural Sites within 300 feet of R/W	-	0
Number of NRHP-Eligible Sites within 300 feet of R/W	-	0
Number of Historical Sites within 300 Feet of R/W	-	0
Social Environment		
Number of Existing Buildings Impacted	-	0
Number of Proposed Buildings Impacted	-	0
Number of Parcels Impacted (for Roadway Construction)	-	0
Number of Parcels Impacted (for Pond Construction)	-	1**
Roadway Right-of-Way Area Required (Acres)	-	0.00
Ponds Right-of-Way Area Required (Acres)	-	8.24*
Total R/W Acquisition Area (acres)	-	0.00
Right-of-way Costs (Qualitative)	-	Low
Physical Environment		
Volume of 100yr Floodplain Encroachment (Acre-Feet)(1)	-	*
Number of Impacted Potential Contamination Sites	-	0
Number of Impacted Noise Sensitive Sites	-	0
Bridges		
Number of Bridges	-	1
Total Area of Bridges (Square Feet)	-	19,800
Preliminary Project Cost Estimates		
Preliminary Roadway and Pond Construction Cost (2011$)(2)	$ -	$ 3,654,000
Construction Engineering Inspection (2011$)(3)	$ -	$ 365,000
Engineering Costs (2011$)(4)	$ -	$ 548,000
Wetland Mitigation Costs (20011$)(5)	$ -	$ -
Total Preliminary Project Cost Estimate (2011$)(6)	**$ -**	**$ 14,950,000**

Notes:

* See Interchange Configuration Alternatives for wetland and floodplain impacts.
** Pond would be constructed within interchange area - no additional right-of-way needed.

(1) Estimated based on GIS data.

(2) Based on FDOT Long Range Estimating (LRE)

(3) 10% of Construction Costs.

(4) 15% of Construction Costs.

(5) Based on $110,000 per acre.

(6) Does not include costs for right-of-way acquisition.

Table 2-3: Evaluation Matrix – Matanzas Woods Parkway Segment 3

Evaluation Criteria	No-Build	Build Alternative 4-Lane Suburban
Length of Alignment (Miles)	0.72	0.72
Length of New Construction (Lane Miles)	-	2.08
Length of Milling & Resurfacing (Lane Miles)	-	0.80
Natural Environment		
Area of Wetland Impacts (Acres)	-	3.46
Number of Threatened and Endangered Species within 300 ft of R/W	-	0
Cultural Resources		
Number of Section 4(f) Impacts	-	0
Number of Archaeological Sites within 300 feet of R/W	-	0
Number of Historic Architectural Sites within 300 feet of R/W	-	0
Number of NRHP-Eligible Sites within 300 feet of R/W	-	0
Number of Historical Sites within 300 Feet of R/W	-	0
Social Environment		
Number of Existing Buildings Impacted	-	0
Number of Proposed Buildings Impacted	-	0
Number of Parcels Impacted (for Roadway Construction)	-	2
Number of Parcels Impacted (for Pond Construction)	-	2
Roadway Right-of-Way Area Required (Acres)	-	0.99
Ponds Right-of-Way Area Required (Acres)	-	12.24*
Total R/W Acquisition Area (acres)	-	13.23
Right-of-way Costs (Qualitative)	-	Medium
Physical Environment		
Volume of 100yr Floodplain Encroachment (Acre-Feet)(1)	-	0.75
Number of Impacted Potential Contamination Sites	-	0
Number of Impacted Noise Sensitive Sites	-	0
Bridges		
Number of Bridges	-	-
Total Area of Bridges (Square Feet)	-	-
Preliminary Project Cost Estimates		
Preliminary Roadway and Pond Construction Cost (2011$)(2)	$ -	$ 4,727,000
Construction Engineering Inspection (2011$)(3)	$ -	$ 473,000
Engineering Costs (2011$)(4)	$ -	$ 709,000
Wetland Mitigation Costs (20011$)(5)	$ -	$ 381,000
Total Preliminary Project Cost Estimate (2011$)(6)	**$ -**	**$ 6,290,000**

Notes:

* Pond 4A would be constructed on Flagler County-owned parcel.

(1) Estimated based on GIS data.

(2) Based on FDOT Long Range Estimating (LRE)

(3) 10% of Construction Costs.

(4) 15% of Construction Costs.

(5) Based on $110,000 per acre.

(6) Does not include costs for right-of-way acquisition.

Table 2-4: Evaluation Matrix – Interchange Configuration Alternatives

Evaluation Criteria	No-Build	Alt. IC-1 Diamond Interchange	Alt. IC-2 Partial Cloverleaf Interchange
Length of Alignment (Miles)	-	2.24	2.99
Length of New Construction (Lane Miles)	-	2.24	3.29
Length of Milling & Resurfacing (Lane Miles)	-	-	-
Natural Environment			
Area of Wetland Impacts (Acres)	-	13.82	12.87
Number of Threatened and Endangered Species within 300 ft of R/W	-	0	0
Cultural Resources			
Number of Section 4(f) Impacts	-	0	0
Number of Archaeological Sites within 300 feet of R/W	-	0	0
Number of Historic Architectural Sites within 300 feet of R/W	-	0	0
Number of NRHP-Eligible Sites within 300 feet of R/W	-	0	0
Number of Historical Sites within 300 Feet of R/W	-	0	0
Social Environment			
Number of Existing Buildings Impacted	-	0	2
Number of Proposed Buildings Impacted	-	0	7
Number of Parcels Impacted (for Roadway Construction)	-	0	10
Number of Parcels Impacted (for Pond Construction)	-	0	0
Roadway Right-of-Way Area Required (Acres)	-	0.00	2.43
Ponds Right-of-Way Area Required (Acres)	-	0.00	0.00
Total R/W Acquisition Area (acres)	-	0.00	2.43
Right-of-way Costs (Qualitative)	-	Low	High
Physical Environment			
Volume of 100yr Floodplain Encroachment (Acre-Feet)(1)	-	5.53	4.74
Number of Impacted Potential Contamination Sites	-	0	0
Number of Impacted Noise Sensitive Sites	7	11	9
Bridges			
Number of Bridges	-	-	-
Total Area of Bridges (Square Feet)	-	-	-
Preliminary Project Cost Estimates			
Preliminary Roadway and Pond Construction Cost (2011$)(2)	$ -	$ 4,413,000	$ 6,274,000
Construction Engineering Inspection (2011$)(3)	$ -	$ 441,000	$ 627,000
Engineering Costs (2011$)(4)	$ -	$ 662,000	$ 941,000
Wetland Mitigation Costs (20011$)(5)	$ -	$ 1,520,000	$ 1,416,000
Total Preliminary Project Cost Estimate (2011$)(6)	**$ -**	**$ 7,036,000**	**$ 9,258,000**

Notes:

(1) Estimated based on GIS data.

(2) Based on FDOT Long Range Estimating (LRE)

(3) 10% of Construction Costs.

(4) 15% of Construction Costs.

(5) Based on $110,000 per acre.

(6) Does not include costs for right-of-way acquisition

Social Environment

The number of existing buildings impacted, the number of proposed buildings impacted, the number of parcels impacted, the roadway right-of-way area required, and the ponds right-of-way area required are the subcategories quantified for the Social Environment category. The number of existing buildings impacted was based upon field observations and aerial photographs. The number of proposed buildings impacted was based on plans filed with Flagler County and the City of Palm Coast and any vacant home sites. The number of parcels impacted was based on the number of parcels crossed by the proposed right-of-way. The roadway right-of-way area required is based upon the total amount of right-of-way required for alternative typical section outside the existing right-of-way. The pond right-of-way area required is based upon the amount of right-of-way required for the proposed stormwater retention facilities. The right-of-way acquisition costs for the roadway improvements and proposed ponds were estimated on a quantitative scale as either being low, medium, or high for each alternative.

Physical Environment

The area of 100-year floodplain encroachment, the number of potential contamination sites within 300 feet of the right-of-way, and the number of noise sensitive sites are the subcategories quantified for the Physical Environment category. The area of 100-year floodplain encroachment was based upon the surface area within each alternative which would pass through the 100-year floodplain as described by the 2006 FEMA floodplain maps. The number of potential contamination sites within 300 feet of the right-of-way was based upon the findings of the CSER. See **Section 3.1.4** for a summary of the results for the contamination study. The number of impacted noise sensitive sites was based upon field reconnaissance of the study area and as documented in the Noise Study (August 2011). See **Section 3.4.1** for a summary of the results for the noise study.

Bridge Replacement

The number of bridge replacements and the total area of bridges are the subcategories quantified for the Bridge Replacement category. The number of bridge replacements was based upon the proposed bridge structures. The total area of bridges was based upon the square footage of the proposed bridges. The bridge alternatives for both the bridge over the Belleaire Waterway and the bridge over I-95, was analyzed in the Bridge Alternatives Evaluation **(Section 2.3.4)**.

Project Costs

The preliminary roadway and pond construction cost, the construction engineering and inspection (CEI) cost, the engineering cost, and the wetland mitigation cost was estimated for each alternative. The preliminary roadway and pond construction cost was based on the estimate derived from the FDOT Long Range Estimates. The CEI cost was estimated as 10% of the preliminary construction cost. The engineering cost was estimated as 15% of the preliminary construction cost. The mitigation cost was estimated at $110,000 per acre. 2011 dollars were utilized to determine the various costs. The preliminary cost estimates are detailed in **Appendix H**.

2.2.2.2 Luther Drive Alternatives Evaluation

The impacts of the two alternatives for the Matanzas Woods Parkway access to Luther Drive were evaluated using the same criteria as the other Matanzas Woods Parkway segments. The Luther Drive alternatives each had no impacts to the natural, cultural, or physical environments, and contained no bridges. The alternatives were evaluated on the length of construction, social environment impacts, and construction costs, shown in **Table 2-5**.

Additional considerations based on feedback from the area residents and Flagler County contributed to the selection of a preferred alternative. Alternative L-1 would require additional right-of-way acquisition, but would offer a direct connection to the Luther Drive neighborhood. Alternative L-2 would save the additional right-of-way cost, but would require u-turns to mitigate the restricted left turns out of the neighborhood. The construction of the additional turn lane at Laramie Drive with Alternative L-2 would almost cost as much as the right-of-way acquisition cost of Alternative L-1. Appropriate sight distance looking toward the interchange would not be obtained for Alternative L-1, which would be a safety issue for those turning from Luther Drive. Alternative L-2, shown on **Figure 2-9**, was the preferred access configuration for Luther Drive.

Table 2-5: Evaluation Matrix – Luther Drive Alternatives

Evaluation Criteria	Alt. L-1 New Connection	Alt. L-2 Directional Opening
Length of Alignment (Miles)	-	-
Length of New Construction (Lane Miles)	0.06	0.08
Length of Milling & Resurfacing (Lane Miles)	-	-
Social Environment		
Number of Existing Buildings Impacted	0	0
Number of Proposed Buildings Impacted	1	0
Number of Parcels Impacted (for Roadway Construction)	1	0
Number of Parcels Impacted (for Pond Construction)	0	0
Roadway Right-of-Way Area Required (Acres)	0.23	0.00
Ponds Right-of-Way Area Required (Acres)	0.00	0.00
Total R/W Acquisition Area (acres)	0.23	0.00
Right-of-way Costs (Qualitative)	Low	None
Preliminary Project Cost Estimates		
Preliminary Roadway and Pond Construction Cost (2011$)(2)	$ 60,000	$ 80,000
Construction Engineering Inspection (2011$)(3)	$ 6,000	$ 8,000
Engineering Costs (2011$)(4)	$ 9,000	$ 12,000
Wetland Mitigation Costs (20011$)(5)	$ -	$ -
Total Preliminary Project Cost Estimate (2011$)(6)	**$ 75,000**	**$ 100,000**

Notes:

(1) Estimated based on GIS data.

(2) Based on FDOT Long Range Estimating (LRE)

(3) 10% of Construction Costs.

(4) 15% of Construction Costs.

(5) Based on $110,000 per acre.

(6) Does not include costs for right-of-way acquisition.

2.2.2.3 Palm Coast Parkway Interchange Alternatives Evaluation

The three widening schemes (left, right, and combination) were evaluated for the additional turn lane needed on the southbound off ramp of the I-95 and Palm Coast Parkway interchange. Since the existing interchange area is in a highly urbanized area and contains no documented wetlands, floodplains, contamination sites, cultural sites, or habitat for threatened or endangered species, the impacts of each alternative were limited to construction costs and intersection impacts. None of the alternatives would impact the existing right-of-way or existing drainage facilities. Widening to the left would allow for the existing lanes to remain so as to not to require lanes to shift

from the normal ramp alignment and would not require any modifications to the existing Palm Coast Parkway intersection. Widening to the right would also allow for the existing lanes to remain and avoid alignment shift, but would require the existing channelizing island and the existing median nose on the west side of the intersection to be reconstructed. Widening using a combination of left and right widening would require both alignment shift and reconstruction of the existing median and channelizing island. Based on these intersection impacts, the preferred alternative was to widen the southbound off ramp to the left (or east), shown on **Figure 2-10**.

Figure 2-10: Palm Coast Parkway Interchange Improvement

2.2.2.4 Preferred Alternative

The selected Preferred Alternatives are refined based on stakeholder and public input, field review, and design analysis. Based on the criteria above, the following improvements were recommended. **Section 2.3** contains a detailed description of the Preferred Alternative.

Segment 1

The Build Alternative was recommended as the preferred alternative for Segment 1. Alternative 1-B was recommended as the preferred build alternative for Segment 1 based on the ability of the alternative to accommodate drainage issues associated with the roadside swales between Londonderry Drive and Louisiana Drive and the relative simplicity of construction.

Segment 2

The Build Alternative was recommended as the preferred alternative for Segment 2. The four lane urban typical section satisfies the traffic demand with minimal impacts.

Segment 3

The Build Alternative was recommended as the preferred alternative for Segment 3. The four lane suburban typical section satisfies the traffic demand with minimal impacts.

Interchange Configuration

Alternative IC-1 (diamond interchange) was recommended as the preferred alternative for the interchange configuration based on the reduced right-of-way impacts and construction costs as compared with Alternative IC-2 (Partial Cloverleaf).

2.3 Preferred Alternative

2.3.1 Typical Sections

Segment 1

An urban typical section, shown previously on **Figure 2-1**, was developed for the widening of the existing two-lane roadway to a four-lane, divided roadway. The urban typical section would consist of two 12-foot wide travel lanes with a four-foot bicycle lane in each direction with curb and gutter on the outside of the bicycle lanes, and a 22-foot wide raised median with curb and gutter. The urban typical section would also include a five-foot sidewalk along the north side of the roadway and a 10-foot sidewalk along the south side of the roadway.

Segment 2

An urban typical section, shown previously on **Figure 2-2**, was developed for the widening of the existing two-lane roadway to a four-lane, divided roadway. The urban typical section would consist of two 12-foot wide travel lanes with a four-foot bicycle lane in each direction with curb and gutter on the outside of the bicycle lanes, and a 22-foot wide raised median with curb and gutter. The urban typical section would also include a five-foot sidewalk along the north side of the roadway with the existing eight-foot sidewalk remaining along the south side of the roadway. The urban typical section would require resurfacing and widening of the existing pavement to become the proposed eastbound lanes.

Segment 3

A suburban typical section, shown previously on **Figure 2-3**, was developed for the widening of the existing two-lane roadway to a four-lane, divided roadway. The suburban typical section would consist of two 12-foot wide travel lanes in each direction with eight-foot outside shoulders (five feet paved), and a 30-foot wide raised median with four-foot paved inside shoulders and curb and gutter. The suburban typical section would also include a five-foot sidewalk along the north side of the roadway with the existing eight-foot sidewalk remaining along the south side of the roadway.

One-Lane Ramps

The typical section for the proposed one-lane interchange ramps, shown previously on **Figure 2-4**, consist of one 15-foot travel lane with six-foot inside shoulders (two feet paved) and six-foot outside shoulders (four feet paved) and an open drainage system. The border width design criteria will require a design variation for the offset from the ramp pavement to the right-of-way line. The border width is 94 feet from the edge of travel to the right-of-way line. The proposed improvements minimum border width is forty-one feet.

2.3.2 Horizontal and Vertical Alignment

2.3.2.1 Horizontal Alignment

The proposed horizontal alignment for Matanzas Woods Parkway, shown in **Table 2-6**, includes adjustments to some of the existing curves in Segment 1, and the complete realignment of Segment 3, shown in the concept plans in **Appendix B**. The proposed horizontal alignments for the interchange ramps, shown in **Table 2-6**, were developed for the diamond interchange configuration using a 40 mph design speed.

Table 2-6: Proposed Horizontal Alignment

Curve or Approximate Location	PI Station	Back Tangent	Delta Angle	Radius (ft)	Curve Direction	Curve Length (ft)	Design Speed (MPH)	Proposed Superelevation (ft/ft)
Matanzas Woods Boulevard Segment 1 – US 1 to Southbound Ramps								
Curve 1	112+10.00	S 80° 00' 30" E	24° 05' 01"	1,061.00	Left	445.98	45	RC (0.020)
Curve 2	123+88.45	N 75° 54' 30" E	22° 41' 19"	1,937.00	Right	767.03	45	RC (0.020)
Curve 3	152+89.42	S 81° 24' 12" E	7° 43' 02"	2,969.76	Right	400.00	45	RC (0.020)
Matanzas Woods Boulevard Segment 2 – Southbound Ramps to Northbound Ramps								
Curve 4	199+94.88	S 73° 41' 10" E	35° 50’ 59”	1,138.00	Left	712.04	45	RC (0.020)
Matanzas Woods Boulevard Segment 3 – Northbound Ramps to Old Kings Road								
Curve 5	233+67.79	N 70° 02' 55" E	11° 40' 48"	2,245.00	Left	457.65	50	0.050
Curve 6	248+24.58	N 58° 22' 07"E	31° 46' 26"	2,500.00	Right	1,386.39	50	0.046
Interchange Ramp A (Southbound On-Ramp)*								
Curve A1	4+01.62	S 39° 32' 09" E	27° 50’ 47”	824.09	Left	400.52	40	0.078
Curve A2	12+46.89	S 67° 22’ 56” E	42° 07’ 42”	716.00	Right	526.46	40	0.084
Curve A3**	21+61.92	S 25° 15’ 15” E	2° 13’ 45”	17,256.73	Left	671.42	70	NC (-0.030)
Interchange Ramp B (Northbound Off-Ramp)*								
Curve B1**	31+20.20	N 26° 03' 31" W	0° 48’ 16”	17,120.73	Right	240.39	70	NC (-0.030)
Curve B2	36+56.61	N 25° 15’ 15” W	33° 39’ 52”	716.00	Right	420.69	40	0.084
Curve B3	44+42.78	N 8° 24’ 38” E	8° 05’ 46”	3,551.35	Left	501.82	40	0.023
Interchange Ramp C (Northbound On-Ramp)*								
Curve C1	54+83.63	N 19° 57' 05" W	46° 39’ 58”	619.93	Left	504.92	40	0.090
Curve C2	64+05.02	N 66° 37’ 03” W	41° 21’ 48”	716.00	Right	516.90	40	0.084
Interchange Ramp D (Southbound Off-Ramp)*								
Curve D1	87+05.68	S 25° 15' 15" E	41° 34’ 04”	700.00	Right	507.85	40	0.085
Curve D2	94+31.21	S 16° 18’ 50” W	16° 23’ 05”	1,417.12	Left	405.25	40	0.051

*Stationing for Proposed Ramps is in direction of travel.
**Curve correlates to curve on adjacent section of I-95

2.3.2.2 Vertical Alignment

The proposed vertical alignment for Matanzas Woods Parkway, shown in **Table 2-7** and in the concept plans in **Appendix B**, includes the required modifications to the existing profile grade in Segment 1 to meet minimum gutter grade criteria. The Segment 2 vertical alignment will require reconstruction to 2% for safely accommodating truck traffic at the ramp entrances. The limits of reconstruction are from approximately Luther Drive to 100 feet west of the bridge and from approximately 100 feet east of the bridge to the existing pond labeled as Pond 3A on **Figure 2-12**. The profile grade in Segment 3 was developed to meet minimum gutter grade criteria. Based on the need for culverts to mitigate overland flow, the placement of the culverts would influence the vertical profile of the interchange ramps. Therefore, the proposed vertical alignments for the interchange ramps will be developed during the final design phase using a 40 mph design speed.

2.3.3 Drainage

Construction of the proposed improvements will require stormwater treatment areas outside of the existing roadway right-of-way. The stormwater management facilities will be designed so that the control, treatment and design high water elevations do not adversely impact off-site areas, including the existing and proposed roadway drainage structures. Additionally, the proposed stormwater management facilities will not impede existing off-site flow patterns. All runoff from the proposed construction will be collected using gutters, swales, ditch bottom inlets, and storm sewer systems that will convey the runoff to the stormwater management facilities.

A Pre-Application Meeting was held with the St. John's River Water Management District (SJRWMD) on June 10, 2011 to discuss the proposed typical sections and interchange configurations. SJRWMD will conceptually allow the treatment of runoff from the pavement east of Belle Terre Parkway / Lakeview Boulevard and west of the Belleaire Waterway to be compensated for by treating the existing pavement east of the Belleaire Waterway and west of I-95. The minutes of this meeting are included in **Appendix E**.

2.3.3.1 Stormwater Management Facilities

The *Pond Siting Report* (September 2011) identifies stormwater management facilities for the each drainage basin identified within the project corridor. The stormwater management systems are estimated to provide adequate stormwater treatment and attenuation required by the SJRWMD and FDOT.

When considering the current stormwater design criteria, the following procedure was used to establish stormwater options for this study:

- Establish onsite drainage basins between alignment high points and cross drains.
- Based on SJRWMD and FDOT stormwater criteria, the requirements to meet water quality (treatment) and water quantity (attenuation) criteria were determined.
- Stormwater volumes required were calculated based upon typical cross sections. All stormwater management systems were sized using wet detention volumes.
- Based on available GIS data and field observations, vacant, undeveloped parcels were identified outside of the existing right-of-way. The parcels were then evaluated to avoid wetland and floodplain impacts, except when the option would result in residential or business impacts.

Table 2-7: Proposed Vertical Alignment

PVI Station	Crest (C)/ Sag (S)/ Point of Inflection (PI)	Grade In (%)	Grade Out (%)	Vertical Curve Length (ft)	K Value		PVI Station	Crest (C)/ Sag (S)/ Point of Inflection (PI)	Grade In (%)	Grade Out (%)	Vertical Curve Length (ft)	K Value
Matanzas Woods Parkway Segment 1 – US 1 to Southbound Ramps												
101+11.50	S	-1.024	0.503	135	88		147+64.81	PI	0.300	-0.300	N/A	N/A
106+10.40	PI	0.503	0.300	N/A	N/A		150+15.94	S	-0.300	0.561	135	157
108+62.61	PI	0.300	-0.300	N/A	N/A		152+65.94	C	0.561	-0.300	135	157
111+14.81	PI	-0.300	0.300	N/A	N/A		155+65.94	PI	-0.300	0.300	N/A	N/A
114+14.81	PI	0.300	-0.300	N/A	N/A		159+46.61	PI	0.300	-0.300	N/A	N/A
117+14.81	PI	-0.300	0.300	N/A	N/A		164+03.94	PI	-0.300	-0.495	N/A	N/A
120+14.81	PI	0.300	-0.300	N/A	N/A		166+60.40	PI	-0.495	-0.599	N/A	N/A
123+14.81	PI	-0.300	0.300	N/A	N/A		172+60.94	PI	-0.599	-0.300	N/A	N/A
126+14.81	PI	0.300	-0.300	N/A	N/A		179+84.41	PI	-0.300	0.300	N/A	N/A
129+14.81	PI	-0.300	0.300	N/A	N/A		186+41.22*	PI	0.300	0.000	N/A	N/A
132+14.81	PI	0.300	-0.300	N/A	N/A		187+60.40*	PI	0.000	-0.400	N/A	N/A
135+14.81	PI	-0.300	0.300	N/A	N/A		192+60.40	PI	-0.400	-0.300	N/A	N/A
140+14.81	PI	0.300	-0.300	N/A	N/A		195+14.38	PI	-0.300	0.400	N/A	N/A
142+64.81	PI	-0.300	0.300	N/A	N/A		197+95.91	S	0.400	2.000	135	84
Matanzas Woods Parkway Segment 2 – Southbound Ramps to Northbound Ramps												
212+62.34	C	2.000	-2.000	460	115							
Matanzas Woods Parkway Segment 3 – Northbound Ramps to Old Kings Road												
224+25.75	S	-2.000	-0.750	135	108		243+57.86	PI	0.300	-0.300	N/A	N/A
230+07.86	S	-0.750	0.400	200	174		249+10.51	PI	-0.300	0.300	N/A	N/A
238+50.72	PI	0.400	-0.300	N/A	N/A		252+01.86	PI	0.300	-0.400	N/A	N/A
241+07.86	PI	-0.300	0.300	N/A	N/A		254+51.86	C	-0.400	-1.172	300	389

*The profile for the bridge across the Belleaire Waterway is subject to change, based on the bridge type selection

- Pond sites were identified to avoid impacts. Therefore, stormwater options were evaluated to determine physical (residential/commercial relocations, utility impacts, potential contamination), environmental (wetland/habitat, public lands), hydrologic impacts, and cost efficiency in order to determine the Preferred Alternative, and to modify sites to minimize impacts. The evaluation was carried out through field visits and research of available documents.

For this study, the recommended stormwater options were chosen based on topographical considerations, discussions with SJRWMD and affected property owners, minimization of impacts, and cost-effectiveness.

Basin 1

Basin 1 is defined as the portion of Segment 1 between US 1 and Belle Terre Parkway / Lakeview Boulevard. The urban typical section in Segment 1 would collect the stormwater runoff from the roadway and sidewalk using a storm sewer system. The runoff for the roadway in Basin 1 would be conveyed to Pond 1B, shown in **Figure 2-11**, an approximately 4.97-acre pond located south of Matanzas Woods Parkway and Londonderry Drive intersection.

Basin 2

Basin 2 is defined as the portion of Segments 1 and 2 between Belle Terre Parkway / Lakeview Boulevard and I-95 and includes the proposed southbound interchange ramps. The runoff for the roadway between Belle Terre Parkway / Lakeview Boulevard and the Belleaire Waterway would be conveyed directly to the Belleaire Waterway. The runoff for the roadway between the Belleaire Waterway and I-95 would be conveyed to the interchange infield to Ponds 2A1 and 2A2, shown in **Figure 2-12**, which would be used as a joint pond. These ponds would combine to cover approximately 8.24 acres and would allow for compensating treatment for the runoff between Belle Terre Parkway / Lakeview Boulevard and the Belleaire Waterway.

Basin 3

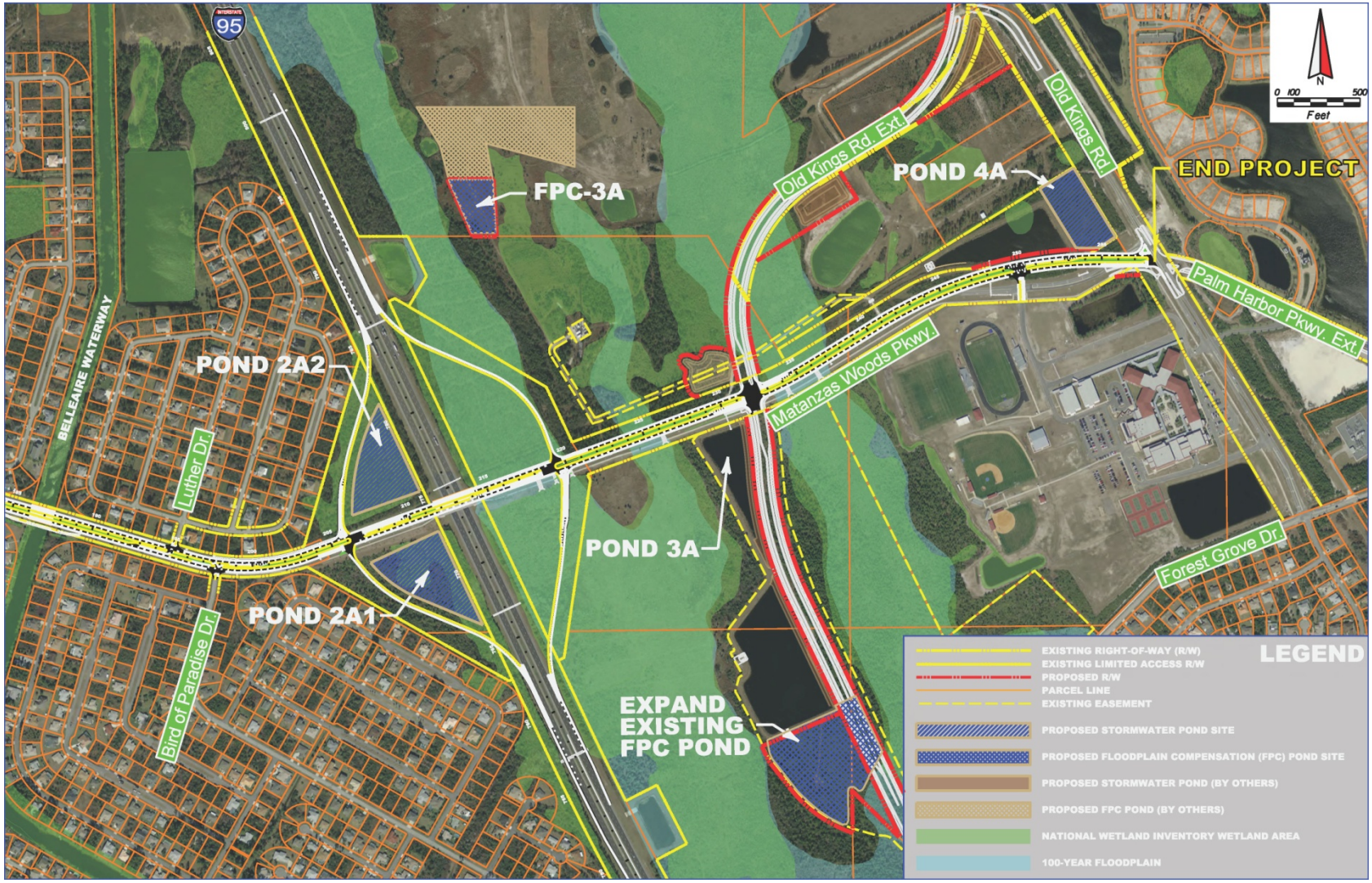
Basin 3 is defined as the portion of Segments 2 and 3 between I-95 and the proposed Old Kings Road Extension and the proposed northbound interchange ramps. The runoff for Basin 3 would be conveyed through the storm sewer system and roadway drainage swales to the existing pond, Pond 3A, shown in **Figure 2-12**, where the existing control structure would be modified in order to allow the pond to treat the increased runoff without requiring additional freeboard.

Basin 4

Basin 4 is defined as the portion of Segment 3 between the proposed Old Kings Road Extension and Old Kings Road. The realignment of Matanzas Woods Parkway in Segment 3 would require a reconstruction of the existing stormwater management pond located on the northwest corner of Matanzas Woods Parkway and Old Kings Road. The runoff for Basin 4 would be conveyed through the roadway drainage swales to Pond 4A, shown in **Figure 2-12**, which consists of the reconstructed stormwater management pond and an approximately 2.24 acre expansion to the east within the existing Flagler County-owned parcel.

Figure 2-11: Proposed Pond Locations US 1 to Belleaire Waterway

Figure 2-12: Proposed Pond Locations Belleaire Waterway to Old Kings Road



2.3.3.2 Floodplains and Regulatory Floodways

To evaluate floodplains, two aspects are considered: conveyance of cross culverts; and floodplain fill.

Cross Culvert Analysis

There are 14 existing cross culverts within the project limits, shown in **Table 2-8**. Two of the structures are bridges (structure ID No. 2 and 3) which are discussed in **Section 2.3.4**. The bridge replacement will include an improved channel for the Belleaire Waterway. One structure (structure ID No. 1) already spans the proposed roadway width and would only require modification to the slopes adjacent to the opening. Two additional structures along I-95 (structure ID No. 11 and 12) would also remain in place as the proposed improvements would not impact these structures. All of the other structures are proposed to be extended for the proposed roadway improvements. The culverts will be lengthened to meet current clear zone requirements. In addition, new culverts would need to be constructed under the proposed northbound ramps to maintain overland flow for the floodplain. The location of these culverts will be determined during the final design phase.

Floodplain Fill

The proposed roadway widening will result in the placement of fill within the 100-year floodplain. Floodplain compensation areas will be required within the same basin to provide compensatory storage for the loss of storage within the floodplain. Estimated floodplain encroachments are approximately 0.24 acre-feet in Basin 1, Basin 2 encroachments within the interchange area is approximately 4.7 acre feet and approximately 0.8 acre-feet in Basin3. Basin 1 includes an approximately 0.73 acre floodplain compensation pond, Pond FPC 1B shown on **Figure 2-11**, located adjacent to Pond 1B. Basin 2 floodplain impacts will be accommodated by expanding the existing Flagler County floodplain compensation pond south of Pond 3A. Basin 3 impacts include an approximately 1.7 acre floodplain compensation pond, Pond FPC 3A shown on **Figure 2-12**, located north of Matanzas Woods Parkway and between I-95 and the proposed Old Kings Road Extension.

2.3.4 Bridge Analysis

Two bridges on Matanzas Woods Parkway will require modification and/or reconstruction for this project. Neither the existing bridge over the Belleaire Waterway nor the bridge over I-95 would be able to accommodate the proposed four-lane roadway. A detailed bridge analysis was performed to evaluate alternatives for each bridge location, as documented in the *Bridge Evaluation Technical Memorandum* (August 2011). This analysis evaluated bridge alternative concepts on their safety, constructability, life cycle cost, service life, and aesthetics. The preferred bridge alternatives are summarized in this section.

2.3.4.1 Matanzas Woods Parkway over Belleaire Waterway

The preferred bridge alternative for Matanzas Woods Parkway over the Belleaire Waterway, shown on **Figure 2-13**, is a five-span single bridge across the Belleaire Waterway. This bridge will consist of a flat-slab concrete bridge deck. The bridge typical section for this bridge consists of four 12-foot travel lanes, 5.5-foot outside shoulders, a 17.5-foot median with a 19-foot raised traffic separator, and a five-foot sidewalk with a pedestrian handrail on the north side separated from traffic with concrete barrier wall. The Flagler County sidewalk project would construct a pedestrian bridge south of the existing right-of-way, which would remain.

Table 2-8: Cross Culverts

Structure Number	Description from Original Construction Plans						Action Needed
	Count	Size (in)		Type	Length (ft)	Approximate Station	
		H/D*	B*				
Segment 1 – US 1 to Southbound Ramps							
1	2	72	-	CMP	139	114+00	None
2	**	**	**	Bridge	**	187+00	Replacement**
3†	**	**	**	Bridge	**	187+00	None**
Segment 2 – Southbound Ramps to Northbound Ramps							
4	2	36	108	CBC	123	218+00	Extension
5	1	36	108	CBC	106	219+00	Extension
6	2	36	108	CBC	90	220+00	Extension
Segment 3 – Northbound Ramps to Old Kings Road							
7	2	36	108	CBC	98	226+00	Extension
8	1	36	108	CBC	106	234+00	Extension
9	2	36	108	CBC	118	236+00	Extension
I-95 – MP 13.97 to MP 15.25							
10	1	36	120	CBC	170	757+00	Extension
11	2	18	-	RCP	180	766+80	None
12	1	24	-	RCP	185	775+20	None
13	2	24	-	RCP	180	785+80	Extension
14	2	24	-	RCP	180	799+80	Extension

* H/D – Structure height/diameter, B – Structure width

** Bridge structural details are discussed in **Section 2.3.4**

† Structure proposed by others

Abbreviations: CMP – Corrugated Metal Pipe; CBC – Concrete Box Culvert; RCP – Reinforced Concrete Pipe

2.3.4.2 Matanzas Woods Parkway over I-95

The preferred bridge alternative for Matanzas Woods Parkway over I-95, shown on **Figure 2-14**, is to widen the existing bridge to the north to accommodate the future four-lane roadway. This approximately 61.5-foot widening would allow for the structure to carry all of the proposed roadway features and allow for extension of the left turn lanes for the interchange ramps, if necessary. The bridge typical section for this bridge consists of four 12-foot travel lanes, 5.5-foot outside shoulders, a 22-foot median with a 19-foot raised traffic separator, and a five-foot sidewalk with pedestrian fencing on the north side separated from traffic with concrete barrier wall. The existing eight-foot sidewalk would remain adjacent to the south side of the bridge, as the southern portion (approximately 37.5 feet) would remain.

Figure 2-13: Proposed Bridge Typical Section – Matanzas Woods Parkway over Belleaire Waterway

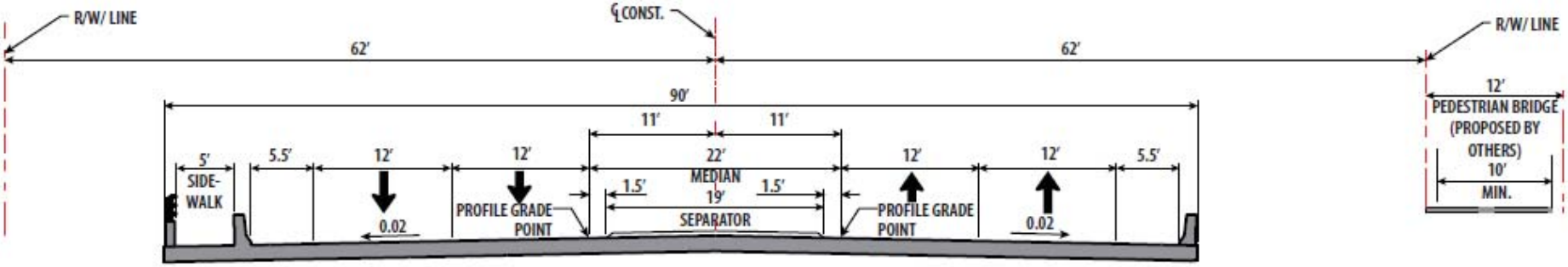
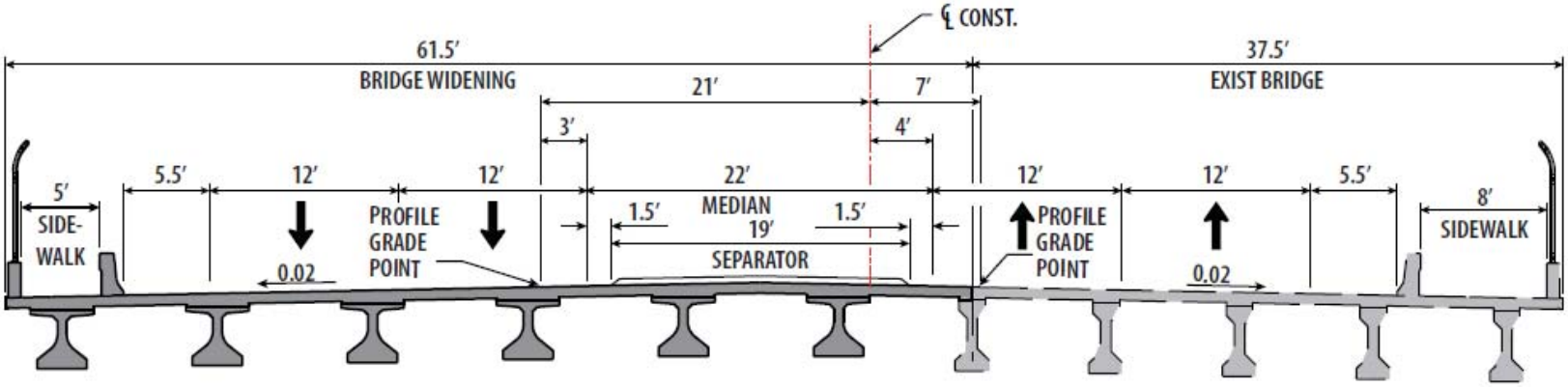


Figure 2-14: Proposed Bridge Typical Section – Matanzas Woods Parkway over I-95



2.3.5 Design Traffic Volumes

The analysis of the design year 2035 traffic volumes is presented in the *Design Traffic Technical Memorandum* (July 2011), shown in **Appendix I**. The traffic volume projections for the 2035 Build Alternative, shown on **Figure 2-15**, project an average annual daily traffic (AADT) on Matanzas Woods Parkway of approximately 29,100 west of I-95 and approximately 15,800 east of I-95. The southbound interchange ramps project to carry an AADT of approximately 3,200 (off ramp) and 6,500 (on ramp). The northbound interchange ramps project to carry an AADT of approximately 6,700 (off ramp) and 3,900 (on ramp). **Figures 2-16a** and **b** provide the 2035 Build AM & PM Peak Hour Intersection Turning Movement Volumes from the *Interchange Justification Report* (February 2011). **Figure 2-17** provides a modified 2035 Build AM & PM Design Hour Volumes East of I-95. These modifications were made to account for the planned Old Kings Road Extension project and are further explained in the *Design Traffic Technical Memorandum* (July 2011). The recommended geometry is provided on **Figure 2-18**.

Figure 2-15: 2035 AADT

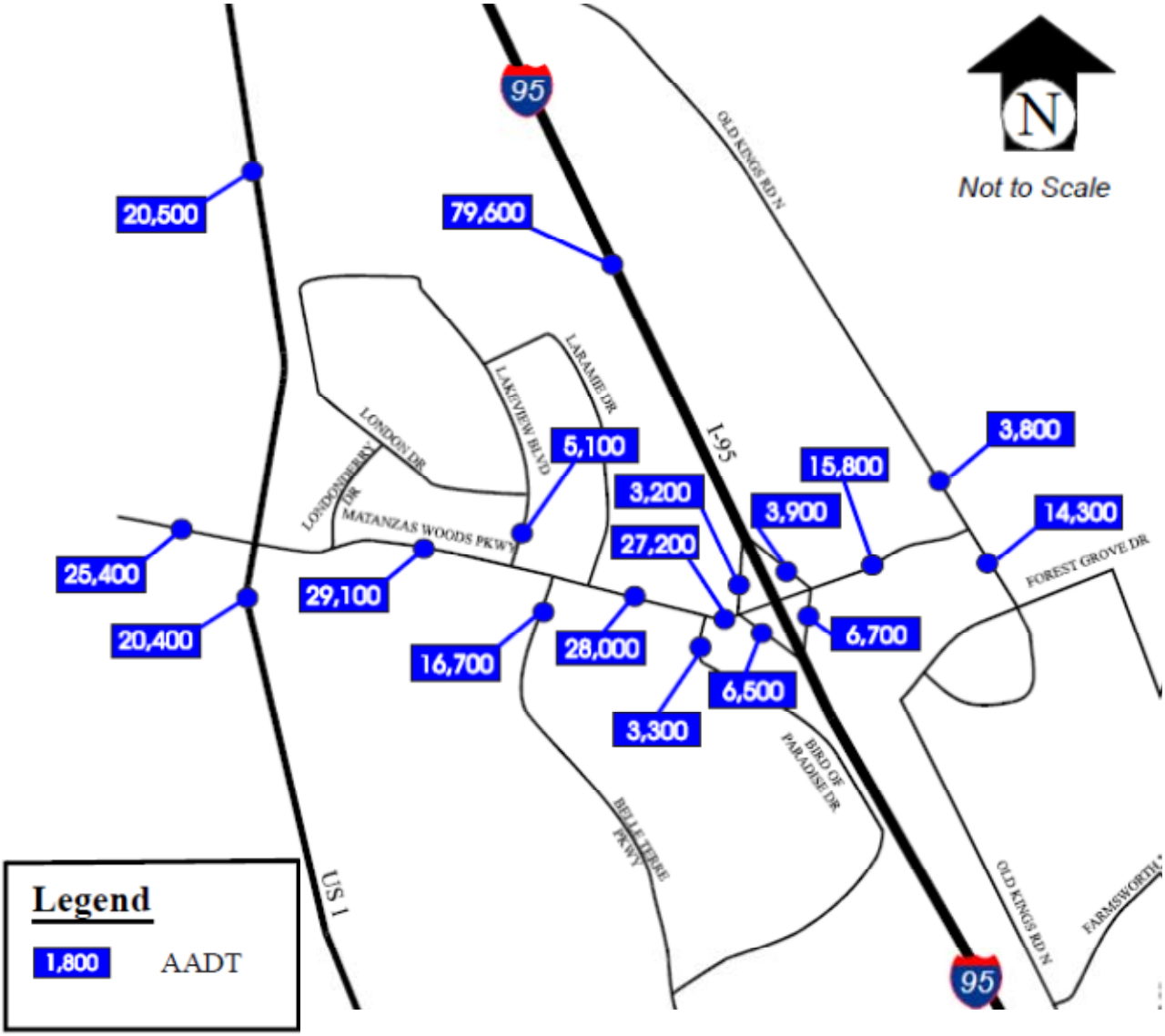


Figure 2-16a: 2035 Build AM & PM Peak Hour Intersection Turning Movement Volumes

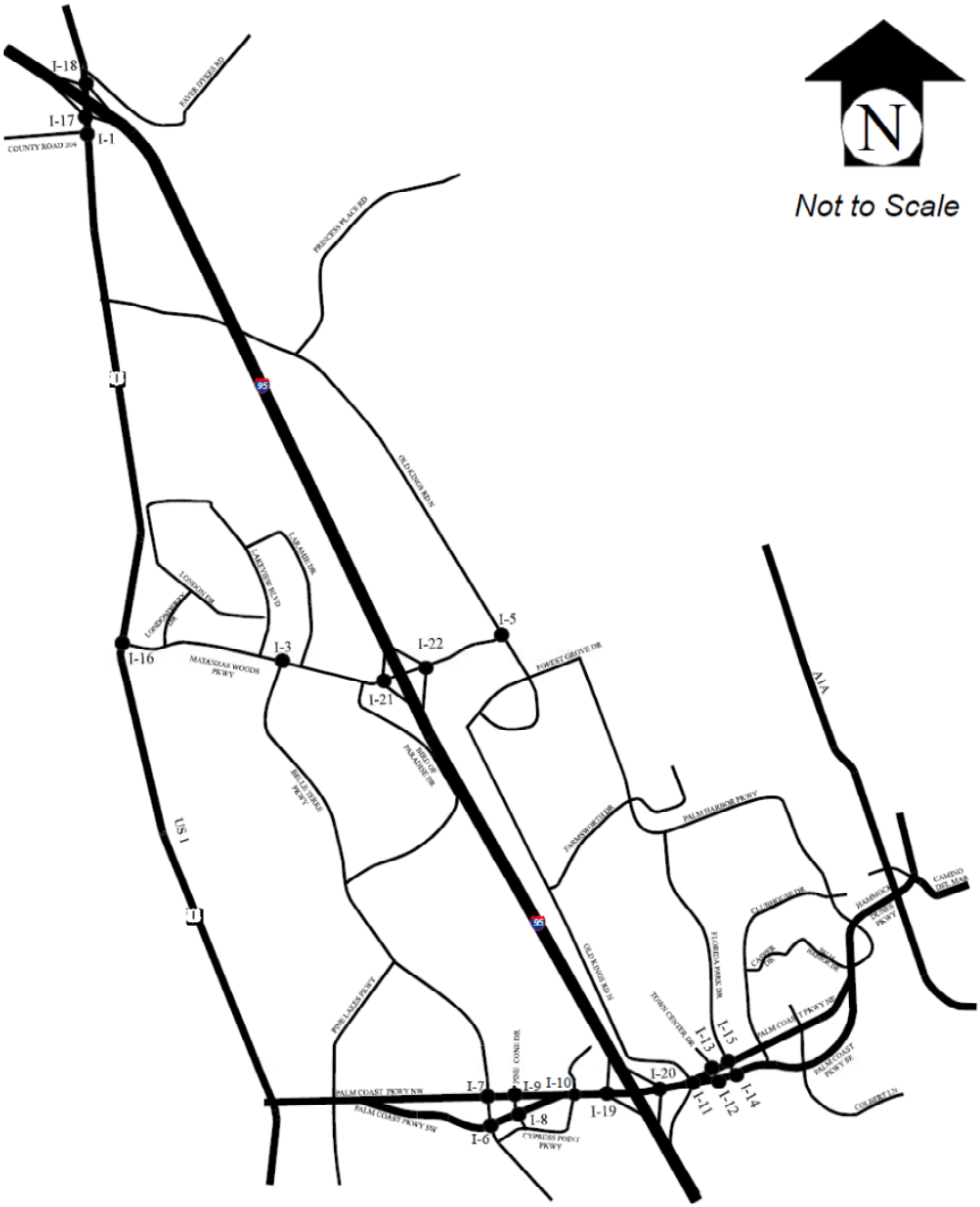


Figure 2-16b: 2035 Build AM & PM Peak Hour Intersection Turning Movement Volumes

Figure 2-17: Revised AM & PM Design Hour Volumes East of I-95

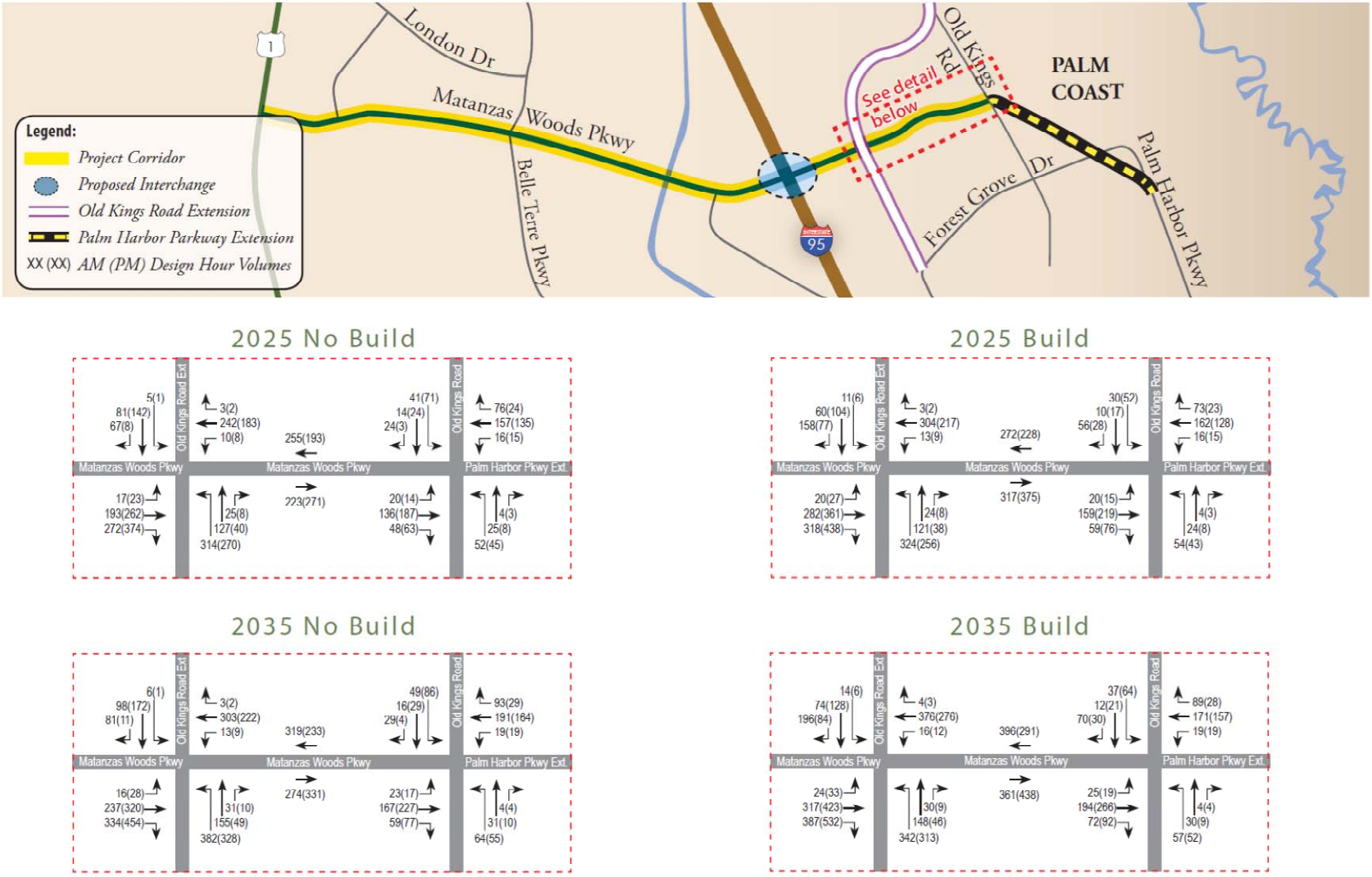
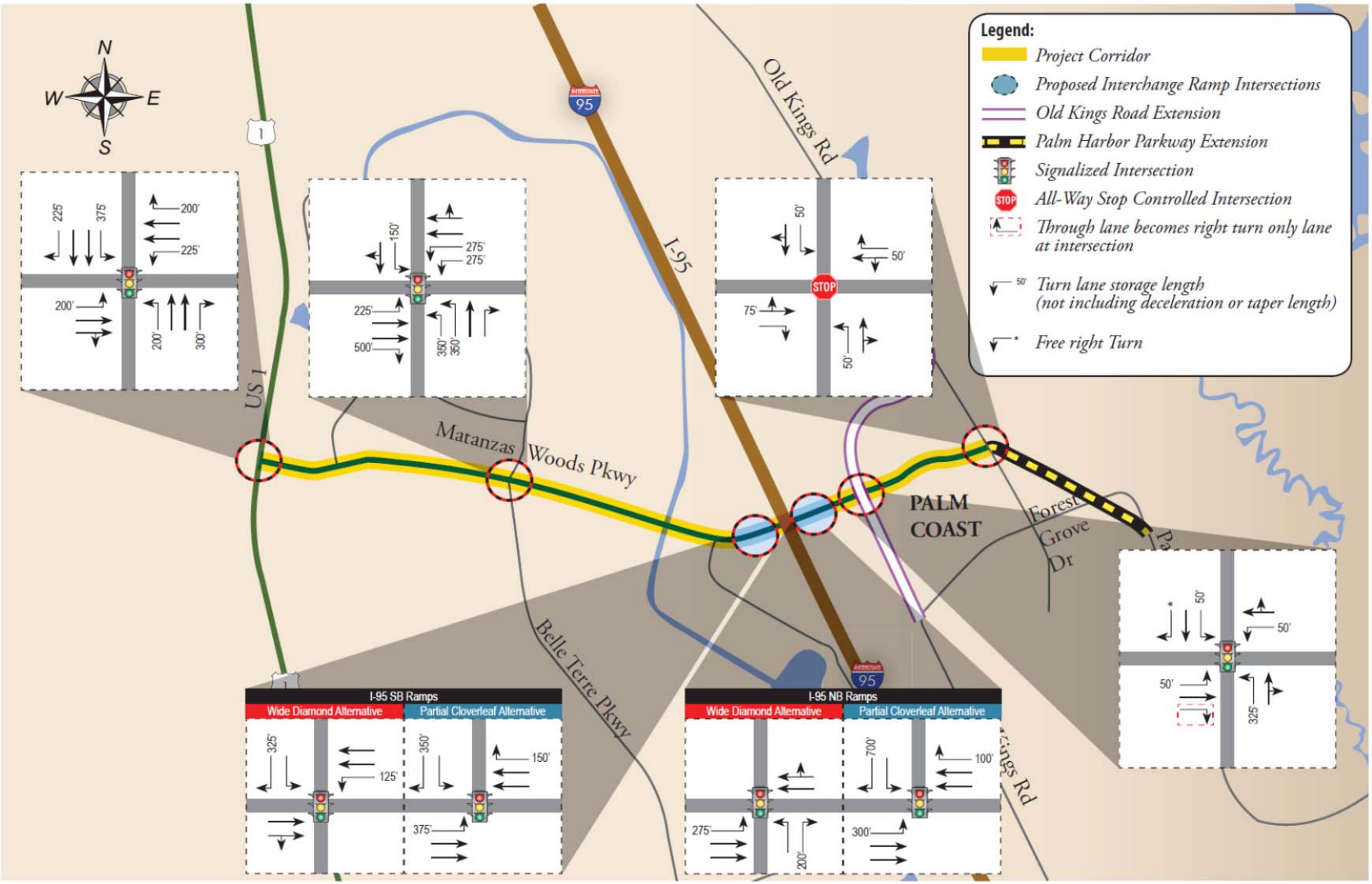


Figure 2-18: Recommended Geometry



2.3.6 Intersection Concepts and Signal Analysis

Analyses of the intersections affected by the proposed improvements are discussed in detail in the *Design Traffic Technical Memorandum* (July 2011), shown in **Appendix I**. The Build Alternative intersection lane geometry and level of service information for the design year (2035) improvements are shown in **Table 2-9**. The Concept Plans, shown in **Appendix B**, illustrate the proposed intersection concepts, including the proposed intersection geometry on Matanzas Woods Parkway at each signalized intersection and unsignalized intersection.

2.3.7 Access Management Designation

In 1988, FDOT adopted access management regulations to assist in providing safer and smoother traffic flow through better regulation of access on Florida's highways. The major documents developed on access management regulations include:

- Florida Statute 335.18 – The Access Management Act;
- Administrative Rule 14-96 (Regulations on Access Permitting Process); and
- Administrative Rule 14-97 (Access Management Classification System and Standards).

In addition, Flagler County has developed criteria for County-owned facilities based upon the design speed and type of roadway facility.

The interchange and the segment of Matanzas Woods Parkway within the interchange (Segment 2) would need to conform to FDOT access management standards, while the remainder of Matanzas Woods Parkway (Segments 1 and 3) would apply the Flagler County access management standards.

2.3.7.1 Access Classification

The interchange on I-95, the portion of Matanzas Woods Parkway within the interchange (Segment 2) and the proposed ramps would fall under the FDOT access classification and interchange spacing requirements for limited access facilities, with an Access Class 1 and Area Type 2. No changes to the access class for I-95 are proposed for this project.

Matanzas Woods Parkway is a Flagler County owned facility and is not subject to the FDOT access classifications. The Flagler County criteria require a minimum of 660 feet between full-access median openings.

2.3.7.2 Proposed Median Access

The existing intersections along Matanzas Woods Parkway and proposed median access are shown in the Concept Plans in **Appendix B**, and in **Table 2-9**. Each existing street that intersects Matanzas Woods Parkway will have a full access median opening with the exception of Luther Drive, where the existing connection would remain as a right-in / right-out access to westbound Matanzas Woods Parkway.

Table 2-9: Proposed Intersections and Median Access

Intersecting Street	Approximate Station	Median Opening Type	Signalized (Y/N)	Peak Hour LOS (AM / PM)	Additional Turn Lanes Needed
Matanzas Woods Parkway Segment 1 – US 1 to Southbound Ramps					
US 1	100+00	Full	**Y**	D / D	WB Left, WB Right, SB Right, SB Left (extension), EB Left, NB right (extension), NB left (extension)
Driveway (Vacant Parcel)	104+20	None	N	-	None
Londonderry Drive	117+10	Full	N	-	EB Left
Louisiana Drive	135+05	Full	N	-	EB Left
Belle Terre Parkway/ Lakeview Boulevard	155+50	Full	**Y**	D / D	WB Left (2), EB Left, EB Right, NB Left (2) (extension)
Old Belle Terre Parkway	164+20	Full	N	-	WB Left
Laramie Drive	172+50	Full	N	-	EB Left
Luther Drive	195+00	None	N	-	None
Bird of Paradise Drive†	197+80	Full	N	-	EB Left, WB Left
Matanzas Woods Parkway Segment 2 – Southbound Ramps to Northbound Ramps					
Southbound Ramps	206+00	Full	**Y**	B / B	WB Left, SB Right
Northbound Ramps	219+50	Full	**Y**	C / D	EB Left, NB Left (2)
Matanzas Woods Parkway Segment 3 – Northbound Ramps to Old Kings Road					
Old Kings Road Extension (Proposed)*	232+50	Full	**Y***	C / C	EB Left, SB Right, WB Left, NB Left
Driveway (Cell Tower Access)	241+10	None	N	-	None
Driveway (Matanzas High School)	249+80	Full	N	-	WB Left
Old Kings Road**	257+00	Full	N	A / A	None

*Old Kings Road Extension proposed by others
**Includes connection to Palm Harbor Parkway Extension by others
†Includes new connection to Luther Drive

2.3.8 Pedestrian and Bicycle Facilities

Sidewalks and bicycle lanes are proposed along both sides of Matanzas Woods Parkway between US 1 and Old Kings Road. In Segment 1, a five-foot sidewalk would be constructed along the north side of Matanzas Woods Parkway between US 1 and the southbound interchange ramps. A 10-foot sidewalk would be constructed along the south side of Matanzas Woods Parkway between US 1 and Bird of Paradise Drive, with the existing eight-foot sidewalk remaining between Bird of Paradise Drive and southbound interchange ramps. For Segments 2 and 3, a five-foot sidewalk would be constructed along the north side of Matanzas Woods Parkway. The existing eight-foot sidewalk will remain from the southbound interchange ramps to Old Kings Road. Four-foot bicycle lanes would be included in each direction in Segment 1 and Segment 2, with the five-foot paved shoulder serving as a bicycle lane in each direction in Segment 3.

2.3.9 Right-of-Way Requirements and Relocations

The Preferred Alternatives for each segment and configuration were chosen to minimize the amount of right-of-way required for roadway construction. The right-of-way acquisition required for the roadway in Segment 1 is limited to parcels located near intersections to allow for the recommended intersection improvements. No right-of-way acquisition is required in Segment 2. The right-of-way area for Segment 2 will be transferred from Flagler County to the Florida Department of Transportation, who will convert it to Limited Access Right-of-way for the interchange ramps. The right-of-way required for the roadway in Segment 3 is limited to a corner clip at Old Kings Road in order to accommodate the realignment of Matanzas Woods Parkway. The proposed right-of-way is shown on the Concept Plans in **Appendix B**.

The roadway right-of-way acquisition would be required at the following locations (and the number of parcels and total acreage affected):

- Belle Terre Parkway (2 parcels, 0.12 acres);
- Old Kings Road (Matanzas High School) (1 parcel, 0.10 acres).

The right-of-way required for stormwater facilities as recommended by the *Pond Siting Report* (September 2011) include:

- Pond 1B (1 parcel, 4.86 acres);
- Pond FPC-1B (1 parcel, 0.73 acres);
- Pond FPC-3A (1 parcel, 1.70 acres).

The proposed improvements, as presented in this report, will not require the relocation of any businesses or residences. The proposed improvements and ponds (Pond 3A and Pond 4A) utilized existing Flagler County parcels, which were assumed to have no cost for acquisition.

2.3.10 Utilities and Lighting

2.3.10.1 Utility Impacts

Nine utility companies, shown in **Table 2-10**, have utilities located within the vicinity of the project corridor. Major utilities, including overhead electrical transmission and distribution lines, water lines, sewer lines, gas lines, telephone lines and cable television lines currently run within the existing rights-of-way of Matanzas Woods Parkway and I-95. Impacts to these utilities were evaluated when considering the proposed alternatives. The approximate locations of the utilities are also described in **Table 2-11**.

Most utility companies have the capability to adjust their services without causing major inconveniences to the customers. As a result, mitigation measures to the maximum extent feasible will include the following:

- Maintaining utility connections in temporary locations;
- Minimizing the time without service;
- Installing alternative or new service before disconnecting the existing service; and
- Allowing service disruption only during periods of non-usage or minimum usage.

Table 2-10: Summary of Utility Contacts

Utility	Contact Name	Address	Phone Number
Connexion Technologies	Anthony Christi	111 Corning Rd. Suite 250 Cary, NC 27518	(919) 535-7301
Florida Power & Light	Tracy Stern	303 Hastings Rd. St. Augustine , FL 32084	(800) 868-9554
Brighthouse Networks	Larry Henderson	211 St. Joe Plaza Palm Coast, FL 32164	(386) 446-1420
Level 3 Communications	Judy Henry	1025 El Dorado Blvd Bldg 13C04 Broomfield, CO 80021	(720) 888-2061
City of Palm Coast	James Majcen	160 Cypress Point Parkway Suite B106 Palm Coast, FL 32164	(386) 986-3752
City of Palm Coast Utility Department	Steve Flanagan	2 Utility Drive Palm Coast, FL 32137	(386) 986-2354
TECO/Peoples Gas - Daytona	Deborah Frazier	600 W. Robinson St Orlando, FL 32801	(407) 420-6609
AT&T - Distribution	N/A	754 Peachtree St, 7A73 Atlanta, GA 30308-1206	N/A
Traffic Control Devices	Bridgett Hackett	242 N. Westmonte Dr. Altamonte Springs, FL 32714	(407) 869-5300 Ext. 175
American Tower Corporation	N/A	116 Huntington Ave,, 11th Floor Boston, MA 02116	(617) 375-7500

Exact locations of the other existing utilities and the extent of impacts will be determined during the final design phase of this project. Coordination with the known utility companies during the final design phase will assist in minimizing relocation adjustments and disruptions of service to the public.

2.3.10.2 Lighting Impacts

The proposed improvements would require relocation/reconstruction of the existing lighting along Matanzas Woods Parkway. The lighting in Segment 1 would either be located on the outside of the roadway or in the median. This will be determined during the design phase. The existing light poles on the south side of the roadway in Segment 2 and Segment 3 would remain and additional lighting would be constructed on the north side of the roadway.

Lighting for the proposed interchange ramps would be determined during the design phase.

Table 2-11: Major Utility Locations

Type of Utility	Service	Location
Matanzas Woods Parkway Segment 1 – US 1 to Southbound Ramps		
Electric	Buried Electric	Within R/W from US 1 to Bird of Paradise Drive.
Electric	Overhead Electric	Within R/W from US 1 to Bird of Paradise Drive, crosses R/W at Old Belle Terre Parkway, crosses R/W at Laramie Drive, crosses R/W east and west of Belleaire Waterway, crosses R/W at Luther Drive, crosses R/W at Bird of Paradise Drive.
Fiber Optic	Buried Fiber Optic	Within R/W from US 1 to Bird of Paradise Drive.
Sewer	6" Force Main	Within R/W from west of Belleaire Waterway to Bird of Paradise Drive.
Telephone	Buried Telephone	Within R/W from US 1 to Bird of Paradise Drive.
Water	24" Water Main	Within R/W from US 1 to Luther Drive.
Water	12" Concentrate Main	Within R/W from US 1 to Bird of Paradise Drive.
Water	6" Water Main	Within R/W from US 1 to Londonderry Drive.
Matanzas Woods Parkway Segment 2 – Southbound Ramps to Northbound Ramps		
Fiber Optic	Buried Fiber Optic	Within R/W from Bird of Paradise Drive to East of I-95.
Water	24" Water Main	Within R/W West of I-95.
Water	12" Concentrate Main	Within R/W from Bird of Paradise Drive to east of I-95.
Water	Water Main	Within R/W east of I-95.
Matanzas Woods Parkway Segment 3 – Northbound Ramps to Old Kings Road		
Telephone	Cell Tower	North of Matanzas Woods Parkway
Electric	Buried Electric	Crosses R/W east of cell tower access driveway.
Fiber Optic	Buried Fiber Optic	Within R/W from east of I-95 to Old Kings Road.
Fiber Optic	Buried Fiber Optic	Within R/W from cell tower access driveway to Old Kings Road.
Water	12" Concentrate Main	Within R/W from east of I-95 to Old Kings Road.
Water	Water Main	Within R/W from east of I-95 to Old Kings Road.
I-95 – MP 13.97 to MP 15.25		
Fiber Optic	Buried Fiber Optic	Within R/W on west side of roadway along entire project segment.

2.3.11 Aesthetics and Landscaping

The project corridor in Segment 1 is set adjacent to existing residences. The project corridor in Segment 2 and Segment 3 is set in an undeveloped area with scenic views of wetlands and densely wooded areas. As a key component in the effort to preserve the characters of the corridor, scenic view protections should be adopted through the implementation of development design standards and right-of-way landscaping. The standards

protect and enhance scenic views from the roadway, complement the area's character, and are respectful of its natural resources.

As documented in FDOT's *Plans Preparation Manual, Volume I* (January 2011), Chapter 9, conservation of natural roadside growth and scenery should be considered to the extent practical. As a result, best management practices will be implemented to offset any visual impacts that may be incurred by this project. Selective clearing and thinning, relocation of existing vegetation, and replanting with native plants will be considered as mitigation options for visual impacts. Furthermore, the aesthetics and landscaping along the project corridor will be reassessed and evaluated further as part of the final design phase of this project.

2.3.12 Special Features

The Preferred Alternative improvements do not include any special features.

2.3.13 Construction Phases

As stated in the *Design Traffic Technical Memorandum* (July 2011), based on the projected traffic demand for the project, it is recommended that the improvements be constructed in three phases over a period of several years, shown in **Table 2-12**. Phase I would be to construct the interchange ramps in 2015. Phase II would be to widen Matanzas Woods Parkway to four lanes in Segment 1 by 2019, including the replacement of the bridge over the Belleaire Waterway. Phase III would be to widen Matanzas Woods Parkway to four lanes in Segment 2 and Segment 3, including the bridge over I-95, and construct the additional left turn lane on the southbound off ramp at the I-95 and Palm Coast Parkway interchange by 2027.

Table 2-12: Construction Phasing

Phase	Improvements	Year
I	Construct Interchange Ramps	2015
II	Widen Matanzas Woods Parkway from US 1 to Southbound Ramps (Segment 1)	2019
III	Widen Matanzas Woods Parkway from Southbound Ramps to Old Kings Road (Segment 2 and Segment 3) & Add Turn Lane for Palm Coast Parkway Interchange	2027

The *Design Traffic Technical Memorandum* (July 2011) also made provisions for the proposed Old Kings Road Extension project. If the Old Kings Road Extension project is not constructed before 2027, the recommendation is to construct Matanzas Woods Parkway as four lanes to the existing Old Kings Road. If the Old Kings Road Extension project is constructed before 2027, the four lane section needed for 2027 on Matanzas Woods Parkway would end at the proposed Old Kings Road Extension and the existing two-lane roadway would remain between the Old Kings Road Extension and the existing Old Kings Road, with the potential to complete the four-lane section of Matanzas Woods Parkway at some point beyond the design year of 2035, as traffic demands warrant.

As of January 2012, FDOT and Flagler County are working to identify construction funding for Phase I (Interchange Ramps). Flagler County will utilize local Transportation Impact Fees to fund the Phase I design.

2.3.14 Preliminary Traffic Management Plan

A Traffic Control Plan will be developed and implemented in consultation with Flagler County, the City of Palm Coast, and FDOT for each phase of the project. Measures to be considered for implementation in the Traffic Control Plan will include, but not be limited to:

- Advance public notification to motorists of the nature, extent, and duration of any street closing and possible detour routes, if needed;
- Detour signing placed in advance at strategic locations to notify motorists of alternate routing;
- Use of warning signs and markings;
- Construction during off-peak times, whenever feasible, to minimize disruption to the interchange ramps, access driveways and business entrances;
- Maintenance of at least one entrance at all times where there are multiple entrances to property;
- Coordination of construction activities with other proposed roadway improvements in the area;
- Concurrent utility relocations whenever possible to minimize disruptions; and
- Inclusion of measures within the construction contract specifications and plans to encourage responsible construction practices by contractors to avoid or minimize impacts.

Construction of the proposed improvements will temporarily impact traffic movements. The extent of construction phase impacts will vary, depending upon whether the construction is at-grade or on the bridge structures.

Phase I

The preliminary traffic control plan for Phase I (Segment 2 – Interchange only) would require separate phases for traffic on Interstate 95 and Matanzas Woods Parkway. Interstate 95 traffic control would be required at the four gore locations, which would include but not limited to barrier wall and/or barrels. Matanzas Woods Parkway traffic control will require temporary closures and detours to allow the construction of the grade change within in the interchange area.

Phase II

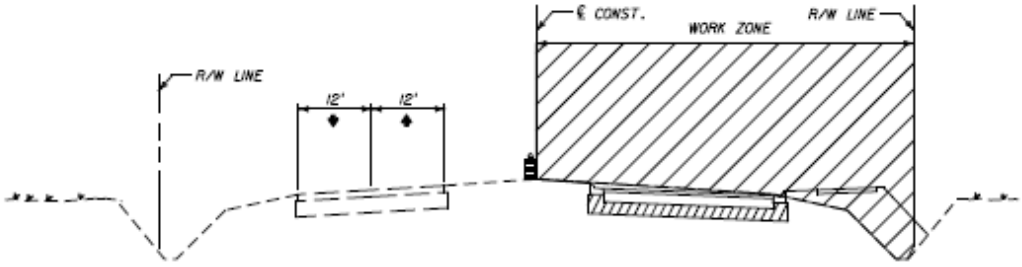
The traffic control plan was developed in two phases for the widening of Matanzas Woods Parkway, shown on **Figure 2-19** for Phase II (Segment 1).

In Phase IIA, the traffic will remain on the existing pavement while the new eastbound lanes in Segment 1 would be constructed. The traffic would be shifted onto the new pavement in Segment 1 in Phase IIB while the westbound lanes would be constructed.

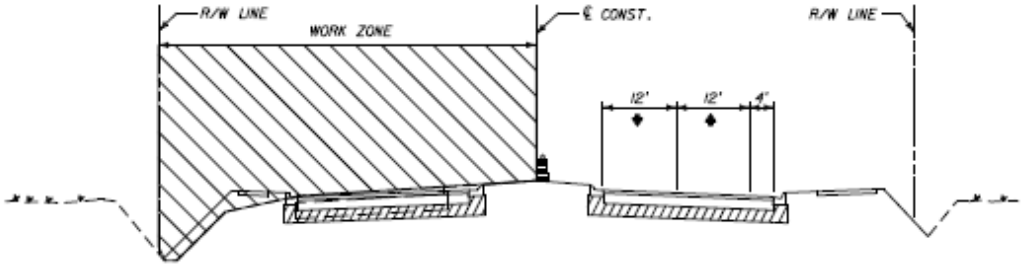
Phase III

The traffic control plan was developed in two phases for the widening of Matanzas Woods Parkway, shown on **Figure 2-20**, for Phase III (Segment 2 and Segment 3).

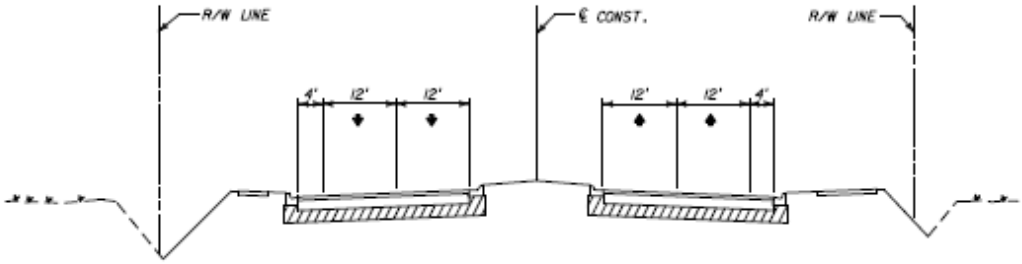
Figure 2-19: Traffic Control Plan Typical Sections Phase II



MATANZAS WOODS PARKWAY
PHASE IIA



MATANZAS WOODS PARKWAY
PHASE IIB



MATANZAS WOODS PARKWAY
FINAL

In Phase IIIA, the traffic will remain on the existing pavement while the new westbound lanes in Segment 2 and Segment 3 would be constructed. The westbound traffic would be shifted onto the new pavement and the eastbound traffic would remain on the existing pavement in Segment 2 and Segment 3 in Phase IIIB while the eastbound lanes would be widened and resurfaced.

It is anticipated that 12-foot travel lanes will be maintained during construction. However, lane widths during construction will be determined during the final design phase of this project.

2.3.15 Value Engineering Summary

A Value Engineering (VE) Study was conducted for the project. The VE team met during the week of September 26 to September 30, 2011. The subject of the study was the initially recommended alternative included in Segments 1, 2, and 3 and the proposed interchange configuration.

The initial recommendations given to the VE study included the use of an urban typical section in Segments 1 and 2, a suburban typical section in Segment 3, a diamond interchange configuration, replacement of the bridge over the Belleaire Waterway, widening of the bridge over I-95, alternative pond sites 1B, FPC-1B, 2A1, 2A2, 3A, FPC-3A, and 4A; and several intersection and median opening concepts. The VE Team used the Concept Plans (August 2011), and other study documents available at the time.

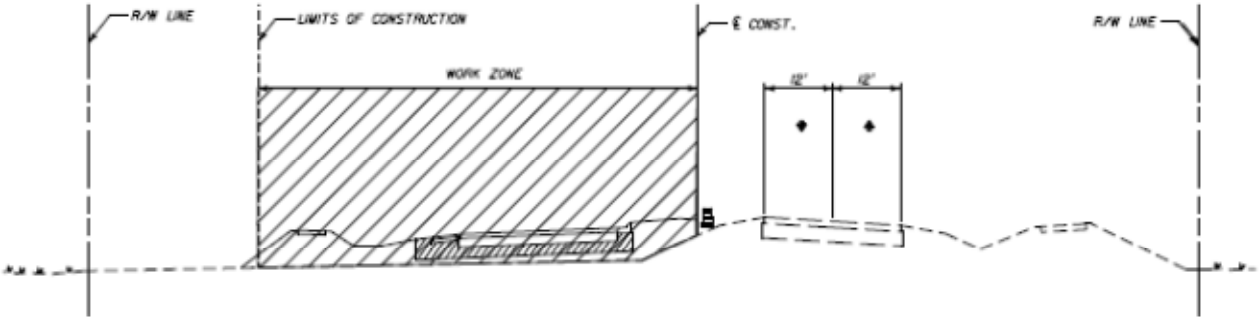
The purpose of the VE Study is to enhance mobility and support economic prosperity. The VE Team identified 14 proposals, four of which were recommended for implementation into the Preferred Alternative. The VE Team proposals recommended during this study are as follows:

Matanzas Woods Parkway – Remove Realignment in Segment 3

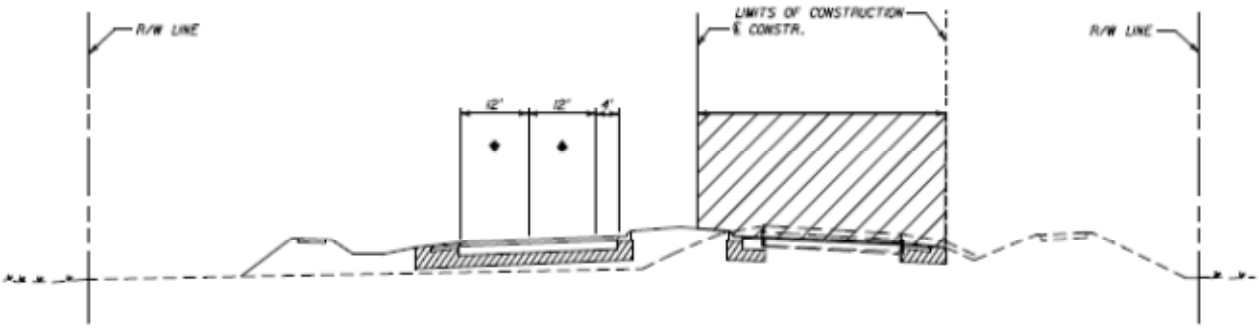
This proposal consists of leaving Matanzas Woods Parkway in Segment 3 in the existing reverse curve alignment to control operating speeds at Matanzas High School. This proposal improves safety for pedestrians and bicyclists and maintains existing lower speed for this school zone and bus route. Because this proposal maintains the existing roadway alignment, other advantages include minimized impact to existing Pond 4A, the right-of-way acquisition would not be required, avoids additional stagnant lands, and translates to a cost savings of approximately $1.2 million.

As discussed in **Section 2.3.13**, the initial recommendation for the reconstruction of Segment 3 of Matanzas Woods Parkway would be contingent upon the construction of the proposed Old Kings Road Extension, with the segment east of the Old Kings Road Extension to remain if the extension is constructed prior to 2027. During final design, the alignment can be further coordinated to determine if is acceptable to reduce the design speed to meet the existing roadway conditions based on the existing land uses.

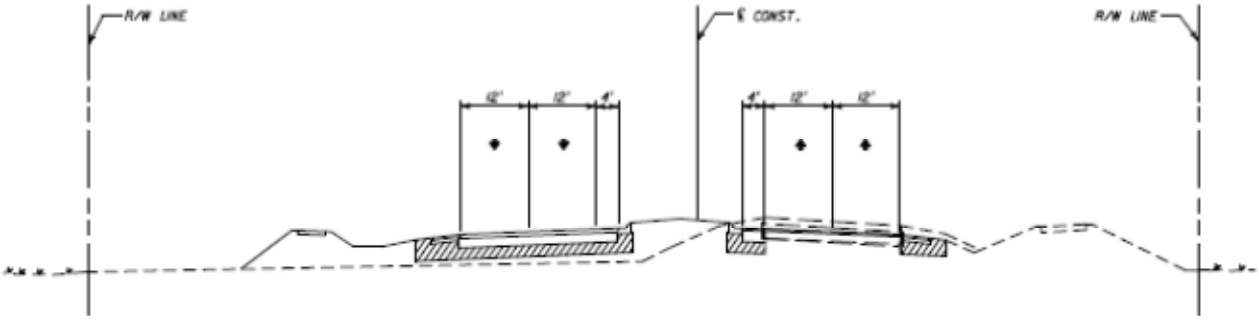
Figure 2-20: Traffic Control Plan Typical Sections Phase III



MATANZAS WOODS PARKWAY
PHASE IIIA



MATANZAS WOODS PARKWAY
PHASE IIIB



MATANZAS WOODS PARKWAY
FINAL

Luther Drive – Recommend Alternative L-2

This proposal would remove the new connection to Luther Drive and use Alternative L-2 as the preferred connection alternative for Luther Drive. This proposal eliminates parcel acquisitions, eliminates a difficult southbound-to-eastbound left turn movement from Luther Drive, improves safety, and retains internal traffic patterns within the community.

The preferred alternative was then recommended as Alternative L-2.

Matanzas Woods Parkway – Install Lighting in Median

The VE Team evaluated the relocation of lighting to the existing power poles and determined that the poles would not be sufficient for lighting support. The proposal was to replace the existing light poles with median light poles, which would eliminate the conflict with the power poles, utilize existing lighting conduits in the median, and reduce the number of light poles needed to light the roadway.

Installing lights in the median would put light poles within the clear zone. Lighting would be evaluated during the final design phase and appropriate lighting structures would be used.

2.3.16 Construction Costs

The construction cost estimates include major cost components such as embankment, roadway and bridge construction, maintenance of traffic, mobilization, and signage. The construction costs were developed using the FDOT Long Range Estimates (LRE) System. Construction costs do not include costs associated with environmental permits, dump fees, or removal and disposal of contaminated soils or materials.

Mobilization costs are estimated at 10%, maintenance of traffic costs are estimated at 10% and a 15% contingency factor (project unknowns) was added to the construction costs for an estimate of the total construction cost. Wetland mitigation costs are developed based upon $110,000 per acre. The total preliminary construction costs, right-of-way costs, and preliminary engineering costs based on 2011 dollars, are summarized in **Table 2-13**.

Preliminary engineering costs are typically developed as a percentage of the total construction costs. The preliminary engineering costs have been estimated at 15% of the total construction costs. This percentage in preliminary engineering costs is based on projects of similar design and construction. Included in this estimated cost are preliminary engineering fees, final design fees, legal fees, administration fees, construction management and post design services for the project.

Right-of-way acquisition costs for the proposed areas for the roadway improvements and ponds were estimated using data from the Flagler County Property Appraiser and a standard multiplier. Where existing Flagler County property would be utilized, the right-of-way cost was assumed to be negligible. For other privately or publicly held parcels, the 2010 certified value for the Flagler County Property Appraiser was used to determine a per-square-foot cost for the parcel. The acquisition area was multiplied by the per-square-foot cost and then multiplied by three to account for the ancillary costs of property acquisition (e.g. legal fees) to determine the approximate right-of-way cost for the area needed.

Figure 2-21: Proposed Typical Section – Segment 1

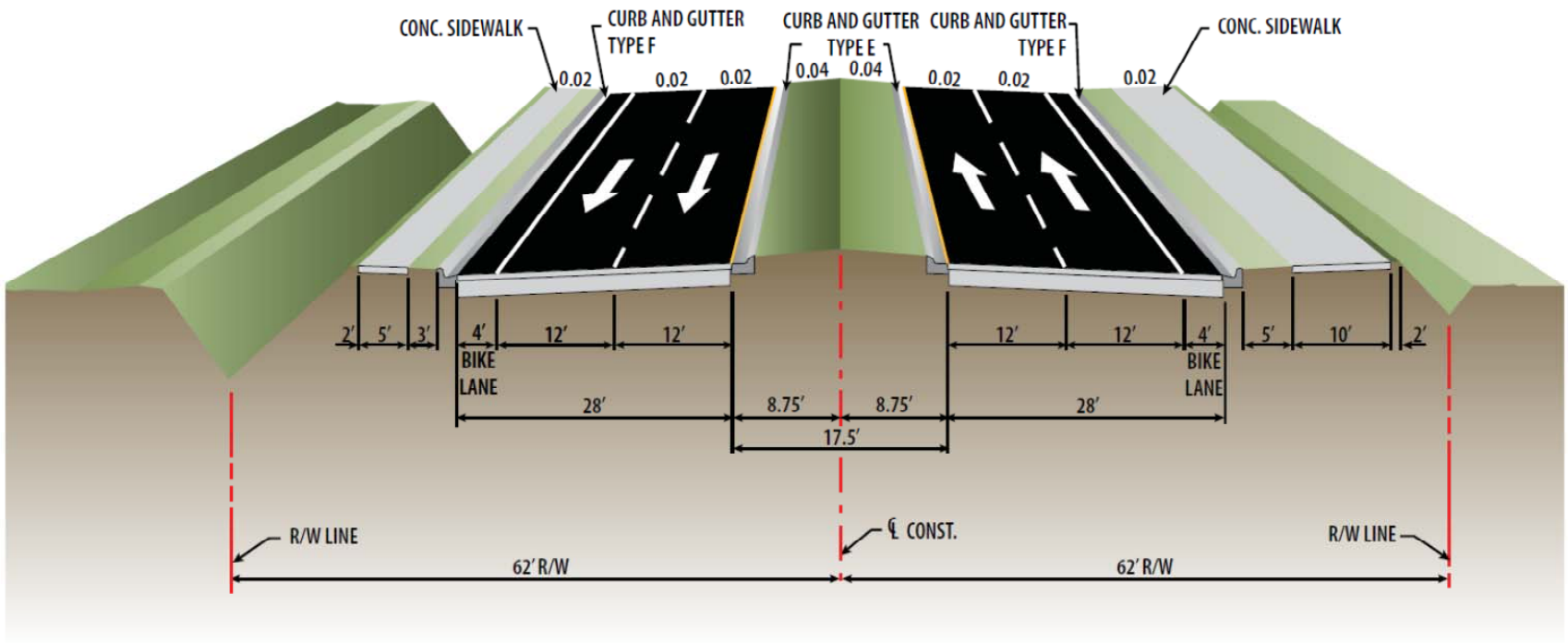


Table 2-13: Project Costs Summary

Cost Component	Phase I (2015) Interchange Ramps	Phase II (2019) Matanzas Woods Parkway (US 1 to Southbound Ramps)	Phase III (2027) Matanzas Woods Parkway (Southbound Ramps to Old Kings Road) & Palm Coast Parkway Interchange
Preliminary Construction Cost (2011$) (1)	$ 5,981,000	$ 12,653,000	$ 8,044,000
Construction Engineering Inspection (2011$) (2)	$ 598,000	$ 1,265,000	$ 804,000
Engineering Costs (2011$) (3)	$ 897,000	$ 1,898,000	$ 1,207,000
Wetland Mitigation Costs (2011$) (4)	$ 1,520,000	$ 28,000	$ 176,000
Right-of-Way Costs (2011$) (5)	$ -	$ 183,000	$ 224,000
Total (2011$)	**$ 8,996,000**	**$ 16,027,000**	**$ 10,455,000**
Total Project Costs – All Phases (2011$)	**$ 35,478,000**		

(1) Based on FDOT Long Range Estimating (LRE)

(2) 10% of Construction Cost

(3) 15% of Construction Cost

(4) Based on $110,000 per acre

(5) Right-of-way costs estimated using Flagler County Property Appraiser data.

3.0 Summary of Environmental Impacts

3.0 Summary of Environmental Impacts

A Programming Screen through the Efficient Transportation Decision Making (ETDM) Process was performed for the interchange area only with Matanzas Woods Parkway and Interstate 95 in March 2010 and updated in July 2010, shown in **Appendix H**. This section provides a summary of the environmental impacts along Matanzas Woods Parkway from US 1 to Old Kings Road and the interchange with Interstate 95.

3.1 Natural Environment

3.1.1 Air Quality

The purpose of air quality analysis is to evaluate the air quality effects that would be caused by the proposed improvements to the project corridor, and to determine whether project-related motor vehicle emissions will cause or contribute to an exceedance of the National Ambient Air Quality Standard (NAAQS) for carbon monoxide (CO). The project corridor is located in Flagler County, which has been designated as attainment for all the air quality standards under the criteria provided in the Clean Air Act Amendments of 1990. The air quality analysis (*Air Quality Impact Technical Memorandum*, August 2011) utilized the default distance of 10 to 150 feet from the travel lanes and the result was that the project will not meet or exceed the NAAQS for CO.

3.1.2 Coastal and Marine

A Coastal Zone Consistency determination is not applicable to this project. This project does not affect access to Coastal Barrier Islands protected under the Governor's Executive Order 81-105 and the Coastal Barrier Resources Act.

3.1.3 Essential Fish Habitat

This project was evaluated by the National Marine Fisheries Service (NMFS) as part of the FDOT Efficient Transportation Decision Making (ETDM) screening process. The NMFS determined that proposed project would not impact areas that support fishery resources. The NMFS concluded, as detailed in the ETDM, that no further action is required pursuant to the Essential Fish Habitat requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Therefore, It has been determined that this project will not have adverse effects to Essential Fish Habitat.

3.1.4 Contamination Sites

A *Contamination Screening Evaluation Report (CSER)* (August 2011) was conducted for the project corridor and the proposed pond sites. The CSER concluded that there was no evidence of recognized environmental conditions with respect to current or past uses of the roadway corridor or proposed pond sites. The CSER also concluded that none of the adjacent sites to the project corridor has a reasonable potential to impact the roadway corridor or proposed pond site. This proposed project contains no known significant contamination.

3.1.5 Farmlands

This project was evaluated by the Natural Resources Conservation Service (NRCS) as part of the ETDM screening process. The NRCS determined that proposed project would not impact areas that support Prime or Unique Farmlands. Through this coordination with the Natural Resources Conservation Service, it has been determined that no farmlands, as defined by 7 CFR 658, are located in the project vicinity.

3.1.6 Floodplains

The existing Matanzas Woods Parkway corridor crosses several floodplain areas shown on **Figure 3-1**. The floodplain locations were determined using the Federal Emergency Management Agency (FEMA) GIS data obtained from Flagler County and the Flood Insurance Rate Maps (FIRM) obtained from FEMA. The FIRM panels used in this analysis were map numbers 12035C0110D and 12035C0126D, each with an effective date of July 17, 2008. There are no regulatory floodways within the project corridor.

The GIS and FIRM data identified two zones present within the project study area. These zones are identified as:

- Zone A – Area of 1% annual chance of flood (100-year flood), no base flood elevation determined; and
- Zone X – Areas determined to be outside the 500-year floodplain.

Based on available information, Matanzas Woods Parkway and I-95 were each constructed on fill and appear to be above the 100-year floodplain with no history of flooding. It is unavoidable that portions of the proposed roadway widening and interchange ramps will be constructed within the 100-year floodplain. Estimated floodplain encroachments are approximately 0.24 acre-feet in Basin 1, Basin 2 encroachments within the interchange area is approximately 4.7 acre feet and approximately 0.8 acre-feet in Basin3. Any lost floodplain volume will be compensated within proposed stormwater management facilities, ditches or separate floodplain shelves.

The proposed new structures and modified structures will perform hydraulically in a manner equal to or greater than the existing structures and backwater surface elevations are not expected to increase. As a result, there will be no significant adverse impacts on natural and beneficial floodplain values. There will be no significant change in flood risk and there will not be a significant change in potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

3.1.7 Infrastructure

The impacts resulting from the proposed interchange and widening of Matanzas Woods Parkway from US 1 to Old Kings Road on the existing utilities within the corridor will require coordination with utility owners. Utility impacts are described in **Section 2.3.10**.

There are no railroads within the vicinity of the project corridor.

Figure 3-1: FEMA Floodplains

Source: Flagler County GIS

3.1.8 Navigation

Based on the ETDM screening, both the US Coast Guard and the US Army Corps of Engineers (USACE) determined that there are no navigable waters of the United States within the project area. Therefore, no impacts to navigation are anticipated.

3.1.9 Special Designations

Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers within the vicinity of the project corridor.

Florida Scenic Highways

The project termini roadways of US 1 and Old Kings Road are designated as part of the Heritage Crossroads: Miles of History Heritage Highway. However, the proposed improvements will not impact on US 1 or Old Kings Road and does not affect this designation.

3.1.10 Water Quality/Quantity

The proposed conveyance system for the I-95 interchange and Matanzas Woods parkway widening will meet current permitting standards set forth by St. Johns River Water Management District (SJRWMD). As such, stormwater treatment will be provided where currently there is little to none. The proposed treatment will improve water quality over the existing condition, thereby enhancing the corridor. A Water Quality Impact Evaluation is provided in **Appendix E**.

The proposed improvements will provide treatment for the stormwater runoff and enhance the water quality. The proposed storm water facility design will include, at a minimum, the water quality requirements for water quality impacts as required by the St. Johns River Water Management District (SJRWMD) in Rule 40C-42.

Outstanding Florida Waters

An Outstanding Florida Water, (OFW), is a water body designated by the Florida Department of Environmental Protection (FDEP) worthy of special protection because of its natural attributes. This special designation is applied to certain waters, and is intended to protect existing good water quality. The project corridor does not contain an OFW.

3.1.11 Wetlands

A *Wetland Evaluation Report* (August 2011) was prepared for this PD&E study. The following is a summary of the findings of the report regarding the impact of the project to area wetlands. A further detailed discussion of the wetlands in the vicinity of Matanzas Woods Parkway and interchange improvements is provided in the *Wetland Evaluation Report* (August 2011).

Wetland impacts were minimized since the proposed improvements on Matanzas Woods Parkway are within the existing right-of-way. The interchange and preferred pond locations were selected to minimize any wetland impacts. Wetland extents will require further field delineation to determine the total acres impacted. The anticipated impacts to the wetlands for the proposed improvements are approximately 17.53 acres, consisting of

approximately 0.25 acres in Segment 1, approximately 13.82 acres in Segment 2 and approximately 3.46 acres in Segment 3, shown on **Table 3-1**.

Table 3-1: Summary of Wetland Impacts

Wetland ID	Wetland ID		Description	Impact Type	Impact Area (ac)
	FLUCCS	FWS			
Segment 1					
SW-1b	511	PEM2Fg	Streams & waterways	ROW	0.02
SW-1d	511	PEM2Fg	Streams & waterways	ROW	0.05
SW-1f	511	PEM2Fg	Streams & waterways	ROW	0.18
				Segment 1 Right-of-Way Impacts	**0.25**
Segment 2 (4-Lane & Interchange)					
W-12a	618	PSS13Eg	Wetland Shrubs	Pond 2A1	2.02
W-12b	643	PEM1Eg	Wet Prairie	Pond2A1	0.29
W-11a	618	PSS13Eg	Wetland Shrubs	Pond 2A2	2.81
W-11b	643	PEM1Eg	Wet Prairie	Pond 2A2	0.55
W-11a	618	PSS13Eg	Wetland Shrubs	ROW	1.24
W-11a	618	PSS13Eg	Wetland Shrubs	ROW	0.38
W-11b	643	PEM1Eg	Wet Prairie	ROW	0.24
W-12a	618	PSS13Eg	Wetland Shrubs	ROW	0.01
W-12a	618	PSS13Eg	Wetland Shrubs	ROW	0.00
W-12a	618	PSS13Eg	Wetland Shrubs	ROW	0.76
W-12a	618	PSS13Eg	Wetland Shrubs	ROW	0.13
W-13	630	PFO124Fg	Wetland Forested Mixed	ROW	2.72
W-14a	630	PFO124Fg	Wetland Forested Mixed	ROW	2.66
W-14b	643	PEM1Eg	Wet Prairie	ROW	0.02
				Segment 2 Right-of-Way Impacts	**13.82**
Segment 3					
W-16e	643	PEM1Eg	Wet Prairie	FPC-3A	1.83
W-14b	643	PEM1Eg	Wet Prairie	ROW	0.08
W-14c	630	PFO124Fg	Wetland Forested Mixed	ROW	0.01
W-15	618	PSS13Eg	Wetland Shrubs	ROW	0.46
W-17	621	PFO2Fg	Cypress	ROW	0.78
W-18a	621	PFO2Fg	Cypress	ROW	0.14
W-19	618	PSS13Eg	Wetland Shrubs	ROW	0.16
				Segment 3 Right-of-Way Impacts	**3.46**

Wetland impacts which will result from the construction of this project will be mitigated based on St Johns River Management District (SJRWMD) and USACE permitting requirements. Wetland mitigation could include but not limited to the following options: Senate Bill, On-site Mitigation and Mitigation Banks. SJRWMD and Flagler County

will develop specific wetland mitigation options for the proposed impacts during the final design phase. Meeting Notes for the coordination with SJRWMD is located in **Appendix E**. Coordination concerning the wetland mitigation with SJRWMD and USACE is provided in **Appendix J**. The USACE provided comments to avoid impacts to the existing conservation easements, and avoidance / minimization for wetland impacts. The project does not impact the existing conservation easements. The proposed pond site locations utilized the Quality Enhancement Strategies for Wetland Impact Minimization.

3.1.12 Wildlife and Habitat

An *Endangered Species Biological Assessment (*August 2011*)* was prepared for this study. Much of the interchange study area appears to provide suitable habitat for a number of federal and state listed wildlife species, and potentially several state-listed plant species. The report recommended further observation of the project site as construction approaches as the area is suitable habitat for the mentioned species. U.S. Fish and Wildlife Service (Service) concurrence letter is provided in **Appendix J**.

3.1.12.1 Federally and State Listed Wildlife Species

U.S. Fish and Wildlife Service (Service), Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Agriculture and Consumer Services (FDACS), and Florida Natural Areas Inventory (FNAI) databases and publications suggest that portions of the study area are located within the vicinity of rare species and/or natural communities. Potential habitat is defined as areas that may offer suitable habitat for one or more rare species based on land cover type, which may occur in the vicinity of the project. Several federally listed wildlife species have the potential to occur within the project limits. Those species most likely to occur within the project limits are identified as follows but not limited to the bald eagle (*Haliaeetus leucocephalus*), wood stork, gopher tortoise (*Gopherus polyphemus*), Florida sandhill crane (*Grus canadensis pratensis*), and Eastern indigo snake (*Drymarchon corias couperi*). See U.S. Fish and Wildlife Service letter in **Appendix J**.

<u>Bald Eagle</u>

The bald eagle has been removed from the FWC's list of threatened & endangered species and is no longer listed under the federal Endangered Species Act. However, it should be noted that protection of the bald eagle will continue under the federal Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and by the revised management plans issued by the FWC and the Service. A bald eagle nest search was conducted following the procedures of the FWC's Eagle Nest Locator Database (2010). The FWC database search revealed that the study area does not occur within the 660-foot protection zone of any eagle nests. The study area contains forested wetland and upland habitat types that would be considered to be appropriate nesting habitat for the species. Further, the surface waters located both east and west of I-95 may provide foraging habitat for the species. The database indicates that the nearest active nest (designated FL011) is located approximately 0.66 mile northeast of the intersection of Matanzas Woods Parkway and Old Kings Highway (the eastern extent of the study area). No coordination with the FWC is necessary unless eagles construct a new nest within the vicinity of the project site in the future.

Wood Stork

The wood stork is the only stork occurring in the United States. In the U.S., the wood stork's range includes Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina, and Texas. The only states in which this bird is known to nest, however, are Florida, Georgia, and South Carolina. The wood stork is a highly colonial species usually nesting in large groups located in trees or in man-made structures surrounded by water. They feed in freshwater marshes, ponds, and roadside ditches. Particularly attractive feeding sites are depressions in marshes or swamps where fish become concentrated during periods of falling water levels.

The species assessment for wood stork is guided in part by the "Wood Stork Effect Determination Key" that is utilized during the permit review process between U. S. Army Corps of Engineers (Corp), FWS, and the State of Florida. The project study area does fall inside a "core foraging area" (CFA) for the Matanzas Marsh wood stork colony. The distance from the colony to the project corridor varies approximately 10 miles. Some of the wetlands within the project study area contain suitable foraging habitat (SFH) for wood storks; however, these are largely outside those areas that may be within the footprint of the proposed pond sites and/or floodplain compensation areas. If the impact to SFH were greater than or equal to 0.5 acres, these would be adequately compensated via the purchase of credits at an FWS-approved wetland mitigation bank within the same CFA.

Florida Sandhill Crane

The Florida sandhill crane is one of Florida's largest birds, and is one of six recognized subspecies of sandhill crane. The sandhill crane utilizes open prairies, active or fallow cropland, and improved pastures for foraging, and herbaceous wetlands as nest sites. The cranes are opportunistic feeders, feeding on invertebrates, plants, seeds, berries, birds, and small mammals. Flood Compensation Area 3B includes a small area of marsh that may offer some potential for cranes to nest; however, no evidence of this was observed during the preliminary site investigations. Other marshes that are large enough to provide suitable nesting habitat occur beyond the current footprint of the proposed project. However, if any active nests are identified during the permitting process, the standard FWC protection guidelines require the establishment of 400-foot buffers around the active nests during the nesting season, making it unlikely that the project could encroach into a sandhill crane nest protection zone, if one were present. Sandhill cranes were not occasionally observed forage along the project study area.

Gopher tortoise

The gopher tortoise inhabits pine-palmetto flatwoods, dry palmetto prairies, scrubby pine flatwoods, and other habitats where the depth to the seasonal high water table is several feet below ground surface. The eastern indigo snake and Florida pine snake utilize gopher tortoise burrows for shelter when available. It appears equally likely that Eastern indigo snake may be present. It is more questionable, however, whether Florida pine snakes are within the project corridor, as these snakes prefer sandhill and scrub habitats where xeric conditions predominate. Florida pine snakes are known to be commensal with gopher tortoises, so the possibility does exist. The only amphibian on the state list, gopher frog, typically

favors the more xeric habitats, especially when located adjacent to wetlands. It is also reasonable to expect that this species may be present in appropriate habitats within the study area.

No gopher tortoise burrows were observed during the preliminary field investigations of the suitable habitat areas within and surrounding the proposed location of Pond 4A. Additional suitable habitat lies adjacent to the south right-of-way of Matanzas Woods Parkway generally in the vicinity of Belle Terre Parkway and Old Belle Terre.

Eastern Indigo Snake

The Eastern indigo snake may be found in a variety of habitats including swamps, wet prairies, xeric pinelands, and scrub areas. Although considered rare in most areas, this species occurs throughout Florida. The Eastern indigo snake is more strongly associated with high, dry, well-drained sandy soils, closely paralleling the sandhill habitat preferred by the gopher tortoise. It commonly utilizes gopher tortoise burrows for shelter during the winter and to escape heat during the summer. During warmer months, the snake may also frequent streams and swamps.

Among the other potentially occurring bird species listed by FWC, all are considered wetland dependent species. The proposed widening and interchange construction are not expected to adversely affect these listed bird species, as direct impacts to wetlands will be minimized, and wetland mitigation will compensate for any loss of function(s).

Florida Mouse

The Florida mouse occupies similar habitats to those for gopher tortoise and other animals that prefer sandhill, scrub, and similar xeric habitats. The Florida mouse will occupy gopher tortoise burrows where they are available. No gopher tortoise burrows were observed during the preliminary site investigations.

Sherman's Fox Squirrel

Sherman's fox squirrel occupy sandhills, pine flatwoods, mixed pine-oak forested communities, and/or open areas where scattered pines and oaks are located. The limited study area for this project does not include suitable habitat for this species.

Florida Black Bear

The Florida black bear it requires large expanses of interconnected forested habitats for its life cycle and may range over a wide area. While there is anecdotal evidence of nuisance bears within the City of Palm Coast the potential habitat for bear within the limits of this study are primarily along I-95 from the Pellicer Creek Corridor Conservation Area to Big Mulberry Branch. However, much of these forested areas are in close proximity to residential and there is not a continuing corridor south of that point. No evidence of bear usage was observed during the preliminary field investigations. Potential project impacts to black bear, primarily with regard to forested habitat at the location of the proposed interchange, would likely be minimal.

3.1.12.2 Federally and State Listed Plant Species

Field investigations resulted in the identification of vegetative communities that would likely support several of the listed plant species that have been identified in FNAI data as potentially occurring in Flagler County. Those species most likely to occur within the project limits are identified as follows but not limited to the Lake-side sunflower (*Helianthus carnosus*), Fall-flowering ixia (*Nemastylis floridana*) and Terrestrial peperomia (*Peperomia humilus).* These species were not observed during the field investigations; however, future searches during the appropriate time of year may reveal their presence.

3.2 Cultural Impacts

3.2.1 Historic/Archaeological

Cultural Resource Assessment Survey (CRAS) (August 2011), conducted in accordance with the procedures contained in 36 CFR Part 800 and including background research and a field survey coordinated with the State Historic Preservation Officer (SHPO), was performed for the project. No archaeological or historical sites or properties were identified, nor are any expected to be encountered during subsequent project development. The Federal Highway Administration, after consultation with the SHPO, has determined that no resources listed or eligible for listing on the National Register of Historic Places would be impacted. The SHPO coordination letter is provided in **Appendix J**.

The archaeological survey included the excavation of 47 shovel tests within the existing and proposed right-of-way within the project area of potential effects (APE). No cultural material was recovered from any of the shovel tests, and no archaeological sites or occurrences were identified within the project APE.

No standing structures were found within the APE. However, the architectural survey resulted in the identification and evaluation of two previously recorded linear historic resources, King's Road (8FL186) and US 1/Philips Highway (8FL291). These resources were evaluated to determine their significance and potential for listing in the NRHP. The sections of both linear resources located within the current APE are recommended not eligible for the NRHP. No potential NRHP districts were located due to the lack of concentration of historic structures.

3.2.2 Recreation Areas

There are no existing recreation areas within the study area. However, the Flagler County Princess Place Preserve is located approximately two (2) miles north of the Matanzas Woods Parkway and Old Kings Road intersection. The Bird of Paradise Nature Preserve is located three quarters of a mile south of the Matanzas Woods Parkway and Bird of Paradise Drive intersection.

The City of Palm Coast Bicycle / Pedestrian Master Plan, shown on **Figure 3-2**, contains existing bicycle and multi-use path facilities near the project corridor consist of pathways along US 1, Belle Terre Parkway, Forest Grove Drive, Palm Harbor Parkway, Old Kings Road, and on Matanzas Woods Parkway from Bird of Paradise to Old Kings Road. The County currently has plans to add a 10-foot pedestrian/bicycle pathway on Matanzas Woods Parkway from US 1 to Bird of Paradise Drive. The proposed sidewalk features will allow connection to these facilities.

3.2.3 Community Facilities

Two community facilities were identified within 300 feet of the Matanzas Woods Parkway corridor. The Palm Coast United Methodist Church has plans to build a facility on the southeast corner of Matanzas Woods Parkway and Belle Terre Parkway. The project does not impact the Palm Coast United Methodist Church site.

Matanzas High School is located on the southwest corner of Matanzas Woods Parkway and Old Kings Road. The project proposes taking a small corner clip at the intersection for the realignment of Matanzas Woods Parkway. However, this right-of-way acquisition is vacant land and does not impact the function of the site.

3.2.4 Section 4(f) Impacts

There are no parks, wildlife refuges, or historic sites which will be impacted by the proposed improvements. Therefore, Section 4(f) protections do not apply to this project.

There are two St. Johns River Water Management District (SJRWMD) conservation easements on the south side of Matanzas Woods Parkway between I-95 and Matanzas High School in Segment 3. These conservation easements are not publicly accessible, nor do they carry a designation as a wildlife or waterfowl refuge and therefore are not considered to be Section 4(f) resources.

3.3 Community Impacts

3.3.1 Neighborhoods

Residential areas have been identified within 300 feet of the project corridor.

Segment 1

In Segment 1, single-family residences are located north of Matanzas Woods Parkway between US 1 and Belle Terre Parkway/Lakeview Boulevard, and both north and south of Matanzas Woods Parkway between Belle Terre Parkway/Lakeview Boulevard and Bird of Paradise Drive.

Segment 2

Single family residences are located adjacent to the west side of the I-95 interchange.

Segment 3

In Segment 3, Matanzas High School occupies the southwest quadrant of the intersection of Matanzas Woods Parkway and Old Kings Road and single family residential occupies the areas to the east of Old Kings Road. At the time of this study, there are no neighborhoods adjacent to Matanzas Woods Parkway in Segment 3.

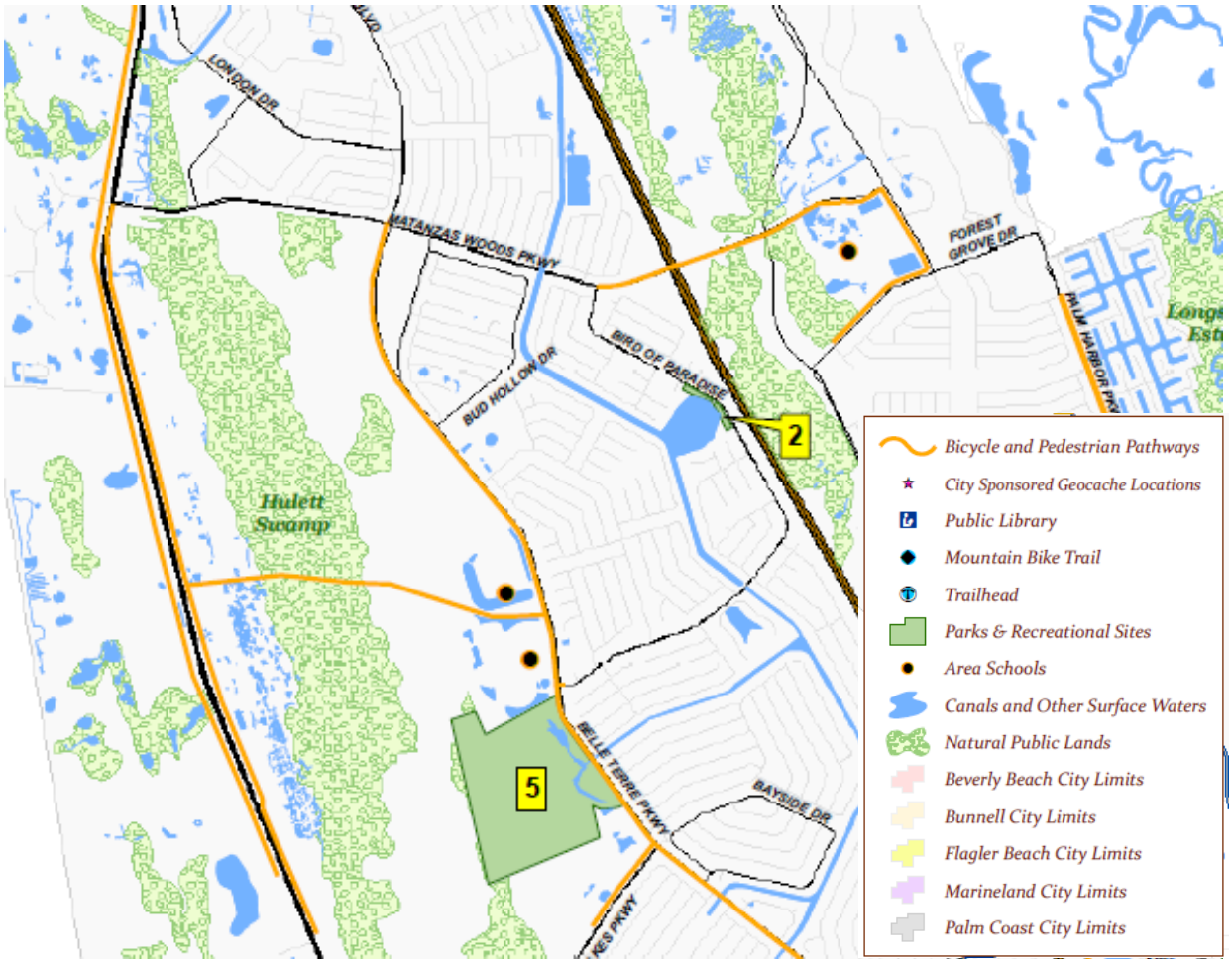
The neighborhoods along the project will not be impacted by the proposed improvements.

3.3.2 Aesthetics

As documented in the FDOT Plans Preparation Manual, Volume II (January 2009), Chapter 15, conservation of natural roadside growth and scenery should be considered to the extent practical. As a result, best management practices will be implemented to offset any visual impacts that may be incurred by this project. Selective clearing

and thinning, relocation of existing vegetation, and replanting with native plants will be considered as mitigation options for visual impacts. Furthermore, the aesthetics and landscaping along the project corridor will be reassessed and evaluated further as part of the final design phase of this project.

Figure 3-2: City of Palm Coast Bicycle, Pedestrian, and Recreation Facilities



3.3.3 Economic

Congestion along Matanzas Woods Parkway will continue to grow causing greater travel delays. These increased delays may cause the traveling public to acquire goods and services elsewhere, thus impacting the local economy. The improvements would provide a reduction in the travel delays as compared with the unimproved condition. The local economy would see a benefit of the reduced travel time for the transportation of goods and services within the corridor.

3.3.4 Land Use

3.3.4.1 Existing Land Use

Existing land use information was based on a review of existing land use maps provided by the City of Palm Coast, current aerial photography and project site visits. The project corridor is located entirely within the City of Palm Coast. Adjacent land uses near the study area include single family residential, agricultural/pasture, conservation lands and institutional uses.

3.3.4.2 Future Land Use

Future land use information was obtained from the City of Palm Coast Comprehensive Plan, shown on **Figure 3-3**.

Segment 1

The future land use from US 1 to the proposed interchange is largely designated as Residential, DRI-Mixed Use, and Mixed Use on the FLUM, with some areas designated as Conservation adjacent to the corridor. The western terminus of the project at US 1 is designated as a Village Center. The DRI-Mixed Use falls within the Palm Coast Park Development of Regional Impact (DRI), a mixed use development approved for residential, office, commercial, industrial and institutional uses.

Segment 2

The proposed interchange area and the existing overpass was set aside during the development plan by ITT Community Development Corporation (ICDC), and is designated as Institutional on the FLUM on both sides of I-95.

Segment 3

The areas adjacent to Matanzas Woods Parkway, east of I-95 from the interchange to Old Kings Road have many wetlands and wetland features and is largely designated either Conservation or Greenbelt on the FLUM. Matanzas High School located at the intersection of Matanzas Woods Parkway and Old Kings Road is designated as Institutional. The land immediately north of Matanzas High School is currently vacant, but is designated as Mixed Use. The Conservation and Greenbelt areas have no development and the potential development in the greenbelt areas is also limited.

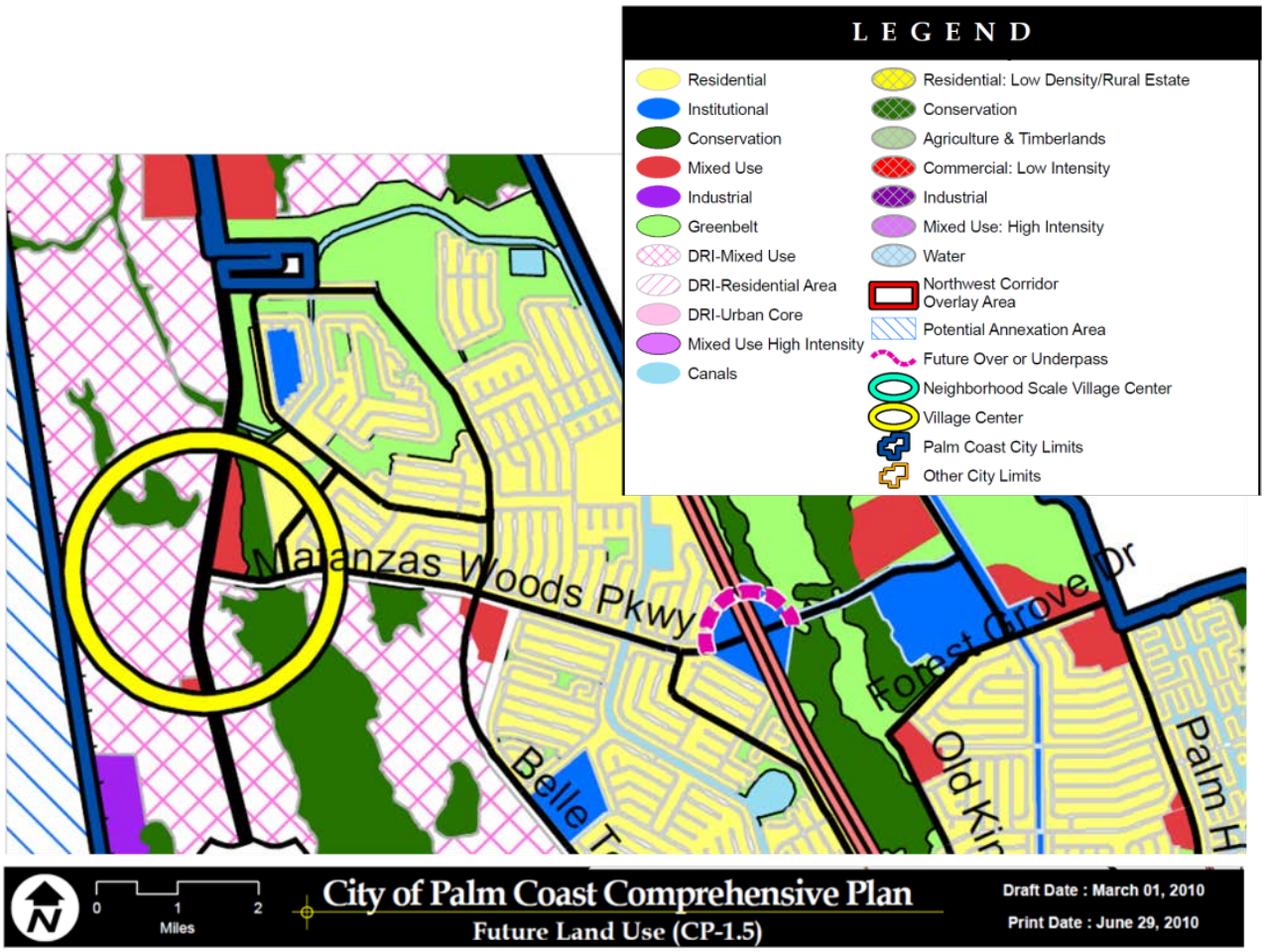
3.3.5 Mobility

The mobility to all users along the corridor, including pedestrians, bicycles, and vehicular, will be enhanced by the proposed improvements. Pedestrians will be provided a sidewalk between US 1 and Old Kings Road on both sides of the road. The proposed improvements will provide a paved shoulder and bicycle slots along right turn lanes within the limits of the improvements. In addition, access to and from I-95 will be provided.

3.3.6 Relocations

The proposed project, as presently conceived, will not displace any residences or businesses within the community. Should this change over the course of the project, the Flagler County / FDOT will carry out a Right-of-Way and Relocation Program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and

Figure 3-3: City of Palm Coast Future Land Use Map (FLUM) Project Area



Real Property Acquisition Policies Act of 1970 (Public Law 91-646 as amended by Public Law 100-17). 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 meetings and made available upon request to any interested persons.

3.3.7 Social

Community Cohesion

Construction of a new highway or improvements to an existing facility can impact community cohesion in several ways and can be either beneficial or adverse. These impacts include changes such as splitting neighborhoods, isolating portions of a neighborhood or minority group, generating new development, changing property values, or separating residents from community facilities. Since the proposed improvements consist of widening an existing roadway and an interchange with existing rights-of-way, the impacts on community cohesion are anticipated to be minimal.

Community Services

Community services help provide the social service needs of the community and include schools and higher education facilities, adult and childcare centers, churches/religious centers, social service organizations, government facilities, medical facilities, police stations, and fire rescue stations. Two of these facilities, as detailed in the Existing Conditions Report (July 2011), were identified through field reconnaissance, local government comprehensive plans, and coordination with state and local governments/agencies with jurisdictions within the project study area. No adverse impacts associated with this project are anticipated to any of the identified community services. Access to these sites has the potential to be improved by the proposed improvements.

Title VI Considerations

This project has been developed in accordance with the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1968.

Controversy Potential

The project was reviewed by Flagler County and FDOT. Throughout this study process, the project was closely coordinated with area property owners and agencies (including City of Palm Coast) as the project was developed and refined.

The project was reviewed through the Efficient Transportation Decision Making (ETDM) screening in July 2010, in accordance with Federal Highway Administration (FHWA) requirements. As a result of this review process, comments were submitted to Flagler County and FDOT. The responses to the ETDM screening were received and none were controversial in nature.

The Alternatives Public Workshop was held on Thursday, August 11, 2011 at the Palm Coast Community Center, 305 Palm Coast Parkway NE, Palm Coast, FL 32164. In preparation for this meeting, notification mailings were sent to property owners, local elected officials and other interested parties. The workshop was held in an open-house format and members of the study team were available to answer questions and discuss the project "one-on-one" with attendees before and after the presentation. Representatives from Flagler County and FDOT were available to speak with the public and answer questions. Approximately 69 citizens attended the meeting. A total of 11 written comments were received and none were controversial in nature.

3.4 Other Impacts

3.4.1 Noise

A *Noise Study* (August 2011) was conducted for the project corridor. Roadway geometry was input into the Federal Highway Administrations (FHWA) approved Traffic Noise Model (TNM), Version 2.5. The No-Build Alternative and the preferred Build Alternative were evaluated for this project. The Noise Study also considered potential noise abatement measures along the study corridor when the design year noise levels either approached or exceeded the FDOT Noise Abatement Criteria (NAC) of 66 dBA. The evaluation of potential noise walls was conducted based on the cost averaging method of potential noise abatement (noise walls) along the study corridor

and interchange area. Further, no consideration was given to potential noise sensitive land uses established after the date of public knowledge.

For the purposes of the noise study, 72 noise sensitive receptor sites were considered in the technical analysis. The results of the analysis indicated that 60 noise sensitive receptor sites under evaluation along the study corridor and interchange area either approached or exceeded the Federal Highway Administration (FHWA) Noise Abatement Criterion (NAC) of 67 dBA and the FDOT Noise Abatement Criteria (NAC) of 66 dBA for potential noise abatement measures. The FDOT approach criterion is one decibel below that of the FHWA NAC.

Potential noise abatement measures appear to be neither reasonable nor feasible at any of the 12 potential noise barrier locations. One location was deemed infeasible for a noise barrier due to its inability to meet the FHWA minimum requirement of a 5.0 dBA reduction for at least two noise sites. The remaining 11 analyzed noise barrier locations did not meet the cost guidelines and were therefore not considered reasonable. **Tables 3-2 to 3-10** provide the results of each of the wall analysis. The *Noise Study* (August 2011) provides additional information on the noise analysis.

Table 3-2: Wall #1 Analysis (Sta. 121+00 to Sta. 134+50)

Impacted Receptor/ # of Noise Sensitive Sites	Existing Noise Level (dBA)	Predicted Noise Level Without Barrier (dBA)	Estimated Noise Reduction (dBA) Length – 1,335' Uniform Wall Height	
			12'	17'
R3/1	59.1	66.4	9.0	10.2
R3a/1	59.1	66.4	9.7	11.1
R3b/1	51.2	57.2	<5.0	5.1
R3c/1	55.3	62.6	7.6	9.1
Total Benefited Noise Sensitive Receptors			3	4
Benefited Receptors Average Noise Reduction			8.8 dBA	8.9 dBA
Total Cost			$480,735	$681,041
Cost per Benefited Receptor			$160,245	$170,260
Conclusion: Exceeds $42,000/Benefited Receptor = Not Reasonable.				

Table 3-3: Wall #2 Analysis (Sta. 137+50 to Sta. 155+00)

Impacted Receptor/ # of Noise Sensitive Sites	Existing Noise Level (dBA)	Predicted Noise Level Without Barrier (dBA)	Estimated Noise Reduction (dBA) Length – 1,722' Uniform Wall Height	
			8'	12'
R4/1	63.0	70.2	9.0	12.0
R4a/6	62.7	69.8	8.6	11.1
R5/1	63.8	71.1	9.0	11.9
R6/1	61.7	68.8	<5.0	<5.0
Total Benefited Noise Sensitive Receptors			8	8
Benefited Receptors Average Noise Reduction			8.9 dBA	11.7 dBA
Total Cost			$413,358	$620,038
Cost per Benefited Receptor			$51,669	$77,504
Conclusion: Exceeds $42,000/Benefited Receptor = Not Reasonable.				

Table 3-4: Barrier #3 Analysis (Sta. 156+20 to Sta. 172+00)

Impacted Receptor/ # of Noise Sensitive Sites	Existing Noise Level (dBA)	Predicted Noise Level Without Barrier (dBA)	Estimated Noise Reduction (dBA) Length – 1,613' Uniform Wall Height	
			8'	12'
R7/5	62.8	70.0	8.5	10.7
R7a/1	63.8	71.2	9.1	11.9
R8/	63.8	71.1	8.8	11.4
R9/1	62.5	69.7	<5.0	<5.0
Total Benefited Noise Sensitive Receptors			7	7
Benefited Receptors Average Noise Reduction			8.9 dBA	11.3 dBA
Total Cost			$387,066	$580,599
Cost per Benefited Receptor			$55,295	$82,942
Conclusion: Exceeds $42,000/Benefited Receptor = Not Reasonable.				

Table 3-5: Wall #4 Analysis (Sta. 165+00 to Sta. 186+00)

Impacted Receptor/ # of Noise Sensitive Sites	Existing Noise Level (dBA)	Predicted Noise Level Without Barrier (dBA)	Estimated Noise Reduction (dBA) Length – 2,145' Uniform Wall Height	
			8'	12'
R10/8	56.7	67.5	7.6	10.3
R10a/1	61.4	68.6	5.9	7.0
R10b/1	60.9	68.1	7.5	10.1
R10c/1	59.1	66.2	6.8	9.3
R10d/1	59.0	66.1	6.1	8.8
Total Benefited Noise Sensitive Receptors			12	12
Benefited Receptors Average Noise Reduction			6.8 dBA	9.0 dBA
Total Cost			$514,709	$772,064
Cost per Benefited Receptor			$42,892	$64,338
Conclusion: Exceeds $42,000/Benefited Receptor = Not Reasonable.				

Table 3-6: Wall #5 Analysis (Sta. 173+10 to Sta. 186+00)

Impacted Receptor/ # of Noise Sensitive Sites	Existing Noise Level (dBA)	Predicted Noise Level Without Barrier (dBA)	Estimated Noise Reduction (dBA) Length – 1,270' Uniform Wall Height	
			8'	12'
R7b/1	63.8	71.1	9.6	12.3
R7c/1	64.0	71.3	9.7	12.5
R7d/5	64.5	71.5	9.2	11.7
Total Benefited Noise Sensitive Receptors			7	7
Benefited Receptors Average Noise Reduction			9.5 dBA	12.2 dBA
Total Cost			$304,795	$457,193
Cost per Benefited Receptor			$43,542	$65,313
Conclusion: Exceeds $42,000/Benefited Receptor = Not Reasonable.				

Table 3-7: Wall #6 Analysis (Sta. 194+70 to Sta.195+80)

Impacted Receptor/ # of Noise Sensitive Sites	Existing Noise Level (dBA)	Predicted Noise Level Without Barrier (dBA)	Estimated Noise Reduction (dBA) Length – 772' Uniform Wall Height	
			8'	12'
R10e/1 – *Not Impacted*	54.6	61.9	<5.0	<5.0
R10f/3	58.4	65.6	6.0	8.3
Total Benefited Noise Sensitive Receptors			3	3
Benefited Receptors Average Noise Reduction			6.0 dBA	8.3 dBA
Total Cost			$185,282	$277,924
Cost per Benefited Receptor			$61,760	$92,641
Conclusion: Exceeds $42,000/Benefited Receptor = Not Reasonable.				

Table 3-8: Wall #7 Analysis (Sta. 187+60 to Sta. 194+70)

Impacted Receptor/ # of Noise Sensitive Sites	Existing Noise Level (dBA)	Predicted Noise Level Without Barrier (dBA)	Estimated Noise Reduction (dBA) Length – 772' Uniform Wall Height	
			8'	15'
R11/1	63.8	71.0	<5.0	5.0
R11a/1	61.3	68.4	5.8	7.2
R11b/2	63.7	70.9	8.7	12.6
Total Benefited Noise Sensitive Receptors			3	4
Benefited Receptors Average Noise Reduction			7.3 dBA	8.3 dBA
Total Cost			$168,093	$315,174
Cost per Benefited Receptor			$56,031	$78,793
Conclusion: Exceeds $42,000/Benefited Receptor = Not Reasonable.				

Table 3-9: Wall #8A Analysis – Diamond Interchange Configuration (Sta. 195+40 to Sta. 797+00)

Impacted Receptor/ # of Noise Sensitive Sites	Existing Noise Level (dBA)	Predicted Noise Level Without Barrier (dBA)	Estimated Noise Reduction (dBA) Length – 2,975' Uniform Wall Height	
			10'	14'
R11c/1	64.2	71.4	<5.0	<5.0
R11d/1	64.1	71.3	7.0	9.4
R12/3	59.4	66.4	10.4	13.1
R12a/1	59.2	66.3	6.9	8.5
R13/4	75.8	75.8	9.9	12.5
R13a/1	75.7	75.7	10.2	12.0
Total Benefited Noise Sensitive Receptors			10	10
Benefited Receptors Average Noise Reduction			8.9 dBA	11.1 dBA
Total Cost			$892,629	$1,249,680
Cost per Benefited Receptor			$89,262	$124,968
Conclusion: Exceeds $42,000/Benefited Receptor = Not Reasonable.				

Table 3-10: Wall #9 Analysis

Impacted Receptor/ # of Noise Sensitive Sites	Existing Noise Level (dBA)	Predicted Noise Level Without Barrier (dBA)	Estimated Noise Reduction (dBA) Length – 1,936' Uniform Wall Height	
			10'	14'
R10g/1 – *Not impacted*	56.1	63.8	<5.0	5.0
R10h/1	58.9	66.0	6.9	8.7
R10i/1 – *Not Impacted*	55.8	63.4	5.1	6.5
Total Benefited Noise Sensitive Receptors			2	3
Benefited Receptors Average Noise Reduction			6.0 dBA	6.7 dBA
Total Cost			$201,590	$282,226
Cost per Benefited Receptor			$100,795	$94,075
Conclusion: Exceeds $42,000/Benefited Receptor = Not Reasonable.				

Table 3-11: Wall #10A Analysis – Diamond Interchange Configuration

Impacted Receptor/ # of Noise Sensitive Sites	Existing Noise Level (dBA)	Predicted Noise Level Without Barrier (dBA)	Estimated Noise Reduction (dBA) Length – 1,936' Uniform Wall Height	
			10'	14'
R15/1	76.4	76.4	10.6	13.3
R15a/2	63.4	70.6	8.2	10.3
R16/1	74.2	74.2	6.1	8.3
Total Benefited Noise Sensitive Receptors			4	4
Benefited Receptors Average Noise Reduction			8.3 dBA	10.6 dBA
Total Cost			$580,791	$813,107
Cost per Benefited Receptor			$145,197	$203,276
Conclusion: Exceeds $42,000/Benefited Receptor = Not Reasonable.				

3.4.2 Construction

Construction activities accompanying the proposed improvements associated with the Preferred Alternative will produce temporary air, noise, water quality, traffic flow, and visual impacts for those residents, businesses and motorists within the immediate vicinity of the project area. All construction will be minimized or controlled in adherence to measures set forth in the FDOT's Standard Specifications for Road and Bridge Construction.

Air Quality

Air quality impacts will be temporary and will primarily be in the form of exhaust emissions from trucks and construction equipment as well as fugitive dust from construction sites. Almost all of the trucks and other equipment involved in construction activities will be diesel powered. Overall, construction vehicle emissions will not be significant as compared with the emissions from automobile traffic in the area. Detours and other delays in traffic during construction typically result in local increases in vehicle emissions. These impacts will be minimized

by adherence to all state and local regulations and in accordance with Standard Specifications for Road and Bridge Construction.

Noise

Noise generated by haul trucks and other heavy equipment used in roadway and bridge construction and paving is anticipated. The range of construction noise depends on the noise characteristics of the equipment and activities involved (e.g. pile driving), the construction schedule (time of day and duration of activity), and the distance from sensitive receptors. Expected phases of construction include land clearing and excavation, demolition, utility relocation, drainage construction, and bridge construction. Noise impacts, including pile driving and vibratory compaction of embankments, will be temporary and control measures will be implemented to reduce the impacts as set forth in the Standard Specifications for Road and Bridge Construction.

Water Quality

During project construction, potential short-term increases in water turbidity, which could affect wetlands and water quality, will vary from moderate to none. Qualitative short-term construction impacts to water quality are listed below. None of the impacts listed will be permanent and all will be kept to a minimum using Best Management Practices (BMPs), consistent with state and local standards.

- Turbidity – Moderate
- Sedimentation – Minor
- Chemical Pollutants – Minor
- Biota – Minor

Direct effects on water quality during construction may include spills or discharges. However, BMPs and proper planning should prevent such occurrences. Water quality degradation as a result of stormwater runoff is expected to be minimal as stormwater management rules and regulations are strict and compensation for this type of impact will be provided. Adverse impacts on water quality during construction can be successfully mitigated through a variety of good construction and stormwater management practices. Water quality impacts resulting from erosion and sedimentation will be controlled in accordance with Standard Specifications for Road and Bridge Construction and through the use of BMPs.

Traffic

Measures to mitigate transportation impacts during construction will consist of several components. A Traffic Control Plan (TCP) will be developed during final design and implemented in consultation with local jurisdictions. A community relations/construction mitigation program could be developed and implemented in order to provide general construction scheduling information, coordination of construction work with local jurisdictions, and assistance with the resolution of problems concerning adjacent land uses associated with the construction work.

Visual and Aesthetic Quality

Visual impacts associated with the storage of construction materials and establishment of temporary construction facilities will occur, but are temporary and short-term. Measures to reduce visual intrusion of the construction process as seen from properties in the vicinity will be in accordance to the Standard Specifications for Road and Bridge Construction and through the use of BMPs.

Visual effects of roadway and bridge construction as seen from adjacent and nearby properties may include, but not be limited to the following:

- The presence and movement of heavy machinery;
- Deposition of fill material;
- Particle dust from embankment;
- Temporary traffic lanes adjacent to or within existing right-of-way;
- Lights associated with night-time operations and temporary traffic signs; and
- Use of silt control devices and excavation of future ponds.

4.0 Summary of Permits and Mitigation

4.0 Summary of Permits and Mitigation

The Preferred Alternative identified in this study is anticipated to minimize unavoidable impacts to wetlands and floodplains. However, it is understood that as a project progresses through the final design and right-of-way acquisition phases, the availability of lands identified for the roadway and stormwater ponds can vary from the concept presented herein.

St. Johns River Water Management District– Environmental Permitting

The complexity of the permitting process depends greatly on the degree of the impact to jurisdictional areas. The St. Johns River Water Management District (SJRWMD) requires an Environmental Resource Permit (ERP) when construction of any projects results in the creation of a water management system, impacts to waters of the State, or impacts to isolated wetlands. The SJRWMD will require FDOT and Flagler County to maximize avoidance and minimization measures in regard to wetland impacts. The SJRWMD also requires that proposed projects demonstrate that the proposed activity is not contrary to the public interest. The SJRWMD will also require the applicant to outline the benefits of the project and any proposed impacts to the public health, safety, or welfare, or the property of others.

When the wetland impacts are less than one acre, the proposed project may request a permit modification to a previously obtained permit on an adjacent roadway project. This would involve extending the limits from the original permit to encompass the proposed work.

The U.S. Army Corps of Engineers (USACE) will have jurisdiction over any of the wetlands within the project limits near US 1 and east of I-95, since they would have connectivity to the "waters of the United States." The coordination with USACE will be completed as part of the SJRWMD permitting process during the final design phase. In addition to requiring a USACE permit for the wetlands impacted within the project area, the USACE would review the permits submitted to the SJRWMD and the FDEP and reviewed by the United States Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission (FFWCC). The USACE provided comments to avoid impacts to the existing conservation easements, and avoidance / minimization for wetland impacts. The project does not impact the existing conservation easements. The proposed pond site locations utilized the Quality Enhancement Strategies for Wetland Impact Minimization.

FFWCC and USFWS will consult with and provide comments to the SJRWMD on the potential habitat impacts of state and federal listed species. Their comments and/or objections will be noted and could be incorporated into the SJRWMD permit as permit conditions. The State Historic Preservation Office (SHPO) will comment to SJRWMD on the presence of any historical sites that might be within the final pond or floodplain compensation site alternatives. USFWS and SHPO coordination letters are located in **Appendix J**. SJRWMD was notified for all of the public meetings as part of the project mailing list.

FDEP

Any project which results in the clearing of five or more acres of land will require a National Pollution Discharge Elimination System (NPDES) permit from the FDEP, pursuant to a 40 CFR parts 122 and 124. The NPDES stormwater program regulates point source discharges of stormwater into surface waters of the State of Florida from certain municipal, industrial, and construction activities. This includes road construction activities and construction of stormwater management facilities. The potential discharge associated with the construction work is covered under the General Permit for Stormwater Discharge from Large and Small Construction Activities. In association with this permit, implementation of a Stormwater Pollution Prevention Plan (SWPPP) during the construction of this project will be required. The primary functions of the NPDES requirements are to insure that sediment and erosion during construction of the project is controlled. These permits typically utilize Best Management Practices (BMP) to ensure compliance. Before proceeding with construction, a Notice of Intent (NOI) must be filed with the FDEP.

The Efficient Transportation Decision Making (ETDM) screening indicated that an ERP will be required for this project. The final determination for the type of permit will depend on final design. Additional information concerning the anticipated impacts would be required during the permitting process. The FDEP also recommended that future environmental documentation provide information regarding the BMP to be utilized during construction activities.

FFWCC/USFWS

Any impacts to listed species will need to be addressed with FFWCC and/or USFWS during project design and permitting. Wildlife permitting and mitigation options will vary depending on multiple factors, such as the species impacted (if any), degree of impact (incidental take or relocation), density of that species within the project limits, or species listing status. Since the proposed activities are not expected to adversely affect protected species, permitting through FFWCC and/or USFWS are not anticipated. Impacts to wildlife associated with the construction of this project are not currently anticipated, it is recommended that wildlife surveys be conducted prior to construction to assure that species utilization of habitat within the project limits has not changed from the time that this study was conducted. U.S. Fish and Wildlife Service (Service) concurrence letter is provided in **Appendix J**.

The permits that are anticipated for the project are shown in **Table 4-1**.

Table 4-1: Potential Permits Anticipated During Design

Permit	Issuing Agency
Individual Environmental Resource Permit (> 100 acres & Wetland Impact > 1 acre)	SJRWMD
Section 404 Individual Permit	USACE
National Pollution Discharge Elimination System Permit	FDEP
Environmental Resource Permit	FDEP

Other Agencies

In addition to the permits anticipated for the proposed improvements, several other agencies were contacted to determine the impacts of the proposed improvements. Through coordination with the Natural Resources Conservation Service as part of the ETDM screening process, it has been determined that no farmlands, as defined by 7 CFR 658, are located in the project vicinity.

5.0 Summary of Public Involvement

5.0 Summary of Public Involvement

A Public Involvement Program (PIP) was developed and implemented for the Interstate 95 & Matanzas Woods Parkway Interchange PD&E Study. The purpose of this program is to share project information with the individuals who live and work in this area; to listen to ideas and concerns; and to incorporate input received during the study process. For this project, the PIP focused on the advance notification process, and public hearing. These elements are described herein.

5.1 Efficient Transportation Decision Making (ETDM)

A Programming Screen through the Efficient Transportation Decision Making (ETDM) Process was performed on the project in March 2010 and updated in July 2010. The ETDM Process is the means through which Federal, State, and local agencies are informed of proposed actions by FDOT. The process provides for early involvement of Federal, State, and local agencies in the project development phase and allows them to share information and/or concerns for a proposed action. This process is required pursuant the "streamlining" provisions contained within the Transportation Equity Act for the 21st Century (TEA-21), which was passed by Congress in July 1999 as part of the National Environmental Policy Act (NEPA).

On March 9, 2010, the Programming Screen was sent in accordance with FDOT requirements to initiate coordination with government agencies and the general public. The purpose was to advise government agencies and the public that an environmental document would be prepared for the proposed interchange project and to determine the class of action. As a result of this review process, comments were submitted to Flagler County and FDOT. The responses to the ETDM screening were received and none were controversial in nature. The ETDM Summary Report is provided in **Appendix H**.

5.2 Agency Coordination Activities

Coordination meetings have been held regarding the project. In addition, there have been other coordination efforts including telephone, electronic, and written correspondence with several agencies, including:

- U.S. Environmental Protection Agency;
- Florida Fish and Wildlife Conservation Commission;
- Florida Department of Environmental Protection;
- St Johns River Water Management District; and
- City of Palm Coast.

5.3 Formal Public Meetings

5.3.1 Public Alternatives Meeting

An Alternatives Public Meeting was held on August 11, 2011 to afford the public the opportunity of expressing their views concerning the conceptual alternatives. The meeting was held at the Palm Coast Community Center, 305 Palm Coast Parkway NE, Palm Coast, Florida 32137.

In preparation for this meeting, notification mailings were sent to property owners, local elected officials and other interested parties. The meeting included an informal, open house to encourage the exchange of information between the public and the project team, a formal presentation and an opportunity for the public to provide formal comments on the various alternatives. Project information and the alternatives considered were included in the presentation as well as displayed on boards. All study documents were available for public review. Representatives from FDOT and Flagler County were available to speak with the public and answer questions.

Approximately 69 citizens attended the meeting. The public comment period was from August 11, 2011 to August 22, 2011. A total of 11 written or verbal comments were received at the meeting and are briefly summarized below:

- One comment inquired as to the need to replace the bridge on Matanzas Woods Parkway over I-95.
- One comment inquired as to the planning process for homes in the vicinity of the proposed interchange.
- One comment inquired as to the how is the "year needed" for the various improvements were determined.
- One comment inquired as to how many homes and parcels would be impacted.
- One comment inquired as to the need for evacuations.
- One comment inquired as to how far along the design process was.
- Two comments regarding if any alternatives were considered to avoid having the interchange.
- One comment inquired as to the need for widening Matanzas Woods Parkway to four lanes.
- One comment asked if can trucks be restricted on Matanzas Woods Parkway from I-95.
- One comment inquired as to the study process and funding availability.

Copies of comments are located in the project files and summarized in the *Public Alternatives Meeting Summary* (August 2011).

5.3.2 Public Hearing

A Public Meeting was held on Tuesday November 29, 2011 to present the preferred project alternative, which was based, in part, on feedback received from residents and local agencies during and after the Public Alternatives meeting (held on August 11, 2011). The preferred alternative presented was a diamond interchange with construction anticipated to begin in 2015. The preferred alternative was to four-lane

Matanzas Woods Parkway from US 1 to Old Kings Road with no additional funding identified. The meeting was held at the Palm Coast Community Center, 305 Palm Coast Parkway NE, Palm Coast, Florida 32137. The public was provided with the opportunity to express their views concerning the preferred alternative.

In preparation for this meeting, notification mailings were sent to property owners, local elected officials and other interested parties. The meeting included an informal, open house to encourage the exchange of information between the public and the project team, a formal presentation and an opportunity for the public to provide formal comments on the project and the preferred alternative. The preferred alternative configuration, pond locations, median opening locations and preferred typical sections were included in the presentation as well as displayed on boards. All study documents were available for public review beginning 21 days prior to the hearing and throughout the comment period from November 29, 2011 to December 9, 2011. Representatives from FDOT and Flagler County were available to speak with the public and answer questions at the meeting.

Approximately 50 citizens attended this public hearing. A total of 13 written or verbal comments were received at the meeting and through e-mail and are briefly summarized below:

- One comment mentioned that the home owners on Matanzas Woods Parkway are hoping that noise abatement will be included in the future phases of the project.
- Two additional comments expressed concern that noise would be an issue.
- One comment pointed out concern that this interchange might bring a lot of commercial growth with it like the Palm Coast Parkway and Route 100 interchanges and one requested clarification whether the projects costs shown were in present day dollars.
- One commenter requested additional information on the funding availability.
- One commenter suggested the interchange only be built to allow access to and from the south and suggested from the north it is just as easy to access this area from the US 1 exit.
- One comment inquired if the City of Palm Coast Planning had provided any comments on this project, why the public hearing started at 5 pm and if the School board had provided an approval.
- Eight commenter's expressed support for the project, several citing the following reasons:
    - congestion relief
    - evacuation route and emergency access
    - its importance to the northern region for traffic flow and services,
    - suggesting that funds from Palm Coast Parkway widening be shifted towards this "much needed, overdue interchange" while reminding about the 1985 and 1998 wildfire issues.

In addition, comments were also received from the City Manager of Palm Coast. The letter highlighted the support from the City of Palm Coast for this project and also encouraged the State to expedite its construction citing the importance of this project as an emergency evacuation route while also helping relieve growing congestion issues.

Copies of comments are located in the project files.

6.0 Commitments and Recommendations

6.0 Commitments and Recommendations

6.1 Commitments

To minimize the impacts of this project to the environment, Flagler County, City of Palm Coast and the Florida Department of Transportation (FDOT) are committed to the following measures for the I-95 & Matanzas Woods Parkway improvements.

Roadway Construction

1. Flagler County and FDOT are committed to implementing the Preferred Alternative. Refer to the Concept Plans provided in **Appendix B** for an illustration of the proposed improvements, access modifications, right-of-way, and utility issues. Access management changes were considered as part of this study and are discussed further in **Section 2** of this report.

2. Flagler County and FDOT are committed to construct the single lane ramps for the diamond interchange at I-95 and Matanzas Woods Parkway by 2015.

3. Flagler County and the City of Palm Coast are committed to construct Matanzas Woods Parkway as a four-lane urban roadway between US 1 and the proposed southbound interchange ramps by 2019 when the average annual daily traffic (AADT) is expected to reach approximately 14,850 vehicles for the adopted level of service (LOS) D.

4. Flagler County is committed to construct Matanzas Woods Parkway as a four-lane suburban roadway between the proposed southbound interchange ramps and the proposed Old Kings Road Extension (or Old Kings Road if the extension is not constructed) by 2027 when the average annual daily traffic (AADT) is expected to reach approximately 14,850 vehicles for the adopted level of service (LOS) D.

5. Flagler County, City of Palm Coast and FDOT are committed to construct an additional left turn lane for the southbound off ramp of the I-95 and Palm Coast Parkway interchange by 2027 per the recommendations from the *Interchange Justification Report* (February 2011).

6. Flagler County, FDOT and the City of Palm Coast are committed to constructing sidewalks along both sides of Matanzas Woods Parkway between US 1 and Old Kings Road. The sidewalk on the north side of Matanzas Woods Parkway from US 1 and Old Kings road will be a minimum of five feet wide. The sidewalk on the south side of the road from US 1 to Bird of Paradise Drive will be ten feet. The existing eight foot sidewalk on the south side of Matanzas Woods Parkway will remain.

7. Flagler County, FDOT and the City of Palm Coast are committed to reconstructing the Matanzas Woods Parkway bridge over the Belleaire Waterway and widen the bridge over I-95 for the proposed roadway and sidewalk improvements.

8. Flagler County has agreed to the proposed access modifications along Matanzas Woods Parkway to accommodate the access requirements previously set for the corridor. Full access openings will be located at each existing or proposed roadway intersection, with the exception of Luther Drive.

9. Flagler County will perform a Lighting Justification Report for the interchange area as part of the design process.

Stormwater Management Facilities

1. Flagler County and FDOT will continue to coordinate with the St. Johns River Water Management District (SJRWMD) and the land owners to address the final recommended stormwater pond modifications and any additional drainage concerns or issues during the design phase of project development.

Threatened and Endangered Species

1. Flagler County and FDOT are committed to providing protection for any wildlife found within the project area. If federally or state listed threatened and endangered species are found during construction, coordination will be initiated with the appropriate resource agencies and required permits will be obtained or impacts will be avoided or mitigated.
2. Flagler County and FDOT is committed to implementing the United States Department of the Interior, Fish and Wildlife Service approved Standard Protection Measures for the Eastern Indigo Snake during design and construction.

6.2 Recommendations

As a result of this study, the Flagler County and FDOT recommend constructing a diamond interchange with full access to Interstate 95 and a four-lane typical section between US 1 and the proposed Old Kings Road Extension, or to Old Kings Road if the Old Kings Road Extension project is not constructed. The following improvements will provide additional traffic capacity and safety upgrades within the study limits.

- **I-95 & Matanzas Woods Interchange:** Construct interchange ramps for a diamond interchange.
- **Matanzas Woods Parkway:** Widen to four lanes between US 1 and Old Kings Road.
    - **Urban Typical Section:** US 1 to proposed northbound interchange ramps.
    - **Suburban Typical Section:** Proposed northbound interchange ramps to Old Kings Road.
    - **Bridge:** Reconstruct the bridge over the Belleaire Waterway and widen the bridge over I-95.
- **I-95 & Palm Coast Parkway Interchange:** Construct a second southbound off ramp left turn lane.
- **Pedestrian Accommodations:** Sidewalk on both sides of Matanzas Woods Parkway from US 1 to Old Kings Road.
- **Access Management:** Allow full access openings at each existing or proposed intersection, except a directional opening at Luther Drive.
- **Right-of-Way:** Interchange ramps to be constructed on Flagler County-owned parcels to be transferred to FDOT for designation as limited access right-of-way. Matanzas Woods Parkway to be

constructed within existing right-of-way or Flagler County-owned parcels, with the following acquisition areas:

- **Belle Terre Parkway:** clips of two parcels on southwest corner (0.12 acres total)
- **Old Kings Road:** clip of one parcel on southwest corner (0.10 acres)

Right-of-way acquisition is also required for the stormwater management facilities and floodplain compensation ponds.

- **Drainage:** Drainage and stormwater management facility improvements will be required for the roadway improvements to comply with local jurisdictions and SJRWMD criteria.
- **Utilities:** The relocation of the concentrate main, overhead electric, water mains, sanitary sewers, buried fiber optic cable, and buried telephone located within the right-of-way will be designed and/or constructed through a Joint Project Agreement (JPA).

As a result of community input, agency coordination, and engineering and environmental studies conducted as part of the PD&E study, the Preferred Build Alternative is recommended. The proposed improvements are intended to enhance the ability of the roadway network to meet anticipated traffic demands, improve safety, and serve existing and future land uses within the project study area.

Specific components of the Preferred Build Alternative are described in **Section 2** of this report and the Typical Section Package, included as **Appendix A**. Variation Request for border width is included as **Appendix F**. Concept Plans for the recommended Preferred Build Alternative are also included as **Appendix B**.

Appendix A

Typical Section Package

Chg RH 5/24/12

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 411959-2-22-01 COUNTY (SECTION) FLAGLER (73001)

PROJECT DESCRIPTION I-95 & MATANZAS WOODS PARKWAY INTERCHANGE FROM US-1 TO OLD KINGS ROAD

PROJECT CONTROLS

FUNCTIONAL CLASSIFICATION

(X) RURAL
( ) URBAN

(X)	FREEWAY/EXPWY.	( )	MAJOR COLL.
( )	PRINCIPAL ART.	( )	MINOR COLL.
(X)	MINOR ART.	( )	LOCAL

HIGHWAY SYSTEM

Yes	No	
(X)	( )	NATIONAL HIGHWAY SYSTEM
(X)	( )	FLORIDA INTRASTATE HIGHWAY SYSTEM
(X)	( )	STRATEGIC INTERMODAL SYSTEM
(X)	( )	STATE HIGHWAY SYSTEM
(X)	( )	OFF STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

(X) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
(X) 7 - BOTH MEDIAN TYPES

TRAFFIC

	YEAR	AADT MATANZAS WOODS PARKWAY	AADT RAMPS (MAX.)
CURRENT	2011	4,700	N/A
OPENING	2015	9,200	3,600
DESIGN	2035	28,000	6,700

DISTRIBUTION

DESIGN SPEED	45/50	K	%
POSTED SPEED	45	D	%
		T_{24}	8%

CRITERIA

(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RRR INTERSTATE / FREEWAY
( ) RRR NON-INTERSTATE / FREEWAY
( ) TDLC / NEW CONSTRUCTION / RECONSTRUCTION
( ) TDLC / RRR
( ) MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)(OFF-STATE HIGHWAY SYSTEM ONLY)

DESIGN SPEED APPROVALS

A K Brennan — 4/11/12
DISTRICT DESIGN ENGINEER — DATE

Richard B Moore — 5/8/2012
DISTRICT TRAFFIC OPERATIONS ENGINEER — DATE

LIST ANY POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION ELEMENTS:

DESIGN VARIATION FOR BORDER WIDTH NEEDED FOR RAMP CONNECTIONS TO I-95

LIST MAJOR STRUCTURES LOCATION/DESCRIPTION - REQUIRING INDEPENDENT STRUCTURE DESIGN:

MATANZAS WOODS PARKWAY BRIDGE OVER BELLEAIRE WATERWAY

MATANZAS WOODS PARKWAY BRIDGE OVER I-95

LIST MAJOR UTILITIES WITHIN PROJECT CORRIDOR:

CONNEXION TECHNOLOGIES, FLORIDA POWER & LIGHT, BRIGHT HOUSE NETWORKS, LEVEL 3 COMMUNICATIONS, CITY OF PALM COAST, TECO/PEOPLES GAS-DAYTONA, AT&T, TRAFFIC CONTROL DEVICES

OVERHEAD ELECTRIC, BURIED TELEPHONE, WATER, SEWER, FIBER OPTIC, CABLE TELEVISION

LIST OTHER INFORMATION PERTINENT TO DESIGN OF PROJECT:

B. Pike 59478 3/28/12

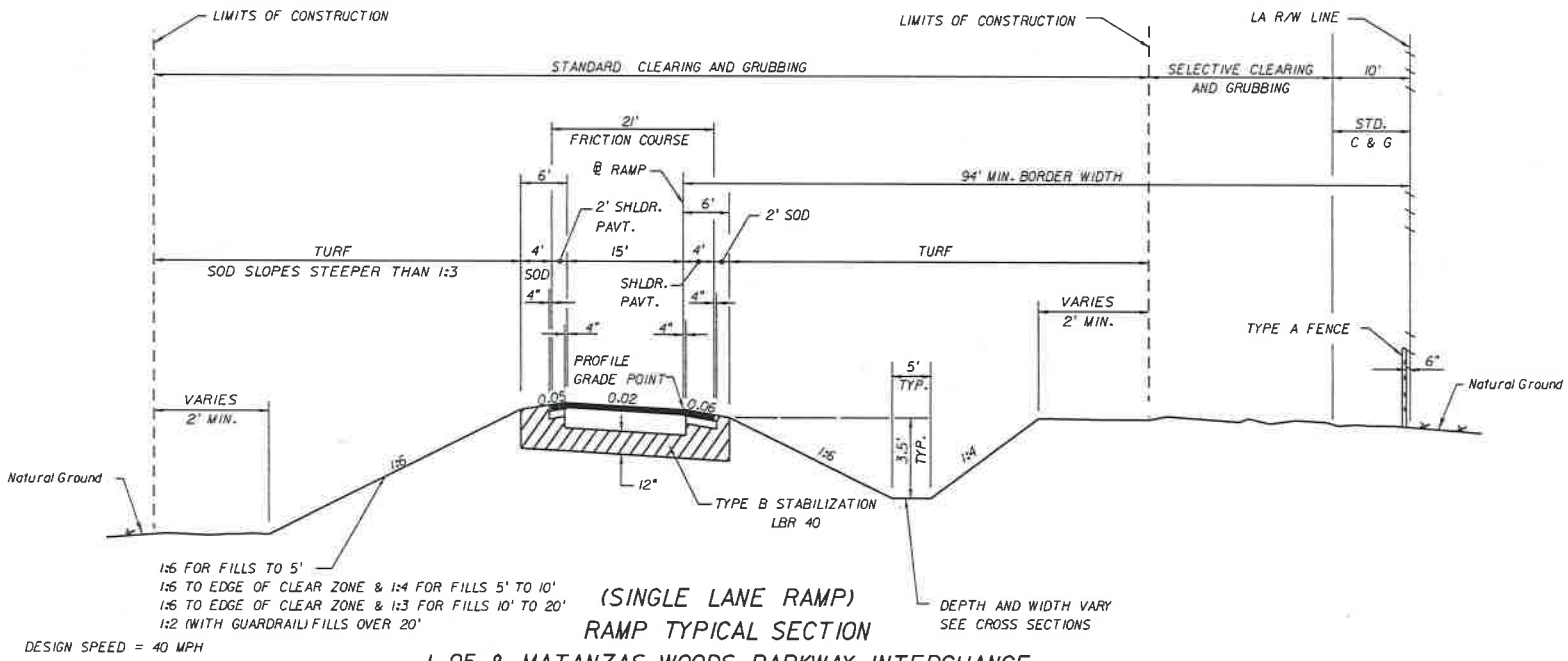
PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 411959-2-22-01 FEDERAL AID PROJECT NO. _____ COUNTY NAME FLAGLER

SECTION NO. _____ ROAD DESIGNATION MATANZAS WOODS PARKWAY LIMITS/MILEPOST US-1 TO OLD KINGS ROAD

PROJECT DESCRIPTION I-95 & MATANZAS WOODS PARKWAY INTERCHANGE, INCLUDING WIDENING MATANZAS WOODS PARKWAY TO 4-LANES FROM US-1 TO OLD KINGS ROAD

PROPOSED ROADWAY TYPICAL SECTION



DESIGN SPEED = 40 MPH

(SINGLE LANE RAMP)
RAMP TYPICAL SECTION
I-95 & MATANZAS WOODS PARKWAY INTERCHANGE

APPROVED BY: Brian P. Ribaric, P.E.	FDOT CONCURRENCE	FHWA CONCURRENCE
B P Ribaric 59478 3/28/12	A K Brennan 4/11/12	
Engineer Of Record Signature and Date	Annette Brennan, P.E. FDOT District Design Engineer — Date	FHWA Transportation Engineer — Date

Appendix B

Concept Plans

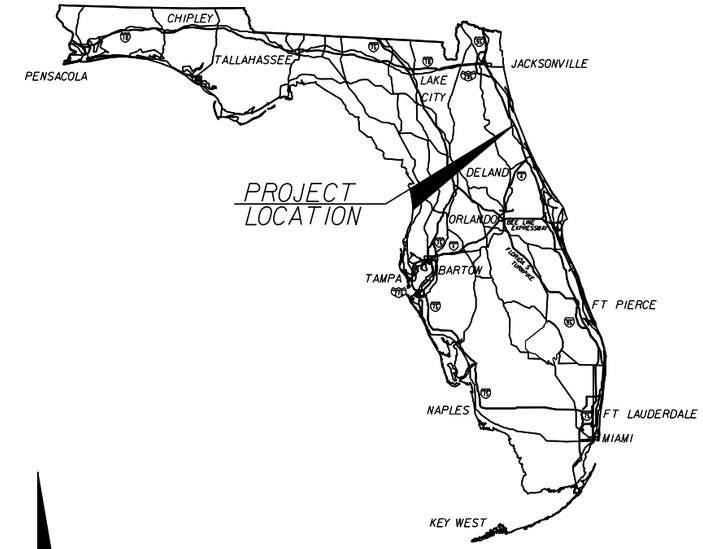
FLAGLER COUNTY
BOARD OF COUNTY COMMISSIONERS

CONCEPT PLANS

FINANCIAL PROJECT ID 411959-2-22-01

FLAGLER COUNTY (73001)

STATE ROAD NO. 9 (I-95) & MATANZAS WOODS PARKWAY INTERCHANGE
FROM US 1 TO OLD KINGS ROAD



COMPONENTS OF CONCEPT PLANS SET

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2-9	CONCEPT PLANS
10-12	CONCEPT PROFILE
13-14	POND DETAILS

FLAGLER COUNTY
BOARD OF COUNTY COMMISSIONERS

ALAN PETERSON
DISTRICT 1

MILISSA HOLLAND
DISTRICT 2

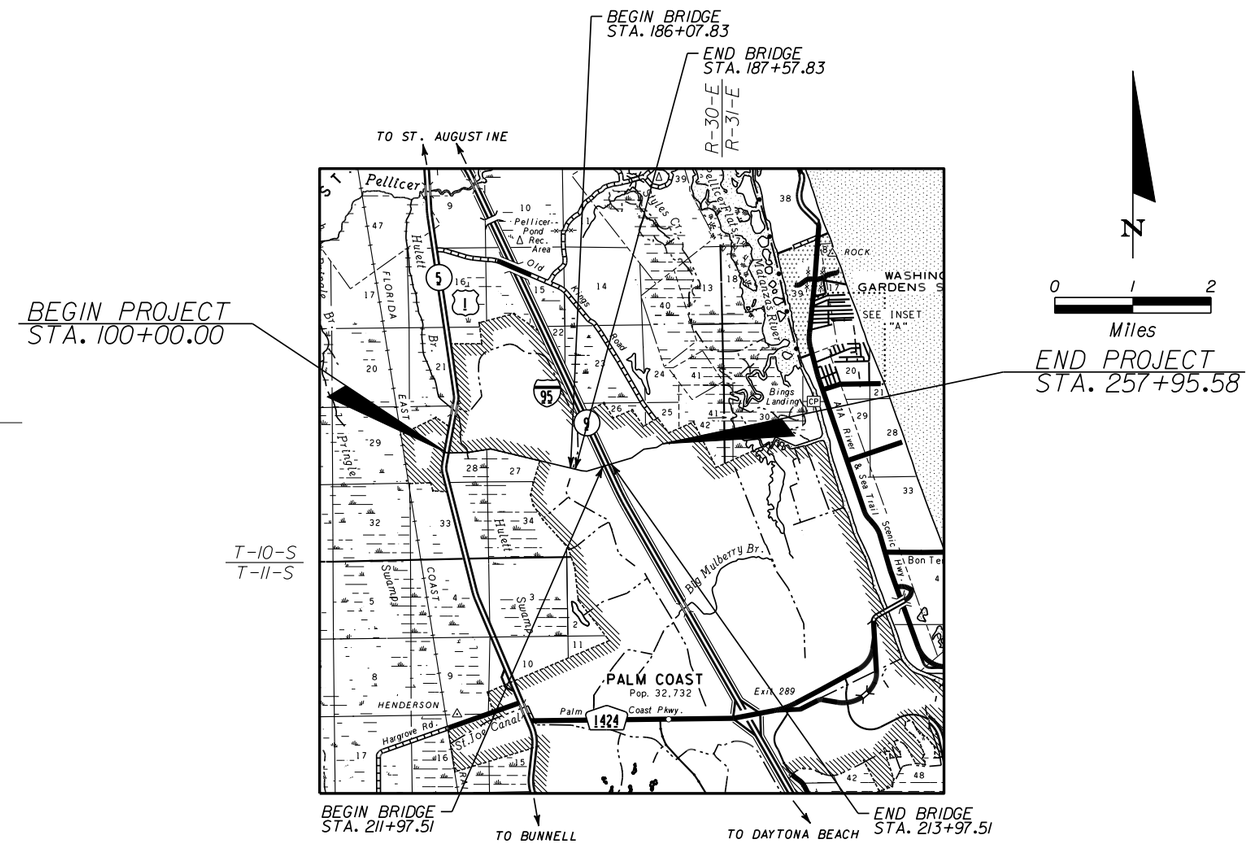
BARBARA REVELS
DISTRICT 3

NATE McLAUGHLIN
DISTRICT 4

GEORGE HANNS
DISTRICT 5

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2010,
AND STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2010,
AS AMENDED BY CONTRACT DOCUMENTS.

APPLICABLE DESIGN STANDARDS MODIFICATIONS: 7-1-11
FOR DESIGN STANDARDS MODIFICATIONS CLICK ON
"DESIGN STANDARDS" AT THE FOLLOWING WEB SITE:
http://www.dot.state.fl.us/rddesign/



N

0 1 2
Miles

PROJECT SHOP DRAWINGS
TO BE SUBMITTED TO:

RICHARD GORDON, P.E. FLAGLER COUNTY
1769 E. MOODY BLVD., BLDG 2, SUITE 309
BUNNELL, FLORIDA 32110
TEL. 386.313.4006 FAX 386.313.4106

PLANS PREPARED BY:

HDR

HDR ENGINEERING, INC.
315 EAST ROBINSON STREET
SUITE 400
ORLANDO, FLORIDA 32801-1949
CONTRACT NO. 8858
VENDOR NO. F47-0680568
CERTIFICATE OF AUTHORIZATION NO. 4213

NOTE: THE SCALE OF THESE PLANS MAY
HAVE CHANGED DUE TO REPRODUCTION.

PROJECT LENGTH IS BASED ON ℄ OF CONSTRUCTION
MATANZAS WOODS PARKWAY

LENGTH OF PROJECT		
	LINEAR FEET	MILES
ROADWAY	15,455.58	2.925
BRIDGES	350.00	0.066
NET LENGTH OF PROJECT	15,795.58	2.992
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJECT	15,795.58	2.992

PROJECT MANAGER:

SHEET NO.
1

EXTEND LEFT TURN LANE TO 785'

CONSTRUCT 685' RIGHT TURN LANE

ASHWOOD WATERWAY

0 40 200 Feet

N

Longview Ln.

Long Pl.

Longview Dr.

MATCHLINE A SEE SHEET 3

BEGIN PROJECT STA. 100+00

CONSTRUCT 330' LEFT TURN LANE

END 6' SIDEWALK
BEGIN 5' SIDEWALK

BEGIN 6' SIDEWALK

END 5' SIDEWALK
BEGIN 6' SIDEWALK

6' SIDEWALK

EXIST. R/W

120

100

105

EXIST. R/W

Matanzas Woods Pkwy.

110

DUAL 72" CMP (TO REMAIN)

115

EXIST. R/W

BEGIN 10' SIDEWALK

EXIST. R/W

10' SIDEWALK

POND 1B

EXTEND LEFT TURN LANE TO 650'

EXTEND RIGHT TURN LANE TO 760'

LEGEND

- EXISTING RIGHT-OF-WAY (R/W)
- EXISTING LIMITED ACCESS R/W
- PROPOSED R/W
- PARCEL LINE
- EXISTING EASEMENT
- PROPOSED STORMWATER POND
- PROPOSED FLOODPLAIN COMPENSATION (FPC) POND
- PROPOSED STORMWATER POND (BY OTHERS)
- NATIONAL WETLAND INVENTORY WETLAND AREA
- 100-YEAR FLOODPLAIN
- POTENTIAL NOISE IMPACT SITE
- PROPOSED TRAFFIC SIGNAL (WHEN WARRANTED)
- EXISTING TRAFFIC SIGNAL (TO REMAIN)

FLAGLER COUNTY

INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE PD&E STUDY

CONCEPT PLANS MATANZAS WOODS PKWY

SHEET NO. 2

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Longfellow Dr.
Longfellow Dr.
Longview Ln.
Louisiana Dr.
Louisburg Ln.
Louvet Ln.
Louisville Dr.
Matanzas Woods Pkwy.
0 40 200
Feet
END 6' SIDEWALK
BEGIN 5' SIDEWALK
EXIST. R/W
125
130
135
140
145
150
5' SIDEWALK
EXIST. R/W
EXIST. R/W
10' SIDEWALK
10' SIDEWALK
EXIST. R/W
PROPOSED R/W
MATCHLINE A
SEE SHEET 2
MATCHLINE B
SEE SHEET 4
POND 1B
FPC-1B

LEGEND

- EXISTING RIGHT-OF-WAY (R/W)
- EXISTING LIMITED ACCESS R/W
- PROPOSED R/W
- PARCEL LINE
- EXISTING EASEMENT
- PROPOSED STORMWATER POND
- PROPOSED FLOODPLAIN COMPENSATION (FPC) POND
- PROPOSED STORMWATER POND (BY OTHERS)
- NATIONAL WETLAND INVENTORY WETLAND AREA
- 100-YEAR FLOODPLAIN
- POTENTIAL NOISE IMPACT SITE
- PROPOSED TRAFFIC SIGNAL (WHEN WARRANTED)
- EXISTING TRAFFIC SIGNAL (TO REMAIN)

FLAGLER COUNTY

INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE PD&E STUDY

CONCEPT PLANS
MATANZAS WOODS PKWY

SHEET NO.
3

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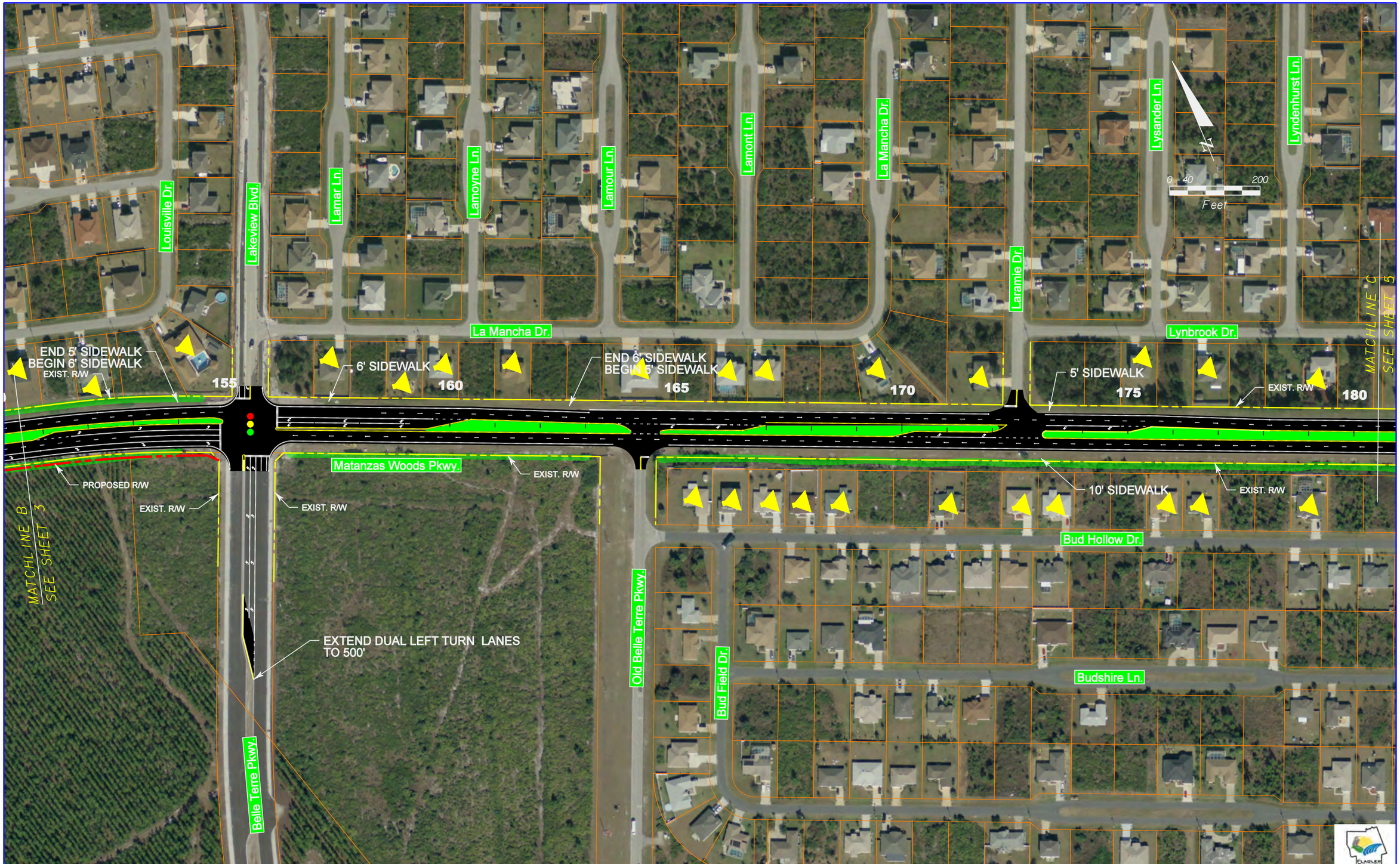

LEGEND

- EXISTING RIGHT-OF-WAY (R/W)
- EXISTING LIMITED ACCESS R/W
- PROPOSED R/W
- PARCEL LINE
- EXISTING EASEMENT
- PROPOSED STORMWATER POND
- PROPOSED FLOODPLAIN COMPENSATION (FPC) POND
- PROPOSED STORMWATER POND (BY OTHERS)
- NATIONAL WETLAND INVENTORY WETLAND AREA
- 100-YEAR FLOODPLAIN
- POTENTIAL NOISE IMPACT SITE
- PROPOSED TRAFFIC SIGNAL (WHEN WARRANTED)
- EXISTING TRAFFIC SIGNAL (TO REMAIN)

FLAGLER COUNTY

INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE PD&E STUDY

CONCEPT PLANS
MATANZAS WOODS PKWY

SHEET NO.
4

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EXISTING RIGHT-OF-WAY (R/W)
EXISTING LIMITED ACCESS R/W
PROPOSED R/W
PARCEL LINE
EXISTING EASEMENT

PROPOSED STORMWATER POND
PROPOSED FLOODPLAIN COMPENSATION (FPC) POND
PROPOSED STORMWATER POND (BY OTHERS)
NATIONAL WETLAND INVENTORY WETLAND AREA
100-YEAR FLOODPLAIN

LEGEND

POTENTIAL NOISE IMPACT SITE
PROPOSED TRAFFIC SIGNAL (WHEN WARRANTED)
EXISTING TRAFFIC SIGNAL (TO REMAIN)

FLAGLER COUNTY

INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE PD&E STUDY

CONCEPT PLANS
MATANZAS WOODS PKWY

SHEET NO.
5

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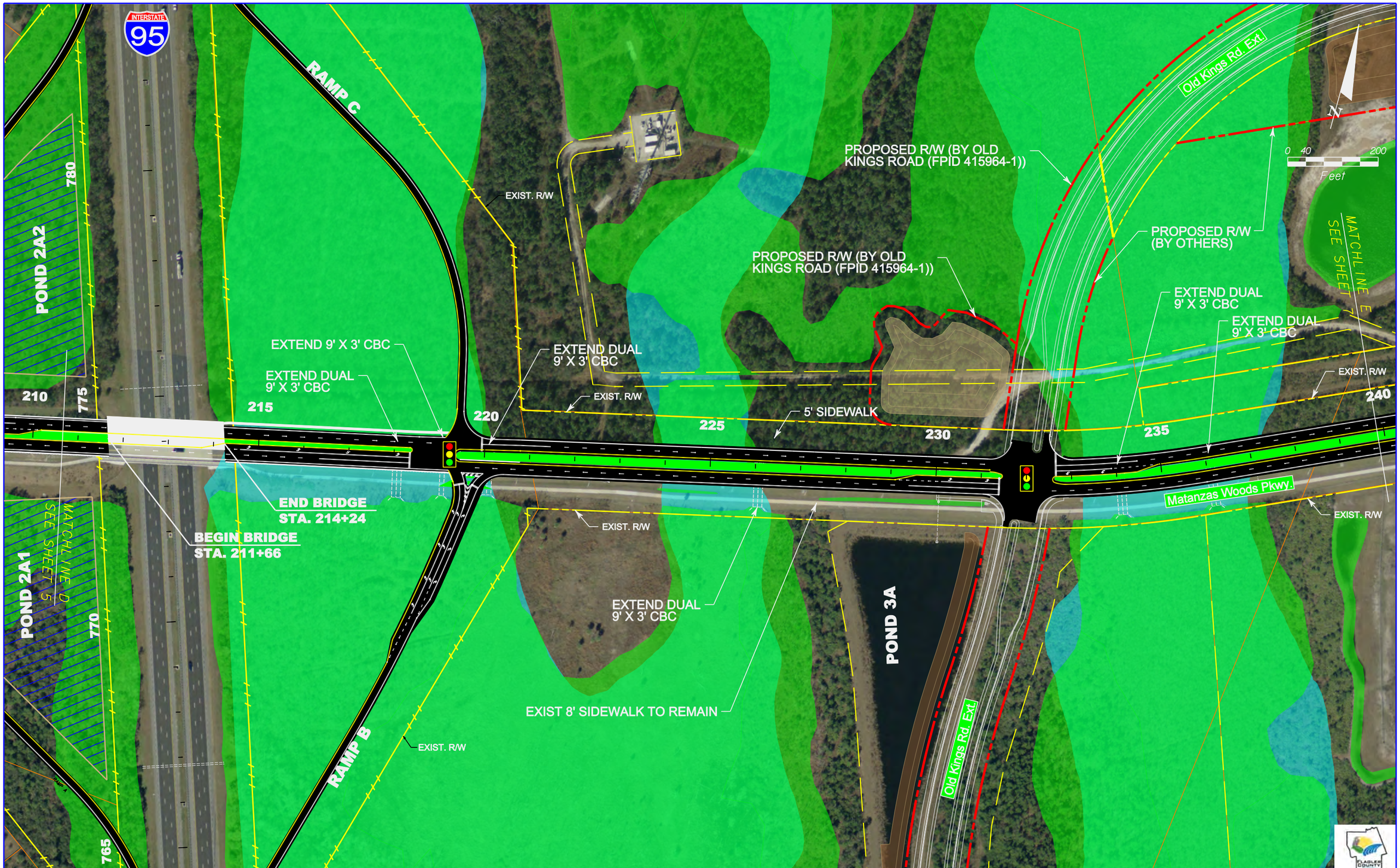

LEGEND

- EXISTING RIGHT-OF-WAY (R/W)
- EXISTING LIMITED ACCESS R/W
- PROPOSED R/W
- PARCEL LINE
- EXISTING EASEMENT
- PROPOSED STORMWATER POND
- PROPOSED FLOODPLAIN COMPENSATION (FPC) POND
- PROPOSED STORMWATER POND (BY OTHERS)
- NATIONAL WETLAND INVENTORY WETLAND AREA
- 100-YEAR FLOODPLAIN
- POTENTIAL NOISE IMPACT SITE
- PROPOSED TRAFFIC SIGNAL (WHEN WARRANTED)
- EXISTING TRAFFIC SIGNAL (TO REMAIN)

FLAGLER COUNTY

INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE PD&E STUDY

CONCEPT PLANS
MATANZAS WOODS PKWY

SHEET NO.
6

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PROPOSED R/W (BY OLD KINGS ROAD (FPID 415964-1))

MATCHLINE E
SEE SHEET 6

EXIST. R/W

EXIST. R/W

Matanzas Woods Pkwy.

240

245

5' SIDEWALK

250

PROPOSED R/W

EXIST. R/W

POND 4A

255

Old Kings Rd.

END 5' SIDEWALK

END PROJECT
STA. 258+15

THE CONSERVATORY

N

0 40 200
Feet

EXIST. R/W

END 8' SIDEWALK
MATCH EXIST.

BEGIN 8' SIDEWALK
MATCH EXIST.

EXIST. 8' SIDEWALK TO REMAIN

EXIST. 8' SIDEWALK TO REMAIN

EXIST. R/W

PROPOSED R/W

Conservatory Dr.

MATANZAS HIGH SCHOOL

Old Kings Rd.

EXIST. R/W

Palm Harbor Pkwy. Ext.

EXIST. R/W

LEGEND			
EXISTING RIGHT-OF-WAY (R/W)	PROPOSED STORMWATER POND	POTENTIAL NOISE IMPACT SITE	
EXISTING LIMITED ACCESS R/W	PROPOSED FLOODPLAIN COMPENSATION (FPC) POND	PROPOSED TRAFFIC SIGNAL (WHEN WARRANTED)	
PROPOSED R/W	PROPOSED STORMWATER POND (BY OTHERS)	EXISTING TRAFFIC SIGNAL (TO REMAIN)	
PARCEL LINE	NATIONAL WETLAND INVENTORY WETLAND AREA		
EXISTING EASEMENT	100-YEAR FLOODPLAIN		

FLAGLER COUNTY

INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE PD&E STUDY

CONCEPT PLANS
MATANZAS WOODS PKWY

SHEET NO.
7

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LEGEND

- EXISTING RIGHT-OF-WAY (R/W)
- EXISTING LIMITED ACCESS R/W
- PROPOSED R/W
- PARCEL LINE
- EXISTING EASEMENT
- PROPOSED STORMWATER POND
- PROPOSED FLOODPLAIN COMPENSATION (FPC) POND
- PROPOSED STORMWATER POND (BY OTHERS)
- NATIONAL WETLAND INVENTORY WETLAND AREA
- 100-YEAR FLOODPLAIN
- POTENTIAL NOISE IMPACT SITE
- PROPOSED TRAFFIC SIGNAL (WHEN WARRANTED)
- EXISTING TRAFFIC SIGNAL (TO REMAIN)

FLAGLER COUNTY

INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE PD&E STUDY

CONCEPT PLANS INTERSTATE 95

SHEET NO. 8

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LEGEND

- EXISTING RIGHT-OF-WAY (R/W)
- EXISTING LIMITED ACCESS R/W
- PROPOSED R/W
- PARCEL LINE
- EXISTING EASEMENT
- PROPOSED STORMWATER POND
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- 100-YEAR FLOODPLAIN
- POTENTIAL NOISE IMPACT SITE
- PROPOSED TRAFFIC SIGNAL (WHEN WARRANTED)
- EXISTING TRAFFIC SIGNAL (TO REMAIN)

FLAGLER COUNTY

INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE PD&E STUDY

CONCEPT PLANS INTERSTATE 95

SHEET NO. 9

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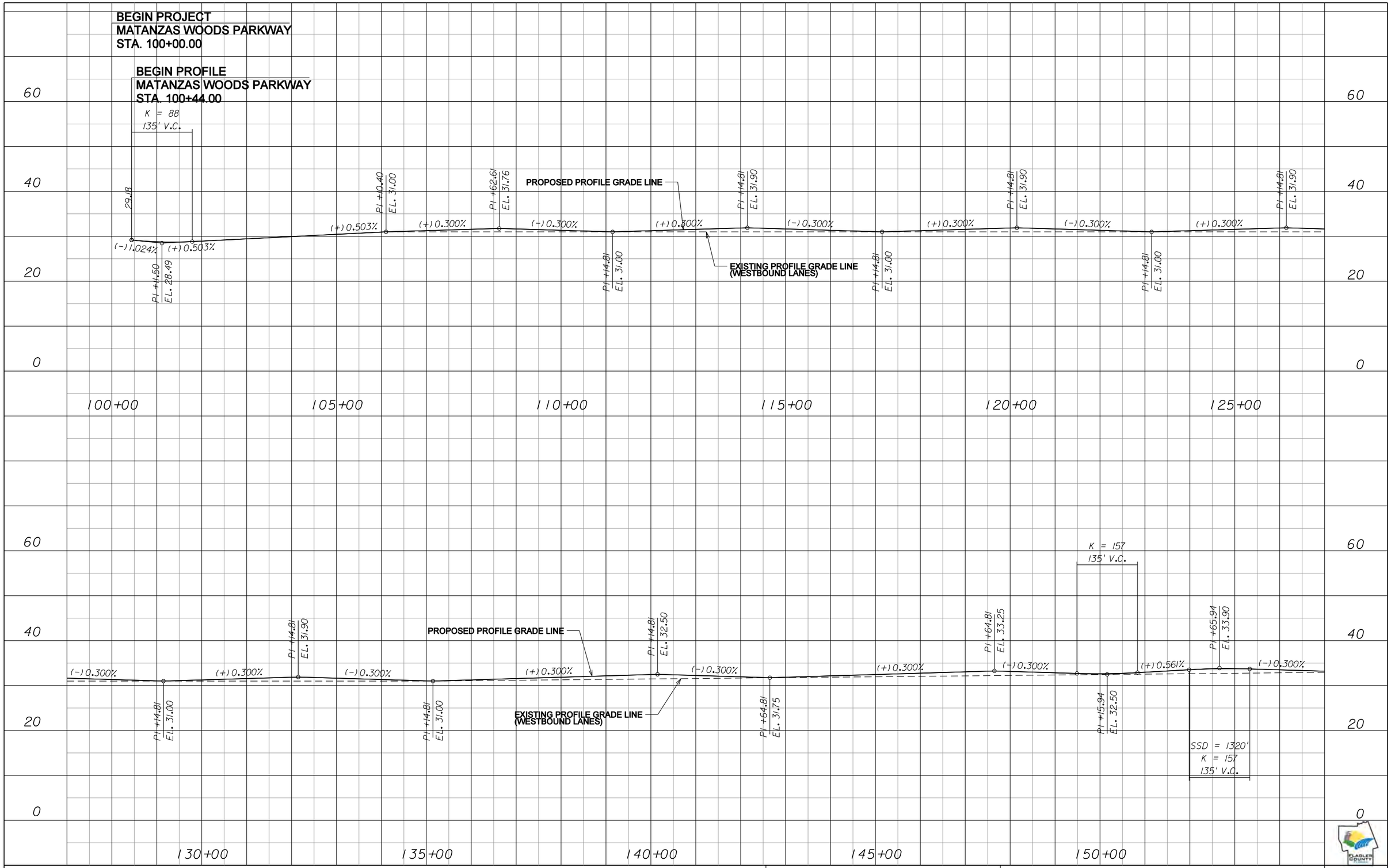

SCALE: 1" = 200' H
1" = 20' V

FLAGLER COUNTY

INTERSTATE 95 &
MATANZAS WOODS PARKWAY
INTERCHANGE PD&E STUDY

CONCEPT PROFILE

MATANZAS WOODS PARKWAY

SHEET NO.

10

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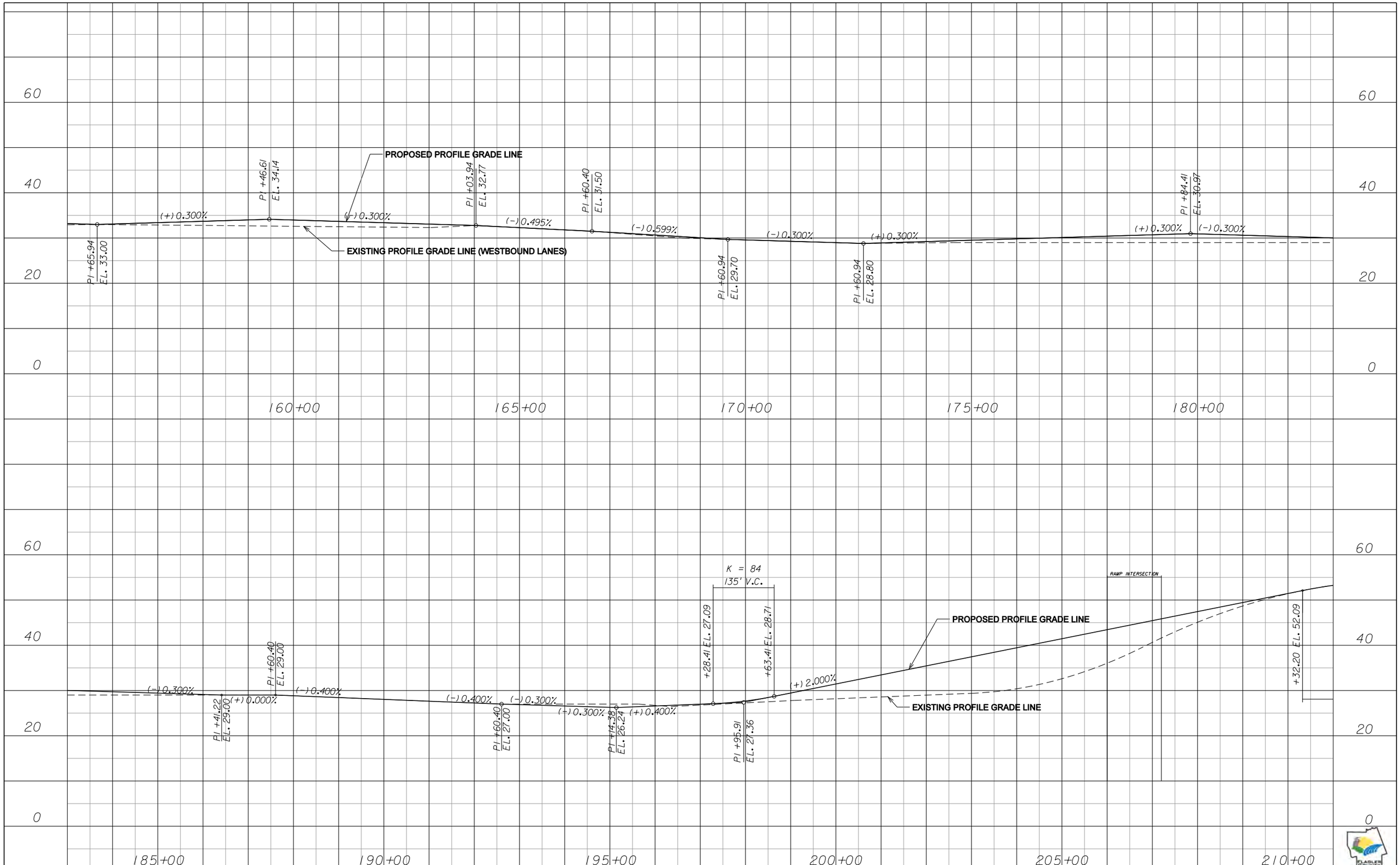

SCALE: 1" = 200' H
1" = 20' V

FLAGLER COUNTY

INTERSTATE 95 &
MATANZAS WOODS PARKWAY
INTERCHANGE PD&E STUDY

CONCEPT PROFILE

MATANZAS WOODS PARKWAY

SHEET NO.

11

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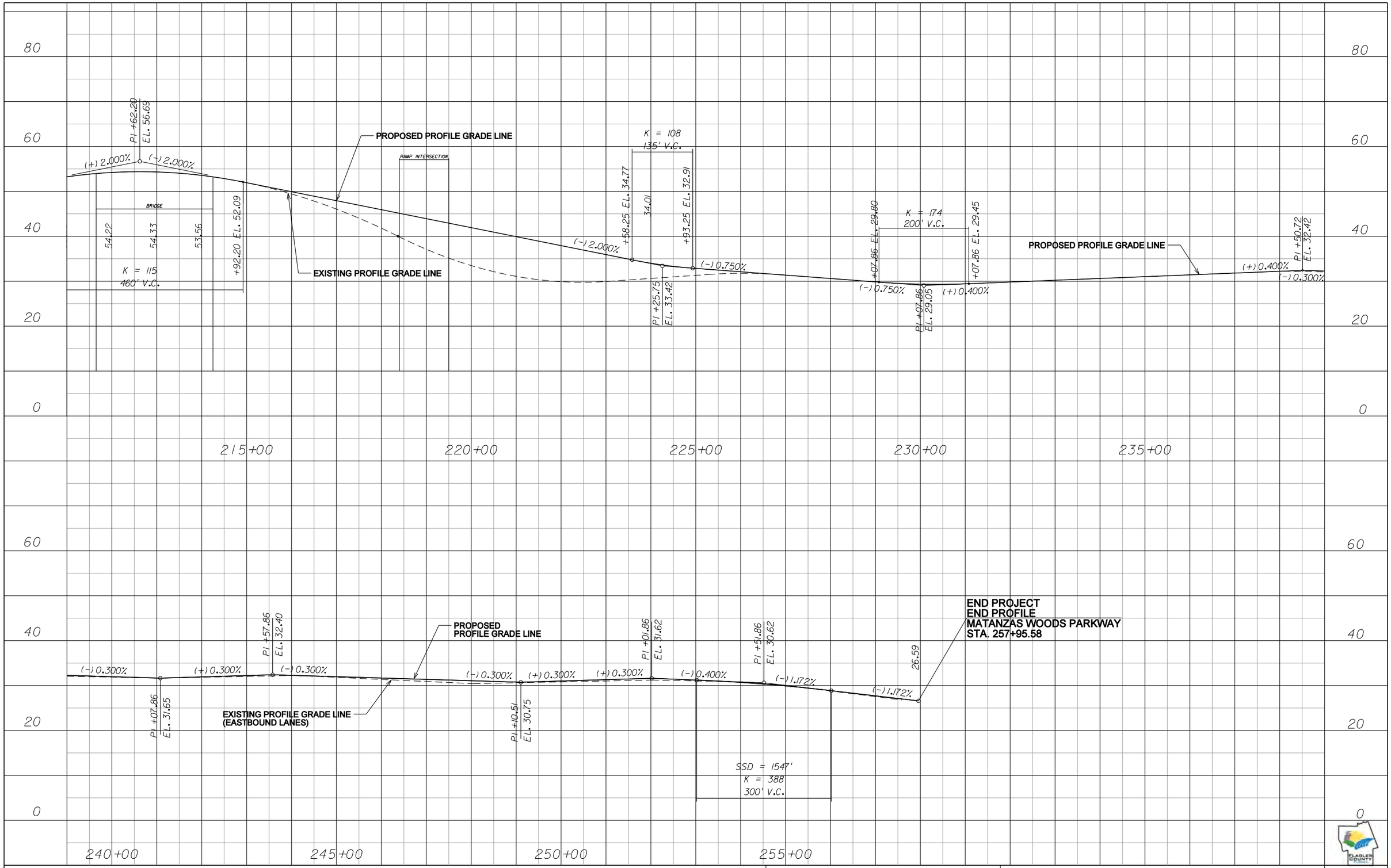

SCALE: 1" = 200' H
1" = 20' V

FLAGLER COUNTY

INTERSTATE 95 &
MATANZAS WOODS PARKWAY
INTERCHANGE PD&E STUDY

CONCEPT PROFILE

MATANZAS WOODS PARKWAY

SHEET NO.

12

LEGEND

- EXISTING RIGHT-OF-WAY (R/W)
- EXISTING LIMITED ACCESS R/W
- PROPOSED R/W
- PARCEL LINE
- EXISTING EASEMENT
- PROPOSED STORMWATER POND
- PROPOSED FLOODPLAIN COMPENSATION (FPC) POND
- PROPOSED STORMWATER POND (BY OTHERS)
- NATIONAL WETLAND INVENTORY WETLAND AREA
- 100-YEAR FLOODPLAIN
- POTENTIAL NOISE IMPACT SITE
- PROPOSED TRAFFIC SIGNAL (WHEN WARRANTED)
- EXISTING TRAFFIC SIGNAL (TO REMAIN)

FLAGLER COUNTY

INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE PD&E STUDY

POND DETAILS
POND 3A & FPC EXPANSION

SHEET NO.
13

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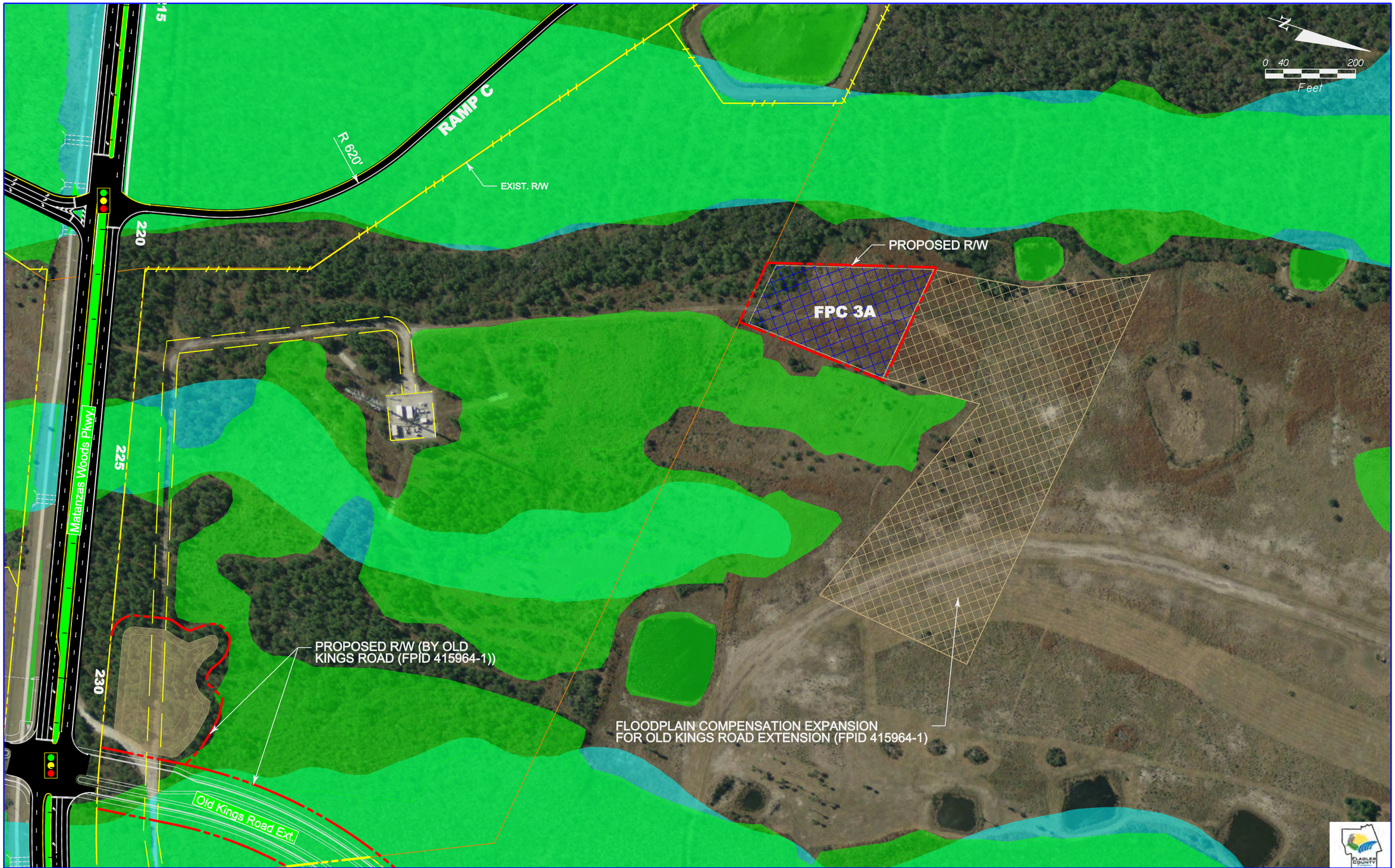

LEGEND

- EXISTING RIGHT-OF-WAY (R/W)
- EXISTING LIMITED ACCESS R/W
- PROPOSED R/W
- PARCEL LINE
- EXISTING EASEMENT
- PROPOSED STORMWATER POND
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- PROPOSED TRAFFIC SIGNAL (WHEN WARRANTED)
- EXISTING TRAFFIC SIGNAL (TO REMAIN)

FLAGLER COUNTY

INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE PD&E STUDY

POND DETAILS FPC-3A

SHEET NO. 14

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Appendix C

List of Supporting Documents

List of Supporting Documents

Interchange Justification Report (February 2011)

Design Traffic Technical Memorandum (July 2011)

Existing Conditions Report (July 2011)

Location Hydraulics Report (July 2011)

Air Quality Impact Technical Memorandum (August 2011)

Cultural Resource Assessment Survey (August 2011)

Contamination Screening Evaluation (August 2011)

Endangered Species Biological Assessment (August 2011)

Geotechnical Report (August 2011)

Noise Study (August 2011)

Wetlands Evaluation Report (August 2011)

Pond Siting Report (September 2011)

Documents are available upon request.

Appendix D

Design Variation Request Package

Design Variation Request

To: Annette Brennan, P.E.,
District Design Engineer

Date: September 1, 2011

Financial Project ID: 411959-2-22-01 **New Construction (☒)** RRR (☐)
Federal Aid Number: N/A
Project Name: Interstate 95 & Matanzas Woods Parkway Interchange PD&E Study
State Road Number: 9 Co./Sec./Sub.: 73 001 000
Begin Project MP: 14.197 End Project MP: 15.181
Full Federal Oversight: Yes(☐) **No(☒)**
Request for Design Exception (☐) , **Design Variation (☒)**

(For Design Exception or Variations Requiring Central Office Approval)
Re-submittal: Yes(☐) No(☐) Original Ref# _ - _ -

Requested for the following element(s):

(☐) Design Speed (☐) Lane Widths (☐) Shoulder Widths (☐) Bridge Widths
(☐) Structural Capacity (☐) Vertical Clearance (☐) Grades (☐) Cross Slope
(☐) Superelevation (☐) Horizontal Alignment (☐) Vertical Alignment (☐) Stopping Sight Distance
(☐) Horizontal Clearance **(☒) Other Border Width**

Project Description

The scope of work for the Interstate 95 (I-95) and Matanzas Woods Parkway Interchange project is a proposed ramp connection between I-95 and Matanzas Woods Parkway (County Road). Development and emergency evacuation routes are primary concerns in this area of northern Flagler County. Currently the only access to I-95 from Matanzas Woods Parkway is via US1 or Palm Coast Parkway via Belle Terre Parkway. Preliminary traffic projections for the year 2035, based on the approved Interchange Justification Report prepared in February 2011, indicate that approximately 29,100 vehicles per day would use this proposed connection. Therefore, with continued development in this area, improved access to I-95 will serve the needs of the community and be consistent with approved local government comprehensive plans.

Items of Concern

The border width for interchange ramps and mainline adheres to the freeway facilities criteria of ninety-four (94) feet per Table 2.5.3 in the 2011 Plans Preparation Manual, Volume I. The border width for freeway facilities is measured from the edge of the outside traffic lane to the right-of-way. The minimum border width for this project is approximately forty-one (41) feet for the interchange ramps and acceleration/deceleration lanes along the mainline.

The project will utilize right-of-way which was originally planned from the original development of Palm Coast by the ITT Community Development Corporation (ICDC) in 1969. This right-of-way is currently under the control of Flagler County. Additional right-of-way must be acquired beyond the previously allotted, to obtain the ninety-four (94) feet requirement. This would require right-of-way along both sides for the length of the proposed interchange ramps and mainline I-95. An additional fourteen (14) parcels would be affected. Twelve (12) parcels with six (6) containing single family homes would be required on the west side of the interchange. Two (2) parcels adjacent to the east side of the interchange. One of those part of conservation lands under the control of the St Johns River Water Management District. The proposed border width of forty-one (41) feet meets the requirements for clear zone, horizontal clearance, drainage and maintenance access for the 40 mph design speed along the ramps and the 70 mph design speed for the mainline.

Recommendations

The acquisition of additional right-of-way is not a practical or cost-effective solution to meet criteria and the width is not required to meet clear zone, drainage and other design considerations. HDR recommends that the border width variation for the interchange ramps and acceleration/deceleration lanes be approved for the project. This design variation will not affect the safety or operational characteristics of this facility.

Recommended by:

_____ Date 3/27/12
Brian P. Ribaric, PE

Approvals:

_____ Date 4/11/12
District Design Engineer

_____ Date _____
District Structures Design Engineer

_____ Date _____
State Roadway Design Engineer

_____ Date _____
State Structures Design Engineer

_____ Date _____
State Chief Engineer

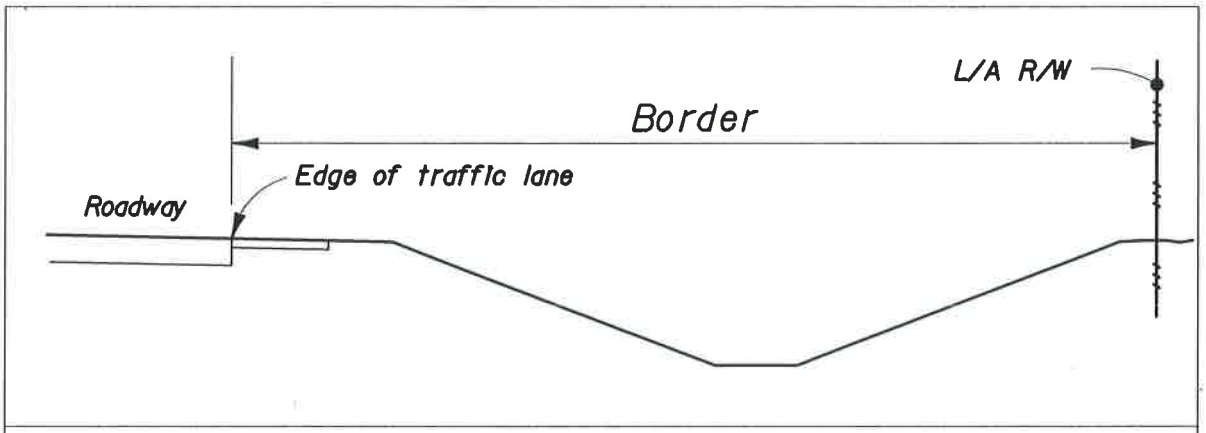
_____ Date _____
FHWA Division Administrator

2.5.1 Limited Access Facilities

On limited access facilities, the border is measured from the edge of the outside traffic lane to the right of way line. This width may be reduced in the area of a crossroad terminal, as long as the design meets the requirements for clear zone, horizontal clearance, drainage, maintenance access, etc.

Limited access facilities shall be contained by fencing, or in special cases, walls or barriers. These treatments shall be continuous and appropriate for each location. Treatment height and type may vary under special conditions. The treatment is typically placed at or near the limited access right of way line, but location may be adjusted based on site-specific conditions (i.e., ponds, trees, bridges, etc.). Placement information and additional data is included in the ***Design Standards, Indexes 800, 801, and 802***.

Table 2.5.3 Limited Access Facilities



BORDER	
TYPE FACILITY	**WIDTH (FEET)**
FREEWAYS (INCLUDING INTERCHANGE RAMPS)	94

Appendix E

SJRWMD Meeting Notes

HDR | ONE COMPANY *Many Solutions*℠

Meeting Notes

Subject: SJRWMD Pre-Application Meeting	
Client: Flagler County	
Project: I-95/Matanzas Woods Pkwy Interchange PD&E	Project No: 157511
Meeting Date: June 10, 2011	Meeting Location: SJRWMD – Palatka Office
Notes by: Jim Johnston	

Attendees:

Melissa Parsons, SJRWMD
Janet Nunley, SJRWMD
Jim Johnston, HDR
Binh Duong, HDR

Project Overview

Jim Johnston gave an overview of the project, describing the 3-mile widening of Matanzas Woods Parkway from US 1 to Old Kings Road. The existing two-lane roadway will be widened to a four-lane divided roadway, and the overpass at I-95 will be converted to an interchange.

Water Quality

- No impaired waters within the project limits.
- No OFW's within the project limits.
- No special requirements within the project limits.
- Required treatment is the greater of 1 inch over the total basin area of 2.5 inches over the total impervious area.
- Offsite runoff must be treated if it comingles with roadway runoff
- Compensatory treatment is allowed but must occur in the same waterbody

Water Quantity

- Required events are mean annual, 25-year and 100-year.

Floodplain Compensation

- Requirements are discussed in Sections 10.5.2 and 10.5.3 of the Applicant's Handbook.
- Excess volume in the existing FPC can be used but supporting documentation must be provided.

Environmental

- Two UMAM mitigation banks are available (Basin 9) – Brick Road and Fishtail Swamp

Application

- Modify the existing permit (No. 83039-1)
- Individual permit required if wetland impacts exceed 1 acre ($1410 fee)

AGENDA

I-95/Matanzas Woods Parkway Interchange
PD&E Study
Flagler County

SJRWMD Pre-Application Meeting

June 10, 2011 @ 2:00 PM

I. Project Description

- **Roadway widening from US 1 to Old Kings Road (3.0 miles)**
- **4-lane divided urban and suburban typical sections**
- **Two existing bridges – Belleaire Waterway and I-95**
- **Overpass at I-95 will be converted to an interchange**

II. Engineering

- **Water quality**
- **Requirements when offsite comingles with roadway runoff**
- **OFW**
- **TMDL**
- **Compensatory**
- **Water quantity**
- **Floodplains – compensation for 10-year impacts**
- **Excess compensation from previous project**
- **Special requirements?**
- **Is data available for existing canals?**

III. Environmental

IV. Other

Adjourn

c:\pwworking\tpa\d0297693\agenda sjrwmd meeting_06-10-11.docx

WQIE CHECK LIST

Project Name: Interstate 95 & Matanzas Woods Parkway Interchange from US 1 to Old Kings Road

County: Flagler

FIN (Financial Number): 411959-2-22-01

Federal Aid Project No: N/A

Short project description: Construction of a new interchange at Matanzas Woods Parkway and widening of Matanzas Woods Parkway from US 1 to Old Kings Road from 2-Lane to 4-Lane

PART 1: DETERMINATION OF WQIE SCOPE

☑ Does project increase impervious surface area? ☑ Yes ☐ No

☑ Does project alter the drainage system? ☑ Yes ☐ No

If the answer to both questions is no, complete the WQIE by checking Box A in Part 4.

☑ Do environmental regulatory requirements apply? ☑ Yes ☐ No

PART 2: PROJECT CHARACTERISTICS

20-year design ADT: 29,100 Expected speed limit: 45 mi/hr

Drainage area: R/W - 120 acres 50 % Impervious 50 % Pervious

Land Use: 45 % Residential 33 % Commercial ____ % Industrial

____ % Agricultural 15 % Wetlands 7 % Other Natural

Potential large sources of pollution (identify): N/A

Groundwater receptor (name of aquifer or N/A): N/A

☐ Designated well head protection area? ☐ Yes ☑ No Name: ____

☐ Sole source aquifer ☐ Yes ☑ No Name: ____

Groundwater recharge mechanism:

N/A (Project includes only wet ponds that discharge to surface waters)

(Notify District Drainage Engineer if karst conditions expected)

WQIE CHECK LIST *(Contd.)*

PART 4: WQIE DOCUMENTATION

☐ Water quality is not an issue.

☐ No regulatory requirements apply to water quality issues
(Document by checking the "none" box for water quality in Section 6.C.3 of the ***Environmental Determination Form*** or Section 5.C.3 of the SEIR.

☑ Regulatory requirements apply to water quality issues. Water quality issues will be mitigated through compliance with the quantity design requirements placed by St. Johns River Water Management District, an authorized regulatory agency.
(Document by checking the "none" box for water quality in Section 6.C.3 of the Environmental Determination Form or Section 5.C.3 of the SEIR.

Evaluator Name (print):
Brian Ribaric, PE

Office:
HDR, 315 E Robinson Street, Suite 400, Orlando, FL 32801

Signature: _____ Date: _____

Appendix F

Preliminary Cost Estimate

Study Build Alternative Cost Estimate

Date: 8/9/2011 7:55:16 AM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English
Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 8 Project Grand Total **$11,959,574.34**

Description: Matanzas Wood Parkway - Alternatives Segment 1 (US 1 to SB Ramps) Overbuild Existing Lanes

Sequence: 1 WDU - Widen/Resurface, Divided, Urban **Net Length:** 1.989 MI 10,500 LF

Description: Matanzas Woods Parkway - US 1 to SB Ramps Urban 4-lane with Overbuild

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	38.00 / 62.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	1.989
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	24.11	AC	$6,275.33	$151,298.21
120-1	REGULAR EXCAVATION	5,266.52	CY	$3.73	$19,644.12
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	47,468.68	CY	$9.14	$433,863.74
	Earthwork Component Total				$604,806.07

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Existing Roadway Pavement Width L/R	24.00 / 0.00
Structural Spread Rate	440
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	0.00 / 28.00
Widened Inside Pavement Width L/R	4.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	43,352.54	SY	$2.63	$114,017.18
285-709	OPTIONAL BASE,BASE GROUP 09	38,102.64	SY	$10.97	$417,985.96
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	27,999.49	SY	$1.44	$40,319.27
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	6,159.89	TN	$77.06	$474,681.12
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	5,133.24	TN	$77.06	$395,567.47
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	2,309.96	TN	$95.36	$220,277.79
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	3,079.94	TN	$95.36	$293,703.08

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	805.00	EA	$3.27	$2,632.35
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	15.91	NM	$790.36	$12,574.63
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	7.95	GM	$220.44	$1,752.50
	Roadway Component Total				$1,973,511.35

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	12.25 / 12.25
New Total Outside Shoulder Width L/R	12.25 / 17.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	5.00 / 10.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	10,499.81	LF	$13.18	$138,387.50
520-1-10	CONCRETE CURB & GUTTER, TYPE F	10,499.81	LF	$13.18	$138,387.50
522-1	SIDEWALK CONC, 4" THICK	17,499.68	SY	$27.11	$474,416.32
570-1-1	PERFORMANCE TURF	11,666.45	SY	$0.51	$5,949.89

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	20,999.62	LF	$0.85	$17,849.68
104-11	FLOATING TURBIDITY BARRIER	198.86	LF	$6.00	$1,193.16
104-12	STAKED TURBIDITY BARRIER-	198.86	LF	$3.04	$604.53

	NYL REINF PVC			
104-15	SOIL TRACKING PREVENTION DEVICE	2.00 EA	$1,969.29	$3,938.58
104-18	INLET PROTECTION SYSTEM	92.00 EA	$32.31	$2,972.52
107-1	LITTER REMOVAL	3.78 AC	$18.24	$68.95
107-2	MOWING	3.78 AC	$30.96	$117.03
	Shoulder Component Total			$783,885.66

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	20,999.62	LF	$12.23	$256,825.35
570-1-1	PERFORMANCE TURF	20,416.29	SY	$0.51	$10,412.31
	Median Component Total				$267,237.66

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	35.79	CY	$944.21	$33,793.28
425-1-351	INLETS, CURB, TYPE P-5, <10'	72.00	EA	$3,084.05	$222,051.60
425-1-451	INLETS, CURB, TYPE J-5, <10'	20.00	EA	$4,863.22	$97,264.40
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	5,261.84	LF	$48.53	$255,357.10
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	469.31	LF	$75.14	$35,263.95
570-1-1	PERFORMANCE TURF	604.53	SY	$0.51	$308.31

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-521	INLETS, DT BOT, TYPE C, <10'	10.00	EA	$1,824.92	$18,249.20
425-2-41	MANHOLES, P-7, <10'	10.00	EA	$2,376.15	$23,761.50
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	9,943.00	LF	$113.98	$1,133,303.14

Retention Basin 1

Description	Value
Size	5 AC
Multiplier	1
Depth	5.00
Description	

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	5.00	AC	$6,275.33	$31,376.65
120-1	REGULAR EXCAVATION	40,333.33	CY	$3.73	$150,443.32
400-2-2	CONC CLASS II, ENDWALLS	30.00	CY	$944.21	$28,326.30
425-1-541	INLETS, DT BOT, TYPE D, <10'	1.00	EA	$2,336.00	$2,336.00
425-2-71	MANHOLES, J-7, <10'	2.00	EA	$3,958.29	$7,916.58

430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	50.00 LF	$101.07	$5,053.50
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	400.00 LF	$177.79	$71,116.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	1,860.00 LF	$8.43	$15,679.80
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	2.00 EA	$2,006.82	$4,013.64
570-1-1	PERFORMANCE TURF	24,200.00 SY	$0.51	$12,342.00
	Drainage Component Total			$2,147,956.27

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	44.00 AS	$241.88	$10,642.72
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	4.00 AS	$641.37	$2,565.48
700-20-40	SINGLE POST SIGN, RELOCATE	4.00 AS	$89.02	$356.08
700-20-60	SINGLE POST SIGN, REMOVE	44.00 AS	$15.22	$669.68
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	4.00 AS	$2,814.25	$11,257.00
700-21-60	MULTI- POST SIGN, REMOVE	4.00 AS	$355.18	$1,420.72
	Signing Component Total			$26,911.68

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Mast Arm
Multiplier	1
Description	Belle Terre Parkway

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	750.00 LF	$3.51	$2,632.50
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	250.00 LF	$10.99	$2,747.50
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	1.00 PI	$2,820.85	$2,820.85
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	16.00 EA	$294.83	$4,717.28
639-1-22	SIGNAL,ELECT POWER SERV,UG,PUR CONT	1.00 AS	$1,330.30	$1,330.30
639-2-1	SIGNAL,ELECTRICAL SERVICE WIRE	60.00 LF	$1.57	$94.20
649-31-103	M/ARM,F&I, WS-150,SINGLE ARM,W/0 LUM-60	4.00 EA	$21,490.57	$85,962.28
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	12.00 AS	$692.43	$8,309.16
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	8.00 AS	$551.59	$4,412.72
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	12.00 EA	$95.34	$1,144.08
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	1.00 EA	$748.15	$748.15
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00 EA	$170.71	$2,048.52
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00 AS	$618.78	$7,425.36

665-11	PED DET, F&I, DET STA POLE OR CAB MTD	8.00 EA	$135.16	$1,081.28
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	$20,872.48	$20,872.48
700-48-19	SIGN PANELS, F & I, 16 - 100	4.00 EA	$1,034.15	$4,136.60

Signalization 2

Description	Value
Type	4 Lane Strain Pole
Multiplier	1
Description	US 1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	750.00	LF	$3.51	$2,632.50
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	200.00	LF	$10.99	$2,198.00
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	1.00	PI	$2,820.85	$2,820.85
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	1.00	PI	$1,524.49	$1,524.49
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	14.00	EA	$294.83	$4,127.62
639-1-12	SIGNAL,ELECTRICAL POWER SRV,OHD,FUR CONT	1.00	AS	$1,524.97	$1,524.97
639-2-1	SIGNAL,ELECTRICAL SERVICE WIRE	30.00	LF	$1.57	$47.10
641-2-16	PREST CNC POLE,F&I,TYP P-VI	4.00	EA	$5,574.06	$22,296.24
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	12.00	AS	$692.43	$8,309.16
653-111	PEDESTRIAN SIGNAL, 12 IN, INCANDES,1 WAY	8.00	AS	$400.00	$3,200.00
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	12.00	EA	$95.34	$1,144.08
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00	EA	$170.71	$2,048.52
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00	AS	$618.78	$7,425.36
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	8.00	EA	$135.16	$1,081.28
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00	AS	$20,872.48	$20,872.48
700-48-19	SIGN PANELS, F & I, 16 - 100	4.00	EA	$1,034.15	$4,136.60
	Signalizations Component Total				$235,872.51

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	35,609.86	LF	$1.75	$62,317.26
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	10,499.81	LF	$2.87	$30,134.45
715-2-12	LIGHTING-CONDUIT, F&I, UNDER EXIST PVMT	1,370.15	LF	$8.42	$11,536.66
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	42.00	EA	$318.30	$13,368.60

715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	42.00	EA	$575.93	$24,189.06
715-511-140	LIGHT POLE COMP,F&I,SGL ARM SM, AL,40'	42.00	EA	$4,000.00	$168,000.00
	Subcomponent Total				$309,546.03
	Lighting Component Total				$309,546.03

BRIDGES COMPONENT

Bridge BELLE

Description	**Value**
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	150.00
Width (LF)	90.00
Type	Low Level
Cost Factor	1.00
Structure No.	735502
Removal of Existing Structures area	2,200.00
Default Cost per SF	$135.00
Factored Cost per SF	$135.00
Final Cost per SF	**$142.87**
Basic Bridge Cost	**$1,822,500.00**
Description	

Bridge Pay Items

Pay item	**Description**	**Quantity**	**Unit**	**Unit Price**	**Extended Amount**
110-3	REMOVAL OF EXISTING STRUCTURE	2,200.00	SF	$18.55	$40,810.00
400-2-10	CONC CLASS II, APPROACH SLABS	200.00	CY	$393.26	$78,652.00
415-1-9	REINF STEEL- APPROACH SLABS	35,000.00	LB	$0.79	$27,650.00
	Bridge BELLE Total				$1,969,612.00
	Bridges Component Total				$1,969,612.00

Sequence 1 Total $8,319,339.23

Sequence: 2 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.739 MI 3,900 LF

Description: Left and Right Turn Lanes

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.739
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	1,829.57 CY	$9.14	$16,722.27
	Earthwork Component Total			$16,722.27

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Existing Roadway Pavement Width L/R	0.00 / 0.00
Structural Spread Rate	275
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	12.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	6,317.69 SY	$2.63	$16,615.52
285-709	OPTIONAL BASE,BASE GROUP 09	5,342.74 SY	$10.97	$58,609.86
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	714.96 TN	$77.06	$55,094.82
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	428.98 TN	$95.36	$40,907.53

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	1

Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.48	NM	$790.36	$1,169.73
	Roadway Component Total				$172,397.46

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,313.89	SY	$0.51	$1,180.08
	Median Component Total				$1,180.08

Sequence 2 Total $190,299.81

Date: 8/9/2011 7:55:17 AM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English
Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 8 Project Grand Total **$11,959,574.34**
Description: Matanzas Wood Parkway - Alternatives Segment 1 (US 1 to SB Ramps) Overbuild Existing Lanes

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Project Sequences Subtotal			**$8,509,639.04**
102-1	Maintenance of Traffic	10.00 %	$850,963.90
101-1	Mobilization	10.00 %	$936,060.29
Project Sequences Total			**$10,296,663.23**
Project Unknowns		15.00 %	$1,544,499.48
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$118,411.63	$118,411.63
Project Non-Bid Subtotal					**$118,411.63**
Version 8 Project Grand Total					**$11,959,574.34**

Date: 8/9/2011 7:51:30 AM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English
Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 7 Project Grand Total **$12,527,662.25**

Description: Matanzas Wood Parkway - Alternatives Segment 1 (US 1 to SB Ramps) Total Reconstruction

Sequence: 1 NDU - New Construction, Divided, Urban **Net Length:** 1.989 MI
10,500 LF

Description: Matanzas Woods Parkway - US 1 to SB Ramps Urban 4-lane with Total Reconstruction

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	62.00 / 62.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	1.989
Top of Structural Course For Begin Section	103.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	29.90	AC	$6,275.33	$187,632.37
120-6	EMBANKMENT	122,335.70	CY	$5.19	$634,922.28
	Earthwork Component Total				$822,554.65

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	28.00 / 28.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	77,371.92	SY	$2.63	$203,488.15
285-709	OPTIONAL BASE,BASE GROUP 09	65,332.14	SY	$10.97	$716,693.58
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	8,983.17	TN	$77.06	$692,243.08
337-7-33	ASPH CONC FC,TRAFFIC C,FC-	5,389.90	TN	$95.36	$513,980.86

12.5,RUBBER

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	805.00	EA	$3.27	$2,632.35
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	15.91	NM	$790.36	$12,574.63
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	7.95	GM	$220.44	$1,752.50
	Roadway Component Total				$2,143,365.15

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	12.25 / 17.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	5.00 / 10.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	10,499.81	LF	$13.18	$138,387.50
520-1-10	CONCRETE CURB & GUTTER, TYPE F	10,499.81	LF	$13.18	$138,387.50
522-1	SIDEWALK CONC, 4" THICK	17,499.68	SY	$27.11	$474,416.32
570-1-1	PERFORMANCE TURF	11,666.45	SY	$0.51	$5,949.89

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	20,999.62	LF	$0.85	$17,849.68
104-11	FLOATING TURBIDITY BARRIER	497.15	LF	$6.00	$2,982.90
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	497.15	LF	$3.04	$1,511.34
104-15	SOIL TRACKING PREVENTION DEVICE	2.00	EA	$1,969.29	$3,938.58
104-18	INLET PROTECTION SYSTEM	102.00	EA	$32.31	$3,295.62
107-1	LITTER REMOVAL	3.78	AC	$18.24	$68.95
107-2	MOWING	3.78	AC	$30.96	$117.03
	Shoulder Component Total				$786,905.31

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00

Performance Turf Width	17.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	20,999.62	LF	$12.23	$256,825.35
570-1-1	PERFORMANCE TURF	20,416.29	SY	$0.51	$10,412.31
	Median Component Total				$267,237.66

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	35.79	CY	$944.21	$33,793.28
425-1-351	INLETS, CURB, TYPE P-5, <10'	72.00	EA	$3,084.05	$222,051.60
425-1-451	INLETS, CURB, TYPE J-5, <10'	20.00	EA	$4,863.22	$97,264.40
425-1-521	INLETS, DT BOT, TYPE C, <10'	10.00	EA	$1,824.92	$18,249.20
425-2-41	MANHOLES, P-7, <10'	10.00	EA	$2,376.15	$23,761.50
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	5,261.84	LF	$48.53	$255,357.10
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	469.31	LF	$75.14	$35,263.95
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	9,943.00	LF	$113.98	$1,133,303.14
570-1-1	PERFORMANCE TURF	604.53	SY	$0.51	$308.31

Retention Basin 1

Description	Value
Size	5 AC
Multiplier	1
Depth	5.00
Description	Basin 1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	5.00	AC	$6,275.33	$31,376.65
120-1	REGULAR EXCAVATION	40,333.33	CY	$3.73	$150,443.32
400-2-2	CONC CLASS II, ENDWALLS	30.00	CY	$944.21	$28,326.30
425-1-541	INLETS, DT BOT, TYPE D, <10'	1.00	EA	$2,336.00	$2,336.00
425-2-71	MANHOLES, J-7, <10'	2.00	EA	$3,958.29	$7,916.58
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	50.00	LF	$101.07	$5,053.50
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	400.00	LF	$177.79	$71,116.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	1,860.00	LF	$8.43	$15,679.80
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	2.00	EA	$2,006.82	$4,013.64
570-1-1	PERFORMANCE TURF	24,200.00	SY	$0.51	$12,342.00
	Drainage Component Total				$2,147,956.27

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	48.00	AS	$241.88	$11,610.24

700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	4.00 AS	$641.37	$2,565.48
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	4.00 AS	$2,814.25	$11,257.00
700-21-12	MULTI- POST SIGN, F&I, 51-100	4.00 AS	$3,767.64	$15,070.56
	Signing Component Total			$40,503.28

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Mast Arm
Multiplier	1
Description	Belle Terre Parkway

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	750.00 LF	$3.51	$2,632.50
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	250.00 LF	$10.99	$2,747.50
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	1.00 PI	$2,820.85	$2,820.85
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	16.00 EA	$294.83	$4,717.28
639-1-22	SIGNAL,ELECT POWER SERV,UG,PUR CONT	1.00 AS	$1,330.30	$1,330.30
639-2-1	SIGNAL,ELECTRICAL SERVICE WIRE	60.00 LF	$1.57	$94.20
649-31-103	M/ARM,F&I, WS-150,SINGLE ARM,W/0 LUM-60	4.00 EA	$21,490.57	$85,962.28
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	12.00 AS	$692.43	$8,309.16
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	8.00 AS	$551.59	$4,412.72
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	12.00 EA	$95.34	$1,144.08
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	1.00 EA	$748.15	$748.15
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00 EA	$170.71	$2,048.52
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00 AS	$618.78	$7,425.36
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	8.00 EA	$135.16	$1,081.28
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	$20,872.48	$20,872.48
700-48-19	SIGN PANELS, F & I, 16 - 100	4.00 EA	$1,034.15	$4,136.60

Signalization 2

Description	Value
Type	4 Lane Strain Pole
Multiplier	1
Description	US 1

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	750.00 LF	$3.51	$2,632.50
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	200.00 LF	$10.99	$2,198.00
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	1.00 PI	$2,820.85	$2,820.85

634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	1.00 PI	$1,524.49	$1,524.49
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	14.00 EA	$294.83	$4,127.62
639-1-12	SIGNAL,ELECTRICAL POWER SRV,OHD,FUR CONT	1.00 AS	$1,524.97	$1,524.97
639-2-1	SIGNAL,ELECTRICAL SERVICE WIRE	30.00 LF	$1.57	$47.10
641-2-16	PREST CNC POLE,F&I,TYP P-VI	4.00 EA	$5,574.06	$22,296.24
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	12.00 AS	$692.43	$8,309.16
653-111	PEDESTRIAN SIGNAL, 12 IN, INCANDES,1 WAY	8.00 AS	$400.00	$3,200.00
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	12.00 EA	$95.34	$1,144.08
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00 EA	$170.71	$2,048.52
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00 AS	$618.78	$7,425.36
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	8.00 EA	$135.16	$1,081.28
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	$20,872.48	$20,872.48
700-48-19	SIGN PANELS, F & I, 16 - 100	4.00 EA	$1,034.15	$4,136.60
	Signalizations Component Total			$235,872.51

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	35,609.86	LF	$1.75	$62,317.26
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	10,499.81	LF	$2.87	$30,134.45
715-2-12	LIGHTING-CONDUIT, F&I, UNDER EXIST PVMT	1,370.15	LF	$8.42	$11,536.66
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	42.00	EA	$318.30	$13,368.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	42.00	EA	$575.93	$24,189.06
715-511-140	LIGHT POLE COMP,F&I,SGL ARM SM, AL,40'	42.00	EA	$4,000.00	$168,000.00
	Subcomponent Total				$309,546.03
	Lighting Component Total				$309,546.03

BRIDGES COMPONENT

Bridge BELLE

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	150.00
Width (LF)	90.00
Type	Low Level
Cost Factor	1.00
Structure No.	735502
Removal of Existing Structures area	2,200.00

Default Cost per SF		$135.00
Factored Cost per SF		$135.00
Final Cost per SF		**$142.87**
Basic Bridge Cost		**$1,822,500.00**
Description	BELLEAIRE WATERWAY	

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-3	REMOVAL OF EXISTING STRUCTURE	2,200.00	SF	$18.55	$40,810.00
400-2-10	CONC CLASS II, APPROACH SLABS	200.00	CY	$393.26	$78,652.00
415-1-9	REINF STEEL- APPROACH SLABS	35,000.00	LB	$0.79	$27,650.00
	Bridge BELLE Total				$1,969,612.00
	Bridges Component Total				$1,969,612.00

Sequence 1 Total $8,723,552.86

Sequence: 2 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.739 MI 3,900 LF

Description: Left and Right Turn Lanes

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.739
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	1,829.57 CY	$9.14	$16,722.27
	Earthwork Component Total			$16,722.27

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Existing Roadway Pavement Width L/R	0.00 / 0.00
Structural Spread Rate	275
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	12.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	6,317.69 SY	$2.63	$16,615.52
285-709	OPTIONAL BASE,BASE GROUP 09	5,342.74 SY	$10.97	$58,609.86
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	714.96 TN	$77.06	$55,094.82
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	428.98 TN	$95.36	$40,907.53

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	1

Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.48	NM	$790.36	$1,169.73
	Roadway Component Total				$172,397.46

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,313.89	SY	$0.51	$1,180.08
	Median Component Total				$1,180.08

Sequence 2 Total $190,299.81

Date: 8/9/2011 7:51:31 AM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English
Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 7 Project Grand Total **$12,527,662.25**

Description: Matanzas Wood Parkway - Alternatives Segment 1 (US 1 to SB Ramps) Total Reconstruction

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Project Sequences Subtotal			**$8,913,852.67**
102-1	Maintenance of Traffic	10.00 %	$891,385.27
101-1	Mobilization	10.00 %	$980,523.79
Project Sequences Total			**$10,785,761.73**
Project Unknowns		15.00 %	$1,617,864.26
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$124,036.26	$124,036.26
Project Non-Bid Subtotal					**$124,036.26**
Version 7 Project Grand Total					**$12,527,662.25**

Date: 8/9/2011 7:59:58 AM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English
Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 9 Project Grand Total **$8,067,380.32**

Description: Matanzas Wood Parkway - Alternatives Segment 2 (SB Ramps to NB Ramps) Diamond Interchange w/ 4-laning

Sequence: 1 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.265 MI 1,400 LF

Description: Matanzas Woods Parkway - SB Ramps to NB Ramps Urban 4-lane with Widening & Resurfacing

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	65.00 / 25.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.265
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	125.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	2 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.265
Top of Structural Course For Begin Section	125.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	2 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.89 AC	$6,275.33	$18,135.70
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	40,180.88 CY	$9.14	$367,253.24
	Earthwork Component Total			$385,388.94

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Existing Roadway Pavement Width L/R	0.00 / 24.00
Structural Spread Rate	165
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	28.00 / 4.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	5,781.50	SY	$2.63	$15,205.34
285-709	OPTIONAL BASE,BASE GROUP 09	5,081.37	SY	$10.97	$55,742.63
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	3,734.02	SY	$1.44	$5,376.99
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	308.06	TN	$77.06	$23,739.10
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	684.57	TN	$77.06	$52,752.96
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	308.06	TN	$95.36	$29,376.60
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	410.74	TN	$95.36	$39,168.17

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	107.00	EA	$3.27	$349.89
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	2.12	NM	$790.36	$1,675.56
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.06	GM	$220.44	$233.67

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	30.67	TN	$144.28	$4,425.07
536-1-1	GUARDRAIL- ROADWAY	900.00	LF	$15.29	$13,761.00

536-85-24	GUARDRAIL END ANCHORAGE ASSEM- PARALLEL	2.00 EA	$1,750.57	$3,501.14
550-10-222	FENCING, TYPE B, 5.1-6.0, W/ VINYL COAT	1,400.00 LF	$11.66	$16,324.00
	Roadway Component Total			$261,632.13

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	0.00 / 12.25
New Total Outside Shoulder Width L/R	12.25 / 7.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	5.00 / 0.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,400.26 LF	$13.18	$18,455.43
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,400.26 LF	$13.18	$18,455.43
522-1	SIDEWALK CONC, 4" THICK	777.92 SY	$27.11	$21,089.41
570-1-1	PERFORMANCE TURF	1,555.84 SY	$0.51	$793.48

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,800.51 LF	$0.85	$2,380.43
104-11	FLOATING TURBIDITY BARRIER	26.52 LF	$6.00	$159.12
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	26.52 LF	$3.04	$80.62
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$1,969.29	$1,969.29
104-18	INLET PROTECTION SYSTEM	13.00 EA	$32.31	$420.03
107-1	LITTER REMOVAL	0.50 AC	$18.24	$9.12
107-2	MOWING	0.50 AC	$30.96	$15.48
	Shoulder Component Total			$63,827.84

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	2,800.51 LF	$12.23	$34,250.24
570-1-1	PERFORMANCE TURF	2,722.72 SY	$0.51	$1,388.59
	Median Component Total			$35,638.83

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	4.77	CY	$944.21	$4,503.88
425-1-351	INLETS, CURB, TYPE P-5, <10'	10.00	EA	$3,084.05	$30,840.50
425-1-451	INLETS, CURB, TYPE J-5, <10'	3.00	EA	$4,863.22	$14,589.66
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	146.39	LF	$48.53	$7,104.31
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	42.43	LF	$75.14	$3,188.19
570-1-1	PERFORMANCE TURF	80.62	SY	$0.51	$41.12

Box Culvert 1

Description	Value
Size	8 x 5
Length	50.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	59.80	CY	$671.35	$40,146.73
415-1-1	REINF STEEL- ROADWAY	6,771.00	LB	$0.77	$5,213.67

Box Culvert 2

Description	Value
Size	Dbl. 8 x 5
Length	50.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	183.40	CY	$671.35	$123,125.59
415-1-1	REINF STEEL- ROADWAY	25,568.00	LB	$0.77	$19,687.36

Retention Basin 1

Description	Value
Size	5 AC
Multiplier	2
Depth	4.00
Description	Pond 2A1 & 2A2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	10.00	AC	$6,275.33	$62,753.30
120-1	REGULAR EXCAVATION	64,533.34	CY	$3.73	$240,709.36
400-2-2	CONC CLASS II, ENDWALLS	60.00	CY	$944.21	$56,652.60
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00	EA	$2,336.00	$4,672.00
425-2-71	MANHOLES, J-7, <10'	4.00	EA	$3,958.29	$15,833.16
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	100.00	LF	$101.07	$10,107.00
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	800.00	LF	$177.79	$142,232.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	3,720.00	LF	$8.43	$31,359.60
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	4.00	EA	$2,006.82	$8,027.28
570-1-1	PERFORMANCE TURF	48,400.00	SY	$0.51	$24,684.00
	Drainage Component Total				$845,471.31

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	6.00 AS	$241.88	$1,451.28
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	1.00 AS	$641.37	$641.37
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	$89.02	$89.02
700-20-60	SINGLE POST SIGN, REMOVE	6.00 AS	$15.22	$91.32
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	2.00 AS	$2,814.25	$5,628.50
	Signing Component Total			$7,901.49

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Strain Pole
Multiplier	2
Description	SB & NB Ramps

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	1,500.00 LF	$3.51	$5,265.00
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	400.00 LF	$10.99	$4,396.00
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	$2,820.85	$5,641.70
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	2.00 PI	$2,396.82	$4,793.64
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	28.00 EA	$294.83	$8,255.24
639-1-12	SIGNAL,ELECTRICAL POWER SRV,OHD,FUR CONT	2.00 AS	$1,383.16	$2,766.32
639-2-1	SIGNAL,ELECTRICAL SERVICE WIRE	60.00 LF	$1.57	$94.20
641-2-16	PREST CNC POLE,F&I,TYP P-VI	8.00 EA	$5,387.64	$43,101.12
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	24.00 AS	$692.43	$16,618.32
653-111	PEDESTRIAN SIGNAL, 12 IN, INCANDES,1 WAY	16.00 AS	$400.00	$6,400.00
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	24.00 EA	$95.34	$2,288.16
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	24.00 EA	$170.71	$4,097.04
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	24.00 AS	$618.78	$14,850.72
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	16.00 EA	$135.16	$2,162.56
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	2.00 AS	$20,872.48	$41,744.96
700-48-19	SIGN PANELS, F & I, 16 - 100	8.00 EA	$1,034.15	$8,273.20
	Signalizations Component Total			$170,748.18

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	4,748.94	LF	$1.75	$8,310.64
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	1,400.26	LF	$2.87	$4,018.75
715-2-12	LIGHTING-CONDUIT, F&I, UNDER EXIST PVMT	182.72	LF	$8.42	$1,538.50
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	6.00	EA	$318.30	$1,909.80
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$575.93	$3,455.58
715-511-140	LIGHT POLE COMP,F&I,SGL ARM SM, AL,40'	6.00	EA	$4,000.00	$24,000.00
	Subcomponent Total				$43,233.27
	Lighting Component Total				$43,233.28

BRIDGES COMPONENT

Bridge I-95

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	198.00
Width (LF)	61.50
Type	Medium Level
Cost Factor	1.00
Structure No.	
Removal of Existing Structures area	0.00
Default Cost per SF	$135.00
Factored Cost per SF	$135.00
Final Cost per SF	**$140.97**
Basic Bridge Cost	**$1,643,895.00**
Description	NEW BRIDGE

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II, APPROACH SLABS	136.67	CY	$393.26	$53,746.84
415-1-9	REINF STEEL- APPROACH SLABS	23,917.25	LB	$0.79	$18,894.63
	Bridge I-95 Total				$1,716,536.47
	Bridges Component Total				$1,716,536.47

RETAINING WALLS COMPONENT

Retaining Wall 1

Description	Value
Length	80.00
Begin height	20.00
End Height	20.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RETAINING WALL SYSTEM,PERM, EXC BAR.	3,200.00	SF	$27.02	$86,464.00

Retaining Walls Component Total	$86,464.00
Sequence 1 Total	$3,616,842.47

Sequence: 2 WUU - Widen/Resurface, Undivided, Urban **Net Length:** 0.156 MI 825 LF

Description: Right and Left Turn Lanes

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	19.00 / 19.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.156
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	92.74 CY	$9.14	$847.64
	Earthwork Component Total			$847.64

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Existing Roadway Pavement Width L/R	0.00 / 0.00
Structural Spread Rate	165
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	12.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,336.93 SY	$2.63	$3,516.13
285-709	OPTIONAL BASE,BASE GROUP 09	1,130.61 SY	$10.97	$12,402.79
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	151.30 TN	$77.06	$11,659.18
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	90.78 TN	$95.36	$8,656.78

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	1
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.31	NM	$790.36	$245.01
	Roadway Component Total				$36,479.89

Sequence 2 Total $37,327.53

Sequence: 3 NUR - New Construction, Undivided, Rural **Net Length:** 0.284 MI 1,500 LF

Description: SB Off - One lane ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.284
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.44	AC	$6,275.33	$21,587.14
120-6	EMBANKMENT	25,091.97	CY	$5.19	$130,227.32
	Earthwork Component Total				$151,814.46

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	4,500.14	SY	$2.63	$11,835.37
285-709	OPTIONAL BASE,BASE GROUP 09	2,610.08	SY	$10.97	$28,632.58
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	343.76	TN	$87.36	$30,030.87
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	100.00	TN	$108.98	$10,898.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$541.40	$541.40

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.57	NM	$790.36	$450.51

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$144.28	$1,490.41
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$15.29	$4,587.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,574.11	$1,574.11
	Roadway Component Total				$90,040.25

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,110.04	SY	$11.09	$12,310.34
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	82.50	TN	$87.36	$7,207.20
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	8.80	TN	$108.98	$959.02
570-1-1	PERFORMANCE TURF	1,000.03	SY	$0.51	$510.02

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	3,900.12	LF	$0.85	$3,315.10
104-11	FLOATING TURBIDITY BARRIER	71.03	LF	$6.00	$426.18
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	71.03	LF	$3.04	$215.93
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.34 AC	$18.24	$6.20
107-2	MOWING	0.34 AC	$30.96	$10.53
	Shoulder Component Total			$26,929.81

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	5.11	CY	$944.21	$4,824.91
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	232.00	LF	$46.10	$10,695.20
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	47.73	LF	$75.14	$3,586.43
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	12.00	EA	$967.23	$11,606.76
570-1-1	PERFORMANCE TURF	200.01	SY	$0.51	$102.01
	Drainage Component Total				$30,815.31

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	6.00	AS	$641.37	$3,848.22
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$6,904.35

Sequence 3 Total $306,504.18

Sequence: 4 NUR - New Construction, Undivided, Rural **Net Length:** 0.057 MI 300 LF

Description: SB Off - Two lane portion of ramp at intersection of crossroad

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.057
Top of Structural Course For Begin Section	111.00
Top of Structural Course For End Section	113.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.69	AC	$6,275.33	$4,329.98
120-6	EMBANKMENT	10,962.08	CY	$5.19	$56,893.20
	Earthwork Component Total				$61,223.17

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	12.00 / 12.00
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,466.20	SY	$2.63	$3,856.11
285-709	OPTIONAL BASE,BASE GROUP 09	821.74	SY	$10.97	$9,014.49
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	109.96	TN	$87.36	$9,606.11
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	31.99	TN	$108.98	$3,486.27

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.00	GM	$220.44	$220.44
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	1.00	NM	$3,105.08	$3,105.08

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1

Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	8.00	EA	$3.27	$26.16
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.11	NM	$790.36	$86.94
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.06	GM	$220.44	$13.23
	Roadway Component Total				$29,414.83

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	4.00 / 10.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	488.51	SY	$11.09	$5,417.58
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	38.49	TN	$87.36	$3,362.49
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	1.76	TN	$108.98	$191.80
570-1-1	PERFORMANCE TURF	199.94	SY	$0.51	$101.97

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	779.75	LF	$0.85	$662.79
104-11	FLOATING TURBIDITY BARRIER	14.20	LF	$6.00	$85.20
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	14.20	LF	$3.04	$43.17
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.07	AC	$18.24	$1.28
107-2	MOWING	0.07	AC	$30.96	$2.17
	Shoulder Component Total				$11,837.73

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	1.02	CY	$944.21	$963.09
430-174-124	PIPE CULV, OPT MATL,	48.00	LF	$46.10	$2,212.80

	ROUND,24"SD			
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	9.54 LF	$75.14	$716.84
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	3.00 EA	$967.23	$2,901.69
570-1-1	PERFORMANCE TURF	39.99 SY	$0.51	$20.39
	Drainage Component Total			$6,814.81

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	2.00	AS	$641.37	$1,282.74
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$4,338.87

Sequence 4 Total $113,629.41

Sequence: 5 NUR - New Construction, Undivided, Rural **Net Length:** 0.303 MI 1,600 LF

Description: NB Off - One lane off-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.303
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.67	AC	$6,275.33	$23,030.46
120-6	EMBANKMENT	26,770.66	CY	$5.19	$138,939.73
	Earthwork Component Total				$161,970.19

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	4,799.52	SY	$2.63	$12,622.74
285-709	OPTIONAL BASE,BASE GROUP 09	2,783.72	SY	$10.97	$30,537.41
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	366.63	TN	$87.36	$32,028.80
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	106.66	TN	$108.98	$11,623.81

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$541.40	$541.40

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.61	NM	$790.36	$482.12

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$144.28	$1,490.41
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$15.29	$4,587.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,574.11	$1,574.11
	Roadway Component Total				$95,487.80

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,183.88	SY	$11.09	$13,129.23
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	87.99	TN	$87.36	$7,686.81
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	9.39	TN	$108.98	$1,023.32
570-1-1	PERFORMANCE TURF	1,066.56	SY	$0.51	$543.95

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,159.00	LF	$0.85	$3,535.15
104-11	FLOATING TURBIDITY BARRIER	75.75	LF	$6.00	$454.50
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	75.75	LF	$3.04	$230.28
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.36 AC	$18.24	$6.57
107-2	MOWING	0.36 AC	$30.96	$11.15
	Shoulder Component Total			$28,590.25

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	5.45	CY	$944.21	$5,145.94
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	13.00	EA	$967.23	$12,573.99
570-1-1	PERFORMANCE TURF	213.31	SY	$0.51	$108.79

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	8.00	LF	$40.99	$327.92
430-175-130	PIPE CULV, OPT MATL, ROUND, 30"S/CD	8.00	LF	$61.00	$488.00
	Drainage Component Total				$18,644.64

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	7.00	AS	$641.37	$4,489.59
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$7,303.84

Sequence 5 Total $311,996.72

Sequence: 6 NUR - New Construction, Undivided, Rural **Net Length:** 0.095 MI 502 LF

Description: NB Off - Three lane portion of ramp at intersection of crossroad

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.095
Top of Structural Course For Begin Section	111.00
Top of Structural Course For End Section	113.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.15	AC	$6,275.33	$7,216.63
120-6	EMBANKMENT	20,398.03	CY	$5.19	$105,865.78
	Earthwork Component Total				$113,082.41

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	18.00 / 18.00
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	3,121.07	SY	$2.63	$8,208.41
285-709	OPTIONAL BASE,BASE GROUP 09	2,043.18	SY	$10.97	$22,413.68
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	275.88	TN	$87.36	$24,100.88
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	80.26	TN	$108.98	$8,746.73

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT	51.00	EA	$3.27	$166.77

	MARKERS			
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.19 NM	$790.36	$150.17
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.19 GM	$220.44	$41.88
	Roadway Component Total			$63,828.52

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	4.00 / 10.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	817.05	SY	$11.09	$9,061.08
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	64.37	TN	$87.36	$5,623.36
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	2.94	TN	$108.98	$320.40
570-1-1	PERFORMANCE TURF	334.40	SY	$0.51	$170.54

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,304.00	LF	$0.85	$1,108.40
104-11	FLOATING TURBIDITY BARRIER	23.75	LF	$6.00	$142.50
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	23.75	LF	$3.04	$72.20
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.11	AC	$18.24	$2.01
107-2	MOWING	0.11	AC	$30.96	$3.41
	Shoulder Component Total				$18,473.19

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	1.71	CY	$944.21	$1,614.60
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	4.00	EA	$967.23	$3,868.92
570-1-1	PERFORMANCE TURF	66.88	SY	$0.51	$34.11

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	80.00	LF	$40.99	$3,279.20

430-175-130	PIPE CULV, OPT MATL, ROUND, 30"S/CD	16.00 LF	$61.00	$976.00
	Drainage Component Total			$9,772.83

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	2.00	AS	$641.37	$1,282.74
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$4,338.87

Sequence 6 Total $209,495.82

Sequence: 7 NUR - New Construction, Undivided, Rural **Net Length:** 0.549 MI 2,900 LF

Description: NB On - One lane on-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.549
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	6.65	AC	$6,275.33	$41,730.94
120-6	EMBANKMENT	48,505.25	CY	$5.19	$251,742.25
	Earthwork Component Total				$293,473.19

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	8,699.33	SY	$2.63	$22,879.24
285-709	OPTIONAL BASE,BASE GROUP 09	5,045.61	SY	$10.97	$55,350.34
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	664.53	TN	$87.36	$58,053.34
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	193.32	TN	$108.98	$21,068.01

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$541.40	$541.40

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.10	NM	$790.36	$869.40

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$144.28	$1,490.41
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$15.29	$4,587.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,574.11	$1,574.11
	Roadway Component Total				$166,413.25

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	2,145.83	SY	$11.09	$23,797.25
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	159.49	TN	$87.36	$13,933.05
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	17.01	TN	$108.98	$1,853.75
570-1-1	PERFORMANCE TURF	1,933.18	SY	$0.51	$985.92

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	7,539.42	LF	$0.85	$6,408.51
104-11	FLOATING TURBIDITY BARRIER	137.30	LF	$6.00	$823.80
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	137.30	LF	$3.04	$417.39
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.66 AC	$18.24	$12.04
107-2	MOWING	0.66 AC	$30.96	$20.43
	Shoulder Component Total			$50,221.43

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	9.89	CY	$944.21	$9,338.24
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	440.00	LF	$46.10	$20,284.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	92.27	LF	$75.14	$6,933.17
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	22.00	EA	$967.23	$21,279.06
570-1-1	PERFORMANCE TURF	386.64	SY	$0.51	$197.19
	Drainage Component Total				$58,031.66

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	2.00	AS	$241.88	$483.76
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	11.00	AS	$641.37	$7,055.07
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	2.00	AS	$2,814.25	$5,628.50
	Signing Component Total				$13,167.33

Sequence 7 Total $581,306.86

Sequence: 8 NUR - New Construction, Undivided, Rural **Net Length:** 0.530 MI 2,800 LF

Description: SB On - One lane on-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.530
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	6.42	AC	$6,275.33	$40,287.62
120-6	EMBANKMENT	46,826.56	CY	$5.19	$243,029.85
	Earthwork Component Total				$283,317.47

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	8,399.95	SY	$2.63	$22,091.87
285-709	OPTIONAL BASE,BASE GROUP 09	4,871.97	SY	$10.97	$53,445.51
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	641.66	TN	$87.36	$56,055.42
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	186.67	TN	$108.98	$20,343.30

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$541.40	$541.40

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.06	NM	$790.36	$837.78

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$144.28	$1,490.41
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$15.29	$4,587.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,574.11	$1,574.11
	Roadway Component Total				$160,966.80

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	2,071.99	SY	$11.09	$22,978.37
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	154.00	TN	$87.36	$13,453.44
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	16.43	TN	$108.98	$1,790.54
570-1-1	PERFORMANCE TURF	1,866.66	SY	$0.51	$952.00

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	7,279.96	LF	$0.85	$6,187.97
104-11	FLOATING TURBIDITY BARRIER	132.57	LF	$6.00	$795.42
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	132.57	LF	$3.04	$403.01
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.64 AC	$18.24	$11.67
107-2	MOWING	0.64 AC	$30.96	$19.81
	Shoulder Component Total			$48,561.52

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	9.55	CY	$944.21	$9,017.21
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	432.00	LF	$46.10	$19,915.20
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	89.09	LF	$75.14	$6,694.22
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	22.00	EA	$967.23	$21,279.06
570-1-1	PERFORMANCE TURF	373.33	SY	$0.51	$190.40
	Drainage Component Total				$57,096.09

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	2.00	AS	$241.88	$483.76
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	11.00	AS	$641.37	$7,055.07
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	2.00	AS	$2,814.25	$5,628.50
	Signing Component Total				$13,167.33

Sequence 8 Total $563,109.21

Date: 8/9/2011 7:59:59 AM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English

Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 9 Project Grand Total **$8,067,380.32**

Description: Matanzas Wood Parkway - Alternatives Segment 2 (SB Ramps to NB Ramps) Diamond Interchange w/ 4-laning

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Project Sequences Subtotal			**$5,740,212.20**
102-1	Maintenance of Traffic	10.00 %	$574,021.22
101-1	Mobilization	10.00 %	$631,423.34
Project Sequences Total			**$6,945,656.76**
Project Unknowns		15.00 %	$1,041,848.51
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$79,875.05	$79,875.05
Project Non-Bid Subtotal					**$79,875.05**
Version 9 Project Grand Total					**$8,067,380.32**

Date: 8/9/2011 8:24:24 AM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English
Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 10 Project Grand Total **$9,928,660.57**

Description: Matanzas Wood Parkway - Alternatives Segment 2 (SB Ramps to NB Ramps) Partial Cloverleaf Interchange w/ 4-laning

Sequence: 1 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.265 MI 1,400 LF

Description: Matanzas Woods Parkway - SB Ramps to NB Ramps Urban 4-lane with Widening & Resurfacing

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	65.00 / 25.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.265
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	125.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	2 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.265
Top of Structural Course For Begin Section	125.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	2 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.89 AC	$6,275.33	$18,135.70
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	40,180.88 CY	$9.14	$367,253.24
	Earthwork Component Total			$385,388.94

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Existing Roadway Pavement Width L/R	0.00 / 24.00
Structural Spread Rate	165
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	28.00 / 4.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	5,781.50	SY	$2.63	$15,205.34
285-709	OPTIONAL BASE,BASE GROUP 09	5,081.37	SY	$10.97	$55,742.63
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	3,734.02	SY	$1.44	$5,376.99
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	308.06	TN	$77.06	$23,739.10
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	684.57	TN	$77.06	$52,752.96
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	308.06	TN	$95.36	$29,376.60
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	410.74	TN	$95.36	$39,168.17

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	107.00	EA	$3.27	$349.89
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	2.12	NM	$790.36	$1,675.56
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.06	GM	$220.44	$233.67

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	30.67	TN	$144.28	$4,425.07
536-1-1	GUARDRAIL- ROADWAY	900.00	LF	$15.29	$13,761.00

536-85-24	GUARDRAIL END ANCHORAGE ASSEM- PARALLEL	2.00 EA	$1,750.57	$3,501.14
550-10-222	FENCING, TYPE B, 5.1-6.0, W/ VINYL COAT	1,400.00 LF	$11.66	$16,324.00
	Roadway Component Total			$261,632.13

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	0.00 / 12.25
New Total Outside Shoulder Width L/R	12.25 / 7.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	5.00 / 0.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,400.26 LF	$13.18	$18,455.43
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,400.26 LF	$13.18	$18,455.43
522-1	SIDEWALK CONC, 4" THICK	777.92 SY	$27.11	$21,089.41
570-1-1	PERFORMANCE TURF	1,555.84 SY	$0.51	$793.48

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,800.51 LF	$0.85	$2,380.43
104-11	FLOATING TURBIDITY BARRIER	26.52 LF	$6.00	$159.12
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	26.52 LF	$3.04	$80.62
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$1,969.29	$1,969.29
104-18	INLET PROTECTION SYSTEM	13.00 EA	$32.31	$420.03
107-1	LITTER REMOVAL	0.50 AC	$18.24	$9.12
107-2	MOWING	0.50 AC	$30.96	$15.48
	Shoulder Component Total			$63,827.84

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	2,800.51 LF	$12.23	$34,250.24
570-1-1	PERFORMANCE TURF	2,722.72 SY	$0.51	$1,388.59
	Median Component Total			$35,638.83

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	4.77	CY	$944.21	$4,503.88
425-1-351	INLETS, CURB, TYPE P-5, <10'	10.00	EA	$3,084.05	$30,840.50
425-1-451	INLETS, CURB, TYPE J-5, <10'	3.00	EA	$4,863.22	$14,589.66
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	146.39	LF	$48.53	$7,104.31
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	42.43	LF	$75.14	$3,188.19
570-1-1	PERFORMANCE TURF	80.62	SY	$0.51	$41.12

Box Culvert 1

Description	Value
Size	8 x 5
Length	50.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	59.80	CY	$671.35	$40,146.73
415-1-1	REINF STEEL- ROADWAY	6,771.00	LB	$0.77	$5,213.67

Box Culvert 2

Description	Value
Size	Dbl. 8 x 5
Length	50.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	183.40	CY	$671.35	$123,125.59
415-1-1	REINF STEEL- ROADWAY	25,568.00	LB	$0.77	$19,687.36

Retention Basin 1

Description	Value
Size	5 AC
Multiplier	2
Depth	4.00
Description	Pond 2A1 & 2A2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	10.00	AC	$6,275.33	$62,753.30
120-1	REGULAR EXCAVATION	64,533.34	CY	$3.73	$240,709.36
400-2-2	CONC CLASS II, ENDWALLS	60.00	CY	$944.21	$56,652.60
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00	EA	$2,336.00	$4,672.00
425-2-71	MANHOLES, J-7, <10'	4.00	EA	$3,958.29	$15,833.16
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	100.00	LF	$101.07	$10,107.00
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	800.00	LF	$177.79	$142,232.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	3,720.00	LF	$8.43	$31,359.60
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	4.00	EA	$2,006.82	$8,027.28
570-1-1	PERFORMANCE TURF	48,400.00	SY	$0.51	$24,684.00
	Drainage Component Total				$845,471.31

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	6.00 AS	$241.88	$1,451.28
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	1.00 AS	$641.37	$641.37
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	$89.02	$89.02
700-20-60	SINGLE POST SIGN, REMOVE	6.00 AS	$15.22	$91.32
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	2.00 AS	$2,814.25	$5,628.50
	Signing Component Total			$7,901.49

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Strain Pole
Multiplier	2
Description	SB & NB Ramps

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	1,500.00 LF	$3.51	$5,265.00
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	400.00 LF	$10.99	$4,396.00
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	$2,820.85	$5,641.70
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	2.00 PI	$2,396.82	$4,793.64
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	28.00 EA	$294.83	$8,255.24
639-1-12	SIGNAL,ELECTRICAL POWER SRV,OHD,FUR CONT	2.00 AS	$1,383.16	$2,766.32
639-2-1	SIGNAL,ELECTRICAL SERVICE WIRE	60.00 LF	$1.57	$94.20
641-2-16	PREST CNC POLE,F&I,TYP P-VI	8.00 EA	$5,387.64	$43,101.12
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	24.00 AS	$692.43	$16,618.32
653-111	PEDESTRIAN SIGNAL, 12 IN, INCANDES,1 WAY	16.00 AS	$400.00	$6,400.00
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	24.00 EA	$95.34	$2,288.16
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	24.00 EA	$170.71	$4,097.04
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	24.00 AS	$618.78	$14,850.72
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	16.00 EA	$135.16	$2,162.56
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	2.00 AS	$20,872.48	$41,744.96
700-48-19	SIGN PANELS, F & I, 16 - 100	8.00 EA	$1,034.15	$8,273.20
	Signalizations Component Total			$170,748.18

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	4,748.94	LF	$1.75	$8,310.64
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	1,400.26	LF	$2.87	$4,018.75
715-2-12	LIGHTING-CONDUIT, F&I, UNDER EXIST PVMT	182.72	LF	$8.42	$1,538.50
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	6.00	EA	$318.30	$1,909.80
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$575.93	$3,455.58
715-511-140	LIGHT POLE COMP,F&I,SGL ARM SM, AL,40'	6.00	EA	$4,000.00	$24,000.00
	Subcomponent Total				$43,233.27
	Lighting Component Total				$43,233.28

BRIDGES COMPONENT

Bridge I-95

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	198.00
Width (LF)	61.50
Type	Medium Level
Cost Factor	1.00
Structure No.	
Removal of Existing Structures area	0.00
Default Cost per SF	$135.00
Factored Cost per SF	$135.00
Final Cost per SF	**$140.97**
Basic Bridge Cost	**$1,643,895.00**
Description	NEW BRIDGE

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II, APPROACH SLABS	136.67	CY	$393.26	$53,746.84
415-1-9	REINF STEEL- APPROACH SLABS	23,917.25	LB	$0.79	$18,894.63
	Bridge I-95 Total				$1,716,536.47
	Bridges Component Total				$1,716,536.47

RETAINING WALLS COMPONENT

Retaining Wall 1

Description	Value
Length	80.00
Begin height	20.00
End Height	20.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RETAINING WALL SYSTEM,PERM, EXC BAR.	3,200.00	SF	$27.02	$86,464.00

Retaining Walls Component Total	$86,464.00
Sequence 1 Total	$3,616,842.47

Sequence: 2 WUU - Widen/Resurface, Undivided, Urban **Net Length:** 0.156 MI 825 LF

Description: Right and Left Turn Lanes

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	19.00 / 19.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.156
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	92.74 CY	$9.14	$847.64
	Earthwork Component Total			$847.64

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Existing Roadway Pavement Width L/R	0.00 / 0.00
Structural Spread Rate	165
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	12.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,336.93 SY	$2.63	$3,516.13
285-709	OPTIONAL BASE,BASE GROUP 09	1,130.61 SY	$10.97	$12,402.79
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	151.30 TN	$77.06	$11,659.18
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	90.78 TN	$95.36	$8,656.78

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	1
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.31	NM	$790.36	$245.01
	Roadway Component Total				$36,479.89

Sequence 2 Total $37,327.53

Sequence: 3 NUR - New Construction, Undivided, Rural **Net Length:** 0.371 MI 1,960 LF

Description: SB Off - One lane ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.370
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	4.50	AC	$6,275.33	$28,238.98
120-6	EMBANKMENT	32,690.24	CY	$5.19	$169,662.35
	Earthwork Component Total				$197,901.34

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	5,879.81	SY	$2.63	$15,463.90
285-709	OPTIONAL BASE,BASE GROUP 09	3,410.29	SY	$10.97	$37,410.88
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	449.15	TN	$87.36	$39,237.74
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	130.66	TN	$108.98	$14,239.33

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$541.40	$541.40

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.74	NM	$790.36	$584.87

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$144.28	$1,490.41
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$15.29	$4,587.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,574.11	$1,574.11
	Roadway Component Total				$115,129.64

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,450.35	SY	$11.09	$16,084.38
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	107.80	TN	$87.36	$9,417.41
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	11.50	TN	$108.98	$1,253.27
570-1-1	PERFORMANCE TURF	1,306.62	SY	$0.51	$666.38

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	5,095.83	LF	$0.85	$4,331.46
104-11	FLOATING TURBIDITY BARRIER	92.80	LF	$6.00	$556.80
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	92.80	LF	$3.04	$282.11
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.45 AC	$18.24	$8.21
107-2	MOWING	0.45 AC	$30.96	$13.93
	Shoulder Component Total			$34,583.24

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	6.68	CY	$944.21	$6,307.32
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	296.00	LF	$46.10	$13,645.60
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	62.36	LF	$75.14	$4,685.73
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	15.00	EA	$967.23	$14,508.45
570-1-1	PERFORMANCE TURF	261.32	SY	$0.51	$133.27
	Drainage Component Total				$39,280.37

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	8.00	AS	$641.37	$5,130.96
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$8,187.09

Sequence 3 Total $395,081.68

Sequence: 4 NUR - New Construction, Undivided, Rural **Net Length:** 0.057 MI 300 LF

Description: SB Off - Two lane portion of ramp at intersection of crossroad

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.057
Top of Structural Course For Begin Section	111.00
Top of Structural Course For End Section	113.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.69	AC	$6,275.33	$4,329.98
120-6	EMBANKMENT	10,962.08	CY	$5.19	$56,893.20
	Earthwork Component Total				$61,223.17

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	12.00 / 12.00
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,466.20	SY	$2.63	$3,856.11
285-709	OPTIONAL BASE,BASE GROUP 09	821.74	SY	$10.97	$9,014.49
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	109.96	TN	$87.36	$9,606.11
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	31.99	TN	$108.98	$3,486.27

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.00	GM	$220.44	$220.44
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	1.00	NM	$3,105.08	$3,105.08

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1

Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	8.00	EA	$3.27	$26.16
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.11	NM	$790.36	$86.94
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.06	GM	$220.44	$13.23
	Roadway Component Total				$29,414.83

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	4.00 / 10.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	488.51	SY	$11.09	$5,417.58
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	38.49	TN	$87.36	$3,362.49
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	1.76	TN	$108.98	$191.80
570-1-1	PERFORMANCE TURF	199.94	SY	$0.51	$101.97

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	779.75	LF	$0.85	$662.79
104-11	FLOATING TURBIDITY BARRIER	14.20	LF	$6.00	$85.20
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	14.20	LF	$3.04	$43.17
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.07	AC	$18.24	$1.28
107-2	MOWING	0.07	AC	$30.96	$2.17
	Shoulder Component Total				$11,837.73

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	1.02	CY	$944.21	$963.09
430-174-124	PIPE CULV, OPT MATL,	48.00	LF	$46.10	$2,212.80

	ROUND,24"SD			
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	9.54 LF	$75.14	$716.84
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	3.00 EA	$967.23	$2,901.69
570-1-1	PERFORMANCE TURF	39.99 SY	$0.51	$20.39
	Drainage Component Total			$6,814.81

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	2.00	AS	$641.37	$1,282.74
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$4,338.87

Sequence 4 Total $113,629.41

Sequence: 5 NUR - New Construction, Undivided, Rural **Net Length:** 0.303 MI 1,600 LF

Description: NB Off - One lane off-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.303
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.67	AC	$6,275.33	$23,030.46
120-6	EMBANKMENT	26,770.66	CY	$5.19	$138,939.73
	Earthwork Component Total				$161,970.19

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	4,799.52	SY	$2.63	$12,622.74
285-709	OPTIONAL BASE,BASE GROUP 09	2,783.72	SY	$10.97	$30,537.41
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	366.63	TN	$87.36	$32,028.80
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	106.66	TN	$108.98	$11,623.81

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$541.40	$541.40

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.61	NM	$790.36	$482.12

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$144.28	$1,490.41
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$15.29	$4,587.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,574.11	$1,574.11
	Roadway Component Total				$95,487.80

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,183.88	SY	$11.09	$13,129.23
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	87.99	TN	$87.36	$7,686.81
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	9.39	TN	$108.98	$1,023.32
570-1-1	PERFORMANCE TURF	1,066.56	SY	$0.51	$543.95

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,159.00	LF	$0.85	$3,535.15
104-11	FLOATING TURBIDITY BARRIER	75.75	LF	$6.00	$454.50
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	75.75	LF	$3.04	$230.28
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.36 AC	$18.24	$6.57
107-2	MOWING	0.36 AC	$30.96	$11.15
	Shoulder Component Total			$28,590.25

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	5.45	CY	$944.21	$5,145.94
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	13.00	EA	$967.23	$12,573.99
570-1-1	PERFORMANCE TURF	213.31	SY	$0.51	$108.79

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	8.00	LF	$40.99	$327.92
430-175-130	PIPE CULV, OPT MATL, ROUND, 30"S/CD	8.00	LF	$61.00	$488.00
	Drainage Component Total				$18,644.64

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	7.00	AS	$641.37	$4,489.59
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$7,303.84

Sequence 5 Total $311,996.72

Sequence: 6 NUR - New Construction, Undivided, Rural **Net Length:** 0.364 MI 1,920 LF

Description: NB Off - Two lane portion of ramp at intersection of crossroad

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.363
Top of Structural Course For Begin Section	111.00
Top of Structural Course For End Section	113.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	4.41	AC	$6,275.33	$27,674.21
120-6	EMBANKMENT	69,811.13	CY	$5.19	$362,319.76
	Earthwork Component Total				$389,993.97

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	12.00 / 12.00
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	9,385.73	SY	$2.63	$24,684.47
285-709	OPTIONAL BASE,BASE GROUP 09	5,260.27	SY	$10.97	$57,705.16
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	703.93	TN	$87.36	$61,495.32
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	204.78	TN	$108.98	$22,316.92

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT	49.00	EA	$3.27	$160.23

	MARKERS			
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.45 NM	$790.36	$1,146.02
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.73 GM	$220.44	$160.92
	Roadway Component Total			$167,669.04

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	4.00 / 10.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	3,127.15	SY	$11.09	$34,680.09
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	246.38	TN	$87.36	$21,523.76
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	11.26	TN	$108.98	$1,227.11
570-1-1	PERFORMANCE TURF	1,279.87	SY	$0.51	$652.73

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,991.50	LF	$0.85	$4,242.78
104-11	FLOATING TURBIDITY BARRIER	90.90	LF	$6.00	$545.40
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	90.90	LF	$3.04	$276.34
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.44	AC	$18.24	$8.03
107-2	MOWING	0.44	AC	$30.96	$13.62
	Shoulder Component Total				$65,139.15

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	6.54	CY	$944.21	$6,175.13
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	296.00	LF	$46.10	$13,645.60
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	61.08	LF	$75.14	$4,589.55
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	15.00	EA	$967.23	$14,508.45
570-1-1	PERFORMANCE TURF	255.97	SY	$0.51	$130.54
	Drainage Component Total				$39,049.27

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	8.00	AS	$641.37	$5,130.96
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$8,187.09

Sequence 6 Total $670,038.52

Sequence: 7 NUR - New Construction, Undivided, Rural **Net Length:** 0.496 MI 2,620 LF

Description: NB On - One lane on-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.496
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	6.01	AC	$6,275.33	$37,714.73
120-6	EMBANKMENT	43,822.59	CY	$5.19	$227,439.24
	Earthwork Component Total				$265,153.97

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	7,859.81	SY	$2.63	$20,671.30
285-709	OPTIONAL BASE,BASE GROUP 09	4,558.69	SY	$10.97	$50,008.83
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	600.40	TN	$87.36	$52,450.94
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	174.66	TN	$108.98	$19,034.45

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$541.40	$541.40

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.99	NM	$790.36	$782.46

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$144.28	$1,490.41
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$15.29	$4,587.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,574.11	$1,574.11
	Roadway Component Total				$151,140.90

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,938.75	SY	$11.09	$21,500.74
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	144.10	TN	$87.36	$12,588.58
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	15.37	TN	$108.98	$1,675.02
570-1-1	PERFORMANCE TURF	1,746.62	SY	$0.51	$890.78

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	6,811.83	LF	$0.85	$5,790.06
104-11	FLOATING TURBIDITY BARRIER	124.05	LF	$6.00	$744.30
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	124.05	LF	$3.04	$377.11
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.60 AC	$18.24	$10.94
107-2	MOWING	0.60 AC	$30.96	$18.58
	Shoulder Component Total			$45,565.40

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	8.93	CY	$944.21	$8,431.80
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	400.00	LF	$46.10	$18,440.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	83.36	LF	$75.14	$6,263.67
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	20.00	EA	$967.23	$19,344.60
570-1-1	PERFORMANCE TURF	349.32	SY	$0.51	$178.15
	Drainage Component Total				$52,658.22

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	10.00	AS	$641.37	$6,413.70
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$9,469.83

Sequence 7 Total $523,988.32

Sequence: 8 NUR - New Construction, Undivided, Rural **Net Length:** 0.066 MI 350 LF

Description: NB On - Two lane ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.066
Top of Structural Course For Begin Section	111.00
Top of Structural Course For End Section	113.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.80	AC	$6,275.33	$5,020.26
120-6	EMBANKMENT	12,692.93	CY	$5.19	$65,876.31
	Earthwork Component Total				$70,896.57

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	12.00 / 12.00
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,711.42	SY	$2.63	$4,501.03
285-709	OPTIONAL BASE,BASE GROUP 09	959.18	SY	$10.97	$10,522.20
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	128.36	TN	$87.36	$11,213.53
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	37.34	TN	$108.98	$4,069.31

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT	9.00	EA	$3.27	$29.43

	MARKERS			
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.27 NM	$790.36	$213.40
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.13 GM	$220.44	$28.66
	Roadway Component Total			$30,577.55

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	4.00 / 10.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	570.22	SY	$11.09	$6,323.74
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	44.92	TN	$87.36	$3,924.21
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	2.05	TN	$108.98	$223.41
570-1-1	PERFORMANCE TURF	233.38	SY	$0.51	$119.02

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	910.17	LF	$0.85	$773.64
104-11	FLOATING TURBIDITY BARRIER	16.58	LF	$6.00	$99.48
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	16.58	LF	$3.04	$50.40
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.08	AC	$18.24	$1.46
107-2	MOWING	0.08	AC	$30.96	$2.48
	Shoulder Component Total				$13,487.13

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	1.19	CY	$944.21	$1,123.61
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	56.00	LF	$46.10	$2,581.60
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	11.14	LF	$75.14	$837.06
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	3.00	EA	$967.23	$2,901.69
570-1-1	PERFORMANCE TURF	46.68	SY	$0.51	$23.81
	Drainage Component Total				$7,467.77

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	2.00	AS	$641.37	$1,282.74
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$4,338.87

Sequence 8 Total $126,767.89

Sequence: 9 NUR - New Construction, Undivided, Rural **Net Length:** 0.530 MI 2,800 LF

Description: SB On - One lane on-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.530
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	6.42	AC	$6,275.33	$40,287.62
120-6	EMBANKMENT	46,826.56	CY	$5.19	$243,029.85
	Earthwork Component Total				$283,317.47

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	8,399.95	SY	$2.63	$22,091.87
285-709	OPTIONAL BASE,BASE GROUP 09	4,871.97	SY	$10.97	$53,445.51
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	641.66	TN	$87.36	$56,055.42
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	186.67	TN	$108.98	$20,343.30

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$541.40	$541.40

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.06	NM	$790.36	$837.78

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$144.28	$1,490.41
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$15.29	$4,587.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,574.11	$1,574.11
	Roadway Component Total				$160,966.80

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	2,071.99	SY	$11.09	$22,978.37
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	154.00	TN	$87.36	$13,453.44
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	16.43	TN	$108.98	$1,790.54
570-1-1	PERFORMANCE TURF	1,866.66	SY	$0.51	$952.00

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	7,279.96	LF	$0.85	$6,187.97
104-11	FLOATING TURBIDITY BARRIER	132.57	LF	$6.00	$795.42
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	132.57	LF	$3.04	$403.01
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.64 AC	$18.24	$11.67
107-2	MOWING	0.64 AC	$30.96	$19.81
	Shoulder Component Total			$48,561.52

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	9.55	CY	$944.21	$9,017.21
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	432.00	LF	$46.10	$19,915.20
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	89.09	LF	$75.14	$6,694.22
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	22.00	EA	$967.23	$21,279.06
570-1-1	PERFORMANCE TURF	373.33	SY	$0.51	$190.40
	Drainage Component Total				$57,096.09

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	2.00	AS	$241.88	$483.76
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	11.00	AS	$641.37	$7,055.07
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	2.00	AS	$2,814.25	$5,628.50
	Signing Component Total				$13,167.33

Sequence 9 Total $563,109.21

Sequence: 10 NUR - New Construction, Undivided, Rural **Net Length:** 0.383 MI 2,020 LF

Description: SB On - Two lane ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.383
Top of Structural Course For Begin Section	111.00
Top of Structural Course For End Section	113.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	4.64	AC	$6,275.33	$29,117.53
120-6	EMBANKMENT	73,657.47	CY	$5.19	$382,282.27
	Earthwork Component Total				$411,399.80

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	12.00 / 12.00
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	9,876.18	SY	$2.63	$25,974.35
285-709	OPTIONAL BASE,BASE GROUP 09	5,535.15	SY	$10.97	$60,720.60
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	740.71	TN	$87.36	$64,708.43
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	215.48	TN	$108.98	$23,483.01

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT	52.00	EA	$3.27	$170.04

	MARKERS			
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.53 NM	$790.36	$1,209.25
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.77 GM	$220.44	$169.74
	Roadway Component Total			$176,435.42

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	4.00 / 10.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	3,290.56	SY	$11.09	$36,492.31
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	259.25	TN	$87.36	$22,648.08
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	11.85	TN	$108.98	$1,291.41
570-1-1	PERFORMANCE TURF	1,346.75	SY	$0.51	$686.84

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	5,252.33	LF	$0.85	$4,464.48
104-11	FLOATING TURBIDITY BARRIER	95.65	LF	$6.00	$573.90
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	95.65	LF	$3.04	$290.78
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.46	AC	$18.24	$8.39
107-2	MOWING	0.46	AC	$30.96	$14.24
	Shoulder Component Total				$68,439.72

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	6.89	CY	$944.21	$6,505.61
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	312.00	LF	$46.10	$14,383.20
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	64.28	LF	$75.14	$4,830.00
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	16.00	EA	$967.23	$15,475.68
570-1-1	PERFORMANCE TURF	269.35	SY	$0.51	$137.37
	Drainage Component Total				$41,331.86

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	8.00	AS	$641.37	$5,130.96
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$8,187.09

Sequence 10 Total $705,793.89

Date: 8/9/2011 8:24:27 AM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English

Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 10 Project Grand Total **$9,928,660.57**

Description: Matanzas Wood Parkway - Alternatives Segment 2 (SB Ramps to NB Ramps) Partial Cloverleaf Interchange w/ 4-laning

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Project Sequences Subtotal			**$7,064,575.64**
102-1	Maintenance of Traffic	10.00 %	$706,457.56
101-1	Mobilization	10.00 %	$777,103.32
Project Sequences Total			**$8,548,136.52**
Project Unknowns		15.00 %	$1,282,220.48
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$98,303.57	$98,303.57
Project Non-Bid Subtotal					**$98,303.57**
Version 10 Project Grand Total					**$9,928,660.57**

Date: 8/9/2011 8:35:01 AM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English
Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 11 Project Grand Total **$4,726,724.91**

Description: Matanzas Wood Parkway - Alternatives Segment 3 (NB Ramps to existing Old Kings Road)

Sequence: 1 WDR - Widen/Resurface, Divided, Rural **Net Length:** 0.237 MI 1,250 LF

Description: Matanzas Woods Parkway - NB Ramps to Old Kings Road (Extension) High Speed Urban 4-lane with Widening & Resurfacing

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	80.00 / 23.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.237
Top of Structural Course For Begin Section	104.00
Top of Structural Course For End Section	104.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	3 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.96 AC	$6,275.33	$18,574.98
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	2,650.10 CY	$9.14	$24,221.91
	Earthwork Component Total			$42,796.89

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Existing Roadway Pavement Width L/R	0.00 / 24.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	28.00 / 4.00

Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	9,720.48 SY	$2.63	$25,564.86
285-709	OPTIONAL BASE,BASE GROUP 09	4,535.30 SY	$10.97	$49,752.24
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	3,332.74 SY	$1.44	$4,799.15
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	366.60 TN	$77.06	$28,250.20
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	733.20 TN	$77.06	$56,500.39
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	133.31 TN	$112.55	$15,004.04
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	177.75 TN	$112.55	$20,005.76

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	160.00 EA	$3.27	$523.20
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.89 NM	$790.36	$1,493.78
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.89 GM	$220.44	$416.63
	Roadway Component Total			$202,310.25

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	8.00 / 8.00
New Total Outside Shoulder Width L/R	8.00 / 8.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 2.67
Existing Paved Outside Shoulder Width L/R	0.00 / 0.00
New Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,480.29 SY	$11.09	$16,416.42
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	76.38 TN	$77.06	$5,885.84

337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	55.55 TN	$112.55	$6,252.15
570-1-1	PERFORMANCE TURF	741.53 SY	$0.51	$378.18

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
522-1	SIDEWALK CONC, 4" THICK	700.00 SY	$24.75	$17,325.00

Erosion Control Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,874.48 LF	$0.85	$2,443.31
104-11	FLOATING TURBIDITY BARRIER	23.67 LF	$6.00	$142.02
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	23.67 LF	$3.04	$71.96
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.80 AC	$18.24	$14.59
107-2	MOWING	0.80 AC	$30.96	$24.77
	Shoulder Component Total			$50,923.53

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50
New Total Median Shoulder Width L/R	11.00 / 11.00
New Paved Median Shoulder Width L/R	0.00 / 0.00
Existing Total Median Shoulder Width L/R	0.00 / 6.00
Existing Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,430.12 SY	$0.51	$1,239.36

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	7,500.00 LF	$12.23	$91,725.00
	Median Component Total			$92,964.36

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	4.26 CY	$944.21	$4,022.33
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	192.00 LF	$46.10	$8,851.20

430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	18.94 LF	$75.14	$1,423.15
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	10.00 EA	$967.23	$9,672.30
570-1-1	PERFORMANCE TURF	166.64 SY	$0.51	$84.99

Box Culvert 1

Description	Value
Size	Dbl. 8 x 5
Length	50.00
Multiplier	1

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	91.70 CY	$671.35	$61,562.80
415-1-1	REINF STEEL- ROADWAY	12,784.00 LB	$0.77	$9,843.68

Retention Basin 1

Description	Value
Size	10 AC
Multiplier	2
Depth	4.00
Description	Basin 3b

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	20.00 AC	$6,275.33	$125,506.60
120-1	REGULAR EXCAVATION	129,066.66 CY	$3.73	$481,418.64
400-2-2	CONC CLASS II, ENDWALLS	72.00 CY	$944.21	$67,983.12
425-1-541	INLETS, DT BOT, TYPE D, <10'	4.00 EA	$2,336.00	$9,344.00
425-2-71	MANHOLES, J-7, <10'	4.00 EA	$3,958.29	$15,833.16
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	200.00 LF	$101.07	$20,214.00
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	800.00 LF	$177.79	$142,232.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	5,560.00 LF	$8.43	$46,870.80
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	6.00 EA	$2,006.82	$12,040.92
570-1-1	PERFORMANCE TURF	96,800.00 SY	$0.51	$49,368.00
	Drainage Component Total			$1,066,271.69

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00 AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	6.00 AS	$641.37	$3,848.22
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	$89.02	$89.02
700-20-60	SINGLE POST SIGN, REMOVE	6.00 AS	$15.22	$91.32
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00 AS	$2,814.25	$2,814.25
700-21-60	MULTI- POST SIGN, REMOVE	1.00 AS	$355.18	$355.18
	Signing Component Total			$7,439.87

LIGHTING COMPONENT

Rural Lighting Subcomponent

Description	**Value**
Multiplier (Number of Poles)	10

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	6,000.00	LF	$1.75	$10,500.00
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	2,000.00	LF	$2.87	$5,740.00
715-4-122	LIGHT POLE COMP, F&I, WS130, 45'	10.00	EA	$3,677.40	$36,774.00
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	10.00	EA	$318.30	$3,183.00
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	10.00	EA	$575.93	$5,759.30
	Subcomponent Total				$61,956.30
	Lighting Component Total				$61,956.30

Sequence 1 Total $1,524,662.89

Sequence: 2 WDR - Widen/Resurface, Divided, Rural **Net Length:** 0.171 MI 900 LF

Description: Matanzas Woods Parkway - Old Kings Road (Extension) to Old Kings Road (Existing) High Speed Urban 4-lane with Widening & Resurfacing

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	80.00 / 23.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.170
Top of Structural Course For Begin Section	104.00
Top of Structural Course For End Section	104.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	3 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.12 AC	$6,275.33	$13,303.70
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	1,900.92 CY	$9.14	$17,374.41
	Earthwork Component Total			$30,678.11

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Existing Roadway Pavement Width L/R	0.00 / 24.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	28.00 / 4.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	7,001.87 SY	$2.63	$18,414.92
285-709	OPTIONAL BASE,BASE GROUP 09	3,266.87 SY	$10.97	$35,837.56
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	2,400.64 SY	$1.44	$3,456.92
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	264.07 TN	$77.06	$20,349.23
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	528.14 TN	$77.06	$40,698.47
337-7-5	ASPH CONC FC, INC BIT/RUBBER,	96.03 TN	$112.55	$10,808.18

	FC-5			
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	128.03 TN	$112.55	$14,409.78

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	115.00 EA	$3.27	$376.05
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.36 NM	$790.36	$1,074.89
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.36 GM	$220.44	$299.80
	Roadway Component Total			$145,725.80

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	8.00 / 8.00
New Total Outside Shoulder Width L/R	8.00 / 8.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 2.67
Existing Paved Outside Shoulder Width L/R	0.00 / 0.00
New Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,066.28 SY	$11.09	$11,825.05
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	55.01 TN	$77.06	$4,239.07
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	40.01 TN	$112.55	$4,503.13
570-1-1	PERFORMANCE TURF	534.14 SY	$0.51	$272.41

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
522-1	SIDEWALK CONC, 4" THICK	500.00 SY	$24.75	$12,375.00

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,070.55 LF	$0.85	$1,759.97
104-11	FLOATING TURBIDITY BARRIER	17.05 LF	$6.00	$102.30

104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	17.05 LF	$3.04	$51.83
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.58 AC	$18.24	$10.58
107-2	MOWING	0.58 AC	$30.96	$17.96
	Shoulder Component Total			$37,126.59

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50
New Total Median Shoulder Width L/R	11.00 / 11.00
New Paved Median Shoulder Width L/R	0.00 / 0.00
Existing Total Median Shoulder Width L/R	0.00 / 6.00
Existing Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	1,750.47 SY	$0.51	$892.74

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	7,500.00 LF	$12.23	$91,725.00
	Median Component Total			$92,617.74

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	3.07 CY	$944.21	$2,898.72
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	144.00 LF	$46.10	$6,638.40
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	13.64 LF	$75.14	$1,024.91
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	7.00 EA	$967.23	$6,770.61
570-1-1	PERFORMANCE TURF	120.03 SY	$0.51	$61.22

Box Culvert 1

Description	Value
Size	Dbl. 8 x 5
Length	50.00
Multiplier	2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount

400-4-1	CONC CLASS IV, CULVERTS	183.40 CY	$671.35	$123,125.59
415-1-1	REINF STEEL- ROADWAY	25,568.00 LB	$0.77	$19,687.36
	Drainage Component Total			$160,206.81

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	5.00	AS	$641.37	$3,206.85
700-20-40	SINGLE POST SIGN, RELOCATE	1.00	AS	$89.02	$89.02
700-20-60	SINGLE POST SIGN, REMOVE	5.00	AS	$15.22	$76.10
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
700-21-60	MULTI- POST SIGN, REMOVE	1.00	AS	$355.18	$355.18
	Signing Component Total				$6,783.28

LIGHTING COMPONENT

Rural Lighting Subcomponent

Description	Value
Multiplier (Number of Poles)	6

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	3,600.00	LF	$1.75	$6,300.00
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	1,200.00	LF	$2.87	$3,444.00
715-4-122	LIGHT POLE COMP, F&I, WS130, 45'	6.00	EA	$3,677.40	$22,064.40
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	6.00	EA	$318.30	$1,909.80
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$575.93	$3,455.58
	Subcomponent Total				$37,173.78
	Lighting Component Total				$37,173.78

Sequence 2 Total $510,312.11

Sequence: 3 NDS - New, Divided, Suburban (Urban In/Rural Out) **Net Length:** 0.331 MI 1,750 LF

Description: Matanzas Woods Parkway - Old Kings Road (Extension) to Old Kings Road (Existing) High Speed Urban 4-lane with New Construction

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	60.00 / 60.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.331
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	90.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	4.81	AC	$6,275.33	$30,184.34
120-6	EMBANKMENT	96,153.47	CY	$5.19	$499,036.51
	Earthwork Component Total				$529,220.85

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	28.00 / 28.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	15,001.55	SY	$2.63	$39,454.08
285-709	OPTIONAL BASE,BASE GROUP 09	11,144.23	SY	$10.97	$122,252.20
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,796.45	TN	$77.06	$138,434.44
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	435.50	TN	$112.55	$49,015.52

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit	Extended Amount

			Price	
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	134.00 EA	$3.27	$438.18
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	2.65 NM	$790.36	$2,094.45
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.33 GM	$220.44	$293.19
	Roadway Component Total			$351,982.07

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 8.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 2.67
Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	2,072.53	SY	$11.09	$22,984.36
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	106.93	TN	$77.06	$8,240.03
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	77.77	TN	$112.55	$8,753.01
570-1-1	PERFORMANCE TURF	1,038.21	SY	$0.51	$529.49

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
522-1	SIDEWALK CONC, 4" THICK	1,000.00	SY	$24.75	$24,750.00

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,549.46	LF	$0.85	$3,867.04
104-11	FLOATING TURBIDITY BARRIER	82.85	LF	$6.00	$497.10
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	82.85	LF	$3.04	$251.86
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.63	AC	$18.24	$11.49
107-2	MOWING	0.63	AC	$30.96	$19.50
	Shoulder Component Total				$71,873.17

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	16.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	3,499.58 LF	$12.23	$42,799.86
570-1-1	PERFORMANCE TURF	3,110.74 SY	$0.51	$1,586.48
	Median Component Total			$44,386.34

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	5.97 CY	$944.21	$5,636.93
425-1-551	INLETS, DT BOT, TYPE E, <10'	3.00 EA	$2,414.15	$7,242.45
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	137.86 LF	$48.53	$6,690.35
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	78.21 LF	$75.14	$5,876.70
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	3.00 EA	$967.23	$2,901.69
570-1-1	PERFORMANCE TURF	127.26 SY	$0.51	$64.90

Retention Basin 1

Description	Value
Size	2.5 AC
Multiplier	1
Depth	6.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.50 AC	$6,275.33	$15,688.32
120-1	REGULAR EXCAVATION	24,200.00 CY	$3.73	$90,266.00
400-2-2	CONC CLASS II, ENDWALLS	18.00 CY	$944.21	$16,995.78
425-1-361	INLETS, CURB, TYPE P-6, <10'	1.00 EA	$3,499.91	$3,499.91
425-2-71	MANHOLES, J-7, <10'	1.00 EA	$3,958.29	$3,958.29
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	50.00 LF	$101.07	$5,053.50
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	200.00 LF	$177.79	$35,558.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	1,335.00 LF	$8.43	$11,254.05
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	1.00 EA	$2,006.82	$2,006.82
570-1-1	PERFORMANCE TURF	12,100.00 SY	$0.51	$6,171.00
	Drainage Component Total			$218,864.70

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	8.00 AS	$241.88	$1,935.04
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	1.00 AS	$641.37	$641.37
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00 AS	$2,814.25	$2,814.25
700-21-12	MULTI- POST SIGN, F&I, 51-100	1.00 AS	$3,767.64	$3,767.64

Signing Component Total $9,158.30

LIGHTING COMPONENT

Rural Lighting Subcomponent

Description	**Value**
Multiplier (Number of Poles)	12

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	7,200.00	LF	$1.75	$12,600.00
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	2,400.00	LF	$2.87	$6,888.00
715-4-122	LIGHT POLE COMP, F&I, WS130, 45'	12.00	EA	$3,677.40	$44,128.80
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	12.00	EA	$318.30	$3,819.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	12.00	EA	$575.93	$6,911.16
	Subcomponent Total				$74,347.56

Lighting Component Total $74,347.56

Sequence 3 Total $1,299,832.99

Sequence: 4 NUU - New Construction, Undivided, Urban **Net Length:** 0.095 MI 500 LF

Description: Left and Right Turn Lanes

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.095
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
120-6	EMBANKMENT	757.04 CY	$5.19	$3,929.04
	Earthwork Component Total			$3,929.04

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	12.00 / 0.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	810.03 SY	$2.63	$2,130.38
285-709	OPTIONAL BASE,BASE GROUP 09	666.69 SY	$10.97	$7,313.59
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	91.67 TN	$77.06	$7,064.09
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	55.00 TN	$95.36	$5,244.80

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	1
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.19 NM	$790.36	$150.17

Roadway Component Total	$21,903.03

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	7.25 / 7.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	0.00 / 0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	555.57	SY	$0.51	$283.34
	Shoulder Component Total				$283.34

Sequence 4 Total	$26,115.41

Date: 8/9/2011 8:35:03 AM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English
Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 11 Project Grand Total **$4,726,724.91**

Description: Matanzas Wood Parkway - Alternatives Segment 3 (NB Ramps to existing Old Kings Road)

Project Sequences Subtotal			**$3,360,923.40**
102-1	Maintenance of Traffic	10.00 %	$336,092.34
101-1	Mobilization	10.00 %	$369,701.57
Project Sequences Total			**$4,066,717.31**
Project Unknowns		15.00 %	$610,007.60
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$50,000.00	$50,000.00
Project Non-Bid Subtotal					**$50,000.00**
Version 11 Project Grand Total					**$4,726,724.91**

Preferred Alternative Cost Estimate

Date: 10/26/2011 4:17:30 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English
Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 13-P Project Grand Total **$25,538,211.88**

Description: Matanzas Wood Parkway - Preferred Alternative - (US 1 to Old Kings Road & Diamond Interchange)

Sequence: 1 NDU - New Construction, Divided, Urban **Net Length:** 1.989 MI
10,500 LF

Description: Matanzas Woods Parkway - Segment 1 - US 1 to SB Ramps - Total Reconstruction Urban 4-lane with Total Reconstruction

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EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	62.00 / 62.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	1.989
Top of Structural Course For Begin Section	103.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	29.90	AC	$6,275.33	$187,632.37
120-6	EMBANKMENT	122,335.70	CY	$5.19	$634,922.28
	Earthwork Component Total				$822,554.65

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	28.00 / 28.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	77,371.92	SY	$2.63	$203,488.15
285-709	OPTIONAL BASE,BASE GROUP 09	65,332.14	SY	$10.97	$716,693.58
334-1-13	SUPERPAVE ASPHALTIC CONC,	8,983.17	TN	$77.06	$692,243.08

	TRAFFIC C			
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	5,389.90 TN	$95.36	$513,980.86

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	805.00 EA	$3.27	$2,632.35
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	15.91 NM	$790.36	$12,574.63
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	7.95 GM	$220.44	$1,752.50
	Roadway Component Total			$2,143,365.15

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	12.25 / 17.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	5.00 / 10.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	10,499.81 LF	$13.18	$138,387.50
520-1-10	CONCRETE CURB & GUTTER, TYPE F	10,499.81 LF	$13.18	$138,387.50
522-1	SIDEWALK CONC, 4" THICK	17,499.68 SY	$27.11	$474,416.32
570-1-1	PERFORMANCE TURF	11,666.45 SY	$0.51	$5,949.89

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	20,999.62 LF	$0.85	$17,849.68
104-11	FLOATING TURBIDITY BARRIER	497.15 LF	$6.00	$2,982.90
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	497.15 LF	$3.04	$1,511.34
104-15	SOIL TRACKING PREVENTION DEVICE	2.00 EA	$1,969.29	$3,938.58
104-18	INLET PROTECTION SYSTEM	102.00 EA	$32.31	$3,295.62
107-1	LITTER REMOVAL	3.78 AC	$18.24	$68.95
107-2	MOWING	3.78 AC	$30.96	$117.03
	Shoulder Component Total			$786,905.31

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	20,999.62	LF	$12.23	$256,825.35
570-1-1	PERFORMANCE TURF	20,416.29	SY	$0.51	$10,412.31
	Median Component Total				$267,237.66

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	35.79	CY	$944.21	$33,793.28
425-1-351	INLETS, CURB, TYPE P-5, <10'	72.00	EA	$3,084.05	$222,051.60
425-1-451	INLETS, CURB, TYPE J-5, <10'	20.00	EA	$4,863.22	$97,264.40
425-1-521	INLETS, DT BOT, TYPE C, <10'	10.00	EA	$1,824.92	$18,249.20
425-2-41	MANHOLES, P-7, <10'	10.00	EA	$2,376.15	$23,761.50
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	5,261.84	LF	$48.53	$255,357.10
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	469.31	LF	$75.14	$35,263.95
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	9,943.00	LF	$113.98	$1,133,303.14
570-1-1	PERFORMANCE TURF	604.53	SY	$0.51	$308.31

Retention Basin 1

Description	Value
Size	5 AC
Multiplier	1
Depth	5.00
Description	Pond 1B

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	5.00	AC	$6,275.33	$31,376.65
120-1	REGULAR EXCAVATION	40,333.33	CY	$3.73	$150,443.32
400-2-2	CONC CLASS II, ENDWALLS	30.00	CY	$944.21	$28,326.30
425-1-541	INLETS, DT BOT, TYPE D, <10'	1.00	EA	$2,336.00	$2,336.00
425-2-71	MANHOLES, J-7, <10'	2.00	EA	$3,958.29	$7,916.58
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	50.00	LF	$101.07	$5,053.50
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	400.00	LF	$177.79	$71,116.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	1,860.00	LF	$8.43	$15,679.80
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	2.00	EA	$2,006.82	$4,013.64
570-1-1	PERFORMANCE TURF	24,200.00	SY	$0.51	$12,342.00

Retention Basin 2

Description	Value
Size	.5 AC
Multiplier	1
Depth	4.00
Description	FPC-1B

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.50	AC	$6,275.33	$3,137.66
120-1	REGULAR EXCAVATION	3,226.67	CY	$3.73	$12,035.48
400-2-2	CONC CLASS II, ENDWALLS	18.00	CY	$944.21	$16,995.78
425-1-541	INLETS, DT BOT, TYPE D, <10'	1.00	EA	$2,336.00	$2,336.00
425-2-71	MANHOLES, J-7, <10'	1.00	EA	$3,958.29	$3,958.29
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	50.00	LF	$101.07	$5,053.50
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	200.00	LF	$177.79	$35,558.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	600.00	LF	$8.43	$5,058.00
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	1.00	EA	$2,006.82	$2,006.82
570-1-1	PERFORMANCE TURF	2,420.00	SY	$0.51	$1,234.20
	Drainage Component Total				$2,235,330.01

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	48.00	AS	$241.88	$11,610.24
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	4.00	AS	$641.37	$2,565.48
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	4.00	AS	$2,814.25	$11,257.00
700-21-12	MULTI- POST SIGN, F&I, 51-100	4.00	AS	$3,767.64	$15,070.56
	Signing Component Total				$40,503.28

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Mast Arm
Multiplier	1
Description	Belle Terre Parkway

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	750.00	LF	$3.51	$2,632.50
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	250.00	LF	$10.99	$2,747.50
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	1.00	PI	$2,820.85	$2,820.85
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	16.00	EA	$294.83	$4,717.28
639-1-22	SIGNAL,ELECT POWER SERV,UG,PUR CONT	1.00	AS	$1,330.30	$1,330.30
639-2-1	SIGNAL,ELECTRICAL SERVICE WIRE	60.00	LF	$1.57	$94.20
649-31-103	M/ARM,F&I, WS-150,SINGLE ARM,W/0 LUM-60	4.00	EA	$21,490.57	$85,962.28
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	12.00	AS	$692.43	$8,309.16
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	8.00	AS	$551.59	$4,412.72

659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	12.00 EA	$95.34	$1,144.08
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	1.00 EA	$748.15	$748.15
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00 EA	$170.71	$2,048.52
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00 AS	$618.78	$7,425.36
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	8.00 EA	$135.16	$1,081.28
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	$20,872.48	$20,872.48
700-48-19	SIGN PANELS, F & I, 16 - 100	4.00 EA	$1,034.15	$4,136.60

Signalization 2

Description	Value
Type	4 Lane Strain Pole
Multiplier	1
Description	US 1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	750.00	LF	$3.51	$2,632.50
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	200.00	LF	$10.99	$2,198.00
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	1.00	PI	$2,820.85	$2,820.85
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	1.00	PI	$1,524.49	$1,524.49
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	14.00	EA	$294.83	$4,127.62
639-1-12	SIGNAL,ELECTRICAL POWER SRV,OHD,FUR CONT	1.00	AS	$1,524.97	$1,524.97
639-2-1	SIGNAL,ELECTRICAL SERVICE WIRE	30.00	LF	$1.57	$47.10
641-2-16	PREST CNC POLE,F&I,TYP P-VI	4.00	EA	$5,574.06	$22,296.24
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	12.00	AS	$692.43	$8,309.16
653-111	PEDESTRIAN SIGNAL, 12 IN, INCANDES,1 WAY	8.00	AS	$400.00	$3,200.00
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	12.00	EA	$95.34	$1,144.08
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00	EA	$170.71	$2,048.52
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00	AS	$618.78	$7,425.36
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	8.00	EA	$135.16	$1,081.28
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00	AS	$20,872.48	$20,872.48
700-48-19	SIGN PANELS, F & I, 16 - 100	4.00	EA	$1,034.15	$4,136.60
	Signalizations Component Total				$235,872.51

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I,	35,609.86	LF	$1.75	$62,317.26

	INSUL, NO.4-2				
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	10,499.81	LF	$2.87	$30,134.45
715-2-12	LIGHTING-CONDUIT, F&I, UNDER EXIST PVMT	1,370.15	LF	$8.42	$11,536.66
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	42.00	EA	$318.30	$13,368.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	42.00	EA	$575.93	$24,189.06
715-511-140	LIGHT POLE COMP,F&I,SGL ARM SM, AL,40'	42.00	EA	$4,000.00	$168,000.00
	Subcomponent Total				$309,546.03
	Lighting Component Total				$309,546.03

BRIDGES COMPONENT

Bridge BELLE

Description	**Value**
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	150.00
Width (LF)	85.50
Type	Low Level
Cost Factor	1.00
Structure No.	735502
Removal of Existing Structures area	2,200.00
Default Cost per SF	$135.00
Factored Cost per SF	$135.00
Final Cost per SF	**$142.87**
Basic Bridge Cost	**$1,731,375.00**
Description	BELLEAIRE WATERWAY - COMPLETE BRIDGE REPLACMENT

Bridge Pay Items

Pay item	**Description**	**Quantity**	**Unit**	**Unit Price**	**Extended Amount**
110-3	REMOVAL OF EXISTING STRUCTURE	2,200.00	SF	$18.55	$40,810.00
400-2-10	CONC CLASS II, APPROACH SLABS	190.00	CY	$393.26	$74,719.40
415-1-9	REINF STEEL- APPROACH SLABS	33,250.00	LB	$0.79	$26,267.50
	Bridge BELLE Total				$1,873,171.90
	Bridges Component Total				$1,873,171.90

Sequence 1 Total $8,714,486.50

Sequence: 2 WDU - Widen/Resurface, Divided, Urban **Net Length:** 1.278 MI 6,750 LF

Description: Segment 1 - Left and Right Turn Lanes

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	1.280
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	3,168.94 CY	$9.14	$28,964.11
	Earthwork Component Total			$28,964.11

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Existing Roadway Pavement Width L/R	0.00 / 0.00
Structural Spread Rate	275
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	12.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	10,934.92 SY	$2.63	$28,758.84
285-709	OPTIONAL BASE,BASE GROUP 09	9,247.43 SY	$10.97	$101,444.31
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,237.49 TN	$77.06	$95,360.98
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	742.49 TN	$95.36	$70,803.85

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	1

Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	2.56	NM	$790.36	$2,023.32
	Roadway Component Total				$298,391.30

Sequence 2 Total $327,355.41

Sequence: 3 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.265 MI 1,400 LF

Description: Matanzas Woods Parkway - Segment 2 - SB Ramps to NB Ramps - Urban 4-lane with Widening & Resurfacing

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	65.00 / 65.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.130
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	125.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	2 to 1 / 2 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.130
Top of Structural Course For Begin Section	125.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	2 to 1 / 2 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	4.18 AC	$6,275.33	$26,230.88
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	47,172.46 CY	$9.14	$431,156.28
	Earthwork Component Total			$457,387.16

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Existing Roadway Pavement Width L/R	0.00 / 0.00
Structural Spread Rate	165
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	28.00 / 28.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	9,515.52	SY	$2.63	$25,025.82
285-709	OPTIONAL BASE,BASE GROUP 09	8,815.39	SY	$10.97	$96,704.83
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,198.00	TN	$77.06	$92,317.88
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	718.80	TN	$95.36	$68,544.77

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	107.00	EA	$3.27	$349.89
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	2.12	NM	$790.36	$1,675.56
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.06	GM	$220.44	$233.67

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	30.67	TN	$140.00	$4,293.80
536-1-1	GUARDRAIL- ROADWAY	900.00	LF	$16.48	$14,832.00
536-85-24	GUARDRAIL END ANCHORAGE ASSEM- PARALLEL	2.00	EA	$1,728.79	$3,457.58
	Roadway Component Total				$307,435.80

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	0.00 / 12.25
New Total Outside Shoulder Width L/R	12.25 / 15.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	5.00 / 8.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,400.26	LF	$13.18	$18,455.43
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,400.26	LF	$13.18	$18,455.43

522-1	SIDEWALK CONC, 4" THICK	2,022.59	SY	$27.11	$54,832.41
570-1-1	PERFORMANCE TURF	1,555.84	SY	$0.51	$793.48

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,800.51	LF	$0.85	$2,380.43
104-11	FLOATING TURBIDITY BARRIER	26.52	LF	$6.00	$159.12
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	26.52	LF	$3.04	$80.62
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
104-18	INLET PROTECTION SYSTEM	13.00	EA	$32.31	$420.03
107-1	LITTER REMOVAL	0.50	AC	$18.24	$9.12
107-2	MOWING	0.50	AC	$30.96	$15.48
	Shoulder Component Total				$97,570.84

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	2,800.51	LF	$12.23	$34,250.24
570-1-1	PERFORMANCE TURF	2,722.72	SY	$0.51	$1,388.59
	Median Component Total				$35,638.83

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	4.77	CY	$944.21	$4,503.88
425-1-351	INLETS, CURB, TYPE P-5, <10'	10.00	EA	$3,084.05	$30,840.50
425-1-451	INLETS, CURB, TYPE J-5, <10'	3.00	EA	$4,863.22	$14,589.66
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	146.39	LF	$48.53	$7,104.31
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	42.43	LF	$75.14	$3,188.19
570-1-1	PERFORMANCE TURF	80.62	SY	$0.51	$41.12

Box Culvert 1

Description	Value
Size	8 x 5
Length	90.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	91.00	CY	$500.00	$45,500.00
415-1-1	REINF STEEL- ROADWAY	10,839.00	LB	$1.00	$10,839.00

Box Culvert 2

Description	Value
Size	Dbl. 8 x 5
Length	90.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	294.60	CY	$500.00	$147,300.00
415-1-1	REINF STEEL- ROADWAY	42,896.00	LB	$1.00	$42,896.00
	Drainage Component Total				$306,802.66

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	6.00	AS	$241.88	$1,451.28
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	1.00	AS	$641.37	$641.37
700-20-40	SINGLE POST SIGN, RELOCATE	1.00	AS	$93.89	$93.89
700-20-60	SINGLE POST SIGN, REMOVE	6.00	AS	$18.17	$109.02
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
700-21-60	MULTI- POST SIGN, REMOVE	1.00	AS	$405.94	$405.94
	Signing Component Total				$5,515.75

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Mast Arm
Multiplier	2
Description	SB & NB Ramps

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	1,500.00	LF	$3.51	$5,265.00
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	500.00	LF	$10.99	$5,495.00
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00	PI	$2,820.85	$5,641.70
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	32.00	EA	$294.83	$9,434.56
639-1-22	SIGNAL,ELECT POWER SERV,UG,PUR CONT	2.00	AS	$1,330.30	$2,660.60
639-2-1	SIGNAL,ELECTRICAL SERVICE WIRE	120.00	LF	$1.57	$188.40
649-31-103	M/ARM,F&I, WS-150,SINGLE ARM,W/0 LUM-60	8.00	EA	$21,490.57	$171,924.56
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	24.00	AS	$692.43	$16,618.32
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	16.00	AS	$551.59	$8,825.44
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	24.00	EA	$95.34	$2,288.16
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	2.00	EA	$748.15	$1,496.30
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	24.00	EA	$170.71	$4,097.04

660-2-106	LOOP ASSEMBLY, F&I, TYPE F	24.00 AS	$618.78	$14,850.72
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	16.00 EA	$135.16	$2,162.56
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	2.00 AS	$20,872.48	$41,744.96
700-48-19	SIGN PANELS, F & I, 16 - 100	8.00 EA	$1,034.15	$8,273.20
	Signalizations Component Total			$300,966.52

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	4,748.94	LF	$1.75	$8,310.64
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	1,400.26	LF	$2.87	$4,018.75
715-2-12	LIGHTING-CONDUIT, F&I, UNDER EXIST PVMT	182.72	LF	$8.42	$1,538.50
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	6.00	EA	$318.30	$1,909.80
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$575.93	$3,455.58
715-511-140	LIGHT POLE COMP,F&I,SGL ARM SM, AL,40'	6.00	EA	$4,000.00	$24,000.00
	Subcomponent Total				$43,233.27
	Lighting Component Total				$43,233.28

BRIDGES COMPONENT

Bridge I-95

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	198.00
Width (LF)	62.50
Type	Medium Level
Cost Factor	1.00
Structure No.	
Removal of Existing Structures area	700.00
Default Cost per SF	$135.00
Factored Cost per SF	$135.00
Final Cost per SF	**$140.97**
Basic Bridge Cost	**$1,670,625.00**
Description	WIDENING EXISTING BRIDGE OVER I-95 TO SINGLE BRIDGE W/ 4-LANES.

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-3	REMOVAL OF EXISTING STRUCTURE	700.00	SF	$18.55	$12,985.00
400-2-10	CONC CLASS II, APPROACH SLABS	138.89	CY	$393.26	$54,619.88
415-1-9	REINF STEEL- APPROACH SLABS	24,305.75	LB	$0.79	$19,201.54
	Bridge I-95 Total				$1,757,431.42

Bridges Component Total $1,757,431.42

RETAINING WALLS COMPONENT

Retaining Wall 1

Description	Value
Length	80.00
Begin height	20.00
End Height	20.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RETAINING WALL SYSTEM,PERM, EXC BAR.	3,200.00	SF	$25.86	$82,752.00

Retaining Walls Component Total $82,752.00

Sequence 3 Total $3,394,734.26

Sequence: 4 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.146 MI 770 LF

Description: Segment 2 - Left and Right Turn Lanes

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.145
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	358.98 CY	$9.14	$3,281.08
	Earthwork Component Total			$3,281.08

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Existing Roadway Pavement Width L/R	0.00 / 0.00
Structural Spread Rate	275
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	12.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,247.11 SY	$2.63	$3,279.90
285-709	OPTIONAL BASE,BASE GROUP 09	1,054.66 SY	$10.97	$11,569.62
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	141.13 TN	$77.06	$10,875.48
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	84.68 TN	$95.36	$8,075.08

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	1

Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.29	NM	$790.36	$229.20
	Roadway Component Total				$34,029.28

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	456.76	SY	$0.51	$232.95
	Median Component Total				$232.95

Sequence 4 Total $37,543.31

Sequence: 5 NUR - New Construction, Undivided, Rural **Net Length:** 0.284 MI 1,500 LF

Description: Diamond - SB Off - One lane off-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.284
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.44	AC	$6,275.33	$21,587.14
120-6	EMBANKMENT	25,091.97	CY	$5.19	$130,227.32
	Earthwork Component Total				$151,814.46

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	4,500.14	SY	$2.63	$11,835.37
285-709	OPTIONAL BASE,BASE GROUP 09	2,610.08	SY	$10.97	$28,632.58
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	343.76	TN	$88.00	$30,250.88
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	100.00	TN	$95.00	$9,500.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$506.09	$506.09

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.57	NM	$790.36	$450.51
	Roadway Component Total				$81,175.43

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,110.04	SY	$11.00	$12,210.44
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	82.50	TN	$88.00	$7,260.00
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	8.80	TN	$95.00	$836.00
570-1-1	PERFORMANCE TURF	1,000.03	SY	$0.51	$510.02

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	3,900.12	LF	$0.85	$3,315.10
104-11	FLOATING TURBIDITY BARRIER	71.03	LF	$6.00	$426.18
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	71.03	LF	$3.04	$215.93
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.34	AC	$18.24	$6.20
107-2	MOWING	0.34	AC	$30.96	$10.53
	Shoulder Component Total				$26,759.69

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	5.11	CY	$944.21	$4,824.91
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	232.00	LF	$53.31	$12,367.92
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	47.73	LF	$75.14	$3,586.43
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	12.00	EA	$882.95	$10,595.40
570-1-1	PERFORMANCE TURF	200.01	SY	$0.51	$102.01

	Drainage Component Total	$31,476.67

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	6.00	AS	$641.37	$3,848.22
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$6,904.35

Sequence 5 Total $298,130.60

Sequence: 6 NUR - New Construction, Undivided, Rural **Net Length:** 0.057 MI 300 LF

Description: Diamond - SB Off - Two lane off-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.057
Top of Structural Course For Begin Section	111.00
Top of Structural Course For End Section	113.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.69	AC	$6,275.33	$4,329.98
120-6	EMBANKMENT	10,962.08	CY	$5.19	$56,893.20
	Earthwork Component Total				$61,223.18

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	12.00 / 12.00
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,466.20	SY	$2.63	$3,856.11
285-709	OPTIONAL BASE,BASE GROUP 09	821.74	SY	$10.97	$9,014.49
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	109.96	TN	$88.00	$9,676.48
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	31.99	TN	$95.00	$3,039.05

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.00	GM	$220.44	$220.44
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	1.00	NM	$3,105.08	$3,105.08

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1

Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	8.00	EA	$3.27	$26.16
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.11	NM	$790.36	$86.94
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.06	GM	$220.44	$13.23
	Roadway Component Total				$29,037.98

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	4.00 / 10.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	488.51	SY	$11.00	$5,373.61
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	38.49	TN	$88.00	$3,387.12
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	1.76	TN	$95.00	$167.20
570-1-1	PERFORMANCE TURF	199.94	SY	$0.51	$101.97

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	779.75	LF	$0.85	$662.79
104-11	FLOATING TURBIDITY BARRIER	14.20	LF	$6.00	$85.20
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	14.20	LF	$3.04	$43.17
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.07	AC	$18.24	$1.28
107-2	MOWING	0.07	AC	$30.96	$2.17
	Shoulder Component Total				$11,793.80

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	1.02	CY	$944.21	$963.09
430-174-124	PIPE CULV, OPT MATL,	48.00	LF	$53.31	$2,558.88

	ROUND,24"SD			
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	9.54 LF	$75.14	$716.84
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	3.00 EA	$882.95	$2,648.85
570-1-1	PERFORMANCE TURF	39.99 SY	$0.51	$20.39
	Drainage Component Total			$6,908.05

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	2.00	AS	$641.37	$1,282.74
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$4,338.87

Sequence 6 Total $113,301.88

Sequence: 7 NUR - New Construction, Undivided, Rural **Net Length:** 0.303 MI 1,600 LF

Description: Diamond - NB Off - One lane off-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.303
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.67	AC	$6,275.33	$23,030.46
120-6	EMBANKMENT	26,770.66	CY	$5.19	$138,939.73
	Earthwork Component Total				$161,970.19

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	4,799.52	SY	$2.63	$12,622.74
285-709	OPTIONAL BASE,BASE GROUP 09	2,783.72	SY	$10.97	$30,537.41
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	366.63	TN	$88.00	$32,263.44
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	106.66	TN	$95.00	$10,132.70

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$506.09	$506.09

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.61	NM	$790.36	$482.12

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$140.00	$1,446.20
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$16.48	$4,944.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,463.73	$1,463.73
	Roadway Component Total				$94,398.43

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,183.88	SY	$11.00	$13,022.68
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	87.99	TN	$88.00	$7,743.12
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	9.39	TN	$95.00	$892.05
570-1-1	PERFORMANCE TURF	1,066.56	SY	$0.51	$543.95

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,159.00	LF	$0.85	$3,535.15
104-11	FLOATING TURBIDITY BARRIER	75.75	LF	$6.00	$454.50
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	75.75	LF	$3.04	$230.28
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.36 AC	$18.24	$6.57
107-2	MOWING	0.36 AC	$30.96	$11.15
	Shoulder Component Total			$28,408.74

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	5.45	CY	$944.21	$5,145.94
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	13.00	EA	$882.95	$11,478.35
570-1-1	PERFORMANCE TURF	213.31	SY	$0.51	$108.79

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	8.00	LF	$40.99	$327.92
430-175-130	PIPE CULV, OPT MATL, ROUND, 30"S/CD	8.00	LF	$62.32	$498.56

Box Culvert 1

Description	Value
Size	10 x 4
Length	25.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	44.05	CY	$500.00	$22,025.00
415-1-1	REINF STEEL- ROADWAY	5,251.00	LB	$1.00	$5,251.00
	Drainage Component Total				$44,835.56

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	7.00	AS	$641.37	$4,489.59
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$7,303.84

Sequence 7 Total $336,916.76

Sequence: 8 NUR - New Construction, Undivided, Rural **Net Length:** 0.095 MI 502 LF

Description: Diamond - NB Off - Three lane portion of ramp at intersection of crossroad

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.095
Top of Structural Course For Begin Section	111.00
Top of Structural Course For End Section	113.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.15	AC	$6,275.33	$7,216.63
120-6	EMBANKMENT	20,398.03	CY	$5.19	$105,865.78
	Earthwork Component Total				$113,082.41

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	18.00 / 18.00
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	3,121.07	SY	$2.63	$8,208.41
285-709	OPTIONAL BASE,BASE GROUP 09	2,043.18	SY	$10.97	$22,413.68
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	275.88	TN	$88.00	$24,277.44
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	80.26	TN	$95.00	$7,624.70

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT	51.00	EA	$3.27	$166.77

	MARKERS			
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.19 NM	$790.36	$150.17
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.19 GM	$220.44	$41.88
	Roadway Component Total			$62,883.05

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	4.00 / 10.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	817.05	SY	$11.00	$8,987.55
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	64.37	TN	$88.00	$5,664.56
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	2.94	TN	$95.00	$279.30
570-1-1	PERFORMANCE TURF	334.40	SY	$0.51	$170.54

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,304.00	LF	$0.85	$1,108.40
104-11	FLOATING TURBIDITY BARRIER	23.75	LF	$6.00	$142.50
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	23.75	LF	$3.04	$72.20
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.11	AC	$18.24	$2.01
107-2	MOWING	0.11	AC	$30.96	$3.41
	Shoulder Component Total				$18,399.76

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	1.71	CY	$944.21	$1,614.60
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	4.00	EA	$882.95	$3,531.80
570-1-1	PERFORMANCE TURF	66.88	SY	$0.51	$34.11

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	80.00	LF	$40.99	$3,279.20

430-175-130	PIPE CULV, OPT MATL, ROUND, 30"S/CD	16.00 LF	$62.32	$997.12
	Drainage Component Total			$9,456.83

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	2.00	AS	$641.37	$1,282.74
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
	Signing Component Total				$4,338.87

Sequence 8 Total $208,160.92

Sequence: 9 NUR - New Construction, Undivided, Rural **Net Length:** 0.549 MI 2,900 LF

Description: Diamond - NB On - One lane on-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.549
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	6.65	AC	$6,275.33	$41,730.94
120-6	EMBANKMENT	48,505.25	CY	$5.19	$251,742.25
	Earthwork Component Total				$293,473.19

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	8,699.33	SY	$2.63	$22,879.24
285-709	OPTIONAL BASE,BASE GROUP 09	5,045.61	SY	$10.97	$55,350.34
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	664.53	TN	$88.00	$58,478.64
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	193.32	TN	$95.00	$18,365.40

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$506.09	$506.09

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.10	NM	$790.36	$869.40

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$140.00	$1,446.20
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$16.48	$4,944.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,463.73	$1,463.73
	Roadway Component Total				$164,303.04

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	2,145.83	SY	$11.00	$23,604.13
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	159.49	TN	$88.00	$14,035.12
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	17.01	TN	$95.00	$1,615.95
570-1-1	PERFORMANCE TURF	1,933.18	SY	$0.51	$985.92

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	7,539.42	LF	$0.85	$6,408.51
104-11	FLOATING TURBIDITY BARRIER	137.30	LF	$6.00	$823.80
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	137.30	LF	$3.04	$417.39
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.66 AC	$18.24	$12.04
107-2	MOWING	0.66 AC	$30.96	$20.43
	Shoulder Component Total			$49,892.58

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	9.89	CY	$944.21	$9,338.24
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	440.00	LF	$53.31	$23,456.40
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	92.27	LF	$75.14	$6,933.17
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	22.00	EA	$882.95	$19,424.90
570-1-1	PERFORMANCE TURF	386.64	SY	$0.51	$197.19
	Drainage Component Total				$59,349.90

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	2.00	AS	$241.88	$483.76
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	11.00	AS	$641.37	$7,055.07
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	2.00	AS	$2,814.25	$5,628.50
	Signing Component Total				$13,167.33

Sequence 9 Total $580,186.04

Sequence: 10 NUR - New Construction, Undivided, Rural **Net Length:** 0.530 MI 2,800 LF

Description: Diamond - SB On - One lane on-ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.530
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	6.42	AC	$6,275.33	$40,287.62
120-6	EMBANKMENT	46,826.56	CY	$5.19	$243,029.85
	Earthwork Component Total				$283,317.47

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	7.50 / 7.50
Structural Spread Rate	275
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	8,399.95	SY	$2.63	$22,091.87
285-709	OPTIONAL BASE,BASE GROUP 09	4,871.97	SY	$10.97	$53,445.51
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	641.66	TN	$88.00	$56,466.08
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	186.67	TN	$95.00	$17,733.65

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-85-25	GUARDRAIL END ANCHORAGE ASSEM- TYPE II	1.00	EA	$506.09	$506.09

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1

Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.06	NM	$790.36	$837.78

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	10.33	TN	$140.00	$1,446.20
536-1-1	GUARDRAIL- ROADWAY	300.00	LF	$16.48	$4,944.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00	EA	$1,463.73	$1,463.73
	Roadway Component Total				$158,934.91

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	2,071.99	SY	$11.00	$22,791.89
334-1-23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	154.00	TN	$88.00	$13,552.00
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22	16.43	TN	$95.00	$1,560.85
570-1-1	PERFORMANCE TURF	1,866.66	SY	$0.51	$952.00

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	7,279.96	LF	$0.85	$6,187.97
104-11	FLOATING TURBIDITY BARRIER	132.57	LF	$6.00	$795.42
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	132.57	LF	$3.04	$403.01
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29

107-1	LITTER REMOVAL	0.64 AC	$18.24	$11.67
107-2	MOWING	0.64 AC	$30.96	$19.81
	Shoulder Component Total			$48,243.91

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	9.55	CY	$944.21	$9,017.21
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	432.00	LF	$53.31	$23,029.92
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	89.09	LF	$75.14	$6,694.22
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	22.00	EA	$882.95	$19,424.90
570-1-1	PERFORMANCE TURF	373.33	SY	$0.51	$190.40
	Drainage Component Total				$58,356.65

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	2.00	AS	$241.88	$483.76
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	11.00	AS	$641.37	$7,055.07
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	2.00	AS	$2,814.25	$5,628.50
	Signing Component Total				$13,167.33

Sequence 10 Total $562,020.27

Sequence: 11 MIS - Miscellaneous Construction **Net Length:** 0.000 MI 0 LF

Description: Diamond - Ponds & Overhead Signing

DRAINAGE COMPONENT

Retention Basin 1

Description	Value
Size	10 AC
Multiplier	1
Depth	5.00
Description	Pond 2A1 & 2A2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	10.00	AC	$6,275.33	$62,753.30
120-1	REGULAR EXCAVATION	80,666.67	CY	$3.73	$300,886.68
400-2-2	CONC CLASS II, ENDWALLS	36.00	CY	$944.21	$33,991.56
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00	EA	$2,336.00	$4,672.00
425-2-71	MANHOLES, J-7, <10'	2.00	EA	$3,958.29	$7,916.58
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	100.00	LF	$101.07	$10,107.00
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	400.00	LF	$177.79	$71,116.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	2,780.00	LF	$8.43	$23,435.40
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	3.00	EA	$2,006.82	$6,020.46
570-1-1	PERFORMANCE TURF	48,400.00	SY	$0.51	$24,684.00

Retention Basin 2

Description	Value
Size	10 AC
Multiplier	1
Depth	1.00
Description	FPC-South Exp.

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	10.00	AC	$6,275.33	$62,753.30
120-1	REGULAR EXCAVATION	16,133.33	CY	$3.73	$60,177.32
400-2-2	CONC CLASS II, ENDWALLS	36.00	CY	$944.21	$33,991.56
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	2,780.00	LF	$8.43	$23,435.40
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	3.00	EA	$2,006.82	$6,020.46
570-1-1	PERFORMANCE TURF	48,400.00	SY	$0.51	$24,684.00
	Drainage Component Total				$756,645.02

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-21-12	MULTI- POST SIGN, F&I, 51-100	10.00	AS	$3,767.64	$37,676.40
700-22-133	OHD TRUSS SPAN SGN,F&I,T101-150,S501-700	3.00	AS	$140,579.21	$421,737.63
700-23-121	OHD TRUSS CANT SGN,F&I,T31-40,S100 OR <	3.00	AS	$40,567.53	$121,702.59

Signing Component Total	$581,116.62
Sequence 11 Total	$1,337,761.64

Sequence: 12 WDR - Widen/Resurface, Divided, Rural **Net Length:** 0.237 MI 1,250 LF

Description: Matanzas Woods Parkway - Segment 3 - NB Ramps to Old Kings Road Extension - High Speed Urban 4-lane with Widening and Resurfacing

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	80.00 / 23.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.237
Top of Structural Course For Begin Section	104.00
Top of Structural Course For End Section	104.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.96	AC	$6,275.33	$18,574.98
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	3,058.88	CY	$9.14	$27,958.16
	Earthwork Component Total				$46,533.14

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Existing Roadway Pavement Width L/R	0.00 / 24.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	28.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 4.00
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	9,720.48	SY	$2.63	$25,564.86
285-709	OPTIONAL BASE,BASE GROUP 09	4,535.30	SY	$10.97	$49,752.24
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	3,332.74	SY	$1.44	$4,799.15
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	366.60	TN	$77.06	$28,250.20
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	733.20	TN	$77.06	$56,500.39
337-7-5	ASPH CONC FC, INC BIT/RUBBER,	133.31	TN	$95.00	$12,664.45

	FC-5			
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	177.75 TN	$95.00	$16,886.25

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	96.00 EA	$3.27	$313.92
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.89 NM	$790.36	$1,493.78
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.95 GM	$220.44	$209.42
	Roadway Component Total			$196,434.66

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	8.00 / 8.00
New Total Outside Shoulder Width L/R	8.00 / 8.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 2.67
Existing Paved Outside Shoulder Width L/R	0.00 / 0.00
New Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,480.29 SY	$11.00	$16,283.19
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	76.38 TN	$77.06	$5,885.84
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	55.55 TN	$95.00	$5,277.25
570-1-1	PERFORMANCE TURF	741.53 SY	$0.51	$378.18

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
522-1	SIDEWALK CONC, 4" THICK	700.00 SY	$27.11	$18,977.00

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,874.48 LF	$0.85	$2,443.31
104-11	FLOATING TURBIDITY BARRIER	23.67 LF	$6.00	$142.02

104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	23.67 LF	$3.04	$71.96
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.80 AC	$18.24	$14.59
107-2	MOWING	0.80 AC	$30.96	$24.77
	Shoulder Component Total			$51,467.40

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50
New Total Median Shoulder Width L/R	11.00 / 11.00
New Paved Median Shoulder Width L/R	0.00 / 0.00
Existing Total Median Shoulder Width L/R	0.00 / 6.00
Existing Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,430.12 SY	$0.51	$1,239.36

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	2,500.00 LF	$12.23	$30,575.00
	Median Component Total			$31,814.36

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	4.26 CY	$944.21	$4,022.33
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	192.00 LF	$53.31	$10,235.52
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	18.94 LF	$75.14	$1,423.15
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	10.00 EA	$882.95	$8,829.50
570-1-1	PERFORMANCE TURF	166.64 SY	$0.51	$84.99

Box Culvert 1

Description	Value
Size	Dbl. 8 x 5
Length	50.00
Multiplier	1

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount

400-4-1	CONC CLASS IV, CULVERTS	91.70 CY	$500.00	$45,850.00
415-1-1	REINF STEEL- ROADWAY	12,784.00 LB	$1.00	$12,784.00

Retention Basin 2

Description	Value
Size	1 AC
Multiplier	1
Depth	0.50
Description	Pond 3A

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-541	INLETS, DT BOT, TYPE D, <10'	1.00	EA	$2,336.00	$2,336.00

Retention Basin 3

Description	Value
Size	1.5 AC
Multiplier	1
Depth	1.50
Description	FPC-3A

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.50	AC	$6,275.33	$9,413.00
120-1	REGULAR EXCAVATION	3,630.00	CY	$3.73	$13,539.90
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	1,025.00	LF	$8.43	$8,640.75
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	1.00	EA	$2,006.82	$2,006.82
570-1-1	PERFORMANCE TURF	7,260.00	SY	$0.51	$3,702.60
	Drainage Component Total				$122,868.56

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	6.00	AS	$641.37	$3,848.22
700-20-40	SINGLE POST SIGN, RELOCATE	1.00	AS	$93.89	$93.89
700-20-60	SINGLE POST SIGN, REMOVE	6.00	AS	$18.17	$109.02
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
700-21-60	MULTI- POST SIGN, REMOVE	1.00	AS	$405.94	$405.94
	Signing Component Total				$7,513.20

LIGHTING COMPONENT

Rural Lighting Subcomponent

Description	Value
Multiplier (Number of Poles)	10

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I,	6,000.00	LF	$1.75	$10,500.00

	INSUL, NO.4-2			
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	2,000.00 LF	$2.87	$5,740.00
715-4-122	LIGHT POLE COMP, F&I, WS130, 45'	10.00 EA	$3,834.21	$38,342.10
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	10.00 EA	$318.30	$3,183.00
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	10.00 EA	$575.93	$5,759.30
	Subcomponent Total			$63,524.40
	Lighting Component Total			$63,524.40

Sequence 12 Total $520,155.72

Sequence: 13 WDR - Widen/Resurface, Divided, Rural **Net Length:** 0.171 MI 900 LF

Description: Matanzas Woods Parkway - Segment 3 - Old Kings Road Extension to Old Kings Road Existing - High Speed Urban 4-lane with Widening and Resurfacing

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	80.00 / 23.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.170
Top of Structural Course For Begin Section	104.00
Top of Structural Course For End Section	104.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.12	AC	$6,275.33	$13,303.70
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	2,337.75	CY	$9.14	$21,367.04
	Earthwork Component Total				$34,670.74

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Existing Roadway Pavement Width L/R	0.00 / 24.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	28.00 / 4.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	7,001.87	SY	$2.63	$18,414.92
285-709	OPTIONAL BASE,BASE GROUP 09	3,266.87	SY	$10.97	$35,837.56
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	2,400.64	SY	$1.44	$3,456.92
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	264.07	TN	$77.06	$20,349.23
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	528.14	TN	$77.06	$40,698.47
337-7-5	ASPH CONC FC, INC BIT/RUBBER,	96.03	TN	$95.00	$9,122.85

	FC-5			
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	128.03 TN	$95.00	$12,162.85

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	69.00 EA	$3.27	$225.63
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.36 NM	$790.36	$1,074.89
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.68 GM	$220.44	$149.90
	Roadway Component Total			$141,493.22

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	8.00 / 8.00
New Total Outside Shoulder Width L/R	8.00 / 8.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 2.67
Existing Paved Outside Shoulder Width L/R	0.00 / 0.00
New Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,066.28 SY	$11.00	$11,729.08
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	55.01 TN	$77.06	$4,239.07
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	40.01 TN	$95.00	$3,800.95
570-1-1	PERFORMANCE TURF	534.14 SY	$0.51	$272.41

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
522-1	SIDEWALK CONC, 4" THICK	500.00 SY	$27.11	$13,555.00

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,070.55 LF	$0.85	$1,759.97
104-11	FLOATING TURBIDITY BARRIER	17.05 LF	$6.00	$102.30

104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	17.05 LF	$3.04	$51.83
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.58 AC	$18.24	$10.58
107-2	MOWING	0.58 AC	$30.96	$17.96
	Shoulder Component Total			$37,508.44

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50
New Total Median Shoulder Width L/R	11.00 / 11.00
New Paved Median Shoulder Width L/R	0.00 / 0.00
Existing Total Median Shoulder Width L/R	0.00 / 6.00
Existing Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	1,750.47 SY	$0.51	$892.74

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	1,800.00 LF	$12.23	$22,014.00
	Median Component Total			$22,906.74

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	3.07 CY	$944.21	$2,898.72
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	144.00 LF	$53.31	$7,676.64
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	13.64 LF	$75.14	$1,024.91
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	7.00 EA	$882.95	$6,180.65
570-1-1	PERFORMANCE TURF	120.03 SY	$0.51	$61.22

Box Culvert 1

Description	Value
Size	Dbl. 8 x 5
Length	50.00
Multiplier	2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount

400-4-1	CONC CLASS IV, CULVERTS	183.40 CY	$500.00	$91,700.00
415-1-1	REINF STEEL- ROADWAY	25,568.00 LB	$1.00	$25,568.00
	Drainage Component Total			$135,110.14

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	5.00	AS	$641.37	$3,206.85
700-20-40	SINGLE POST SIGN, RELOCATE	1.00	AS	$93.89	$93.89
700-20-60	SINGLE POST SIGN, REMOVE	5.00	AS	$18.17	$90.85
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
700-21-60	MULTI- POST SIGN, REMOVE	1.00	AS	$405.94	$405.94
	Signing Component Total				$6,853.66

LIGHTING COMPONENT

Rural Lighting Subcomponent

Description	Value
Multiplier (Number of Poles)	6

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	3,600.00	LF	$1.75	$6,300.00
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	1,200.00	LF	$2.87	$3,444.00
715-4-122	LIGHT POLE COMP, F&I, WS130, 45'	6.00	EA	$3,834.21	$23,005.26
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	6.00	EA	$318.30	$1,909.80
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$575.93	$3,455.58
	Subcomponent Total				$38,114.64
	Lighting Component Total				$38,114.64

Sequence 13 Total $416,657.58

Sequence: 14 NDS - New, Divided, Suburban (Urban In/Rural Out) **Net Length:** 0.331 MI 1,750 LF

Description: Matanzas Woods Parkway - Segment 3 - Old Kings Road Extension to Old Kings Road Existing - High Speed Urban 4-lane with New Construction

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	60.00 / 60.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.331
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	90.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	4.81	AC	$6,275.33	$30,184.34
120-6	EMBANKMENT	96,153.47	CY	$5.19	$499,036.51
	Earthwork Component Total				$529,220.85

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	28.00 / 28.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	15,001.55	SY	$2.63	$39,454.08
285-709	OPTIONAL BASE,BASE GROUP 09	11,144.23	SY	$10.97	$122,252.20
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,796.45	TN	$77.06	$138,434.44
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	435.50	TN	$95.00	$41,372.50

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit	Extended Amount

			Price	
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	134.00 EA	$3.27	$438.18
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	2.65 NM	$790.36	$2,094.45
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.33 GM	$220.44	$293.19
	Roadway Component Total			$344,339.04

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 8.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 2.67
Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	2,072.53 SY	$11.00	$22,797.83
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	106.93 TN	$77.06	$8,240.03
337-7-5	ASPH CONC FC, INC BIT/RUBBER, FC-5	77.77 TN	$95.00	$7,388.15
570-1-1	PERFORMANCE TURF	1,038.21 SY	$0.51	$529.49

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
522-1	SIDEWALK CONC, 4" THICK	1,000.00 SY	$27.11	$27,110.00

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,549.46 LF	$0.85	$3,867.04
104-11	FLOATING TURBIDITY BARRIER	82.85 LF	$6.00	$497.10
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	82.85 LF	$3.04	$251.86
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.63 AC	$18.24	$11.49
107-2	MOWING	0.63 AC	$30.96	$19.50
	Shoulder Component Total			$72,681.78

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	16.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	3,499.58 LF	$12.23	$42,799.86
570-1-1	PERFORMANCE TURF	3,110.74 SY	$0.51	$1,586.48
	Median Component Total			$44,386.34

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	5.97 CY	$944.21	$5,636.93
425-1-551	INLETS, DT BOT, TYPE E, <10'	3.00 EA	$2,423.32	$7,269.96
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	137.86 LF	$48.53	$6,690.35
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	78.21 LF	$75.14	$5,876.70
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	3.00 EA	$882.95	$2,648.85
570-1-1	PERFORMANCE TURF	127.26 SY	$0.51	$64.90

Retention Basin 1

Description	Value
Size	2.5 AC
Multiplier	1
Depth	4.00
Description	Pond 4A

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.50 AC	$6,275.33	$15,688.32
120-1	REGULAR EXCAVATION	16,133.33 CY	$3.73	$60,177.32
400-2-2	CONC CLASS II, ENDWALLS	18.00 CY	$944.21	$16,995.78
425-1-361	INLETS, CURB, TYPE P-6, <10'	1.00 EA	$3,475.77	$3,475.77
425-2-71	MANHOLES, J-7, <10'	1.00 EA	$3,958.29	$3,958.29
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	50.00 LF	$101.07	$5,053.50
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	200.00 LF	$177.79	$35,558.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	1,335.00 LF	$8.43	$11,254.05
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	1.00 EA	$2,006.82	$2,006.82
570-1-1	PERFORMANCE TURF	12,100.00 SY	$0.51	$6,171.00
	Drainage Component Total			$188,526.55

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	8.00 AS	$241.88	$1,935.04
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	1.00 AS	$641.37	$641.37
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00 AS	$2,814.25	$2,814.25
700-21-12	MULTI- POST SIGN, F&I, 51-100	1.00 AS	$3,767.64	$3,767.64

Signing Component Total $9,158.30

LIGHTING COMPONENT

Rural Lighting Subcomponent

Description	**Value**
Multiplier (Number of Poles)	12

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	7,200.00	LF	$1.75	$12,600.00
715-2-11	LIGHTING-CONDUIT, F&I, UNDERGROUND	2,400.00	LF	$2.87	$6,888.00
715-4-122	LIGHT POLE COMP, F&I, WS130, 45'	12.00	EA	$3,834.21	$46,010.52
715-14-11	LIGHTING - PULL BOX,F&I,ROADSIDE-MOULDED	12.00	EA	$318.30	$3,819.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	12.00	EA	$575.93	$6,911.16
	Subcomponent Total				$76,229.28

Lighting Component Total $76,229.28

Sequence 14 Total $1,264,542.14

Sequence: 15 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.152 MI 800 LF

Description: Segment 3 - Left and Right Turn Lanes

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.151
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	373.84 CY	$9.14	$3,416.90
	Earthwork Component Total			$3,416.90

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Existing Roadway Pavement Width L/R	0.00 / 0.00
Structural Spread Rate	275
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	12.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,295.87 SY	$2.63	$3,408.14
285-709	OPTIONAL BASE,BASE GROUP 09	1,095.89 SY	$10.97	$12,021.91
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	146.65 TN	$77.06	$11,300.85
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	87.99 TN	$95.36	$8,390.73

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	1

Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.30	NM	$790.36	$237.11
	Roadway Component Total				$35,358.74

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	474.62	SY	$0.51	$242.06
	Median Component Total				$242.06

Sequence 15 Total $39,017.70

Sequence: 16 WUR - Widen/Resurface, Undivided, Rural **Net Length:** 0.129 MI 680 LF

Description: Palm Coast Parkway - SB Off-Ramp - Dual Left Turn

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	30.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.129
Top of Structural Course For Begin Section	104.00
Top of Structural Course For End Section	104.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.47	AC	$6,275.33	$2,949.41
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	666.74	CY	$9.14	$6,094.00
	Earthwork Component Total				$9,043.41

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Existing Roadway Pavement Width L/R	12.00 / 12.00
Structural Spread Rate	165
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	12.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,662.38	SY	$2.63	$4,372.06
285-709	OPTIONAL BASE,BASE GROUP 09	931.69	SY	$10.97	$10,220.64
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	1,813.50	SY	$1.44	$2,611.44
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	149.61	TN	$77.06	$11,528.95
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	124.68	TN	$77.06	$9,607.84
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	149.61	TN	$95.36	$14,266.81
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	74.81	TN	$95.36	$7,133.88

Pavement Marking Subcomponent

Description	Value

Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	70.00	EA	$3.27	$228.90
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.52	NM	$790.36	$410.99
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.52	GM	$220.44	$114.63
	Roadway Component Total				$60,496.14

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	10.00 / 10.00
New Total Outside Shoulder Width L/R	10.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 0.00
Existing Paved Outside Shoulder Width L/R	5.00 / 5.00
New Paved Outside Shoulder Width L/R	5.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	402.75	SY	$11.00	$4,430.25
327-70-1	MILLING EXIST ASPH PAVT, 1" AVG DEPTH	755.63	SY	$1.00	$755.63
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	20.78	TN	$77.06	$1,601.31
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	31.17	TN	$95.36	$2,972.37
570-1-1	PERFORMANCE TURF	201.75	SY	$0.51	$102.89

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,564.15	LF	$0.85	$1,329.53
104-11	FLOATING TURBIDITY BARRIER	12.88	LF	$6.00	$77.28
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	12.88	LF	$3.04	$39.16
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$1,969.29	$1,969.29
107-1	LITTER REMOVAL	0.15	AC	$18.24	$2.74
107-2	MOWING	0.15	AC	$30.96	$4.64
	Shoulder Component Total				$13,285.09

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.32	CY	$944.21	$2,190.57
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	24.00	LF	$53.31	$1,279.44
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	8.24	LF	$75.14	$619.15
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	2.00	EA	$882.95	$1,765.90
570-1-1	PERFORMANCE TURF	52.04	SY	$0.51	$26.54
	Drainage Component Total				$5,881.60

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	1.00	AS	$241.88	$241.88
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	3.00	AS	$641.37	$1,924.11
700-20-40	SINGLE POST SIGN, RELOCATE	1.00	AS	$93.89	$93.89
700-20-60	SINGLE POST SIGN, REMOVE	3.00	AS	$18.17	$54.51
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	1.00	AS	$2,814.25	$2,814.25
700-21-60	MULTI- POST SIGN, REMOVE	1.00	AS	$405.94	$405.94
	Signing Component Total				$5,534.58

Sequence 16 Total $94,240.82

Date: 10/26/2011 4:17:35 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: MATSWD-1-52-01 **Letting Date:** 01/2099

Description: MATANZAS WOODS PARKWAY INTERCHANGE from US 1 to Old Kings Road

District: 05 **County:** 73 FLAGLER **Market Area:** 07 **Units:** English

Contract Class: 1 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.755 MI

Project Manager: SIRMANS

Version 13-P Project Grand Total **$25,538,211.88**

Description: Matanzas Wood Parkway - Preferred Alternative - (US 1 to Old Kings Road & Diamond Interchange)

Project Sequences Subtotal			**$18,245,211.55**
102-1	Maintenance of Traffic	10.00 %	$1,824,521.16
101-1	Mobilization	10.00 %	$2,006,973.27
Project Sequences Total			**$22,076,705.98**
Project Unknowns		15.00 %	$3,311,505.90
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$150,000.00	$150,000.00
Project Non-Bid Subtotal					**$150,000.00**
Version 13-P Project Grand Total					**$25,538,211.88**

Appendix G

Public Hearing Transcripts

ORIGINAL

IN RE:

CITY OF PALM COAST
INTERSTATE 95 & MATANZAS WOODS PARKWAY INTERCHANGE
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
FROM US 1 TO OLD KINGS ROAD

PUBLIC HEARING

DATE: Tuesday, November 29, 2011

TIME: 5:00 p.m. until 6:27 p.m.

PLACE: Palm Coast Community Center
305 Palm Coast Parkway Northeast
Palm Coast, Florida 32137

REPORTED BY: JESSICA BARRON
Court Reporter and Notary Public

APPEARANCES:

ANDRE E. LAUZIER, P.E. - Project Manager
BRIAN P. RIBARIC, P.E.
HDR Engineering, Inc.
315 East Robinson Street
Suite 400
Orlando, Florida 32801
(407) 420-4200

FAITH ALKHATIB, P.E., M.B.A.
Flagler County Engineer
1769 East Moody Boulevard
Building 2, Suite 309
Bunnell, Florida 32110

ALSO PRESENT:

Others as may appear in the transcript.

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1 P R O C E E D I N G S
2 FAITH ALKHATIB: Hello and welcome. Can you hear
3 me? No?
4 ANDRE LAUZIER: I turned it up.
5 FAITH ALKHATIB: You turned it up? Okay. Good.
6 My name is Faith Alkhatib. I'm a Flagler County
7 engineer. I would like to thank you for taking the
8 time to come and attend the I-95 and Matanzas Woods
9 Parkway and Interchange PD&E public hearing. Tonight,
10 first of all, I would like to acknowledge our public
11 officials who are here with us tonight. I know we do
12 have with us Commissioner Anderson, Commissioner Nate.
13 Is he still here? I always ask about him. I think he
14 left. I know Commissioner Jane is here with us too
15 tonight. Anybody else here? Any public officials?
16 I'm sorry.
17 MARSHALL SHUPE: Marshall Shupe. I'm Flagler
18 Beach.
19 FAITH ALKHATIB: All right. Thank you all for
20 coming. And also, I would like to acknowledge the
21 staff, Suzanne Steele, I know, Brian, and a lot of
22 staff are here with us to talk about this project. We
23 do value your input, your comments, and this is the
24 perfect timing to provide us with any issues or
25 comments you have on this project. And I will turn it

over to our project managers, Andy and Brian, to start our presentation for the night.

ANDRE LAUZIER: I'd like to welcome you to the public hearing for the I-95 and Matanzas Woods Parkway Interchange Project Development and Environmental or PD&E study. My name is Andy Lauzier, and I'm the project manager for HDR Engineering and serving as a consultant to Flagler County. Before -- I was going to recognize elected officials, but Faith went ahead and did that for me. And of course, Faith is here along with Richard Gordon from Flagler County, and there are technical staff available to answer questions.

We've already talked with many of you all ahead of time. Just look for someone wearing a nametag similar to mine if you do have questions after the presentation. The purpose of tonight's meeting is to share information about the proposed project and serve as the official forum to give interested parties the opportunity to express their views concerning the location, the conceptual design, and the social, economic, and environmental impacts of the proposed improvements.

We're here to provide project background information and receive comments on the preferred

alternative for the improvements. We will also provide a brief summary of the study process and the results to date.

I'd like to go over and cover a few administrative items for this hearing which are required by law, and this is a little dry, so I'm going to have to read it because a lot of things have to be read into the record.

This public hearing is being held relative to Flagler County Project FC-10-R04 and FDOT Financial Project No. 411959-2-28-01. The project limits for this study include a proposed interchange at Matanzas Woods Parkway and Interstate 95, as well as improvements to Matanzas Woods Parkway from US 1 to Old Kings Road, a total distance of approximately 3 miles. This study is being conducted by Flagler County.

As you entered tonight, you should have received a project handout. That handout includes a summary of the information to be provided tonight.

Before we proceed with the formal presentation, I need to read several administrative statements into the public record. The project presentation will then follow,

lasting about 30 minutes. And after that we'll take an intermission, and then we'll begin the public testimony portion of this hearing.

This hearing is being held to give all interested persons the right to understand the project and comment on their concerns to Flagler County. This public hearing was advertised consistent with federal and state requirements, and is being conducted consistent with the Americans with Disabilities Act of 1990. It was advertised in the Florida Administrative Weekly and the Flagler/Palm Coast News-Tribune. Notification letters to property owners were mailed on or about November 1st.

Public participation at this hearing is encouraged and solicited without regard to race, color, creed, religion, sex, age, national origin, disability, or family status. This information is also provided in the project brochure and on a sign displayed at the public hearing.

There are no relocations anticipated with this project.

I -- my text just changed. I've got really small text, and I do need to read this into the

record, so excuse me. The public hearing is being held in accordance with the Federal Highway Act of 1968 as amended; 23 United States Code 120 (sic); 40 Code of Federal Regulations 1500 through 1508, and 23 Code of Federal Regulation 771; Section 339.155 of Florida Statutes; Executive Order 11988, Floodplain Management; and Executive Order 11990, Protection of Wetlands of the Constitution of the United States of America.

This project is also being conducted in accordance with the Florida Department of Transportation's Project Development and Environment Manual, which incorporates all the following requirements listed here, including the National Environmental Policy Act, or NEPA, federal laws and executive orders, applicable federal regulations, as well as state laws and regulations.

Throughout our study, we have been coordinating with key stakeholders including Flagler County, the City of Palm Coast, FDOT, and the Federal Highway Administration. We are also soliciting public input.

As part of the public involvement activities, one public meeting was held in

1 August. Tonight, this is a formal public
2 hearing, and the study team has also been
3 available to respond to questions throughout the
4 study.
5 We'll get into the project itself in a
6 little bit. The project limits for the study
7 include the proposed interchange of Matanzas
8 Woods Parkway and Interstate 95, and improvements
9 to Matanzas Woods Parkway from US 1 to Old Kings
10 Road, again, a distance of approximately
11 three miles. A planned interchange at Interstate
12 95 and Matanzas Woods Parkway was first
13 identified in the original ITT Community
14 Development Corporation Plans. In 2007, Flagler
15 County built the extension of Matanzas Woods
16 Parkway from its terminus at that time, Birds of
17 Paradise Drive -- Bird of Paradise Drive to Old
18 Kings Road, including the existing two-lane
19 bridge over Interstate 95.
20 In 2008, Flagler County and FDOT initiated
21 an interchange justification report for the
22 proposed Interstate 95 and Matanzas Woods Parkway
23 interchange. The interchange justification
24 report included an extensive traffic analysis of
25 both the planned interchange and necessary cross

1 street improvements. The interchange
2 justification report was coordinated through the
3 Federal Highway Administration, and was approved
4 in February of 2011. The PD&E study we're
5 discussing here tonight is the next step in the
6 process for this project.
7 The first step in the project development
8 process was to identify the purpose and need for
9 the project. The purpose and need for this
10 project includes additional access to I-95,
11 enhanced safety, and improved mobility and
12 evacuation routes, enhanced safety along Matanzas
13 Woods Corridor for both vehicular and pedestrian
14 users.
15 Our team took the traffic results from the
16 interchange justification report which, as I
17 mentioned, was approved earlier this year, and
18 determined the following improvements were needed
19 to meet future travel demands: The interchange
20 ramps at Interstate 95 and Matanzas Woods Parkway
21 are needed in 2015; four-lane widening of
22 Matanzas Woods Parkway from US 1 to the
23 southbound ramps is needed in 2019; and the
24 remainder of Matanzas Woods Parkway from the
25 southbound ramps to Old Kings Road, including the

1 bridge over Interstate 95, is needed to be
2 four-laned in 2027.
3 As we developed the project alternatives,
4 they were evaluated for satisfying the purpose
5 and need, and for potential impacts to social,
6 natural, and physical environments, and project
7 costs. Two alternatives are being considered for
8 the project: The no build alternative, or do
9 nothing alternative, and the build alterative.
10 In the build alternative, we examine two
11 alternative interchange concepts, and for
12 Matanzas Woods Parkway, planned improvements
13 follow the existing roadway alignment.
14 Although it's true the main advantage of the
15 no build alternative is the absence of
16 construction-related activities and costs, there
17 are several drawbacks to the no build
18 alternative, which include no additional access
19 to Interstate 95, limited evacuation routes, and
20 increased congestion. The no build alternative
21 will remain a viable alternative through the
22 study process.
23 And at this time I'd like to introduce our
24 project engineer, Brian Ribaric, who is going to
25 present the preferred alternative for the study.

1 BRIAN RIBARIC: Okay. Thank you. Thanks, Andy.
2 Matanzas Woods Parkway Corridor was divided into three
3 different segments. The first segment is from US 1 to
4 the southbound interchange ramps. The second segment
5 is from the southbound interchange ramps to the
6 northbound interchange ramps, and also includes the
7 interchange ramps themselves to I-95. Segment 3 is
8 from the northbound interchange ramps all the way to
9 Old Kings Road.
10 Now we'll talk about each of the segments
11 individually. Segment 1, as I mentioned, is from
12 US 1 to the southbound ramps. It's approximately
13 two miles in length. The existing typical
14 section is a two-lane roadway with 12-foot travel
15 lanes in the northern half the existing
16 right-of-way.
17 The proposed roadway is a four-lane divided
18 facility with curb and gutter on the inside and
19 outside, and the 17-and-a-half foot median.
20 Four-foot on-street bike lanes are provided,
21 along with a proposed 10-foot sidewalk on the
22 south side, consistent with Flagler County's
23 plans, and a five-foot sidewalk would also be
24 constructed on the north side of the roadway.
25 With the addition of the median, access

1 management is needed along the corridor. There
2 are three primary goals to access management: To
3 protect public safety and general welfare, to
4 provide for the mobility of goods and people, and
5 preserve the functional integrity of the roadway
6 network.
7 These are the locations for the full access,
8 which shows -- which will allow left turns from
9 the side street, both to and from the side
10 street. In addition, there are two signal
11 locations: One at US 1, one that's warranted,
12 and will maintain the existing signal at Belle
13 Terre and Lakeview. In addition, at Luther Drive
14 we'll have a directional median access, which
15 will allow left and right turns onto Luther
16 Drive, and only allow right turns out of Luther.
17 The existing two-lane bridge over the
18 Belleaire Waterway was originally built in 1980.
19 It includes a shelf on the south portion of the
20 bridge for utility line. A Flagler County
21 pedestrian bridge will be located south of the
22 existing bridge, and will remain in the future.
23 Based on the age of the existing bridge, the
24 preferred alternative is the construction of a
25 single new bridge, which would include the

on-street bike lanes and sidewalk over the Belleaire Waterway. Right-of-way for the roadway is only required for the right turn lane onto Belle Terre Parkway.

Segment 2, as I mentioned, is within the interchange area for the -- between the northbound/southbound ramps. It's about a quarter mile in length. The existing typical section is once again the two-lane roadway with 12-foot travel lanes and guardrail as it approaches the bridge, along with a eight-foot sidewalk, all located in the southern portion of the right-of-way.

The preferred alternative is once again a four-lane section with 12-foot lanes. This section has a 22-foot median with raised -- with curb and gutter on the inside and outside. We have the four-foot bike lanes once again. We'll maintain the existing eight-foot sidewalk and we'll construct a new five-foot sidewalk on the north side.

The median location for this segment is at the terminus of the interchange ramps with Matanzas Woods Parkway, and when warranted, a signal could be constructed.

1 The bridge -- the existing bridge over I-95
2 was completed in 2006 with the Matanzas Woods
3 Parkway Extension. The proposed improvement is
4 to widen this bridge to accommodate the four
5 lanes, including the on-street bike lanes and the
6 sidewalk. This will allow us to maximize the use
7 of that existing bridge.
8 The preferred interchange configuration is a
9 diamond interchange with ramps on each side of
10 Matanzas Woods Parkway, allowing full access to
11 Interstate 95. In addition to this project, a
12 border width variation is required to avoid
13 right-of-way impacts along the ramps. The border
14 width is area between the edge of the pavement
15 and where the right-of-way line is, that allows
16 for drainage and maintenance.
17 A portion of Matanzas Woods Parkway on each
18 side of the bridge will be -- require
19 reconstruction to safely accommodate traffic
20 turning onto the ramp entrances. The limits of
21 the reconstruction are from approximately Luther
22 Drive to a hundred feet west of the bridge, and
23 then approximately a hundred feet east of the
24 bridge down to the existing county pond, which we
25 have labeled as 3A on the boards at the side of

the room.

With the interchange ramps, we propose a one-lane interchange -- one-lane ramp with 15-foot travel lanes and paved shoulders on both the inside and the outside. Segment 3 is located from the southbound ramp -- excuse me -- from the northbound ramps to Old Kings Road with a distance of approximately three quarters of a mile.

The existing typical section is a two-lane roadway with 12-foot travel lanes in the southern half of the right-of-way, along with a eight-foot sidewalk. The proposed typical section is the four twelve-foot travel lanes with a 30-foot raised grass median with curb and gutter. There are five-foot paved shoulders, which also can be used as a bike lane, and will also maintain that eight-foot sidewalk on the south side, and we'll construct a new five-foot sidewalk along the north side of the right-of-way.

The median access for this segment would be at the school bus loop driveway near the eastern end of the project, and also a full access with a signal when warranted would be at the Old Kings Road Extension. The right-of-way required for

this segment is needed due to the realignment of Matanzas Woods Parkway to allow for a better connection with the Palm Harbor Parkway Extension. This requires a right-of-way take on the corner of the school property.

Preferred pond locations have not -- have been identified for the four basins along the project. The actual pond locations will not be finalized and acquired until the project has moved into the final design and construction phases. For Basin 1, the preferred pond location is Pond 1B and Floodplain Compensation Pond 1B, which is located near the intersection of Matanzas Woods Parkway and Londonderry Drive.

For Basin 2, the ponds will be located within the interchange area on the west side of the interstate, and are all contained within the existing right-of-way. Basin 3 requires the modification of the existing county pond labeled as Pond 3A on the boards, and expanding the existing county floodplain further to the south for the impacts due to the interchange.

In addition, Floodplain Compensation Pond 3A, located north of the cell tower site, will be utilized for floodplain compensation for the

1 four-laning of Matanzas Woods Parkway. And also,
2 this could be expanded to accommodate Old Kings
3 Road Extension Project as needed.
4 The final basin, Basin 4, requires the
5 expansion of the existing county facility,
6 labeled here as Pond 4A.
7 For the -- based on the analysis performed,
8 there are no impacts for the preferred
9 alternative with regards to land use, cultural
10 resources, threatened and endangered species, air
11 quality, and no relocations are anticipated.
12 This project meets the maximum air quality
13 standards established by the U.S. Environmental
14 Protection Agency. Also based on the analysis,
15 there were found to be impacts for the preferred
16 alternative with regards to wetlands,
17 floodplains, noise, and right-of-way.
18 What this chart provides is a summary of the
19 impacts based on the study segments for the
20 preferred alternative and for the no build
21 alternative. We'll go -- we're going to go
22 through each column individually. The first
23 column is the diamond interchange. As noted
24 here, it does not require any additional
25 right-of-way. No relocations are required.

1 There are 12 sites that are impacted due to noise
2 within the interchange area. There is
3 approximately 13.8 acres of wetland impacts,
4 along with 4.7 acres of floodplain impacts --
5 excuse me -- acre-feet of floodplain impacts.
6 The four-lane for Matanzas Woods Parkway for
7 Segment 1, which is from US 1 to the southbound
8 interchange ramps, will require approximately 5.7
9 acres of right-of-way for both the roadway and
10 storm water pond improvements. This will impact
11 three parcels. However, no relocations will be
12 required.
13 There are 49 impacted noise sites along the
14 two-mile corridor. The impacts to both wetlands
15 and floodplains are approximately .2 acres each.
16 For Segment 2, which is between the interchange
17 ramps, and this is just for the four lanes of
18 Matanzas Woods Parkway, no right-of-way is
19 required, and there are no impacted noise sites
20 for the four-lane. The wetland and floodplain
21 impacts were included in the diamond interchange
22 alternative.
23 The final segment, Segment 3, from the
24 northbound ramps to Old Kings Road, for the four
25 lanes, will require approximately 1.7 acres of

right-of-way for both the roadway and pond improvements. Two parcels will be impacted by these improvements. There are no impacted noise sites. There is approximately 1.6 acres of wetlands, and approximately 0.8 acre-feet of floodplain impacts.

The final column is -- the fifth column summarizes the totals for all three of the segments for the Matanzas Woods Parkway four-lane. The final column is for the no build scenario. As stated for the no build, is to do nothing. So there will be no right-of-way impacts, no parcels impacted, no relocations. However, there will still be 36 sites impacted for noise. While the right-of-way limits have not been finalized, an acquisition will not occur until the project's moved to the final design and construction phases.

A noise abatement analysis was conducted for the preferred alternative. The result was that the noise abatement was not cost-feasible. In addition, the mitigation requirements for the floodplains and the wetlands will be determined during the final design stages, in accordance with Water Management District guidelines.

1 The costs -- this is a summary of the costs,
2 and they're provided based on present day
3 dollars. All the costs include the cost for
4 construction, engineering services, environmental
5 mitigation, and right-of-way. The first need
6 based on the traffic is the construction of the
7 interchange ramps to connect with the two lanes
8 of Matanzas Woods Parkway. The cost for this
9 total project is approximately $9 million.
10 The next phase based on the need includes
11 the cost of four-laning Matanzas Woods Parkway
12 from US 1 to the southbound interchange ramps,
13 with cost of approximately $16.1 million. The
14 final phase based on need is from the southbound
15 ramps to Old Kings Road, including the bridge
16 over the Interstate 95, would have a cost of
17 approximately $10.4 million. And of course, with
18 the no build, that alternative has a zero-dollar
19 cost.
20 We are currently completing the first line,
21 the PD&E study, as part of our schedule. The
22 design for the interchange ramp is currently
23 funded with local Transportation Impact fees, and
24 should begin in 2012. Construction for the
25 interchange ramps is tentatively funded for 2015.

1 Currently, the design for the four-lane
2 improvements to Matanzas Woods Parkway is not
3 funded for either design, right-of-way
4 acquisition, or construction.
5 This concludes the technical portion of our
6 presentation tonight. The next segment of
7 tonight's hearing is to provide you the
8 opportunity to make formal statements before all
9 of us here, using the microphone. Anyone
10 desiring to make a statement or present written
11 views and/or exhibits regarding the location,
12 conceptual design, social, economic, and
13 environmental effects of the improvements that we
14 presented tonight, will have opportunity to do
15 so.
16 If you'd like to do that, you need to fill
17 out one of the speaker cards. Anybody with a
18 nametag will be able to provide you one if you
19 don't have one already. If you're holding a
20 completed speaker card, Andy Lauzier be
21 collecting them in a moment here, once I
22 conclude.
23 And we recognize that some of you don't
24 enjoy speaking in front of a crowd. We're not
25 going to require you to speak publicly. In

1 addition to speaking this evening, there are
2 three other methods to provide your comments
3 tonight.
4 The first option is to dictate your comments
5 directly to the court reporter upon conclusion of
6 the pubic testimony period. These comments will
7 be made after our public testimony. The second
8 option is to provide written comments. As you
9 signed in this evening, you should have received
10 a comment form. We have a couple also on the
11 table for you to fill out. Please feel free to
12 fill those out. You can place them in the
13 basket.
14 You can also take them with you and think
15 about it, what you want to say, and you can send
16 those back to us in several different formats.
17 You can mail them to us with the mailing address
18 we have here on the screen, or also on your
19 comment form. You can fax them to us, and you
20 also can email them. Any comments must be
21 postmarked by December 9.
22 The third option is you can send them
23 through the electronic email at
24 mindy.heath@hdrinc.com. And we'll accept emails
25 and faxes up till 5:00 p.m. on December 9.

1 All comments, regardless of form, will be
2 given equal weight and considered as part of the
3 public record. Written statements and exhibits
4 may be presented in lieu of an oral statement.
5 All written material received at this public
6 hearing and postmarked no later than December 9th
7 will become part of the official public record.
8 All written comments should be addressed to Mindy
9 Heath. The Flagler County project manager is
10 Richard Gordon, and here is his contact
11 information along with my own.
12 At this time we're going to take a five
13 minute break and collect speaker cards. So we'll
14 reconvene at approximately 6:15. So thank you.
15 (A break was taken at 6:10 p.m., and the
16 proceedings resumed at 6:15 p.m.)
17 ANDRE LAUZIER: Okay. We'll go ahead and formally
18 reconvene the public hearing. Are there any speaker
19 cards anybody would like to turn in? Okay. What we'll
20 do is, we will call the speakers in the order we
21 received the speaker cards, and we've only got three of
22 them, but we'll call them up. First is Denis McDonald.
23 Oh. I'm sorry. That's all right.
24 I had -- I didn't have my glasses on, so I
25 missed part of my script. Sorry about that.

When you come forward, please state your name and address for the record. And if you represent an organization or group, please let us know that as well. And we ask that you please limit your input to three minutes, and please come to the microphone so the court reporter will be able to get a complete record of your comments. And if you are reading a prepared statement, we appreciate having a copy for the court reporter.

Denis?

DENIS MCDONALD: Good evening. Faith, I wanted to --

ANDRE LAUZIER: Name and address.

DENIS MCDONALD: -- direct this to you since you live here and you're the county engineer. When I look at this project, I see something that is absolutely in the wrong place. You've created a major security breach, the way I see it, on a residential area of the city.

I can't see how the sheriff's department would be interested in at all having this entrance and exit onto a major highway like I-95. There are absolutely no services here at all. People will be getting off and wandering around in the neighborhoods that are existing here.

1 We have a new high school that is built
2 immediately adjacent to this interchange, which
3 opens up all kinds of possibilities, and probably
4 none of them very good. You know, we have a --
5 you know, this to me likens to having bought on a
6 dead end street, a cul-de-sac street, and then
7 all of a sudden you're going to come along, and
8 you're going to open up the other end of it and
9 make it a thoroughfare.
10 The other aspect I look at on this project
11 is simply this: This is zoned wrong, absolutely
12 zoned wrong. I don't -- I can't think of, if we
13 all stop and think about interchanges off of 95
14 when we go up and down, where there is an
15 interchange where you get off and there's
16 absolutely no commercialism at all. None.
17 There's no gas stations, there's no stores,
18 there's no -- there's no services or anybody to
19 help you or whatever, you know.
20 And then what happens is that you're then
21 going to take what everybody bought in this area,
22 which are hundreds of families that live here,
23 and it's their home, and what you're going to do
24 is you're going to drive a four-lane highway
25 through the middle of it, you know, to connect up

to Route 1. I can't think of a more ill-conceived project and use of money.

And, you know, we're not even beginning to touch on the environmental end of this thing, which I'm sure there's a lot of other people that are more qualified than me to speak about. But just from the fact that this is absolutely zoned in the wrong place, and it creates a major security problem for this community.

Thank you.

UNIDENTIFIED FEMALE SPEAKER: Your address?

ANDRE LAUZIER: Your name and address, please.

DENIS MCDONALD: My -- the address would be 35 and 37 Bickshire.

ANDRE LAUZIER: And next will be Dave Preat.

DAVE PREAT: Yes. Good evening. My name is Dave Preat, 1 Buffalo Berry Place. I would like to take an opportunity to say this is a good idea. It's about time that we look at another alternative or another means for us in Palm Coast to be able to access the interstate.

We all know Palm Coast Parkway is congested. We're going to throw more money at Palm Coast Parkway to widen Palm Coast Parkway, and we're all going to complain about Palm Coast Parkway.

1 Being here in 1998, being here in 1985 during the
2 wildfires, what did we learn from those deals?
3 We learned that we had no evacuation routes.
4 So what did we do? Let's take a small
5 history. We paved Old Kings Road North to US 1.
6 Is that an alternative? Yes, it is, to a certain
7 extent. We put no interchange in. We are
8 dumping people from the northeast end of Palm
9 Coast onto US 1, which is already going to be an
10 evacuation route for people that live on the west
11 side of Palm Coast and I-95.
12 So what do we create there? Nothing. This
13 interchange is long due -- overdue. As a
14 resident living up there, I travel these roads
15 all the time. I work in this county and I live
16 in this county. We need this today, not
17 tomorrow, not 2015, not 2029.
18 As far as security, what is any different
19 than riding down Palm Coast Parkway, Whiteview,
20 Royal Palms? If you look at those maps and ITT's
21 original development, those roads one day might
22 be an interchange as well, too.
23 Flagler County, FDOT, let's not sit on this
24 any longer. I know there's no money out there.
25 We've got to find this money. I like this

interchange. We need it today. Thank you.

ANDRE LAUZIER: And the final speaker card I have is Janet McDonald.

JANET MCDONALD: Hello. Good evening. I'm Janet McDonald, 35-37 Bickshire. And as a healthcare professional, I just want to encourage the planners to do something different about the noise abatement issue. I think it's irresponsible and unethical and very impactful for not only the buffer zone that is listed on all of your maps, but all of those people beyond that.

The quality of life is impacted for all those residents, and it's different from all of our interchanges in town. They're all in commercial areas, and what goes, goes, but in this high impact on this residential area that's very nice, significant changes and buffers should be included in the plan.

Thank you.

ANDRE LAUZIER: That's all the speaker cards I have. Would anybody else like to make a formal statement? Please -- just give us your name and address, please.

DAWN LOPES: Sure. Forgive me. I didn't plan a prepared speech, but my name is Dawn Lopes, and I just

want to say I totally support what you're saying about this whole situation. We moved into Matanzas Woods thinking it was going to be a nice, quiet area. We knew the high school was going in. My son goes to that high school, and I can tell you I just think this is a disaster waiting to happen on this area, for a couple reason why.

Right now, currently, there's already problems with the teenagers coming out of the high school. There's been accidents that have happened since the beginning of the year. I know of at least three personally. Every day it's a near miss situation, and you put interchanges intermixed with teenagers coming right out of the high school, it's a recipe for disaster that's even worse than what it is now.

The other thing is, is that you're subjecting all these people that are right up against it -- me personally, I'm right up against it -- to 15 years of construction, more or less. You know, what's that going to do to everybody's -- you're talking about quality of life.

I'm disabled. I spend 18 to 20 hours a day at home in bed. My property backs right up to this, and so I'm looking at already a noise

1 problem there. And you add this onto it, it's
2 going to be intolerable for everybody living on
3 those streets in that area, and for 15 years is
4 what you're talking about.
5 The other thing, in addition to that, not
6 only do those people have to be subjected to
7 that, but they would eventually be taking away
8 our access to make a left-hand turn. So not only
9 are we kind of screwed as far as not being able
10 to have any issues with the noise abatement, but
11 being able to access the road. We're going to
12 have to make a u-turn to go to the high school.
13 So that's really an unfair situation.
14 But just looking at it from security-wise, I
15 think what you were referring to is it's a known
16 fact that when you put an interchange in an area,
17 the security risks go up. It's not about, like,
18 traffic security or accidents in another type of
19 way. I think you were talking about the fact
20 that criminals access interchanges to commit
21 crimes. And when you don't have any commercial
22 areas for people to go to, gas stations and
23 stuff, it's just going to promote even more
24 people just wandering around your neighborhood.
25 You're not going to know what's going on, who's

1 out there, and what kind of problems that they
2 could be committing.
3 In addition to the security risk for the
4 kids, as far as just the traffic issues that are
5 there, right now, the only time that anybody
6 travels that road is in the afternoon and morning
7 for the school kids. The rest of the time, that
8 road is dead. The other issue that I raised
9 earlier, is I'd like to be able to see -- I guess
10 they can provide this -- the hard data on these
11 studies as far as determining this was needed
12 there, in that location.
13 I know that if there were studies that were
14 done before when Flagler County was one of the
15 fastest-growing in the nation, but since then,
16 with the economy, that situation has slowed down
17 considerably. And is this really a -- something
18 that's needed at this time, in this place?
19 Sorry. I'm nervous. But you know, for all
20 those reasons, I really think that this is a
21 really bad decision to make this at this
22 location, at this time, for the reasons I stated.
23 UNIDENTIFIED FEMALE SPEAKER: Your address?
24 DAWN LOPES: 18 Ludlow Lane East, Palm Coast,
25 Florida.

1 THE COURT REPORTER: And your last name?
2 DAWN LOPES: Lopes, L-O-P-E-S.
3 THE COURT REPORTER: Thank you.
4 ANDRE LAUZIER: Anyone else like to speak tonight?
5 UNIDENTIFIED FEMALE SPEAKER: I just have a
6 question. My name is --
7 ANDRE LAUZIER: You need to come up to the mic and
8 give your name and address.
9 UNIDENTIFIED FEMALE SPEAKER: When the chart was
10 up and you -- the noise level, and you mentioned the
11 total was 36 sites. Does that mean 36 properties, 36
12 acres? What does that refer to?
13 ANDRE LAUZIER: A site is a -- and we're not
14 supposed to do Q&A, but I'll answer your question. A
15 site is a receptor; in this case, a house.
16 UNIDENTIFIED FEMALE SPEAKER: So there are 36
17 houses that will be affected, highly affected?
18 ANDRE LAUZIER: Based on -- and we can talk about
19 it in detail at the board afterwards, but they have
20 been identified as impacted based on noise. So that
21 would be homes. Okay.
22 Anyone else like to provide public comments
23 for the official transcript? Okay.
24 An official verbatim transcript of tonight's
25 public hearing, including this public testimony

period, will be prepared. This transcript, along with the written comments, project displays, and information materials provided here tonight will become part of the official public hearing record and the decision-making process, and made available for public review upon request.

Requests for project information may be sent to Mindy Heath, whose contact information is on the comment form. We'd like to thank you for attending tonight's public hearing and providing your input on this project. It's now 6:26, and I hereby officially close the public hearing for the Interstate 95/Matanzas Woods Parkway PD&E Study.

The record of this hearing will remain open to receive written comments until December 9, 2011. Thank you, and have a good, safe evening. And remember, if you do want to provide a comment directly to the court reporter, you can go over and talk to her now.

(Whereupon, the proceedings were concluded at 6:27 p.m.)

1 CERTIFICATE OF REPORTER

2 STATE OF FLORIDA)
)
3 COUNTY OF FLAGLER)

4 I, Jessica Barron, CERTIFY that I was authorized to and
5 did stenographically report the foregoing proceedings; and
6 that the transcript is a true and complete record of my
7 stenographic notes.
8
9 I FURTHER CERTIFY that I am not a relative, employee,
10 attorney, or counsel of any of the parties, nor am I a
11 relative or employee of any of the attorneys or counsel
12 connected with the action, nor am I financially interested
13 in the action.
14
15 DATED this 12th day of December, 2011.
16
17
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19
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21
22 Jessica Barron
23
24 JESSICA BARRON
Court Reporter
25

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Appendix H

ETDM Summary Report

ETDM Summary Report

Project #12516 - Matanzas Woods Parkway Interchange @ I-95

Programming Screen - Published on 07/13/2010

Printed on: 12/12/2011

Introduction to Programming Screen Summary Report

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

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

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

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

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12516 - Matanzas Woods Parkway Interchange @ I-95 ** Most Recent Data

Review Start Date:	10/30/2009	**Phase:**	Programming Screen
From:	MP 14.65 (Exit 292)	**To:**	,"Location not available."
District:	District 5	**County:**	Flagler County
Planning Organization:	FDOT District 5	**Plan ID:**	
Contact Name / Phone:	Lance Decuir (386) 943-5383	**Contact Email:**	lance.decuir@dot.state.fl.us

Project Re-Published 7/13/2010

Project Overview: Summary Degree of Effect Chart

Legend

- N/A — N/A / No Involvement
- 1 — Enhanced
- 0 — None
- 2 — Minimal (after 12/5/2005)
- 3 — Moderate
- 4 — Substantial
- 5 — Dispute Resolution (Programming)

	Evaluation of Direct Effects																				
	Natural											Cultural			Community						
	Air Quality	Coastal and Marine	Contaminated Sites	Farmlands	Floodplains	Infrastructure	Navigation	Special Designations	Water Quality and Quantity	Wetlands	Wildlife and Habitat	Historic and Archaeological Sites	Recreation Areas	Section 4(f) Potential	Aesthetics	Economic	Land Use	Mobility	Relocation	Social	Secondary and Cumulative Effects
Alternative #1 **From - To MP 14.65 (Exit 292)** *- Reviewed from 10/30/2009 to 12/14/2009* *- Published on 7/13/2010*	2	2	0	0	3	2	N/A	2	2	3	3	2	0	N/A	2	1	2	1	2	2	2

Project Description Summary

Construct new interchange at the existing Matanzas Woods Parkway overpass in the City of Palm Coast, Flagler County.

Summary of Public Comments

Community Desired Features

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

Purpose and Need Statement

The purpose of the project is to provide access between I-95 and the growing area of Palm Coast in Flagler County. The need for the additional access to and from I-95 at this location is based on both safety and current and future planned development in the area of Matanzas Woods Parkway. A PD&E Study will be conducted to assess whether a new interchange at this location would meet this growing need.

The genesis of this project dates back to at least June of 1998 when wild fires in the area highlighted a need for improved access to I-95 to facilitate evacuation. As a result, FDOT conducted a study in 2000 titled Transportation Planning Analysis for Potential I-95 Interchange in Flagler County, which included as one of its study alternatives an interchange at this location. That study documented the congestion that could result within Flagler County if evacuation was required due to an imminent Class 3, 4 or 5 hurricane. The study further concluded that while a formal interchange study was not recommended at that time, that the Matanzas Woods Parkway overpass be completed at a minimum, and that the location be monitored for future study. The FDOT subsequently conducted a second study in 2006 titled Final Matanzas Woods Parkway Interchange Feasibility Study as part of the I-95 SOAR, which concluded that preliminarily an interchange at this location would not have an overall adverse affect to the interstate mainline system, and would in fact benefit the operations of other area roadways including Palm Coast Parkway to the south.

The interchange termini from I-95 at Palm Coast Parkway currently operate near or at capacity. The planned development in this area will continue to add traffic to this interchange and potentially the interchange at US-1 to the north. As further evidence of the anticipated growth expected in this area, the FDOT SIS Needs Plan has identified that two (2) additional lanes are needed along I-95 from the Volusia County Line to SR-100 by 2015. Further, it also showed that two (2) additional lanes are needed along I-95 from SR-100 to beyond the St. Johns County Line (to I-295 in Jacksonville) by 2030. The SIS Needs Plan predates the proposal for this interchange; therefore it is not shown as a need in this plan. However, an update to the I-95 Systems Operations Analysis Report (SOAR) for the I-95 corridor through Flagler, Volusia and Brevard Counties did address the feasibility of an interchange at Matanzas Woods Parkway. The SOAR found that "Based on the traffic analysis performed for this feasibility study, the proposed interchange at Matanzas Woods Parkway and I-95 will reduce congestion in the study area. The proposed interchange will not have an adverse impact on mainline operations but it does reduce the traffic on the adjacent interchanges. The proposed interchange will reduce delay at the cross street intersections and reduce traffic volumes on several of the roadways in the study area". Flagler County has identified this proposed interchange as a priority project and it is identified in the Capital Improvements Element of the City of Palm Coast's 2020 Comprehensive Plan. Lastly, the need for improved evacuation capacity in the area has been punctuated by the spate of storm activity in recent years which has prompted a heightened desire on the part of the general public to evacuate as opposed to ride out the storm.

As mentioned above, the Palm Coast Parkway interchange (exit 289) currently operates at or near capacity and is the only interchange serving the heart of Palm Coast, a city with a 2007 population of 70,237. The existing interchange at SR 100 (exit 284) is located about 5 miles south of the Palm Coast Parkway interchange and is at the southern limits of the City. The US 1 interchange (exit 298) is approximately 9 miles north of Palm Coast Parkway in St. Johns County. The proposed interchange at Matanzas Woods Parkway ("exit 292") would also serve the heart of Palm Coast and would provide a much needed additional access to the I-95 SIS facility.

There is a significant amount of development that is planned within the cities of Palm Coast and Bunnell within the vicinity of the proposed interchange location, which will put a significant burden on the regional roadway system, and more importantly on the existing interchange of Palm Coast Parkway and I-95, briefly summarized below:

Palm Coast Park

Palm Coast Park is a proposed 4,700 acre mixed-use development located approximately 1 mile south of the existing I-95 interchange with US-1 and mile north of Palm Coast Parkway and US-1. The Palm Coast Park development will include 3,600 residential units, 1.6 million square feet of retail, 8000,000 square feet of office, 900,000 square feet of industrial, and an 18-hole golf course.

Hammock Dunes
Hammock Dunes is a private residential gated oceanfront community nearly completed located east of A1A extending approximately 3 miles north and 4 miles south of Palm Coast Parkway. The development includes 4,400 residential units, over 5 million square feet of hotel space and over 400 acres of golf course area.

A federal earmark, HPP #F231, for $285,834 has been approved towards the study of this new interchange. An additional $431,415 in non federal funds has also been programmed towards this study. This study will be managed by Flagler County under a LAP agreement with FDOT, District 5.

Purpose and Need Reviews

Federal Highway Administration Comments

Agency	Acknowledgment	Review Date
Federal Highway Administration	Accepted	12/8/2009

Comments

Please specify clear project limits (logical termini) in the Programming Screen Summary Report in order for FHWA to sign the Class of Action.

Please also ensure that funds for at least the next phase of the project are included in the TIP, STIP and LRTP.

US Coast Guard Comments

Agency	Acknowledgment	Review Date
US Coast Guard	Understood	11/3/2009

Comments

No Purpose and Need Comments Were Found.

US Environmental Protection Agency Comments

Agency	Acknowledgment	Review Date
US Environmental Protection Agency	Understood	12/14/2009

Comments

No Purpose and Need Comments Were Found.

FL Department of Community Affairs Comments

Agency	Acknowledgment	Review Date
FL Department of Community Affairs	Understood	12/16/2009

Comments

No Purpose and Need Comments Were Found.

FL Fish and Wildlife Conservation Commission Comments

Agency	Acknowledgment	Review Date
FL Fish and Wildlife Conservation Commission	Understood	11/18/2009

Comments

No Purpose and Need Comments Were Found.

FL Department of Environmental Protection Comments		
Agency	**Acknowledgment**	**Review Date**
FL Department of Environmental Protection	Understood	12/14/2009
Comments		
No Purpose and Need Comments Were Found.		

National Marine Fisheries Service Comments		
Agency	**Acknowledgment**	**Review Date**
National Marine Fisheries Service	Understood	12/4/2009
Comments		
None.		

Natural Resources Conservation Service Comments		
Agency	**Acknowledgment**	**Review Date**
Natural Resources Conservation Service	Understood	11/16/2009
Comments		
No Purpose and Need Comments Were Found.		

FL Department of State Comments		
Agency	**Acknowledgment**	**Review Date**
FL Department of State	Understood	11/2/2009
Comments		
Please see detailed comments provided in "Describe Direct Effects" section.		

US Army Corps of Engineers Comments		
Agency	**Acknowledgment**	**Review Date**
US Army Corps of Engineers	Understood	12/2/2009
Comments		
No Purpose and Need Comments Were Found.		

Alternative #1

Alternative Description	
From	?
To	MP 14.65 (Exit 292)
Type	New Alignment
Status	ETAT Review Complete
Total Length	? mi.
Cost	
Modes	Roadway

Location and Length	
	Segment #1
Name	
Beginning Location	
Ending Location	
Length (mi.)	0.985
Roadway Id	Digitized
BMP	??
EMP	??
Jurisdiction and Class	
	Segment #1
Jurisdiction	
Urban Service Area	
Functional Class	
Current and Future Conditions	
Base Conditions	
	Segment #1
Year	
AADT	unspecified
Lanes	
Config	
Interim Plan	
	Segment #1
Year	
AADT	unspecified
Lanes	
Config	
Needs Plan	
	Segment #1
Year	
AADT	unspecified
Lanes	
Config	
Cost Feasible Plan	
	Segment #1
Year	
AADT	unspecified

Lanes	
Config	

No funding sources found.

Project Effects Overview

Issue	Degree of Effect	Organization	Date Reviewed
Natural			
Air Quality	2 Minimal	US Environmental Protection Agency	12/14/2009
Coastal and Marine	2 Minimal	National Marine Fisheries Service	12/04/2009
Contaminated Sites	0 None	FL Department of Environmental Protection	12/14/2009
Contaminated Sites	0 None	US Environmental Protection Agency	12/14/2009
Farmlands	0 None	Natural Resources Conservation Service	11/16/2009
Floodplains	3 Moderate	US Environmental Protection Agency	12/14/2009
Navigation	N/A N/A / No Involvement	US Coast Guard	11/03/2009
Navigation	0 None	US Army Corps of Engineers	12/02/2009
Special Designations	0 None	US Environmental Protection Agency	12/14/2009
Special Designations	2 Minimal	Federal Highway Administration	12/08/2009
Water Quality and Quantity	2 Minimal	US Environmental Protection Agency	12/14/2009
Water Quality and Quantity	2 Minimal	FL Department of Environmental Protection	12/14/2009
Wetlands	3 Moderate	US Army Corps of Engineers	12/02/2009
Wetlands	3 Moderate	US Environmental Protection Agency	12/14/2009
Wetlands	3 Moderate	US Fish and Wildlife Service	12/04/2009
Wetlands	3 Moderate	FL Department of Environmental Protection	12/14/2009
Wetlands	4 Substantial	National Marine Fisheries Service	12/04/2009
Wildlife and Habitat	3 Moderate	FL Fish and Wildlife Conservation Commission	11/18/2009
Wildlife and Habitat	3 Moderate	US Fish and Wildlife Service	12/04/2009
Cultural			
Historic and Archaeological Sites	2 Minimal	FL Department of State	11/05/2009
Historic and Archaeological Sites	2 Minimal	Federal Highway Administration	12/08/2009
Recreation Areas	0 None	FL Department of Environmental Protection	12/14/2009
Recreation Areas	0 None	Federal Highway Administration	12/08/2009

Recreation Areas	0 None	US Environmental Protection Agency	12/14/2009
Community			
Aesthetics	2 Minimal	Federal Highway Administration	12/08/2009
Land Use	2 Minimal	FL Department of Community Affairs	12/16/2009
Social	2 Minimal	US Environmental Protection Agency	12/14/2009
Social	2 Minimal	FL Department of Community Affairs	12/16/2009
Secondary and Cumulative			

ETAT Reviews: Natural

Air Quality

Coordinator Summary

2 Summary Degree of Effect

Air Quality Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (12/28/2009)
Comments:
Thank you for your review and comments. We concur with a summary degree of effect of minimal for this issue. The upcoming PD&E Study will further address Air Quality issues in accordance with Chapt. 16 of the FDOT Project Development and Environment Guidlines.

ETAT Reviews for Air Quality

2 ETAT Review by Madolyn Dominy, US Environmental Protection Agency (12/14/2009)

Air Quality Effect: Minimal

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
Resources: Air Quality

Level of Importance: Air quality within the region is of a high level of importance. Traffic volumes on the roads in the vicinity are expected to increase due to anticipated population and growth in the area and within the region.

Comments on Effects to Resources:
Flagler County has not been designated non-attainment or maintenance for ozone, carbon monoxide (CO) or particulate matter (PM) in accordance with the Clean Air Act. There are no violations of National Ambient Air Quality Standards (NAAQS). Nevertheless, the environmental review of this project should consider long-term potential air quality impacts. This could include an air impact analysis which documents the current pollutant concentrations recorded at the nearest air quality monitors, an evaluation of anticipated emissions, and air quality trend analyses. It is recommended that the environmental review also include a hot spot analysis at the point in time and place where congestion is expected to be greatest during the design life of the project.

Additional Comments (optional):

As population growth and vehicle volumes increase, there is the potential to have air quality conformity and non-attainment issues in the future. FDOT, MPOs, municipalities, and regional planning agencies should conduct air quality modeling as traffic forecasts increase.

Coordinator Feedback: None

- No review submitted from the Federal Highway Administration

Coastal and Marine

Coordinator Summary

2 Summary Degree of Effect

Coastal and Marine Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (12/29/2009)
Comments:
One agency provided comments under this issue and assigned a summary degree of effect of minimal. The National Marine Fisheries Service has determined that the proposed work would not directly impact areas that support essential fish habitat or NOAA trust fisheries resources. Based on these comments we are assigning a Minimal degree of effect for coastal and marine issues.

ETAT Reviews for Coastal and Marine

2 ETAT Review by Brandon Howard, National Marine Fisheries Service (12/04/2009)

Coastal and Marine Effect: Minimal

Coordination Document: No Involvement

Dispute Information:N/A

Identified Resources and Level of Importance:
Wetlands within the project area are high in quality and part of a larger freshwater wetland system associated with the Matanzas River. These wetlands are important to the area, and provide wildlife habitat, water quality functions, aquifer recharge, and contribute organic materials to downstream estuaries associated with the Matanzas River. These wetlands do not provide habitat for fishery resources under the purview of NMFS; however, they do provide ecological services that support habitats used by fish and wildlife.

Comments on Effects to Resources:
NMFS understands that the purpose of the project is to construct a dual purpose intersection. The intersection would be important for safety as well as a capacity improvement. The project description indicates that the capacity improvement projected needs are based on proposed residential developments in the area. Hammock Dunes being the only one mentioned that is currently under construction. From the description in the EST, Palm Coast Park is only proposed at this time. The intersection should not be constructed until environmental permits are issued for these proposed developments. The intersection will encourage urban sprawl and secondarily impact wetlands in the

project area. If project impacts are sufficiently avoided, minimization and mitigation should take place. Mitigation for unavoidable wetland impacts should be based on a functional assessment such as the Uniform Mitigation Assessment Method and take place in the Matanzas River watershed.

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

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

Fish and Wildlife Coordination Act: The comments NMFS provided regarding sequential mitigation are in accordance with the Fish and Wildlife Coordination Act.

FDOT District 5 Feedback to National Marine Fisheries Service's Review
*Comments:*Thank you for your review and comments. We understand that no further coordination is required for EFH under the Magnuson-Stevens Act unless future modifications may result in adverse impacts to EFH. We will, however, coordinate with the U.S. Fish and Wildlife Services under the Endangered Species Act when this project moves into the study phase.
*Date Feedback Submitted:*12/29/2009

- No review submitted from the Federal Highway Administration

Contaminated Sites

Coordinator Summary

0 Summary Degree of Effect

Contaminated Sites Summary Degree of Effect: None

Reviewed By:
FDOT District 5 (12/29/2009)
Comments:
Two agencies provided comments on this issue and both assigned None as the degree of effect. Based no known contaminated sites within the project area, we are assigning a None summary degree of effect for this issue.

ETAT Reviews for Contaminated Sites

0 ETAT Review by Lauren P. Milligan, FL Department of Environmental Protection (12/14/2009)
Contaminated Sites Effect: None

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
None found.

Comments on Effects to Resources:
None found.

FDOT District 5 Feedback to FL Department of Environmental Protection's Review Comments: Thank you for your review.
*Date Feedback Submitted:*12/29/2009

0 ETAT Review by Madolyn Dominy, US Environmental Protection Agency (12/14/2009)
Contaminated Sites Effect: None

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
Resources: Soils, groundwater, surface water which have the potential to be negatively affected by contaminated site features such as underground petroleum storage tanks, industrial/commercial facilities with onsite storage of hazardous materials, solid waste facilities, hazardous waste facilities, National Priority List (NPL) sites, etc.

Level of Importance: These resources are of a high level of importance in the State of Florida. There were no contaminated sites features listed in the GIS analysis data for the proposed project.

Comments on Effects to Resources:
EPA reviewed the following contaminated sites GIS analysis data for buffer distances of 100, 200, and 500 feet: Brownfield Location Boundaries, Geocoded Dry Cleaners, Geocoded Gasoline Stations, Geocoded Petroleum Tanks, Hazardous Waste Sites, National Priority List Sites, Nuclear Site Locations, Solid Waste Facilities, Superfund Hazardous Waste Sites, TANKS-NOV 2007, Toxic Release Inventory Sites, and USEPA RCRA Facilities.

There were no contaminated sites features, such as those listed above, identified in the GIS analysis data at the programming screen phase of the project.

EPA recommends, however, that the environmental review (PD&E) phase of the project include a survey of the area to confirm whether any contaminated site features may have been previously located in the area. If any contaminated sites features (e.g., petroleum storage tanks) are to be impacted or removed during the construction phase of the project, sampling and analysis should be conducted to determine if pollutants are present above regulatory levels. If high levels of pollutants are identified, remediation may be required prior to commencement of construction of the project.

FDOT District 5 Feedback to US Environmental Protection Agency's Review
*Comments:*Thank you for your review and comments. Although no known contaminated site features were identified in the GIS analysis, we will conduct a survey during the study phase to determine if any previous contamination features may have existed.
*Date Feedback Submitted:*12/29/2009

- No review submitted from the Federal Highway Administration

Farmlands

Coordinator Summary

0 Summary Degree of Effect
Farmlands Summary Degree of Effect: None

Reviewed By:
FDOT District 5 (12/29/2009)
Comments:
The National Resources Conservation Service reviewed this issue and assigned a None as the degree of effect. Based on no soils present in the project area that support Prime or Unique Farmlands, we are assigning None as the summary degree of effect for Farmland issues.

ETAT Reviews for Farmlands

0 ETAT Review by Rick Allen Robbins, Natural Resources Conservation Service (11/16/2009)
Farmlands Effect: None

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
The USDA-NRCS considers soil map units with important soil properties for agricultural uses to be Prime Farmland. In addition, the USDA-NRCS considers any soils used in the production of commodity crops (such as, cotton, citrus, row crops, specialty crops, nuts, etc.) to possibly be considered as Unique Farmlands. Nationally, there has been a reduction in the overall amount of Prime and Unique Farmlands through conversion to non-farm uses. This trend has the possibility of impacting the nation's food supply and exporting capabilities.

Comments on Effects to Resources:
Conducting GIS analysis of Prime Farmland (using USDA-NRCS data) and Important (Unique) Farmland Analysis (using 2004 SJRWMD data) has resulted in the determination that there are no Prime and Unique Farmland soils within any buffer width within the Project Area. Therefore, no degree of effect to agricultural resources.

Additional Comments (optional):
The Florida USDA-NRCS is in the process of evaluating soil map units statewide to determine there applicability to either the Unique Farmland and/or Locally Important Farmland designations. It is

possible that some of the map units in this County could be assigned one of these classifications in the future.

FDOT District 5 Feedback to Natural Resources Conservation Service's Review
*Comments:*Thank you for your review and comments. Although no Prime or Unique Farmlands soils are present within the project area, we understand that the on-going reevaluation of these map units could result in some map units in this County being assigned one of these classifications in the future.
*Date Feedback Submitted:*12/29/2009

- No review submitted from the Federal Highway Administration

Floodplains

Coordinator Summary

3 Summary Degree of Effect
Floodplains Summary Degree of Effect: Moderate

Reviewed By:
FDOT District 5 (12/29/2009)
Comments:
The U.S. Environmental Protection Agency has reviewed this issue and assigned a Moderate degree of effect. The GIS analysis indicates between 9 and 35 acres of 100 year floodplain impacts between the 100 to 500 foot buffer distances of the proposed interchange. We are assigning a Moderate degree of effect for floodplain issues.

ETAT Reviews for Floodplains

3 ETAT Review by Madolyn Dominy, US Environmental Protection Agency (12/14/2009)
Floodplains Effect: Moderate

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
Resources: Floodplains

Level of Importance: Development within the 100-year floodplain is of a high level of importance. Construction of roadways within the floodplain should not impede, obstruct or divert the flow of water or debris in the floodplain which would alter the roadway's discharge capacity or otherwise adversely affect public health, safety and welfare, or cause damage to public or private property in the event of a flood. A moderate degree of effect is being assigned for the proposed project due to the substantial amount of development in the area and the potential to impact additional floodplain areas with the proposed project.

Comments on Effects to Resources:

A review of GIS analysis data (DFIRM Flood Hazard Zones and Special Flood Hazard Areas) in the EST at the programming screen phase of the project indicates the following that there are floodplains, as designated by Zone A of the flood hazard zone designation, which will be impacted by the proposed project.

Approximately 9 acres of 100-year floodplain are identified within the 100 foot buffer distance, 18 acres of 100-year floodplain are identified within the 200 foot buffer distance, and 35 acres of 100-year floodplain are identified within the 500 foot buffer distance of the proposed interchange project. This project has the potential to impact floodplains and their functions in the area. Due to ongoing and increased development in the area, much of the land use and landscape has changed or will change. This results in more impervious surface and less natural runoff and drainage of storm and/or flood waters.

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

The PD&E study should have included an evaluation of floodplain impacts. FDOT should consider alternatives to avoid adverse effects and incompatible development in the floodplains. Efforts should be made to avoid or minimize impacts to floodplain resources and functions. Consultation and coordination with appropriate flood management agencies should occur relating to regulatory requirements, avoidance, minimization and/or mitigation strategies.

FDOT District 5 Feedback to US Environmental Protection Agency's Review
*Comments:*Thank you for your review and comments. The Location Hydraulic Report to be performed during the PD&E study will evaluate the potential for floodplain impacts and address measures to minimize these impacts if avoidance is not possible. Floodplain impacts will be an issue in the evaluation of interchange alternatives. We will also address floodplain impact mitigation strategies if the preferred alternative can not avoid impacts.
*Date Feedback Submitted:*12/29/2009

- No review submitted from the FL Department of Environmental Protection
- No review submitted from the Federal Highway Administration

Infrastructure

Coordinator Summary

2 Summary Degree of Effect

Infrastructure Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (2/04/2010)
Comments:
No agencies provided comments for infrastructure issues. Based on the GIS analysis for this issue there were 2 schools and 1 wireless antennae structure within 1 mile of the project. These infrastructure facilities will not be impacted by construction of the proposed interchange. However, there is the possibility of

underground utilities being impacted by construction of the interchange and associated stormwater conveyance facilities. Due to this we are assigning a Minimal degree of effect for infrastructure.

ETAT Reviews for Infrastructure

No reviews found for the Infrastructure Issue.
- No review submitted from the Federal Highway Administration

Navigation

Coordinator Summary

N/A Summary Degree of Effect

Navigation Summary Degree of Effect: N/A / No Involvement

Reviewed By:
FDOT District 5 (12/29/2009)
Comments:
Both the US Coast Guard and the US Army Corps of Engineers provided comments on this issue. Both agencies determined that there are no navigable waters of the United States within the project area. Therefore, we are assigning a No Involvement summary degree of effect.

ETAT Reviews for Navigation

N/A ETAT Review by Evelyn Smart, US Coast Guard (11/03/2009)

Navigation Effect: N/A / No Involvement

Coordination Document: No Involvement

Dispute Information:N/A

Identified Resources and Level of Importance:
Navigable Waters of the United States - Navigation

Comments on Effects to Resources:
No effect on navigation - no navigable waterway crossings.

FDOT District 5 Feedback to US Coast Guard's Review
*Comments:*Thank you for your review and comments.
*Date Feedback Submitted:*12/29/2009

0 ETAT Review by Randy Turner, US Army Corps of Engineers (12/02/2009)

Navigation Effect: None

Coordination Document: Permit Required

Dispute Information:N/A

Identified Resources and Level of Importance:
None found.

Comments on Effects to Resources:
Navigation: No navigable waters were identified within the project area. The project will have no impacts to navigation.

FDOT District 5 Feedback to US Army Corps of Engineers's Review
*Comments:*Thank you for your review and comments.
*Date Feedback Submitted:*12/29/2009

- No review submitted from the Federal Highway Administration

Special Designations

Coordinator Summary

2 Summary Degree of Effect
Special Designations Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (12/30/2009)
Comments:
Two agencies provided comments on this issue. One assigned a None degree of effect and the other assigned a Minimal degree of effect. There were no special designations other than the previously identified floodplain. We are assigning a Minimal degree of effect due to potential floodplain impacts.

ETAT Reviews for Special Designations

0 ETAT Review by Madolyn Dominy, US Environmental Protection Agency (12/14/2009)
Special Designations Effect: None

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
None found.

Comments on Effects to Resources:
DFIRM 100-Year Flood Plain/Special Flood Hazard Areas - Zone A (See Floodplains Issue for comments)

FDOT District 5 Feedback to US Environmental Protection Agency's Review
*Comments:*Thank you for your review. Floodplain encroachment will be evaluated during the upcoming PD&E study.
*Date Feedback Submitted:*12/30/2009

2 ETAT Review by Cathy Kendall, Federal Highway Administration (12/08/2009)
Special Designations Effect: Minimal

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
No areas of special designation other than floodplains identified using the GIS analysis tool.

Comments on Effects to Resources:
Floodplains that cannot be avoided will require minimiztion/mitigation.

FDOT District 5 Feedback to Federal Highway Administration's Review
*Comments:*Thank you for your review. Floodplain encroachment issues will be evaluated during the upcoming PD&E study.
*Date Feedback Submitted:*12/30/2009

- No review submitted from the FL Department of Agriculture and Consumer Services

Water Quality and Quantity

Coordinator Summary

2 Summary Degree of Effect
Water Quality and Quantity Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (12/30/2009)
Comments:
Two agencies commented on this issue with both assigning Minimal degrees of effect. As the project will provide for stormwater treatment and attenuation facilities to meet state and federal standards we are assigning a Minimal degree of effect.

ETAT Reviews for Water Quality and Quantity

2 ETAT Review by Madolyn Dominy, US Environmental Protection Agency (12/14/2009)
Water Quality and Quantity Effect: Minimal

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
Resources: Water quality, surface water, groundwater

Level of Importance: These resources are of a high level of importance in the State of Florida and in the area surrounding the proposed project. A minimal degree of effect is being assigned to the water quality issue.

Comments on Effects to Resources:
The project area is within the Hulett Branch and Styles Creek drainage basins within the Upper East Coast Watershed/Basin. Water quality within the watershed is listed as "Good".

Potential pollutant sources to surface water quality include stormwater runoff into nearby surface water bodies via drainage ditches or other conveyance systems. Stormwater runoff from urban sources, including roadways, carries pollutants such as volatile organics, petroleum hydrocarbons, heavy metals, and pesticides/herbicides. Proper stormwater conveyance, containment, and treatment will be required in accordance with state and federal regulations and guidelines.

Increase in traffic volumes and an increase in growth and development as a result of a new roadway interchange could have both direct and indirect impacts to water quality in surface water bodies. Due to the potential to have an impact on surface water bodies, the PD&E study should include a review of water quality data, water quality concerns in nearby surface waters and wetlands, and any groundwater concerns and/or issues. FDOT should consult with appropriate resource agencies on stormwater permitting issues and other water quality issues relating to point and nonpoint source discharges into surface water bodies, if necessary.

FDOT District 5 Feedback to US Environmental Protection Agency's Review
*Comments:*Thank you for your review and comments. The PD&E study will provide a surface water quality evaluation in accordance with Chapt. 20 of the PD&E guidelines. The study will also evaluate locations to provide stormwater treatment and attenuation as required by state and federal criteria.
*Date Feedback Submitted:*12/30/2009

2 ETAT Review by Lauren P. Milligan, FL Department of Environmental Protection (12/14/2009)
Water Quality and Quantity Effect: Minimal

Coordination Document: Permit Required

Dispute Information:N/A

Identified Resources and Level of Importance:
Stormwater runoff from the road surface may alter adjacent wetlands and surface waters through increased pollutant loading. Increased runoff carrying oils, greases, metals, sediment, and other pollutants from the increased impervious surface will be of concern. Natural resource impacts within and adjacent to the proposed road right-of-way will likely include alteration of the existing surface water hydrology and natural drainage patterns, and reduction in flood attenuation capacity of area creeks, ditches, and sloughs as a result of increased impervious surface within the watershed.

Comments on Effects to Resources:
Every effort should be made to maximize the treatment of stormwater runoff from the proposed interchange project to prevent ground and surface water contamination. Stormwater treatment should be designed to maintain the natural predevelopment hydroperiod and water quality, as well as to protect the natural functions of adjacent wetlands. We recommend that the PD&E study include an evaluation of existing stormwater treatment adequacy and details on the future stormwater treatment facilities. Retro-fitting of stormwater conveyance systems would help reduce impacts to water quality.

FDOT District 5 Feedback to FL Department of Environmental Protection's Review
*Comments:*Thank you for your review, comments and recommendations. The PD&E study will evaluate stormwater treatment options in order to comply with state and federal requirements. The study will also evaluate capacities of existing conveyance structures in order to maintain surface hydrology.
*Date Feedback Submitted:*12/30/2009

- No review submitted from the Federal Highway Administration

Wetlands

Coordinator Summary

3 Summary Degree of Effect
Wetlands Summary Degree of Effect: Moderate

Reviewed By:
FDOT District 5 (12/30/2009)
Comments:
Five agencies provided comments on this issue. Four of those agencies assigned Moderate degrees of effect and one agency assigned a Substantial degree of effect. We are assigning a Moderate summary degree of effect.

ETAT Reviews for Wetlands

3 ETAT Review by Randy Turner, US Army Corps of Engineers (12/02/2009)
Wetlands Effect: Moderate

Coordination Document: Permit Required

Dispute Information:N/A

Identified Resources and Level of Importance:
Wetlands: A review of the proposed project area revealed the presence of wetlands directly connecting and flowing into Hominy Branch within the project limits. Hominy Branch and the abutting wetlands within the project area are tributaries of Pellicer Creek and ultimately the Matanzas River. This system is considered of moderately high, to high importance due to its contribution to waters of the United States.

Navigation: No navigable waters were identified within the project area. The project will have no impacts to navigation.

Comments on Effects to Resources:
The identified branch and wetland systems play a vital role as habitat for wildlife, flood storage, water quality issues, and drainage for the surrounding areas. The Flagler County Matanzas Woods Overpass was constructed with wildlife and hydrological crossing culverts which may require design considerations and incorporation.

Additional Comments (optional):
Wetlands associated with Nottingham Equestrian Village and the Flagler County Matanzas Woods Overpass where avoided and minimized during their development. Many of the subject wetlands may be encumbered in conservation easement and additional investigation is required. If a conservation easement has been placed over the subject wetlands there wetland value will be increased.

FDOT District 5 Feedback to US Army Corps of Engineers's Review
*Comments:*Thank you for your review and insightful comments. Existing wildlife crossing structures will be considered as design concepts progress during the PD&E study. We will also investigate any lands within the project area that are encumbered by conservation easements.
*Date Feedback Submitted:*12/31/2009

3 ETAT Review by Madolyn Dominy, US Environmental Protection Agency (12/14/2009)
Wetlands Effect: Moderate

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
Resources: Wetlands, wetlands habitat, water quality

Level of Importance: These resources are of a high level of importance in the State of Florida and within the project area. A moderate degree of effect is being assigned to the wetlands issue for the proposed project.

Comments on Effects to Resources:
The proposed project is likely to have direct, indirect, and cumulative effects on high quality palustrine wetlands and the associated wetlands habitat. The wetlands in the project area are associated with the Matanzas River and provide a variety of functions such as providing for wildlife habitat, enhancing water quality, and flood storage. The degree of direct wetlands impacts associated with the project will be dependent upon the selected location of the roadway interchange and the amount of right-of-way necessary for the project. Potential impacts include, but are not limited to, loss of wetlands function, loss of wildlife habitat, degradation of water quality in wetlands, degradation of water quality in surface waters, and reduction in flood storage and capacity.

Other issues of concern include increased stormwater runoff and the increase of pollutants into surface waters and wetlands as a result of the roadway project and other point and nonpoint sources. Every effort should be made to maximize the collection and treatment of stormwater. Stormwater collection and treatment mechanisms should be designed to protect the function of surrounding wetlands, floodplains, and surface water features.

The PD&E study should focus on identifying wetlands areas to be potentially impacted by the project. The PD&E study should include a delineation of wetlands; functional analysis of wetlands to determine their value and function; an evaluation of stormwater pond sites to determine their impact on wetlands; avoidance and minimization strategies for wetlands; and mitigation plans to compensate for adverse impacts. Impact to wetlands should be strongly considered when selecting a final location and design for the project.

Indirect and cumulative effects on wetlands should be evaluated to identify and quantify incremental and cumulative impacts on natural resources (wetlands) as a result of past, present, and reasonably foreseeable actions, including the proposed project and other land use actions.

FDOT District 5 Feedback to US Environmental Protection Agency's Review
*Comments:*Thank you for your review and comments. The PD&E study will include a Wetland Evaluation Report which will delineate wetlands with the potential to be impacts and will also provide a functional analysis of those wetlands. Stormwater treatment and conveyance facility concepts will attempt to avoid wetlands. Wetland avoidance and minimization is a major consideration in the matrix evaluation of project alternatives.
*Date Feedback Submitted:*12/30/2009

3 ETAT Review by Todd Samuel Mecklenborg, US Fish and Wildlife Service (12/04/2009)
Wetlands Effect: Moderate

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

Dispute Information:N/A

Identified Resources and Level of Importance:
Federally listed plant and animal species, migratory birds, the habitats they occupy and are supported by (breeding, feeding, and sheltering), and wetlands are trust resources that have a high level of importance to the mission of the U.S. Fish and Wildlife Service.

Our mission is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. We are both a leader and trusted partner in fish and wildlife conservation, known for our scientific excellence, stewardship of lands and natural resources, dedicated professionals and commitment to public service.

Comments on Effects to Resources:
The Service has reviewed the GIS database on the Environmental Screening Tool for recorded locations of federally listed threatened and endangered species and wetlands on or adjacent to the project study corridor. After a literature review utilizing the 500 foot buffer of the proposed alignment, the Service has the following comments and recommendations:

All habitats should be surveyed for listed species and properly documented in the environmental report. A list of potentially occurring species for Flagler County is available on our web-page (www.fws.gov/northflorida). The following guidance is specific to species which have a high probability of occurring in the study corridor.

A major reason for the wood stork (Mycteria americana) decline has been the loss and degradation of feeding habitat. A variety of nearby wetland habitats such as roadside or agricultural ditches can provide good forage areas for storks, and storks typically do most of their feeding in wetlands

between 5 and 40 miles from the colony. Wetlands in the project area should be delineated and evaluated using an evaluation technique such as the Wetland Rapid Assessment Procedure or the Uniform Mitigation Assessment Method. The Service recommends assessing any impacted wetland for potential wood stork usage, such as wetlands that are seasonally flooded and drawn down with littoral shelf areas. Wetlands occurring within 20 km (13 miles) of an active wood stork colony in northern Florida are defined as a Core Foraging Areas (CFA). If wetland impacts occur from the proposed action, type for type wetland creation would be recommended within the CFA.

The eastern indigo snake may occupy a broad range of habitats, from scrub and sandhill communities to wet prairies and flatwoods, adjacent to the proposed project. The eastern indigo snake is most strongly associated with high, dry, well-drained sandy soils, closely paralleling habitat preferred by the gopher tortoise (Gopherus polyphemus), a Florida listed species. The Service would recommend that FDOT implement the Service's Standard Protection Measures for the Eastern Indigo Snake during the construction phase of the project. Those measures can be found at the Service's Jacksonville Ecological Service Field Office website at http://northflorida.fws.gov/IndigoSnakes/east-indigo-snake-measures-071299.htm

Approximately 11.9 acres of cypress, 17.1 acres of shrub/scrub, and 30.8 acres of wet prairie are within the 500-foot buffer. All measures to avoid and minimize impacts to these resources should be implemented in to the design of the future facility. Measures to reduce fragmentation of theses areas from the adjacent landscape need to be considered to avoid isolating areas not impacted by the action as well as impeding natural travel corridors for wildlife.

Additional Comments (optional):
Comments are provided in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), section 7 of the Endangered Species Act of 1973, (87 Stat 884, as amended 16 U.S.C. 1531 et seq.), the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712 et seq.), and the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361 et seq.).

FDOT District 5 Feedback to US Fish and Wildlife Service's Review
*Comments:*Thank you for your review and comments. The PD&E study will include a survey and evaluation of listed species and their habitats along with a functional analysis of wetlands within the project area. Should it be determined that the project has the potential to impact listed species, the department will commit to conservation measures acceptable to the Service. Wetlands will be avoided if practicable and impacts minimized if not avoidable.
*Date Feedback Submitted:*12/30/2009

3 ETAT Review by Lauren P. Milligan, FL Department of Environmental Protection (12/14/2009)
Wetlands Effect: Moderate

Coordination Document: Permit Required

Dispute Information:N/A

Identified Resources and Level of Importance:
A review of the National Wetlands Inventory GIS data indicates that there are 8.2 acres and 16 acres of palustrine wetlands (34%) within the 100-ft. and 200-ft. project buffer zones.

Comments on Effects to Resources:
An environmental resource permit (ERP) will be required from the St. Johns River Water Management District - the ERP applicant will be required to eliminate or reduce the proposed

wetland resource impacts of interchange construction to the greatest extent practicable:
- Minimization should emphasize avoidance-oriented corridor alignments, wetland fill reductions via pile bridging and steep/vertically retained side slopes, and median width reductions within safety limits.
- Wetlands should not be displaced by the installation of stormwater conveyance and treatment swales; compensatory treatment in adjacent uplands is the preferred alternative.
- After avoidance and minimization have been exhausted, mitigation must be proposed to offset the adverse impacts of the project to existing wetland functions and values. Significant attention is given to forested wetland systems, which are difficult to mitigate.
- The cumulative impacts of concurrent and future transportation improvement projects in the vicinity of the subject project should also be addressed.

FDOT District 5 Feedback to FL Department of Environmental Protection's Review
*Comments:*Thank you for your review and comments. We acknowledge the need for an ERP permit from St. Johns WMD. The PD&E study will evaluate alternatives to lessen any unavoidable wetland impacts along with design features to minimize these impacts.
*Date Feedback Submitted:*12/30/2009

4 ETAT Review by Brandon Howard, National Marine Fisheries Service (12/04/2009)
Wetlands Effect: Substantial

Coordination Document: No Involvement

Dispute Information:N/A

Identified Resources and Level of Importance:
Wetlands within the project area are high in quality and part of a larger freshwater wetland system associated with the Matanzas River. These wetlands are important to the area, and provide wildlife habitat, water quality functions, aquifer recharge, and contribute organic materials to downstream estuaries associated with the Matanzas River. These wetlands do not provide habitat for fishery resources under the purview of NMFS; however, they do provide ecological services that support habitats used by fish and wildlife.

Comments on Effects to Resources:
NMFS understands that the purpose of the project is to construct a dual purpose intersection. The intersection would be important for safety as well as a capacity improvement. The project description indicates that the capacity improvement projected needs are based on proposed residential developments in the area. Hammock Dunes being the only one mentioned that is currently under construction. From the description in the EST, Palm Coast Park is only proposed at this time. The intersection should not be constructed until environmental permits are issued for these proposed developments. The intersection will encourage urban sprawl and secondarily impact wetlands in the project area. If project impacts are sufficiently avoided, minimization and mitigation should take place. Mitigation for unavoidable wetland impacts should be based on a functional assessment such as the Uniform Mitigation Assessment Method and take place in the Matanzas River watershed.

Additional Comments (optional):
Magnuson-Stevens Act: Based on the project location, information provided in the ETDM website, and GIS-based analysis of impacts, NOAA's National Marine Fisheries Service (NMFS) concludes the proposed work would not directly impact areas that support essential fish habitat (EFH) or NOAA trust fishery resources. NMFS has no comments or recommendations to provide pursuant to the EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act (P.L. 104-

297); and this project will not require an EFH Assessment. Further consultation on this matter is not necessary unless future modifications are proposed and you believe that the proposed action may result in adverse impacts to EFH.

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

Fish and Wildlife Coordination Act: The comments NMFS provided regarding sequential mitigation are in accordance with the Fish and Wildlife Coordination Act.

FDOT District 5 Feedback to National Marine Fisheries Service's Review
*Comments:*Thank you for your review and comment that the project will not require an EFH Assessment. Further coordination with the U.S. Fish and Wildlife Service will take place during the PD&E study phase and a determination of effect under the ESA will be requested.
*Date Feedback Submitted:*12/30/2009

- No review submitted from the Federal Highway Administration

Wildlife and Habitat

Coordinator Summary

3 Summary Degree of Effect
Wildlife and Habitat Summary Degree of Effect: Moderate

Reviewed By:
FDOT District 5 (12/31/2009)
Comments:
Two agencies provided comments on this issue and both assigned Moderate degrees of effect. We are assigning a Moderate summary degree of effect for wildlife and habitat issues.

ETAT Reviews for Wildlife and Habitat

3 ETAT Review by Scott Sanders, FL Fish and Wildlife Conservation Commission (11/18/2009)
Wildlife and Habitat Effect: Moderate

Coordination Document: To Be Determined: Further Coordination Required

Dispute Information:N/A

Identified Resources and Level of Importance:
The Habitat Conservation Scientific Services Section of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated an agency review of ETDM #12516, Flagler County, and provides the following comments related to potential effects to fish and wildlife resources on this

Programming Phase project.

The Project Description Summary states that this project involves the construction of a new interchange on I-95 at the Matanzas Woods Parkway in Palm Coast.

The project area was evaluated for potential fish, wildlife, and habitat resources within 500 feet of the proposed alignment. Our assessment reveals that while the project construction area is rural and undeveloped, it is adjacent to a rapidly developing suburban landscape to the east and west along Matanzas Woods Parkway. Within the 110.74-acre assessment area, 38.12% of the land cover is classified as High or Low Impact Urban. Natural communities include Shrub and Brushland (28.7 acres), Cypress Swamp (23.4 acres), Shrub Swamp (5.3 acres), Hardwood Hammocks and Forests (4.0 acres), Pinelands (3.5 acres), Mixed Wetland Forest (2.0 acres), Bare Soil/Clearcut (0.9 acres), and Freshwater Marsh (0.7 acres).

Based on range and preferred habitat type, the following species listed by the FWC as Endangered (E), Threatened (T), or Species of Special Concern (SSC) may occur along the project area: gopher frog (SSC), gopher tortoise (T), Eastern indigo snake (T), Florida pine snake (SSC), wood stork (E), little blue heron (SSC), white ibis (SSC), tricolored heron (SSC), snowy egret (SSC), limpkin (SSC), Florida black bear (T), Sherman's fox squirrel (SSC), and Florida mouse (SSC).

The GIS analysis revealed several specific characteristics associated with lands along the project alignment that provide an indication of potential habitat quality or sensitivity that will require field studies to verify the presence or absence of listed wildlife species and the quality of wildlife habitat resources. The FWC's Integrated Wildlife Habitat Ranking System classifies the project area as medium habitat quality. The site contains FWC Priority Wetlands Habitat capable of supporting 4 to 6 focal species in wetlands and 1 to 3 focal species in uplands. The project area is within the U.S. Fish and Wildlife Service Consultation Area for the Florida Scrub Jay, although there is no scrub jay habitat in the immediate vicinity.

Primary wildlife issues associated with this project include: potential adverse effects to a moderate number of species listed by the FWC as Endangered, Threatened, or Species of Special Concern; direct destruction of cypress and hardwood wetlands; secondary impacts of a new I-95 interchange that result in additional loss of wooded wetlands; and potential water quality degradation as a result of additional stormwater runoff from the expanded roadway surface draining into adjacent wetlands and, ultimately, the Matanzas River. Cypress swamp covers a major portion of the project area immediately east of I-95, and ramp construction would involve both direct wetland removal, and habitat fragmentation and isolation of the remaining wetlands. Future development around the interchange could significantly reduce the wildlife habitat value of these currently undeveloped lands in the project area. Increased traffic on Matanzas Woods Parkway could lead to more wildlife roadkill, potentially including the Florida black bear.

Comments on Effects to Resources:
Based on the project information provided, we believe that direct and indirect effects of the Matanzas Woods Parkway/I-95 interchange could be moderate, and would require a mitigation plan that compensates for the loss of all forested wetlands between I-95 and the outer limits of on- and off-ramp construction.

Additional Comments (optional):
We recommend that the Project Development and Environment (PD&E) Study address natural resources by including the following measures for conserving fish and wildlife and habitat resources that may occur within and adjacent to the project area. Plant community mapping and wildlife surveys for the occurrence of wildlife species listed by our agency as Endangered, Threatened, or Species of Special Concern should be performed, both along the Right-of-way and within sites proposed for Drainage Retention Areas. A plan should also be implemented to avoid and minimize project effects to the extent practicable. Drainage Retention Areas and equipment staging areas should be located in previously disturbed sites to avoid habitat destruction or degradation.

Opportunities should also be investigated for providing structures to maintain habitat connectivity. A compensatory mitigation plan should include the replacement of any wetland, upland, or aquatic habitat lost as a result of the project. This could be achieved by purchasing land, or securing conservation easements over lands adjacent to existing public lands, and by habitat restoration. Replacement habitat for mitigation should be type for type, as productive, and equal to or of higher functional value. Please notify us immediately if the design, extent, or footprint of the current project is modified, as we may choose to provide additional comments and/or recommendations.

We appreciate the opportunity to provide input on highway design and the conservation of fish and wildlife resources. Please contact Brian Barnett at (850) 528-6316 or email brian_barnett@urscorp.com to initiate the process for further overall coordination on this project.

FDOT District 5 Feedback to FL Fish and Wildlife Conservation Commission's Review
*Comments:*Thank you for your review and comments. A Wildlife and Habitat Impact analysis will be conducted during the PD&E study which will evaluate the various habitat types and potential for those habitats to support state listed species. This report will also include a survey for any listed species within the existing or proposed right of way, including drainage retention areas.
*Date Feedback Submitted:*1/4/2010

3 ETAT Review by Todd Samuel Mecklenborg, US Fish and Wildlife Service (12/04/2009)
Wildlife and Habitat Effect: Moderate

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

Dispute Information:N/A

Identified Resources and Level of Importance:
Federally listed plant and animal species, migratory birds, the habitats they occupy and are supported by (breeding, feeding, and sheltering), and wetlands are trust resources that have a high level of importance to the mission of the U.S. Fish and Wildlife Service.

Our mission is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. We are both a leader and trusted partner in fish and wildlife conservation, known for our scientific excellence, stewardship of lands and natural resources, dedicated professionals and commitment to public service.

Comments on Effects to Resources:
The Service has reviewed the GIS database on the Environmental Screening Tool for recorded locations of federally listed threatened and endangered species and wetlands on or adjacent to the project study corridor. After a literature review utilizing the 500 foot buffer of the proposed alignment, the Service has the following comments and recommendations:

All habitats should be surveyed for listed species and properly documented in the environmental report. A list of potentially occurring species for Flagler County is available on our web-page (www.fws.gov/northflorida). The following guidance is specific to species which have a high probability of occurring in the study corridor.

A major reason for the wood stork (Mycteria americana) decline has been the loss and degradation of feeding habitat. A variety of nearby wetland habitats such as roadside or agricultural ditches can provide good forage areas for storks, and storks typically do most of their feeding in wetlands between 5 and 40 miles from the colony. Wetlands in the project area should be delineated and

evaluated using an evaluation technique such as the Wetland Rapid Assessment Procedure or the Uniform Mitigation Assessment Method. The Service recommends assessing any impacted wetland for potential wood stork usage, such as wetlands that are seasonally flooded and drawn down with littoral shelf areas. Wetlands occurring within 20 km (13 miles) of an active wood stork colony in northern Florida are defined as a Core Foraging Areas (CFA). If wetland impacts occur from the proposed action, type for type wetland creation would be recommended within the CFA.

The eastern indigo snake may occupy a broad range of habitats, from scrub and sandhill communities to wet prairies and flatwoods, adjacent to the proposed project. The eastern indigo snake is most strongly associated with high, dry, well-drained sandy soils, closely paralleling habitat preferred by the gopher tortoise (Gopherus polyphemus), a Florida listed species. The Service would recommend that FDOT implement the Service's Standard Protection Measures for the Eastern Indigo Snake during the construction phase of the project. Those measures can be found at the Service's Jacksonville Ecological Service Field Office website at http://northflorida.fws.gov/IndigoSnakes/east-indigo-snake-measures-071299.htm

Approximately 11.9 acres of cypress, 17.1 acres of shrub/scrub, and 30.8 acres of wet prairie are within the 500-foot buffer. All measures to avoid and minimize impacts to these resources should be implemented in to the design of the future facility. Measures to reduce fragmentation of theses areas from the adjacent landscape need to be considered to avoid isolating areas not impacted by the action as well as impeding natural travel corridors for wildlife.

Additional Comments (optional):
Comments are provided in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), section 7 of the Endangered Species Act of 1973, (87 Stat 884, as amended 16 U.S.C. 1531 et seq.), the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712 et seq.), and the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361 et seq.).

FDOT District 5 Feedback to US Fish and Wildlife Service's Review
*Comments:*Thank you for your review and comments. A Wildlife and Habitat Impact analysis will be conducted during the PD&E study which will evaluate the various habitat types and potential for those habitats to support listed species. This report will also include a survey for any listed species with a special emphasis on wood storks, indigo snakes and gopher tortoise.
*Date Feedback Submitted:*1/4/2010

- No review submitted from the Federal Highway Administration
- No review submitted from the US Forest Service

ETAT Reviews: Cultural

Historic and Archaeological Sites

Coordinator Summary

2 Summary Degree of Effect

Historic and Archaeological Sites Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (1/04/2010)
Comments:

Two agencies provided comments on this resource with both assigning Minimal degrees of effect. Nonetheless, a Cultural Resource Assessment Survey will be conducted during the PD&E Study. We are assigning a Minimal summary degree of effect.

ETAT Reviews for Historic and Archaeological Sites

2 ETAT Review by Jennifer R Ross, FL Department of State (11/05/2009)
Historic and Archaeological Sites Effect: Minimal

Confidential: Review will not be displayed on Public Access website

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

Dispute Information:N/A

Identified Resources and Level of Importance:
There are no previously-identified, historic-age cultural resources within close vicinity to the project corridor. The only cultural resource within one mile (5280 feet) of the project activities is the Old King's Road Resource Group, which has been identified as POTENTIALLY ELIGIBLE FOR NRHP by the SHPO. This property is located at least 2640 feet outside of the project, well beyond the proposed activities.

Comments on Effects to Resources:
Since there are no previously-identified, historic-age cultural resources within close vicinity to the project corridor, the proposed activities are unlikely to have an affect upon significant cultural resources.

Additional Comments (optional):
DHR records indicate that the project corridor was subjected to a cultural resources survey in 1995 (survey No. 4646, DHR No. 1996-3490). At that time no historic resources were recorded within the vicinity of the current project corridor. However, because the area has not been subjected to study in 14 years, it is possible that there could be unrecorded historic properties within the project area. Therefore, it is the opinion of our office that, prior to any ground disturbing activities, the proposed project area should be subject to a systematic cultural resources assessment survey by a qualified professional. All historic-age resources, including potential historic districts, within the area of potential effects should be documented and assessed for NRHP eligibility. The resultant survey report will need to be forwarded to this agency for review and comment.

FDOT District 5 Feedback to FL Department of State's Review
*Comments:*Thank you for your review and comments. A CRAS will be conducted during the PD&E Study in order to document any potential historic resources.
*Date Feedback Submitted:*1/4/2010

2 ETAT Review by Cathy Kendall, Federal Highway Administration (12/08/2009)
Historic and Archaeological Sites Effect: Minimal

Confidential: Review will not be displayed on Public Access website

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

Dispute Information:N/A

Identified Resources and Level of Importance:
No areas within 200 feet identified using the GIS analysis.

Comments on Effects to Resources:
field verification needed.

FDOT District 5 Feedback to Federal Highway Administration's Review
*Comments:*Thank you for your review and comments. Although the GIS analysis did not indicate any historical or archaeological resources within the project area, the Florida Department of State has requested a survey for potentially eligible historic resources as the project vicinity has not been subject to a systematic survey in over 14 years. A Cultural Resource Assessment Survey will be conducted during the PD&E Study.
*Date Feedback Submitted:*1/4/2010

- No review submitted from the Miccosukee Tribe of Indians of Florida
- No review submitted from the Seminole Tribe of Florida

Recreation Areas

Coordinator Summary

0 Summary Degree of Effect

Recreation Areas Summary Degree of Effect: None

Reviewed By:
FDOT District 5 (1/05/2010)
Comments:
Three agencies provided a review of recreational issues and all assigned a None degree of effect. We are assigning a None summary degree of effect for this issue.

ETAT Reviews for Recreation Areas

0 ETAT Review by Lauren P. Milligan, FL Department of Environmental Protection (12/14/2009)

Recreation Areas Effect: None

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
None found.

Comments on Effects to Resources:
None found.

FDOT District 5 Feedback to FL Department of Environmental Protection's Review
*Comments:*Thank you.
*Date Feedback Submitted:*1/5/2010

0 ETAT Review by Cathy Kendall, Federal Highway Administration (12/08/2009)
Recreation Areas Effect: None

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

Dispute Information:N/A

Identified Resources and Level of Importance:
No areas identified using GIS analysis.

Comments on Effects to Resources:
None found.

FDOT District 5 Feedback to Federal Highway Administration's Review
*Comments:*Thank you for the review. We will document recreational issues, or lack thereof, in the PD&E document.
*Date Feedback Submitted:*1/5/2010

0 ETAT Review by Madolyn Dominy, US Environmental Protection Agency (12/14/2009)
Recreation Areas Effect: None

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
None found.

Comments on Effects to Resources:
None found.

FDOT District 5 Feedback to US Environmental Protection Agency's Review
*Comments:*Thank you.
*Date Feedback Submitted:*1/5/2010

- No review submitted from the National Park Service

Section 4(f) Potential

Coordinator Summary

N/A Summary Degree of Effect

Section 4(f) Potential Summary Degree of Effect: N/A / No Involvement

Reviewed By:
FDOT District 5 (1/05/2010)
Comments:
No reviews or comments were received for this issue. A review of the GIS analysis indicates that there are no potential Section 4(f) resources within the project area. We are assigning a N/A - No Involvement as the summary degree of effect for this issue

ETAT Reviews for Section 4(f) Potential

No reviews found for the Section 4(f) Potential Issue.
- No review submitted from the Federal Highway Administration

ETAT Reviews: Community

Aesthetics

Coordinator Summary

2 Summary Degree of Effect

Aesthetics Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (1/05/2010)
Comments:
One agency provided comments on this issue and assigned a Minimal degree of effect. We concur and are assigning a Minimal summary degree of effect for aesthetics.

ETAT Reviews for Aesthetics

2 ETAT Review by Cathy Kendall, Federal Highway Administration (12/08/2009)

Aesthetics Effect: Minimal

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
Potential impacts to low density residential that is located in area or which is under construction.

Comments on Effects to Resources:
Assess impacts as part of PD&E.

FDOT District 5 Feedback to Federal Highway Administration's Review
*Comments:*Thank you for your review and comments. Potential aesthetic treatment to the proposed

interchange will be looked at during the PD&E study based on comments received from the public and local government.
*Date Feedback Submitted:*1/5/2010

Economic

Coordinator Summary

1 Summary Degree of Effect

Economic Summary Degree of Effect: Enhanced

Reviewed By:
FDOT District 5 (2/03/2010)
Comments:
No agencies provided comments on economic issues. If the proposed interchange is constructed, it would allow a more direct access from commercial properties along Matanzas Woods Parkway to I-95, a Strategic Intermodal System facility. SIS facilities are the major transportation networks within the state of Florida that allow for movement of goods and services between strategic economic hubs. As such, it is anticipated that a direct connection to the I-95 SIS facility would be of economic benefit to businesses along Matanzas Woods Parkway. Therefore, we are assigning an Enhanced summary degree of effect for economic issues.

ETAT Reviews for Economic

No reviews found for the Economic Issue.
- No review submitted from the Federal Highway Administration

Land Use

Coordinator Summary

2 Summary Degree of Effect

Land Use Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (1/05/2010)
Comments:
One agency provided comments on this issue. As the proposed interchange has been identified in the Transportation Facilities Map of the City of Palm Coast's comprehensive plan, we are assigning a Minimal summary degree of effect for land use issues.

ETAT Reviews for Land Use

2 ETAT Review by Gary Donaldson, FL Department of Community Affairs (12/16/2009)
Land Use Effect: Minimal

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
The Department of Community Affairs has reviewed the referenced project and has determined that it is identified on the 2020 Transportation Facilities Map as contained in the City of Palm Coast's Comprehensive Plan and consistent with the City's comprehensive plan. In addition, the ETDM Purpose and Need Statement identifies the project as necessary in order to facilitate wildfire evacuation.

Comments on Effects to Resources:
see above

FDOT District 5 Feedback to FL Department of Community Affairs's Review
*Comments:*Thank you for your review, comments and acknowledgment that this project is consistent the City of Palm Coast's comprehensive plan.
*Date Feedback Submitted:*1/5/2010

- No review submitted from the Federal Highway Administration

Mobility

Coordinator Summary

1 Summary Degree of Effect

Mobility Summary Degree of Effect: Enhanced

Reviewed By:
FDOT District 5 (2/03/2010)
Comments:
No agencies provided comments on mobility issues. An additional connection for the residents and businesses within the City of Palm Coast to I-95 would result in increased mobility for these users. Therefore, we are assigning an Enhanced summary degree of effect for mobility issues.

ETAT Reviews for Mobility

No reviews found for the Mobility Issue.
- No review submitted from the Federal Highway Administration
- No review submitted from the Federal Transit Administration

Relocation

Coordinator Summary

2 Summary Degree of Effect

Relocation Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (2/03/2010)
Comments:
No agencies provided comments for relocation issues. A future interchange with I-95 at Matanzas Woods Parkway has been part of the City of Palm Coast's Comprehensive Plan for some time. Development in the immediate vicinity anticipated this future interchange and preserved a corridor for an interchange. As such, it is anticipated that the potential for relocations should be minimal, depending on the preferred interchange configuration determined by the PD&E Study. We are assigning a Minimal degree of effect for relocation issues.

ETAT Reviews for Relocation

No reviews found for the Relocation Issue.
- No review submitted from the Federal Highway Administration

Social

Coordinator Summary

2 Summary Degree of Effect

Social Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (1/05/2010)
Comments:
Two agencies provide comments on this issue and both assigned Minimal degrees of effect. We are assigning a Minimal summary degree of effect.

ETAT Reviews for Social

2 ETAT Review by Madolyn Dominy, US Environmental Protection Agency (12/14/2009)

Social Effect: Minimal

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
Resources: Residential communities and properties, commercial businesses and properties, social service facilities, religious facilities or centers, schools, healthcare facilities, public parks and recreation areas, etc.

Level of Importance: These resources are of a high level of importance. A minimal degree of effect is being assigned to this issue at this time. EPA does, however, recommend that a public involvement plan be developed and implemented.

Comments on Effects to Resources:
The degree of direct impact to social features and/or structures is dependent upon the location and amount of right-of-way needed for the project. FDOT should consider the impact to any social

features within the proposed interchange footprint area. Construction of a new roadway interchange could require the acquisition of right-of-way from adjacent land owners, increase traffic volumes and congestion, increase noise, impact businesses during construction, impact traffic flow during construction, etc. Efforts should be made to avoid or minimize social impacts and negative community impacts to the greatest extent practicable. A public involvement plan should be developed and implemented.

FDOT District 5 Feedback to US Environmental Protection Agency's Review
*Comments:*Thank you for your review and comments. A public involvement plan will be implemented during the study phase which will include public outreach, newsletters, workshops and a formal Public Hearing. All alternatives to be looked at during the study will consider impacts to the resources you have identified and the social implications of those impacts.
*Date Feedback Submitted:*1/5/2010

2 ETAT Review by Gary Donaldson, FL Department of Community Affairs (12/16/2009)
Social Effect: Minimal

Coordination Document: No Selection

Dispute Information:N/A

Identified Resources and Level of Importance:
Pursuant to Section 163.3177 (6)(a), (b) and (j), F.S., the Department supports the use of congestion management techniques in lieu of widening where appropriate. This initiative supports alternative modes of transportation such as bicycles, walking and transit. The State of Florida is placing a greater emphasis on multi-modal opportunities as the Department seeks to promote greater mobility while reducing greenhouse gas emissions.

Comments on Effects to Resources:
see above

FDOT District 5 Feedback to FL Department of Community Affairs's Review
*Comments:*Thank you for your review and comments. The department of transportation shares FDCA's support of congestion management techniques where appropriate and multi-modal opportunities.
*Date Feedback Submitted:*1/5/2010

- No review submitted from the Federal Highway Administration

ETAT Reviews: Secondary and Cumulative

Secondary and Cumulative Effects

Coordinator Summary

2 Summary Degree of Effect

Secondary and Cumulative Effects Summary Degree of Effect: Minimal

Reviewed By:
FDOT District 5 (2/04/2010)
Comments:
No agencies provided reviews or comments for secondary and cumulative effects issues. Due to the highly developed urban nature of the area of the proposed interchange there is little room for future development in the immediate vicinity. We believe that construction of the interchange would have minimal secondary and cumulative effects on adjacent resources and are assigning this as the degree of effect.

ETAT Reviews for Secondary and Cumulative Effects

No reviews found for the Secondary and Cumulative Effects Issue.

General Project Commitments

No General Project Commitments Found

Permits

Permit Name	Type	Review Org	Review Date
Large Construction (>= 5 AC)	Stormwater	FDOT District 5	06/17/10
Individual Permit	USACE	FDOT District 5	06/17/10
Environmental Resource Permit	State	FDOT District 5	06/17/10

Technical Studies

Technical Study Name	Type	Review Org	Review Date
Final Preliminary Engineering Report (signed and sealed)	ENGINEERING	FDOT District 5	02/04/10
Location Hydraulics Report	ENGINEERING	FDOT District 5	02/04/10
Drainage/Pond Siting Report	ENGINEERING	FDOT District 5	02/04/10
Typical Section Package	ENGINEERING	FDOT District 5	02/04/10
Advance Notification/ICAR Package	ENVIRONMENTAL	FDOT District 5	02/04/10
Public Involvement Plan	ENVIRONMENTAL	FDOT District 5	02/04/10
Class of Action Determination	ENVIRONMENTAL	FDOT District 5	02/04/10
Section 4(f) Statement	ENVIRONMENTAL	FDOT District 5	02/04/10
Noise Study Report	ENVIRONMENTAL	FDOT District 5	02/04/10
Air Quality Report	ENVIRONMENTAL	FDOT District 5	02/04/10
Contamination Screening Evaluation Report	ENVIRONMENTAL	FDOT District 5	02/04/10
Public Hearing Transcript	ENVIRONMENTAL	FDOT District 5	02/04/10
Endangered Species Biological Assessment	ENVIRONMENTAL	FDOT District 5	02/04/10
Wetlands Evaluation Report	ENVIRONMENTAL	FDOT District 5	02/04/10
Cultural Resource Assessment	ENVIRONMENTAL	FDOT District 5	02/04/10
Traffic Analysis	ENGINEERING	FDOT District 5	02/04/10
Type 2 CE	ENVIRONMENTAL	FDOT District 5	02/04/10
Preliminary Drainage Report	ENGINEERING	FDOT District 5	02/04/10
Project Development Summary Report (PDSR)	ENGINEERING	FDOT District 5	02/04/10
Essential Fish Habitat Assessment	ENVIRONMENTAL	FDOT District 5	02/04/10

Class of Action

Class of Action	Other Actions
Categorical Exclusion	None
Lead Agency	**Cooperating Agency/Agencies**
Federal Highway Administration	

Signatures

	Name	Review Status	Date
Lead Agency ETAT Member	Cathy Kendall (Federal Highway Administration)	ACCEPTED	6/30/2010
Comments	FHWA accepts the proposed Class of Action as a Type 2 Categorical Exclusion. This determination is based on FHWA review of the project in the ETDM screening tool, agency input provided through the ETDM screening tool, meetings with FDOT, as well as		

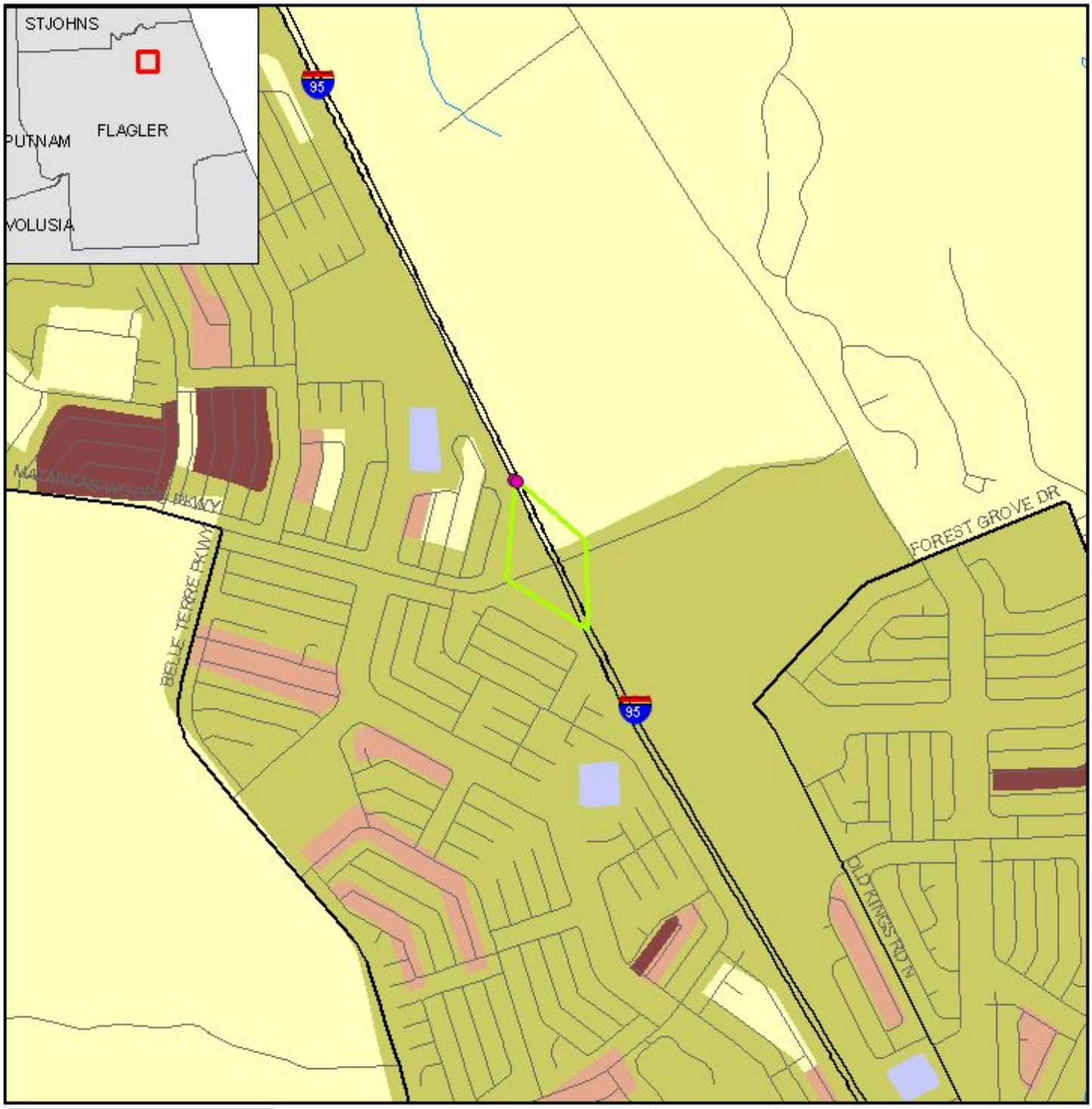
	the context of the area, which has numerous large developments proposed or approved for the vacant land in the area near this interchange. Based on these considerations, FHWA does not any anticipate significant impacts associated with this project. FHWA shall require that all concerns raised during the project screenings be addressed as part of the environmental analysis in the CE2 PD&E.		
	Name	**Review Status**	**Date**
FDOT ETDM Coordinator	Richard Fowler (FDOT District 5)	ACCEPTED	6/18/2010
Comments	Through coordination with the Federal Highway Administration it has been determined that the proposed new interchange, along with approved and pending Developments of Regional Impact along US1 in the vicinity of Matanzas Woods Parkway, justifies studying all of Matanzas Woods Parkway for potential improvements from US1 to the west to Old Kings Road to the east, a distance of approximately 2.96 miles. This study is proposed as a Type II Categorical Exclusion Class of Action.		

Dispute Resolution Activity Log

No Dispute Actions Found.

Hardcopy Maps: Alternative #1

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
to MP 14.65 (Exit 292)



0 0.7 Miles

Population Age Distribution Map

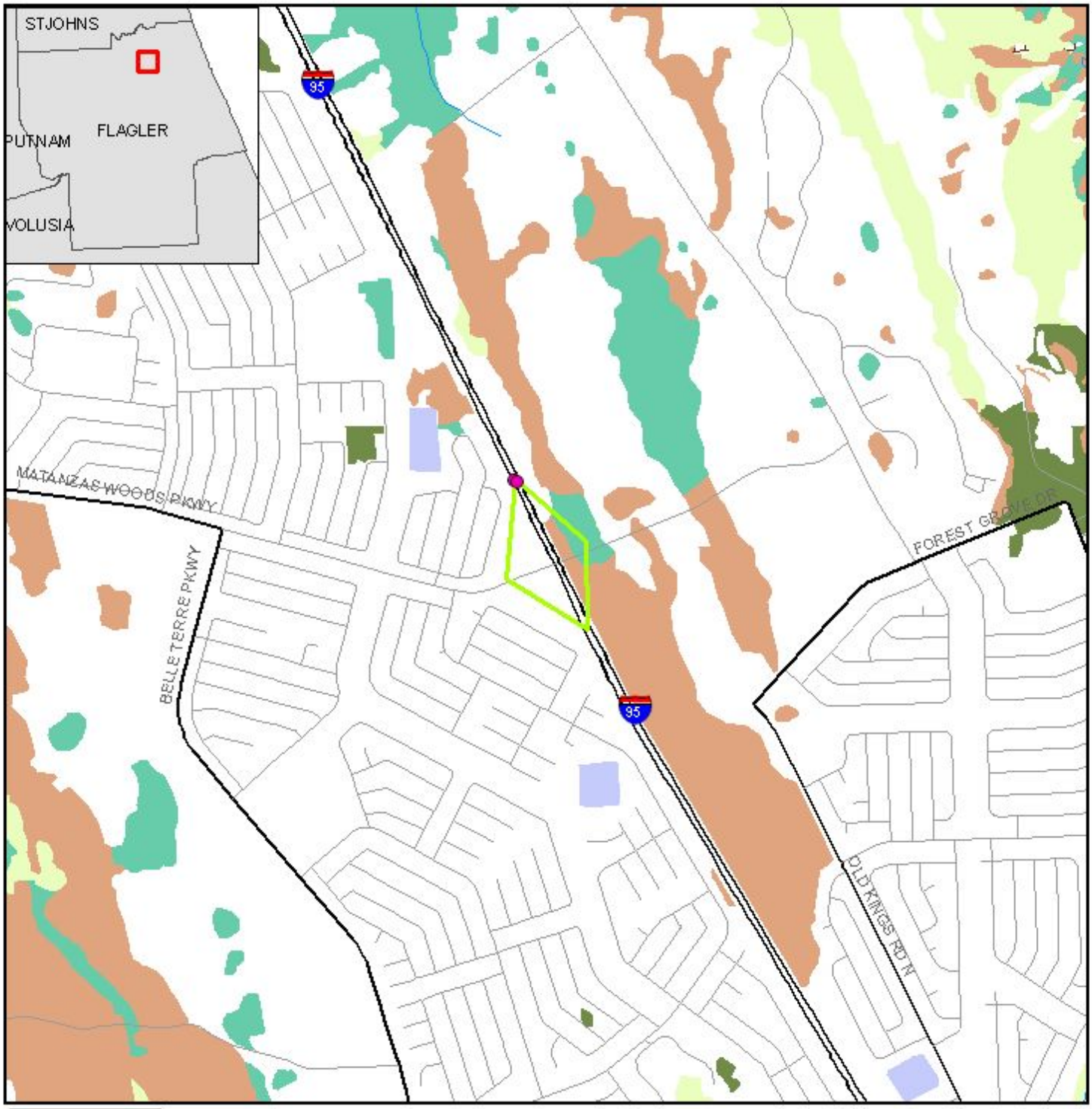
Data Sources:
US Geological Survey
FL Department of Transportation
Geographic Data Technology, Inc.
US Census Bureau

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body

Median Age: 0 - 18, 18 - 30, 30 - 65, > 65

Printed on: 12/12/2011
Map Generated on: 10/14/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
to MP 14.65 (Exit 292)



0 0.4 Miles

Coastal and Marine Resource Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- River, Stream or Canal
- Water Body
- Aquatic Preserve
- Navigable Water Way
- Continuous Seagrass
- Discontinuous Seagrass
- Coastal Barrier Resource Area
- Swamp or Marsh
- Exposed Rocky Platform
- Sand Beach
- Gravel Beach/Riprap
- Exposed Tidal Flat
- Sheltered Tidal Flat
- Mixed Sand And Gravel Beach
- Sheltered Rock/Seawall/Vegetated
- Exposed Vertical Rocky Shore/Seawall

Data Sources: Geographic Data Technology, Inc.; US Geological Survey; Florida Marine Research Institute; Florida Department of Transportation; Florida Department of Environmental Protection; National Oceanic and Atmospheric Association; Florida Water Management Districts

Printed on: 12/12/2011
Map Generated on: 10/14/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
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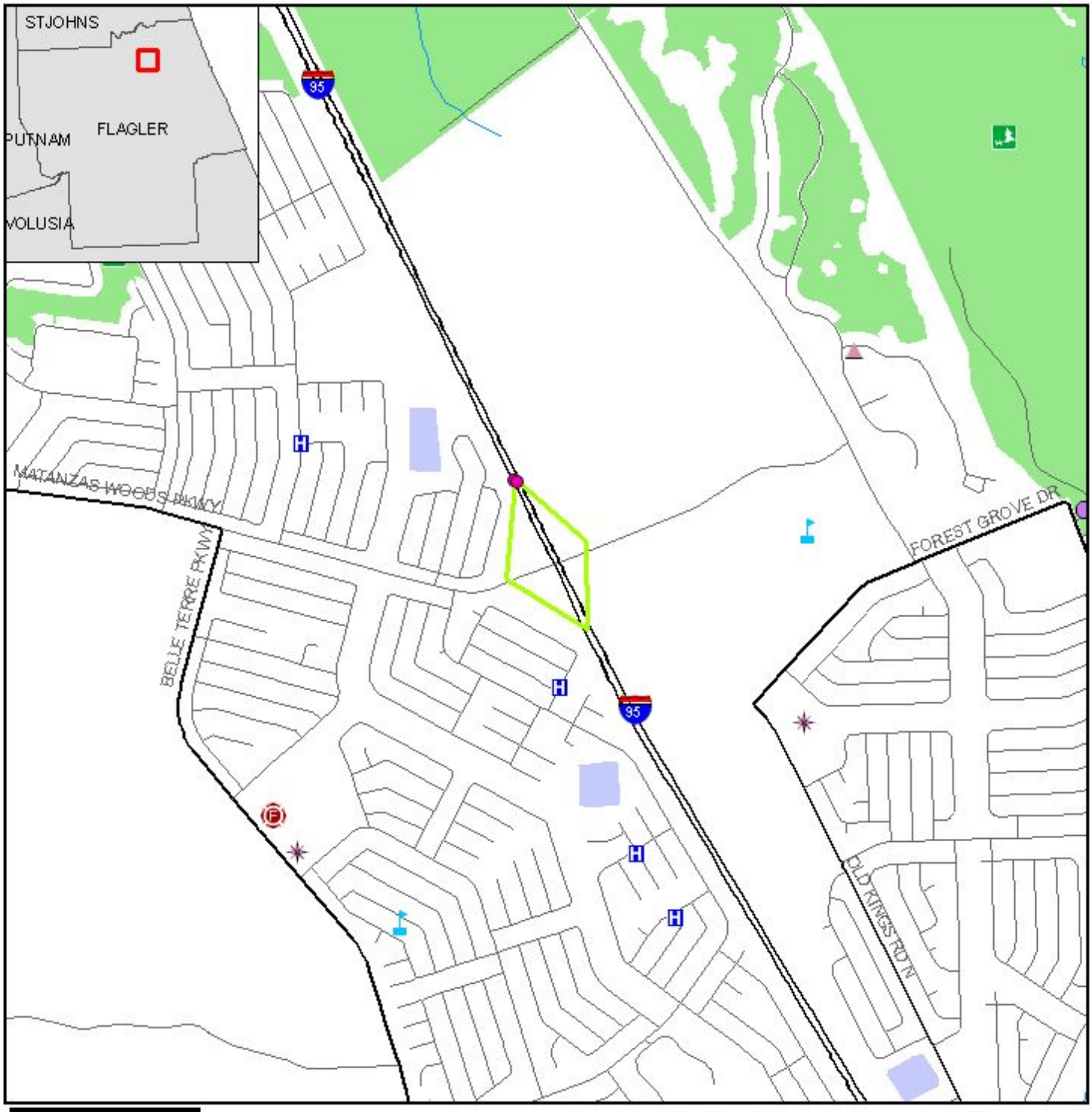


0 0.5 Miles

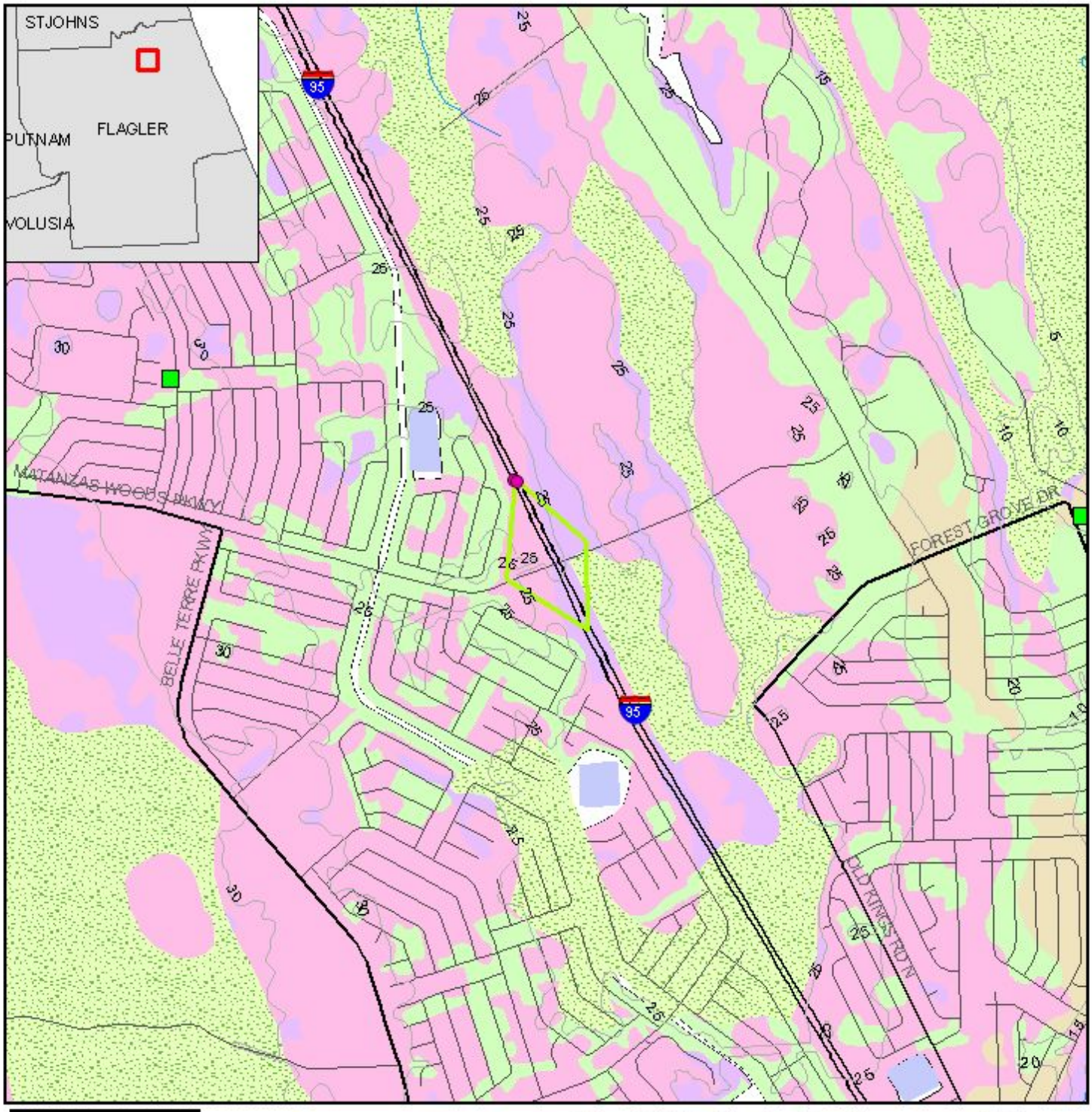
Community Facilities and Services Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Government
- Civic Center
- Cemetery
- Social Service
- Community Center
- Law Enforcement
- Place of Worship
- Cultural Center
- Fire Station
- Health Care
- School
- Park
- River, Stream or Canal
- Recreational Trail
- Major Road
- Local Road or Trail
- Railroad
- Community Boundary
- Water Body
- Conservation or Recreation Area

Data Sources:
US Geological Survey; FL Department of Transportation; Geographic Data Technology, Inc.; FL Property Appraisers; FL Natural Areas Inventory

Printed on: 12/12/2011
Map Generated on: 10/14/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
to MP 14.65 (Exit 292)



0 0.5 Miles

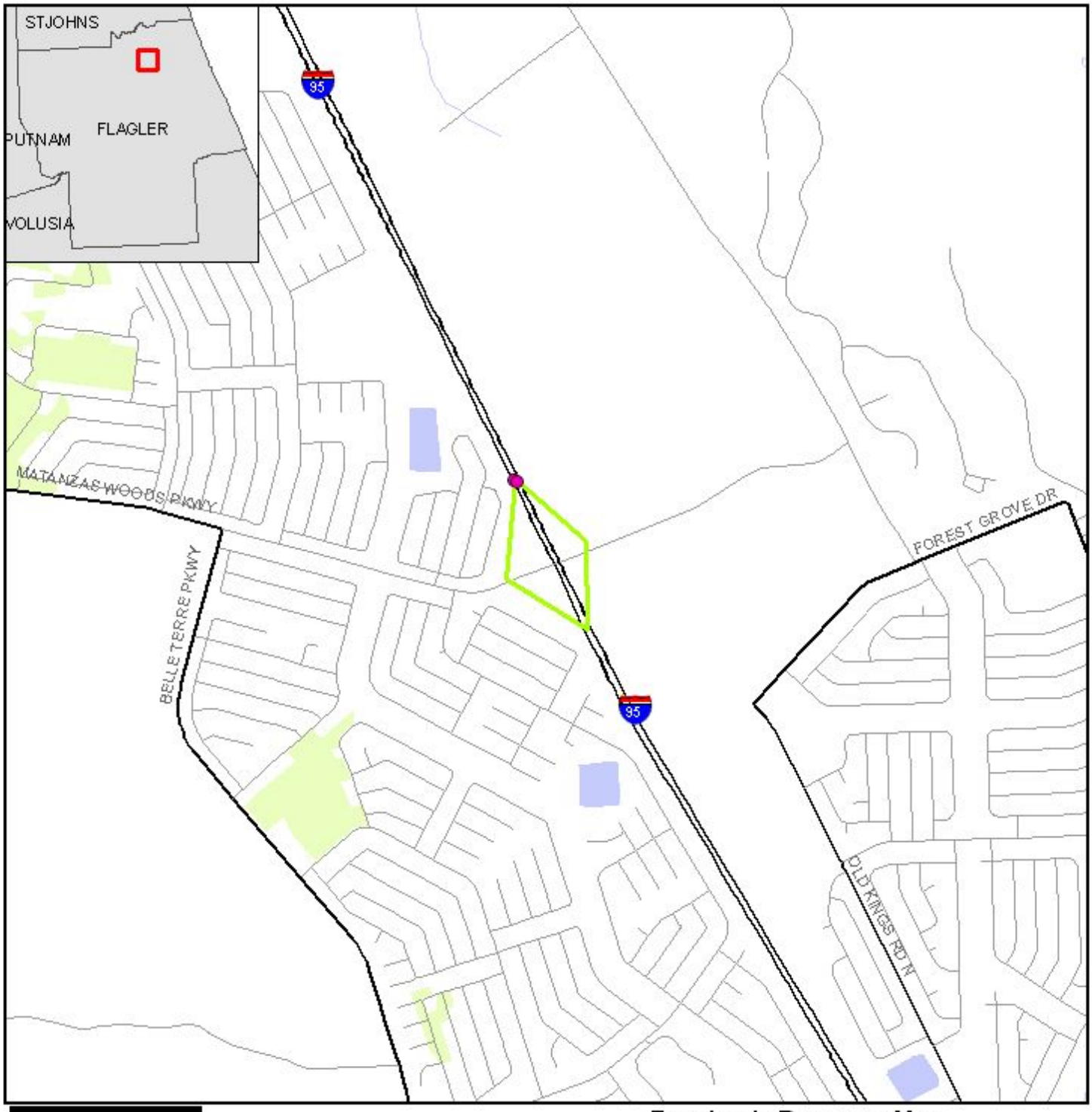
Potential Contamination Assessment Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Toxic Release Inventory
- Dry Cleaning Facility
- Gasoline Service Station
- Solid Waste Facility
- NPL Remediation Site
- Hazardous Material Site
- Power Plant
- Superfund Site
- Nuclear Site
- FDEP Tanks
- Brownfield Area
- 5 FT Contour
- Water Body
- Swamp/Marsh

Data Sources:
Geographic Data Technology, Inc.; US Geological Survey; FL Department of Transportation; FL Department of Environmental Protection; FL Water Management Districts; US Environmental Protection Agency; Natural Resource Conservation Service

Printed on: 12/12/2011
Map Generated on: 10/14/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
to MP 14.65 (Exit 292)



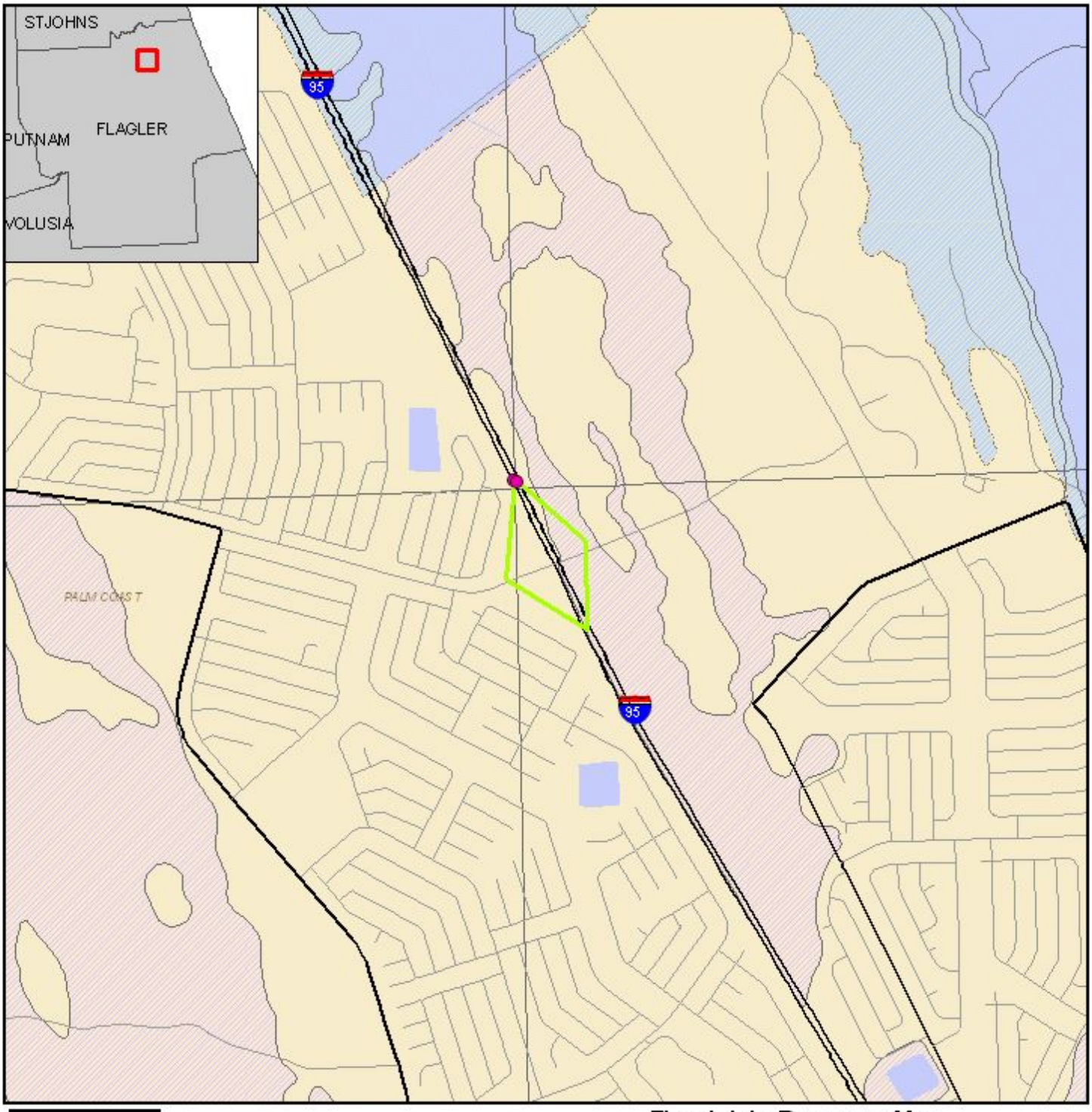
Farmlands Resource Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- River, Stream or Canal
- Major Road
- Local Road or Trail
- Water Body
- Prime Farmland Soils
- Cropland/Pastureland
- Nurseries/Vineyards
- Specialty Farms
- Tree Crops
- Rural Open Lands

Data Sources: Geographic Data Technology, Inc., Florida Water Management Districts, US Geological Survey, Natural Resources Conseration Services

Printed on: 12/12/2011
Map Generated on: 10/19/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
to MP 14.65 (Exit 292)



0 0.4 Miles

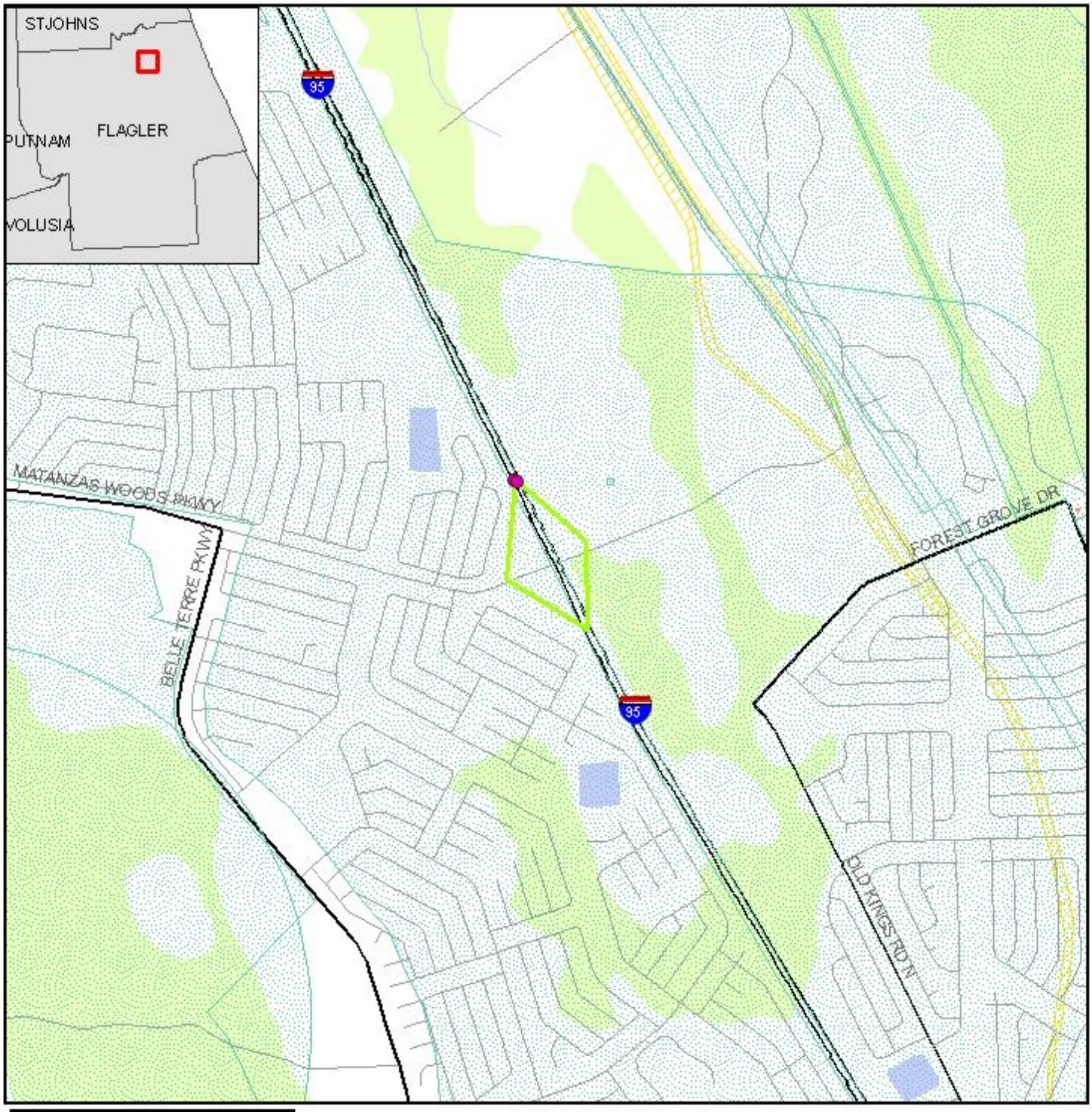
Floodplain Resource Map

ETDM Alternative Point
ETDM Alternative Terminus
ETDM Alternative Segment
ETDM Alternative Polygon
Major Road
Local Road or Trail
Railroad
River, Stream or Canal
Water Body
City Limits
County Boundaries
Inside Special Flood Hazard Area
Outside Special Flood Hazard Area

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Federal Emergency Management Agency

Printed on: 12/12/2011
Map Generated on: 10/14/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
to MP 14.65 (Exit 292)



Historic Resources Map

0 0.75 Miles

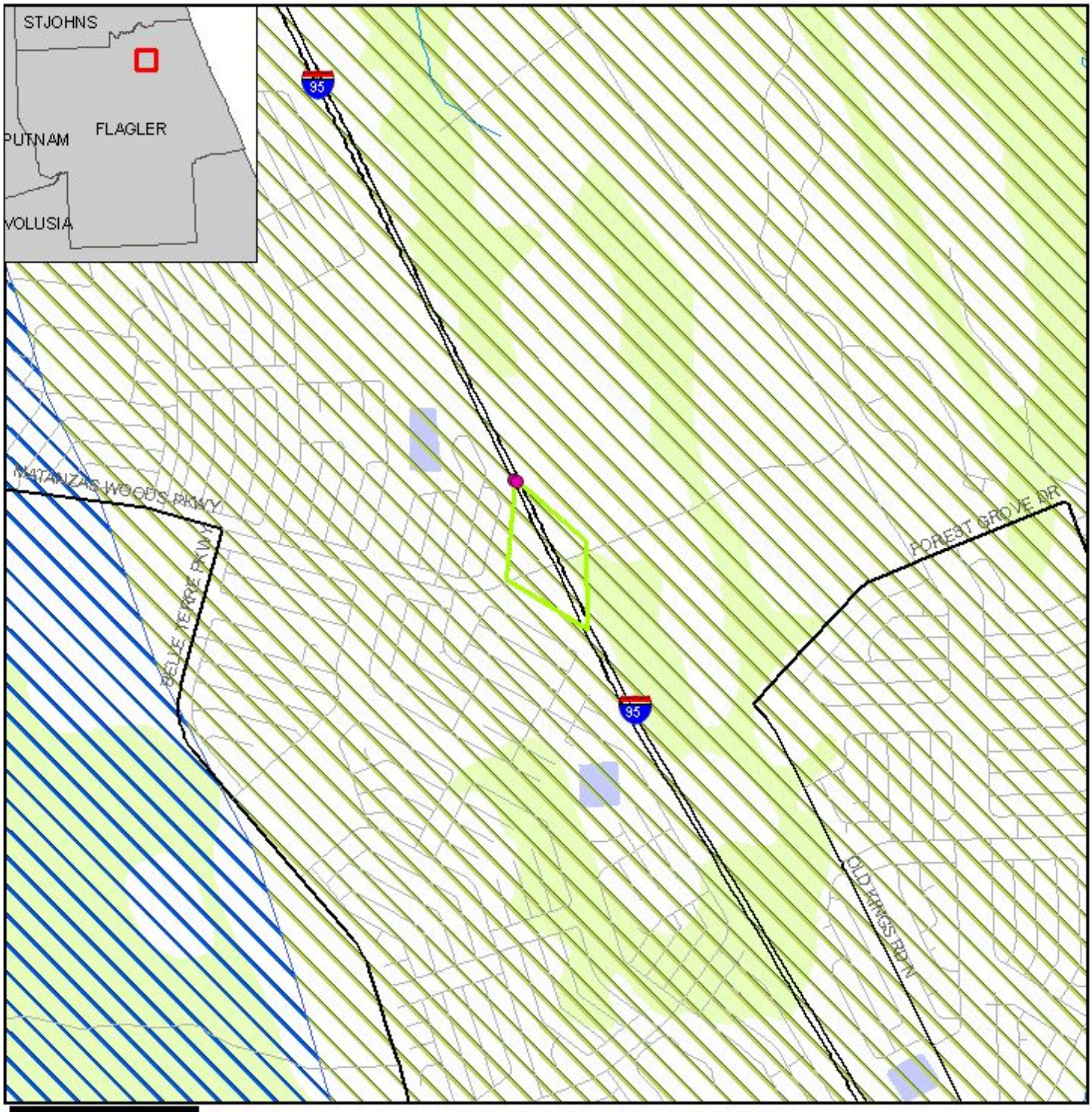
Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Florida Department of Transportation
Florida Department of State,
Bureau of Archaeological Research

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- River, Stream or Canal
- Water Body
- Swamp/Marsh
- Major Road
- Local Road or Trail
- Railroad
- Historic Structure
- Historic Cemetery
- Historic Bridge
- Historic Resource Group
- Cultural Resource Field Survey Area
- State Historic Highway

Note: Historic properties depicted on this map represent resources listed in the Florida Master Site File excluding archeological site locations, which, pursuant to Chapter 267.135, Florida Statutes, may be exempt from public record (Chapter 119.07, Florida Statutes). Absence of features on the map does not necessarily indicate an absence of resources in the project vicinity.

Printed on: 12/12/2011
Map Generated on: 10/14/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
to MP 14.65 (Exit 292)



Hydrogeology Resource Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- River, Stream or Canal
- Other Water Body
- Swamp/Marsh

Recharge Areas of the Floridan Aquifer
- Discharge 1 TO 5
- Discharge > 5
- Disharge < 1
- Recharge 1 TO 10
- Recharge > 10
- Recharge < 1

Geological Epoch
- Eocene
- Holocene
- Miocene
- Miocene/Pliocene
- Oligocene
- Oligocene/Miocene
- Pleistocene
- Pleistocene & Holocene
- Pliocene
- Pliocene/Pleistocene

Data Sources: Geographic Data Technology, Inc.; US Geological Survey; Florida Department of Transportation; South West Florida Water Management District; Florida Geological Survey

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
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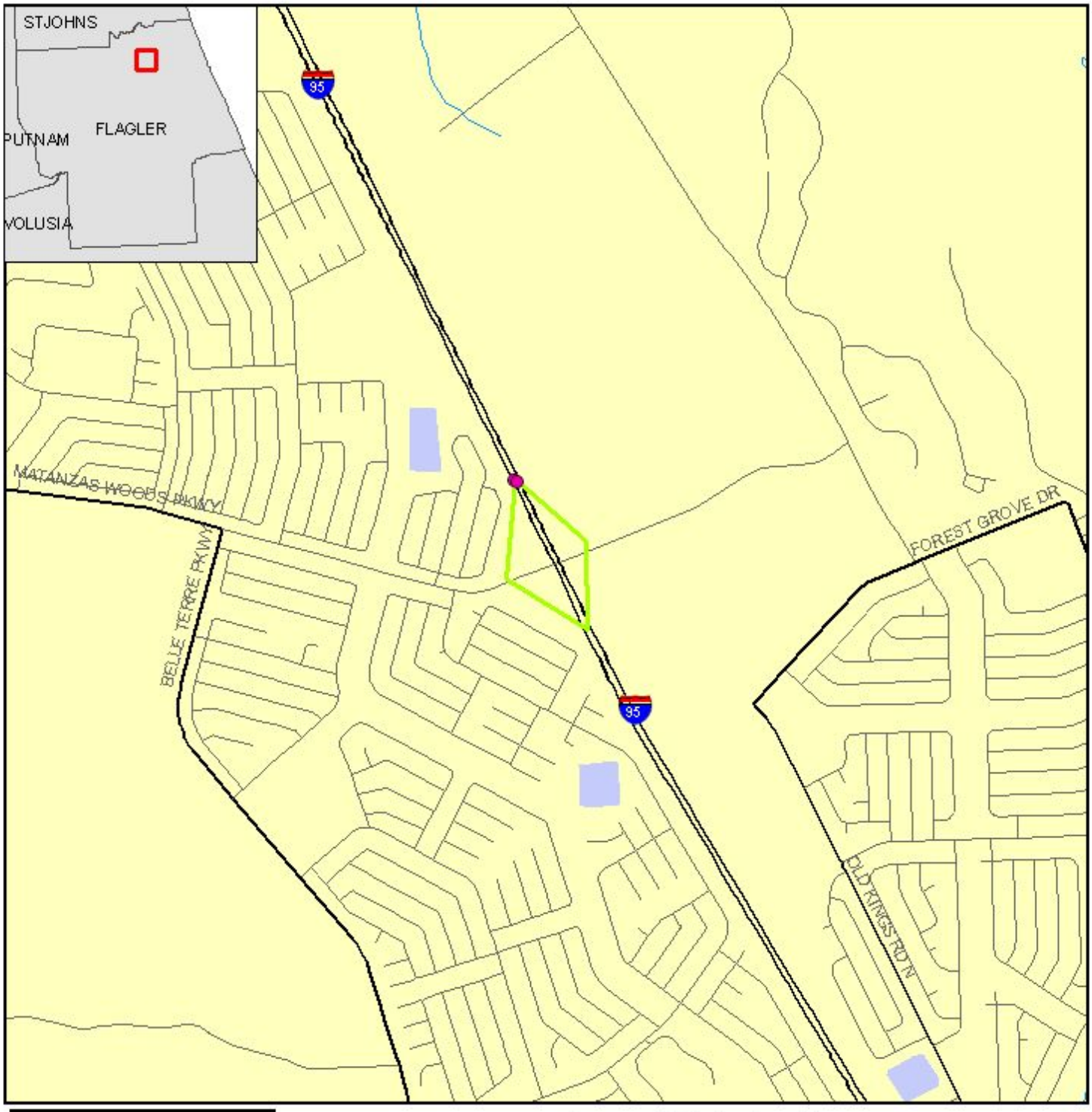

0 0.7 Miles

Income Distribution Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- > 20% Below Poverty
- Water Body

Median Household Income

0 - 10000 | 10001 - 29999 | 30000 - 49999 | 50000 - 79999 | 80000 - 125000 | > 125000

Data Sources:
US Geological Survey
FL Department of Transportation
Geographic Data Technology, Inc.
US Census Bureau

Printed on: 12/12/2011
Map Generated on: 10/19/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
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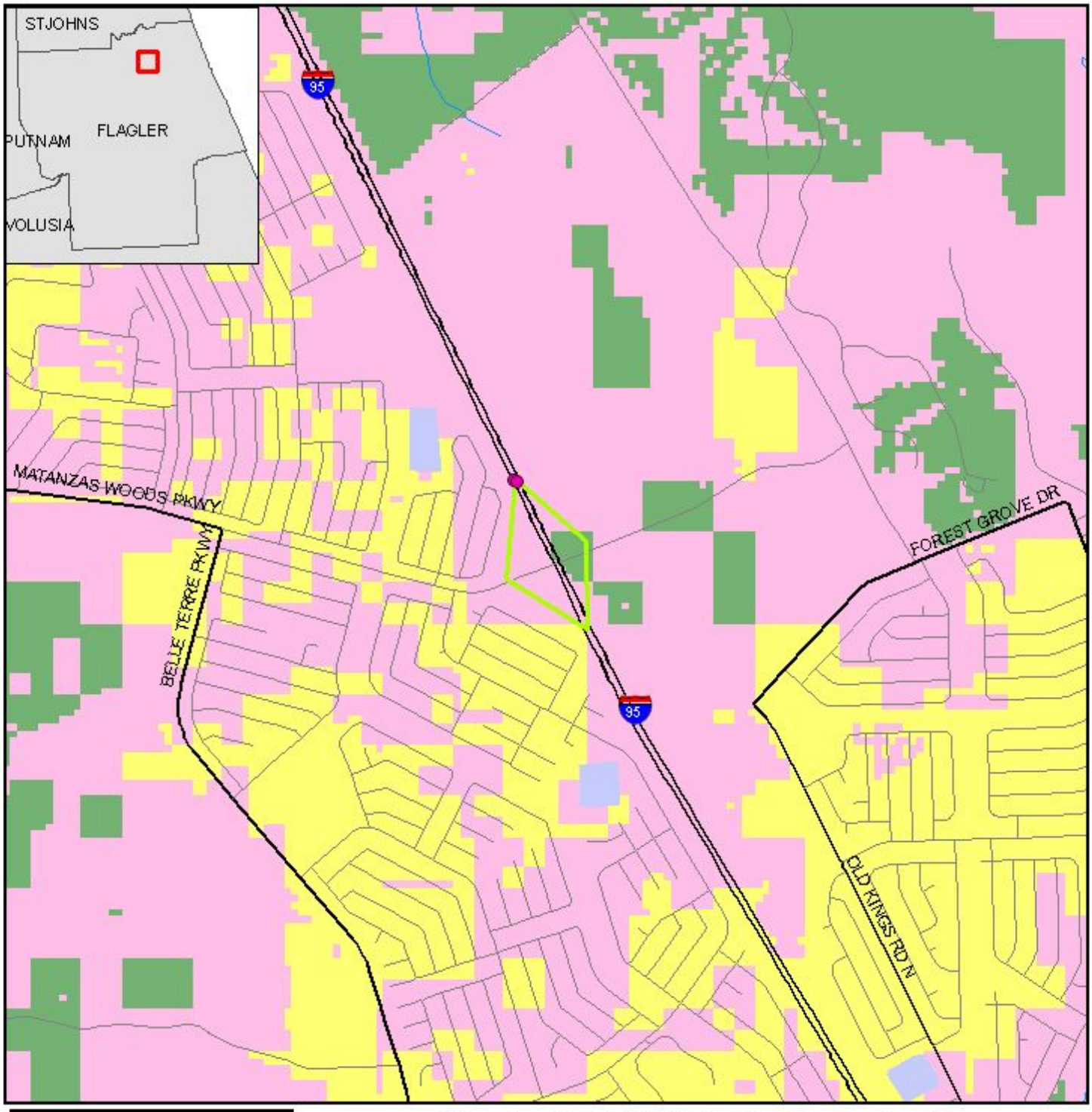

0 0.75 Miles

Integrated Wildlife Habitat Ranking System Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body
- Low Habitat Quality
- Medium Habitat Quality
- High Habitat Quality

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Florida Department of Transportation
Florida Fish & Wildlife Conservation Commission

Printed on: 12/12/2011
Map Generated on: 10/14/2009

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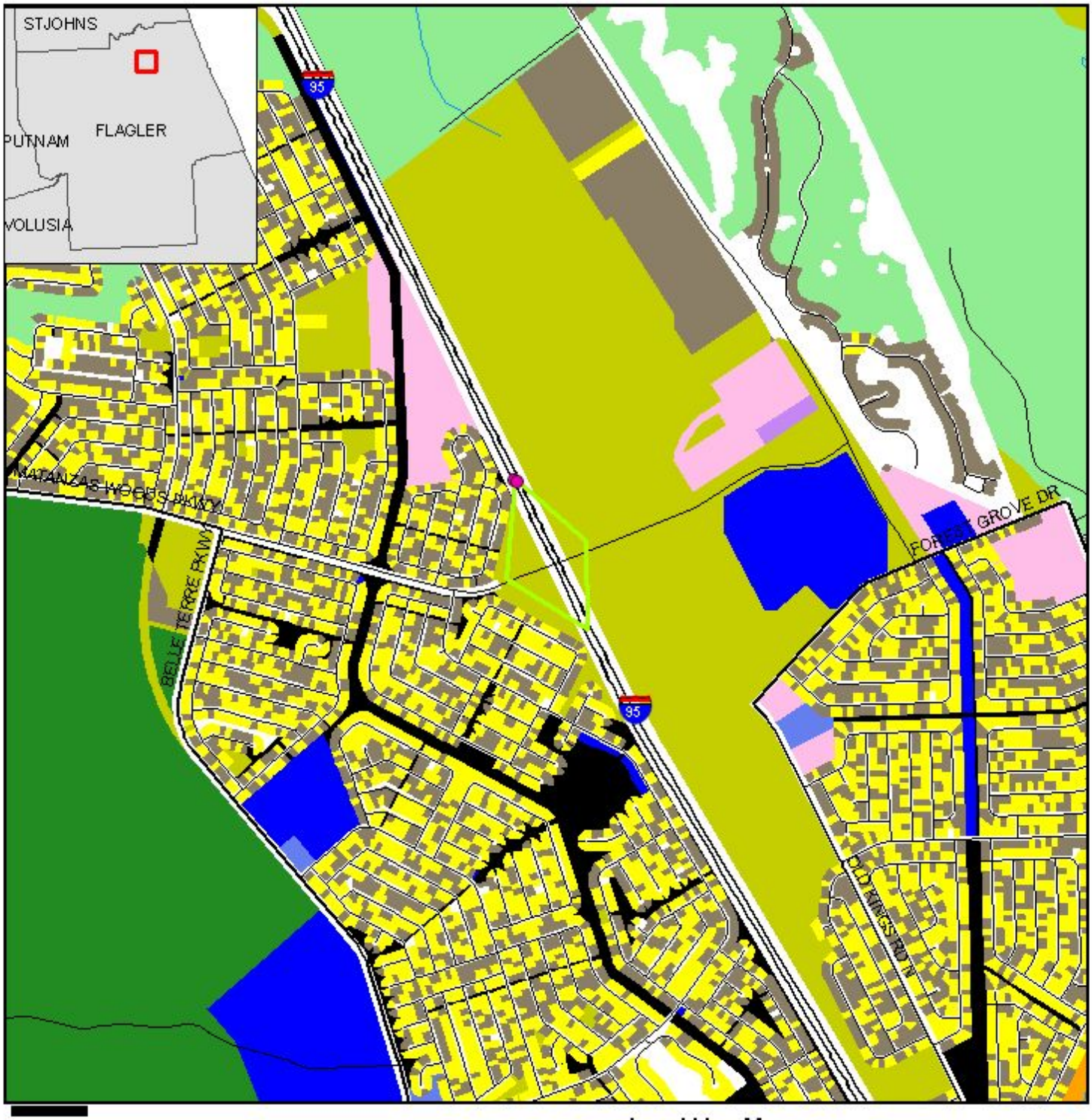

Land Use Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Agricultural
- Industrial
- Institutional
- Mining
- Open (Not Agricultural)
- Other
- Public
- Right-of-Way
- Recreational
- Residential
- Retail/Office
- Vacant (Residential)
- Vacant (Nonresidential)
- Water
- No Data

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Florida Department of Revenue
Florida Department of Transportation
Florida County Property Appraiser Offices

Printed on: 12/12/2011
Map Generated on: 10/14/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
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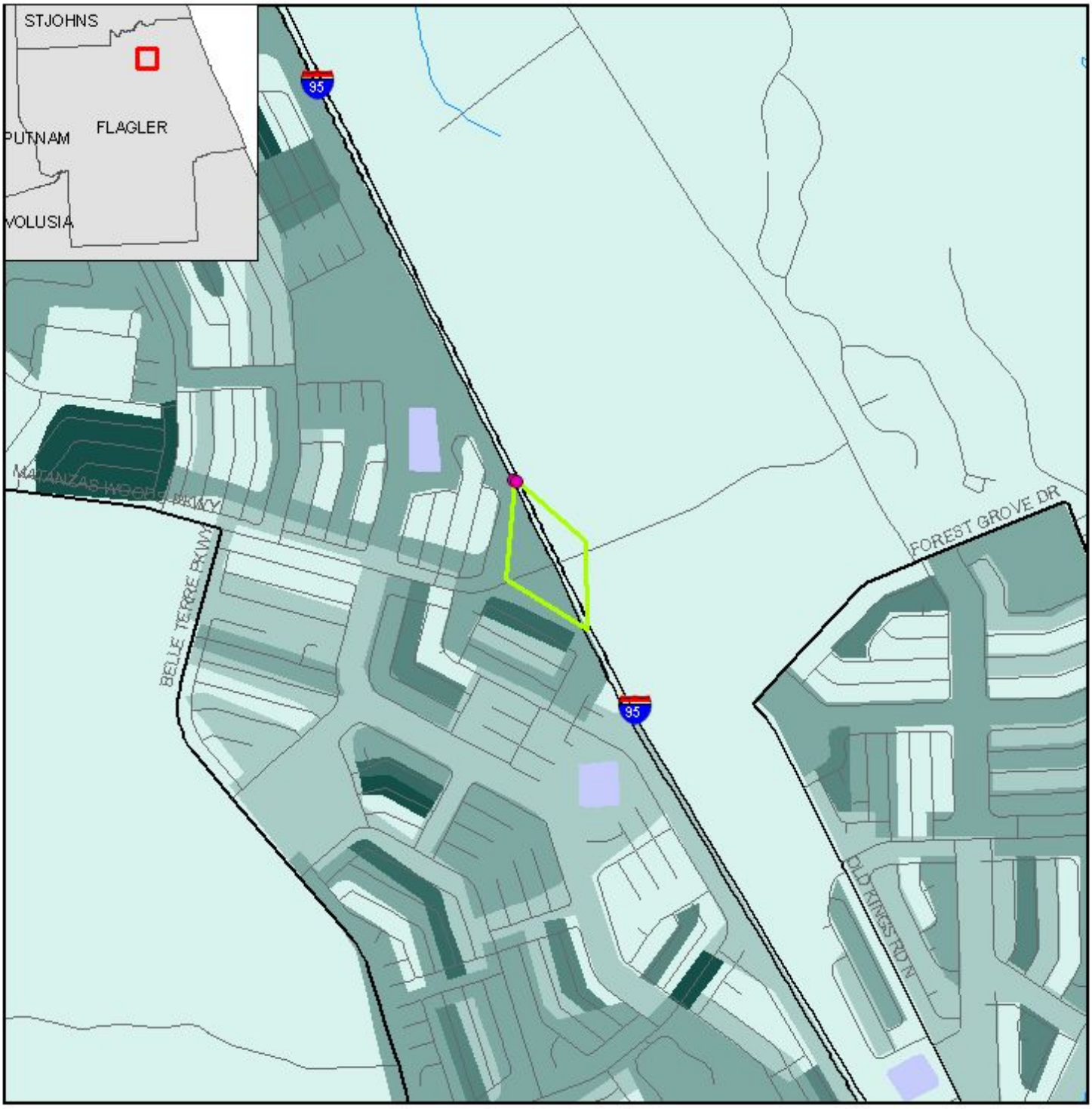


0 0.2 Miles

Minority Population Distribution Map

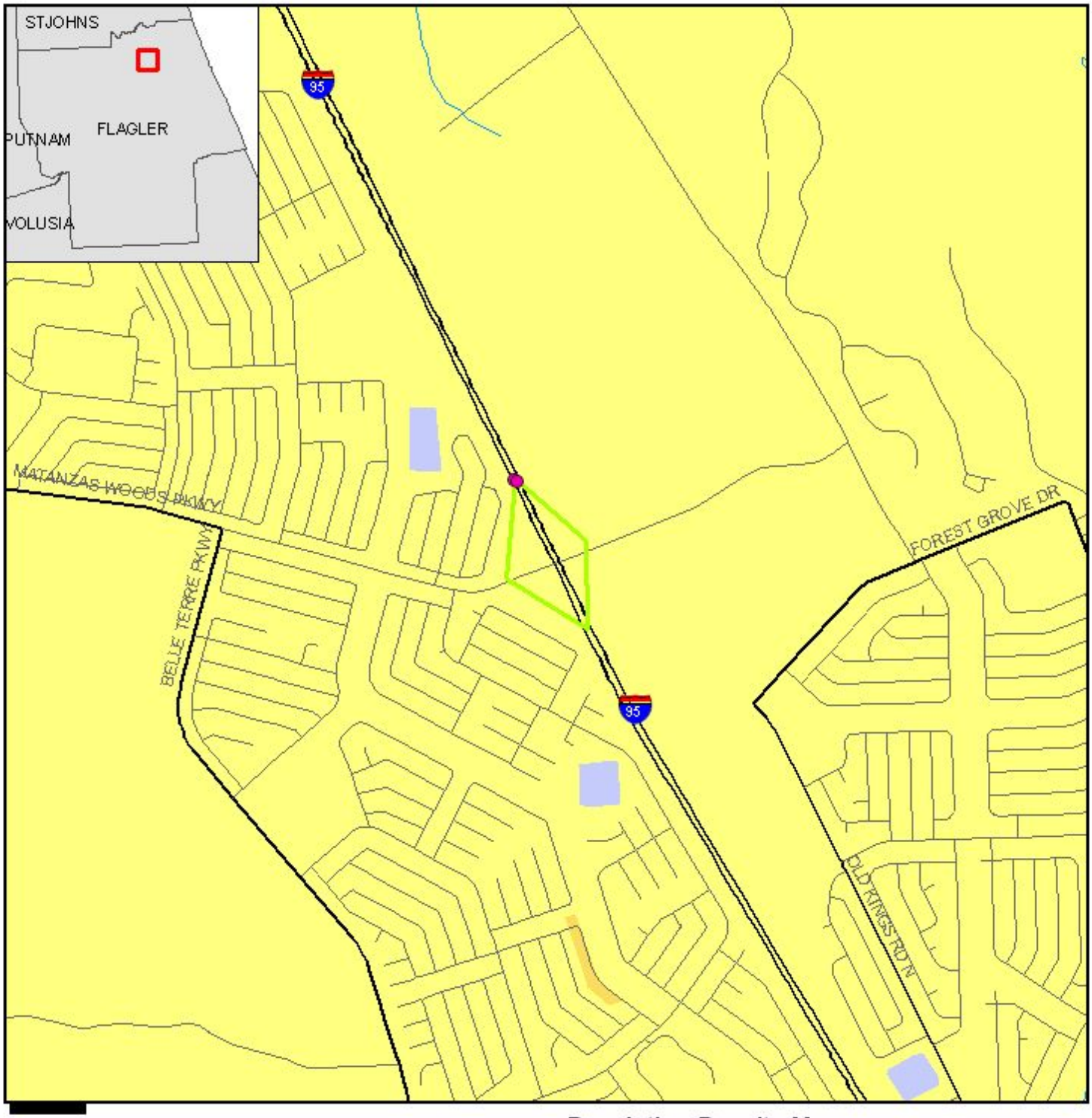
ETDM Alternative Point
ETDM Alternative Terminus
ETDM Alternative Segment
ETDM Alternative Polygon
Major Road
Local Road or Trail
Railroad
River, Stream or Canal
Water Body

Percent Minority Population
0 - 6
7 - 20
21 - 38
39 - 60
61 - 85
86 - 100

Data Sources:
US Geological Survey
FL Department of Transportation
Geographic Data Technology, Inc.
US Census Bureau

Printed on: 12/12/2011
Map Generated on: 10/14/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
to MP 14.65 (Exit 292)



0 0.2 Miles

Population Density Map

ETDM Alternative Point
ETDM Alternative Terminus
ETDM Alternative Segment
ETDM Alternative Polygon
Major Road
Local Road or Trail
Railroad
River, Stream or Canal
Water Body

Population per Acre
0 - 4.9
5 - 29.9
30 - 99.9
100 - 349.9
350 - 800
> 800

Data Sources:
US Geological Survey
FL Department of Transportation
Geographic Data Technology, Inc.
US Census Bureau

Printed on: 12/12/2011
Map Generated on: 10/14/2009

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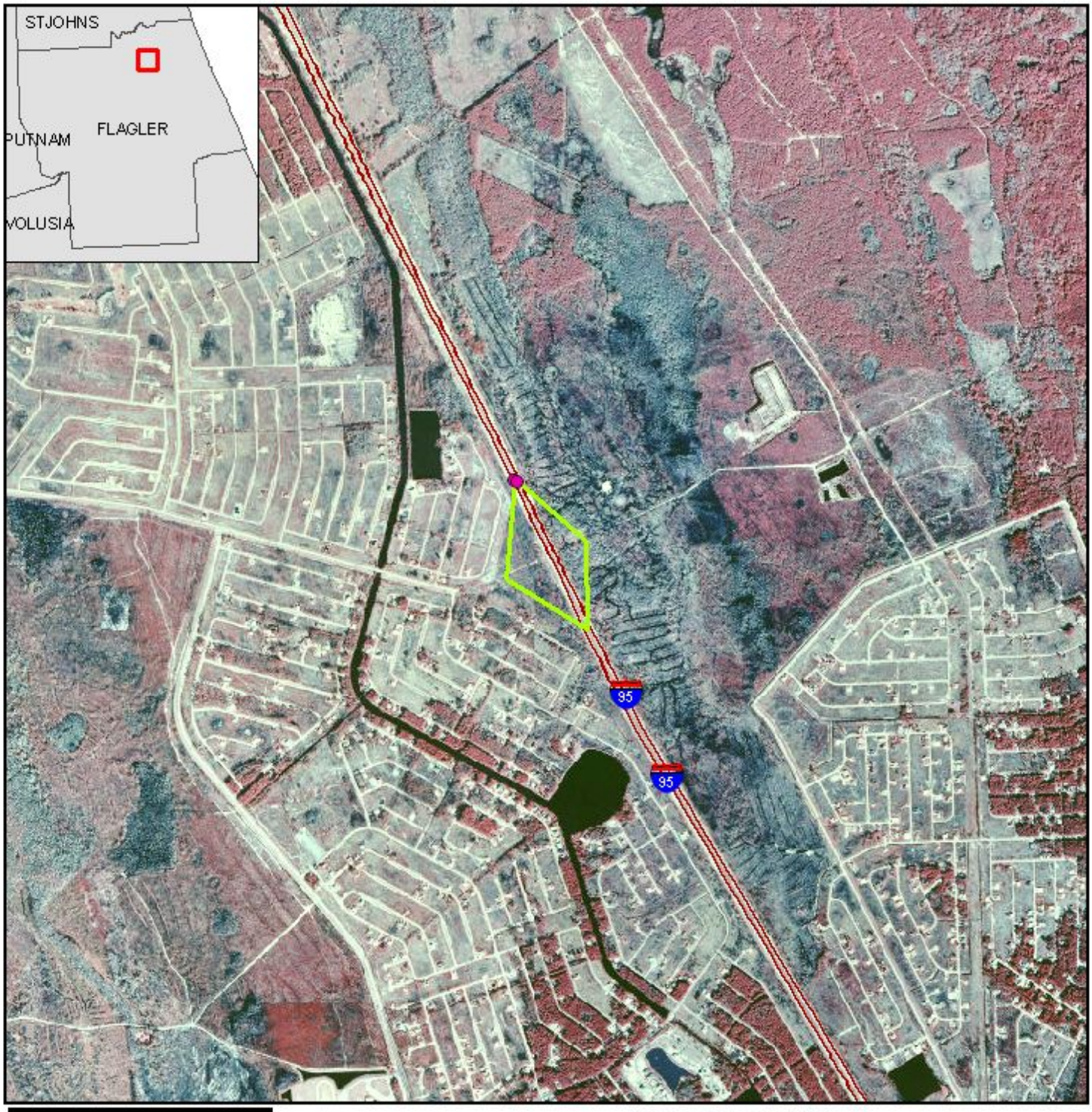

0 0.7 Miles

Project Aerial Map

ETDM Alternative Point
ETDM Alternative Terminus
ETDM Alternative Segment
ETDM Alternative Polygon
Primary and Limited Access Highway
Secondary, Unlimited Access Highway
Other Highway Feature

Data Sources:
Highways - Geographic Data Technology, Inc.
Digital Orthophotograph - US Geological Survey

Printed on: 12/12/2011
Map Generated on: 10/14/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
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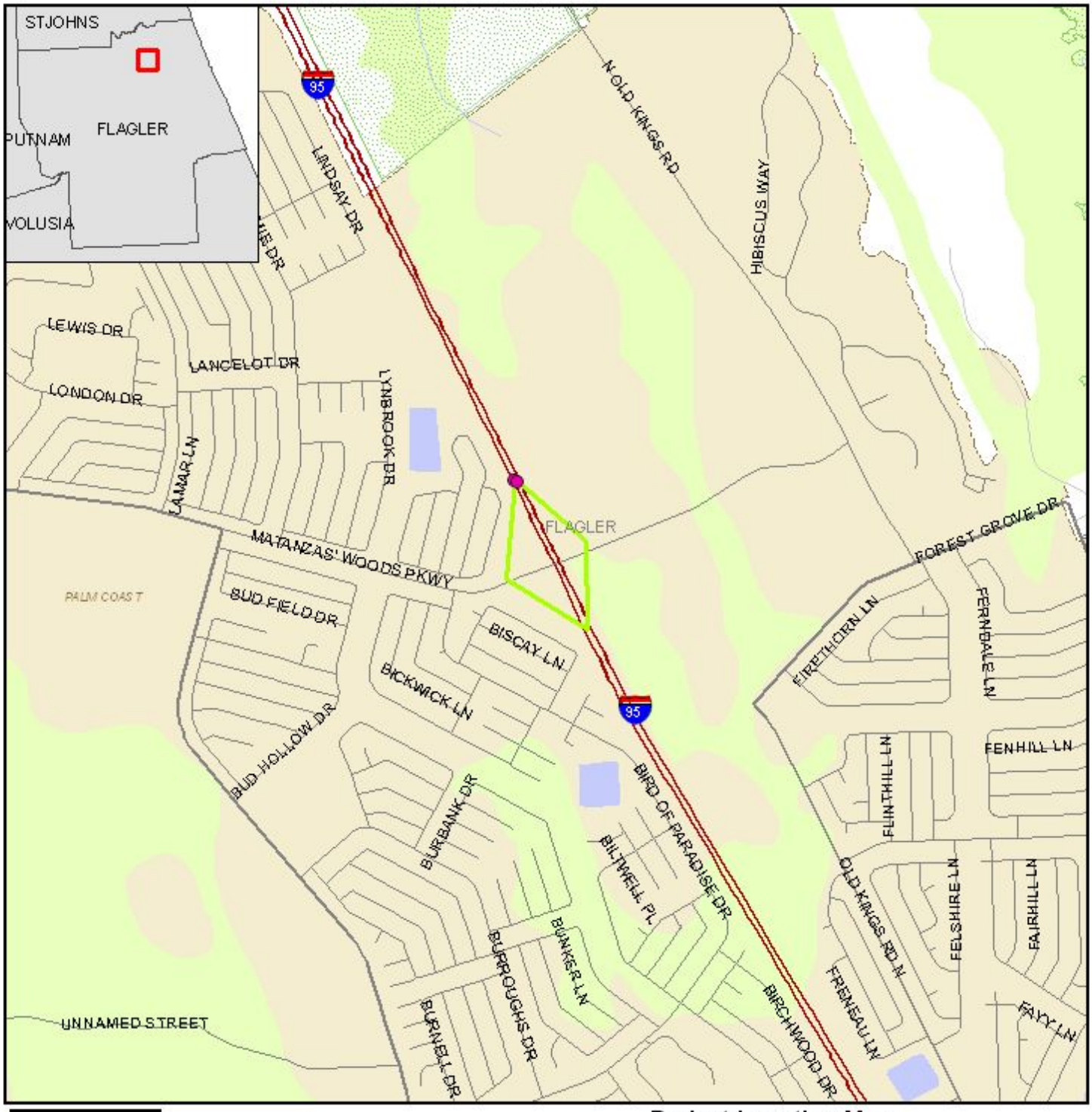

Project Location Map

0 0.4 Miles

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
US Census Bureau
County Property Appraisers
Florida Natural Areas Inventory

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- River, Stream or Canal
- Water Body
- Swamp/Marsh
- Managed Conservation Lands
- Primary and Limited Access Highway
- Secondary, Unlimited Access Highway
- Connecting Road
- Local Road or Trail
- Other Roadway Feature
- Toll Road
- Railroad
- Airport
- City Limits
- County Boundaries

Printed on: 12/12/2011
Map Generated on: 10/14/2009

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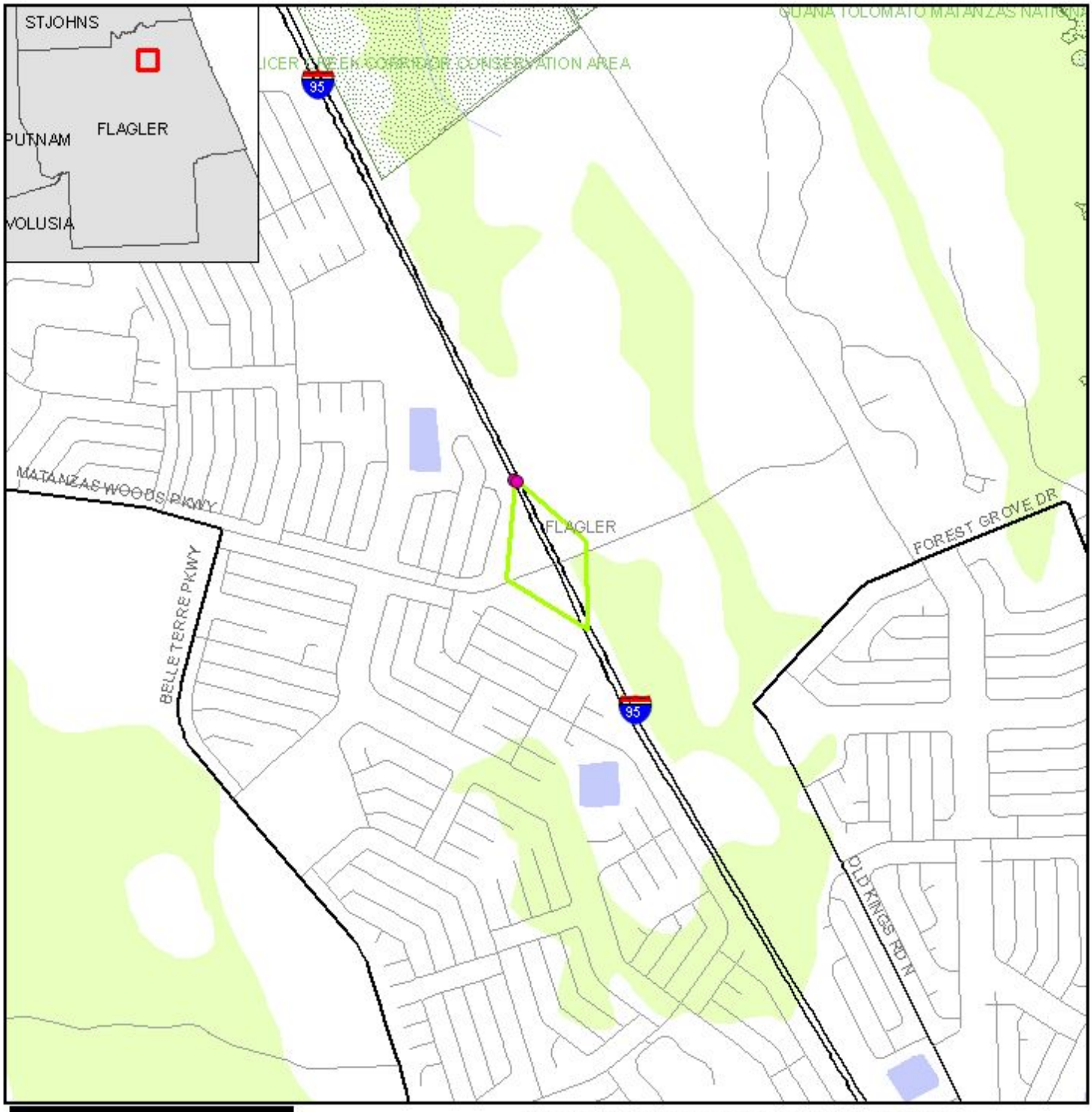

0 0.75 Miles

Conservation and Recreation Area Map

ETDM Alternative Point
ETDM Alternative Segment
ETDM Alternative Polygon
ETDM Alternative Terminus
River, Stream or Canal
Water Body
Swamp/Marsh
Conservation or Recreation Area
Major Road
Local Road or Trail
Railroad
County Boundary

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Florida Natural Areas Inventory

Printed on: 12/12/2011
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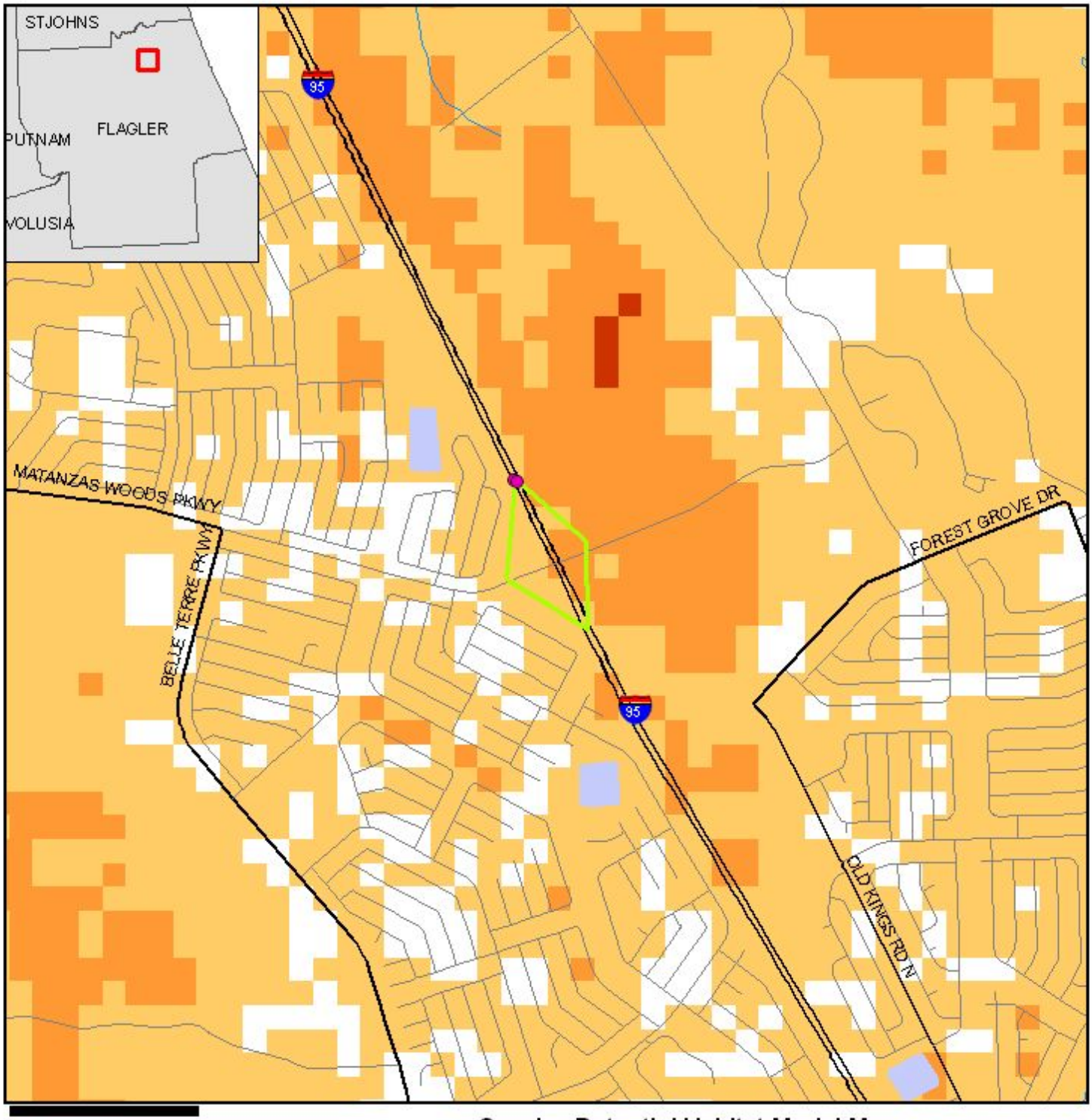

0 0.5 Miles

Species Potential Habitat Model Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body

Potential Habitat for Focal Species

- 1 - 6 Species
- 7 - 12 Species
- 13 - 18 Species
- > 18 Species

Data Sources:
Geographic Data Technology, Inc.
US Geological Survey
Florida Department of Transportation
Florida Fish & Wildlife Conservation Commission

Printed on: 12/12/2011
Map Generated on: 10/14/2009

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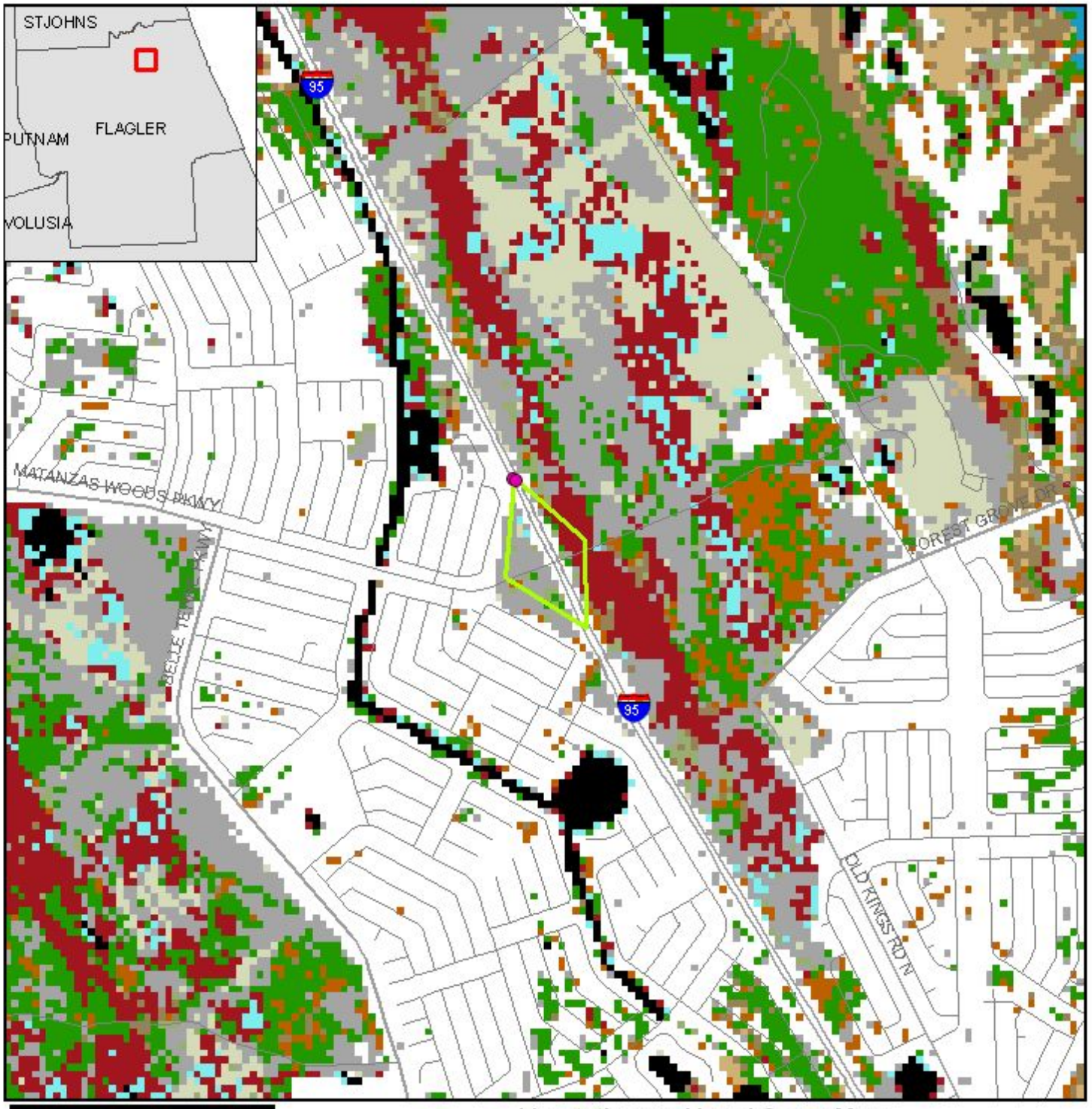

Vegetation and Land Cover Map

- ETDM Alternative Polygon
- ETDM Alternative Segment
- ETDM Alternative Terminus
- ETDM Alternative Point
- Major Road
- Local Road or Trail

- Not Classified
- Coastal Strand
- Sand/Beach
- Xeric Oak Scrub
- Sand Pine Scrub
- Sandhill
- Dry Prairie
- Mixed Hardwood-pine Forest
- Hardwood Hammocks and Forests
- Pinelands
- Cabbage Palm-live Oak Hammock
- Tropical Hardwood Hammock
- Freshwater Marsh and Wet Prairie
- Sawgrass Marsh
- Cattail Marsh
- Shrub Swamp
- Bay Swamp
- Cypress Swamp
- Cypress/Pine/Cabbage Palm
- Mixed Wetland Forest
- Hardwood Swamp
- Hydric Hammock
- Bottomland Hardwood Forest
- Salt Marsh
- Mangrove Swamp
- Scrub Mangrove
- Tidal Flats
- Open Water
- Shrub and Brushland
- Grassland
- Bare Soil/Clearcut
- Improved Pasture
- Unimproved Pasture
- Sugarcane
- Citrus
- Row and Field Crops
- Other Agriculture
- Exotic Plants
- Australian Pine
- Melaleuca
- Brazilian Pepper
- High Impact Urban
- Low Impact Urban
- Extractive

Data Sources:
Geographic Data Technology, Inc.; Florida Department of Transportation; Florida Fish and Wildlife Conservation Commission

Printed on: 12/12/2011
Map Generated on: 10/14/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
to MP 14.65 (Exit 292)

0 0.75 Miles

Water Resources Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- 1st Magnitude Spring
- River, Stream or Canal
- Navigable Water Way
- Drainage Basin
- Outstanding Florida Water
- Surface Water Class I
- Surface Water Class II
- Other Water Body
- Swamp/Marsh

Data Sources:

Geographic Data Technology, Inc.
US Geological Survey

Florida Department of Transportation
Florida Department of Environmental Protection

Florida Geological Survey
US Bureau of Transportation Statistics

Printed on: 12/12/2011
Map Generated on: 10/19/2009

12516 Matanzas Woods Parkway Interchange @ I-95, Alternative #1
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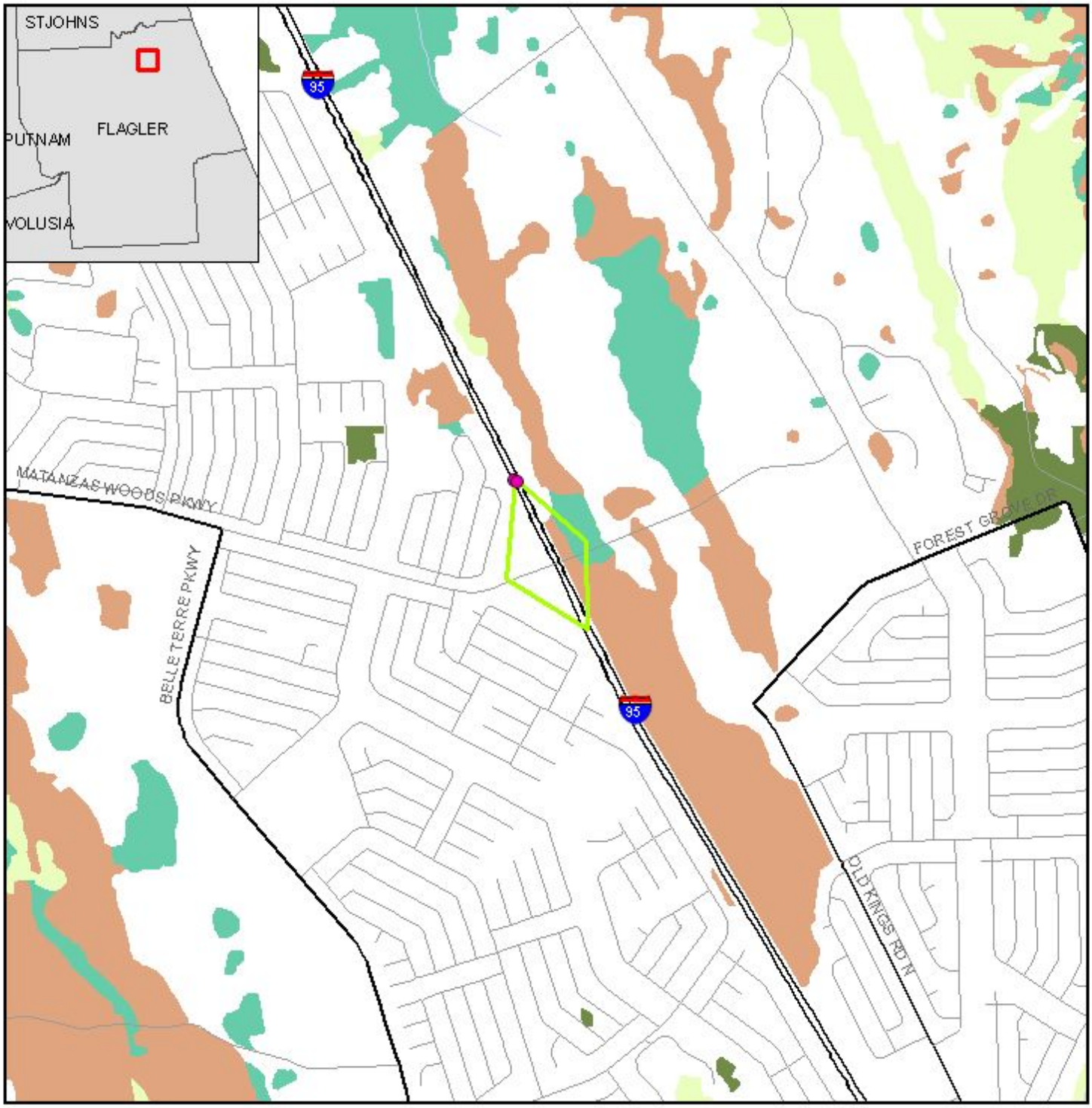


Wetland Resource Map

0 0.3 Miles

- ETDM Alternative Polygon
- ETDM Alternative Segment
- ETDM Alternative Terminus
- ETDM Alternative Point
- Major Road
- Local Road or Trail
- River, Stream or Canal
- Water Body
- Non-vegetated Wetland
- Vegetated Non-forested Wetland
- Wetland Forested Mixed
- Wetland Coniferous Forest
- Wetland Hardwood Forest

Data Sources: Geographic Data Technology, Inc.; Florida Water Management Districts; US Geological Survey

Printed on: 12/12/2011
Map Generated on: 10/14/2009

Appendicies

Legend			
Color Code	**Meaning**	**ETAT**	**Public Involvement**
0	None	The issue is present, but the project will have no impact on the issue; project has no adverse effect on ETAT resources; permit issuance or consultation involves routine interaction with the agency.	No community opposition to the planned project. No adverse effect on the community.
1	Enhanced	Project has positive effect on the ETAT resource or can reverse a previous adverse effect leading to environmental improvement.	Affected community supports the proposed project. Project has positive effect.
2	Minimal to None	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
3	Moderate	Agency resources are affected by the proposed project, but avoidance and minimization options are available and can be addressed during development with a moderated amount of agency involvement and moderate cost impact.	Project has adverse effect on elements of the affected community. Public Involvement is needed to seek alternatives more acceptable to the community. Moderate community interaction will be required during project development.
4	Substantial	The project has substantial adverse effects but ETAT understands the project need and will be able to seek avoidance and minimization or mitigation options during project development. Substantial interaction will be required during project development and permitting.	Project has substantial adverse effects on the community and faces substantial community opposition. Intensive community interaction with focused Public Involvement will be required during project development to address community concerns.
5	Dispute Resolution	Project does not conform to agency statutory requirements and will not be permitted. Dispute resolution is required before the project proceeds to programming	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
	No ETAT Consensus	ETAT members from different agencies assigned a different degree of effect to this project, and the ETDM coordinator has not assigned a summary degree of effect.	
	No ETAT Reviews	No ETAT members have reviewed the corresponding issue for this project, and the ETDM coordinator has not assigned a summary degree of effect.	

Supporting Documents

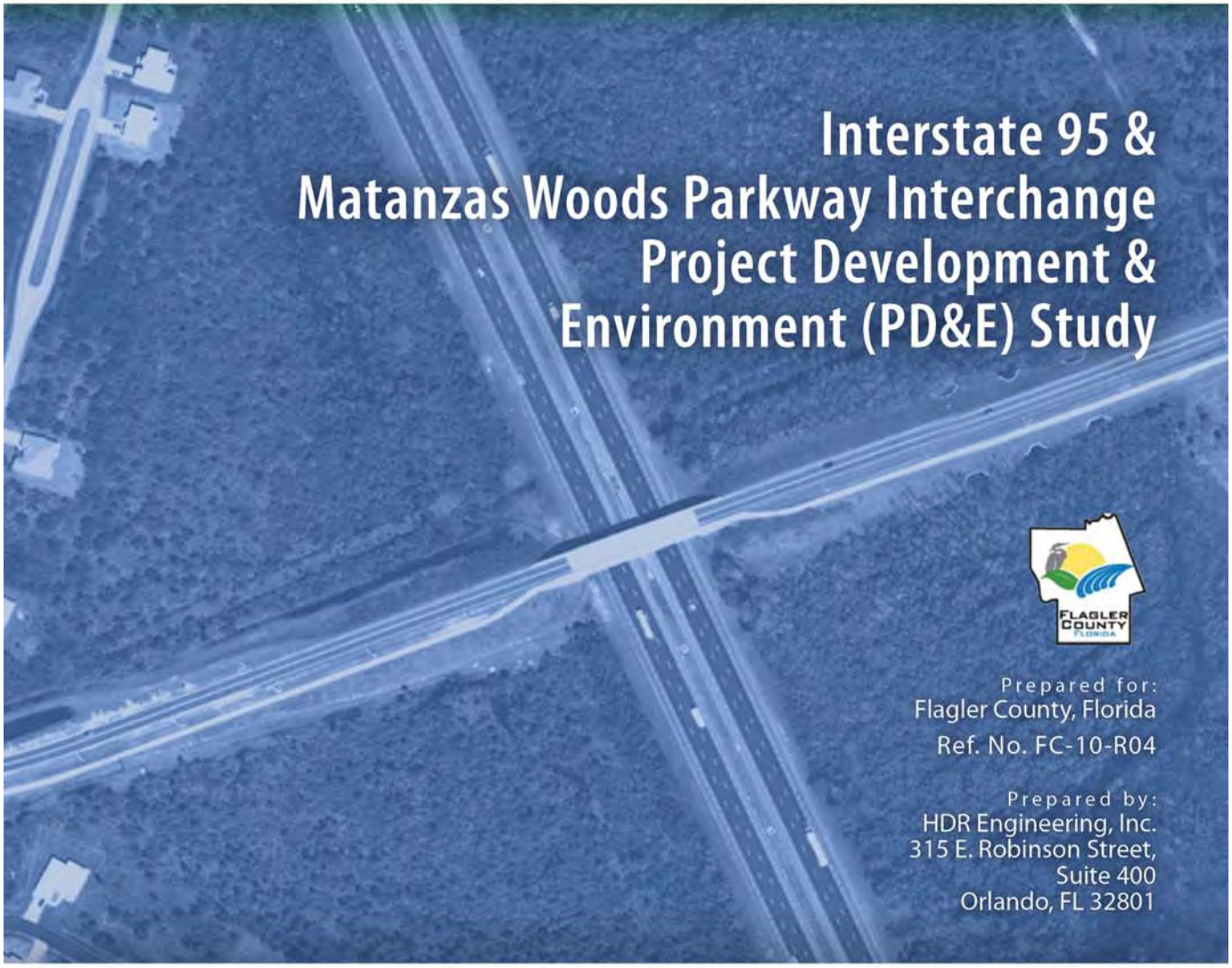
Date	Type	Size	Link	Name / Description
10/27/2009	Ancillary Project Documentation	401 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=8773	compplan_ch8: CIE of City of Palm Coast's Comprehensive Plan
10/27/2009	Form SF-424: Application for Federal Assistance	113 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=8772	Signed SF-424 for 411959-2: SF-424 form for Matanzas Woods Interchange
9/17/2009	Ancillary Project Documentation	292 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=8538	Proposed Location: Map

Appendix I

Traffic Memorandum

Prepared by:

HDR



DESIGN TRAFFIC
Final Technical Memorandum

July 28, 2011

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SECTION 1 – OVERVIEW

INTRODUCTION

HDR Engineering, Inc., in conjunction with Flagler County, is providing transportation engineering services for the Interstate 95 (I-95) & Matanzas Woods Parkway Interchange Project Development and Environment (PD&E) Study from US 1 to Old Kings Road in Flagler County. This Technical Memorandum summarizes the technical traffic elements including the key design traffic information and results from the approved I-95 and Matanzas Woods Parkway Interchange Justification Report (IJR) dated February 2011.

PROJECT LOCATION & LIMITS

The study limits of the Matanzas Woods Parkway corridor for this project extend from US 1 to Old Kings Road, a distance of approximately 3 miles. Matanzas Woods Parkway within the study limits is a two lane undivided rural highway with one signalized intersection located at Belle Terre Parkway. Matanzas Woods Parkway is currently classified as an Urban Minor City Arterial with an adopted level of service (LOS) D standard. The project corridor is shown on Figure 1.

STUDY OBJECTIVE

Design traffic forecasts for the study corridor have previously been established as part of the approved I-95 and Matanzas Woods Parkway IJR. No additional travel demand modeling or traffic forecasting was performed as part of the PD&E Study. However, the assumptions, design requirements, and operational results of the IJR have been reviewed for reasonableness as part of this report. The specific objectives of this report are as follows:

- Provide an existing daily vehicle classification traffic count and develop 18 kip Equivalent Single Axle Load (ESAL) forecasts.
- Review and confirm the results of the IJR:
  - Design requirements for roadway typical sections, intersection and interchange design.
  - Lane geometry, traffic control and turn lane storage lengths needed to accommodate the design hour traffic demand. For the interchange, both the Diamond and Partial Cloverleaf alternatives from the IJR were evaluated.

Since the approval of the IJR, two additional improvements have been identified, which this study will account for. The two improvements, which are shown on Figure 2, are as follows:

- The City of Palm Coast conducted a PD&E Study for Old Kings Road in March 2011 for Segment 1 (widening from Palm Coast Parkway to Forest Grove Drive) and Segment 2 (extension from Forest Grove Drive to Old Kings Road). The proposed Old Kings Road Extension will result in a new intersection on Matanzas Woods Parkway between the I-95 interchange and the existing Old Kings Road intersection.

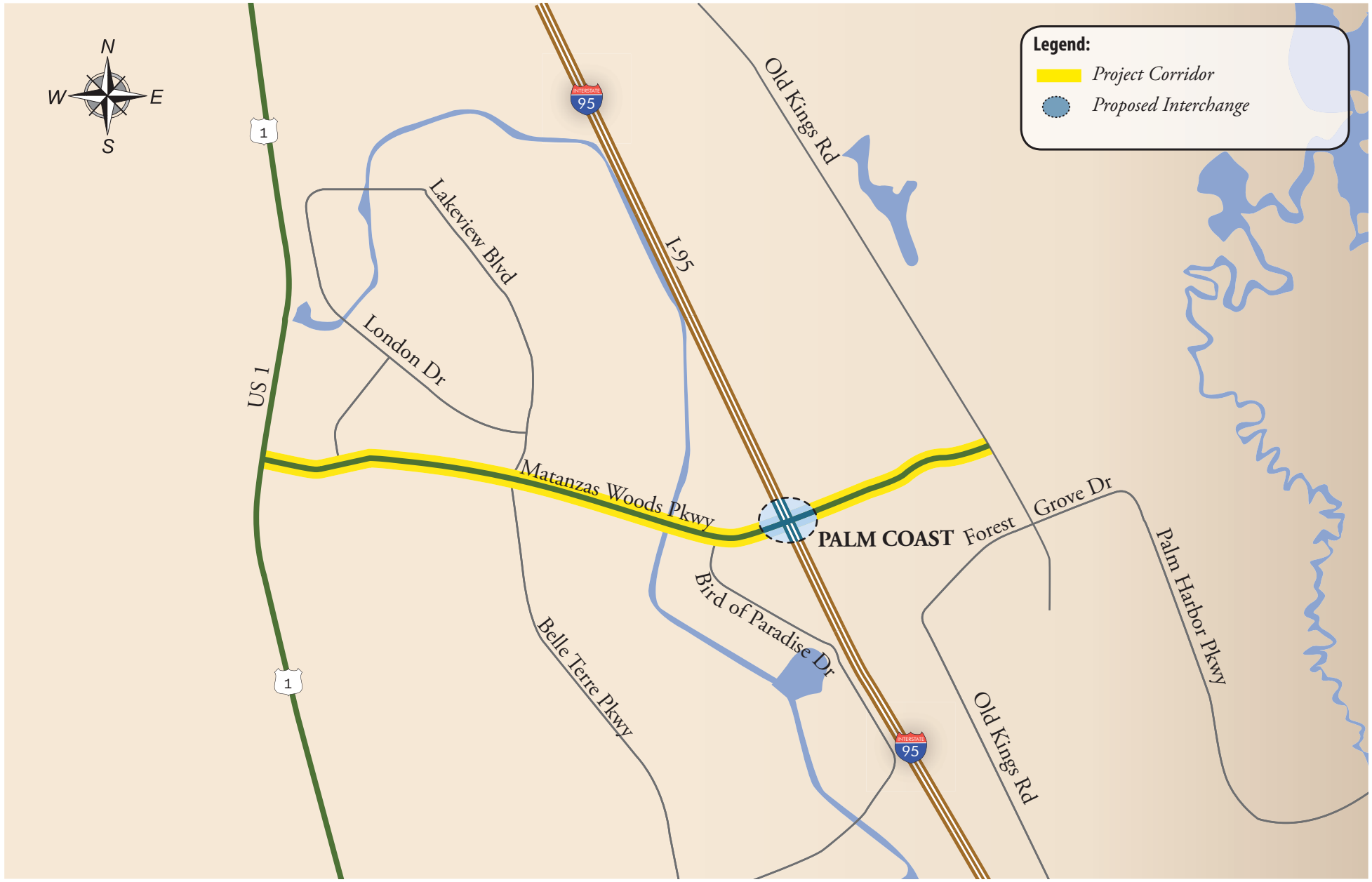


Figure 1
Location Map

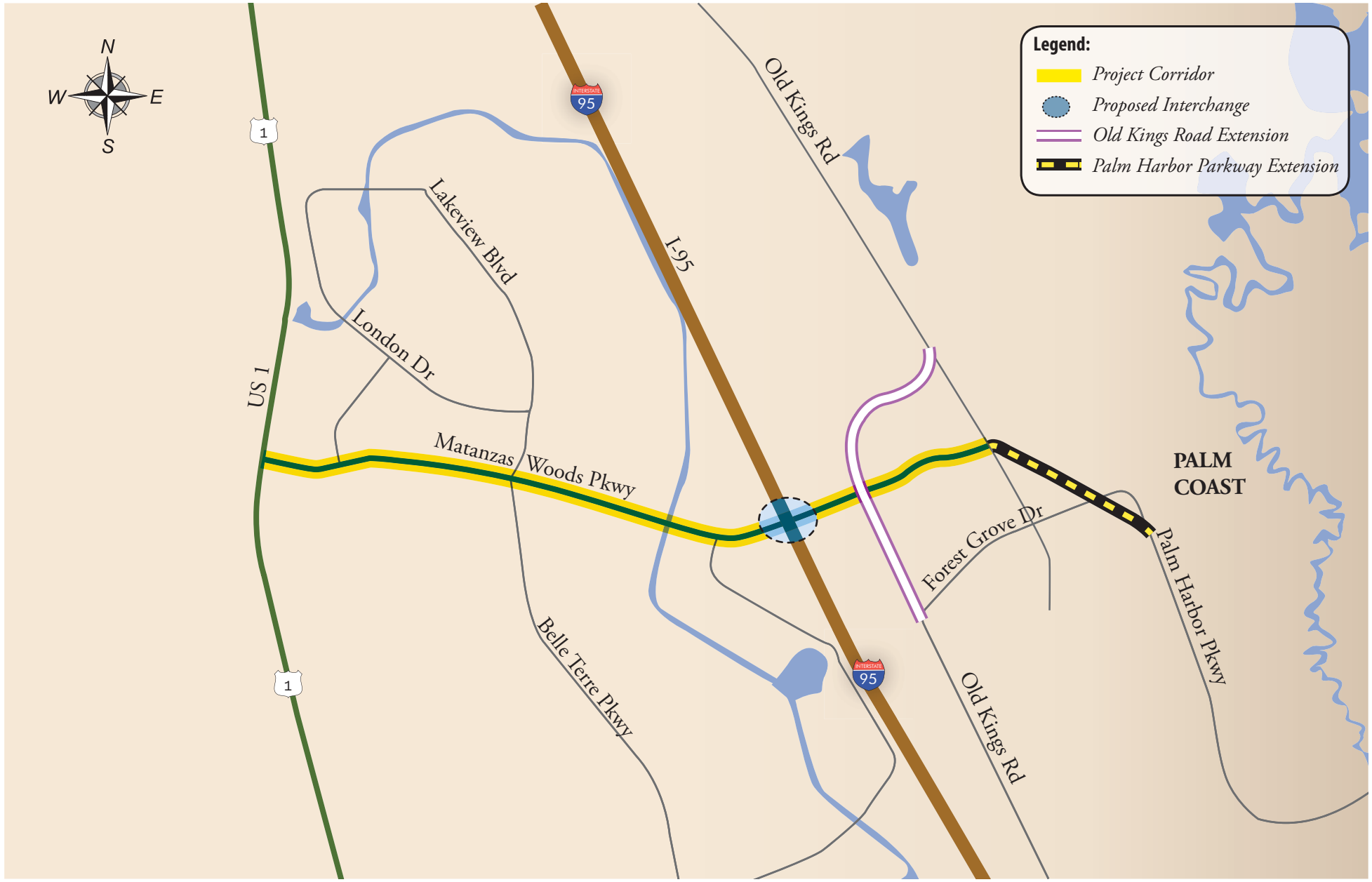


Figure 2
Proposed Projects Impacting Study Corridor

- The City of Palm Coast has completed 90% design plans for the Palm Harbor Parkway Extension Phase 2. The extension of Palm Harbor Parkway is proposed to align with Matanzas Woods Parkway at the existing Old Kings Road intersection with a slight alignment modification to Matanzas Woods Parkway.

To account for these two projects, minor adjustments were made to the IJR design traffic forecasts on the eastern end of the study corridor between the proposed Old Kings Road Extension and the existing Old Kings Road intersections. These adjustments do not have any impacts on I-95 operations. This report documents the adjustments made and the resulting impacts to the recommended geometry and intersection operations.

Crash data analysis is provided separately in the Existing Conditions Report.

DESIGN PERIOD

The design year for the project is 2035. The existing year is 2011, the project opening year is 2015 and the project mid-design year is 2025.

SECTION 2 - TRAFFIC DATA COLLECTION

TRAFFIC COUNT INFORMATION

A 3-day (72-hour) automatic vehicle classification count (volumes at 15-minute increments) was performed along the study corridor east of Belle Terre Parkway and west of I-95 from Tuesday May 3rd through Thursday May 5th, 2011. Figure 3 shows the location of this traffic count. The traffic count data is attached in Appendix A. Table 1 summarizes the daily traffic volumes collected and corresponding truck factors. The existing daily truck factor was calculated to be 7.94%. The design year daily truck factor is assumed as 8% based on the existing counts and is used in the development of 18-kip ESAL forecasts, which are attached in Appendix B.

Table 1 Matanzas Woods Parkway – Existing AADT and Daily Truck Factor

Day	Non-Trucks	Trucks	Total
3-May	4,398	345	4,743
4-May	4,374	390	4,764
5-May	4,209	384	4,593
3-day Count Totals	12,981	1,119	14,100
Average Daily Truck Factor (%)		**7.94%**	
Average Daily Traffic (ADT)			4,700
Seasonal Factor*			0.96
Annual Average Daily Traffic (AADT)			**4,500**

** Based on Seasonal Factor for Flagler County from Florida Traffic Information 2010 DVD.*

Figure 3
Count Location Map

SECTION 3 - DESIGN YEAR VOLUMES

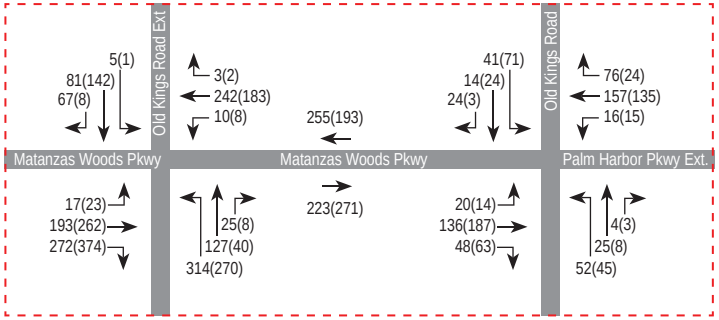
2025 AND 2035 DESIGN YEAR VOLUMES REVISION

As previously stated, minor adjustments were made to the approved IJR design traffic volumes on the eastern end of the study corridor east of the proposed I-95 interchange to account for the Old Kings Road Extension and Palm Harbor Parkway Extension projects (shown on Figure 2). For the PD&E Study, it is assumed that both the Old Kings Road Extension and Palm Harbor Parkway Extension would be complete by 2025. As a result, the intersection and roadway analysis on Matanzas Woods Parkway from east of I-95 to the existing Old Kings Road intersection were updated for years 2025 and 2035. No changes have been made to the approved IJR design hour volumes in 2015, and no changes have been to the design hour volumes west of the proposed Old Kings Road Extension, including at the proposed I-95 interchange. The design hour volumes and AM/PM intersection turning volumes along Matanzas Woods Parkway were revised from the Old Kings Road Extension to the existing Old Kings Road using traffic projections from the Old Kings Road Extension PD&E Study conducted by the City of Palm Coast and the Palm Coast Area Wide Alternatives Evaluation Study conducted by FDOT. The IJR 2025 and 2035 AM and PM design hour intersection volumes for the Matanzas Woods Parkway and existing Old Kings Road intersection were distributed between the two intersections on Matanzas Woods Parkway east of I-95 at the proposed Old Kings Road Extension and the existing Old Kings Road. These adjustments do not have any impacts on I-95 operations.

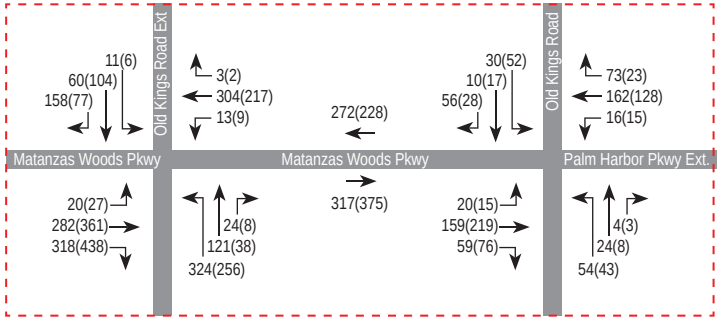
Figure 4 shows the revised design hour intersection and roadway segment volumes on Matanzas Woods Parkway east of I-95 for the No Build and Build Alternatives in years 2025 and 2035. Volumes for 2015 and for intersections between US 1 and the proposed I-95 interchange have not been changed, and therefore are shown only in the IJR.

Interstate 95 & Matanzas Woods Parkway Interchange PD&E Study

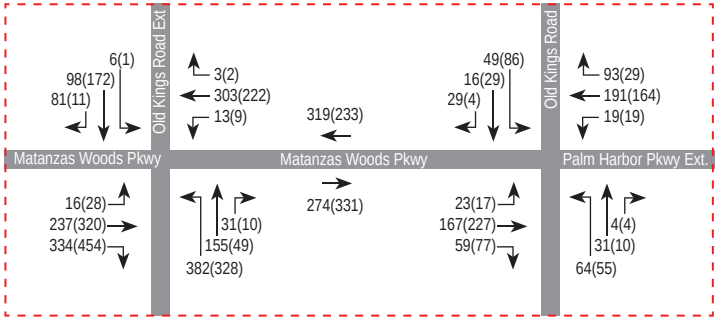
2025 No Build



2025 Build



2035 No Build



2035 Build

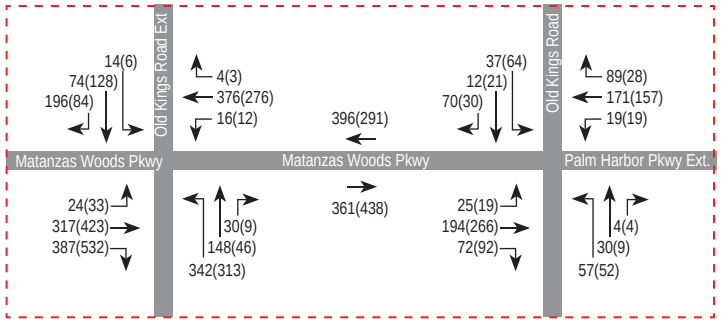


Figure 4

Revised AM & PM Design Hour Volumes East of I-95

SECTION 4 - LEVEL OF SERVICE ANALYSIS

This section presents the results of the roadway and intersection operational analysis for the No Build and Build Alternatives on the Matanzas Woods Parkway corridor, including the portion of the corridor east of I-95 to the existing Old Kings Road for which the design year volumes have been revised as discussed in the previous section. As previously stated in Section 1 of this report, the adopted LOS standard for the Matanzas Woods Parkway study corridor is "D".

ROADWAY OPERATIONAL ANALYSIS

No Build Alternative

The traffic and signal characteristics of Matanzas Woods Parkway are most similar to a Class I Major City/County Roadway in the Generalized Tables included in the 2009 FDOT Quality/Level of Service Handbook. The peak hour peak direction maximum service volume for LOS D for this category is 792 vehicles per hour for a two-lane section and 1,764 for a four-lane section. Table 2 provides a preliminary roadway LOS analysis for the No Build Alternative based on the service volumes in the FDOT Generalized Tables. Although the IJR assumed Matanzas Woods Parkway to have four lanes between US 1 and Belle Terre Parkway beginning in 2015 for both the No Build and Build Alternatives, Table 2 shows that this segment does not require four-laning until 2020 in the No Build Alternative. The roadway segment between Belle Terre Parkway and Bird of Paradise Drive is projected to exceed its LOS D standard in 2026, and the segment between Belle Terre Parkway and Old Kings Road Extension is projected to exceed its LOS D standard in 2035. Because the Old Kings Road Extension diverts much of the traffic that was originally projected to travel on Matanzas Woods Parkway to and from the existing Old Kings Road, this study does not show the need for the section east of the proposed Old Kings Road Extension to be widened beyond the existing two lanes. The failing sections of Matanzas Woods Parkway shown in Table 2 will operate satisfactorily with four-lane widening.

Table 2 Laneage Requirement for No-Build Alternative

Roadway/ Segment	Road Class	Adopted LOS Std	Pk Hr Pk Dir Capacity (1)		# of Lanes	2015		2025		2035		Year 4L Req'd
			2L	4L		DDHV (2)	LOS	DDHV (2)	LOS	DDHV (2)	LOS	
Matanzas Woods Parkway												
US 1 to Belle Terre Parkway (3)	I	D	792	1,764	4	449	B	1,246	B	1,518	C	**2020**
Belle Terre Parkway to Bird of Paradise Drive	I	D	792	1,764	2	390	B	780	D	951	**F**	**2026**
Bird of Paradise Drive to Old Kings Road Extension (4)	I	D	792	1,764	2	301	B	656	C	797	**F**	**2035**
Old Kings Road Extension to Existing Old Kings Road (4)	I	D	792	1,764	2	301	B	271	B	331	B	N/A

Notes:

(1) Based on Class I Major City/County Roadways taken from 2009 FDOT Quality/Level of Service Handbook, Generalized Tables, updated October 2010.

(2) No Build conditions volumes taken from Table 7-2 in Interstate 95 & Matanzas Woods Parkway Final Interchange Justification Report, Revised February 2011. Volumes on Matanzas Woods Parkway east of I-95 were adjusted to account for the Old Kings Road Extension and Palm Harbor Parkway Extension.

(3) Belle Terre Parkway is assumed to be widened as 4L by year 2015 in the IJR (in both Build and No-Build condition) and hence 4L were used in 2015 analysis.

(4) Old Kings Road Extension is assumed to be built by year 2025 with a signalized intersection at Matanzas Woods Parkway. All way stop control is assumed at the existing Matanzas Woods Parkway/ Old Kings Road intersection in years 2025 and 2035 based on the design plans for the Palm Harbor Parkway Extension.

Build Alternative

Similarly to the No Build Alternative, the service volumes for a Class I Major City/County Roadway in the 2009 FDOT Quality/Level of Service Handbook Generalized Tables were used to complete a preliminary roadway LOS analysis for the Build Alternative and determine the timing of the needed four-lane improvement. As shown in the 2025 analysis in Table 3, the project roadway segments between US 1 and the I-95 Southbound Ramps require four lanes to accommodate the mid-design year traffic demand. However, the four-laning is estimated to be needed by 2019, which is the point at which the traffic volumes are projected to exceed the LOS D standard. The roadway segment between the I-95 Southbound Ramps and Old Kings Road Extension will require four lanes by 2027. Because the Old Kings Road Extension diverts much of the traffic that was originally projected to travel on Matanzas Woods Parkway to and from the existing Old Kings Road, this study does not show the need for the section east of the proposed Old Kings Road Extension to be widened beyond the existing two lanes. The failing sections of Matanzas Woods Parkway shown in Table 3 will operate satisfactorily with four-lane widening.

Although the analysis results shown in Table 3 are based on generalized table service volumes, the need for only two lanes from the I-95 Southbound Ramps to Old Kings Road Extension in 2025 was confirmed by intersection

analysis completed for the Matanzas Woods Parkway intersections at the two I-95 interchange ramps and Old Kings Road Extension. The I-95 ramp intersections would require left and right turn lanes in order to operate acceptably in 2025. This is a change from the IJR results, which showed the need for four lanes on all of Matanzas Woods Parkway by 2025.

Table 3 Laneage Requirement for Build Alternative

Roadway/ Segment	Road Class	Adopted LOS Std	Pk Hr Pk Dir Capacity (1)		# of Lanes	2015		2025		2035		Year 4L Req'd
			2L	4L		DDHV (2)	LOS	DDHV (2)	LOS	DDHV (2)	LOS	
Matanzas Woods Parkway												
US 1 to Belle Terre Parkway (3)	I	D	792	1,764	4	455	B	1,411	C	1,719	D	**2019**
Belle Terre Parkway to I-95 Southbound Ramps	I	D	792	1,764	2	520	C	1,358	**F**	1,654	**F**	**2019**
I-95 Southbound Ramps to Old Kings Road Extension (4)	I	D	792	1,764	2	543	C	768	D	933	**F**	**2027**
Old Kings Road Extension to Existing Old Kings Road (4)	I	D	792	1,764	2	543	C	375	B	438	B	N/A

Notes:

(1) Based on Class I Major City/County Roadways taken from 2009 FDOT Quality/Level of Service Handbook, Generalized Tables, updated October 2010.

(2) Build conditions volumes taken from Table 7-4 in Interstate 95 and Matanzas Woods Parkway Final Interchange Justification Report, Revised February 2011. Volumes on Matanzas Woods Parkway east of I-95 were adjusted to account for the Old Kings Road Extension and Palm Harbor Parkway Extension.

(3) Belle Terre Parkway is assumed to be widened as 4L by year 2015 in the IJR (in both Build and No-Build condition) and hence 4L were used in 2015 analysis.

(4) Old Kings Road Extension is assumed to be built by year 2025 with a signalized intersection at Matanzas Woods Parkway. All way stop control is assumed at the existing Matanzas Woods Parkway/ Old Kings Road intersection in years 2025 and 2035 based on the design plans for the Palm Harbor Parkway Extension.

The implication of these results is that the I-95 interchange ramps could be constructed without additional improvements to open in 2015 as an initial phase. It should be noted that the IJR assumed the two I-95 ramp intersections would be signalized beginning in 2015. However, a signal warrant analysis should be completed during the design process to determine if signalization would be warranted at the 2015 opening year or if it could be delayed beyond 2015. A second potential project phase would be the four-lane widening of Matanzas Woods Parkway from US 1 to the I-95 Southbound Ramps and construction of left and right turn lanes at the I-95 ramp intersections, to occur by 2019. This potential intermediate phased configuration is shown in Figure 5. A third potential project phase would consist of the four-lane widening of Matanzas Woods Parkway from the I-95 Southbound Ramps to Old Kings Road Extension, including the bridge over I-95, to occur by 2027.

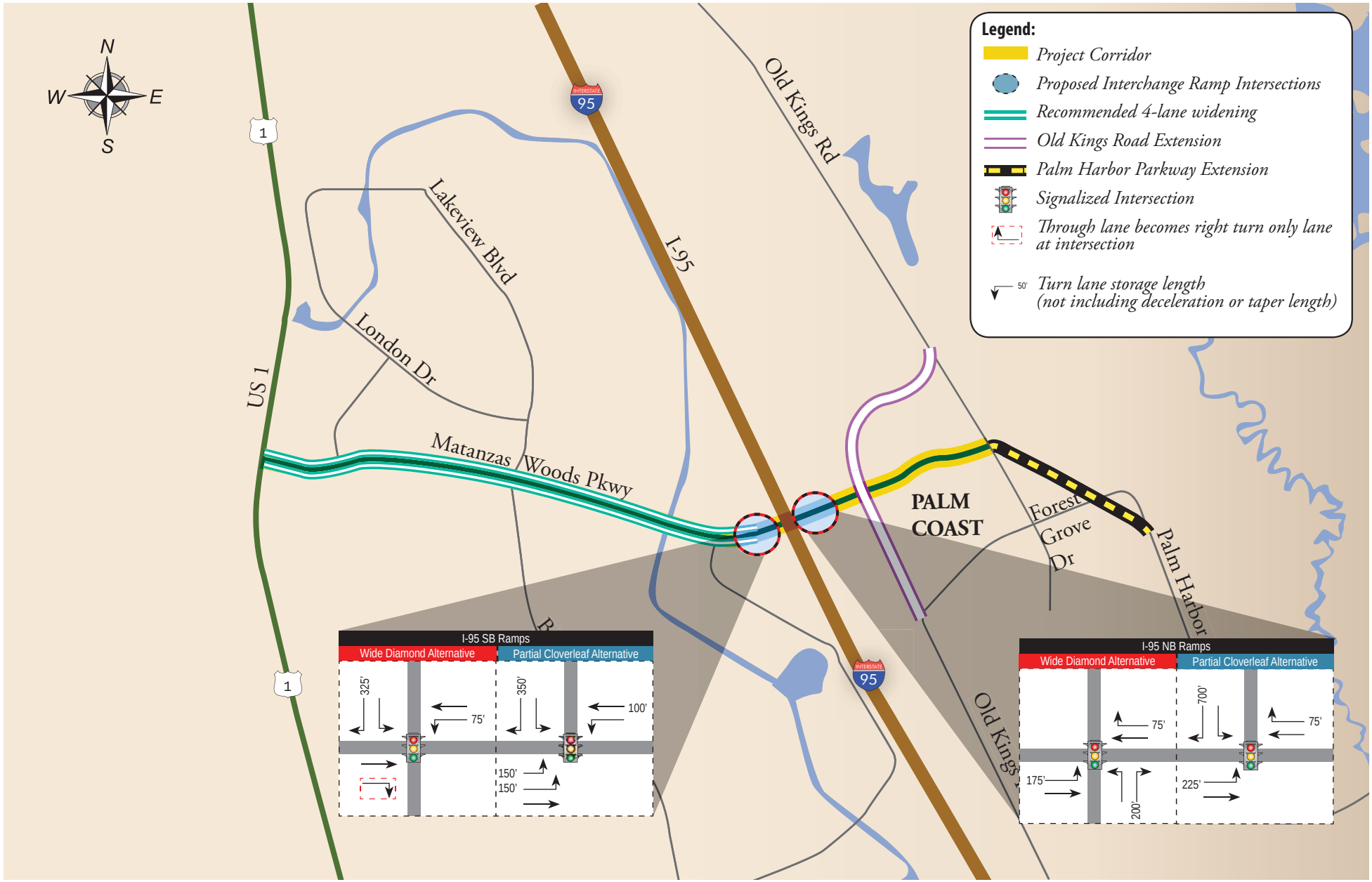


Figure 5
2019 Recommended Phased Build Condition Geometry

INTERSECTION OPERATIONAL ANALYSIS

Year 2025 and 2035 No Build and Build Alternatives

Intersection operational analyses were performed for year 2025 and 2035 No Build and Build Alternatives for the intersections on Matanzas Woods Parkway at the proposed Old Kings Road Extension and the existing Old Kings Road. In addition, the need for just two lanes from the I-95 Southbound Ramps to Old Kings Road Extension in 2025 was confirmed by performing intersection analyses for the Matanzas Woods Parkway intersections at the two I-95 interchange ramps. The intersection operations were analyzed using the Synchro software, which uses methodologies from the Transportation Research Board's Highway Capacity Manual (HCM) 2000. A summary of the intersection operations from the analysis mentioned in this section, along with design year (2035) operating conditions for the other intersections on Matanzas Woods Parkway taken from the approved IJR, is presented in Table 4. The detailed Synchro analysis reports for the revised intersection analyses are included in Appendix C.

Since no other changes from the approved IJR are reflected in this PD&E Study, no other analysis results are provided in this report. The results for analysis of other intersections not covered herein, the opening year 2015, and all interchange analysis should be referred to in the approved IJR document, which is included as Appendix D (body of IJR report only without IJR appendices).

The analysis shows that the I-95 ramps in the 2025 Build Alternative will operate satisfactorily with the addition of left and right turn lanes and without widening Matanzas Woods Parkway between the interchange ramp intersections to four lanes. With the diamond interchange configuration, the eastbound outside lane approaching the I-95 Southbound Ramp intersection would become a right turn only lane (see Figure 5). However, with the partial cloverleaf interchange configuration, two eastbound left turn lanes would be required at the I-95 Southbound Ramps intersection in order to meet the LOS standard. This would mean that the eastbound inside through lane approaching the I-95 Southbound Ramp intersection would become a left turn only lane (see Figure 5). This second left turn lane is only needed as an interim condition with the partial cloverleaf interchange if it is desired and feasible to delay the four lane widening of the bridge over I-95. The unsignalized all-way stop controlled intersection at Matanzas Woods Parkway and existing Old Kings Road/ proposed Palm Harbor Parkway Extension (as proposed in the Palm Harbor Parkway Extension Phase 2 90% design plans) will also operate satisfactorily in all alternatives.

Table 4 Year 2025 and 2035 Intersection Analysis

Intersection	Control	No Build				Build			
		AM Pk Hr		PM Pk Hr		AM Pk Hr		PM Pk Hr	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Year 2035									
US 1 and Matanzas Woods Pkwy *	Signalized	37.3	D	41.8	D	41.7	D	54.4	D
Matanzas Woods Pkwy and Belle Terre Pkwy *	Signalized	61.7	E	63.3	E	51.0	D	50.6	D
Matanzas Woods Pkwy and Bird of Paradise Drive *	Unsignalized	181.3	F	128.3	F	Not Applicable			
Matanzas Woods Pkwy and I-95 Southbound Ramps (Wide Diamond Alternative) *	Signalized	Not Applicable				15.4	B	12.1	B
Matanzas Woods Pkwy and I-95 Northbound Ramps (Wide Diamond Alternative) *	Signalized	Not Applicable				32.4	C	35.8	D
Matanzas Woods Pkwy and I-95 Southbound Ramps (Partial Cloverleaf Alternative) *	Signalized	Not Applicable				22.2	C	23.2	C
Matanzas Woods Pkwy and I-95 Northbound Ramps (Partial Cloverleaf Alternative) *	Signalized	Not Applicable				23.1	C	22.6	C
Matanzas Woods Pkwy and Proposed Old Kings Rd Ext	Signalized	24.1	C	26.5	C	21.9	C	28.0	C
Matanzas Woods Pkwy and Existing Old Kings Rd	All-Way Stop	9.1	A	9.5	A	9.2	A	9.8	A
Year 2025									
Matanzas Woods Pkwy and I-95 Southbound Ramps (Wide Diamond Alternative)	Signalized	Not Applicable				12.8	B	16.4	B
Matanzas Woods Pkwy and I-95 Northbound Ramps (Wide Diamond Alternative)	Signalized	Not Applicable				29.7	C	27.4	C
Matanzas Woods Pkwy and I-95 Southbound Ramps (Partial Cloverleaf Alternative)	Signalized	Not Applicable				21.3	C	21.4	C
Matanzas Woods Pkwy and I-95 Northbound Ramps (Partial Cloverleaf Alternative)	Signalized	Not Applicable				19.6	B	18.5	B
Matanzas Woods Pkwy and Proposed Old Kings Rd Ext	Signalized	20.1	C	21.7	C	30.5	C	31.2	C
Matanzas Woods Pkwy and Existing Old Kings Rd	All-Way Stop	8.7	A	8.6	A	8.6	A	8.8	A

** Intersection Level of Service taken from Table 7-8 and Table 8-5 in Interstate 95 and Matanzas Woods Parkway Final Interchange Justification Report, Revised February 2011.*

SECTION 5 – RECOMMENDED GEOMETRY

Based on the approved IJR intersection analysis results and the revised PD&E intersection analysis results described in the previous section, the 2035 Build Alternative recommended geometry is shown in Figure 6. Tables 5 and 6 show the recommended storage length for each of the exclusive turn lanes at the study intersections recommended in Figure 5 for the 2035 Build Alternative. Table 7 provides the recommended storage lengths at the two I-95 interchange ramp intersections and at the proposed Old Kings Road Extension intersection for the 2025 Build Alternative. These storage lengths would be used if the widening of the Matanzas Woods Parkway Bridge over I-95 is phased to occur at a later time than the four laning of the corridor west of I-95. The storage lengths in Figure 5 for the eastbound and westbound turn lanes are taken from Table 7 and based on the 2025 analysis. However, the storage values shown in Figure 5 for the northbound and southbound turn lanes on the I-95 ramps are based on the values in Table 5 for the 2035 Build Alternative since these turn lanes would likely be built to their ultimate configuration during construction of the ramps.

Turn lane storage lengths in Table 5 and Table 7 (for signalized intersections) are calculated based on the following formula:

L = (25)*(DHV)*(1-(G/C))*(T+1)*(AF) / (3600/C) / (N)

where:
- L = storage length
- DHV = design hour volume (vph)
- G/C = ratio of green time to cycle length
- N = number of lanes
- T = percent heavy vehicles
- AF = adjustment factor (1.25 to 2.0) * →
- C = cycle length

Vol <= 300	AF = 2.0
300 < Vol <= 500	AF = 1.75
500 < Vol <= 1000	AF = 1.5
Vol > 1000	AF = 1.25

* Toolbox on Intersection Safety and Design, ITE, 2004.

Turn lane storage lengths in Table 6 (for unsignalized intersections) are calculated based on Equation 20-33 from the Highway Capacity Manual 2010, as follows:

$$Q_{95} \approx \frac{900T}{h_d}\left[(x-1)+\sqrt{(x-1)^2+\frac{h_d x}{150T}}\right]$$

where:
- Q_{95} = 95th percentile queue (veh)
- $x = v*h_d/3600$ = degree of utilization
- h_d = departure headway (sec), taken from Synchro output
- T = length of analysis period (h)

It should be noted that the storage lengths shown in Tables 5-7 do not include deceleration distance or taper.

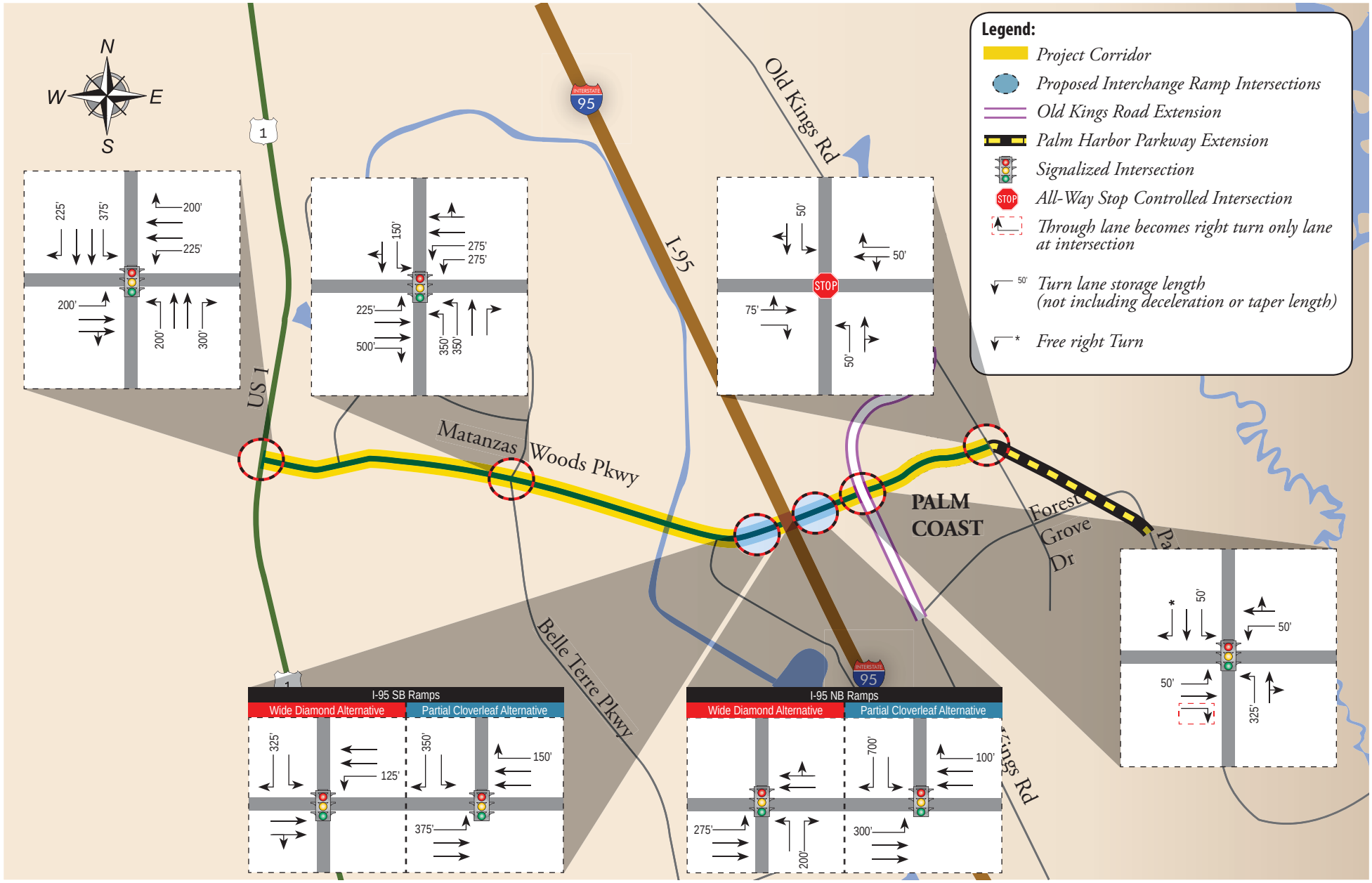


Figure 6
2035 Recommended Build Condition Geometry

Table 5 Recommended 2035 Storage Length for Turn Lanes (Signalized Intersections)

Movement	No. of Lanes	% Trucks	2035 Build AM Peak Hour						2035 Build PM Peak Hour						PD&E Reco'd Storage Length (ft) (1)
			Design Hour Vol (vph)	G/C Ratio	Cycle Length (sec)	Adj. Factor (AF)	Calc'd Storage Lane Length (ft)	Req'd Storage Lane Length (ft)	Design Hour Vol (vph)	G/C Ratio	Cycle Length (sec)	Adj. Factor (AF)	Calc'd Storage Lane Length (ft)	Req'd Storage Lane Length (ft)	
Intersection: US 1 @ Matanzas Woods Parkway															
EB Left	1	4.0%	146	0.43	120	2.00	144	150	201	0.52	140	2.00	195	200	**200**
WB Left	1	4.0%	307	0.54	120	1.75	214	225	223	0.55	140	2.00	203	200	**225**
WB Right	1	4.0%	278	0.44	120	1.50	202	200	202	0.44	140	1.50	172	175	**200**
NB Left	1	4.0%	165	0.33	120	2.00	192	200	120	0.23	140	2.00	187	175	**200**
NB Right	1	4.0%	307	0.23	120	1.50	307	300	223	0.17	140	1.50	281	275	**300**
SB Left	1	4.0%	202	0.32	120	2.00	238	250	278	0.35	140	2.00	365	375	**375**
SB Right	1	4.0%	178	0.23	120	1.50	178	175	201	0.26	140	1.50	226	225	**225**
Intersection: Matanzas Woods Parkway @ Belle Terre Parkway/ Lakeview Boulevard															
EB Left	1	4.0%	150	0.14	120	2.00	224	225	130	0.10	140	2.00	237	225	**225**
EB Right	1	4.0%	322	0.32	120	1.50	285	275	496	0.34	140	1.50	496	500	**500**
WB Left	2	4.0%	514	0.21	120	1.50	264	275	318	0.11	140	1.75	250	250	**275**
NB Left	2	4.0%	322	0.10	120	1.75	220	225	450	0.14	140	1.75	342	350	**350**
SB Left	1	4.0%	71	0.07	120	2.00	114	125	86	0.07	140	2.00	162	150	**150**
Intersection: Matanzas Woods Parkway @ I-95 SB Ramps (Wide Diamond Alternative)															
WB Left	1	4.0%	230	0.71	120	2.00	116	125	140	0.79	140	2.00	59	50	**125**
SB Left	1	4.0%	140	0.19	120	2.00	197	200	140	0.12	140	2.00	249	250	**250**
SB Right	1	4.0%	300	0.19	120	1.50	316	325	170	0.12	140	1.50	227	225	**325**
Intersection: Matanzas Woods Parkway @ I-95 NB Ramps (Wide Diamond Alternative)															
EB Left	1	4.0%	220	0.58	120	2.00	160	150	325	0.54	140	1.75	265	275	**275**
NB Left	1	4.0%	485	0.32	120	1.75	500	500	570	0.38	140	1.50	536	525	**525**
NB Right	1	4.0%	125	0.32	120	1.50	111	100	205	0.38	140	1.50	193	200	**200**
Intersection: Matanzas Woods Parkway @ Old Kings Road Extension															
EB Left	1	4.0%	24	0.46	120	2.00	22	50	33	0.44	140	2.00	37	50	**50**
EB Right	1	4.0%	387	0.46	120	1.50	272	275	532	0.40	140	1.50	484	475	**475**
WB Left	1	4.0%	16	0.45	120	2.00	15	50	12	0.38	140	2.00	15	50	**50**
NB Left	1	4.0%	342	0.36	120	1.75	332	325	313	0.45	140	1.75	305	300	**325**
SB Left	1	4.0%	14	0.11	120	2.00	22	50	6	0.24	140	2.00	9	50	**50**
SB Right (2)	1	4.0%	196	1.00	120	2.00	0	0	84	1.00	140	2.00	0	0	**0**
Intersection: Palm Coast Parkway @ I-95 SB Ramps															
EB Right (2)	1	4.0%	445	1.00	160	1.50	0	0	300	1.00	180	1.75	0	0	**0**
WB Left	2	4.0%	545	0.11	160	1.50	420	425	490	0.13	180	1.75	485	475	**475**
SB Left	2	4.0%	610	0.12	160	1.50	465	475	400	0.11	180	1.75	405	400	**475**
SB Right	1	4.0%	455	0.12	160	1.50	694	700	365	0.11	180	1.50	633	625	**700**
Intersection: Matanzas Woods Parkway @ I-95 SB Ramp (Partial Cloverleaf Alternative)															
EB Left (3)	1	4.0%	480	0.50	120	1.75	364	375	430	0.50	140	1.75	380	375	**375**
WB Right	1	4.0%	230	0.46	120	1.50	161	150	140	0.53	140	1.50	100	100	**150**
SB Left	1	4.0%	140	0.13	120	2.00	211	200	140	0.12	140	2.00	249	250	**250**
SB Right	1	4.0%	300	0.13	120	1.50	339	350	170	0.12	140	1.50	227	225	**350**
Intersection: Matanzas Woods Parkway @ I-95 NB Ramp (Partial Cloverleaf Alternative)															
EB Left (3)	1	4.0%	220	0.50	120	2.00	191	200	325	0.50	140	1.75	288	300	**300**
WB Right (4)	1	4.0%	130	0.54	120	1.50	78	75	115	0.55	140	2.00	105	100	**100**
SB Left	1	4.0%	125	0.21	120	2.00	171	175	205	0.18	140	2.00	340	350	**350**
SB Right	1	4.0%	485	0.21	120	1.50	498	500	570	0.18	140	1.50	709	700	**700**

Notes:

(1) Recommended storage length does not include deceleration or taper length.

(2) Right turn movement is proposed as a free movement, and hence does not require a storage length.

(3) Actuated G/C ratio is limited to 0.50 for these movements to allow for conservative storage length calculations.

(4) Actuated G/C ratio is set equal to WBT movement as right turn operates under yield control per IJR Synchro files.

Table 6 Recommended 2035 Storage Length for Turn Lanes (Un-signalized Intersections)

Movement	2035 AM Peak Hour					2035 PM Peak Hour					PD&E Reco'd Storage Length (ft) (2)
	Design Hour Vol (vph)	Degree of Utilization x	Departure Headway h_d	Calc'd 95th percentile queue (veh)	Req'd Storage Lane Length (ft) (1)	Design Hour Vol (vph)	Degree of Utilization x	Departure Headway h_d	Calc'd 95th percentile queue (veh)	Req'd Storage Lane Length (ft) (1)	
Intersection: Matanzas Woods Parkway @ Existing Old Kings Road (w/ Palm Harbor Pkwy Extension)											
EB Right	72	0.10	4.8	0.3	50	92	0.12	4.7	0.4	50	**50**
WB Right	89	0.12	4.8	0.4	50	28	0.04	4.9	0.1	50	**50**
NB Left	57	0.11	6.7	0.4	50	52	0.10	6.7	0.3	50	**50**
SB Left	37	0.07	6.7	0.2	50	64	0.12	6.6	0.4	50	**50**

Notes:

(1) Minimum storage length of 50 feet assumed.

(2) Recommended storage length does not include deceleration or taper length.

Table 7 Recommended 2025 Storage Length for Turn Lanes (Signalized Intersections)

Movement	No. of Lanes	% Trucks	2025 Build AM Peak Hour						2025 Build PM Peak Hour							PD&E Reco'd Storage Length (ft) (1)
			Design Hour Vol (vph)	G/C Ratio	Cycle Length (sec)	Adj. Factor (AF)	Calc'd Storage Lane Length (ft)	Req'd Storage Lane Length (ft)	Design Hour Vol (vph)	G/C Ratio	Cycle Length (sec)	No. of Lanes	Adj. Factor (AF)	Calc'd Storage Lane Length (ft)	Req'd Storage Lane Length (ft)	
Intersection: Matanzas Woods Parkway @ I-95 SB Ramps (Wide Diamond Alternative)																
EB Right	1	4.0%	405	0.60	100	1.50	176	175	370	0.66	120	1	1.50	164	175	**175**
WB Left	1	4.0%	210	0.73	100	2.00	82	75	130	0.76	120	1	2.00	54	50	**75**
SB Left	1	4.0%	130	0.15	100	2.00	160	150	130	0.14	120	1	2.00	194	200	**200**
SB Right	1	4.0%	260	0.15	100	1.50	239	250	120	0.14	120	1	1.50	134	125	**250**
Intersection: Matanzas Woods Parkway @ I-95 NB Ramps (Wide Diamond Alternative)																
EB Left	1	4.0%	163	0.61	100	2.00	92	100	264	0.61	120	1	2.00	178	175	**175**
WB Right	1	4.0%	125	0.48	100	1.50	70	75	110	0.43	120	1	1.50	82	75	**75**
NB Left	1	4.0%	385	0.27	100	1.75	355	350	400	0.29	120	1	1.75	431	425	**425**
NB Right	1	4.0%	120	0.27	100	1.50	95	100	200	0.29	120	1	1.50	185	175	**175**
Intersection: Matanzas Woods Parkway @ Old Kings Road Extension																
EB Left	1	4.0%	20	0.38	100	2.00	18	50	27	0.45	120	1	2.00	26	50	**50**
EB Right	1	4.0%	318	0.38	100	1.50	214	225	438	0.43	120	1	1.50	325	325	**325**
WB Left	1	4.0%	13	0.35	100	2.00	12	50	9	0.42	120	1	2.00	9	50	**50**
NB Left	1	4.0%	324	0.44	100	1.75	229	225	256	0.43	120	1	2.00	253	250	**250**
SB Left	1	4.0%	11	0.18	100	2.00	13	50	6	0.24	120	1	2.00	8	50	**50**
Intersection: Matanzas Woods Parkway @ I-95 SB Ramp (Partial Cloverleaf Alternative)																
EB Left (2)	2	4.0%	405	0.50	100	1.75	128	125	370	0.50	120	2	1.75	140	150	**150**
WB Right	1	4.0%	210	0.60	100	1.50	91	100	130	0.66	120	1	1.50	57	50	**100**
SB Left	1	4.0%	130	0.15	100	2.00	160	150	130	0.14	120	1	2.00	194	200	**200**
SB Right	1	4.0%	260	0.15	100	1.50	239	250	120	0.14	120	1	1.50	134	125	**250**
Intersection: Matanzas Woods Parkway @ I-95 NB Ramp (Partial Cloverleaf Alternative)																
EB Left (2)	1	4.0%	163	0.50	100	2.00	118	125	264	0.50	120	1	2.00	229	225	**225**
WB Right (3)	1	4.0%	125	0.59	100	2.00	74	75	110	0.60	120	1	2.00	76	75	**75**
SB Left	1	4.0%	120	0.17	100	2.00	144	150	200	0.17	120	1	2.00	288	300	**300**
SB Right	1	4.0%	385	0.17	100	1.50	346	350	400	0.17	120	1	1.50	432	425	**425**

Notes:

(1) Recommended storage length does not include deceleration or taper length.

(2) Actuated G/C ratio is limited to 0.50 for these movements to allow for conservative storage length calculations.

(3) Actuated G/C ratio is set equal to WBT movement as right turn operates under yield control per IJR Synchro files.

Table 5 includes the storage calculation for the Palm Coast Parkway at I-95 Southbound Ramps intersection assuming that two left turn lanes are provided for the southbound left turn movement, consistent with the recommended geometry at this intersection in the IJR.

Just as previously stated in the approved IJR in Section 8.4.5, the queue analysis summary provided in Table 5 clearly demonstrates that the forecasted design hour volumes will be accommodated within the vehicle storage recommended, without queue backup onto the I-95 mainline.

SECTION 6 – SUMMARY

This memorandum summarizes the technical traffic elements including the key design traffic information and results from the approved IJR and also provides details of the additional analysis performed to account for the proposed new intersection on Matanzas Woods Parkway with the proposed Old Kings Road Extension as well as the intersection of Matanzas Woods Parkway/ Existing Old Kings Road following the proposed extension of Palm Harbor Parkway to align with this intersection.

The results of the study indicate that four lanes are needed on Matanzas Woods Parkway from US 1 to the proposed Old Kings Road Extension to accommodate the projected design year traffic demand. Although the approved IJR recommended the four-lane improvement extend to the existing Old Kings Road intersection, the proposed Old Kings Road Extension diverts much of the traffic that was originally projected to travel on Matanzas Woods Parkway to and from the existing Old Kings Road. The results of this study do not show the need for the section east of the proposed Old Kings Road Extension to be widened beyond the existing two lanes through the design year.

The results of this study indicate that the Matanzas Woods Parkway four-lane widening and I-95 interchange construction could be phased as follows:

1. Construct the I-95 interchange ramps without additional improvements by the opening year of 2015.
2. Widen Matanzas Woods Parkway to four lanes from US 1 to the I-95 Southbound Ramps and construct left and right turn lanes as shown in Figure 5 at the I-95 ramp intersections by 2019.
3. Widen Matanzas Woods Parkway to four lanes from the I-95 Southbound Ramps to the proposed Old Kings Road Extension, including the bridge over I-95 by 2027.

The forecasted volumes from the Year 2035 Build Alternative were also used to complete an 18-kip Equivalent Single Axle Load (ESAL) analysis for Matanzas Woods Parkway between US 1 and Old Kings Road, which is included in Appendix B.

The PD&E Design Traffic Reevaluation Assessment Checklist from FDOT District Five for this project is attached in Appendix E.

SECTION 7 - APPENDICES

Appendix A – Traffic Count Data

Appendix B – 18 kip ESAL Accumulations

Appendix C – Future 2025-2035 Intersection Analysis

Appendix D – Approved I-95 and Matanzas Woods Parkway Interchange IJR

Appendix E – PD&E Design Traffic Reevaluation Assessment Checklist from FDOT District Five

Appendix A

Traffic Count Data

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
5/3/2011		**Hour**															
1	1	15	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	30	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	45	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	1	100	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0
1	2	100	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	115	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	115	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	130	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	130	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	145	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	145	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	200	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	200	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	215	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
1	1	230	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	230	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1	1	245	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	245	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	300	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	300	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	315	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	315	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	330	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	330	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	345	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	345	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	400	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	400	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	415	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	430	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	445	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	445	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
1	1	500	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	500	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	515	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	515	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	530	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	530	0	2	1	0	2	1	0	0	0	0	0	0	0	0	0
1	1	545	1	9	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	545	0	2	3	0	0	1	0	0	0	0	0	0	0	0	0
1	1	600	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	600	0	8	4	0	0	3	0	0	0	0	0	0	0	0	0
1	1	615	0	4	2	1	0	0	0	0	0	0	0	0	0	0	0
1	2	615	1	10	0	0	0	2	0	0	0	0	0	0	0	1	0
1	1	630	0	9	1	0	1	1	0	0	0	0	0	0	0	0	0
1	2	630	2	12	4	0	1	1	0	0	0	0	0	0	0	0	0
1	1	645	0	11	5	2	1	0	0	0	0	0	0	0	0	0	0
1	2	645	0	15	3	2	0	2	0	0	0	0	0	0	0	1	0
1	1	700	0	47	8	5	1	0	0	0	0	0	0	0	0	0	0

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
1	2	700	0	21	4	1	2	3	0	0	0	0	0	0	0	0	0
1	1	715	1	95	16	1	5	0	0	0	0	0	0	0	0	0	0
1	2	715	0	37	7	11	2	4	0	0	0	0	0	0	0	1	0
1	1	730	1	123	21	0	1	3	0	0	0	0	0	0	0	0	0
1	2	730	0	63	16	0	3	2	0	0	0	0	0	0	0	0	0
1	1	745	0	27	7	0	0	1	0	0	0	0	0	0	0	0	0
1	2	745	2	21	15	0	1	3	0	0	0	0	0	0	0	0	0
1	1	800	0	29	12	1	1	0	0	0	0	0	0	0	0	0	0
1	2	800	0	31	5	2	0	1	0	0	0	0	0	0	0	0	0
1	1	815	0	18	5	1	2	0	0	0	0	0	0	0	0	0	0
1	2	815	0	13	7	0	3	0	0	0	0	0	0	0	0	0	0
1	1	830	0	23	5	0	2	0	0	0	0	0	0	0	0	0	0
1	2	830	1	15	11	2	1	3	0	0	0	0	0	0	0	1	0
1	1	845	0	26	11	0	1	0	0	0	0	0	0	0	0	1	0
1	2	845	0	24	25	1	0	2	0	0	0	0	0	0	0	0	0
1	1	900	0	38	10	0	1	0	0	0	0	0	0	0	0	0	0
1	2	900	1	19	9	0	0	3	0	0	0	0	0	0	0	0	0
1	1	915	1	28	6	0	1	1	0	0	0	0	0	0	0	0	0
1	2	915	2	12	5	0	0	1	0	0	0	0	0	0	0	0	0
1	1	930	1	23	5	0	0	0	0	0	0	0	0	0	0	0	0
1	2	930	0	18	7	0	0	3	0	0	0	0	0	0	0	0	0
1	1	945	1	16	5	0	0	0	0	0	0	0	0	0	0	0	0
1	2	945	0	12	11	0	0	1	0	1	0	0	0	0	0	0	0
1	1	1000	0	20	4	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1000	1	17	4	0	1	3	0	0	0	0	0	0	0	1	0
1	1	1015	0	35	14	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1015	0	14	9	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1030	0	20	7	0	0	0	0	2	0	0	0	0	0	0	0
1	2	1030	0	14	8	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1045	0	18	5	0	0	1	0	0	0	0	0	0	0	0	0
1	2	1045	0	12	6	0	1	0	0	0	0	0	0	0	0	1	0
1	1	1100	0	20	5	1	2	2	0	0	0	0	0	0	0	1	0
1	2	1100	0	8	11	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1115	0	16	3	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1115	0	16	6	0	0	1	0	1	0	0	0	0	0	0	0
1	1	1130	0	24	11	1	0	0	0	1	0	0	0	0	0	1	0
1	2	1130	1	13	9	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1145	3	19	7	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1145	0	14	9	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1200	0	17	6	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1200	0	13	10	0	2	0	0	1	0	0	0	0	0	0	0
1	1	1215	0	29	6	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1215	0	13	7	0	2	1	0	0	0	0	0	0	0	0	0
1	1	1230	0	23	6	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1230	1	22	7	0	0	0	1	1	0	0	0	0	0	0	0
1	1	1245	1	14	3	0	2	0	0	0	0	0	0	0	0	0	0
1	2	1245	1	12	14	1	0	1	0	0	0	0	0	0	0	0	0
1	1	1300	0	24	4	0	2	1	0	0	0	0	0	0	0	0	0
1	2	1300	0	13	6	0	1	0	0	1	0	0	0	0	0	1	0
1	1	1315	0	13	6	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1315	1	16	10	0	3	0	0	0	0	0	0	0	0	0	0
1	1	1330	0	27	10	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1330	0	24	11	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1345	0	23	6	0	0	1	0	0	0	0	0	0	0	0	0
1	2	1345	1	24	6	0	0	2	0	1	0	0	0	0	0	0	0
1	1	1400	0	25	7	4	3	0	0	1	0	0	0	0	0	0	0

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
1	2	1400	1	18	8	0	0	0	0	0	0	0	0	0	0	1	0
1	1	1415	0	34	9	6	3	0	0	0	0	0	0	0	0	0	0
1	2	1415	1	18	13	0	5	4	0	1	0	0	0	0	0	1	0
1	1	1430	0	49	12	2	1	0	0	0	0	1	0	0	0	0	0
1	2	1430	1	65	25	5	3	7	0	0	1	0	0	0	0	1	0
1	1	1445	1	39	9	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1445	0	37	16	2	1	4	0	0	0	0	0	0	0	0	0
1	1	1500	0	29	5	1	1	0	0	0	0	0	0	0	0	0	0
1	2	1500	0	26	18	2	2	0	2	0	0	0	0	0	0	1	0
1	1	1515	0	29	7	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1515	0	17	11	3	3	2	0	1	0	0	0	0	0	0	0
1	1	1530	2	48	11	1	0	0	0	0	0	0	0	0	0	0	0
1	2	1530	1	22	16	1	1	0	0	0	1	0	0	0	0	1	0
1	1	1545	0	38	13	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1545	1	23	9	2	0	1	0	1	0	0	0	0	0	0	0
1	1	1600	2	43	13	1	0	0	0	0	0	0	0	0	0	0	0
1	2	1600	0	23	6	0	0	4	0	0	0	0	0	0	0	1	0
1	1	1615	1	33	9	1	0	1	0	0	0	0	0	0	0	0	0
1	2	1615	0	25	10	0	2	1	0	1	0	0	0	0	0	0	0
1	1	1630	0	18	13	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1630	0	23	13	1	1	1	0	0	0	1	0	0	0	0	0
1	1	1645	5	36	9	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1645	0	29	14	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1700	1	31	4	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1700	0	29	15	0	2	1	0	0	0	0	0	0	0	0	0
1	1	1715	3	35	7	0	0	0	0	0	0	0	0	0	0	1	0
1	2	1715	0	17	13	1	3	0	0	0	0	0	0	0	0	0	0
1	1	1730	0	42	17	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1730	1	24	16	0	0	3	0	0	0	0	0	0	0	3	0
1	1	1745	1	42	7	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1745	0	26	22	0	1	0	0	0	0	0	0	0	0	1	0
1	1	1800	1	45	8	0	3	0	0	0	0	0	0	0	0	0	0
1	2	1800	2	31	8	0	0	1	0	0	0	0	0	0	0	0	0
1	1	1815	0	27	7	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1815	0	25	14	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1830	2	30	8	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1830	0	19	9	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1845	1	21	4	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1845	1	21	9	0	2	2	0	0	0	0	0	0	0	0	0
1	1	1900	0	28	6	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1900	1	19	9	0	1	2	0	0	0	0	0	0	0	0	0
1	1	1915	0	20	10	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1915	1	20	9	0	2	1	0	0	0	0	0	0	0	0	0
1	1	1930	0	22	8	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1930	0	11	9	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1945	0	30	7	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1945	2	17	7	0	0	4	0	0	0	0	0	0	0	1	0
1	1	2000	1	17	3	0	0	0	0	0	0	0	0	0	0	0	0
1	2	2000	1	19	6	0	1	1	0	0	0	0	0	0	0	0	0
1	1	2015	0	21	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	2015	1	18	5	0	3	0	0	0	0	0	0	0	0	1	0
1	1	2030	0	13	7	0	1	0	0	0	0	0	0	0	0	0	0
1	2	2030	1	10	4	0	0	1	0	0	0	0	0	0	0	1	0
1	1	2045	1	8	5	0	1	0	0	0	0	0	0	0	0	0	0
1	2	2045	0	10	5	0	0	3	0	0	0	0	0	0	0	0	0
1	1	2100	0	15	3	0	0	0	0	0	0	0	0	0	0	0	0

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	
1	2	2100	1	9	4	0	0	0	0	0	0	0	0	0	0	0	0	
1	1	2115	1	9	2	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2115	0	8	7	0	0	3	0	0	0	0	0	0	0	0	0	
1	1	2130	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2130	0	9	2	0	0	1	0	0	0	0	0	0	0	0	0	
1	1	2145	1	15	4	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2145	0	3	4	0	0	3	0	0	0	0	0	0	0	0	0	
1	1	2200	0	14	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2200	0	13	5	0	0	2	0	0	0	0	0	0	0	0	0	
1	1	2215	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2215	0	4	2	0	0	1	0	0	0	0	0	0	0	0	0	
1	1	2230	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2230	0	8	4	0	0	1	0	0	0	0	0	0	0	0	0	
1	1	2245	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2245	0	11	1	0	0	1	0	0	0	0	0	0	0	0	0	
1	1	2300	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2300	0	7	2	0	0	2	0	0	0	0	0	0	0	0	0	
1	1	2315	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2315	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	
1	1	2330	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2330	0	8	3	0	0	2	0	0	0	0	0	0	0	0	0	
1	1	2345	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2345	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	
1	1	2400	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2400	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total			**68**	**3,220**	**1,110**	**66**	**112**	**122**	**3**	**14**	**2**	**2**	**0**	**0**	**0**	**24**	**0**	**4,743**
Total by Class			**4,398**			**345**												

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
5/4/2011		**Hour**															
1	1	15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	15	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
1	1	30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	45	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	100	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	100	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	115	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	115	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
1	1	130	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	130	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	145	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	200	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	200	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
1	1	215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	215	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	230	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	230	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	245	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	245	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	315	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	315	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	330	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	330	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
1	1	345	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	345	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	400	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	400	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1	1	415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	430	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
1	1	445	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	445	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	500	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	500	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
1	1	515	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	515	0	4	2	0	0	1	0	0	0	0	0	0	0	0	0
1	1	530	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0
1	2	530	0	5	2	0	0	1	0	0	0	0	0	0	0	0	0
1	1	545	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	545	1	2	1	0	0	1	0	0	0	0	0	0	0	0	0
1	1	600	0	10	1	0	0	0	0	1	0	0	0	0	0	0	0
1	2	600	1	10	3	0	0	0	0	0	0	0	0	0	0	0	0
1	1	615	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0
1	2	615	0	9	6	0	0	0	0	0	0	0	0	0	0	0	0
1	1	630	0	7	1	3	1	0	0	0	0	0	0	0	0	0	0
1	2	630	2	6	4	0	1	4	0	0	0	0	0	0	0	0	0
1	1	645	0	12	2	1	2	0	0	0	0	0	0	0	0	0	0
1	2	645	0	12	3	3	0	3	0	0	0	0	0	0	0	0	0
1	1	700	0	43	9	4	4	0	0	0	0	0	0	0	0	0	0

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
1	2	700	0	16	7	0	1	5	0	0	0	0	0	0	0	0	0
1	1	715	1	80	20	2	3	0	0	1	0	0	0	0	0	0	0
1	2	715	0	47	8	13	1	5	0	1	0	0	0	0	0	1	0
1	1	730	0	111	21	0	1	2	0	1	0	0	0	0	0	0	0
1	2	730	1	41	27	0	8	6	0	0	0	0	0	0	0	0	0
1	1	745	0	33	14	0	2	0	0	0	0	0	0	0	0	0	0
1	2	745	0	27	9	0	1	3	0	0	0	0	0	0	0	1	0
1	1	800	1	19	7	1	1	0	0	0	0	0	0	0	0	0	0
1	2	800	0	24	11	1	1	1	0	0	0	0	0	0	0	0	0
1	1	815	0	30	4	1	3	0	0	0	0	0	0	0	0	0	0
1	2	815	0	17	9	1	2	0	0	0	0	0	0	0	0	0	0
1	1	830	0	13	9	0	1	0	0	0	0	0	0	0	0	0	0
1	2	830	0	22	15	1	1	2	0	0	0	0	0	0	0	0	0
1	1	845	0	24	6	0	1	0	0	0	0	0	0	0	0	0	0
1	2	845	0	30	18	0	1	2	0	0	0	0	0	0	0	1	0
1	1	900	0	36	12	0	2	0	0	0	0	0	0	0	0	0	0
1	2	900	2	25	7	0	1	1	0	0	0	0	0	0	0	0	0
1	1	915	1	36	5	0	0	0	0	1	0	0	0	0	0	0	0
1	2	915	0	14	11	0	0	1	0	0	0	0	0	0	0	0	0
1	1	930	0	11	5	0	0	0	0	0	0	0	0	0	0	0	0
1	2	930	0	16	3	0	0	2	0	0	0	0	0	0	0	0	0
1	1	945	2	27	9	0	1	0	0	0	0	0	0	0	0	0	0
1	2	945	0	14	4	0	1	0	0	1	0	0	0	0	0	0	0
1	1	1000	0	20	5	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1000	0	10	11	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1015	1	21	6	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1015	0	9	9	0	1	1	0	0	0	0	0	0	0	1	0
1	1	1030	0	18	13	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1030	0	8	8	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1045	0	18	14	0	1	0	0	1	0	0	0	0	0	0	0
1	2	1045	0	14	16	0	1	2	0	0	0	0	0	0	0	0	0
1	1	1100	0	22	7	0	0	0	0	1	0	0	0	0	0	0	0
1	2	1100	0	11	14	0	2	2	0	0	0	0	0	0	0	0	0
1	1	1115	0	12	4	0	0	1	0	0	0	0	0	0	0	0	0
1	2	1115	2	12	8	0	2	0	0	0	0	0	0	0	0	1	0
1	1	1130	0	10	6	0	2	1	0	0	0	0	0	0	0	0	0
1	2	1130	0	14	6	0	4	2	0	0	0	0	0	0	0	0	0
1	1	1145	1	15	11	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1145	1	23	8	0	3	1	0	0	0	0	0	0	0	0	0
1	1	1200	1	9	6	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1200	0	18	9	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1215	1	35	5	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1215	0	13	12	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1230	0	14	8	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1230	0	11	8	0	0	1	0	0	0	0	0	0	0	0	0
1	1	1245	0	12	3	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1245	0	9	8	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1300	0	15	8	0	1	1	0	0	0	0	0	0	0	0	0
1	2	1300	0	11	8	1	0	0	0	0	0	0	0	0	0	0	0
1	1	1315	0	21	7	0	0	0	0	1	0	0	0	0	0	0	0
1	2	1315	1	11	9	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1330	1	26	6	0	1	1	0	0	0	0	0	0	0	0	0
1	2	1330	0	19	4	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1345	0	25	7	0	1	0	0	0	1	0	0	0	0	0	0
1	2	1345	0	27	11	0	2	1	0	1	0	0	0	0	1	1	0
1	1	1400	0	19	7	3	2	0	0	0	0	0	0	0	0	0	0

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
1	2	1400	0	21	14	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1415	0	26	7	6	2	0	0	0	0	0	0	0	0	0	0
1	2	1415	1	18	10	0	5	2	0	0	0	0	0	0	0	0	0
1	1	1430	0	41	9	5	2	1	0	1	0	0	0	0	0	0	0
1	2	1430	1	53	34	5	3	2	0	0	0	0	0	0	0	0	0
1	1	1445	1	38	9	0	3	1	0	0	0	0	0	0	0	0	0
1	2	1445	0	39	18	1	5	2	0	0	0	0	0	0	0	0	0
1	1	1500	0	23	6	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1500	3	20	10	2	3	2	0	0	0	0	0	0	0	0	0
1	1	1515	1	22	5	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1515	0	29	20	3	0	3	0	1	0	0	0	0	0	0	0
1	1	1530	1	33	8	2	1	0	0	0	0	0	0	0	0	0	0
1	2	1530	0	33	17	0	4	2	0	1	0	0	0	0	0	0	0
1	1	1545	0	40	15	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1545	0	38	21	3	3	0	0	0	0	0	0	0	0	1	0
1	1	1600	1	32	9	2	3	0	0	0	0	0	0	0	0	0	0
1	2	1600	0	22	22	1	3	2	0	0	0	0	0	0	0	0	0
1	1	1615	0	37	13	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1615	0	23	14	1	1	0	0	0	0	0	0	0	0	0	0
1	1	1630	0	31	8	0	0	0	0	1	0	0	0	0	0	0	0
1	2	1630	1	20	13	0	1	3	0	0	0	0	0	0	0	0	0
1	1	1645	0	40	8	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1645	2	14	10	0	2	1	0	0	0	0	0	0	0	0	0
1	1	1700	2	37	9	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1700	0	28	14	0	3	1	0	0	0	0	0	0	0	0	0
1	1	1715	1	32	15	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1715	0	11	13	0	2	1	1	0	0	0	0	0	0	0	0
1	1	1730	0	55	7	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1730	0	25	14	0	1	1	0	1	0	0	0	0	0	0	0
1	1	1745	0	51	13	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1745	0	30	18	0	1	2	0	0	0	0	0	0	0	1	0
1	1	1800	1	46	12	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1800	0	21	12	0	1	2	0	0	0	0	0	0	0	0	0
1	1	1815	3	31	8	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1815	1	22	12	0	3	3	0	0	0	0	0	0	0	2	0
1	1	1830	0	23	4	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1830	0	22	16	0	0	3	0	0	0	0	0	0	0	0	0
1	1	1845	0	24	8	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1845	1	12	14	0	2	0	0	0	0	0	0	0	0	0	0
1	1	1900	1	28	7	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1900	0	28	6	0	3	2	0	0	0	0	0	0	0	1	0
1	1	1915	0	38	7	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1915	1	16	4	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1930	0	22	6	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1930	0	19	8	0	0	2	0	0	0	0	0	0	0	0	0
1	1	1945	0	21	3	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1945	0	15	5	0	2	2	0	0	0	0	0	0	0	1	0
1	1	2000	2	27	4	0	0	0	0	0	0	0	0	0	0	1	0
1	2	2000	0	17	7	0	1	3	0	0	0	0	0	0	0	0	0
1	1	2015	0	10	4	0	0	0	0	0	0	0	0	0	0	0	0
1	2	2015	1	16	6	0	2	6	0	1	0	0	0	0	0	0	0
1	1	2030	1	22	4	0	1	0	0	0	0	0	0	0	0	0	0
1	2	2030	1	16	11	0	0	1	0	0	0	0	0	0	0	0	0
1	1	2045	0	17	4	0	0	0	0	0	0	0	0	0	0	0	0
1	2	2045	0	13	8	0	0	1	0	0	0	0	0	0	0	0	0
1	1	2100	0	13	2	0	0	0	0	0	0	0	0	0	0	0	0

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass

Channel 1 EB

Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	
1	2	2100	0	5	5	0	0	1	0	0	0	0	0	0	0	0	0	
1	1	2115	0	19	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2115	0	16	4	0	0	0	0	0	0	0	0	0	0	0	0	
1	1	2130	1	14	2	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2130	0	13	6	0	0	2	0	0	0	0	0	0	0	0	0	
1	1	2145	0	9	3	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2145	0	17	7	0	1	5	0	0	0	0	0	0	0	0	0	
1	1	2200	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2200	0	8	1	0	0	3	0	0	0	0	0	0	0	0	0	
1	1	2215	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2215	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	1	2230	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2230	0	6	5	0	0	3	0	0	0	0	0	0	0	0	0	
1	1	2245	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2245	0	4	5	0	0	1	0	0	0	0	0	0	0	0	0	
1	1	2300	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2300	0	7	1	0	0	3	0	0	0	0	0	0	0	2	0	
1	1	2315	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2315	0	3	1	0	0	3	0	0	0	0	0	0	0	0	0	
1	1	2330	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2330	1	4	3	0	0	2	0	0	0	0	0	0	0	0	0	
1	1	2345	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2345	0	3	2	0	0	2	0	0	0	0	0	0	0	0	0	
1	1	2400	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2400	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	
Total			**53**	**3,120**	**1,201**	**66**	**149**	**141**	**1**	**16**	**1**	**0**	**0**	**0**	**1**	**15**	**0**	**4,764**
Total by Class			**4,374**			**390**												

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
5/5/2011		**Hour**															
1	1	15	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	30	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	100	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	100	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	115	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	115	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0
1	1	130	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	130	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0
1	1	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	145	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	200	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	215	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	215	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	230	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	230	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	245	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	245	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0
1	1	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	300	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	315	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
1	2	315	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1	1	330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	330	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	345	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	345	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	400	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	400	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	430	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	445	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	445	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	500	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	500	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0
1	1	515	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	515	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0
1	1	530	1	3	3	0	1	0	0	0	0	0	0	0	0	0	0
1	2	530	0	3	1	0	0	2	0	0	0	0	0	0	0	0	0
1	1	545	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	545	2	3	1	0	0	2	0	0	0	0	0	0	0	0	0
1	1	600	0	7	2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	600	1	8	2	0	0	1	0	0	0	0	0	0	0	0	0
1	1	615	0	10	1	1	0	0	0	0	0	0	0	0	0	0	0
1	2	615	1	10	5	0	0	2	0	0	0	0	0	0	0	0	0
1	1	630	0	6	1	2	0	0	0	0	0	0	0	0	0	0	0
1	2	630	2	8	5	0	1	2	0	0	0	0	0	0	0	0	0
1	1	645	1	11	4	1	2	0	0	0	0	0	0	0	0	0	0
1	2	645	2	11	6	2	1	1	0	0	0	0	0	0	0	0	0
1	1	700	0	43	12	5	2	0	0	0	0	0	0	0	0	0	0

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
1	2	700	0	17	5	3	1	2	0	0	0	0	0	0	0	0	0
1	1	715	2	73	25	2	4	0	0	0	0	0	0	0	0	0	0
1	2	715	1	24	7	10	2	11	0	0	0	0	0	0	0	1	0
1	1	730	1	109	27	0	1	3	0	3	0	0	0	0	0	0	0
1	2	730	1	51	20	0	4	15	0	0	0	0	0	0	0	2	0
1	1	745	0	32	8	0	1	0	0	0	0	0	0	0	0	0	0
1	2	745	0	22	9	0	5	1	0	0	0	0	0	0	0	0	0
1	1	800	1	21	5	1	0	0	0	0	0	0	0	0	0	0	0
1	2	800	0	22	14	1	1	5	0	0	0	0	0	0	0	0	0
1	1	815	1	21	6	0	2	0	0	0	0	0	0	0	0	0	0
1	2	815	0	23	9	1	1	1	0	0	0	0	0	0	0	0	0
1	1	830	0	28	6	0	0	0	0	0	0	0	0	0	0	0	0
1	2	830	1	22	14	2	3	1	0	0	0	0	0	0	0	0	0
1	1	845	0	33	10	0	0	0	0	0	0	0	0	0	0	0	0
1	2	845	1	29	16	0	0	4	0	0	0	0	0	0	0	0	0
1	1	900	1	34	13	0	1	0	0	0	0	0	0	0	0	0	0
1	2	900	0	23	10	0	0	0	0	0	0	0	0	0	0	0	0
1	1	915	1	22	8	0	2	0	0	0	0	0	0	0	0	0	0
1	2	915	1	6	7	0	0	0	1	0	0	0	0	0	0	0	0
1	1	930	1	18	5	0	0	1	0	0	0	0	0	0	0	0	0
1	2	930	0	9	4	0	0	2	0	0	0	0	0	0	0	0	0
1	1	945	0	23	5	0	0	0	0	0	0	0	0	0	0	0	0
1	2	945	1	15	7	0	0	2	0	1	0	0	0	0	0	0	0
1	1	1000	0	17	4	0	0	0	0	1	1	0	0	0	0	0	0
1	2	1000	0	12	7	0	1	1	0	1	0	0	0	0	0	0	0
1	1	1015	0	25	10	0	0	1	0	0	0	0	0	0	0	1	0
1	2	1015	0	13	8	0	1	3	0	0	0	0	0	0	0	0	0
1	1	1030	0	22	10	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1030	0	12	11	0	2	0	0	0	0	0	0	0	0	0	0
1	1	1045	0	18	7	0	1	1	0	0	0	0	0	0	0	0	0
1	2	1045	1	12	4	0	1	0	0	0	0	0	0	0	0	1	0
1	1	1100	0	20	4	0	2	0	0	0	0	0	0	0	0	0	0
1	2	1100	1	7	11	0	2	1	0	0	0	0	0	0	0	0	0
1	1	1115	0	18	9	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1115	1	8	6	0	0	1	0	0	0	0	0	0	0	1	0
1	1	1130	0	14	8	0	0	0	0	0	0	0	0	0	0	1	0
1	2	1130	0	13	7	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1145	1	16	2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1145	0	12	7	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1200	0	22	6	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1200	0	11	13	0	3	0	0	0	0	0	0	0	0	0	0
1	1	1215	0	22	8	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1215	0	14	12	0	0	2	0	0	0	0	0	0	0	0	0
1	1	1230	0	28	10	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1230	0	18	12	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1245	0	18	3	0	0	1	0	0	0	0	0	0	0	0	0
1	2	1245	0	15	10	0	0	1	0	0	0	0	0	0	0	0	0
1	1	1300	1	15	2	0	2	0	0	0	0	0	0	0	0	0	0
1	2	1300	0	18	6	0	1	0	0	0	0	0	0	0	0	1	0
1	1	1315	0	16	7	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1315	0	14	9	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1330	0	19	3	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1330	2	19	9	0	2	3	0	1	0	0	0	0	0	0	0
1	1	1345	2	13	6	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1345	0	20	12	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1400	0	18	6	5	6	0	0	0	0	0	0	0	0	0	0

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class	**Group**		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
1	2	1400	0	13	11	0	1	0	0	1	0	0	0	0	0	0	0
1	1	1415	1	29	6	5	1	0	0	0	0	0	0	0	0	0	0
1	2	1415	1	17	10	0	5	4	0	0	0	0	0	0	0	0	0
1	1	1430	0	40	11	5	1	1	0	1	0	0	0	0	0	0	0
1	2	1430	0	65	27	4	1	3	0	1	0	0	0	0	0	0	0
1	1	1445	1	28	8	0	2	0	0	0	0	0	0	0	0	1	0
1	2	1445	0	42	19	2	0	3	0	1	0	0	0	0	0	0	0
1	1	1500	0	30	4	0	1	0	0	0	0	0	0	0	0	1	0
1	2	1500	5	33	13	1	2	6	1	1	0	0	0	0	0	1	0
1	1	1515	0	29	5	0	0	0	0	1	0	0	0	0	0	0	0
1	2	1515	0	36	13	1	2	4	0	1	0	0	0	0	0	0	0
1	1	1530	1	43	12	2	0	0	0	1	0	0	0	0	0	0	0
1	2	1530	0	22	10	0	1	1	0	0	0	0	0	0	0	1	0
1	1	1545	2	38	18	0	2	0	0	0	0	0	0	0	0	0	0
1	2	1545	0	25	13	2	4	2	0	0	0	0	0	0	0	0	0
1	1	1600	1	34	8	2	0	0	0	0	0	0	0	0	0	0	0
1	2	1600	0	18	12	0	0	2	0	1	0	0	0	0	0	0	0
1	1	1615	2	24	7	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1615	0	22	13	0	1	1	0	1	0	0	0	0	0	0	0
1	1	1630	1	32	10	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1630	0	27	13	0	1	2	0	0	0	0	0	0	0	0	0
1	1	1645	1	41	11	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1645	1	18	15	1	1	0	0	0	0	0	0	0	0	1	0
1	1	1700	1	38	11	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1700	0	21	11	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1715	1	35	6	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1715	0	21	8	1	1	2	0	0	0	0	0	0	0	0	0
1	1	1730	1	46	9	0	1	0	0	1	0	0	0	0	0	0	0
1	2	1730	1	24	8	0	2	3	0	1	0	0	0	0	0	0	0
1	1	1745	1	41	7	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1745	0	22	22	0	0	4	0	1	0	0	0	0	0	1	0
1	1	1800	1	40	8	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1800	0	19	10	0	3	1	0	0	0	0	0	0	0	0	0
1	1	1815	2	24	5	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1815	1	24	8	0	1	0	0	1	0	0	0	0	0	0	0
1	1	1830	1	31	4	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1830	1	27	4	0	3	4	0	0	0	0	0	0	0	0	0
1	1	1845	1	32	3	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1845	0	18	8	0	0	1	0	0	0	0	0	0	0	0	0
1	1	1900	0	21	4	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1900	0	13	9	0	1	1	0	0	0	0	0	0	0	0	0
1	1	1915	0	17	8	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1915	1	16	8	0	1	2	0	0	0	0	0	0	0	0	0
1	1	1930	0	16	3	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1930	0	15	5	0	0	3	0	0	0	0	0	0	0	0	0
1	1	1945	1	25	2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1945	0	14	7	0	0	0	0	0	0	0	0	0	0	0	0
1	1	2000	1	26	6	0	0	0	0	0	0	0	0	0	0	0	0
1	2	2000	0	12	7	0	1	1	0	0	0	0	0	0	0	0	0
1	1	2015	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0
1	2	2015	0	16	2	0	0	0	0	0	0	0	0	0	0	0	0
1	1	2030	0	15	4	0	0	0	0	0	0	0	0	0	0	0	0
1	2	2030	2	10	11	0	0	0	0	0	0	0	0	0	0	1	0
1	1	2045	0	13	4	0	1	0	0	0	0	0	0	0	0	0	0
1	2	2045	0	5	5	0	1	0	0	0	0	0	0	0	0	0	0
1	1	2100	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0

000MWP W I95 T30000000000 01 0000 050311 2400 050511 0015 02 2 100 594 210
0000 0000 0000 0000 0000 0000 0000 0000 0000 24000000
Palm Coast 'Flagler 'Matanzas Woods Parkway West of I-95 Overpass
Channel 1 EB
Channel 2 WB

Class Group			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	
1	2	2100	0	10	2	0	1	2	0	0	0	0	0	0	0	1	0	
1	1	2115	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2115	0	11	2	0	1	3	0	0	0	0	0	0	0	0	0	
1	1	2130	0	15	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2130	0	15	3	0	1	1	0	0	0	0	0	0	0	0	0	
1	1	2145	0	16	4	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2145	1	15	3	0	0	3	0	0	0	0	0	0	0	0	0	
1	1	2200	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2200	0	3	5	0	0	2	0	0	0	0	0	0	0	0	0	
1	1	2215	0	17	4	0	1	0	0	0	0	0	0	0	0	0	0	
1	2	2215	0	3	4	0	0	3	0	0	0	0	0	0	0	2	0	
1	1	2230	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2230	0	11	8	0	0	2	0	0	0	0	0	0	0	0	0	
1	1	2245	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	
1	2	2245	1	7	2	0	1	1	0	0	0	0	0	0	0	0	0	
1	1	2300	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2300	0	2	5	0	0	4	0	0	0	0	0	0	0	0	0	
1	1	2315	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2315	0	5	1	0	0	1	0	0	0	0	0	0	0	0	0	
1	1	2330	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2330	0	5	2	0	0	3	0	0	0	0	0	0	0	1	0	
1	1	2345	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2345	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	
1	1	2400	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	2	2400	0	3	1	0	0	1	0	0	0	0	0	0	0	0	0	
Total			**71**	**3,046**	**1,092**	**63**	**117**	**160**	**2**	**21**	**1**	**0**	**0**	**0**	**0**	**20**	**0**	**4,593**
Total by Class			**4,209**			**384**												

Appendix B

18 kip ESAL Accumulations

18 kip EQUIVALENT SINGLE AXLE LOAD ANALYSIS

PROJECT TRAFFIC FOR PD&E and DESIGN ANALYSIS INFO / FACTORS

SECTION #: Matanzas Woods Parkway
SEGMENT #: 1
ITEM #: FC-10-R04
PROJECT DESCRIPTION: I-95 & Matanzas Woods Parkway PD&E Final Traffic Technical Memorandum

LOCATION #: Flagler

LOCATION DESCRIPTION: From US 1 to I-95 Northbound Ramps

GROWTH RATE FORMULA

A: Interpolation
B: Enter Growth Rate
C: Enter All AADTs
D: New Facility

If "A" select an interpolation function
If "B" enter rate as decimals (1%=1.01)
If ""C", or "D" continue to next section

Choose A, B, C, or D here: C

Linear Growth Rate _____ %
Compounded Growth Rate _____ %
Decaying Growth Rate _____ %
(select one)

DESIGN INFORMATION

		AADT
Existing Year	2011	4500
Opening Year	2015	8800
Mid-Design Year	2025	23900
Design Year	2035	29100

Note: AADT values have been rounded to the nearest 100

Daily Direction Split (50% or 100%)	50%
Lanes in One Direction	1
T24 values	
Existing to Opening Year	8.00%
Opening to Mid-Year	8.00%
Mid-Year to Design-Year	8.00%

1995 EQUIVALENCY FACTORS |u(1)|

(selected with an X)

	FLEXIBLE PAVEMENT SN = 5/THICK		RIGID PAVEMENT SN = 12/THICK	
RURAL FREEWAY:	1.050	____	1.600	____
URBAN FREEWAY:	0.900	____	1.270	____
RURAL HIGHWAY:	0.960	____	1.350	____
URBAN HIGHWAY:	0.890	____	1.220	____
OTHER (Enter Factor and X):	0.96	X		____

(1) Equivalency Factors are based on Updated Pavement Damage Factors Memorandum, dated July 2, 1998.
Lane Factors developed by Copes equation

I have reviewed the 18 kip Equivalent Single Axle Loads (ESAL's) to be used for pavement design on this project. I hereby attest that these have been developed in accordance with the FDOT Project Traffic Forecasting Procedure using historical traffic data and other available information.

	Name	Title	Org. Unit or Firm	Date
Prepared by:	Suraj Pamulapati, PE, PTOE	Transportation Engineer	HDR Engineering, Inc.	06/09/11
	Signature			
Reviewed by:	Name	Title	Org. Unit or Firm	Date
	Signature			

18 kip EQUIVALENT SINGLE AXLE LOAD ANALYSIS - LOCATION Flagler

PROJECT TRAFFIC FOR PD&E and DESIGN ANALYSIS INFO / FACTORS

YEARS: *2011 to 2035*

SECTION #: Matanzas Woods Parkway **Location #:** 1 **FIN #:** FC-10-R04

FLEXIBLE PAVEMENT OTHER FACTOR 0.960

SN=5/THICK I-95 & Matanzas Woods Parkway PD&E Final Traffic Technical Memorandum C

YEAR	AADT	ESAL (1000S)	ACCUM (1000s)	D	T	LF	EF
2011	4500	64	0	0.5	8.00%	1.000	0.960
2012	5500	78	0	0.5	8.00%	1.000	0.960
2013	6600	93	0	0.5	8.00%	1.000	0.960
2014	7700	108	0	0.5	8.00%	1.000	0.960
2015	8800	124	124	0.5	8.00%	1.000	0.960
2016	10300	145	269	0.5	8.00%	1.000	0.960
2017	11800	166	435	0.5	8.00%	1.000	0.960
2018	13300	187	622	0.5	8.00%	1.000	0.960
2019	14800	208	830	0.5	8.00%	1.000	0.960
2020	16300	229	1059	0.5	8.00%	1.000	0.960
2021	17800	250	1309	0.5	8.00%	1.000	0.960
2022	19300	271	1580	0.5	8.00%	1.000	0.960
2023	20800	292	1872	0.5	8.00%	1.000	0.960
2024	22300	313	2185	0.5	8.00%	1.000	0.960
2025	23900	335	2520	0.5	8.00%	1.000	0.960
2026	24400	342	2862	0.5	8.00%	1.000	0.960
2027	24900	349	3211	0.5	8.00%	1.000	0.960
2028	25400	357	3568	0.5	8.00%	1.000	0.960
2029	25900	364	3932	0.5	8.00%	1.000	0.960
2030	26500	372	4304	0.5	8.00%	1.000	0.960
2031	27000	379	4683	0.5	8.00%	1.000	0.960
2032	27500	386	5069	0.5	8.00%	1.000	0.960
2033	28000	393	5462	0.5	8.00%	1.000	0.960
2034	28500	400	5862	0.5	8.00%	1.000	0.960
2035	29100	408	6270	0.5	8.00%	1.000	0.960

Opening to Mid-Design Year ESAL Accumulation (1000s): 2396

Opening to Design Year ESAL Accumulation (1000s): 6146

I have reviewed the 18 kip Equivalent Single Axle Loads (ESAL's) to be used for pavement design on this project. I hereby attest that these have been developed in accordance with the FDOT Project Traffic Forecasting Procedure using historical traffic data and other available information.

Prepared by: Suraj Pamulapati, PE, PTOE Transportation Engineer HDR Engineering, Inc. 06/09/11

Name Title Org.Unit or F Date

Signature

Name Title Org.Unit or F Date

Signature

18 kip EQUIVALENT SINGLE AXLE LOAD ANALYSIS

PROJECT TRAFFIC FOR PD&E and DESIGN ANALYSIS INFO / FACTORS

SECTION #: Matanzas Woods Parkway
SEGMENT #: 2
ITEM #: FC-10-R04
PROJECT DESCRIPTION: I-95 & Matanzas Woods Parkway PD&E Final Traffic Technical Memorandum

LOCATION #: Flagler

LOCATION DESCRIPTION: East of I-95 Northbound Ramps

GROWTH RATE FORMULA

A: Interpolation
B: Enter Growth Rate
C: Enter All AADTs
D: New Facility

If "A" select an interpolation function
If "B" enter rate as decimals (1%=1.01)
If ""C", or "D" continue to next section

Choose A, B, C, or D here: C

Linear Growth Rate ____ %
Compounded Growth Rate ____ %
Decaying Growth Rate ____ %
(select one)

DESIGN INFORMATION

		AADT
Existing Year	2011	4500
Opening Year	2015	9200
Mid-Design Year	2025	13000
Design Year	2035	15800

Note: AADT values have been rounded to the nearest 100

Daily Direction Split (50% or 100%)	50%
Lanes in One Direction	1
T24 values	
Existing to Opening Year	8.00%
Opening to Mid-Year	8.00%
Mid-Year to Design-Year	8.00%

1995 EQUIVALENCY FACTORS |u(1)|

(selected with an X)

	FLEXIBLE PAVEMENT SN = 5/THICK		RIGID PAVEMENT SN = 12/THICK	
RURAL FREEWAY:	1.050	____	1.600	____
URBAN FREEWAY:	0.900	____	1.270	____
RURAL HIGHWAY:	0.960	____	1.350	____
URBAN HIGHWAY:	0.890	____	1.220	____
OTHER (Enter Factor and X):	0.96	X		____

(1) Equivalency Factors are based on Updated Pavement Damage Factors Memorandum, dated July 2, 1998.

Lane Factors developed by Copes equation

I have reviewed the 18 kip Equivalent Single Axle Loads (ESAL's) to be used for pavement design on this project. I hereby attest that these have been developed in accordance with the FDOT Project Traffic Forecasting Procedure using historical traffic data and other available information.

	Name	Title	Org. Unit or Firm	Date
Prepared by:	Suraj Pamulapati, PE, PTOE	Transportation Engineer	HDR Engineering, Inc.	06/09/11
	Signature			
Reviewed by:	Name	Title	Org. Unit or Firm	Date
	Signature			

18 kip EQUIVALENT SINGLE AXLE LOAD ANALYSIS - LOCATION Flagler

PROJECT TRAFFIC FOR PD&E and DESIGN ANALYSIS INFO / FACTORS

YEARS: *2011 to 2035*

SECTION #: Matanzas Woods Parkway **Location #:** 2 **FIN #:** FC-10-R04

FLEXIBLE PAVEMENT OTHER FACTOR 0.960

SN=5/THICK I-95 & Matanzas Woods Parkway PD&E Final Traffic Technical Memorandum C

YEAR	AADT	ESAL (1000S)	ACCUM (1000s)	D	T	LF	EF
2011	4500	64	0	0.5	8.00%	1.000	0.960
2012	5600	79	0	0.5	8.00%	1.000	0.960
2013	6800	96	0	0.5	8.00%	1.000	0.960
2014	8000	113	0	0.5	8.00%	1.000	0.960
2015	9200	129	129	0.5	8.00%	1.000	0.960
2016	9500	134	263	0.5	8.00%	1.000	0.960
2017	9900	139	402	0.5	8.00%	1.000	0.960
2018	10300	145	547	0.5	8.00%	1.000	0.960
2019	10700	150	697	0.5	8.00%	1.000	0.960
2020	11100	156	853	0.5	8.00%	1.000	0.960
2021	11400	160	1013	0.5	8.00%	1.000	0.960
2022	11800	166	1179	0.5	8.00%	1.000	0.960
2023	12200	171	1350	0.5	8.00%	1.000	0.960
2024	12600	177	1527	0.5	8.00%	1.000	0.960
2025	13000	183	1710	0.5	8.00%	1.000	0.960
2026	13200	186	1896	0.5	8.00%	1.000	0.960
2027	13500	190	2086	0.5	8.00%	1.000	0.960
2028	13800	194	2280	0.5	8.00%	1.000	0.960
2029	14100	198	2478	0.5	8.00%	1.000	0.960
2030	14400	202	2680	0.5	8.00%	1.000	0.960
2031	14600	205	2885	0.5	8.00%	1.000	0.960
2032	14900	209	3094	0.5	8.00%	1.000	0.960
2033	15200	214	3308	0.5	8.00%	1.000	0.960
2034	15500	218	3526	0.5	8.00%	1.000	0.960
2035	15800	222	3748	0.5	8.00%	1.000	0.960

Opening to Mid-Design Year ESAL Accumulation (1000s): 1581

Opening to Design Year ESAL Accumulation (1000s): 3619

I have reviewed the 18 kip Equivalent Single Axle Loads (ESAL's) to be used for pavement design on this project. I hereby attest that these have been developed in accordance with the FDOT Project Traffic Forecasting Procedure using historical traffic data and other available information.

Prepared by: Suraj Pamulapati, PE, PTOE Transportation Engineer HDR Engineering, Inc. 06/09/11

Name Title Org.Unit or F Date

Signature

Name Title Org.Unit or F Date

Signature

Appendix C

Future 2025-2035 Intersection Analysis

2025 No-Build AM Peak Hour

Queues
39: Matanzas Woods Pkwy & OKR Extension

6/22/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	18	101	296	11	266	341	165	5	161
v/c Ratio	0.05	0.17	0.43	0.02	0.46	0.71	0.24	0.02	0.48
Control Delay	13.6	17.7	5.2	13.4	20.6	22.2	12.9	10.8	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	17.7	5.2	13.4	20.6	22.2	12.9	10.8	20.1
Queue Length 50th (ft)	4	22	0	2	65	66	26	1	29
Queue Length 95th (ft)	16	72	55	12	172	#197	96	7	88
Internal Link Dist (ft)		2051			867		884		779
Turn Bay Length (ft)	250		250	250		250		250	
Base Capacity (vph)	384	578	694	452	578	483	801	305	576
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.17	0.43	0.02	0.46	0.71	0.21	0.02	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	93	272	10	242	3	314	127	25	5	81	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1553	1736	1824		1736	1782		1736	1703	
Flt Permitted	0.54	1.00	1.00	0.69	1.00		0.42	1.00		0.65	1.00	
Satd. Flow (perm)	992	1827	1553	1264	1824		774	1782		1192	1703	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	101	296	11	263	3	341	138	27	5	88	73
RTOR Reduction (vph)	0	0	217	0	1	0	0	10	0	0	45	0
Lane Group Flow (vph)	18	101	79	11	265	0	341	155	0	5	116	0
Turn Type	pm+pt		Perm	pm+pt			pm+pt			pm+pt		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	17.2	16.6	16.6	17.2	16.6		26.3	19.7		11.6	11.0	
Effective Green, g (s)	17.2	16.6	16.6	17.2	16.6		26.3	19.7		11.6	11.0	
Actuated g/C Ratio	0.28	0.27	0.27	0.28	0.27		0.42	0.32		0.19	0.18	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	280	485	412	352	484		469	562		226	300	
v/s Ratio Prot	c0.00	0.06		0.00	c0.15		c0.11	0.09		0.00	0.07	
v/s Ratio Perm	0.02		0.05	0.01			c0.20			0.00		
v/c Ratio	0.06	0.21	0.19	0.03	0.55		0.73	0.28		0.02	0.39	
Uniform Delay, d1	16.6	17.8	17.8	16.5	19.7		13.4	16.1		20.8	22.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.0	1.0	0.0	4.4		5.6	0.3		0.0	0.8	
Delay (s)	16.7	18.8	18.8	16.6	24.1		19.0	16.3		20.8	23.6	
Level of Service	B	B	B	B	C		B	B		C	C	
Approach Delay (s)		18.7			23.8			18.1			23.5	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	62.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	136	48	16	157	76	52	25	4	41	14	24
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	23	158	56	19	183	88	60	29	5	48	16	28

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	181	56	201	88	60	34	48	44
Volume Left (vph)	23	0	19	0	60	0	48	0
Volume Right (vph)	0	56	0	88	0	5	0	28
Hadj (s)	0.13	-0.63	0.11	-0.63	0.57	-0.03	0.57	-0.37
Departure Headway (s)	5.5	4.7	5.4	4.6	6.4	5.8	6.4	5.5
Degree Utilization, x	0.28	0.07	0.30	0.11	0.11	0.05	0.09	0.07
Capacity (veh/h)	630	730	642	740	521	569	518	602
Control Delay (s)	9.3	6.9	9.5	7.0	9.0	8.0	8.8	7.7
Approach Delay (s)	8.7		8.8		8.6		8.3	
Approach LOS	A		A		A		A	

Intersection Summary			
Delay	8.7		
HCM Level of Service	A		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

2025 No-Build PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	276	394	8	195	284	50	1	157
v/c Ratio	0.06	0.46	0.51	0.02	0.36	0.58	0.07	0.00	0.34
Control Delay	12.9	20.6	4.9	12.5	20.9	20.8	13.8	13.0	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	20.6	4.9	12.5	20.9	20.8	13.8	13.0	22.8
Queue Length 50th (ft)	6	78	0	2	52	60	8	0	44
Queue Length 95th (ft)	19	173	60	9	123	#167	38	3	106
Internal Link Dist (ft)		2051			867		783		612
Turn Bay Length (ft)	250		250	250		250		250	
Base Capacity (vph)	420	603	777	358	548	487	742	444	461
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.46	0.51	0.02	0.36	0.58	0.07	0.00	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	262	374	8	183	2	270	40	8	1	142	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1553	1736	1824		1736	1783		1736	1813	
Flt Permitted	0.61	1.00	1.00	0.52	1.00		0.53	1.00		0.72	1.00	
Satd. Flow (perm)	1115	1827	1553	957	1824		960	1783		1323	1813	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	276	394	8	193	2	284	42	8	1	149	8
RTOR Reduction (vph)	0	0	282	0	1	0	0	5	0	0	3	0
Lane Group Flow (vph)	24	276	112	8	194	0	284	45	0	1	154	0
Turn Type	pm+pt		Perm	pm+pt			pm+pt			pm+pt		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	22.5	21.0	21.0	20.9	20.2		32.4	26.4		21.8	21.1	
Effective Green, g (s)	22.5	21.0	21.0	20.9	20.2		32.4	26.4		21.8	21.1	
Actuated g/C Ratio	0.30	0.28	0.28	0.28	0.27		0.44	0.36		0.30	0.29	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	353	520	442	278	499		485	638		395	518	
v/s Ratio Prot	c0.00	c0.15		0.00	0.11		c0.05	0.03		0.00	0.09	
v/s Ratio Perm	0.02		0.07	0.01			c0.21			0.00		
v/c Ratio	0.07	0.53	0.25	0.03	0.39		0.59	0.07		0.00	0.30	
Uniform Delay, d1	18.1	22.2	20.4	19.1	21.8		15.2	15.6		18.3	20.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	3.8	1.4	0.0	2.3		1.8	0.0		0.0	1.5	
Delay (s)	18.2	26.1	21.7	19.1	24.1		17.0	15.7		18.3	22.0	
Level of Service	B	C	C	B	C		B	B		B	C	
Approach Delay (s)		23.3			23.9			16.8			22.0	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	18.5
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	14	187	63	15	135	24	45	8	3	71	24	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	15	197	66	16	142	25	47	8	3	75	25	3

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	212	66	158	25	47	12	75	28
Volume Left (vph)	15	0	16	0	47	0	75	0
Volume Right (vph)	0	66	0	25	0	3	0	3
Hadj (s)	0.10	-0.63	0.12	-0.63	0.57	-0.12	0.57	-0.01
Departure Headway (s)	5.3	4.5	5.4	4.6	6.3	5.6	6.3	5.7
Degree Utilization, x	0.31	0.08	0.24	0.03	0.08	0.02	0.13	0.04
Capacity (veh/h)	657	763	645	744	533	592	538	591
Control Delay (s)	9.4	6.7	8.8	6.6	8.7	7.5	9.0	7.7
Approach Delay (s)	8.8		8.5		8.5		8.6	
Approach LOS	A		A		A		A	

Intersection Summary			
Delay	8.6		
HCM Level of Service	A		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

2025 Build AM Peak Hour
Wide Diamond Alternative

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	159	59	16	162	73	54	24	4	30	10	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	167	62	17	171	77	57	25	4	32	11	59

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	188	62	187	77	57	29	32	69
Volume Left (vph)	21	0	17	0	57	0	32	0
Volume Right (vph)	0	62	0	77	0	4	0	59
Hadj (s)	0.12	-0.63	0.11	-0.63	0.57	-0.03	0.57	-0.53
Departure Headway (s)	5.4	4.7	5.4	4.6	6.4	5.8	6.4	5.3
Degree Utilization, x	0.28	0.08	0.28	0.10	0.10	0.05	0.06	0.10
Capacity (veh/h)	636	737	641	740	524	573	522	624
Control Delay (s)	9.3	6.9	9.3	7.0	8.9	7.9	8.6	7.7
Approach Delay (s)	8.7		8.6		8.6		8.0	
Approach LOS	A		A		A		A	

Intersection Summary			
Delay	8.6		
HCM Level of Service	A		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	579	426	221	960	137	274
v/c Ratio	0.53	0.39	0.40	0.72	0.54	0.77
Control Delay	8.3	2.2	3.1	7.7	45.9	31.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	2.2	3.1	7.7	45.9	31.6
Queue Length 50th (ft)	45	0	4	38	83	75
Queue Length 95th (ft)	446	245	m56	m625	130	151
Internal Link Dist (ft)	38			1782		
Turn Bay Length (ft)			350			350
Base Capacity (vph)	1093	1100	643	1339	417	488
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.39	0.34	0.72	0.33	0.56

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	550	405	210	912	0	0	0	0	130	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	4.0	6.0					6.0		6.0
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		1827	1553	1736	1827					1736		1553
Flt Permitted		1.00	1.00	0.33	1.00					0.95		1.00
Satd. Flow (perm)		1827	1553	598	1827					1736		1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	579	426	221	960	0	0	0	0	137	0	274
RTOR Reduction (vph)	0	0	171	0	0	0	0	0	0	0	0	130
Lane Group Flow (vph)	0	579	255	221	960	0	0	0	0	137	0	144
Turn Type			Perm	pm+pt						Prot		custom
Protected Phases		2		1	6					4		4
Permitted Phases			2	6								
Actuated Green, G (s)		59.9	59.9	73.3	73.3					14.7		14.7
Effective Green, g (s)		59.9	59.9	73.3	73.3					14.7		14.7
Actuated g/C Ratio		0.60	0.60	0.73	0.73					0.15		0.15
Clearance Time (s)		6.0	6.0	4.0	6.0					6.0		6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		1094	930	545	1339					255		228
v/s Ratio Prot		0.32		0.04	c0.53					0.08		c0.09
v/s Ratio Perm			0.16	0.26								
v/c Ratio		0.53	0.27	0.41	0.72					0.54		0.63
Uniform Delay, d1		11.8	9.6	6.1	7.5					39.5		40.1
Progression Factor		0.48	0.91	0.46	0.62					1.00		1.00
Incremental Delay, d2		1.5	0.6	0.3	1.8					2.2		5.6
Delay (s)		7.2	9.3	3.0	6.4					41.7		45.8
Level of Service		A	A	A	A					D		D
Approach Delay (s)		8.1			5.8			0.0			44.4	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	172	544	776	132	405	126
v/c Ratio	0.68	0.49	0.88	0.16	0.86	0.25
Control Delay	30.4	8.0	38.5	4.6	52.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	8.0	38.5	4.6	52.4	6.0
Queue Length 50th (ft)	23	191	424	7	240	0
Queue Length 95th (ft)	#150	93	#689	m27	#352	40
Internal Link Dist (ft)		1782	1229			
Turn Bay Length (ft)	350			350		350
Base Capacity (vph)	253	1111	884	820	538	568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.49	0.88	0.16	0.75	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	517	0	0	737	125	385	0	120	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0	6.0	6.0		6.0			
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1736	1827			1827	1553	1736		1553			
Flt Permitted	0.11	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	198	1827			1827	1553	1736		1553			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	172	544	0	0	776	132	405	0	126	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	68	0	0	92	0	0	0
Lane Group Flow (vph)	172	544	0	0	776	64	405	0	34	0	0	0
Turn Type	pm+pt					Perm	Prot		custom			
Protected Phases	1	6			2		3		3			
Permitted Phases	6					2						
Actuated Green, G (s)	60.8	60.8			48.4	48.4	27.2		27.2			
Effective Green, g (s)	60.8	60.8			48.4	48.4	27.2		27.2			
Actuated g/C Ratio	0.61	0.61			0.48	0.48	0.27		0.27			
Clearance Time (s)	4.0	6.0			6.0	6.0	6.0		6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	250	1111			884	752	472		422			
v/s Ratio Prot	c0.06	0.30			c0.42		c0.23		0.02			
v/s Ratio Perm	0.36					0.04						
v/c Ratio	0.69	0.49			0.88	0.08	0.86		0.08			
Uniform Delay, d1	17.7	10.9			23.1	13.9	34.6		27.1			
Progression Factor	1.49	0.55			1.12	1.46	1.00		1.00			
Incremental Delay, d2	6.8	1.4			10.7	0.2	14.3		0.1			
Delay (s)	33.2	7.4			36.5	20.4	48.9		27.2			
Level of Service	C	A			D	C	D		C			
Approach Delay (s)		13.6			34.1			43.7			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	297	335	14	323	341	152	12	229
v/c Ratio	0.05	0.35	0.42	0.03	0.41	0.73	0.22	0.05	0.75
Control Delay	30.0	35.0	4.5	17.2	25.1	31.6	19.9	18.7	34.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	35.0	4.5	17.2	25.1	31.6	19.9	18.7	34.5
Queue Length 50th (ft)	11	165	38	5	128	158	57	4	67
Queue Length 95th (ft)	m26	273	78	18	268	209	107	14	139
Internal Link Dist (ft)		1229			867		850		652
Turn Bay Length (ft)	350		350	350		350		350	
Base Capacity (vph)	413	837	815	456	788	478	708	221	412
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.35	0.41	0.03	0.41	0.71	0.21	0.05	0.56

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	282	318	13	304	3	324	121	24	11	60	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.98		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1553	1736	1824		1736	1782		1736	1628	
Flt Permitted	0.42	1.00	1.00	0.50	1.00		0.30	1.00		0.66	1.00	
Satd. Flow (perm)	769	1827	1553	907	1824		546	1782		1207	1628	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	297	335	14	320	3	341	127	25	12	63	166
RTOR Reduction (vph)	0	0	209	0	0	0	0	7	0	0	97	0
Lane Group Flow (vph)	21	297	126	14	323	0	341	145	0	12	132	0
Turn Type	pm+pt		custom	pm+pt			pm+pt			pm+pt		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		4	2			4			8		
Actuated Green, G (s)	37.9	35.8	37.6	35.3	34.5		44.4	37.6		18.2	17.4	
Effective Green, g (s)	37.9	35.8	37.6	35.3	34.5		44.4	37.6		18.2	17.4	
Actuated g/C Ratio	0.38	0.36	0.38	0.35	0.34		0.44	0.38		0.18	0.17	
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	312	654	584	327	629		492	670		224	283	
v/s Ratio Prot	c0.00	0.16		0.00	c0.18		c0.15	0.08		0.00	0.08	
v/s Ratio Perm	0.02		0.08	0.01			c0.16			0.01		
v/c Ratio	0.07	0.45	0.22	0.04	0.51		0.69	0.22		0.05	0.46	
Uniform Delay, d1	19.9	24.6	21.2	21.2	26.1		20.3	21.2		33.7	37.1	
Progression Factor	1.77	1.63	1.23	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.1	0.2	0.1	3.0		4.2	0.2		0.1	1.2	
Delay (s)	35.4	42.2	26.3	21.3	29.0		24.5	21.4		33.8	38.3	
Level of Service	D	D	C	C	C		C	C		C	D	
Approach Delay (s)		33.8			28.7			23.5			38.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

2025 Build AM Peak Hour
Partial Cloverleaf Alternative

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	426	579	960	221	137	274
v/c Ratio	0.80	0.43	0.87	0.22	0.53	0.62
Control Delay	24.6	6.1	19.3	2.3	47.4	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	6.1	19.3	2.3	47.4	13.8
Queue Length 50th (ft)	26	292	151	2	82	15
Queue Length 95th (ft)	#110	380	#538	m19	144	93
Internal Link Dist (ft)		648	1386		687	
Turn Bay Length (ft)	400			350		300
Base Capacity (vph)	531	1334	1114	1034	260	444
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.43	0.86	0.21	0.53	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	405	550	912	210	130	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3367	1827	1827	1553	1736	1553
Flt Permitted	0.10	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	367	1827	1827	1553	1736	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	426	579	960	221	137	274
RTOR Reduction (vph)	0	0	0	87	0	211
Lane Group Flow (vph)	426	579	960	134	137	63
Turn Type	pm+pt			Perm		Prot
Protected Phases	1	6	2		3	3
Permitted Phases	6			2		
Actuated Green, G (s)	73.0	73.0	60.5	60.5	15.0	15.0
Effective Green, g (s)	73.0	73.0	60.5	60.5	15.0	15.0
Actuated g/C Ratio	0.73	0.73	0.60	0.60	0.15	0.15
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	523	1334	1105	940	260	233
v/s Ratio Prot	c0.07	0.32	c0.53		c0.08	0.04
v/s Ratio Perm	0.53			0.09		
v/c Ratio	0.81	0.43	0.87	0.14	0.53	0.27
Uniform Delay, d1	21.9	5.3	16.4	8.5	39.2	37.7
Progression Factor	1.25	0.96	0.71	1.66	1.00	1.00
Incremental Delay, d2	7.9	0.8	6.5	0.2	1.9	0.6
Delay (s)	35.1	6.0	18.2	14.4	41.2	38.3
Level of Service	D	A	B	B	D	D
Approach Delay (s)		18.3	17.5		39.2	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	172	544	776	132	126	405
v/c Ratio	0.46	0.42	0.72	0.08	0.42	0.81
Control Delay	8.1	2.7	22.8	0.1	40.8	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	2.7	22.8	0.1	40.8	26.2
Queue Length 50th (ft)	11	22	382	0	74	77
Queue Length 95th (ft)	34	101	551	0	123	189
Internal Link Dist (ft)		1386	1474		583	
Turn Bay Length (ft)	350			350		300
Base Capacity (vph)	373	1292	1083	1553	365	547
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.42	0.72	0.08	0.35	0.74

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	163	517	737	125	120	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	1827	1827	1553	1736	1553
Flt Permitted	0.20	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	364	1827	1827	1553	1736	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	172	544	776	132	126	405
RTOR Reduction (vph)	0	0	0	0	0	231
Lane Group Flow (vph)	172	544	776	132	126	174
Turn Type	pm+pt			Free		Prot
Protected Phases	1	6	2		3	3
Permitted Phases	6			Free		
Actuated Green, G (s)	70.7	70.7	58.9	100.0	17.3	17.3
Effective Green, g (s)	70.7	70.7	58.9	100.0	17.3	17.3
Actuated g/C Ratio	0.71	0.71	0.59	1.00	0.17	0.17
Clearance Time (s)	4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	364	1292	1076	1553	300	269
v/s Ratio Prot	0.04	c0.30	c0.42		0.07	c0.11
v/s Ratio Perm	0.30			0.09		
v/c Ratio	0.47	0.42	0.72	0.08	0.42	0.65
Uniform Delay, d1	10.5	6.1	14.7	0.0	36.9	38.5
Progression Factor	0.95	0.26	1.18	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.9	3.9	0.1	1.0	5.3
Delay (s)	10.8	2.5	21.2	0.1	37.8	43.8
Level of Service	B	A	C	A	D	D
Approach Delay (s)		4.5	18.1		42.4	
Approach LOS		A	B		D	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

2025 Build PM Peak Hour
Wide Diamond Alternative

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	15	219	76	15	128	23	43	8	3	52	17	28
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	231	80	16	135	24	45	8	3	55	18	29

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	246	80	151	24	45	12	55	47
Volume Left (vph)	16	0	16	0	45	0	55	0
Volume Right (vph)	0	80	0	24	0	3	0	29
Hadj (s)	0.10	-0.63	0.12	-0.63	0.57	-0.12	0.57	-0.37
Departure Headway (s)	5.2	4.5	5.4	4.6	6.4	5.7	6.3	5.4
Degree Utilization, x	0.36	0.10	0.23	0.03	0.08	0.02	0.10	0.07
Capacity (veh/h)	663	769	641	740	525	582	529	618
Control Delay (s)	9.9	6.8	8.7	6.6	8.7	7.6	8.8	7.6
Approach Delay (s)	9.2		8.4		8.5		8.2	
Approach LOS	A		A		A		A	

Intersection Summary			
Delay	8.8		
HCM Level of Service	A		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	875	389	137	795	137	126
v/c Ratio	0.73	0.34	0.38	0.57	0.55	0.38
Control Delay	14.8	2.6	8.2	12.2	56.7	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	2.6	8.2	12.2	56.7	11.1
Queue Length 50th (ft)	130	0	23	188	101	0
Queue Length 95th (ft)	m792	m164	m75	612	162	53
Internal Link Dist (ft)	38			1782		
Turn Bay Length (ft)			350			350
Base Capacity (vph)	1200	1134	365	1384	420	471
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.34	0.38	0.57	0.33	0.27

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	831	370	130	755	0	0	0	0	130	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	4.0	6.0					6.0		6.0
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		1827	1553	1736	1827					1736		1553
Flt Permitted		1.00	1.00	0.19	1.00					0.95		1.00
Satd. Flow (perm)		1827	1553	343	1827					1736		1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	875	389	137	795	0	0	0	0	137	0	126
RTOR Reduction (vph)	0	0	114	0	0	0	0	0	0	0	0	108
Lane Group Flow (vph)	0	875	275	137	795	0	0	0	0	137	0	18
Turn Type			Perm	pm+pt						Prot		custom
Protected Phases		2		1	6					4		4
Permitted Phases			2	6								
Actuated Green, G (s)		78.8	78.8	90.9	90.9					17.1		17.1
Effective Green, g (s)		78.8	78.8	90.9	90.9					17.1		17.1
Actuated g/C Ratio		0.66	0.66	0.76	0.76					0.14		0.14
Clearance Time (s)		6.0	6.0	4.0	6.0					6.0		6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		1200	1020	354	1384					247		221
v/s Ratio Prot		c0.48		0.03	c0.44					c0.08		0.01
v/s Ratio Perm			0.18	0.27								
v/c Ratio		0.73	0.27	0.39	0.57					0.55		0.08
Uniform Delay, d1		13.6	8.6	11.1	6.2					47.9		44.6
Progression Factor		0.82	1.17	1.65	1.62					1.00		1.00
Incremental Delay, d2		2.5	0.4	0.5	1.3					2.7		0.2
Delay (s)		13.6	10.4	18.9	11.4					50.6		44.8
Level of Service		B	B	B	B					D		D
Approach Delay (s)		12.6			12.5			0.0			47.8	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	278	734	511	116	421	211
v/c Ratio	0.58	0.66	0.66	0.16	0.83	0.37
Control Delay	17.9	15.1	35.7	6.2	53.5	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	15.1	35.7	6.2	53.5	8.9
Queue Length 50th (ft)	48	128	308	0	305	24
Queue Length 95th (ft)	m195	417	#633	45	383	75
Internal Link Dist (ft)		1782	1229			
Turn Bay Length (ft)	350			350		350
Base Capacity (vph)	561	1111	780	730	665	700
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.66	0.66	0.16	0.63	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	264	697	0	0	485	110	400	0	200	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0	6.0	6.0		6.0			
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1736	1827			1827	1553	1736		1553			
Flt Permitted	0.26	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	472	1827			1827	1553	1736		1553			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	278	734	0	0	511	116	421	0	211	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	66	0	0	120	0	0	0
Lane Group Flow (vph)	278	734	0	0	511	50	421	0	91	0	0	0
Turn Type	pm+pt					Perm	Prot		custom			
Protected Phases	1	6			2		3		3			
Permitted Phases	6					2						
Actuated Green, G (s)	73.0	73.0			51.3	51.3	35.0		35.0			
Effective Green, g (s)	73.0	73.0			51.3	51.3	35.0		35.0			
Actuated g/C Ratio	0.61	0.61			0.43	0.43	0.29		0.29			
Clearance Time (s)	4.0	6.0			6.0	6.0	6.0		6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	474	1111			781	664	506		453			
v/s Ratio Prot	0.09	c0.40			0.28		c0.24		0.06			
v/s Ratio Perm	0.27					0.03						
v/c Ratio	0.59	0.66			0.65	0.07	0.83		0.20			
Uniform Delay, d1	14.9	15.4			27.3	20.3	39.8		32.0			
Progression Factor	1.23	0.73			1.00	1.00	1.00		1.00			
Incremental Delay, d2	1.4	2.3			4.2	0.2	11.2		0.2			
Delay (s)	19.7	13.5			31.5	20.5	50.9		32.2			
Level of Service	B	B			C	C	D		C			
Approach Delay (s)		15.2			29.5			44.7			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	380	461	9	230	269	48	6	190
v/c Ratio	0.05	0.42	0.46	0.02	0.27	0.60	0.07	0.02	0.53
Control Delay	17.0	24.6	3.5	16.7	25.0	36.7	26.6	28.7	52.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	24.6	3.5	16.7	25.0	36.7	26.6	28.7	52.1
Queue Length 50th (ft)	12	205	0	4	134	175	23	3	138
Queue Length 95th (ft)	29	341	63	14	199	254	59	13	#253
Internal Link Dist (ft)		1229			867		569		608
Turn Bay Length (ft)	350		350	350		350		350	
Base Capacity (vph)	528	915	1008	413	851	505	672	362	356
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.42	0.46	0.02	0.27	0.53	0.07	0.02	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	361	438	9	217	2	256	38	8	6	104	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1553	1736	1825		1736	1781		1736	1710	
Flt Permitted	0.54	1.00	1.00	0.42	1.00		0.43	1.00		0.73	1.00	
Satd. Flow (perm)	979	1827	1553	765	1825		781	1781		1326	1710	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	28	380	461	9	228	2	269	40	8	6	109	81
RTOR Reduction (vph)	0	0	263	0	0	0	0	4	0	0	17	0
Lane Group Flow (vph)	28	380	198	9	230	0	269	44	0	6	173	0
Turn Type	pm+pt		Perm	pm+pt			pm+pt			pm+pt		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	63.4	60.1	60.1	59.0	57.9		59.8	52.5		33.8	32.5	
Effective Green, g (s)	63.4	60.1	60.1	59.0	57.9		59.8	52.5		33.8	32.5	
Actuated g/C Ratio	0.45	0.43	0.43	0.42	0.41		0.43	0.38		0.24	0.23	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	461	784	667	330	755		479	668		324	397	
v/s Ratio Prot	c0.00	c0.21		0.00	0.13		c0.09	0.02		0.00	0.10	
v/s Ratio Perm	0.03		0.13	0.01			c0.15			0.00		
v/c Ratio	0.06	0.48	0.30	0.03	0.30		0.56	0.07		0.02	0.44	
Uniform Delay, d1	21.5	28.8	26.1	24.1	27.5		27.9	28.0		40.4	45.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.1	1.1	0.0	1.0		1.5	0.2		0.0	3.5	
Delay (s)	21.6	30.9	27.3	24.2	28.6		29.4	28.2		40.4	49.4	
Level of Service	C	C	C	C	C		C	C		D	D	
Approach Delay (s)		28.7			28.4			29.3			49.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

2025 Build PM Peak Hour
Partial Cloverleaf Alternative

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	389	875	795	137	137	126
v/c Ratio	0.47	0.63	0.66	0.13	0.58	0.39
Control Delay	12.6	19.1	15.0	1.4	58.7	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	19.1	15.0	1.4	58.7	11.5
Queue Length 50th (ft)	67	418	402	13	102	0
Queue Length 95th (ft)	m46	m270	603	16	163	54
Internal Link Dist (ft)		645	1386		687	
Turn Bay Length (ft)	400			350		300
Base Capacity (vph)	1104	1416	1198	1066	236	320
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.62	0.66	0.13	0.58	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	370	831	755	130	130	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3367	1827	1827	1553	1736	1553
Flt Permitted	0.23	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	814	1827	1827	1553	1736	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	389	875	795	137	137	126
RTOR Reduction (vph)	0	0	0	47	0	109
Lane Group Flow (vph)	389	875	795	90	137	17
Turn Type	pm+pt			Perm		Prot
Protected Phases	1	6	2		3	3
Permitted Phases	6			2		
Actuated Green, G (s)	91.7	91.7	78.7	78.7	16.3	16.3
Effective Green, g (s)	91.7	91.7	78.7	78.7	16.3	16.3
Actuated g/C Ratio	0.76	0.76	0.66	0.66	0.14	0.14
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	814	1396	1198	1019	236	211
v/s Ratio Prot	0.04	c0.48	c0.44		c0.08	0.01
v/s Ratio Perm	0.33			0.06		
v/c Ratio	0.48	0.63	0.66	0.09	0.58	0.08
Uniform Delay, d1	9.4	6.4	12.6	7.5	48.6	45.3
Progression Factor	3.34	2.53	0.91	0.79	1.00	1.00
Incremental Delay, d2	0.3	1.4	2.5	0.1	3.6	0.2
Delay (s)	31.6	17.6	14.0	6.1	52.2	45.5
Level of Service	C	B	B	A	D	D
Approach Delay (s)		21.9	12.9		49.0	
Approach LOS		C	B		D	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	278	734	511	116	211	421
v/c Ratio	0.46	0.55	0.47	0.07	0.71	0.68
Control Delay	5.4	7.2	13.4	0.1	59.5	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	7.2	13.4	0.1	59.5	10.0
Queue Length 50th (ft)	27	95	179	0	157	0
Queue Length 95th (ft)	82	480	291	0	225	88
Internal Link Dist (ft)		1386	1474		583	
Turn Bay Length (ft)	350			350		300
Base Capacity (vph)	669	1331	1092	1553	434	704
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.55	0.47	0.07	0.49	0.60

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	264	697	485	110	200	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	1827	1827	1553	1736	1553
Flt Permitted	0.37	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	672	1827	1827	1553	1736	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	278	734	511	116	211	421
RTOR Reduction (vph)	0	0	0	0	0	349
Lane Group Flow (vph)	278	734	511	116	211	72
Turn Type	pm+pt			Free		Prot
Protected Phases	1	6	2		3	3
Permitted Phases	6			Free		
Actuated Green, G (s)	87.4	87.4	71.7	120.0	20.6	20.6
Effective Green, g (s)	87.4	87.4	71.7	120.0	20.6	20.6
Actuated g/C Ratio	0.73	0.73	0.60	1.00	0.17	0.17
Clearance Time (s)	4.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	593	1331	1092	1553	298	267
v/s Ratio Prot	0.05	c0.40	0.28		c0.12	0.05
v/s Ratio Perm	0.30			0.07		
v/c Ratio	0.47	0.55	0.47	0.07	0.71	0.27
Uniform Delay, d1	7.1	7.4	13.5	0.0	46.9	43.2
Progression Factor	0.64	0.69	0.78	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.3	1.4	0.1	7.5	0.5
Delay (s)	5.0	6.4	11.9	0.1	54.3	43.7
Level of Service	A	A	B	A	D	D
Approach Delay (s)		6.0	9.7		47.3	
Approach LOS		A	A		D	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

2035 No-Build AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	17	249	352	14	322	402	196	6	188
v/c Ratio	0.05	0.44	0.49	0.04	0.57	0.83	0.27	0.02	0.54
Control Delay	13.6	20.3	5.3	13.5	23.3	30.9	13.4	11.0	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	20.3	5.3	13.5	23.3	30.9	13.4	11.0	21.5
Queue Length 50th (ft)	4	60	0	3	81	86	33	1	38
Queue Length 95th (ft)	15	163	60	14	#238	#289	115	8	104
Internal Link Dist (ft)		2051			867		584		581
Turn Bay Length (ft)	250		250	250		250		250	
Base Capacity (vph)	323	567	725	381	567	487	729	331	536
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.44	0.49	0.04	0.57	0.83	0.27	0.02	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	237	334	13	303	3	382	155	31	6	98	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.97		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1553	1736	1824		1736	1781		1736	1703	
Flt Permitted	0.43	1.00	1.00	0.56	1.00		0.46	1.00		0.63	1.00	
Satd. Flow (perm)	789	1827	1553	1021	1824		832	1781		1159	1703	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	249	352	14	319	3	402	163	33	6	103	85
RTOR Reduction (vph)	0	0	260	0	1	0	0	10	0	0	43	0
Lane Group Flow (vph)	17	249	92	14	321	0	402	186	0	6	145	0
Turn Type	pm+pt		Perm	pm+pt			pm+pt			pm+pt		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	17.9	17.3	17.3	17.9	17.3		29.0	22.4		15.5	14.9	
Effective Green, g (s)	17.9	17.3	17.3	17.9	17.3		29.0	22.4		15.5	14.9	
Actuated g/C Ratio	0.27	0.26	0.26	0.27	0.26		0.44	0.34		0.24	0.23	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	223	480	408	284	479		477	605		278	385	
v/s Ratio Prot	c0.00	0.14		0.00	c0.18		c0.10	0.10		0.00	0.09	
v/s Ratio Perm	0.02		0.06	0.01			c0.27			0.00		
v/c Ratio	0.08	0.52	0.23	0.05	0.67		0.84	0.31		0.02	0.38	
Uniform Delay, d1	17.8	20.7	19.1	17.6	21.8		15.4	16.0		19.3	21.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	4.0	1.3	0.1	7.3		12.8	0.3		0.0	0.6	
Delay (s)	17.9	24.7	20.3	17.7	29.0		28.2	16.3		19.4	22.2	
Level of Service	B	C	C	B	C		C	B		B	C	
Approach Delay (s)		22.0			28.6			24.3			22.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	23	167	59	19	191	93	64	31	4	49	16	29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	24	176	62	20	201	98	67	33	4	52	17	31

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	200	62	221	98	67	37	52	47
Volume Left (vph)	24	0	20	0	67	0	52	0
Volume Right (vph)	0	62	0	98	0	4	0	31
Hadj (s)	0.13	-0.63	0.11	-0.63	0.57	-0.01	0.57	-0.38
Departure Headway (s)	5.6	4.8	5.5	4.7	6.6	6.0	6.6	5.7
Degree Utilization, x	0.31	0.08	0.34	0.13	0.12	0.06	0.09	0.07
Capacity (veh/h)	618	713	631	724	508	552	504	584
Control Delay (s)	9.8	7.0	10.1	7.2	9.3	8.2	9.1	7.9
Approach Delay (s)	9.2		9.2		8.9		8.5	
Approach LOS	A		A		A		A	

Intersection Summary			
Delay	9.1		
HCM Level of Service	A		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

2035 No-Build PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	337	478	9	236	345	63	1	193
v/c Ratio	0.06	0.51	0.55	0.02	0.39	0.94	0.11	0.00	0.50
Control Delay	11.8	20.2	5.0	11.6	19.7	55.4	13.4	12.0	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	20.2	5.0	11.6	19.7	55.4	13.4	12.0	24.3
Queue Length 50th (ft)	6	77	0	2	50	67	8	0	47
Queue Length 95th (ft)	21	#238	67	10	144	#275	43	3	117
Internal Link Dist (ft)		2051			867		779		695
Turn Bay Length (ft)	250		250	250		250		250	
Base Capacity (vph)	456	662	867	378	600	367	683	366	597
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.51	0.55	0.02	0.39	0.94	0.09	0.00	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	320	454	9	222	2	328	49	10	1	172	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1553	1736	1825		1736	1779		1736	1810	
Flt Permitted	0.59	1.00	1.00	0.48	1.00		0.48	1.00		0.72	1.00	
Satd. Flow (perm)	1074	1827	1553	870	1825		872	1779		1308	1810	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	337	478	9	234	2	345	52	11	1	181	12
RTOR Reduction (vph)	0	0	333	0	1	0	0	8	0	0	4	0
Lane Group Flow (vph)	29	337	145	9	235	0	345	55	0	1	189	0
Turn Type	pm+pt		Perm	pm+pt			pm+pt			pm+pt		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	19.9	18.6	18.6	18.5	17.9		21.1	16.4		12.9	12.3	
Effective Green, g (s)	19.9	18.6	18.6	18.5	17.9		21.1	16.4		12.9	12.3	
Actuated g/C Ratio	0.33	0.30	0.30	0.30	0.29		0.34	0.27		0.21	0.20	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	363	555	472	271	534		367	477		280	364	
v/s Ratio Prot	c0.00	c0.18		0.00	0.13		c0.07	0.03		0.00	0.10	
v/s Ratio Perm	0.02		0.09	0.01			c0.25			0.00		
v/c Ratio	0.08	0.61	0.31	0.03	0.44		0.94	0.12		0.00	0.52	
Uniform Delay, d1	14.2	18.2	16.4	15.0	17.6		19.2	16.9		19.1	21.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	4.9	1.7	0.1	2.6		31.9	0.1		0.0	1.3	
Delay (s)	14.3	23.1	18.0	15.1	20.2		51.1	17.0		19.1	23.1	
Level of Service	B	C	B	B	C		D	B		B	C	
Approach Delay (s)		19.9			20.0			45.9			23.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	18.5
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	17	227	77	19	164	29	55	10	4	86	29	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	239	81	20	173	31	58	11	4	91	31	4

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	257	81	193	31	58	15	91	35
Volume Left (vph)	18	0	20	0	58	0	91	0
Volume Right (vph)	0	81	0	31	0	4	0	4
Hadj (s)	0.10	-0.63	0.12	-0.63	0.57	-0.13	0.57	-0.02
Departure Headway (s)	5.4	4.7	5.6	4.8	6.6	5.9	6.5	5.9
Degree Utilization, x	0.39	0.11	0.30	0.04	0.11	0.02	0.16	0.06
Capacity (veh/h)	635	731	619	708	504	557	512	559
Control Delay (s)	10.7	7.1	9.7	6.8	9.2	7.9	9.6	8.1
Approach Delay (s)	9.8		9.3		8.9		9.2	
Approach LOS	A		A		A		A	

Intersection Summary			
Delay	9.5		
HCM Level of Service	A		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

2035 Build AM Peak Hour

Queues
39: Matanzas Woods Pkwy & OKR Extension

6/7/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	25	334	407	17	400	360	188	15	78	206
v/c Ratio	0.05	0.35	0.40	0.04	0.42	0.78	0.36	0.10	0.49	0.13
Control Delay	7.8	8.7	2.8	19.5	22.6	45.8	33.4	28.7	61.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	8.7	2.8	19.5	22.6	45.8	33.4	28.7	61.8	0.2
Queue Length 50th (ft)	2	23	0	7	211	225	99	8	59	0
Queue Length 95th (ft)	18	194	104	22	322	310	174	22	106	0
Internal Link Dist (ft)		1229			867		617		981	
Turn Bay Length (ft)	250			250		250		250		250
Base Capacity (vph)	505	960	1009	513	944	475	592	147	244	1553
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.35	0.40	0.03	0.42	0.76	0.32	0.10	0.32	0.13

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	317	387	16	376	4	342	148	30	14	74	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1736	1827	1553	1736	1824		1736	1780		1736	1827	1553
Flt Permitted	0.50	1.00	1.00	0.40	1.00		0.47	1.00		0.64	1.00	1.00
Satd. Flow (perm)	908	1827	1553	731	1824		850	1780		1168	1827	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	334	407	17	396	4	360	156	32	15	78	206
RTOR Reduction (vph)	0	0	219	0	1	0	0	6	0	0	0	0
Lane Group Flow (vph)	25	334	188	17	399	0	360	182	0	15	78	206
Turn Type	pm+pt		Perm	pm+pt			pm+pt			pm+pt		Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		Free
Actuated Green, G (s)	55.5	55.5	55.5	54.5	54.5		42.7	35.1		13.2	11.6	120.0
Effective Green, g (s)	55.5	55.5	55.5	54.5	54.5		42.7	35.1		13.2	11.6	120.0
Actuated g/C Ratio	0.46	0.46	0.46	0.45	0.45		0.36	0.29		0.11	0.10	1.00
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	446	845	718	355	828		488	521		136	177	1553
v/s Ratio Prot	0.00	c0.18		0.00	c0.22		c0.15	0.10		0.00	0.04	
v/s Ratio Perm	0.02		0.12	0.02			c0.11			0.01		0.13
v/c Ratio	0.06	0.40	0.26	0.05	0.48		0.74	0.35		0.11	0.44	0.13
Uniform Delay, d1	19.4	21.2	19.7	19.0	22.9		31.6	33.4		47.9	51.1	0.0
Progression Factor	0.38	0.38	0.71	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	1.3	0.9	0.1	2.0		5.8	0.4		0.4	1.8	0.2
Delay (s)	7.5	9.4	14.9	19.0	24.9		37.4	33.8		48.3	52.9	0.2
Level of Service	A	A	B	B	C		D	C		D	D	A
Approach Delay (s)		12.2			24.7			36.2			16.3	
Approach LOS		B			C			D			B	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
5: Matanzas Woods Pkwy & Old Kings Rd (Existing)

6/6/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	25	194	72	19	171	89	57	30	4	37	12	70
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	26	204	76	20	180	94	60	32	4	39	13	74

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	231	76	200	94	60	36	39	86
Volume Left (vph)	26	0	20	0	60	0	39	0
Volume Right (vph)	0	76	0	94	0	4	0	74
Hadj (s)	0.13	-0.63	0.12	-0.63	0.57	-0.01	0.57	-0.53
Departure Headway (s)	5.6	4.8	5.6	4.8	6.7	6.1	6.7	5.6
Degree Utilization, x	0.36	0.10	0.31	0.13	0.11	0.06	0.07	0.13
Capacity (veh/h)	618	711	618	709	500	543	501	596
Control Delay (s)	10.5	7.2	9.9	7.3	9.3	8.3	9.0	8.2
Approach Delay (s)	9.7		9.1		8.9		8.5	
Approach LOS	A		A		A		A	

Intersection Summary			
Delay	9.2		
HCM Level of Service	A		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

2035 Build PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	35	445	560	13	294	329	57	6	135	88
v/c Ratio	0.08	0.53	0.55	0.04	0.38	0.61	0.08	0.02	0.37	0.06
Control Delay	8.4	15.9	4.2	19.7	29.8	34.8	23.4	26.3	51.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	15.9	4.2	19.7	29.8	34.8	23.4	26.3	51.8	0.1
Queue Length 50th (ft)	5	241	207	6	186	212	26	3	107	0
Queue Length 95th (ft)	m12	329	6	18	266	300	63	12	174	0
Internal Link Dist (ft)		1229			867		823		950	
Turn Bay Length (ft)	250			250		250		250		250
Base Capacity (vph)	439	841	1017	289	783	538	731	317	392	1553
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.53	0.55	0.04	0.38	0.61	0.08	0.02	0.34	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	423	532	12	276	3	313	46	9	6	128	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1736	1827	1553	1736	1824		1736	1784		1736	1827	1553
Flt Permitted	0.47	1.00	1.00	0.30	1.00		0.52	1.00		0.72	1.00	1.00
Satd. Flow (perm)	855	1827	1553	543	1824		951	1784		1315	1827	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	35	445	560	13	291	3	329	48	9	6	135	88
RTOR Reduction (vph)	0	0	337	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	35	445	223	13	294	0	329	52	0	6	135	88
Turn Type	pm+pt		Perm	pm+pt			pm+pt			pm+pt		Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		Free
Actuated Green, G (s)	62.0	55.8	55.8	53.2	51.4		63.4	56.6		33.6	32.8	140.0
Effective Green, g (s)	62.0	55.8	55.8	53.2	51.4		63.4	56.6		33.6	32.8	140.0
Actuated g/C Ratio	0.44	0.40	0.40	0.38	0.37		0.45	0.40		0.24	0.23	1.00
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	418	728	619	222	670		569	721		318	428	1553
v/s Ratio Prot	0.00	c0.24		0.00	0.16		c0.10	0.03		0.00	0.07	
v/s Ratio Perm	0.03		0.14	0.02			c0.16			0.00		c0.06
v/c Ratio	0.08	0.61	0.36	0.06	0.44		0.58	0.07		0.02	0.32	0.06
Uniform Delay, d1	29.1	33.5	29.6	42.2	33.4		26.2	25.6		40.6	44.3	0.0
Progression Factor	0.41	0.48	1.03	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	3.5	1.5	0.1	2.1		1.4	0.0		0.0	0.4	0.1
Delay (s)	12.1	19.5	32.0	42.3	35.5		27.7	25.6		40.6	44.7	0.1
Level of Service	B	B	C	D	D		C	C		D	D	A
Approach Delay (s)		26.0			35.8			27.4			27.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
5: Matanzas Woods Pkwy & Old Kings Rd (Existing)

6/6/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	19	266	92	19	157	28	52	9	4	64	21	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	20	280	97	20	165	29	55	9	4	67	22	32

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	300	97	185	29	55	14	67	54
Volume Left (vph)	20	0	20	0	55	0	67	0
Volume Right (vph)	0	97	0	29	0	4	0	32
Hadj (s)	0.10	-0.63	0.12	-0.63	0.57	-0.15	0.57	-0.34
Departure Headway (s)	5.4	4.7	5.6	4.9	6.7	6.0	6.6	5.7
Degree Utilization, x	0.45	0.13	0.29	0.04	0.10	0.02	0.12	0.09
Capacity (veh/h)	643	740	617	705	496	548	502	578
Control Delay (s)	11.6	7.1	9.7	6.9	9.3	8.0	9.4	8.1
Approach Delay (s)	10.5		9.3		9.0		8.8	
Approach LOS	B		A		A		A	

Intersection Summary			
Delay	9.8		
HCM Level of Service	A		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix D

Approved I-95 and Matanzas Woods Parkway IJR

Final Interchange Justification Report

Interstate 95 and Matanzas Woods Parkway

Prepared for:

Flagler County

December 2010
Revised February 2011

This document was originally prepared and submitted in December 2010. FHWA reviewed the document and provided comments. The FHWA comments and associated responses have been incorporated into this document at the beginning of Appendix I. As a result of FHWA comments 2m, 2o, and 33; four (4) pages were revised. These pages are denoted in this document with the letter "R" as follows: 6-4R (Figure 6-1R); 6-6R (Figure 6-3R); 8-13R; and 8-14R. These were simply clarifications, therefore the document footer still denotes December 2010.

INTERCHANGE JUSTIFICATION REPORT (IJR)

INTERSTATE 95 at

MATANZAS WOODS PARKWAY

Flagler County, Florida

Certification:

This document dated December 2010 has been reviewed and is complete and correct, meeting the requirements of the Methodology Letter of Understanding with the Federal Highway Administration (FHWA). It has been prepared in compliance with Florida Department of Transportation (FDOT) Interchange Handbook, and it's supporting documents.

Faith Alkhatib, P.E, Flagler County Engineer Date

John Zielinski, Chair District Interchange Review Committee, FDOT D5 Date

Debbie Hunt, Assistant Secretary, Intermodal Systems Development, FDOT Date

Approval:

Monica Gourdine, P.E, FHWA Program Operations Engineer Date

EXECUTIVE SUMMARY

This Interchange Justification Report (IJR) was completed in compliance with the requirements of the Final MLOU dated November 24, 2008 bearing the final signature by FHWA on February 17, 2009. The IJR has established a need for the interchange at Matanzas Woods Parkway and I-95, located between existing interchanges at Palm Coast Parkway and US-1 in St. Johns County. The Matanzas Woods Parkway Bridge over I-95 was completed in 2007 connecting US-1 with Old Kings Highway, and right-of-way was acquired for a full diamond interchange. While the need for the interchange is demonstrated through benefits to the area roadway system and interchanges by accommodation of future population growth and the need for system linkage, the most critical need is one for evacuation, particularly for wildfires.

The Area of Influence (AOI) for the IJR included the I-95 interchanges at US-1 and Palm Coast Parkway, as well as crossroads between these interchanges. The analysis years include: 2009 Existing Conditions; 2015 Opening Year; 2025 Interim Year; and 2035 Design Year. The alternatives included Build and No Build, and two interchange configurations were evaluated for the Build Alternative; a Partial Cloverleaf and a Wide Diamond. Future daily traffic projections were developed with the adopted Central Florida Regional Planning Model (CFRPM Version 4.5) which was expanded to include the interchange of US-1 and I-95 in neighboring St. Johns County. Subarea model refinements were coordinated with FDOT District 5 and Central Office.

Daily model forecasts derived from the CFRPM for each analysis year were converted into design hours, directional volumes, and intersection turning movements consistent with the methodology prescribed in the MLOU. The roadways and intersections were evaluated for level of service using the latest FDOT level of service tables and intersection analysis software such as HCS and SYNCHRO.

The Build Alternative revealed measurable benefits to area roadways including reduced peak hour delays at the interchange of Palm Coast Parkway and I-95. After careful review of all factors selected for development and assessment of alternatives, it is recommended that the Build alternative be implemented. The Build alternative consists of a new wide diamond interchange at Matanzas Woods Parkway and I-95 at Milepost 14.65 in Flagler County. The interchange is proposed at the most logical location for a new interchange between Palm Coast Parkway and US-1, and is consistent with the City of Palm Coast Comprehensive Plan. The interchange proposal spacing of 5.0 miles from US-1 and 3.6 miles from Palm Coast Parkway exceeds the 2.0 mile spacing standard for urbanized areas (Rule Chapter 14-97 FAC) which extends over 88 percent of the segment length between Palm Coast Parkway and US-1.

The IJR Existing Conditions Report has documented that there are no significant environmental impacts that could be considered a fatal flaw or result in significant mitigation requirements due to the proposed interchange at I-95 and Matanzas Woods Parkway.

The following summary demonstrates that the interchange proposal at Matanzas Woods Parkway and I-95 meets the eight FHWA requirements for approval of new or modified access to the interstate highway system as published in August 2009:

1. The need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control, modifying ramp terminals and intersections, adding turn bays or lengthening storage) to satisfactorily accommodate the design-year traffic demands (23 CFR 625.2(a)).

   Response:
   The primary need for the I-95 and Matanzas Woods Parkway interchange is to provide emergency evacuation during wild fires. During the 1998 wild fire, the entire County's population, approximately 30,000 persons, had to be evacuated. This 1998 fire destroyed 71 homes, damaged another 175, and burned over 84,000 acres. In 1985 a similar fire spread through Bunnell, Palm Coast and Korona, destroying 131 homes and damaging another 200 homes. The current population is over 90,000 persons many of whom could be at risk if a similar incident occurred today in this area and be required to evacuate at the same access points to I-95 (Palm Coast Parkway and US-1 interchanges). Further, based on the Bureau of Economic and Business Research (BEBR) and FDOT Office of Policy Planning (2009), Flagler County is projected to have a population of 198,000 in 2035. Since 1998 Flagler County officials have focused on evacuation planning including a new access to I-95 at Matanzas Woods Parkway.

   Additionally, the 2035 no-build scenario (without Matanzas Woods Parkway Interchange) shows unacceptable levels of service (LOS) at existing Palm Coast Parkway ramp intersections. However, in the build scenario (with Matanzas Woods Parkway Interchange), Palm Coast Parkway ramp intersections and the Palm Coast Parkway corridor through the interchange area has reduced levels of delay, on some segments up to 41%. While the ramp intersections at Palm Coast Parkway continue to operate at unacceptable LOS with or without the Matanzas Woods Parkway interchange, the new interchange does reduce system wide delays, and provide measurable benefits during the AM and PM peak hour intersection operations (19% to 28% reduction in delays).

2. The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (such as ramp metering, mass transit, and HOV facilities), geometric design, and alternative improvements to the Interstate without the proposed change(s) in access (23 CFR 625.2(a)).

   Response:
   The primary need being addressed is one of safety through improved evacuation. Unlike hurricanes; fires, which are not uncommon in Flagler County are unpredictable and evacuation options are evaluated on short notice. This need cannot be satisfied by ramp metering and other Transportation System Management (TSM) or Travel Demand Management (TDM) techniques, or geometric modifications to the Palm Coast Parkway interchange since the need is additional access to the interstate for evacuation.

3. An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall,

particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that [[Page 43745]] the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).

Response:
The analyses contained in this proposal demonstrate that the proposed interchange will not have a detrimental or adverse impact to the regional roadway system or interstate and its adjacent interchanges. The proposed interchange will safely and efficiently collect and distribute traffic to and from the local roadway system onto the interstate. The proposed interchange and its ramps meet and exceed all spacing requirements. Matanzas Woods Parkway and connecting roads are programmed for improvements to meet the forecasted demands including developer agreements for widening as contained in their respective development orders.

4. The proposed access connects to a public road only and will provide for all traffic movements. Less than ``full interchanges'' may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)).

   Response:
   The proposed Matanzas Woods Parkway interchange will connect to the Matanzas Woods Parkway corridor, a county road, which currently exists as a 2-lane undivided cross-section between US-1 and Old Kings Road. The proposed interchange will also provide all traffic movements to access I-95.

5. The proposal considers and is consistent with local and regional land use and transportation plans. Prior to receiving final approval, all requests for new or revised access must be included in an adopted Metropolitan Transportation Plan, in the adopted Statewide or Metropolitan Transportation Improvement Program (STIP or TIP), and the Congestion Management Process within transportation management areas, as appropriate, and as specified in 23 CFR part 450, and the transportation conformity requirements of 40 CFR parts 51 and 93.

   Response:
   The City of Palm Coast 2020 Comprehensive Plan – Goals, Objectives, and Policies supports the additional interchange at Matanzas Woods Parkway to improve access to I-95.

6. In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with

recommendations that address all of the proposed and desired access changes within the context of a longer-range system or network plan (23 U.S.C. 109(d), 23 CFR 625.2(a), 655.603(d), and 771.111).

Response:
There are no new interchanges proposed between Palm Coast Parkway and US-1 other than the current proposal at Matanzas Woods Parkway. There are no significant changes in access programmed for the interchange at Palm Coast Parkway or US-1.

7. When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements (23 CFR 625.2(a) and 655.603(d)). The request must describe the commitments agreed upon to assure adequate collection and dispersion of the traffic resulting from the development with the adjoining local street network and Interstate access point (23 CFR 625.2(a) and 655.603(d)).

   Response:
   The new access point is being requested to enable safe and efficient evacuation of existing and future area residents with an emphasis on wild fires which have spread through this region on multiple occasions over the last 25 years. Future and planned development in the area has already undergone Development of Regional Impact (DRI) review and resulted in development order conditions that obligate the developers to improve multiple regional roadways including Matanzas Woods Parkway.

8. The proposal can be expected to be included as an alternative in the required environmental evaluation, review and processing. The proposal should include supporting information and current status of the environmental processing (23 CFR 771.111).

   Response:
   The proposal will be included in the Project Development and Environmental (PD&E) study which is programmed to commence immediately upon approval of this Interchange Justification Report (IJR). The PD&E study has been advertised, and a consultant has been selected. The Efficient Transportation Decision Making (ETDM) screening tool for the proposal has been active since October 30, 2009 (ETDM Project # 12516).

In conclusion, evidence of local support for this interchange is provided by the letters from the Mayor of the City of Palm Coast dated November 3, 2010 and from the Chairman of the Flagler County Board of County Commissioners dated November 5, 2010. Both letters are appended to this Executive Summary.

County
Administration

FLAGLER
COUNTY
FLORIDA

www.flaglercounty.org
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Fax 386-313-4101

1769 E.Moody Blvd. Bld. 2 Bunnell Fl. 32110

November 5, 2010

TO: Federal Highway Administration

RE: Matanzas Woods / I-95 Interchange

Dear Sir:

On behalf of the Flagler County Board of County Commissioners we wish to express our support for the Matanzas Woods / I-95 Interchange Project being submitted by Flagler County in conjunction with the City of Palm Coast.

This project is a key element to the citizens of Flagler County. Based on the most current census population estimates through 2009 the Flagler County population has grown almost 84% since the year 2000 and is expected to continue to grow, even with the current economic climate. During this same period, our regional access to I-95 has remained unchanged. We view this interchange asa key component for the safety of our citizens. Therefore, maintaining the planning and construction of this project in the current time schedule will be essential to ensure future orderly growth.

Also as a County, we are faced with hurricanes and wildland fires that at times require critical access for evacuation. On two separate occasions in the last two decades, we have had to evacuate the entire county out of the region. Those evacuations occurred with much smaller populations and overwhelmed our ability to safely exit the residents on I-95.

In addition, by going forward with this project at this time, it is felt that we can take advantage of current efficiencies in construction costs. At the same time, this project will help with the unemployment rate in the county by providing a large, long-term project that will employ many different skill sets.

In today's economy, we realize that it is difficult for Federal and State agencies to provide funding for all needed projects. However, your support not only monetarily but with processing is essential to the success of this project.

Sincerely,

George Hanns

George Hanns, Chairman
Flagler County Board of County Commissioners

C: Flagler County Board of County Commissioners
Congressman John Mica
City of Palm Coast City Council & City Manager
Ms. Noranne Downs

/clm

OFFICE OF THE MAYOR

November 3, 2010

Federal Highway Administration

Gentlemen:

As Mayor of the City of Palm Coast please accept this letter as our support for the proposed Matanzas Woods Parkway Interchange with I-95. The construction of this interchange will provide additional regional access to our growing community, while increasing available emergency evacuation routes to the population. Both State and Federal DOT and local officials have made this the County's top infrastructure priority. As a coastal County, Flagler County is naturally vulnerable to hurricanes. Further, the City of Palm Coast, and Flagler County as a whole, experience a hazardous dry season every year subject to the spread of wild fires. In 1985 a major wildfire spread through Bunnell, Palm Coast, and Korona, destroying 131 homes and damaging another 200 homes. Then again in 1998 wild fires in the area destroyed 71 homes, damaged another 175 homes, and burned over 131 square miles. Almost the entire County was required to evacuate.

Based on the most current census population estimates through 2009 the Flagler County population has grown almost 84% since the year 2000. Yet our regional access to I-95 has remained unchanged. Even with the current economic climate, growth is expected to continue in Flagler County. The University of Florida has projected that Flagler County will grow by 109% over the next 25 years. In fact, there is a significant amount of development that is planned within the cities of Palm Coast and Bunnell (Palm Coast Park, Hammock Dunes, and Old Brick Township), within the vicinity of the proposed interchange location. These developments will put a significant additional burden on the regional roadway system, and more importantly on the existing interchange of Palm Coast Parkway and I-95.

We support the proposed interchange to address existing demands for regional access in our community, and the long-term viability of our community.

Sincerely,

Jon Netts
Mayor

160 Cypress Point Parkway Suite B-106 • Palm Coast, FL 32164 • tel (386) 986-3702 • fax (386) 986-3703

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1.0 INTRODUCTION

1.1 General Background

Flagler County is the Applicant for the interchange proposal at Interstate 95 and Matanzas Woods Parkway. Flagler County's population has nearly doubled between 2000 and 2009. The University of Florida has projected that Flagler County will grow by an additional 109% over the next 25 years to approximately 198,000 residents. This continued growth will be driven by large scale Developments of Regional Impact (DRI) that have been approved in recent years and not yet constructed. This growth has led to planned and programmed roadway improvements to keep up with the existing and forecasted transportation and circulation needs of the region, including evacuation for hurricanes and most importantly, wildfires. Flagler County is considered a wildfire hazard area, having approximately 577 homes either destroyed or damaged due to the wildfires of 1985 and 1998, burning over 131 square miles.

Interstate 95 is a north/south freeway that serves the primary north/south travel demands through Flagler County and the adjoining coastal counties of St. Johns County to the north and Volusia County to the south. Interstate 95 is designed for high speed and high volume traffic and is part of the Florida Intrastate Highway System (FIHS), as well as, the Strategic Intermodal System (SIS).

The St. Johns County line is 7.66 miles north of the Palm Coast Parkway interchange, after which the next I-95 interchange is with US-1, located 0.95 miles north of the county line. The Palm Coast Parkway interchange is currently operating at unacceptable levels of service. The level of service is expected to further deteriorate since a substantial amount of additional development has been approved, particularly to the west of I-95 up to the St. Johns County line.

Previously, two studies, conducted in 2000 and 2006 for the Florida Department of Florida (FDOT) District 5, dealt directly with the feasibility for a new I-95 interchange between Palm Coast Parkway and US-1. These include the *Transportation Planning Analysis for Potential I-95 Interchange in Flagler County*; September 21, 2000 prepared by FDOT-District 5; and, *Final Matanzas Woods Parkway Interchange Feasibility Study,* prepared as part of the I-95 System Operational Analysis Report (SOAR) in 2006. The first study (2000) concluded that an interchange could not be justified at either Kings Highway or Matanzas Woods Parkway based on forecasts prepared at the time. However, the study recommended that a bridge be built over I-95 at Matanzas Woods Parkway (3.6 miles north of Palm Coast Parkway) and the location be monitored for future justification of a full interchange. That bridge was completed in 2007. Matanzas Woods Parkway is a 2-lane county roadway connecting Kings Highway east of I-95 with US-1 west of I-95.

The second study (2006) concluded that an interchange could be built at Matanzas Woods Parkway and that it could have a beneficial impact on area roadways including Palm Coast Parkway with no adverse affect to mainline I-95. Consequently, in 2007 Flagler County initiated a formal interchange proposal through the Interchange Justification Report (IJR) process.

1.2 Project Location

The proposed Matanzas Woods Parkway interchange will be located approximately at milepost 14.65 on highway section number 73001000 (I-95). Figure 1-1 identifies the location, the relationship to adjacent existing interchanges, and system linkages of the proposed interchange. As shown in Figure 1-1, the proposed interchange location lies approximately 3.6 miles north of the existing Palm Coast Parkway interchange (milepost 11.070) and 5.0 miles south of the existing US-1 interchange (milepost 0.953, State section number 78080000, St. Johns County).

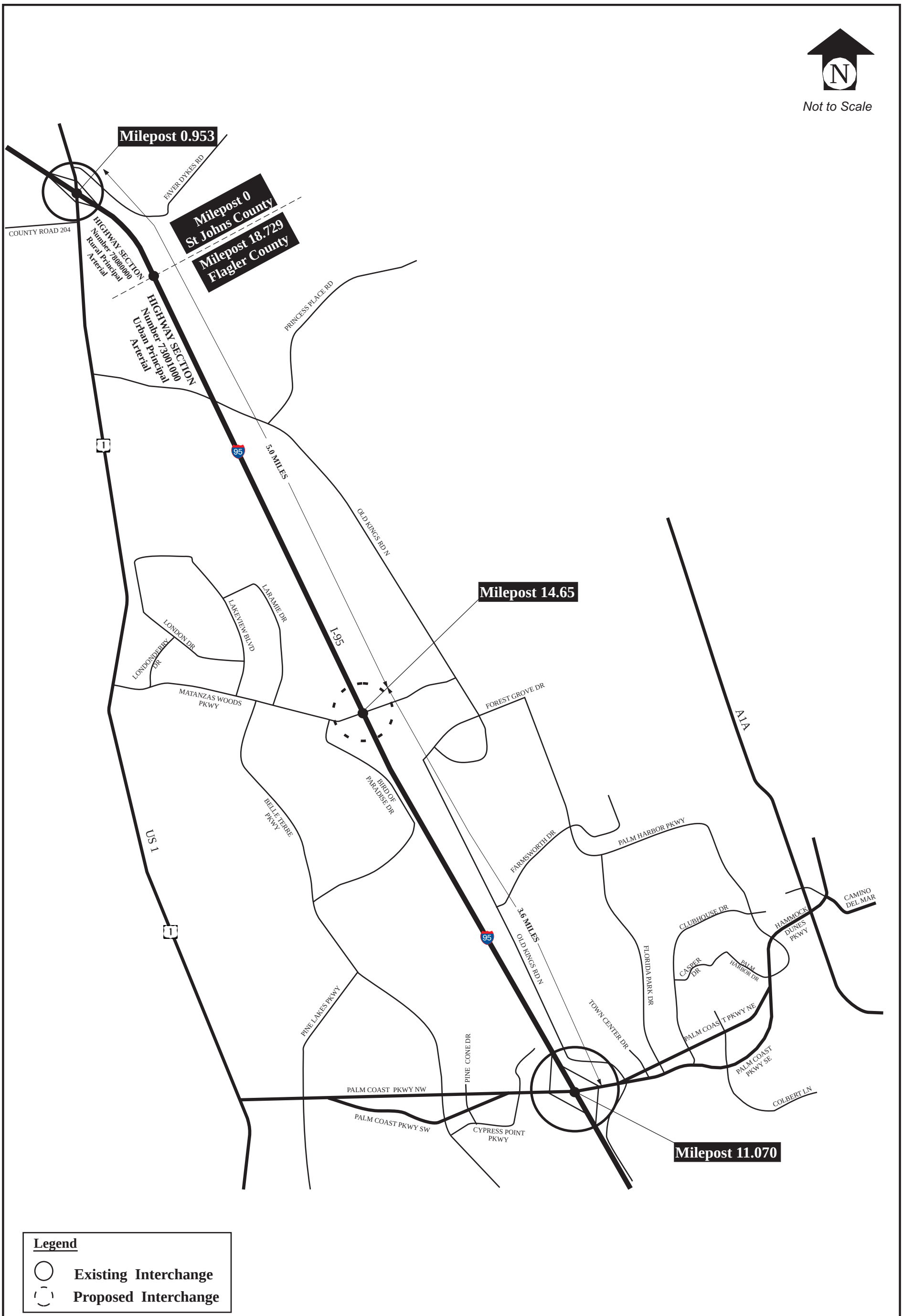
1.3 Area of Influence

Consistent with the agreed upon Methodology Letter of Understanding (MLOU) for the IJR dated November 24, 2008, and executed in February 2009 (See Appendix I), the area of influence (AOI) for the proposed interchange will extend approximately 8.6 miles along I-95 from Palm Coast Parkway to US-1 as presented in Figure 1-2. Also depicted in Figure 1-2 are the crossroads that are included in the AOI consisting of:

- Palm Coast Parkway between Belle Terre Parkway to the west and Florida Parkway Drive to the east. The proposed AOI terminals west and east of I-95 are beyond the typical half mile limit; however, this area is anticipated to experience significant changes in traffic volumes resulting from the interchange proposal;

- Matanzas Woods Parkway between US-1 to the west and Old Kings Road to the east; and

- US-1 between County Road 204 to the south and Faver Dykes Road to the north.



I-95 and Matanzas Woods Parkway Interchange Justification Report

Location Map

Figure 1-1

I-95 and Matanzas Woods Parkway Interchange Justification Report

Area of Influence

Figure 1-2

2.0 METHODOLOGY

2.1 General Description

The methodology for this Interchange Justification Report (IJR) has been developed in accordance with the FDOT Policy No. 000-525-015-g: Approval of New or Modified Access to Limited Access facilities, FDOT Procedure No. 525-030-160-h; Interchange Handbook (December 2002), and the FDOT Traffic Forecasting Handbook. The methodology was formalized through meetings and correspondence with the FDOT and FHWA and finalized in the Methodology Letter of Understanding (MLOU) dated November 24, 2008. A copy of the approved MLOU is attached in Appendix I.

The analysis years include: 2009 Existing Conditions; 2015 Opening Year; 2025 Interim Year; and 2035 Design Year. The alternatives included Build and No Build, and two interchange configurations were evaluated for the Build Alternative; a Partial Cloverleaf and a Wide Diamond at Matanzas Woods Parkway and Interstate 95. Future daily traffic projections were developed with the adopted Central Florida Regional Planning Model (CFRPM Version 4.5) which was expanded to include the interchange of US-1 and I-95 in neighboring St. Johns County. Subarea model refinements which included the newly approved developments within the AOI were coordinated with FDOT District 5 and Central Office. Programmed roadway, intersection, and interchange improvements within the AOI were included in the analysis and were obtained from FDOT, Flagler County, St. Johns County, and the City of Palm Coast adopted work programs.

Daily model forecasts derived from the CFRPM for each analysis year were converted into design hours (AM and PM peak hours), directional volumes, and intersection turning movements consistent with the methodology prescribed in the approved MLOU. The roadways and intersections were evaluated for level of service using the latest FDOT Q/LOS level of service tables, and intersection analysis software such as HCS and SYNCHRO.

The methodology also includes a preliminary environmental evaluation to identify if the Build alternatives impact any sensitive environmental issues or constitute a fatal flaw. The Build alternatives, consisting of a wide diamond and a partial cloverleaf interchange also included a cost analysis.

2.2 Traffic Data and Resources

The information, methodology and assumptions used in the traffic analysis of existing conditions are consistent with the standard procedures, general guidelines, and standards found in the resource documents listed below and the agreement set forth in the MLOU document dated November 24, 2008.

- *2002 Quality Level of Service Handbook*, published by FDOT (referred to as the 2002 FDOT LOS Handbook);
- *2000 Highway Capacity Manual*, published by Transportation Research Board (TRB) (referred to as the 2000 HCM)
- *Standard Specifications for Road and Bridge Construction*, FDOT;
- *The Interchange Handbook*, FDOT, December 2002;
- *Project Traffic Forecasting Handbook, Topic No. 525-030-120* Published by the FDOT, October 2002;
- *Development of Design Traffic - Technical Resource Document 10, The Interchange Handbook* published by the FDOT, December 2002;
- *2007 Florida Traffic Information CD-ROM*, Published by the FDOT (2007 FTI); and
- *Project Development and Environment Manual*, FDOT.

The operational evaluation of the IJR is based on HCS results developed consistent with the procedures and guidelines of the Highway Capacity Manual. Two software packages were utilized in the existing conditions traffic operations analysis:

- *Highway Capacity Software (HCS):* Used for preliminary merging, diverging and weaving analyses; and unsignalized intersections; and
  .
- *SYNCHRO:* Used to analyze the operations of the signalized intersections of the existing and proposed interchange ramps in coordination with nearby intersections.

Transportation system needs and improvements information were obtained from the following documents:

- FDOT Work Program/FDOT SIS Plan;

- Flagler County Comprehensive Plan;
- 2020 City of Palm Coast Comprehensive Plan, adopted April 6, 2004 and last amended on June 17, 2008; and
- Project Development Summary Report, Palm Coast Parkway Widening, February 2010.

2.3 Environmental Methodology and Data Sources

Screening-level analysis were prepared to identify potential environmental fatal flaws that could pose a significant obstacle to design or construction of the project. This analysis is not intended to provide the extensive examination of environmental and community impact issues that will be accomplished in the National Environmental Policy Act (NEPA) process.

A desktop review of historical aerials and existing databases was conducted to assess documented land use, wetlands, and habitats within the study area, to evaluate the potential for the occurrence of protected plant and animal species, and to evaluate the potential for contamination. The environmental study review area extended ½ mile to the east and west of the intersection of Matanzas Woods Parkway and I-95, and 1 mile to the north and south of the intersection.

After the desktop review, a field reconnaissance was conducted on December 30 and 31, 2008 to ground-truth information gathered during the desktop review. The following resources were utilized for the desktop review:

- Historical aerials dated 1943, 1952, 1980, and 1995;
- Aerial photographs dated 2007 at a scale of 1:24,000;
- United States Geological Service 7.5 Minute Quadrangle Map;
- United States Department of Agriculture (USDA), Natural Resources Conservation Service, Soil Resource Report for Flagler County;
- Florida Land Use, Cover and Forms Classification System (FLUCCS), Florida Department of Transportation;

- National Wetlands Inventory (NWI), United States Fish and Wildlife Service (USFWS);

- Flagler County Federally Listed Species, USFWS; Rare Plants and Animals of Flagler County, Florida Natural Areas Inventory (FNAI); and

- Geographic Information System (GIS) information provided by the Florida Fish and Wildlife Conservation Commission (FWC), including Species Occurrence, Biodiversity Hotspots, Priority Wetlands, and Florida Land Cover, 2003.

3.0 EXISTING CONDITIONS

3.1 Existing and Approved Land Use

The predominant land use within the AOI consists of established residential communities located within both Flagler County and the City of Palm Coast, combined with vacant lands that have been approved for large scale residential and commercial development. The highest concentration of existing mixed use development including commercial are located along Palm Coast Parkway at the southern boundary of the AOI. North of Palm Coast Parkway and along US-1 up to St. Johns County, are the large scale developments labeled on the City of Palm Coast Future Land Use Map as "DRI Mixed Use". These developments are significant, and drive much of the population growth in the region and the AOI. Land use along Matanzas Woods Parkway is predominantly residential west of I-95 to US-1, and institutional (schools) west of I-95 to Old Kings Road.

A number of new major developments are planned within the cities of Palm Coast and Bunnell. These developments will put a significant burden on the regional roadway system, and more importantly on the existing interchange of Palm Coast Parkway and I-95. The three major approved DRI developments are known as Palm Coast Park, Hammock Dunes and Old Brick Township. Those within the AOI are depicted in Figure 3-1.

- *Palm Coast Park*
  Palm Coast Park is a proposed 4,700 acre mixed-use development located approximately 1 mile south of the existing I-95 interchange with US-1 and ½ mile north of Palm Coast Parkway and US-1. The Palm Coast Park development will include 3,600 residential units, 1.6 million square feet of retail, 800,000 square feet of office, 900,000 square feet of industrial, and an 18-hole golf course.

- *Hammock Dunes*
  Hammock Dunes is a private residential gated oceanfront community that is nearly completed, and located east of SR A1A extending approximately 3 miles north and 4 miles south of Palm Coast Parkway. The development includes 4,400 residential units, over 5 million square feet of hotel/recreational space and over 400 acres of golf course.

- *Old Brick Township*
  Old Brick Township is a mixed-use development generally located south of the St. Johns County line, west of the Florida East Coast Railroad (FEC), and east of County Road 13 (Old Brick Road) for approximately 4.5 miles and contains 5,273 acres. The Old Brick Township will include 5,000

residential units, 100,000 square feet of retail, 50,000 square feet of office and 1.0 million square feet of industrial.

3.2 Existing Roadway Network

There are four key roadways within the AOI that are most impacted by the interchange proposal. They consist of Interstate 95, Matanzas Woods Parkway, US-1, and Palm Coast Parkway. Interstate 95 has two interchanges within the AOI, located at Palm Coast Parkway and US-1.

- Interstate-95
  Interstate 95 (I-95) is functionally classified as interstate urban principal arterial between the existing Palm Coast Parkway interchange and the St. Johns County line. The functional classification of I-95 changes to interstate rural principal arterial at the St. Johns County line. I-95 is part of the Florida Intrastate Highway System (FIHS) and the Strategic intermodal System (SIS). I-95 mainline within the study area is currently a six-lane freeway with diamond interchanges at both US-1 and Palm Coast Parkway, and has a 70 mph posted speed limit. Per Chapter 2009-96 Laws of Florida, as an SIS, local governments must apply and maintain the FDOT LOS standards to I-95.

- Matanzas Woods Parkway
  Matanzas Woods Parkway is a two-lane undivided roadway between US-1 and Old Kings Road with a 45 mph posted speed limit. Jurisdiction of Matanzas Woods Parkway is generally the City of Palm Coast. Matanzas Woods Parkway crosses I-95 with a two lane bridge at I-95 Milepost 14.65. Local LOS standards apply to Matanzas Woods Parkway.

- US-1
  US-1 is a four-lane rural divided arterial between Faver Dykes Road and Palm Coast Parkway with posted speed limits ranging between 55 and 65 mph. US-1 is part of the FIHS but not designated as part of the statewide SIS. Chapter 2009-96 Laws of Florida allow the local government(s) to establish the LOS for a FIHS roadway not part of the SIS. This applies to US-1 within the AOI.

- Palm Coast Parkway
  Palm Coast Parkway is a four-lane divided arterial from US-1 to SR A1A and has posted speed limits of 40 and 45 mph. This entire length of Palm Coast Parkway is under the jurisdiction of the City of Palm Coast. Local LOS standards apply to Palm Coast Parkway.

A description of roadway characteristics including number of lanes, facility type, jurisdiction and adopted level of service (LOS) is provided in Table 3-1.

3.3 Environmental Conditions

Preliminary environmental evaluations were performed to determine if any environmental issues requiring mitigation or constituting a fatal flaw were likely if the interchange was built at Matanzas Woods Parkway and I-95 at Milepost 14.65 in Flagler County. For this analysis, the Build alternative and wide diamond configuration was evaluated since it would require development in all four quadrants of the interchange.

3.3.1 Conservation Easement

A primary environmental issue for this IJR is the avoidance of impacts to 197.2 acres of wetland and upland preservation areas found within in the southeast quadrant of the proposed I-95 and Matanzas Woods Parkway interchange (see Appendix VII). The preservation areas serve as mitigation for the Matanzas Woods Parkway Extension (SJRWMD Permit No. 4-035-83039-1 and ACOE Permit No. 200200905 [IP-MLH], 2003). The Matanzas Woods Parkway extension consisted of 1.2 miles of roadway improvements, beginning at Bird of Paradise Drive and continuing east of I-95 to Old Kings Road. The project included the extension of the two-lane rural roadway section with a bridge (with no connecting ramps) crossing the I-95 corridor.

The preservation areas are protected under a Conservation Easement recorded on August 8, 2005 by Flagler County in accordance with St. Johns River Water Management District (SJRWMD) and Army Corps of Engineers (ACOE) permit requirements. The Easement is intended to "assure that the property will be retained forever in its existing natural condition and to prevent any use of the Property that will impair or interfere" with its environmental value. Therefore, the proposed interchange should avoid impacts to the preservation areas. Both the wide diamond and cloverleaf configurations avoid impacts to this easement.

No significant impacts are expected as a result of the proposed interchange to the natural, physical, socio-cultural, or economic aspects of the environment. Nonetheless, further preliminary investigations were performed and are documented in the Existing Conditions Report.

3.3.2 Land Use and Wetlands

Much of the western portion of the study area is developed or under construction. According to the FLUCCS map, the land uses within the IJR study area include Residential, Low Density: <2 Dwelling Units/Acre (FLUCCS Code 110), and Low Density Under Construction (FLUCCS Code 119).

Table 3-1
Flagler County Roadway Characteristics

Roadway From	To	DIR	[1] Existing Facility	[2] Facility Type	[2] Jurisdiction	[2] Adopted LOS
Palm Coast Parkway						
US-1	Pine Lakes Pkwy	EB/WB	4LD	UMA	City of Palm Coast	D
Pine Lakes Pkwy	Belle Terre Pkwy	EB/WB	2L-1 WAY	UMA	City of Palm Coast	D
Belle Terre Pkwy	Cypress Point Pkwy	EB/WB	3L-1 WAY	UMA	City of Palm Coast	D
Cypress Point Pkwy	I-95 W Ramps	EB/WB	6LD	UMA	City of Palm Coast	D
I-95 W Ramps	I-95 E Ramps	EB/WB	6LD	UMA	City of Palm Coast	D
I-95 E Ramps	Old Kings Rd	EB/WB	6LD	UMA	City of Palm Coast	D
Old Kings Rd	Florida Park Dr	EB/WB	2L-1 WAY	UMA	City of Palm Coast	D
Florida Park Dr	Clubhouse Dr	EB/WB	2L-1 WAY	UMA	City of Palm Coast	D
Clubhouse Dr	Colbert Ln	EB/WB	2L-1 WAY	UMA	City of Palm Coast	D
Colbert Ln	Palm Harbor Pkwy	EB/WB	2L-1 WAY	UMA	City of Palm Coast	D
Palm Harbor Pkwy	SR A1A / N Oceanshore Blvd	EB/WB	2LU	UMA	Hammock Dunes	D
Matanzas Woods Parkway						
US-1	Belle Terre Pkwy	EB/WB	2LU	UMA	City of Palm Coast	D
Belle Terre Pkwy	Birds Of Paradise Dr	EB/WB	2LU	UMA	City of Palm Coast	D
Birds Of Paradise Dr	Old Kings Rd	EB/WB	2LU	UMA	City of Palm Coast	D
US-1						
North of Faver Dykes Rd	Faver Dykes Rd	EB/WB	4LD	RPA	FDOT	D
Faver Dykes Rd	I-95	EB/WB	4LD	RPA	FDOT	D
I-95	CR 204	EB/WB	4LD	RPA	FDOT	D
CR 204	Old Kings Rd	EB/WB	4LD	UPA/RPA	FDOT	D
Old Kings Rd	Matanzas Woods Pkwy	EB/WB	4LD	UPA	FDOT	D
Matanzas Woods Pkwy	Palm Coast Pkwy	EB/WB	4LD	UPA	FDOT	D
Belle Terre Parkway						
Matanzas Woods Pkwy	Bird Of Paradise Dr	NB/SB	2LU	UMA	City of Palm Coast	D
Bird Of Paradise Dr	Pines Lakes Pkwy	NB/SB	2LU	UMA	City of Palm Coast	D
Pines Lakes Pkwy	Bellaire Dr	NB/SB	2LU	UMA	City of Palm Coast	D
Bellaire Dr	Palm Coast Pkwy WB	NB/SB	4LD	UMA	City of Palm Coast	D
Palm Coast Pkwy WB	Palm Coast Pkwy EB	NB/SB	4LD	UMA	City of Palm Coast	D
Palm Coast Pkwy EB	Cypress Point Pkwy	NB/SB	4LD	UMA	City of Palm Coast	D
Cypress Point Pkwy	Pines Lakes Pkwy	NB/SB	4LD	UMA	City of Palm Coast	D
Pines Lakes Pkwy	Parkview Dr	NB/SB	4LD	UMA	City of Palm Coast	D
Old Kings Road						
US-1	Princess Pl Preserve	NB/SB	2LU	UC / RC	Flagler County	D
Princess Pl Preserve	Forest Grove Dr	NB/SB	2LU	RC	Flagler County	D
Forest Grove Dr	Farmsworth Dr	NB/SB	2LU	RC	City of Palm Coast	D
Farmsworth Dr	Frontier Dr	NB/SB	2LU	RC	City of Palm Coast	D
Frontier Dr	Fleetwood Dr	NB/SB	2LU	RC	City of Palm Coast	D
Fleetwood Dr	Farragut Dr	NB/SB	2LU	RC	City of Palm Coast	D
Farragut Dr	Palm Coast Pkwy	NB/SB	4LD	RC	City of Palm Coast	D
I-95						
N of US-1	US-1	EB/WB	6LD	IRPA	FDOT	C
US-1	Palm Coast Pkwy	NB/SB	6LD	IRPA/IUPA [3]	FDOT	C
Palm Coast Pkwy	South of Palm Coast Pkwy	NB/SB	6LD	IUPA	FDOT	C

UPA = URBAN PRINCIPAL ARTERIAL UMA = URBAN MINOR ARTERIAL RPA=RURAL PRINCIPAL ARTERIAL U-COLL = URBAN COLLECTOR RC=RURAL COLLECTOR IRPA=INTERSTATE RURAL PRINCIPAL ARTERIAL IUPA=INTERSTATE URBAN

[1] Existing number of lanes obtained through field surveys.

[2] Facility type, jurisdiction and adopted level of service (LOS) obtained from City of Palm Coast's Transportation Facility Status Report dated October 1, 2007. I-95 LOS determined from FDOT Minimum LOS Standards.

[3] I-95 south of US-1 (approximately 1.0 mile) is Interstate Rural Principal Arterial.

The NWI map and FLUCCS map show the presence of palustrine wetlands in small areas of the western study area, and in larger portions of the eastern study area. The wetland communities are identified as mixed wetland hardwoods, cypress swamp, hydric pine flatwoods, wetland forested mixed, wet prairie, and mixed scrub-shrub. Streams and waterways, and reservoirs (surface waters) are also present.

Wetlands are present east of I-95 along Matanzas Woods Parkway. These include elements of streams and waterways, wetland hardwoods, a cypress swamp (north of the overpass), hydric pine flatwoods, wetland forested mixed, wet prairie, and mixed scrub-shrub wetland. Impacts require permitting through the ACOE and SJRWMD.

The field reconnaissance found that the FLUCCS and NWI maps are in reasonably good agreement with actual field conditions.

3.3.3 Wildlife and Habitats

The list of federal and state-listed species for the County as found in the document titled *Endangered, Threatened, and Species of Special Concern in Flagler County* was used as a reference, in combination with field observations, to assess potential impacts to critical wildlife and habitats.

No critical habitat for federal or state-listed species exists in the study area. Birds observed during the preliminary field investigation were primarily passerine species (primarily perching songbirds). The exception was osprey.

The osprey is listed by the state as a Species of Special Concern in Monroe County only; it is not listed outside of Monroe. However, the osprey is protected under the Migratory Bird Treaty Act (16 U.S.C. 703-712; CFR 10). The Act makes it unlawful to "pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or products made thereof." The state regulation protecting ospreys is rule 68A-4.001, F.A.C., which prohibits the taking or transporting of "…wildlife…or their nests, eggs, young, homes, or dens…"

Osprey nests were identified in the northeast and northwest quadrants of the project study area, approximately one-quarter mile north of Matanzas Woods Parkway, and located approximately 300 feet from the I-95 edge of pavement.

Osprey nests may not be "taken" (removed) without a permit. Generally, only inactive nests (nests without eggs, or young, and outside the nesting season) may be taken. Inactive nest removal requires a permit issued by the FWC. An active nest requires a federal permit from the USFWS, which is rarely issued. A consideration for this project will be avoiding impacts to the osprey nests to the extent practicable.

Other wildlife of concern within the project area are wood storks and gopher tortoises. Preliminary review indicates the project area is within a North Florida (13 mile radius) CFA for wood storks. Coordination for impacts would be addressed during preparation of the ERP and coordination would be through the USFWS Jacksonville Ecological Services Field Office. Gopher tortoises were encountered during construction of the Matanzas Woods Parkway Extension. If tortoises and commensal species are encountered during the construction of the proposed project, a permit from FWC would be required for relocation.

A review of the FWC Eagle Nest Locator (http://myfwc.com/eagle/eaglenests/ Default.asp) showed a documented eagle's nest (FL011) located more than 1 mile from the study area to the northeast. This nest does not pose any obstacles to the proposed interchange.

3.3.4 Soils

Flagler County is part of the Eastern Flatwoods District, one of 10 major physiographic subdivisions of Florida (Brooks, 1982; Caldwell and Johnson, 1982). Its landscape consists of broad expanses of flatwoods with prairies, ridges, and a variety of coastal features. The project study area contains typically sandy soils that are somewhat poorly drained, and which have dark, sandy subsoil layers. Ecosystems associated with these soils are flatwoods, and wet to dry prairies with ponds and cypress domes interspersed.

According to the U.S. Department of Agriculture, National Resources Conservation Service, a majority of the soils within the project study area are hydric. Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation. However, due to drainage and other manmade disturbances, a majority of these soils no longer support wetland ecosystems in the study area.

3.3.5 Flood Zones

The project area contains two Federal Emergency Management Agency (FEMA) flood zone designations:

- Area A: Areas with a 1 percent annual chance of flooding, and a 26 percent chance of flooding over 30 years. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.

- Area X: Areas outside the 1 percent annual chance floodplain, areas of 1 percent annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1 percent annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected

from the 1 percent annual chance flood by levees. No depths or base flood elevations are shown within this zone.

3.3.6 Contamination

A previous contamination screening -- *Contamination Screening Evaluation Report (CSER)* -- was performed in 2003 to support the Matanzas Woods Parkway Extension.[1] The area investigated was a radius of up to 1.25 miles from a point located approximately 0.7 miles northeast of the I-95 / Matanzas Woods Parkway overpass. The CSER identified the former Flagler Gun and Archery Range as a contaminated site (lead). This facility is located at 2525 Old Kings Road, Palm Coast, Florida. The site operated as a target range from 1975 to 2000. A subsequent investigation was performed in late 2003 which found residual levels of lead in soil above cleanup standards, so an additional soil removal action was undertaken in May 2004.

The May 2004 environmental determination for the Categorical Exclusion stated that a geotechnical investigation of the site was conducted and revealed no contamination within the right-of-way.

A field reconnaissance was conducted in December 2008 to search for visible evidence of contamination sites. The field reconnaissance included a search for common sources of contamination such as drycleaners, gasoline stations, engine repair shops, printing facilities, and landfills within the study area (2 miles long by 1 mile wide). No common sources of contamination were found. Field reconnaissance also included a closer inspection within 1,000 feet of the center of the proposed interchange for visual evidence of contamination, such as debris piles, drums, stained soils, and stressed vegetation. No visual evidence of contamination was found.

Historical aerial photographs were reviewed for the years 1943, 1952, 1980, and 1995. The purpose was to search for evidence of potential large-scale dumping of hazardous substances. No evidence was found on the aerials.

3.3.7 Air and Noise Conditions

3.3.7.1 Air Quality

The AOI is located in an attainment area for Ambient Air Quality Standards. An air quality screening test for carbon monoxide will be conducted during the PD&E Study to determine if full air quality modeling is

[1] *"Contamination Screening Evaluation Report, Palm Harbor Parkway and Old Kings Road Extensions from Forest Grove Drive to Matanzas Woods Parkway Extension and Old Kings Road, Flagler County FL,"* Prepared for Flagler County Engineering Department by EMS Scientists, Engineers, Planners, Inc., October 2003.

warranted. Carbon monoxide is produced primarily by motor vehicles. The screening test will use worst case assumptions to predict Carbon monoxide levels resulting from the project. If the project fails the screening test, then a full air modeling analysis would be undertaken. However, projects in Florida rarely fail the screening test, even under worst case scenarios. Long-term monitoring in Florida shows a significant reduction in carbon monoxide concentrations. In fact, the FDOT PD&E manual states that Florida has not recorded a violation of the carbon monoxide standard since 1986.

Based on the nature of the proposed interchange, no significant air quality impacts are expected to occur.

3.3.7.2 Noise

A review of local aerials of the I-95 corridor within the AOI indicated that there are a few residences located at a distance of less than 130 feet from the west edge of I-95 in the vicinity of the proposed I-95 and Matanzas Woods Parkway interchange.
Noise levels generated from the interchange project will be fully evaluated and documented in the PD&E Study in accordance with FDOT and FHWA procedures. If noise levels approach or exceed noise abatement criteria, then appropriate noise abatement measures will be recommended to mitigate any impacts.

3.3.8 Summary of Environmental Findings

- No environmental fatal flaws were identified in the screening-level analysis.

- There is an existing Conservation Easement adjoining the right-of-way in the southeast quadrant of the proposed interchange. Generally, Conservation Easements cannot be impacted unless no viable alternatives exist. To facilitate permitting, the Conservation Easement should be avoided to the extent practicable.

- Wetlands are present east of I-95 along Matanzas Woods Parkway. Impacts require permitting through the ACOE and SJRWMD.

- Osprey nests are in the project vicinity. Osprey nests cannot be removed without a permit, and generally can only be removed outside the nesting season. Osprey nests should be avoided to the extent practicable, and any potential impacts evaluated with the FWC.

- Preliminary review indicates the project area is within a North Florida (13 mile radius) CFA for wood storks. Coordination for impacts would be addressed during preparation of the ERP and coordination would be through the USFWS Jacksonville Ecological Services Field Office.

- Gopher tortoises were encountered during construction of the Matanzas Woods Parkway Extension. If tortoises and commensal species are encountered during the proposed project, a permit from FWC would be required for relocation.

- There is no evidence of contamination that would present an insurmountable obstacle to construction of the interchange.

I-95 and Matanzas Woods Parkway Interchange Justification Report

Major Developments Location Map

Figure 3-1

4.0 EXISTING OPERATIONAL PERFORMANCE

The base year 2009 traffic analysis consisted of collecting the most recent available traffic data, adjusting the data for peak season conditions and heavy vehicle composition, and then performing operational link, intersection, ramp, and freeway analyses. The analysis of the existing conditions also addressed crash and pedestrian activity within the study area.

4.1 Data Sources

4.1.1 Existing Traffic Count Data from Primary Sources

Traffic counts were obtained from FDOT, Flagler County, and the City of Palm Coast. Available 24-hour and/or 48-hour bi-directional traffic counts in 15-minute intervals obtained from FDOT and County stations, primary and secondary source, are included in Appendix III.

Year 2007 24-hour or 48-hour bi-directional machine counts were obtained from FDOT for 13 locations shown in Figure 4-1 and listed in Appendix I. Traffic data from 2008 were obtained from the City of Palm Coast for 37 locations and are also shown in Figure 4-1 and listed in Appendix I.

4.1.2 2009 Traffic Data from Secondary Sources

Additional 24-hour bi-directional machine counts at 15-minute intervals and/or 72-hour vehicle classification data were collected on typical weekdays during a five-day workweek (Tuesday, Wednesday and Thursday) during the months of February and March 2009 on roadway segments within the AOI. The count program included 31 locations depicted on Figure 4-2 and listed in Appendix III.

4.1.3 Intersection Turning Movement Count Data from Secondary Sources

Intersection turning movement data were collected in February and March 2009. The data collection consisted of three days of peak hour turning movement counts at each intersection extending from 7:00-9:00AM and 4:00-6:00PM. The count program included a total of 16 intersections within the AOI listed as follows:

- I-1: US-1 and County Road 20;
- I-2: US-1 and Faver Dykes Road;
- I-3: Matanzas Woods Parkway and Belle Terre Parkway;

- I-4: Matanzas Woods Parkway and Bird of Paradise Drive;
- I-5: Matanzas Woods Parkway and Old Kings Road;
- I-6: Palm Coast Parkway EB and Belle Terre Parkway;
- I-7: Palm Coast Parkway WB and Belle Terre Parkway;
- I-8: Palm Coast Parkway EB and Pine Cone Drive;
- I-9: Palm Coast Parkway WB and Pine Cone Drive;
- I-10: Palm Coast Parkway and Cypress Point Parkway;
- I-11: Palm Coast Parkway and Old Kings Road;
- I-12: Palm Coast Parkway EB and Town Center Drive;
- I-13: Palm Coast Parkway WB and Town Center Drive;
- I-14: Palm Coast Parkway EB and Florida Park Drive;
- I-15: Palm Coast Parkway WB and Florida Park Drive; and
- I-16. Matanzas Woods Parkway and US-1.

These intersections are also depicted on Figure 4-2. The intersection count summaries are included in Appendix III.

4.1.4 Traffic Characteristics Data

The following traffic data, found in Appendix III, were collected to obtain information related to the area geometric and travel characteristics:

- Pedestrian volumes were obtained during the intersection counts;

- Truck percentages for operations analyses were obtained from FDOT (2007 FTI) and vehicle classification counts;

- Peak season factors (SF), peak season conversion factors (PSCF), and axle factors were obtained from FDOT (2007 FTI);

- Existing intersection geometry, storage lane lengths and speed limits within the study area were verified by Keith and Schnars and are depicted on Figure 4-3; and

- Signal timing information was obtained from Flagler County and the City of Palm Coast. The signal timing sheets are provided in Appendix III.

4.1.5 Crash Data

The most recent five years (2003 – 2007) of crash data in the study area was collected from FDOT District 5. Crash data from January 2006 through mid-November 2008 was obtained from the Flagler County Sheriff's Office. The analysis of the crash data will be used to identify any current safety issues that may be addressed through future geometric configurations. The crash data sheets used in the analysis are provided in Appendix IV.

4.2 Existing Operating Conditions

4.2.1 2009 Traffic Conditions and Static Link Analysis

The estimated 2009 Annual Average Daily Traffic (AADT) derived from the secondary traffic data sources (Flagler County) are presented in Figure 4-4. These volumes reflect the adjustment of the 2009 daily volumes through the application of season factors and axle factors as found in FDOT's 2007 FTI database. Figure 4-5 demonstrates the corresponding 2009 AM and PM peak hour directional volumes. An assessment of the 2009 AADT and AM and PM peak directional volumes as depicted in Figure 4-5 indicated that all of the roadway links operate at acceptable conditions with volumes that are less than the corresponding maximum service volumes.

4.2.2 Intersection Analysis

The existing conditions intersection operational analyses were performed using HCS 2000 for unsignalized intersections, and SYNCHRO was used for signalized intersections.

4.2.2.1 Peak Hour Factor (PHF)

The intersection peak hour factors were calculated by averaging the peak hour factors derived from the three days of traffic counts at each study intersection. The existing peak hour factors (PHF) for both AM and PM peak hours are contained in Appendix V. Each PHF was applied to the existing conditions analysis. A limiting value of 0.95 was applied to locations where the average PHF produced a higher value.

4.2.2.2 2009 Peak Hour Volumes

The 2009 intersection turning movement count volumes were adjusted using FDOT peak seasonal factors from the 2007 FTI. The resulting 2009 AM and PM intersection turning movement volumes are shown in Figure 4-6. Detailed intersection worksheets are contained in Appendix V.

The base year 2009 AM and PM peak hour intersection analysis results using HCS 2000 for unsignalized intersections and SYNCHRO for signalized intersections are summarized in Table 4-1. The 95th queue percentile for the intersection's turn lanes are summarized in Appendix V.

The intersection analyses accounted for the AM and PM peak hour truck percentages as provided in Appendix V. The minimum truck percentage applied at each intersection was 2 percent. The intersection level of service output sheets are presented in Appendix VI.

Table 4-1
2009 AM and PM Peak Hour Intersection Level of Service Summary

Intersection		AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
I-1	US-1 and CR 204 (US)	14.5	B	16.3	C
I-2	US-1 and Faver Dykes Rd (US)	14.3	B	14.1	B
I-3	Matanzas Woods Pkwy and Belle Terre Pkwy (US)	35.8	E	16.7	C
I-4	Matanzas Woods Pkwy and Bird Of Paradise Dr (US)	13.0	B	11.2	B
I-5	Matanzas Woods Pkwy and Old Kings Rd (US)	10.1	B	10.2	B
I-6	Palm Coast Pkwy EB and Belle Terre Pkwy (SIG)	36.5	D	26.6	C
I-7	Palm Coast Pkwy WB and Belle Terre Pkwy (SIG)	35.3	D	36.9	D
I-8	Palm Coast Pkwy EB and Pine Cone Dr (SIG)	17.1	B	13.6	B
I-9	Palm Coast Pkwy WB and Pine Cone Dr (SIG)	9.3	A	16.5	B
I-10	Palm Coast Pkwy and Cypress Point Pkwy (SIG)	34.6	C	49.9	D
I-11	Palm Coast Pkwy and Old Kings Rd (SIG)	127.3	F	161.8	F
I-12	Palm Coast Pkwy EB and Harbor Center Way (NS)	13.0	B	14.0	B
I-13	Palm Coast Pkwy WB and Harbor Center Way (SIG)	7.7	A	11.2	B
I-14	Palm Coast Pkwy EB and Florida Park Dr (SIG)	4.9	A	5.8	A
I-15	Palm Coast Pkwy WB and Florida Park Dr (SIG)	16.4	B	19.6	B
I-16	US-1 and Matanzas Woods Pkwy (NS)	18.4	C	20.5	C
I-17	US-1 and I-95 South Ramps (NS)	9.5	A	16.3	C
I-18	US-1 and I-95 North Ramps (NS)	15.4	C	10.6	B
I-19	Palm Coast Pkwy and I-95 West Ramps (SIG)	55.4	E	31.9	C
I-20	Palm Coast Pkwy and I-95 East Ramps (SIG)	19.2	B	31.4	C

NOTES: (SIG) Signalized Intersection (NS) Non-Signalized Intersection

[1] Synchro analyses applied for signalized intersections. HCS analyses applied for non-signalized intersections.

[2] For Stop controlled intersections, worse level of service and vehicle delay of the stop controlled approach is shown.

4.2.2.3 AM Peak Hour Analysis

The operational analysis identified the following intersections to be operating at LOS E during the AM peak hour:

- Matanzas Woods Parkway and Belle Terre Parkway (Un-signalized, "T" intersection); and
- I-95 and Palm Coast Parkway Interchange west ramp (signalized).

The operational analysis identified the following intersection to be operating at LOS F during the AM peak hour:

- Palm Coast Parkway and Old Kings Road (Signalized).

4.2.2.4 PM Peak Hour Analysis

The operational analysis identified the following intersection to be operating at LOS F during the PM peak hour:

- Palm Coast Parkway and Old Kings Road (Signalized);

4.2.3 I-95 Ramp Volumes and Analysis

Base year 2009 AADT and AM and PM peak hour volumes at the two existing I-95 interchanges (US-1 and Palm Coast Parkway) are summarized in Table 4-2. The northbound off-ramp and the southbound on-ramp at Palm Coast Parkway have the highest daily ramp volumes with 7,263 daily vehicles and 8,809 daily vehicles, respectively.

The merge and diverge ramp operational analyses were conducted based on the procedures presented in the Highway Capacity Manual (HCM) through the application of Highway Capacity Software (HCS).

Table 4-3 presents the levels of service for each of the interchange ramps. As shown in the table, all of the ramps operate at LOS B. The ramp level of service output sheets are presented in Appendix VII. There are no weave segments on I-95 between US-1 and Palm Coast Parkway interchange ramps since they are separated by 8.6 miles.

4.2.4 I-95 Freeway Analysis

An analysis of the I-95 freeway section within the AOI was performed based on the HCM procedures. Table 4-4 presents the results of the analysis based on passenger cars per mile per lane and by direction and freeway segment.

Overall, the existing I-95 freeway operates at LOS of A and B throughout the entire length of the study area. The freeway facility analysis output sheets are presented in Appendix VIII.

Table 4-2
2009 Daily, AM and PM Peak Hour Ramp Volumes

Ramp Location	Dir.	Number of Lanes	Adopted LOS	2009 Average Annual Daily Traffic	Peak Season Conversion Factor [1]	Axle Factor [1]	AM Peak Hour		PM Peak Hour	
							Peak Hour Directional Raw Counts [2]	Peak Season Directional Volume [3]	Peak Hour Directional Raw Counts [2]	Peak Season Directional Volume [3]
I-95 AND US-1 RAMPS										
NORTHBOUND OFF RAMP	NB	1-LANE	D	2,364	1.01	0.95	163	156	195	187
NORTHBOUND ON RAMP	NB	1-LANE	D	2,863	1.01	0.95	419	402	133	128
SOUTHBOUND OFF RAMP	SB	1-LANE	D	2,260	1.01	0.95	97	93	354	340
SOUTHBOUND ON RAMP	SB	1-LANE	D	2,204	1.01	0.95	217	208	163	156
I-95 AND PALM COAST PARKWAY RAMPS										
NORTHBOUND OFF RAMP	NB	1-LANE	D	7,263	0.99	0.94	477	444	914	851
NORTHBOUND ON RAMP	NB	1-LANE	D	3,171	1.01	0.95	292	280	177	170
SOUTHBOUND OFF RAMP	SB	1-LANE	D	2,292	1.01	0.95	112	107	246	236
SOUTHBOUND ON RAMP	SB	1-LANE	D	8,809	1.01	0.95	948	910	753	723

NOTES:
[1] Peak Season Conversion Factors (PSCF) and Axle Factors obtained from Florida Department of Transportation databases as presented in Appendix III.
[2] Ramp volumes presented in Appendix III.
[3] Adjusted volumes determined through application of PSCF and Axle Factors.

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Table 4-3
2009 AM and PM Peak Hour Ramp Analysis

I-95 Interchanges	Ramps [1]	2009 Existing			
		AM Peak Hour		PM Peak Hour	
		Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
US-1	NB Off-Ramp	14.2	B	14.0	B
	NB On-Ramp	12.0	B	10.7	B
	SB Off-Ramp	12.3	B	13.9	B
	SB On-Ramp	11.3	B	11.8	B
Matanzas Woods Pkwy	NB Off-Ramp	N/A	N/A	N/A	N/A
	NB On-Ramp	N/A	N/A	N/A	N/A
	SB Off-Ramp	N/A	N/A	N/A	N/A
	SB On-Ramp	N/A	N/A	N/A	N/A
Palm Coast Pkwy	NB Off-Ramp	15.2	B	18.9	B
	NB On-Ramp	11.7	B	11.2	B
	SB Off-Ramp	12.5	B	14.0	B
	SB On-Ramp	17.5	B	16.7	B

NOTES:

[1] Consistent with the HCM procedures, adjacent ramps were considered where the distance between ramps is less than 6,000 feet.

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Table 4-4
2009 AM and PM Freeway (I-95) Analysis Based on HCS

Segment Number	Segment Type	Segment Length\ (FT)	Destination	2009 Existing			
				AM Peak Hour		PM Peak Hour	
				Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I-95 NORTHBOUND DIRECTION							
1	Basic	2000	I-95	9.1	A	11.4	B
2	Off Ramp	1500	Palm Coast Pkwy Off Ramp	12.0	B	14.7	B
3	Basic	4400	I-95	6.8	A	7.2	A
4	On Ramp	1500	Palm Coast Pkwy On Ramp	10.5	B	10.3	B
5	Basic	9750	I-95	8.2	A	8.1	A
6	Basic	9750	I-95	8.2	A	8.1	A
7	Basic	9750	I-95	8.2	A	8.1	A
8	Basic	9750	I-95	8.2	A	8.1	A
9	Off Ramp	1500	US 1 Off Ramp	11.3	B	11.1	B
10	Basic	3400	I-95	7.5	A	7.2	A
11	On Ramp	1500	US 1 On Ramp	12.0	B	9.7	A
12	Basic	2000	I-95	9.7	A	7.8	A
I-95 SOUTHBOUND DIRECTION							
1	Basic	2000	I-95	7.2	A	8.0	A
2	Off Ramp	1500	US 1 Off Ramp	9.9	A	10.9	B
3	Basic	3400	I-95	6.8	A	6.4	A
4	On Ramp	1500	US 1 On Ramp	10.1	B	9.3	A
5	Basic	9750	I-95	8.0	A	7.1	A
6	Basic	9750	I-95	8.0	A	7.1	A
7	Basic	9750	I-95	8.0	A	7.1	A
8	Basic	9750	I-95	8.0	A	7.1	A
9	Off Ramp	1500	Palm Coast Pkwy Off Ramp	10.5	B	9.6	A
10	Basic	4400	I-95	7.4	A	6.0	A
11	On Ramp	1500	Palm Coast Pkwy On Ramp	14.9	B	12.5	B
12	Basic	2000	I-95	12.2	B	9.6	A

4.3 Crash Data Analysis

Table 4-5 and Figure 4-7 present the crash information recorded along segments of the main arterials and I-95 within the AOI between 2003 and 2008. Appendix IV provides a breakdown of the crashes by type along each of the roadway segments. Information of crash type was not provided in the crash database.

As shown in Table 4-5, during the five-year period of January 2003 through December 2007, the segment of I-95 between Palm Coast Parkway and US-1 experienced approximately 317 crashes that included 278 injuries and 10 fatalities. The majority of the crashes, 248 crashes or 78.2 percent of the injuries and fatalities occurred between 2004 and 2006. The most typical crash type was rear-ends totaling 54.5 percent of the crashes. The construction work to widen I-95 along this segment during the same period may have been a contributing factor in the increase of crashes.

Table 4-5
Number of Crashes, Injuries, and Fatalities on Roadway Segments

Roadway		Number of Crashes							Number of Injuries							Number of Fatalities						
From	To	2003	2004	2005	2006	2007	2008[1]	Total	2003	2004	2005	2006	2007	2008[1]	Total	2003	2004	2005	2006	2007	2008[1]	Total
DATA OBTAINED FROM THE OFFICE OF THE FLAGLER COUNTY SHERIFF																						
PALM COAST PARKWAY																						
US-1	Pine Lakes Pkwy	N/A	N/A	N/A	11	5	14	30	N/A	N/A	N/A	N/A	N/A	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pine Lakes Pkwy	Belle Terre Pkwy	N/A	N/A	N/A	17	29	63	109	N/A	N/A	N/A	N/A	N/A	16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Belle Terre Pkwy	Cypress Point Pkwy	N/A	N/A	N/A	1	1	38	40	N/A	N/A	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cypress Point Pkwy	Old Kings Rd	N/A	N/A	N/A	82	33	42	157	N/A	N/A	N/A	N/A	N/A	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Old Kings Rd	Clubhouse Dr	N/A	N/A	N/A	0	0	1	1	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Clubhouse Dr	Palm Harbor Dr	N/A	N/A	N/A	0	1	2	3	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Palm Harbor Dr	A1A	N/A	N/A	N/A	0	0	0	0	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL ANNUAL CRASHES		**N/A**	**N/A**	**N/A**	**111**	**69**	**160**	**340**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**33**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
MATANZAS WOODS PARKWAY																						
US-1	Belle Terre Pkwy	N/A	N/A	N/A	1	2	1	4	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Belle Terre Pkwy	Bird of Paradise Dr	N/A	N/A	N/A	0	0	2	2	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bird of Paradise Dr	Old Kings Rd	N/A	N/A	N/A	0	0	1	1	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL ANNUAL CRASHES		**N/A**	**N/A**	**N/A**	**1**	**2**	**4**	**7**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
DATA OBTAINED FROM FDOT DISTRICT V																						
U.S. 1																						
County Road 205	Faver Dykes Rd	13	9	7	12	9	N/A	50	17	8	4	14	6	N/A	49	0	0	0	1	0	N/A	1
TOTAL ANNUAL CRASHES		**13**	**9**	**7**	**12**	**9**	**N/A**	**50**	**17**	**8**	**4**	**14**	**6**	**N/A**	**49**	**0**	**0**	**0**	**1**	**0**	**N/A**	**1**
I-95								0														
Palm Coast Pkwy	Milepost 18.729	33	52	72	79	29	N/A	265	47	57	72	47	12	N/A	235	0	4	3	2	0	N/A	9
Milepost 0	U.S. 1	6	14	14	21	5	N/A	60	3	10	9	20	2	N/A	44	0	1	0	0	0	N/A	1
TOTAL ANNUAL CRASHES		**39**	**66**	**86**	**100**	**34**	**N/A**	**325**	**50**	**67**	**81**	**67**	**14**	**N/A**	**279**	**0**	**5**	**3**	**2**	**0**	**N/A**	**10**

NOTE:
[1] 2008 DATA AVAILABLE FROM JANUARY TO MID NOVEMBER

The section of Palm Coast Parkway between US-1 and Old Kings Highway had a recorded total of 336 crashes between 2006 and November 2008. A large portion of these crashes, 157 crashes or 46.1 percent occurred along the segment between Cypress Point Parkway and Old Kings Road, the I-95 interchange area. Most of the crashes were rear-ends, often related to signalized intersections.

The segment of Palm Coast Parkway between Belle Terre Parkway and Cypress Point Parkway experienced a significant increase in crashes in 2008 (no specific breakdown of crash type or explanation was provided in the database.

Table 4-6 and Figure 4-7 present the crash information recorded at the intersections within the AOI between January 2006 and November 2008. These crashes are in addition to those recorded along the roadway segments.

Appendix IV contains a breakdown of the crashes by type at each of the intersections. As evidenced from the crash data, the intersections along Palm Coast Parkway between US-1 and Cypress Point Parkway had a total of 288 crashes with the largest proportion being rear-end crashes. The largest numbers of crashes, 150 crashes, were recorded at the intersection with Cypress Point Parkway.

Table 4-7 shows the comparison between the calculated 2007 crash rate and the statewide average for similar facilities.

A summary of crash types on roadway segments is presented in Table 4-9 (page 4-20).

Table 4-6
Number of Crashes, Injuries, and Fatalities at Intersections

Intersection	Number of Crashes					Number of Injuries				Number of fatalities				Crash Rate
	2003--2005	2006	2007	[2] 2008	Total	2003--2005	2006--2007	[2] 2008	Total	2003--2005	2006--2007	[2] 2008	Total	
DATA OBTAINED FROM COUNTY SHERIFF OFFICE														RATE
PALM COAST PARKWAY														
Belle Terre Pkwy	N/A	27	34	33	94	N/A	N/R	8	N/A	N/A	N/R	0	N/A	2.36
Pine Cone Dr [1]	N/A	13	16	15	44	N/A	N/R	2	N/A	N/A	N/R	0	N/A	1.31
Cypress Point Pkwy/Boulder Rock Dr. [1]	N/A	53	63	34	150	N/A	N/R	10	N/A	N/A	N/R	0	N/A	3.60
Old Kings Rd	N/A	0	0	0	0	N/A	N/R	0	N/A	N/A	N/R	0	N/A	N/A
Town Center Dr	N/A	0	0	0	0	N/A	N/R	0	N/A	N/A	N/R	0	N/A	N/A
Florida Park Dr	N/A	0	0	0	0	N/A	N/R	0	N/A	N/A	N/R	0	N/A	N/A
TOTAL ANNUAL CRASHES	**N/A**	**93**	**113**	**82**	**288**	**N/A**	**N/R**	**20**	**N/A**	**N/A**	**N/R**	**0**	**N/A**	
MATANZAS WOODS PARKWAY														
US-1	N/A	5	6	12	23	N/A	N/R	8	N/A	N/A	N/R	0	N/A	1.40
Belle Terre Pkwy	N/A	6	3	1	10	N/A	N/R	0	N/A	N/A	N/R	0	N/A	1.07
Bird of Paradise Dr. [1]	N/A	1	1	2	4	N/A	N/R	0	N/A	N/A	N/R	0	N/A	0.55
Old Kings Rd	N/A	0	1	2	3	N/A	N/R	0	N/A	N/A	N/R	0	N/A	0.53
TOTAL ANNUAL CRASHES	**N/A**	**12**	**11**	**17**	**40**	**N/A**	**N/R**	**8**	**N/A**	**N/A**	**N/R**	**0**	**N/A**	

NOTE:
[1] AADT TO CALCULATE THE CRASH RATE WAS DERIVED BY APPLYING THE EXISTING PM PEAK HOUR TO DAILY RATIO (9.0%) TO THE INBOUND N/S INTERSECTION TURNING MOVEMENTS.
[2] 2008 DATA AVAILABLE FROM JANUARY TO MID NOVEMBER
N/A -- Data not made available. "-" = Number not recorded on data sheets.

Table 4-7
Crash Rates

Intersection	2007 Crash Rate	2007 State Crash Rate
PALM COAST PARKWAY		
Belle Terre Pkwy	2.36	0.75
Pine Cone Dr	1.31	0.75
Cypress Point Pkwy/Boulder Rock Dr.	3.60	0.46
Old Kings Rd	N/A	N/A
Town Center Dr	N/A	N/A
Florida Park Dr	N/A	N/A
MATANZAS WOODS PARKWAY		
US-1	1.40	0.28
Belle Terre Pkwy	1.07	0.28
Bird of Paradise Dr.	0.55	0.28
Old Kings Rd	0.53	0.28

4.4 Pedestrians

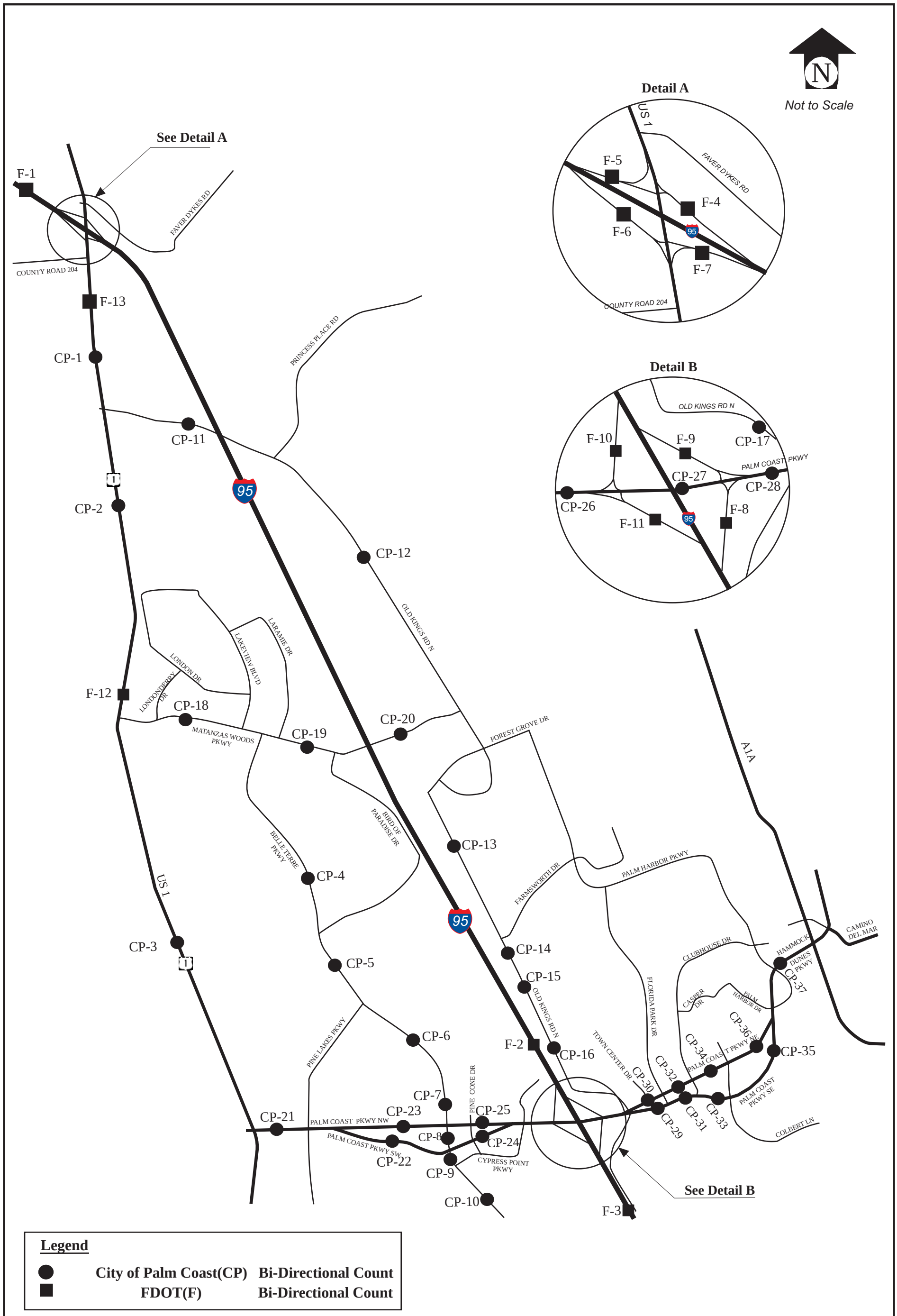
A summary of the AM and PM peak hour pedestrian volumes at 16 of the AOI intersections is presented in Table 4-8. The results indicate that the total pedestrian peak hour volume at each intersection is typically equal to or less than four persons per hour, indicating that minimum accommodation for pedestrians in the operational analyses is sufficient.

4.5 Existing Environmental Constraints

There were no environmental fatal flaws identified in the screening-level analysis for either interchange configuration, a wide diamond, or a partial cloverleaf.

Table 4-8
2009 AM and PM Peak Number of Pedestrians Crossing at Intersections

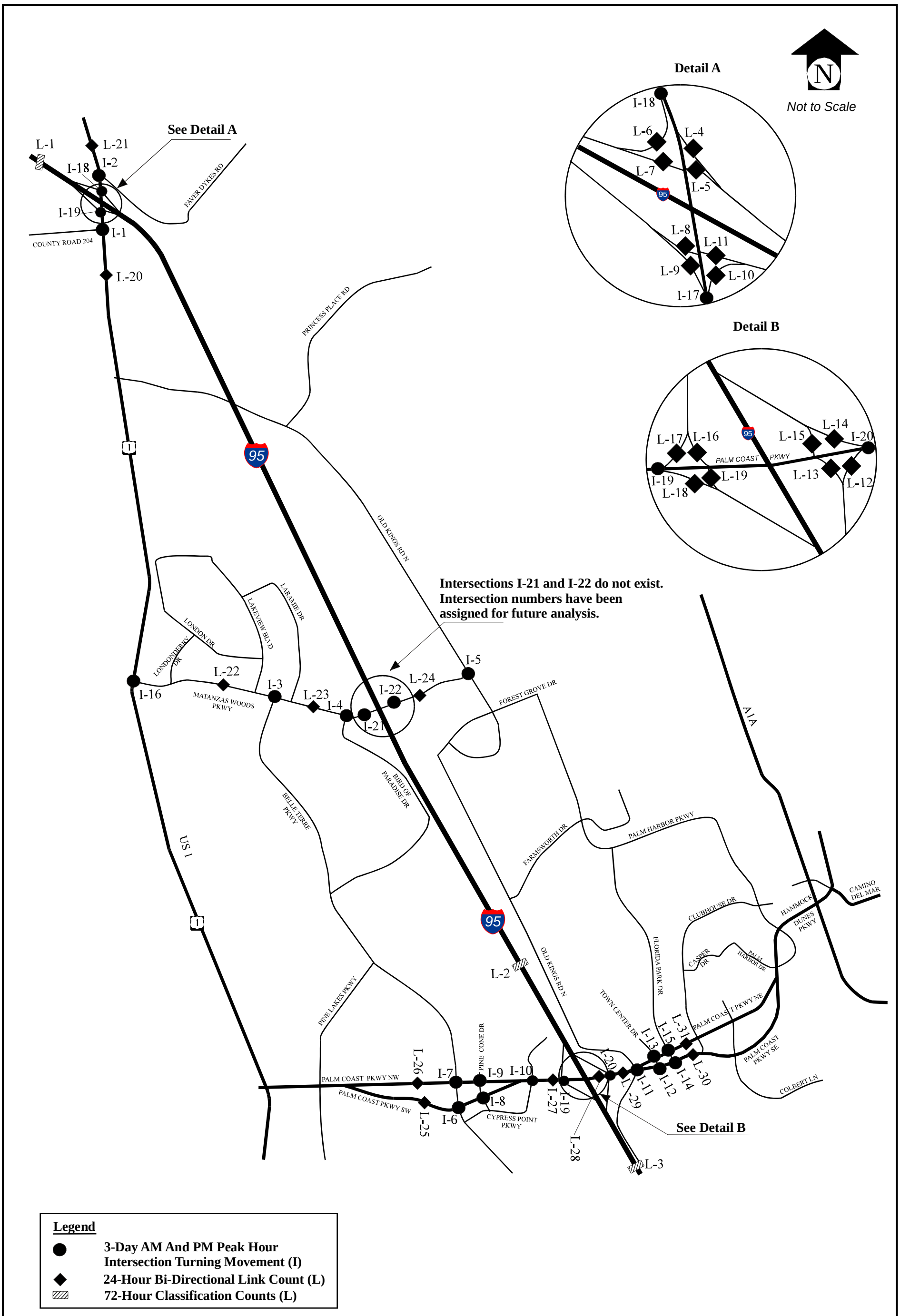
Intersection	AM Peak Hour Pedestrians				PM Peak Hour Pedestrians			
	Day 1	Day 2	Day 3	Average	Day 1	Day 2	Day 3	Average
I-1 US-1 AND CR 204	0	0	0	0	0	0	0	0
I-2 US-1 AND FAVER DYKES RD	0	0	0	0	0	0	0	0
I-3 MATANZAS WOODS PKWY AND BELLE TERRE PKWY	0	0	0	0	3	1	0	1
I-4 MATANZAS WOODS PKWY AND BIRD OF PARADISE DR	0	1	1	1	0	2	5	2
I-5 MATANZAS WOODS PKWY AND OLD KINGS RD	3	2	1	2	1	3	2	2
I-6 PALM COAST PKWY EB AND BELLE TERRE PKWY	0	1	1	1	2	2	2	2
I-7 PALM COAST PKWY WB AND BELLE TERRE PKWY	1	4	0	2	8	4	0	4
I-8 PALM COAST PKWY EB AND PINE CONE DR	2	1	0	1	2	1	2	2
I-9 PALM COAST PKWY WB AND PINE CONE DR	0	1	0	0	2	0	3	2
I-10 PALM COAST PKWY AND CYPRESS POINT PKWY	4	2	1	2	4	3	4	4
I-11 PALM COAST PKWY AND OLD KINGS RD	0	1	0	0	2	3	2	2
I-12 PALM COAST PKWY EB AND HARBOR CENTER WAY	0	0	0	0	0	1	0	0
I-13 PALM COAST PKWY WB AND HARBOR CENTER WAY	1	1	1	1	1	2	5	3
I-14 PALM COAST PKWY EB AND FLORIDA PARK DR	0	0	0	0	0	0	0	0
I-15 PALM COAST PKWY WB AND FLORIDA PARK DR	2	4	3	3	1	1	4	2
I-16 US-1 AND MATANZAS WOODS PKWY	0	0	0	0	0	0	0	0



I-95 and Matanzas Woods Parkway Interchange Justification Report

Primary Source Traffic Counts Locations

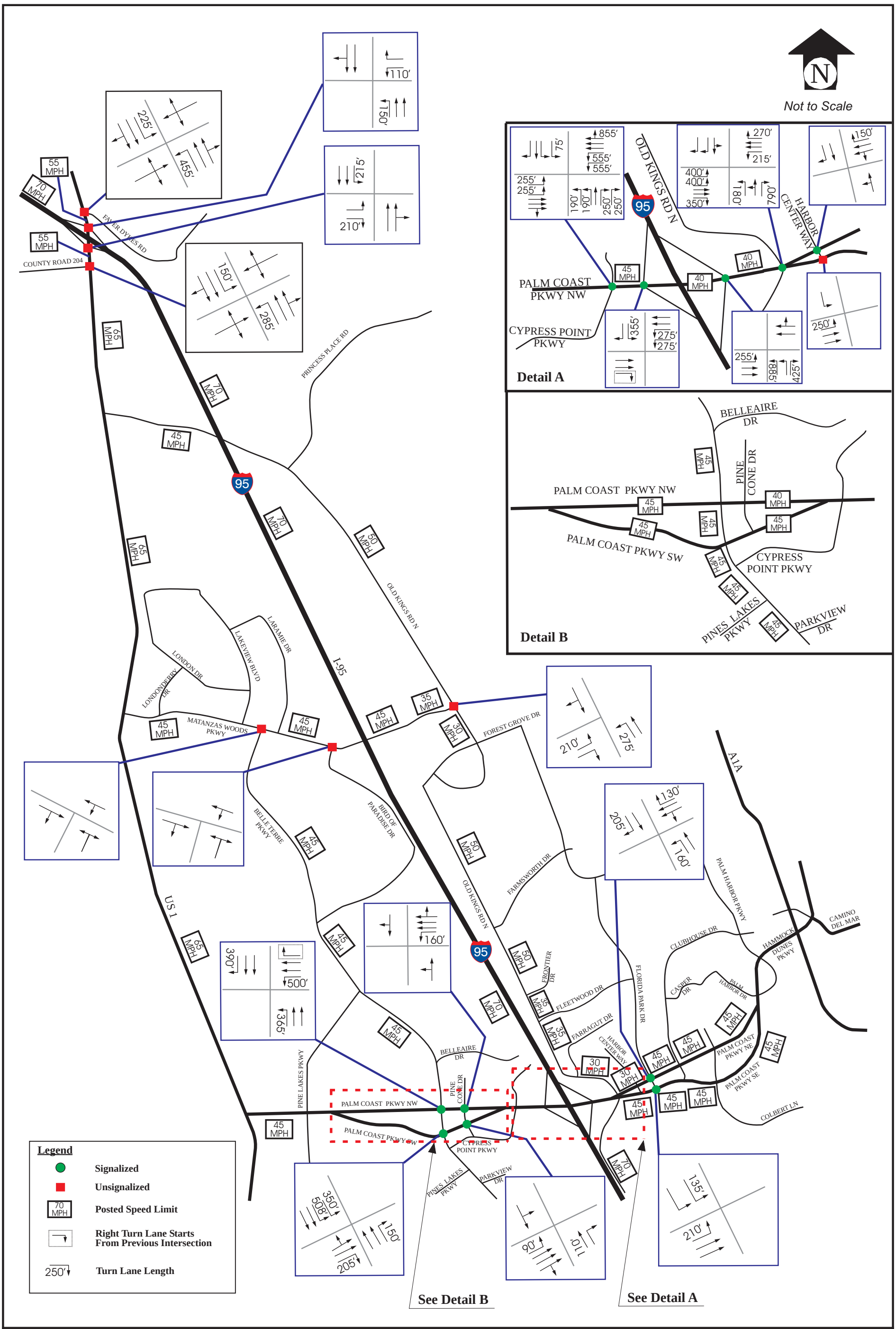
Figure 4-1



I-95 and Matanzas Woods Parkway Interchange Justification Report

Secondary Source Traffic Counts Locations

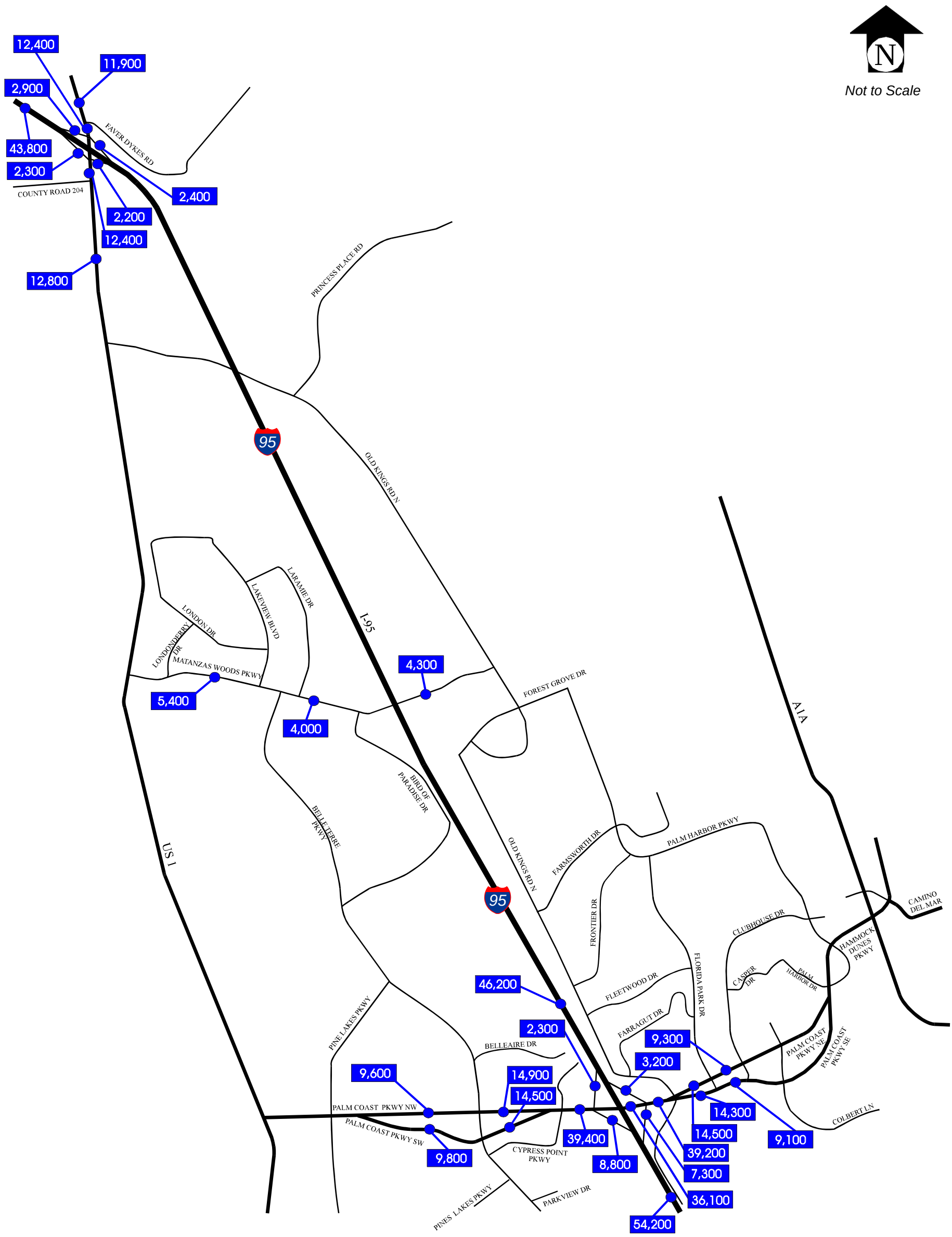
Figure 4-2



I-95 and Matanzas Woods Parkway Interchange Justification Report

Existing Intersection Geometry

Figure 4-3



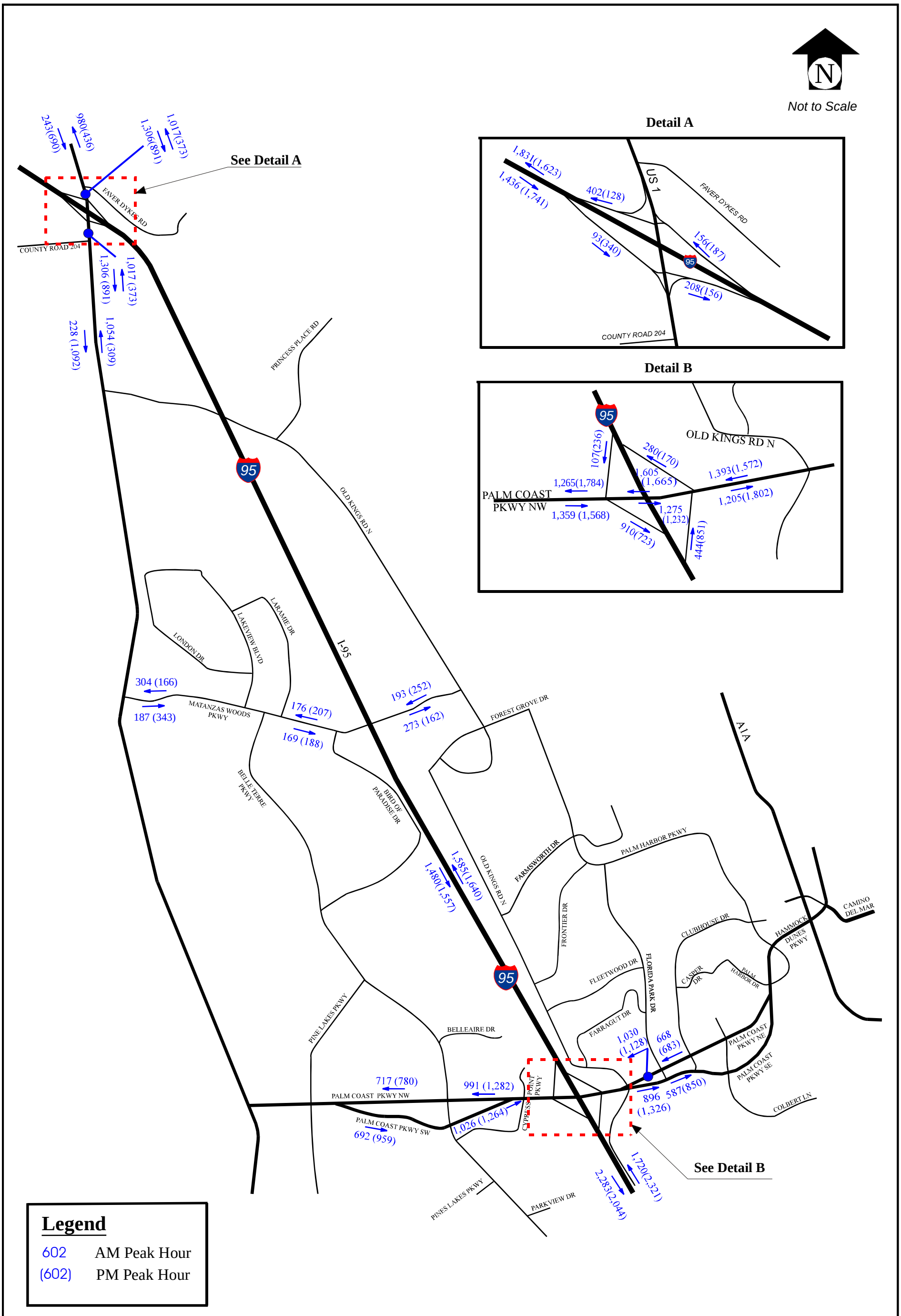
Legend

1,800 AADT

I-95 and Matanzas Woods Parkway Interchange Justification Report

2009 Annual Average Daily Traffic

Figure 4-4



I-95 and Matanzas Woods Parkway Interchange Justification Report

2009 AM and PM Peak Hour Directional Volumes

Figure 4-5

U.S. 1 and CR 204

I-1

22(100)
189(775)
1(1)
1(1)
1(1)
1(1)
141(32)
1(1)
24(41)
23(42)
612(228)
1(1)

US-1 and Faver Dykes Road

I-2

1(3)
225(650)
4(12)
11(5)
1(2)
18(22)
3(1)
1(1)
7(5)
8(14)
554(292)
20(21)

Matanzas Woods Pkwy and Belle Terre Pkwy

I-3

160(84)
164(120)
102(118)
71(152)
131(119)
144(149)

Matanzas Woods Pkwy and Bird of Pradise Drive

I-4

159(173)
46(60)
193(158)
21(46)
46(27)
73(48)

Matanzas Woods Pkwy and Old Kings Rd

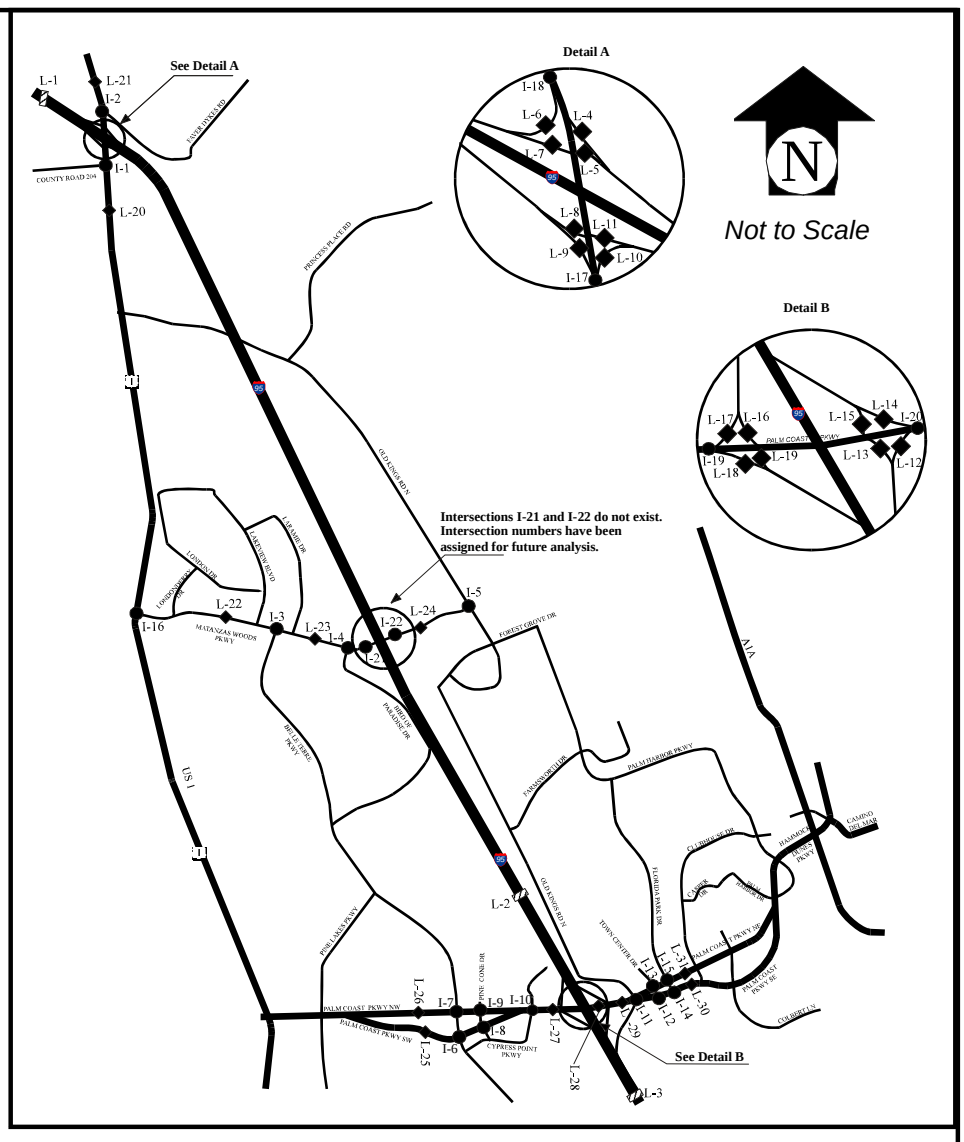
I-5

7(8)
21(115)
9(2)
204(201)
231(227)
123(36)

Palm Coast Pkwy EB and Belle Terre Pkwy

I-6

369(685)
383(348)
69(176)
553(718)
100(275)
382(542)
504(300)



Palm Coast Pkwy WB and Belle Terre Pkwy

I-7

69(84)
526(600)
224(550)
523(586)
223(449)
150(223)
221(477)

Palm Coast Pkwy EB and Pine Cone Dr

I-8

145(121)
103(102)
99(89)
1,061(1,123)
99(96)
55(92)
127(109)

Palm Coast Pkwy WB and Pine Cone Dr

I-9

19(33)
54(72)
35(25)
920(1,487)
124(114)
69(156)
43(32)

Palm Coast Pkwy and Cypress Point Pkwy

I-10

79(133)
37(91)
115(162)
116(201)
933(1,163)
310(598)
83(126)
1,023(1,050)
105(204)
62(197)
55(106)
440(515)

Palm Coast Pkwy and Old Kings Rd

I-11

407(448)
85(86)
55(99)
65(89)
748(926)
101(92)
390(586)
750(1,099)
195(231)
179(197)
56(96)
110(118)

Palm Coast Pkwy EB and Harbor Center Way

I-12

37(62)
103(160)
896(1,099)

Palm Coast Pkwy WB and Harbor Center Way

I-13

79(128)
31(68)
84(110)
975(993)
2(1)
6(2)
80(157)

Palm Coast Pkwy EB and Florida Park Dr

I-14

102(150)
146(373)
523(677)

Palm Coast Pkwy WB and Florida Park Dr

I-15

289(277)
98(143)
79(157)
623(529)
2(8)
11(9)
141(384)

U.S. 1 and Matanzas Woods Pkwy

I-16

119(431)
36(234)
197(27)
134(65)
413(196)
50(143)

U.S. 1 and I-95 South Ramps

I-17

127(541)
122(156)
8(11)
85(329)
667(260)
86(1)

U.S. 1 and I-95 North Ramps

I-18

19(15)
231(662)
138(153)
18(35)
383(112)
292(159)

Palm Coast Pkwy and I-95 West Ramps

I-19

52(107)
56(130)
1,004 (1,489)
601(406)
1,219(1,410)
309(317)

Palm Coast Pkwy and I-95 East Ramps

I-20

133(81)
1,324(1,490)
147(89)
1,128(1,451)
281(405)
163(445)

Legend

Intersection Number — XX

SB: Right, Thru, Left

WB: Right, Thru, Left

EB: Left, Thru, Right

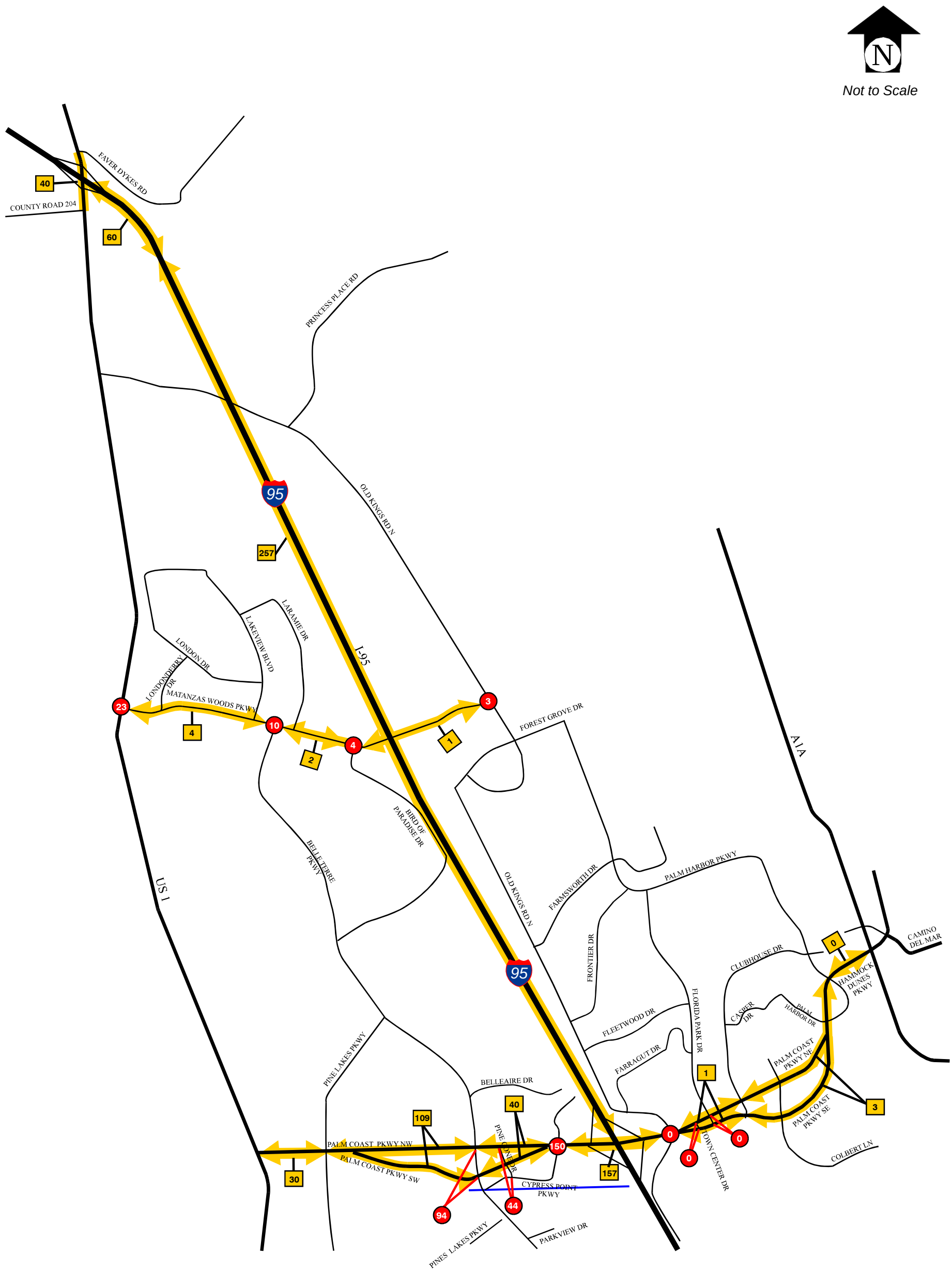
NB: Left, Thru, Right

XX(XX) AM(PM)

I-95 and Matanzas Woods Parkway Interchange Justification Report

2009 AM and PM Peak Hour Intersection Turning Movement Volumes

Figure 4-6



Legend

- XX — Number of Crashes at Intersection (2003 - 2008)
- XX — Number of Crashes on Roadway Segment (I-95 and Us-1: 2003 - 2007. All Others: January 2006 - November 2008)

I-95 and Matanzas Woods Parkway Interchange Justification Report

Crash Data

Figure 4-7

Table 4-9
Summary of Crash Types at Roadway Segments

FROM	TO	NUMBER OF CRASHES					
PALM COAST PARKWAY							
US-1	**PINE LAKES PKWY**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
CRASH TYPE	Rear-End	N/A	N/A	N/A	3	1	N/S
	Left-Turn	N/A	N/A	N/A	0	1	N/S
	Sideswipe	N/A	N/A	N/A	1	0	N/S
	Collision with Animal	N/A	N/A	N/A	0	1	N/S
	Hit Sign/SignPost	N/A	N/A	N/A	2	1	N/S
	Ran In Ditch/Culvert	N/A	N/A	N/A	1	0	N/S
	Overturned	N/A	N/A	N/A	0	1	N/S
	Other (Not Described)	N/A	N/A	N/A	4	0	14
	NUMBER OF CRASHES	**N/A**	**N/A**	**N/A**	**11**	**5**	**14**
PINE LAKES PKWY	**BELLE TERRE PKWY**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
CRASH TYPE	Rear-End	N/A	N/A	N/A	3	9	N/S
	Angle	N/A	N/A	N/A	3	6	N/S
	Left-Turn	N/A	N/A	N/A	6	6	N/S
	Sideswipe	N/A	N/A	N/A	1	4	N/S
	Backed Into	N/A	N/A	N/A	0	1	N/S
	Coll.W/MV on Roadway	N/A	N/A	N/A	2	0	N/S
	Coll.W/Pedestrian	N/A	N/A	N/A	0	1	N/S
	Coll. W/Fixed Objects Avobe the Road	N/A	N/A	N/A	0	1	N/S
	Other (Not Described)	N/A	N/A	N/A	2	1	63
	NUMBER OF CRASHES	**N/A**	**N/A**	**N/A**	**17**	**29**	**63**
BELLE TERRE PKWY	**CYPRESS POINT PKWY**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
TYPE	Sideswipe	N/A	N/A	N/A	1	1	N/S
	Other (Not Described)	N/A	N/A	N/A	0	0	38
	NUMBER OF CRASHES	**N/A**	**N/A**	**N/A**	**1**	**1**	**38**
CYPRESS POINT PKWY	**OLD KINGS RD**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
CRASH TYPE	Rear-End	N/A	N/A	N/A	56	22	N/S
	Angle	N/A	N/A	N/A	2	5	N/S
	Left-Turn	N/A	N/A	N/A	0	1	N/S
	Sideswipe	N/A	N/A	N/A	4	0	N/S
	Backed Into	N/A	N/A	N/A	2	0	N/S
	Coll.W/MV on Roadway	N/A	N/A	N/A	2	0	N/S
	Coll.W/Bicycle	N/A	N/A	N/A	0	1	N/S
	Hit Guardrail	N/A	N/A	N/A	1	0	N/S
	Hit Conc. Barrier Wall	N/A	N/A	N/A	1	0	N/S
	Occupant Fell From Veh	N/A	N/A	N/A	1	0	N/S
	Other (Not Described)	N/A	N/A	N/A	13	4	42
	NUMBER OF CRASHES	**N/A**	**N/A**	**N/A**	**82**	**33**	**42**
OLD KINGS RD	**CLUBHOUSE DR**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
	Other (Not Described)	N/A	N/A	N/A	0	0	1
	NUMBER OF CRASHES	**N/A**	**N/A**	**N/A**	**0**	**0**	**1**
CLUBHOUSE DR	**PALM HARBOR DR**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
TYPE	Angle	N/A	N/A	N/A	0	1	N/S
	Other (Not Described)	N/A	N/A	N/A	0	0	2
	NUMBER OF CRASHES	**N/A**	**N/A**	**N/A**	**0**	**1**	**2**
PALM HARBOR DR	**A1A**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
	No Crashes	N/A	N/A	N/A	0	0	0
	NUMBER OF CRASHES	**N/A**	**N/A**	**N/A**	**0**	**0**	**0**

Table 4-9 (Continued)
Summary of Crash Types at Roadway Segments

MATANZAS WOODS PARKWAY							
US-1	**BELLE TERRE PKWY**	2003	2004	2005	2006	2007	2008
TYPE	Angle	N/A	N/A	N/A	0	1	N/S
	Ran In Ditch/Culvert	N/A	N/A	N/A	0	1	N/S
	Other (Not Described)	N/A	N/A	N/A	1	0	1
	NUMBER OF CRASHES	**N/A**	**N/A**	**N/A**	**1**	**2**	**1**
BELLE TERRE PKWY	**BIRD OF PARADISE DR**	2003	2004	2005	2006	2007	2008
	Other (Not Described)	N/A	N/A	N/A	0	0	2
	NUMBER OF CRASHES	**N/A**	**N/A**	**N/A**	**0**	**0**	**2**
BIRD OF PARADISE DR	**OLD KINGS RD**	2003	2004	2005	2006	2007	2008
	Other (Not Described)	N/A	N/A	N/A	0	0	1
	NUMBER OF CRASHES	**N/A**	**N/A**	**N/A**	**0**	**0**	**1**
U.S. 1							
COUNTY ROAD 204	**FAVER DYKES RD**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
CRASH TYPE	Rear-End	2	2	1	1	4	N/A
	Angle	6	3	2	6	2	N/A
	Left-Turn	2	0	0	1	1	N/A
	Right Turn	0	1	0	0	1	N/A
	Sideswipe	1	2	2	1	0	N/A
	Hit Sign/SignPost	0	0	0	1	0	N/A
	Hit Guardrail	0	1	0	0	0	N/A
	Hit Tree/Shruberry	1	0	0	0	0	N/A
	Cargo Loss or Shift	0	0	1	0	0	N/A
	MedianCrossover	0	0	0	0	1	N/A
	Other (Not Described)	1	0	1	2	0	N/A
	NUMBER OF CRASHES	**13**	**9**	**7**	**12**	**9**	**N/A**
I-95							
PALM COAST PKWY	**MILEPOST 18.129**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
CRASH TYPE	Rear-End	16	34	40	38	15	N/A
	Head-On	1	0	3	1	1	N/A
	Angle	0	0	0	1	2	N/A
	Left-Turn	0	0	2	0	0	N/A
	Right Turn	9	11	20	22	7	N/A
	Sideswipe	2	3	1	5	0	N/A
	Coll. W/Parked Car	0	0	1	0	0	N/A
	Hit Guardrail	1	0	0	3	1	N/A
	Hit fence	0	0	0	0	1	N/A
	Hit Conc. Barrier Wall	0	1	0	3	0	N/A
	Hit Tree/Shruberry	1	1	1	0	0	N/A
	Coll. W/Moveable Object on the Road	0	0	0	3	0	N/A
	Ran In Ditch/Culvert	0	0	2	1	0	N/A
	Overturned	1	0	1	0	0	N/A
	Jackknifed	0	1	0	0	0	N/A
	MedianCrossover	0	1	0	0	0	N/A
	Other (Not Described)	2	0	1	2	2	N/A
	NUMBER OF CRASHES	**33**	**52**	**72**	**79**	**29**	**N/A**
MILEPOST 0	**US-1**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
CRASH TYPE	Rear-End	1	2	7	7	0	N/A
	Head-On	0	1	0	0	0	N/A
	Angle	0	0	0	1	1	N/A
	Sideswipe	2	0	3	5	2	N/A
	Collision with Animal	0	0	1	0	0	N/A
	Utility/Light Pole	0	1	0	1	0	N/A
	Hit Guardrail	2	4	0	2	1	N/A
	Hit Conc. Barrier Wall	0	0	1	3	0	N/A
	Hit Bridge/Pier/Abutment/Rail	0	1	0	0	0	N/A
	Coll. W/Moveable Object on the Road	1	2	0	0	0	N/A
	Ran In Ditch/Culvert	0	1	0	0	1	N/A
	Overturned	0	0	1	0	0	N/A
	Other (Not Described)	0	2	1	2	0	N/A
	NUMBER OF CRASHES	**6**	**14**	**14**	**21**	**5**	N/A

5.0 NEED

5.1 Evacuation

The genesis of this interchange proposal dates back to 1998 when wildfires in the area highlighted a need for improved access to I-95 to facilitate evacuation. This wildfire destroyed 71 homes, damaged another 175 homes, and burned over 131 square miles. These fires are not rare events in Flagler County. A major fire in 1985 spread through Bunnell, Palm Coast, and Korona, destroying 131 homes and damaging another 200 homes. After the 1998 fires, evacuation planning by county officials began to focus on an additional access to I-95 at Matanzas Woods Parkway. As a result, the Florida Department of Transportation (FDOT) conducted a study in 2000 titled *Transportation Planning Analysis for Potential I-95 Interchange in Flagler County*[1], which included as one of its study alternatives an interchange at this location. That study documented the congestion that could result within Flagler County if evacuation was required due to an imminent Class 3, 4 or 5 hurricane. The study further concluded that while a formal interchange study was not recommended at that time, that the Matanzas Woods Parkway overpass be completed at a minimum, and that the location be monitored for future study.

5.2 System Linkage and Growth

There is a significant amount of large scale development that has been approved and continues to be planned within the cities of Palm Coast and Bunnell in the proposed interchange AOI and vicinity, which will put a significant burden on the regional roadway system, and more importantly on the existing interchange of Palm Coast Parkway and I-95. The most significant future development is generally located along US-1 between Palm Coast Parkway and the St. Johns County border.

A total of three approved DRI projects are within the immediate AOI; the Palm Coast Park DRI, the Old Brick Township DRI, and the Hammock Dunes DRI. The Palm Coast Park DRI and Old Brick Township DRI are along and west of US-1 within the eight miles between Palm Coast Parkway and the St. Johns County border. These two developments will generate substantial traffic volumes from the combined 8,600 residential units, 1.7 million square feet of retail space, 850,000 square feet of office space, and 1.9 million square feet of industrial space. The Hammock Dunes DRI is located to the east and will contain 3,800 residential units, 5 million square feet of hotel/recreational facilities and over 400 acres of golf courses. The locations of the two major developments found in the immediate AOI are shown on Figure 3-1 in

[1] Transportation Planning Analysis for Potential I-95 Interchange in Flagler County, Technical Memorandum, Florida Department of Transportation, District Five, Leftwich Consulting Engineers, Inc., September 21, 2000.

Chapter 3 of this report. Matanzas Woods Parkway will extend west across US-1 into these developments and connection to I-95 is a logical system linkage between local roads and the interstate system.

5.3 Benefit to Existing Roadways and Interchanges

The interchange termini from I-95 at Palm Coast Parkway currently operate near or at capacity. The planned development in this area will continue to add traffic to this interchange and potentially the interchange at US-1 to the north. While improvements have been programmed at Palm Coast Parkway and US-1, these do not offset the impacts of the planned area development. A second study by FDOT District 5 in 2006 *Final Matanzas Woods Parkway Interchange Feasibility Study,* prepared as part of the I-95 System Operational Analysis Report (SOAR) concluded that an interchange could be built at Matanzas Woods Parkway and have a beneficial impact on area roadways including Palm Coast Parkway with no adverse affect to mainline I-95.

The interchange proposal is also at a logical location with respect to future planning. It is approximately midpoint between the existing interchanges at Palm Coast Parkway and US-1 where future interchange access to I-95 will most likely occur based on interchange spacing and linkage to both existing and future roadway networks.

6.0 ALTERNATIVES

The future alternatives analyses consist of a No Build and Build scenario for the proposed interchange at I-95 and Matanzas Woods Parkway. The addition of the interchange is the only change made to the alternatives; all other data files and network assumptions remained the same. These two alternatives were evaluated for Opening Year 2015, Interim Year 2025, and Design Year 2035.

Matanzas Woods Parkway is a two lane roadway under the jurisdiction of the City of Palm Coast and crosses I-95 with a two lane bridge that was completed in 2007. Right-of-way has been acquired for a wide diamond configuration in all four quadrants of the bridge crossing. The IJR evaluates two interchange configurations; a wide diamond, and a partial cloverleaf with loop ramps in the northeast and northwest quadrants of the interchange. A wide diamond was carried through the alternatives analyses since it allows for all movements and as such the forecasts for the No Build and Build alternatives would not change throughout the AOI other than the turning movements at the interchange ramps. Each interchange configuration is evaluated in detail in the *Alternatives Analysis.*

Both interchange designs allow maintaining the two lane Matanzas Woods Parkway bridge over I-95 for the initial opening year (2015) and changes to a four lane road and bridge for 2025 and 2035 since the widening is a development order commitment.

6.1 Build Alternative Configurations

6.1.1 Wide Diamond

The wide diamond configuration, depicted on Figure 6-1 allows the I-95 entry and exit ramps in all four quadrants to remain within the available right-of-way, measuring approximately 44.6 acres. Both ramp intersections were evaluated with traffic signal control for all three future analysis years. Lane arrangements used in the analysis for the wide diamond are depicted on Figure 6-2.

The construction cost for the wide diamond configuration is estimated as follows:

Matanzas Woods Parkway Mainline	$5,090,000 (2015)
Ramps and I-95 Work	$5,400,000 (2015)
Bridge	$1,420,000 (2025)
TOTAL	$11,910,000

Note: cost in 2009 dollars.

6.1.2 Partial Cloverleaf

The partial cloverleaf configuration, depicted on Figure 6-3 uses all of the right-of-way available in the northeast and northwest quadrants of the bridge crossing totaling 25.6 acres. An additional 3.4 acres of right of way is necessary to accommodate the northwest ramp, and 1.6 acres to accommodate the northeast ramp. This increases the total required right-of-way to 30.6 acres. The additional right-of-way requires a taking of 5.0 acres which will include at least five (5) existing single family residential dwellings. Both ramp intersections were evaluated with traffic signal control for all three future analysis years. Lane arrangements used in the analysis for the partial cloverleaf are depicted on Figure 6-2.

The construction cost for the partial cloverleaf configuration is estimated as follows:

Matanzas Woods Parkway Mainline	$5,090,000 (2015)
Ramps and I-95 Work	$6,520,000 (2015)
Bridge	$1,420,000 (2025)
TOTAL	$13,030,000

Note: cost in 2009 dollars.

6.2 Access Management

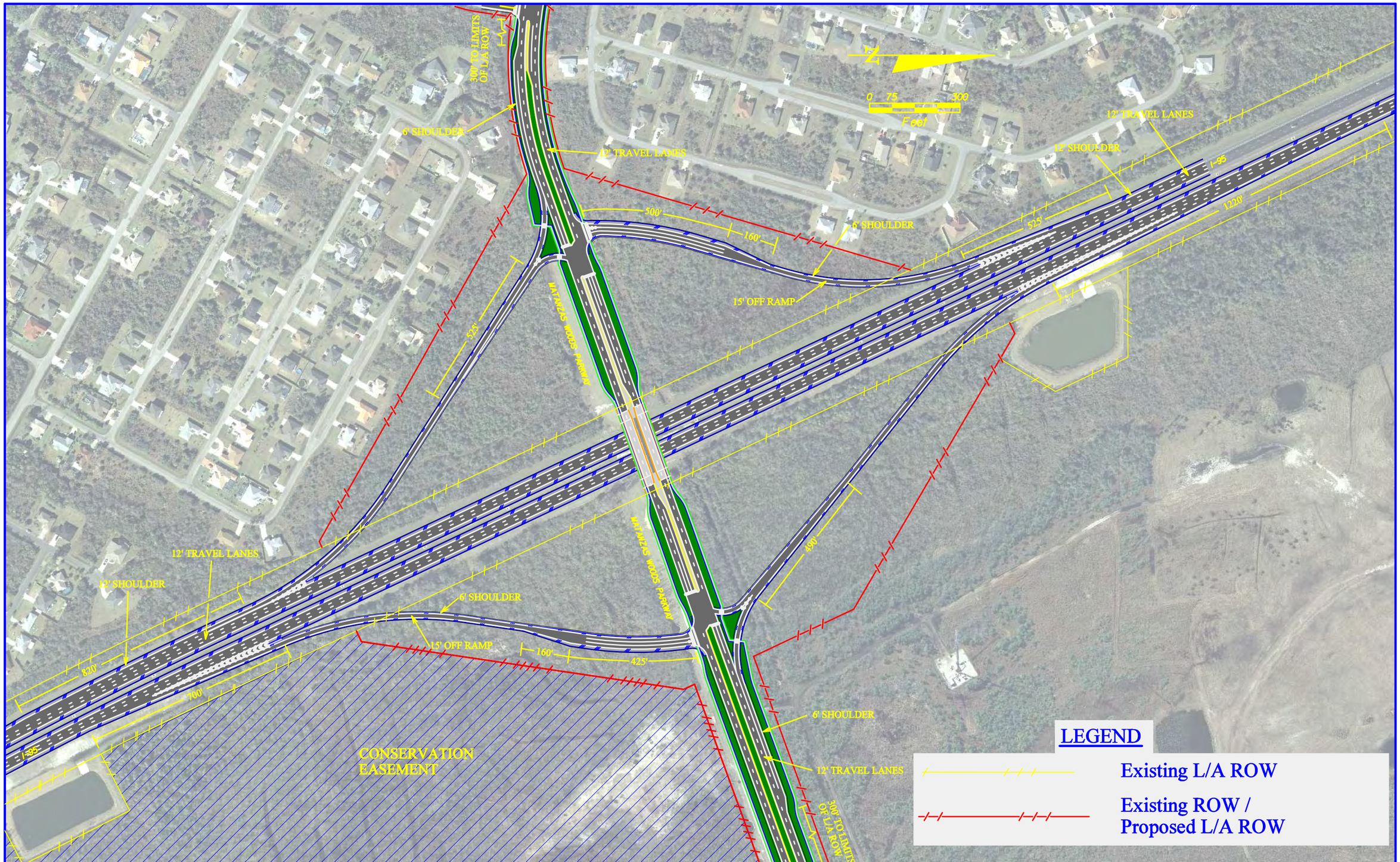
An Access Management Agreement may be required by FDOT during the final design and permit stage of the interchange approval. Since Matanzas Woods Parkway is not a state roadway, the interchange access management guidance provided in Chapter 14-97 F.A.C. can only be coordinated with the local government through an Access Management Agreement. The access guidelines set forth in Chapter 14-97 F.A.C. generally apply for 1,320 feet east and west of the ramp taper on the cross roads that extends furthest from the interchange as conceptually shown on Figure 6-1 and Figure 6-3.

6.3 Conceptual Signing Plan

Consistent with the requirements for interchange proposals as set forth in the FDOT Interchange Handbook, a conceptual signing plan for each design alternative is provided on Figure 6-4 for the wide diamond, and Figure 6-5 for the partial cloverleaf.

6.4 Alternative Modes, TDM and TSM

There is minimal transit service within the AOI that could relieve the existing LOS deficiencies at Palm Coast Parkway. The scale of planned and approved development along the west side of the AOI is likely to justify increased transit service in future years. However, even if such future transit service could cause significant trip reductions along these study roadways, which is not considered likely, the primary need for the interchange proposal is one of access to the interstate system for emergency evacuation. Transit service, TDM and TSM strategies cannot satisfy that need. As such, these strategies were not included as an alternative for evaluation.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

KEITH and SCHNARS, P.A.
ENGINEERS, PLANNERS, SURVEYORS
CERTIFICATE OF AUTHORIZATION NO. 1337
6500 N. Andrews Ave., Ft. Lauderdale, FL. 33309-2132 (954)776-1616

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

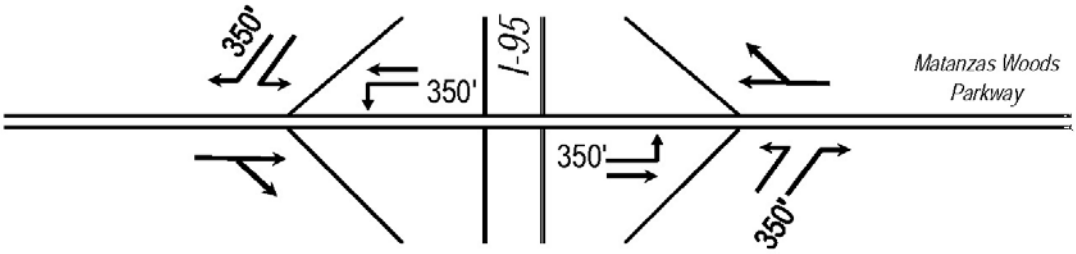
ROAD NO.	COUNTY	FINANCIAL PROJECT ID

SCHEMATIC DIAMOND INTERCHANGE CONFIGURATION ALTERNATIVE

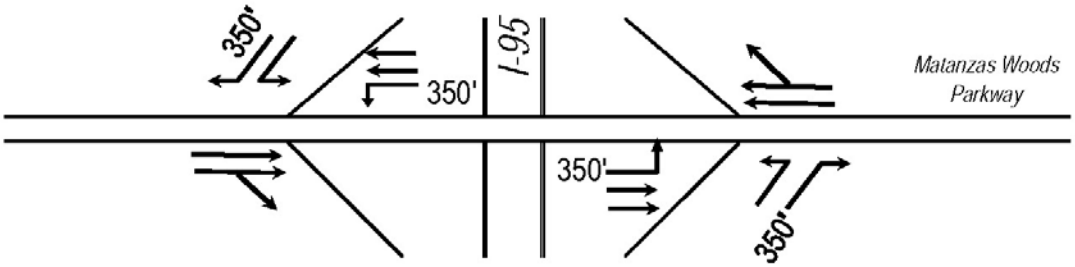
Figure 6-1 R

Wide Diamond Lane Configuration

Year 2015

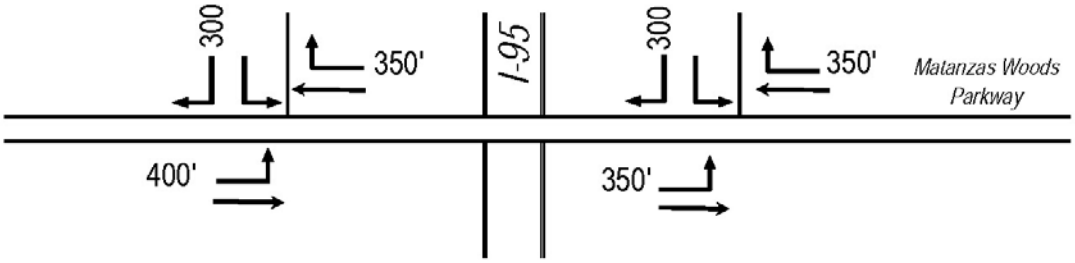


Years 2025 - 2035

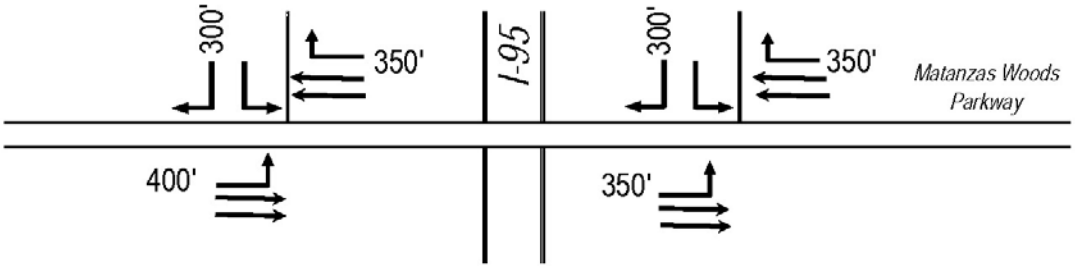


Partial Cloverleaf Lane Configuration

Year 2015



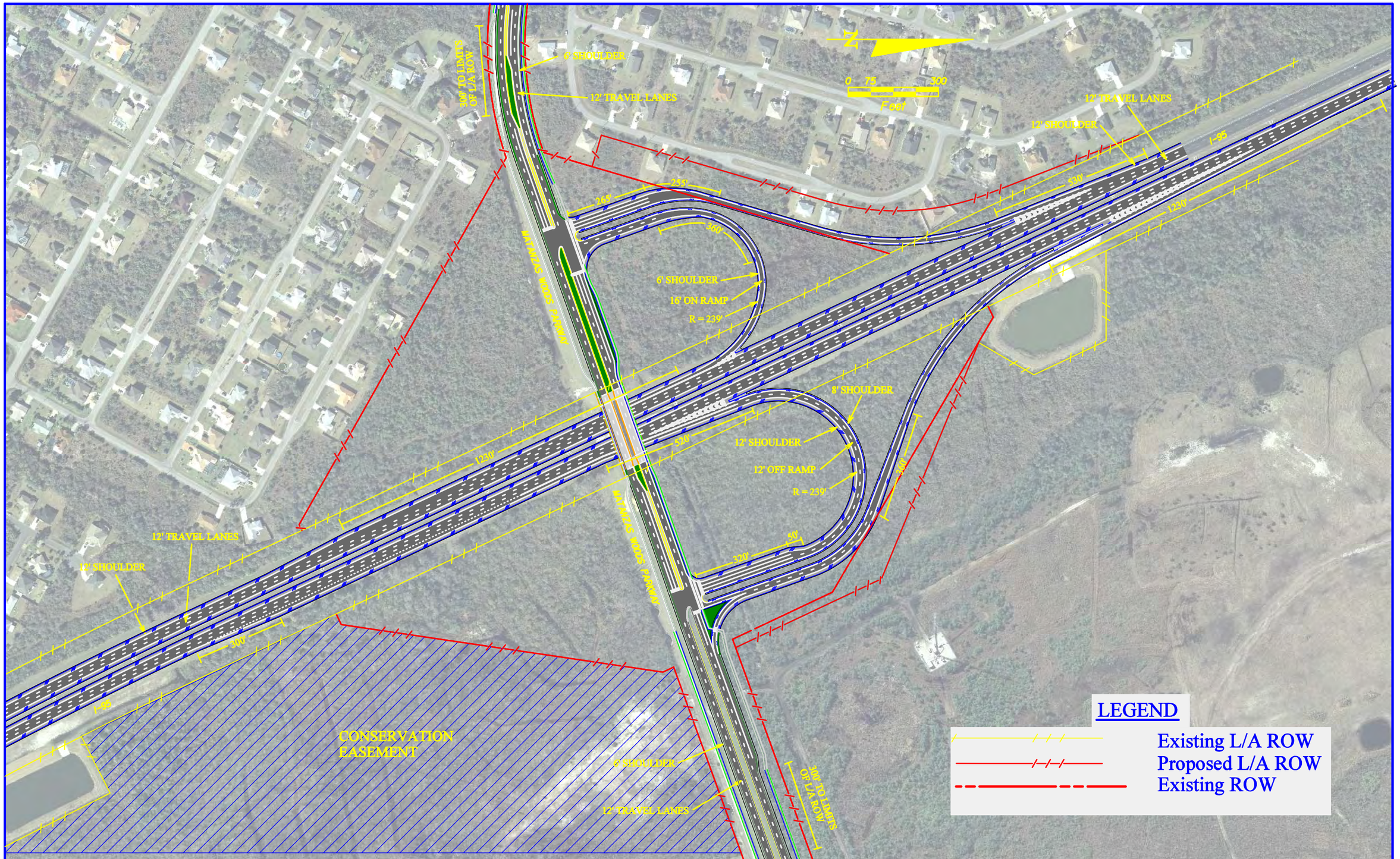
Years 2025 - 2035



I-95 and Matanzas Woods Parkway Interchange Justification Report

Lanes Interchange Configuration

Figure 6-2



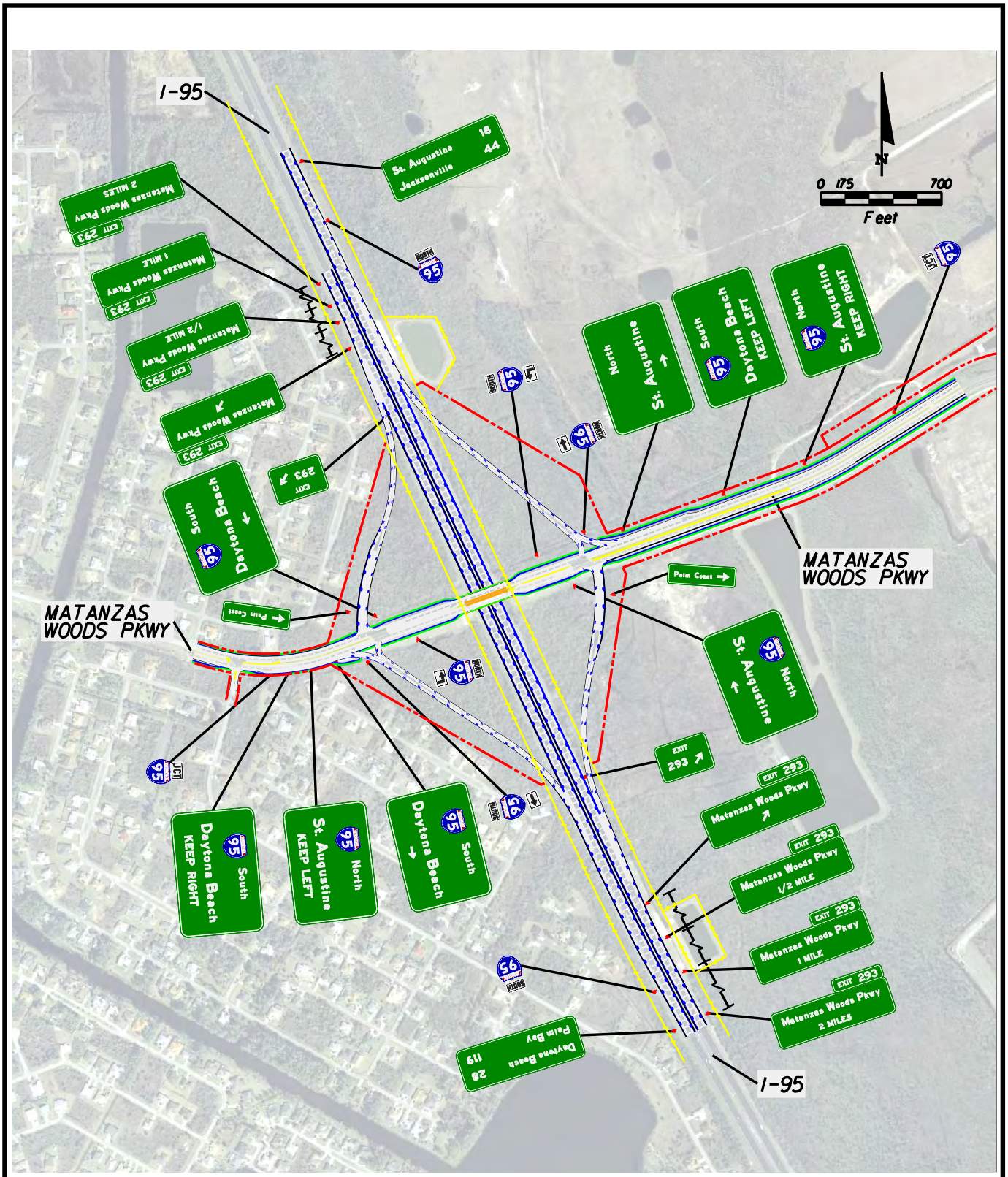
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

SCHEMATIC PARTIAL CLOVER INTERCHANGE CONFIGURATION ALTERNATIVE

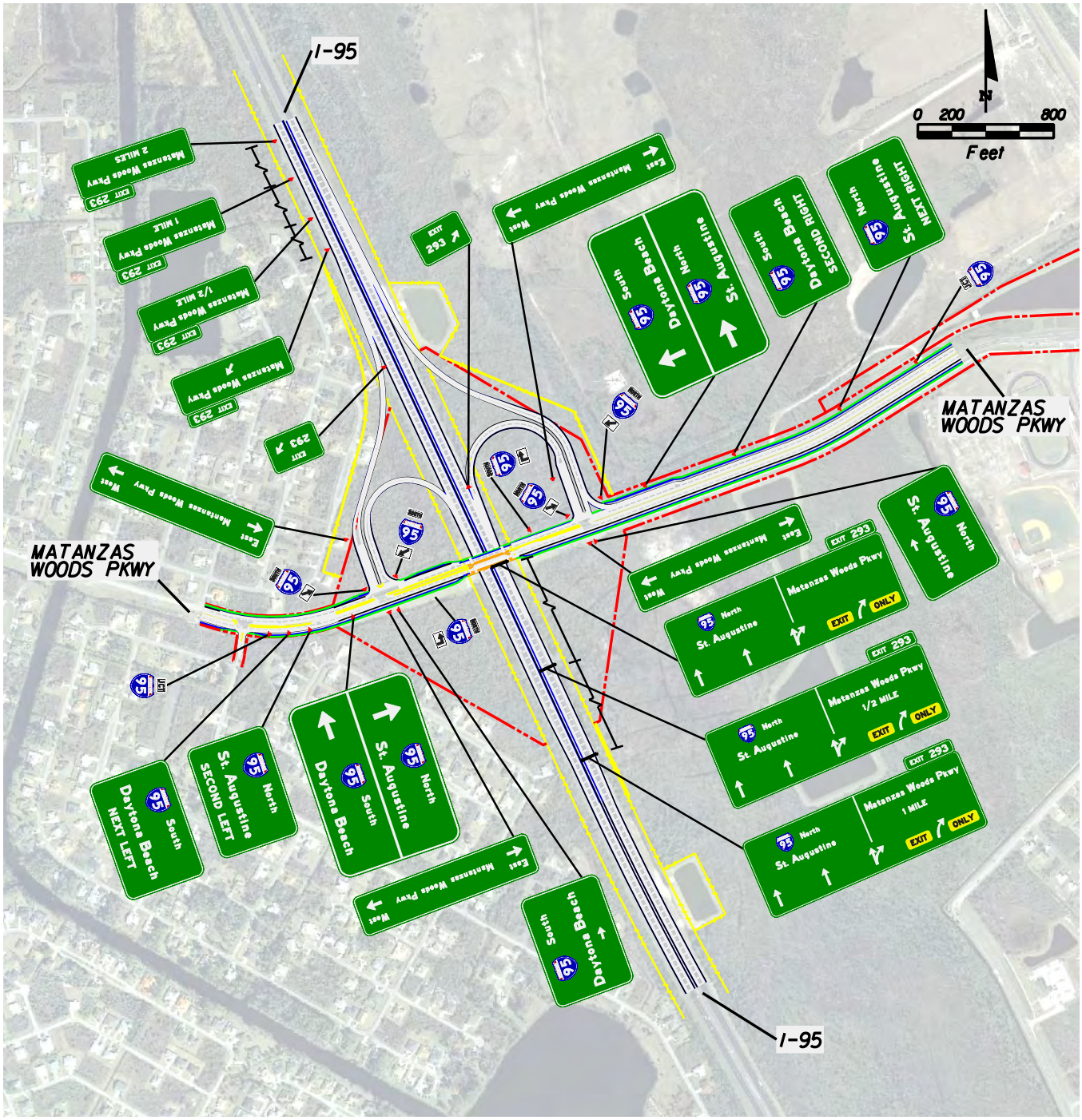
FIGURE 6-3 R



I-95 and Matanzas Woods Parkway Interchange Justification Report

Conceptual Signing Plan - Diamond Configuration

Figure 6-4



I-95 and Matanzas Woods Parkway Interchange Justification Report

Conceptual Signing Plan - Partial Cloverleaf Configuration

Figure 6-5

7.0 FUTURE YEAR TRAFFIC

The Central Florida Regional Planning Model (CFRPM Version 4.5) was used to develop daily traffic projections for the opening (2015), interim (2025) and design (2035) years. CFRPM 4.5 is a full conversion to the Cube/Voyager format of the CFRPM 4.1 model with the same 2000 validation year and 2025 future horizon year. The CFRPM 4.5 package also includes a 2012 model.

7.1 Sub-area Refinements

The base year 2008 roadway network was based on the validated 2000 CFRPM (Version 4.5). This roadway network was expanded to include the interchange of I-95 and US-1 which will be immediately north of the proposed Matanzas Woods Parkway interchange. The zonal data was adjusted to include new Traffic Analysis Zones (TAZ) representing large DRI projects located in the north section of Flagler County as well as the southern part of St. Johns County if they could impact the US-1 and I-95 interchange. These were developments that were approved or in advanced stages of development order review to account for the committed trips in the future volume forecasts, and not included in the 2000 CFRPM.

The study area boundary for the sub-area model refinement extends to I-95 and US-1 to the north, Palm Coast Parkway to the south, US-1 to the west and Old Kings Road to the east. It should be noted that the sub-area model refinement boundary includes Palm Coast Parkway extending to A1A. the sub area model refinement also included revising roadway number of lanes, reconfiguration of the intersection at Palm Coast Parkway and Cypress Point Parkway, revisions to facility Types and Area Types, and the addition/modification of Time Penalties and Turn Prohibitors, Speed and Capacity Tables and CFRPM K-Factors. During our preliminary evaluations, meetings with FDOT District 5 were initiated to discuss model assumptions and forecasts. The complete AOI Sub-area Refinement and Coordination memos and correspondence provided to FDOT District 5 and Central Office are contained in Appendix IX.

7.2 Annual Average Daily Traffic (AADT)

7.2.1 Opening Year 2015 and Interim Year 2025

The refined sub-area CFRPM was used to develop 2015 and 2025 Annual Average Daily Traffic (AADT) forecasts. AADT was derived by applying the Model Output Conversion Factor (MOCF) of 0.93 for the arterial roadways and 0.94 for I-95 to the Peak Season Weekday Average Daily Traffic (PSWADT). The resulting 2015 and 2025 CFRPM derived AADT for the major arterial roadways and I-95 were checked for

reasonableness and where deemed necessary, manually adjusted. All adjustments are documented in the *Sub-area Model Refinement/Adjustments* contained in Appendix IX.

7.2.2 Design Year 2035

The 2035 No Build and Build AADT were derived by applying a growth rate to the 2025 AADT that was derived by comparing the 2000 validated and 2025 cost feasible models. The result was a 2 percent per year growth rate. Several growth rate sources were reviewed to determine the most appropriate rate as follows:

- Historic growth rates between 1997 and 2008 data;
- Historic growth rates between 2004 and 2008 data;
- CFRPM growth rates between 2008 and 2025; and
- Growth rates based on the Bureau of Economic and Business Research (BEBR) population projections.

Consistent with the MLOU, the 2035 growth rate recommendations are presented separately for the I-95 mainline and the remainder of the study area. As indicated in Table 7-1, the historic and model growth rates are generally greater than the BEBR population projections.

Table 7-1
Growth Rate

ROADWAY	Historic Growth Rate 1997 - 2008	Historic Growth Rate 2004 - 2009	Model No Build Growth Rate 2008 - 2025	BEBR MEDIUM POP. Population Forecast (FDOT)		Recommended Growth Rate
				2008-2025	2025-2035	
US 1	4.18%	0.04%	4.92%			
Matanzas Woods Parkway	9.26%	15.38%	11.32%			
Palm Coast Parkway	3.67%	-0.66%	5.14%			
Areawide Average without Matanzas Woods Parkway =	3.79%	-0.29%	4.97%	3.89% (County)	2.48% (County)	2.00%
I-95 Mainline	2.32%	0.60%	3.41%	1.23% (State)	1.06% (State)	1.00%

Although the trend analyses between 1997 and 2008 show a high growth rate, the data between the most recent five years (2004 through 2008) shows that traffic has slightly decreased. Additionally, the 2025 model ZDATA1 population (164,200) is greater than the 2025 BEBR medium population (158,700), thus the growth rate would be lower than the 2.48% county-wide rate reported in Table 7-1. Therefore, a 2.0 percent per year growth rate is recommended to be applied to 2025 AADT to derive 2035 AADT. For I-95 through traffic, the 2004 through 2008 historic AADT traffic patterns indicate a growth rate of less than one percent per year. Although approved developments in Flagler County will contribute to the high growth rate determined using the model, the growth rate will likely diminish as the area starts reaching build-out, thus a 2 percent per year growth rate is also reasonable for I-95. The AADT are graphically presented in Figures 7-1 through 7-6. Worksheets for 2015, 2025 1and 2035 AADT for the No Build and Build forecast alternatives are contained in Appendix X.

Both historic and model derived growth rates are summarized in the November 5, 2009 memorandum included in Appendix X. The historic growth rate development output sheets are also included in Appendix X.

7.3 Directional Design Hour Volume

Directional Design Hour Volumes (DDHV) were derived by applying K_{30} and D_{30} factors to AADT. The K_{30} factor for I-95 and the arterial roadways are 9.7 and 10.2, respectively. The D_{30} factor for I-95 and the arterial roadways are 55.8 and 57.9, respectively. These factors were approved during the MLOU development (See Appendix I). The No Build DDHV for the arterial roadways and I- 95 are summarized in Tables 7-2 and 7-3, respectively. The Build DDHV for the arterial roadways and I- 95 are summarized in Tables 7-4 and 7-5, respectively. No Build and Build AM and PM peak hour directional volumes for I-95 and ramps are depicted on Figures 7-13 through 7-18.

7.4 Turning Movement Volumes

FDOT TURNS 5 was used to estimate future years AM and PM peak hour turning movement volumes. The daily turn volumes from the CFRPM at the proposed interchange intersections with Matanzas Woods Parkway were utilized to develop the percent turns to use as an input for TURNS 5. The turning movement volume estimates were checked for reasonableness and manually adjusted where necessary and appropriate. The No Build and Build AM and PM peak hour turning movement volumes for each analysis year are shown on Figures 7-7 and 7-8 for 2015, Figures 7-9 and 7-10 for (2025), and Figures 7-11 and 7-12 for 2035. A summary of each intersection LOS for the No Build and Build alternatives is provided in Tables 7-6, 7-7 and 7-8. The TURNS 5 output sheets and detailed intersection LOS summaries as well as queue summaries are included in Appendix XI. Future intersection lane arrangements are depicted in Figures 7-19 through 7-22.

Table 7-2
Arterial Directional Design Hour Volumes – No Build

ROADWAY		NO BUILD									
		AADT				AM Peak Hour			PM Peak Hour		
FROM	TO	2015	2025	2035	DIR	2015	2025	2035	2015	2025	2035
PALM COAST PARKWAY											
PINE LAKES PKWY	BELLE TERRE PKWY	27,000	34,600	42,200	EB	1,595	2,043	2,492	1,159	1,486	1,812
					WB	1,159	1,486	1,812	1,595	2,043	2,492
BELLE TERRE PKWY	PINE CONE DR	33,700	40,500	49,400	EB	1,990	2,392	2,917	1,447	1,739	2,122
					WB	1,447	1,739	2,122	1,990	2,392	2,917
PINE CONE DR	CYPRESS POINT PKWY	34,300	41,100	50,100	EB	2,026	2,427	2,959	1,473	1,765	2,151
					WB	1,473	1,765	2,151	2,026	2,427	2,959
CYPRESS POINT PKWY	I-95 INTERCHANGE	52,300	60,900	74,200	EB	3,089	3,597	4,382	2,246	2,615	3,186
					WB	2,246	2,615	3,186	3,089	3,597	4,382
I-95 INTERCHANGE	OLD KINGS RD	49,800	62,200	75,800	EB	2,941	3,673	4,477	2,139	2,671	3,255
					WB	2,139	2,671	3,255	2,941	3,673	4,477
OLD KINGS RD	TOWN CENTER DRIVE	38,600	51,700	63,000	EB	2,280	3,053	3,721	1,657	2,220	2,705
					WB	1,657	2,220	2,705	2,280	3,053	3,721
TOWN CENTER DRIVE	FLORIDA PARK DR	39,800	52,900	64,500	EB	2,351	3,124	3,809	1,709	2,272	2,770
					WB	1,709	2,272	2,770	2,351	3,124	3,809
FLORIDA PARK DR	CLUBHOUSE DR	36,700	46,200	56,300	EB	2,167	2,728	3,325	1,576	1,984	2,418
					WB	1,576	1,984	2,418	2,167	2,728	3,325
MATANZAS WOODS PARKWAY											
WEST OF US-1	US-1	3,700	18,300	22,300	EB	158	786	958	219	1,081	1,317
					WB	219	1,081	1,317	158	786	958
US-1	BELLE TERRE PKWY	7,600	21,100	25,700	EB	326	906	1,103	449	1,246	1,518
					WB	449	1,246	1,518	326	906	1,103
BELLE TERRE PKWY	BIRDS OF PARADISE DR	6,600	13,200	16,100	EB	283	566	691	390	780	951
					WB	390	780	951	283	566	691
BIRDS OF PARADISE DR	I-95 INTERCHANGE	5,100	11,100	13,500	EB	219	476	580	301	656	797
					WB	301	656	797	219	476	580
I-95 INTERCHANGE	OLD KINGS RD	5,100	11,100	13,500	EB	219	476	580	301	656	797
					WB	301	656	797	219	476	580
US-1											
FAVER DYKES RD	I-95 INTERCHANGE	14,700	19,000	23,200	NB	868	1,122	1,370	631	816	996
					SB	631	816	996	868	1,122	1,370
I-95 INTERCHANGE	CR 204	15,000	19,400	23,600	NB	886	1,146	1,394	644	833	1,013
					SB	644	833	1,013	886	1,146	1,394
CR 204	OLD KINGS RD	14,200	16,600	20,200	NB	839	980	1,193	609	713	867
					SB	609	713	867	839	980	1,193
OLD KINGS RD	MATANZAS WOODS PKWY	11,800	17,100	20,800	NB	697	1,010	1,228	507	734	894
					SB	507	734	894	697	1,010	1,228
MATANZAS WOODS PKWY	S OF MATANZAS WOODS PKWY	10,800	16,400	20,000	NB	638	969	1,181	464	704	859
					SB	464	704	859	638	969	1,181
US-1 AND I-95 RAMPS											
TO/FROM NORTH		6900	9700	12900	NB	296	416	554	408	573	762
					SB	408	573	762	296	416	554
TO/FROM SOUTH		10900	12800	15600	NB	468	550	670	644	756	921
					SB	644	756	921	468	550	670
MATANZAS WOODS PKWY AND I-95 RAMPS											
TO/FROM NORTH		0	0	0	NB	0	0	0	0	0	0
					SB	0	0	0	0	0	0
TO/FROM SOUTH		0	0	0	NB	0	0	0	0	0	0
					SB	0	0	0	0	0	0
PALM COAST PKWY AND I-95 RAMPS											
TO/FROM NORTH		11400	13000	15800	NB	490	558	679	673	768	933
					SB	673	768	933	490	558	679
TO/FROM SOUTH		16600	17400	21200	NB	713	747	910	980	1,028	1,252
					SB	980	1,028	1,252	713	747	910

Note: Directional Design Hour Volumes (DDHV) derived by applying K30=10.2% and D30=57.9%.

Table 7-3
I-95 Directional Design Hour Volumes – No Build

INTERSTATE 95		AADT				AM Peak Hour			PM Peak Hour		
From	To	2015	2025	2035	DIR	2015	2025	2035	2015	2025	2035
North of US-1	US-1	51,900	67,200	81,900	NB	2,225	2,881	3,511	2,809	3,637	4,433
					SB	2,809	3,637	4,433	2,225	2,881	3,511
US-1	Matanzas Woods Parkway	60,400	70,300	85,700	NB	2,590	3,014	3,674	3,269	3,805	4,639
					SB	3,269	3,805	4,639	2,590	3,014	3,674
Matanzas Woods Parkway	Palm Coast Parkway	60,400	70,300	85,700	NB	2,590	3,014	3,674	3,269	3,805	4,639
					SB	3,269	3,805	4,639	2,590	3,014	3,674
Palm Coast Parkway	South of Palm Coast Parkway	63,400	70,000	85,300	NB	2,718	3,001	3,657	3,432	3,789	4,617
					SB	3,432	3,789	4,617	2,718	3,001	3,657

Note: Directional Design Hour Volumes (DDHV) derived by applying K30=9.7% and D30=55.8%.

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Table 7-4
Arterial Directional Design Hour Volumes – Build

ROADWAY		BUILD									
		AADT				AM Peak Hour			PM Peak Hour		
FROM	TO	2015	2025	2035	DIR	2015	2025	2035	2015	2025	2035
PALM COAST PARKWAY											
PINE LAKES PKWY	BELLE TERRE PKWY	26,800	29,900	36,400	EB	1,583	1,766	2,150	1,151	1,284	1,563
					WB	1,151	1,284	1,563	1,583	1,766	2,150
BELLE TERRE PKWY	PINE CONE DR	32,100	33,700	41,100	EB	1,896	1,990	2,427	1,378	1,447	1,765
					WB	1,378	1,447	1,765	1,896	1,990	2,427
PINE CONE DR	CYPRESS POINT PKWY	32,100	33,800	41,200	EB	1,896	1,996	2,433	1,378	1,452	1,769
					WB	1,378	1,452	1,769	1,896	1,996	2,433
CYPRESS POINT PKWY	I-95 INTERCHANGE	50,100	54,100	65,900	EB	2,959	3,195	3,892	2,151	2,323	2,830
					WB	2,151	2,323	2,830	2,959	3,195	3,892
I-95 INTERCHANGE	OLD KINGS RD	47,600	60,100	73,300	EB	2,811	3,549	4,329	2,044	2,581	3,148
					WB	2,044	2,581	3,148	2,811	3,549	4,329
OLD KINGS RD	TOWN CENTER DRIVE	38,200	51,300	62,500	EB	2,256	3,030	3,691	1,640	2,203	2,684
					WB	1,640	2,203	2,684	2,256	3,030	3,691
TOWN CENTER DRIVE	FLORIDA PARK DR	39,400	52,600	64,100	EB	2,327	3,106	3,786	1,692	2,259	2,752
					WB	1,692	2,259	2,752	2,327	3,106	3,786
FLORIDA PARK DR	CLUBHOUSE DR	36,400	45,500	55,500	EB	2,150	2,687	3,278	1,563	1,954	2,383
					WB	1,563	1,954	2,383	2,150	2,687	3,278
MATANZAS WOODS PARKWAY											
WEST OF US-1	US-1	3,900	20,800	25,400	EB	168	894	1,091	230	1,228	1,500
					WB	230	1,228	1,500	168	894	1,091
US-1	BELLE TERRE PKWY	7,700	23,900	29,100	EB	330	1,027	1,249	455	1,411	1,719
					WB	455	1,411	1,719	330	1,027	1,249
BELLE TERRE PKWY	BIRDS OF PARADISE DR	8,100	23,000	28,000	EB	348	988	1,202	478	1,358	1,654
					WB	478	1,358	1,654	348	988	1,202
BIRDS OF PARADISE DR	I-95 INTERCHANGE	8,800	22,300	27,200	EB	378	958	1,168	520	1,317	1,606
					WB	520	1,317	1,606	378	958	1,168
I-95 INTERCHANGE	OLD KINGS RD	9,200	13,000	15,800	EB	395	558	679	543	768	933
					WB	543	768	933	395	558	679
US-1											
FAVER DYKES RD	I-95 INTERCHANGE	14,700	19,000	23,200	NB	868	1,122	1,370	631	816	996
					SB	631	816	996	868	1,122	1,370
I-95 INTERCHANGE	CR 204	10,800	17,600	21,500	NB	638	1,039	1,270	464	756	923
					SB	464	756	923	638	1,039	1,270
CR 204	OLD KINGS RD	8,800	14,800	18,000	NB	520	874	1,063	378	636	773
					SB	378	636	773	520	874	1,063
OLD KINGS RD	MATANZAS WOODS PKWY	9,800	16,800	20,500	NB	579	992	1,211	421	722	880
					SB	421	722	880	579	992	1,211
MATANZAS WOODS PKWY	S OF MATANZAS WOODS PKWY	11,000	16,700	20,400	NB	650	986	1,205	472	717	876
					SB	472	717	876	650	986	1,205
US-1 AND I-95 RAMPS											
TO/FROM NORTH		4000	8600	10500	NB	172	369	451	236	508	620
					SB	236	508	620	172	369	451
TO/FROM SOUTH		12500	13600	16600	NB	537	584	713	738	803	980
					SB	738	803	980	537	584	713
MATANZAS WOODS PKWY AND I-95 RAMPS											
TO/FROM NORTH		3800	5800	7100	NB	164	249	305	224	343	419
					SB	224	343	419	164	249	305
TO/FROM SOUTH		6700	10800	13200	NB	287	464	566	396	638	780
					SB	396	638	780	287	464	566
PALM COAST PKWY AND I-95 RAMPS											
TO/FROM NORTH		13400	13700	16700	NB	576	588	717	791	809	986
					SB	791	809	986	576	588	717
TO/FROM SOUTH		14000	14600	17800	NB	601	627	765	827	862	1,051
					SB	827	862	1,051	601	627	765

Note: Directional Design Hour Volumes (DDHV) derived by applying K30=10.2% and D30=57.9%.

Table 7-5
I-95 Directional Design Hour Volumes – Build

INTERSTATE 95		AADT				AM Peak Hour			PM Peak Hour		
From	To	2015	2025	2035	DIR	2015	2025	2035	2015	2025	2035
North of US-1	US-1	51,900	67,200	81,900	NB	2,225	2,881	3,511	2,809	3,637	4,433
					SB	2,809	3,637	4,433	2,225	2,881	3,511
US-1	Matanzas Woods Parkway	63,100	72,100	87,900	NB	2,706	3,092	3,768	3,415	3,902	4,758
					SB	3,415	3,902	4,758	2,706	3,092	3,768
Matanzas Woods Parkway	Palm Coast Parkway	66,000	77,100	94,000	NB	2,830	3,306	4,030	3,572	4,173	5,088
					SB	3,572	4,173	5,088	2,830	3,306	4,030
Palm Coast Parkway	South of Palm Coast Parkway	64,800	73,400	89,500	NB	2,779	3,147	3,838	3,507	3,973	4,844
					SB	3,507	3,973	4,844	2,779	3,147	3,838

Note: Directional Design Hour Volumes (DDHV) derived by applying K30=9.7% and D30=55.8%.

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Table 7-6
2015 AM and PM Peak Hours Intersection Level of Service Summary

Intersection	Control	No Build				Build			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
I-1 US-1 and CR 204	NS	29.0	D	27.7	D	19.1	C	19.3	C
I-3 Matanzas Woods Pkwy and Belle Terre Pkwy	SIG	22.7	C	25.3	C	22.6	C	27.3	C
I-4 Matanzas Woods Pkwy and Bird Of Paradise Dr	NS	18.4	C	14.9	B	Not Applicable			
I-5 Matanzas Woods Pkwy and Old Kings Rd	NS	11.9	B	17.5	C	16.1	C	16.5	C
I-6 Palm Coast Pkwy EB and Belle Terre Pkwy	SIG	96.5	F	28.8	C	39.6	D	24.8	C
I-7 Palm Coast Pkwy WB and Belle Terre Pkwy	SIG	26.2	C	33.6	C	32.4	C	33.4	C
I-8 Palm Coast Pkwy EB and Pine Cone Dr	SIG	20.3	C	23.9	C	21.6	C	22.0	C
I-9 Palm Coast Pkwy WB and Pine Cone Dr	SIG	15.6	B	10.0	B	14.7	B	8.8	A
I-10 Palm Coast Pkwy and Cypress Point Pkwy	SIG	114.2	F	55.4	E	105.3	F	52.6	D
I-11 Palm Coast Pkwy and Old Kings Rd	SIG	593.1	F	482.7	F	559.5	F	457.1	F
I-12 Palm Coast Pkwy EB and Harbor Center Way	NS	18.9	C	13.1	B	20.8	C	14.6	B
I-13 Palm Coast Pkwy WB and Harbor Center Way	SIG	7.2	A	6.4	A	7.0	A	6.3	A
I-14 Palm Coast Pkwy EB and Florida Park Dr	SIG	52.1	D	6.8	A	49.1	D	7.2	A
I-15 Palm Coast Pkwy WB and Florida Park Dr	SIG	24.9	C	43.0	D	24.9	C	30.4	C
I-16 US-1 and Matanzas Woods Pkwy	SIG	21.1	C	19.1	B	19.3	B	19.2	B
I-17 US-1 and I-95 South Ramps	NS	14.1	B	16.8	C	12.4	B	14.3	B
I-18 US-1 and I-95 North Ramps	NS	106.2	F	41.8	E	22.2	C	19.5	C
I-19 Palm Coast Pkwy and I-95 West Ramps	SIG	60.6	E	16.9	B	46.5	D	17.2	B
I-20 Palm Coast Pkwy and I-95 East Ramps	SIG	22.6	C	49.5	D	22.2	C	38.5	D
I-21 Matanzas Woods Pkwy and I-95 South Ramps	SIG	Not Applicable				10.1	B	11.6	B
I-22 Matanzas Woods Pkwy and I-95 North Ramps	SIG	Not Applicable				13.7	B	16.2	B

NOTES:

[1] Synchro Analyses Applied for Signalized Intersections. HCS Analyses Applied for Non-Signalized Intersections.

[2] For Stop Controlled Intersections, worse Level of Service and Vehicle Delay of The Stop Controlled Approach is Shown.

[3] SIG=Siglized; NS = Non-Signalized

Table 7-7
2025 AM and PM Peak Hours Intersection Level of Service Summary

Intersection	Control	No Build				Build			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
I-1 US-1 and CR 204	NS	125.5	F	37.3	E	50.0	E	41.3	E
I-3 Matanzas Woods Pkwy and Belle Terre Pkwy	SIG	47.1	D	41.1	D	41.2	D	54.3	D
I-4 Matanzas Woods Pkwy and Bird Of Paradise Dr	NS	84.8	F	46.9	E	Not Applicable			
I-5 Matanzas Woods Pkwy and Old Kings Rd	SIG	12.1	B	14.7	B	76.5	E	19.8	B
I-6 Palm Coast Pkwy EB and Belle Terre Pkwy	SIG	149.0	F	32.1	C	39.6	D	28.9	C
I-7 Palm Coast Pkwy WB and Belle Terre Pkwy	SIG	31.3	C	51.4	D	23.6	C	37.8	D
I-8 Palm Coast Pkwy EB and Pine Cone Dr	SIG	58.6	E	23.3	C	23.1	C	22.6	C
I-9 Palm Coast Pkwy WB and Pine Cone Dr	SIG	18.3	B	13.8	B	16.5	B	11.0	B
I-10 Palm Coast Pkwy and Cypress Point Pkwy	SIG	149.5	F	58.3	E	107.3	F	51.1	D
I-11 Palm Coast Pkwy and Old Kings Rd	SIG	932.5	F	812.4	F	802.9	F	764.1	F
I-12 Palm Coast Pkwy EB and Harbor Center Way	NS	58.4	F	22.2	C	41.6	E	22.5	C
I-13 Palm Coast Pkwy WB and Harbor Center Way	SIG	6.5	A	5.5	A	6.2	A	5.6	A
I-14 Palm Coast Pkwy EB and Florida Park Dr	SIG	132.3	F	15.4	B	107.3	F	12.3	B
I-15 Palm Coast Pkwy WB and Florida Park Dr	SIG	67.3	E	151.0	F	59.3	E	122.7	F
I-16 US-1 and Matanzas Woods Pkwy	SIG	29.0	C	29.1	C	26.9	C	34.8	C
I-17 US-1 and I-95 South Ramps	SIG	32.4	C	18.3	B	30.8	C	14.2	B
I-18 US-1 and I-95 North Ramps	SIG	19.9	B	20.4	C	18.5	B	20.7	C
I-19 Palm Coast Pkwy and I-95 West Ramps	SIG	90.9	F	23.9	C	68.8	E	20.2	C
I-20 Palm Coast Pkwy and I-95 East Ramps	SIG	32.0	C	68.4	E	24.6	C	51.5	D
I-21 Matanzas Woods Pkwy and I-95 South Ramps	SIG	Not Applicable				9.9	A	10.7	B
I-22 Matanzas Woods Pkwy and I-95 North Ramps	SIG	Not Applicable				19.1	B	22.6	C

NOTES:

[1] Synchro Analyses Applied for Signalized Intersections. HCS Analyses Applied for Non-Signalized Intersections.

[2] For Stop Controlled Intersections, worse Level of Service and Vehicle Delay of The Stop Controlled Approach is Shown.

[3] SIG=Siglized; NS = Non-Signalized

Table 7-8
2035 AM and PM Peak Hours Intersection Level of Service Summary

Intersection	Control	No Build				Build			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
I-1 US-1 and CR 204	NS	269.0	F	97.8	F	162.6	F	110.2	F
I-3 Matanzas Woods Pkwy and Belle Terre Pkwy	SIG	61.7	E	63.3	E	51.0	D	50.6	D
I-4 Matanzas Woods Pkwy and Bird Of Paradise Dr	NS	181.3	F	128.3	F	Not Applicable			
I-5 Matanzas Woods Pkwy and Old Kings Rd	SIG	23.4	C	20.1	C	22.9	C	27.9	C
I-6 Palm Coast Pkwy EB and Belle Terre Pkwy	SIG	174.9	F	56.2	E	88.4	F	33.6	C
I-7 Palm Coast Pkwy WB and Belle Terre Pkwy	SIG	50.3	D	99.8	F	34.1	C	62.8	E
I-8 Palm Coast Pkwy EB and Pine Cone Dr	SIG	168.9	F	32.8	C	80.5	F	26.3	C
I-9 Palm Coast Pkwy WB and Pine Cone Dr	SIG	17.8	B	15.2	B	16.3	B	16.4	B
I-10 Palm Coast Pkwy and Cypress Point Pkwy	SIG	243.3	F	95.5	F	205.5	F	81.0	F
I-11 Palm Coast Pkwy and Old Kings Rd	SIG	1135.9	F	1004.7	F	1025.3	F	937.4	F
I-12 Palm Coast Pkwy EB and Harbor Center Way	NS	271.1	F	39.8	E	240.2	F	41.4	E
I-13 Palm Coast Pkwy WB and Harbor Center Way	SIG	6.7	A	21.6	C	6.6	A	16.7	B
I-14 Palm Coast Pkwy EB and Florida Park Dr	SIG	258.4	F	62.4	E	237.0	F	56.4	E
I-15 Palm Coast Pkwy WB and Florida Park Dr	SIG	158.9	F	264.7	F	160.2	F	244.7	F
I-16 US-1 and Matanzas Woods Pkwy	SIG	37.3	D	41.8	D	41.7	D	54.4	D
I-17 US-1 and I-95 South Ramps	SIG	85.0	F	40.1	D	54.1	D	29.5	C
I-18 US-1 and I-95 North Ramps	SIG	25.6	C	63.0	E	29.3	C	31.2	C
I-19 Palm Coast Pkwy and I-95 West Ramps	SIG	150.6	F	59.8	E	97.1	F	33.2	C
I-20 Palm Coast Pkwy and I-95 East Ramps	SIG	72.8	E	134.2	F	46.3	D	108.5	F
I-21 Matanzas Woods Pkwy and I-95 South Ramps	SIG	Not Applicable				15.4	B	12.1	B
I-22 Matanzas Woods Pkwy and I-95 North Ramps	SIG	Not Applicable				32.4	C	35.8	D

NOTES:

[1] Synchro Analyses Applied for Signalized Intersections. HCS Analyses Applied for Non-Unsignalized Intersections.

[2] For Stop Controlled Intersections, worse Level of Service and Vehicle Delay of The Stop Controlled Approach is Shown.

[3] SIG=Siglized; NS = Non-Unsignalized

The figures in Appendix XI show the intersection turning movements, the percent difference between the DDHV and intersection's approach/departure volumes, and the intersection's approach/departure balance. The intersection analysis results are further discussed in section 8.0 Alternatives Analysis.

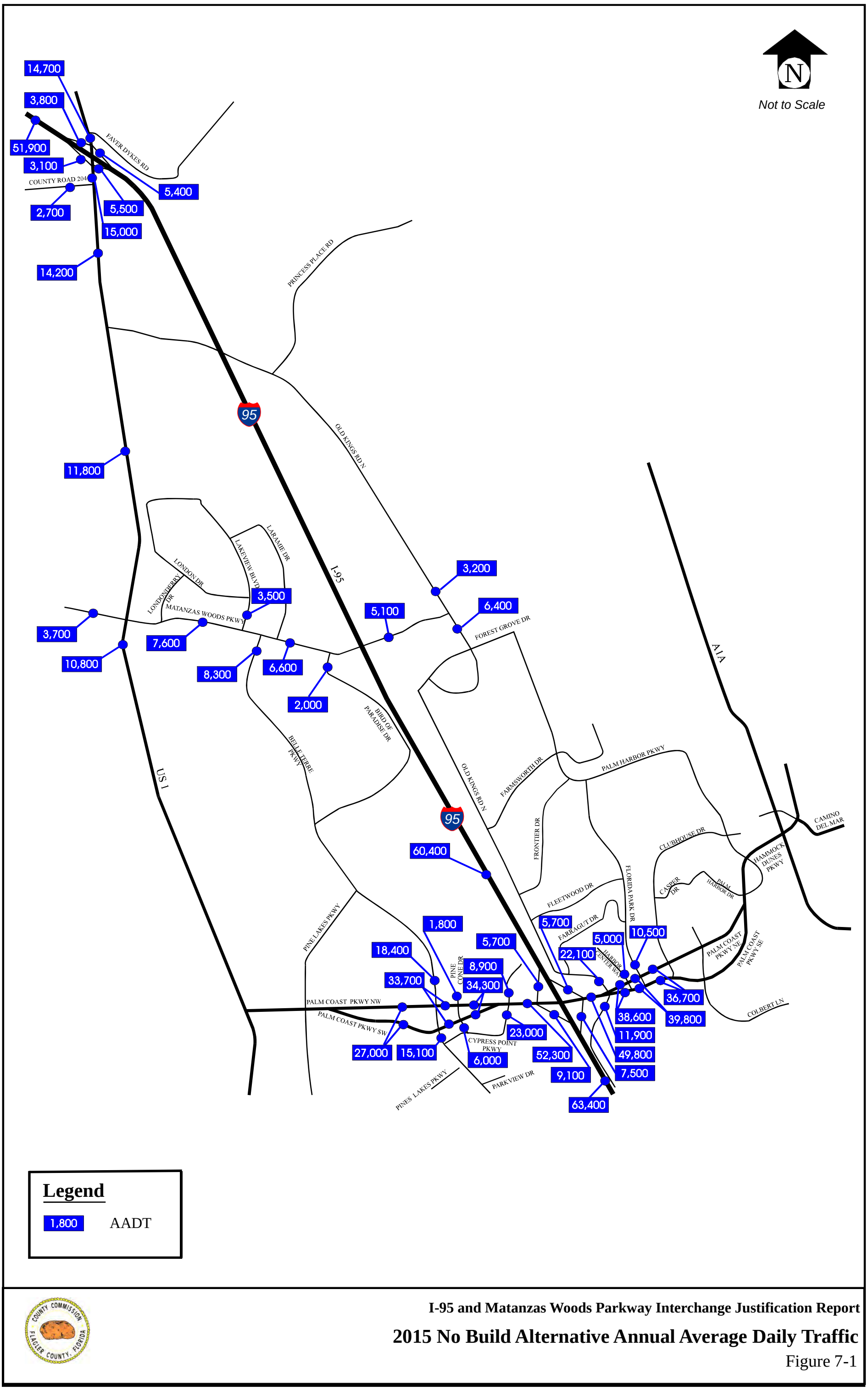
7.5 Programmed and Planned Roadway Improvements

The Future Year Traffic for the AOI roadway network was analyzed based on existing roadway facilities, programmed roadway improvements, and planned improvements. These improvements were assumed in the analysis based on the year during which they were anticipated to be in place. Table 7-9 identifies the improvements applied to analysis years 2015, 2025 and 2035.

Table 7-9
Programmed and Planned Roadway Improvements

Roadway Segments	Number of Lanes						
		2015		2025		2035	
	Existing	No Build	Build	No Build	Build	No Build	Build
[1] Palm Coast Parkway Widening - Between Cypress Point Parkway and Florida Park Drive	4L/6L	6L	6L	6L	6L	6L	6L
[2] Matanzas Woods Parkway Widening - Between west of US-1 and Belle Terre Parkway	2L	4L	4L	4L	4L	4L	4L
[3] Matanzas Woods Parkway Widening - Between Belle Terre Parkway and Old King Road	2L	2L	2L	2L	4L	2L	4L
[4] Belle Terre Parkway Widening - Between Palm Coast Parkway and Matanzas Woods Parkway	2L/4L	4L	4L	4L	4L	4L	4L
[4] Belle Terre Parkway Realigned with Lakeview Blvd at Matanzas Woods		--	--	--	--	--	--

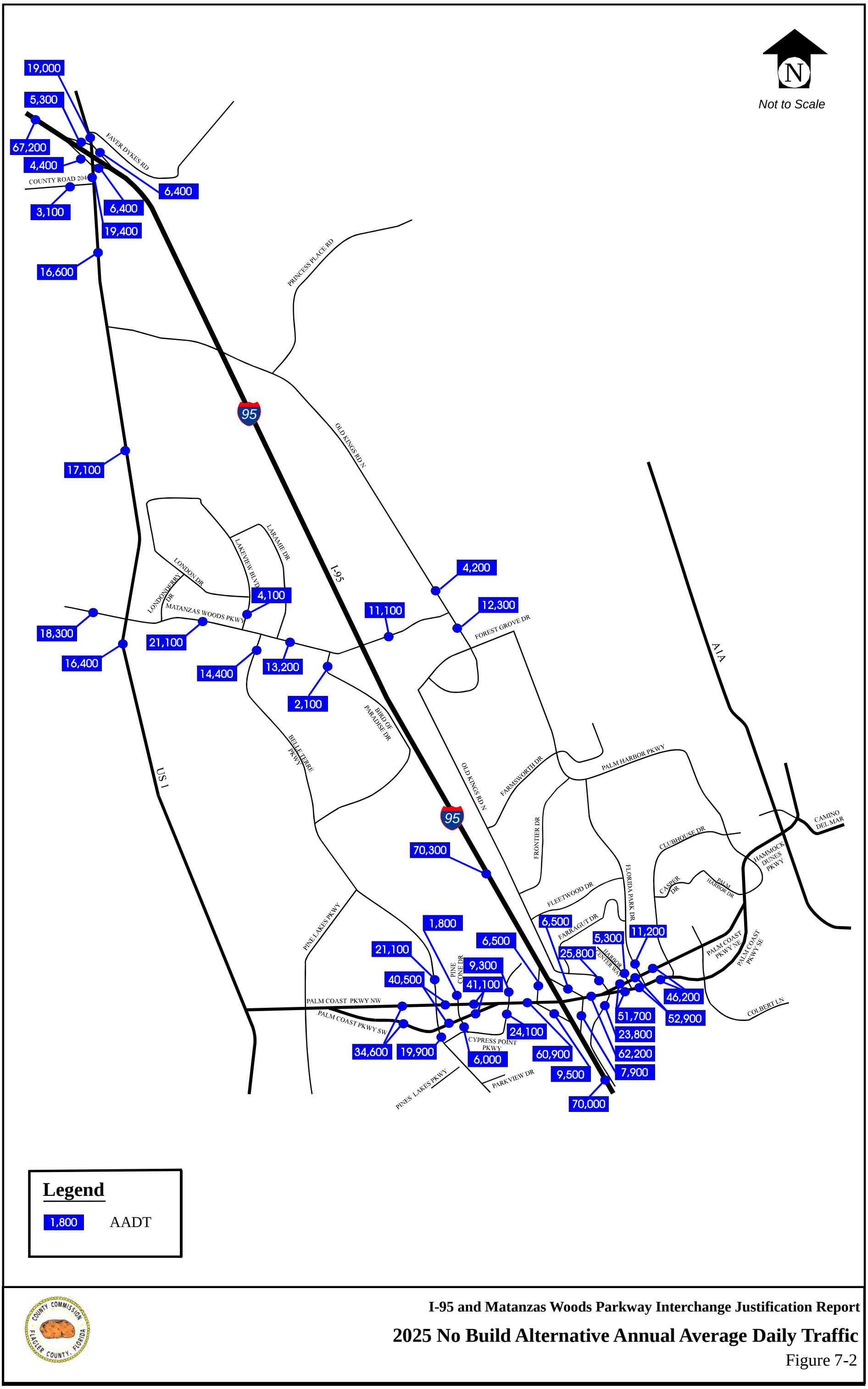
Notes:
[1] City of Palm Coast Palm Coast Parkway Widening.
[2] Palm Coast Park Development.
[3] Matanzas Woods IJR.
[4] City of Palm Coast Belle Terre Parkway 4-Laning Project.



I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 No Build Alternative Annual Average Daily Traffic

Figure 7-1



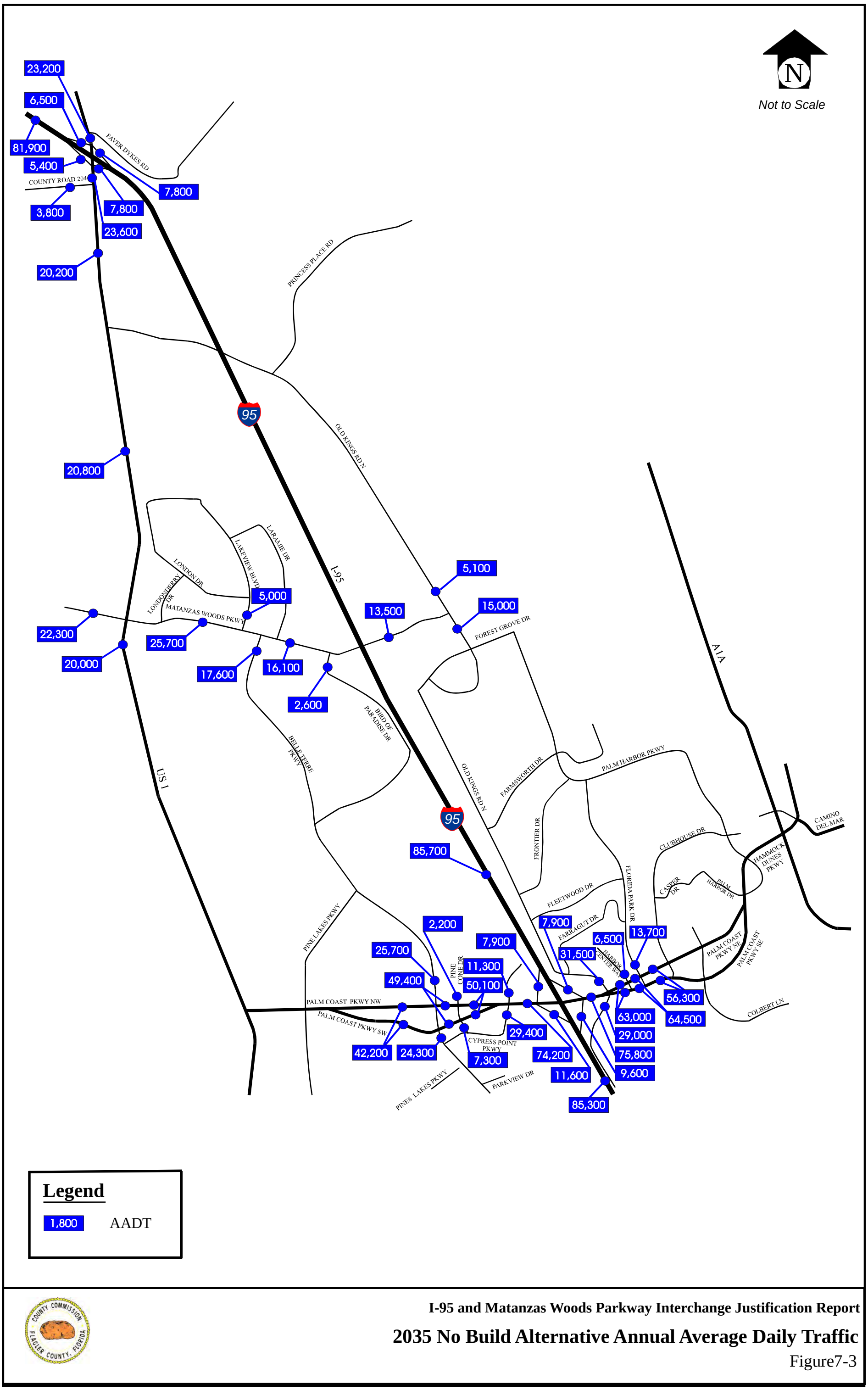
Legend

1,800 AADT

I-95 and Matanzas Woods Parkway Interchange Justification Report

2025 No Build Alternative Annual Average Daily Traffic

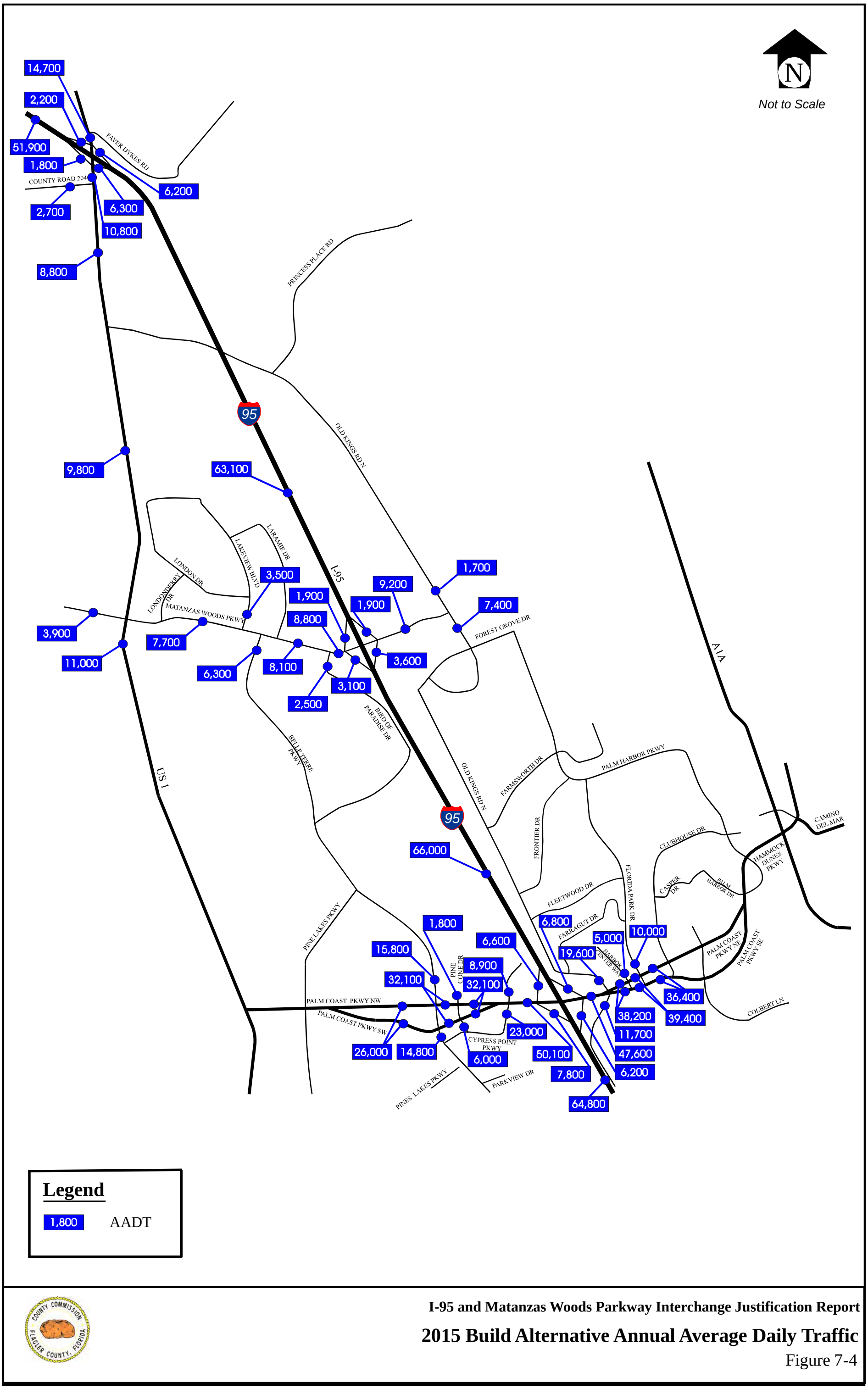
Figure 7-2



I-95 and Matanzas Woods Parkway Interchange Justification Report

2035 No Build Alternative Annual Average Daily Traffic

Figure7-3



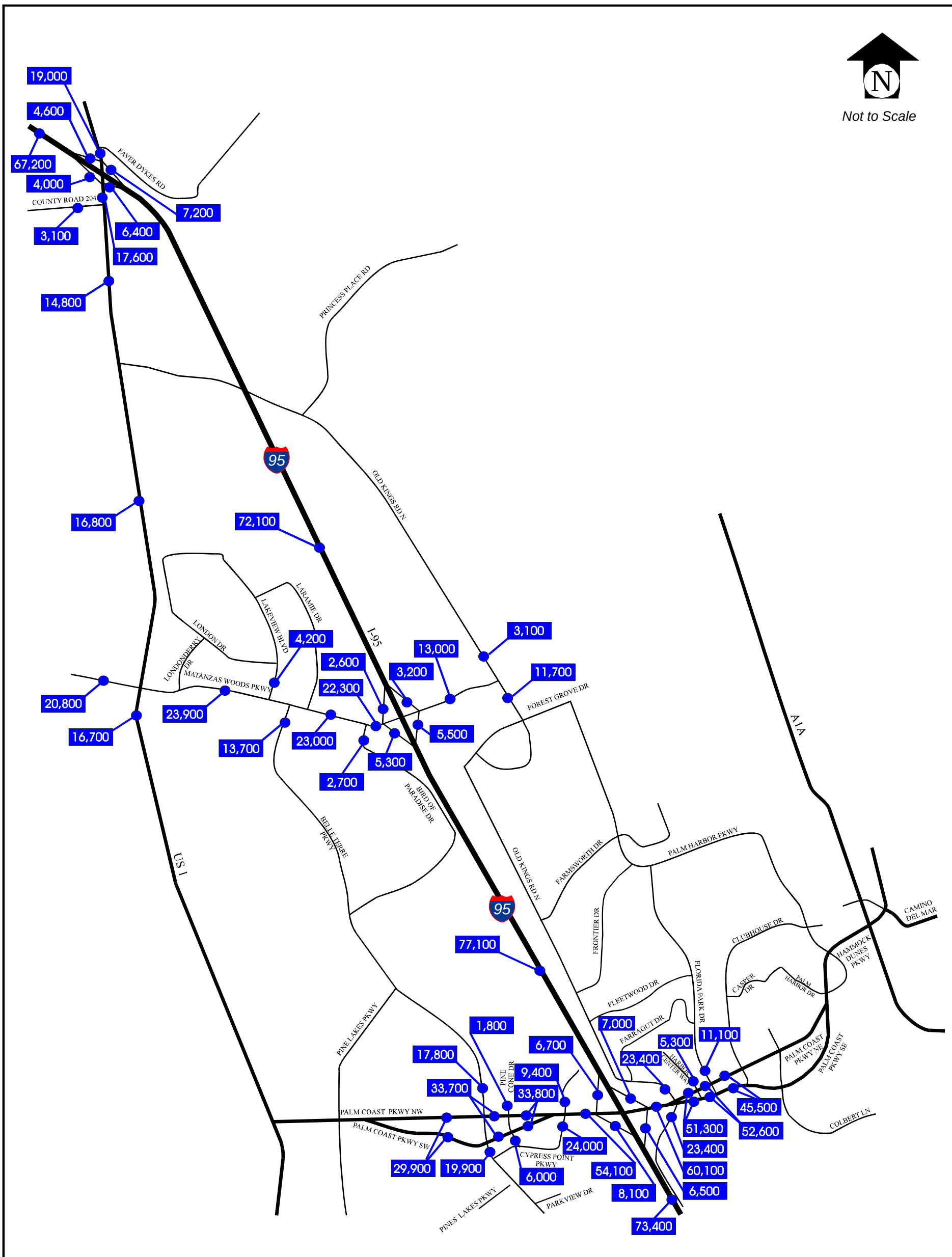
Legend

1,800 AADT

I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 Build Alternative Annual Average Daily Traffic

Figure 7-4



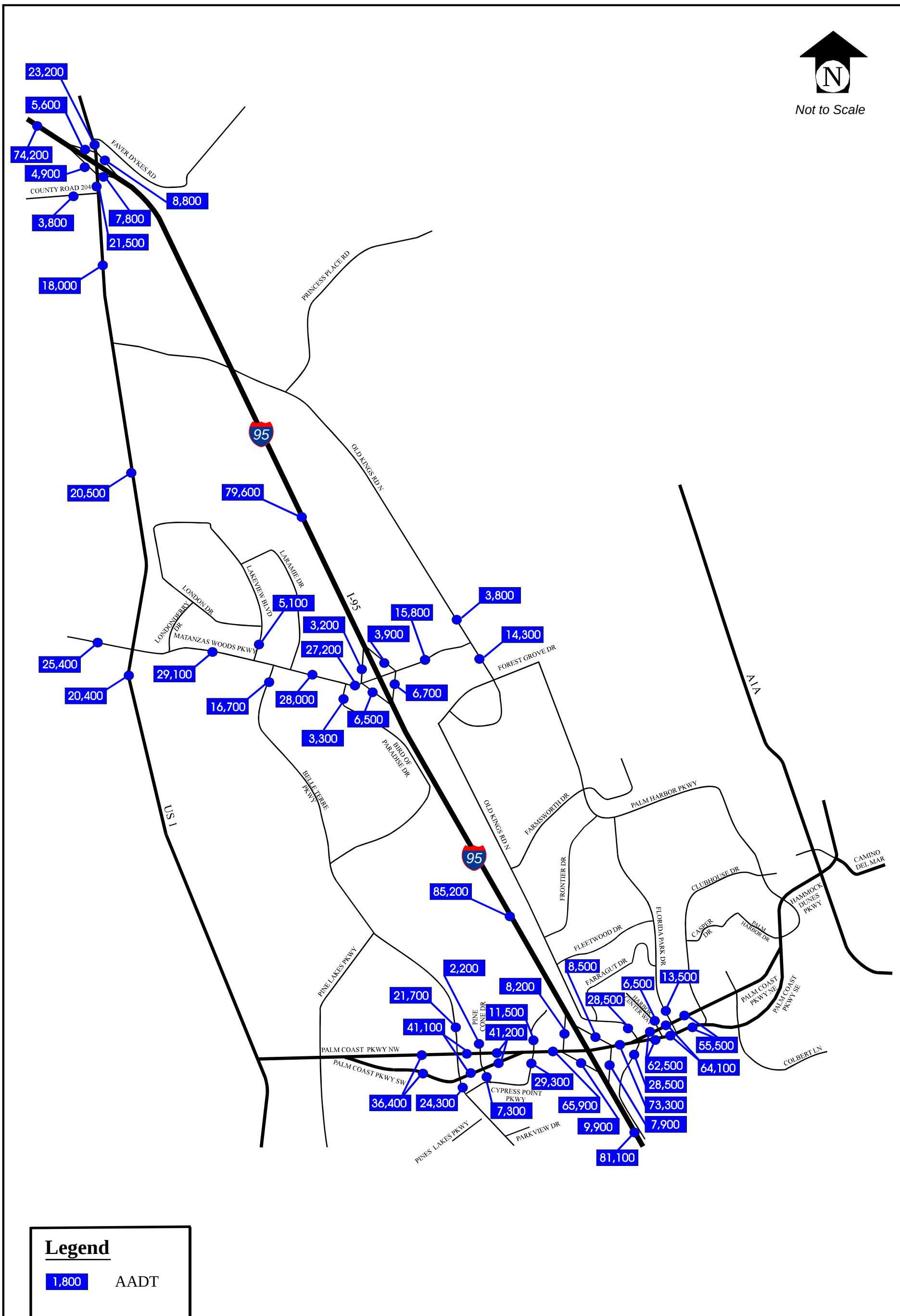
Legend

1,800 AADT

I-95 and Matanzas Woods Parkway Interchange Justification Report

2025 Build Alternative Annual Average Daily Traffic

Figure 7-5



Legend

1,800 AADT

I-95 and Matanzas Woods Parkway Interchange Justification Report

2035 Build Alternative Annual Average Daily Traffic

Figure 7-6

U.S. 1 and CR 204

I-1

77(106)
571(785)
1(1)
1(1)
1(1)
1(1)
106(77)
1(1)
53(43)
53(43)
851(571)
1(1)

Matanzas Woods Pkwy and
Belle Terre Pkwy/Lakeview Blvd

I-3

112(42)
59(60)
35(39)
35(39)
164(100)
224(133)
82(71)
94(154)
150(224)
150(200)
43(83)
163(183)

Matanzas Woods Pkwy and
Bird of Pradise Drive

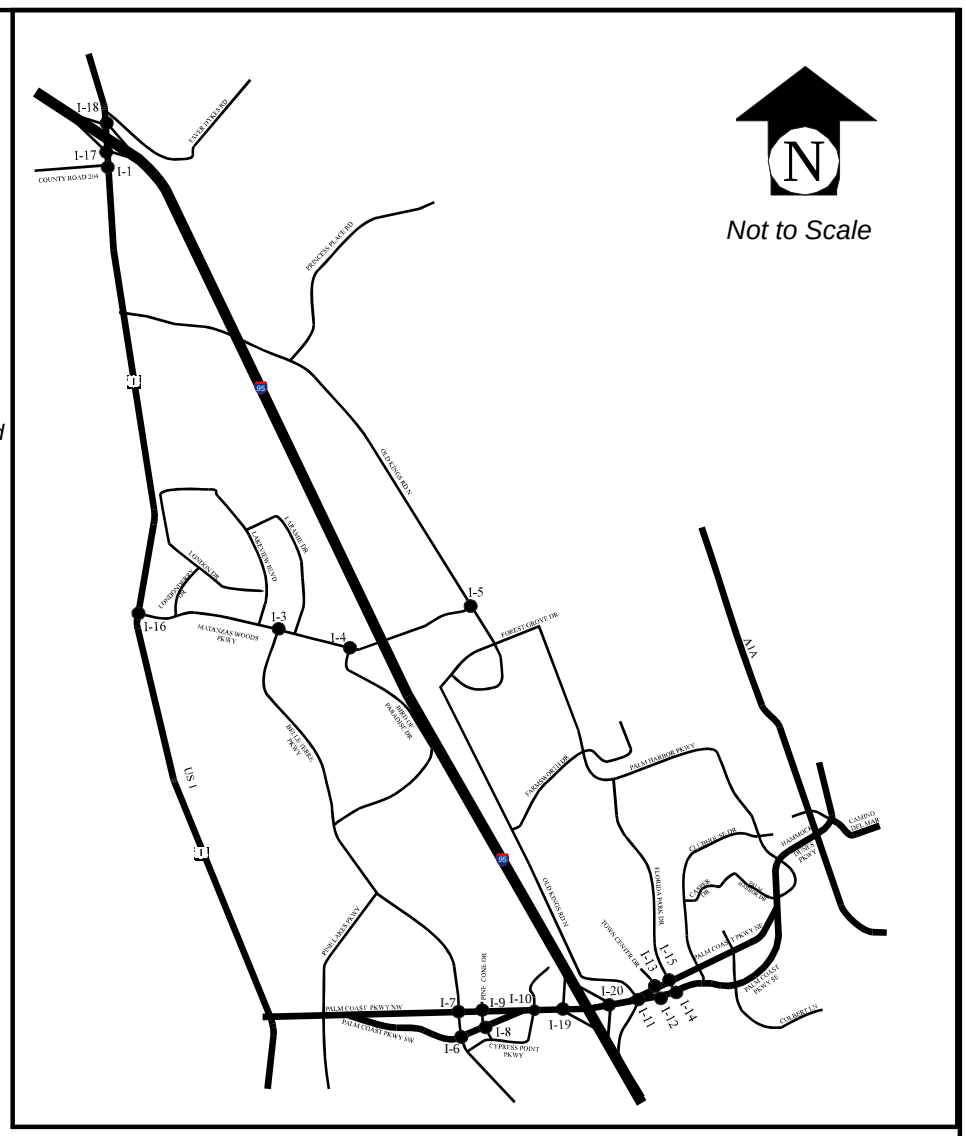
I-4

289(210)
18(13)
210(289)
77(100)
106(73)
18(13)

Matanzas Woods Pkwy and Old Kings Rd

I-5

34(9)
103(180)
19(15)
210(1)
246(229)
132(46)



Palm Coast Pkwy EB and
Belle Terre Pkwy

I-6

469(779)
395(532)
219(180)
1,075(750)
201(280)
573(558)
519(306)

Palm Coast Pkwy WB and
Belle Terre Pkwy

I-7

159(183)
632(898)
361(570)
855(1,094)
232(463)
201(230)
591(508)

Palm Coast Pkwy EB and
Pine Cone Dr

I-8

155(212)
110(105)
105(90)
1,743(1,318)
136(103)
171(129)
177(129)

Palm Coast Pkwy WB and
Pine Cone Dr

I-9

26(35)
136(140)
36(35)
1,303(1,813)
129(177)
136(167)
140(52)

Palm Coast Pkwy and
Cypress Point Pkwy

I-10

94(137)
86(106)
202(307)
202(307)
1,162(1,719)
782(1,068)
130(130)
1,736(1,150)
165(210)
165(200)
118(110)
1,075(683)

Palm Coast Pkwy and Old Kings Rd

I-11

823(627)
165(133)
236(189)
172(260)
1,213(1,789)
193(230)
898(627)
1,772(1,301)
266(240)
193(289)
120(183)
193(230)

Palm Coast Pkwy EB and
Harbor Center Way

I-12

183(133)
112(165)
2,167(1,493)

Palm Coast Pkwy WB and
Harbor Center Way

I-13

112(131)
172(131)
133(183)
1,565(2,167)
11(2)
8(5)
104(160)

Palm Coast Pkwy EB and
Florida Park Dr

I-14

219(159)
402(384)
1,949(1,324)

Palm Coast Pkwy WB and
Florida Park Dr

I-15

402(292)
215(151)
159(219)
1,413(1,949)
4(8)
29(10)
373(374)

U.S. 1 and Matanzas Woods Pkwy

I-16

35(30)
300(455)
155(240)
200(155)
118(86)
145(86)
21(30)
80(100)
52(71)
71(52)
455(280)
118(145)

U.S. 1 and I-95 South Ramps

I-17

310(651)
385(349)
10(10)
375(275)
687(451)
266(150)

U.S. 1 and I-95 North Ramps

I-18

54(225)
527(762)
334(370)
168(238)
219(160)
478(301)

Palm Coast Pkwy and
I-95 West Ramps

I-19

447(275)
279(207)
1,677 (2,692)
620(420)
2,615(1,928)
424(320)

Palm Coast Pkwy and
I-95 East Ramps

I-20

185(324)
1,929(2,611)
335(312)
2,559(1,823)
368(501)
309(466)

Legend

Intersection Number — XX

SB: Right, Thru, Left

WB: Right, Thru, Left

EB: Left, Thru, Right

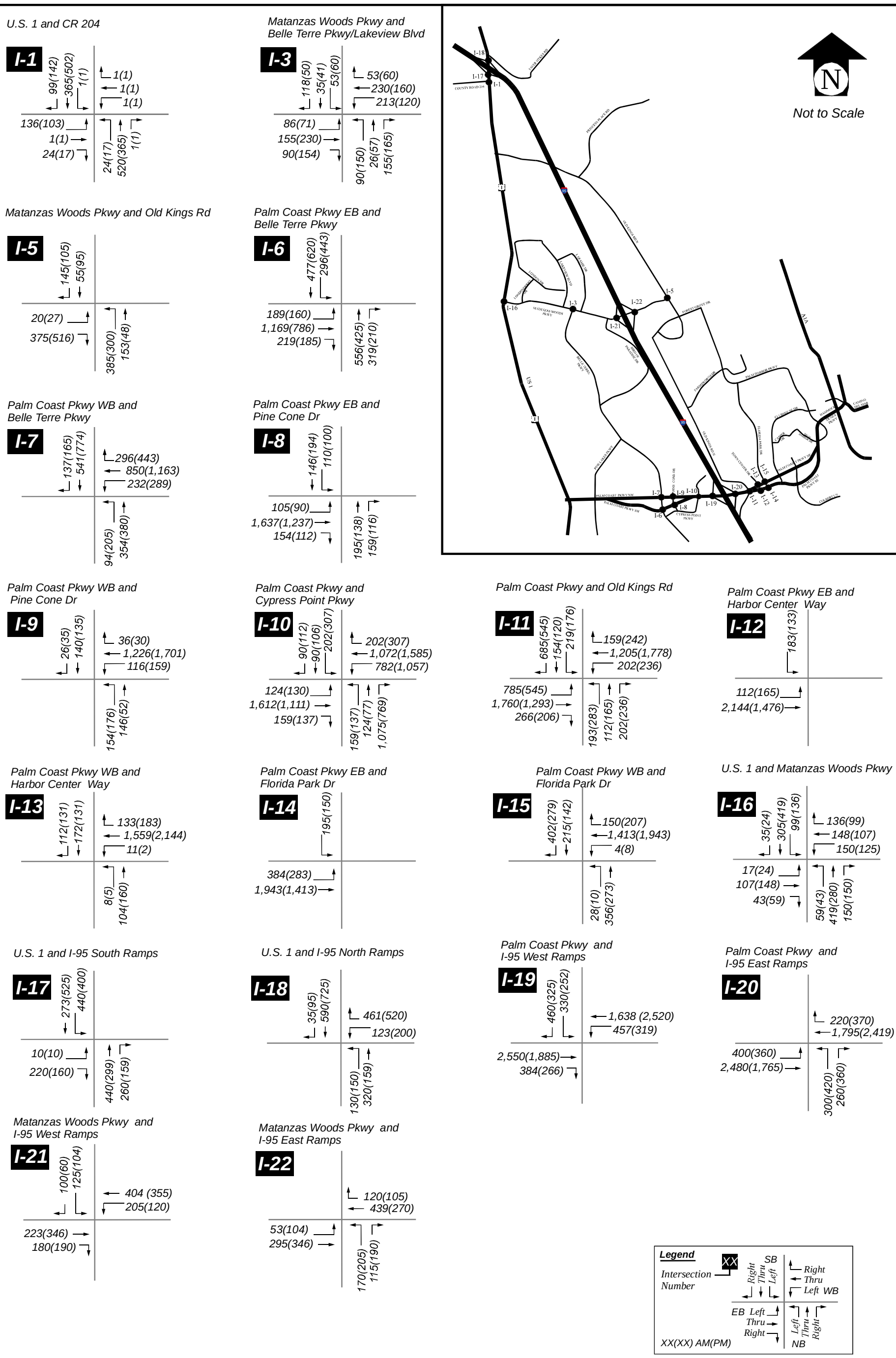
NB: Left, Thru, Right

XX(XX) AM(PM)

I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 No Build AM and PM Peak Hour Intersection Turning Movement Volumes

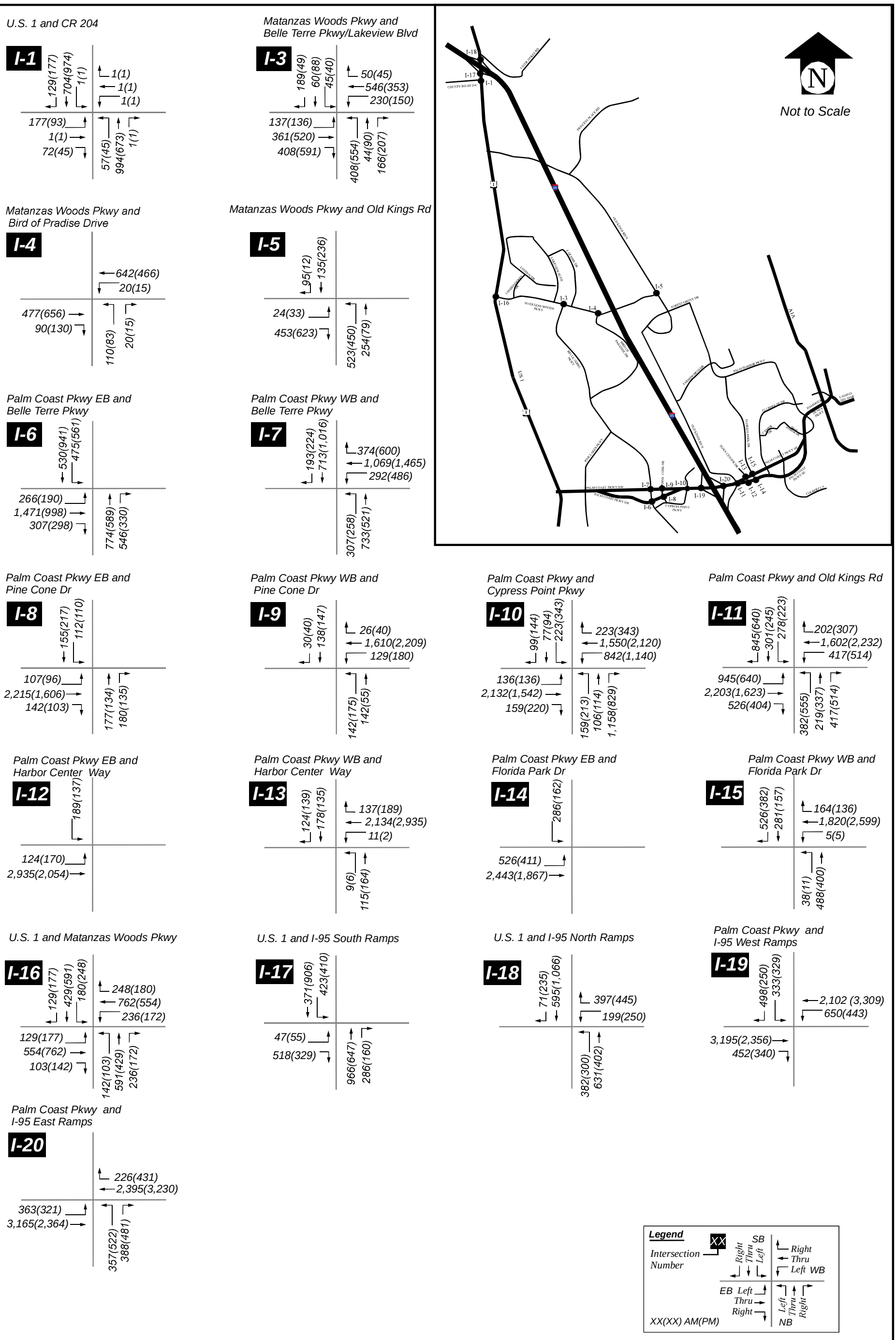
Figure 7-7



I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 Build AM and PM Peak Hour Intersection Turning Movement Volumes

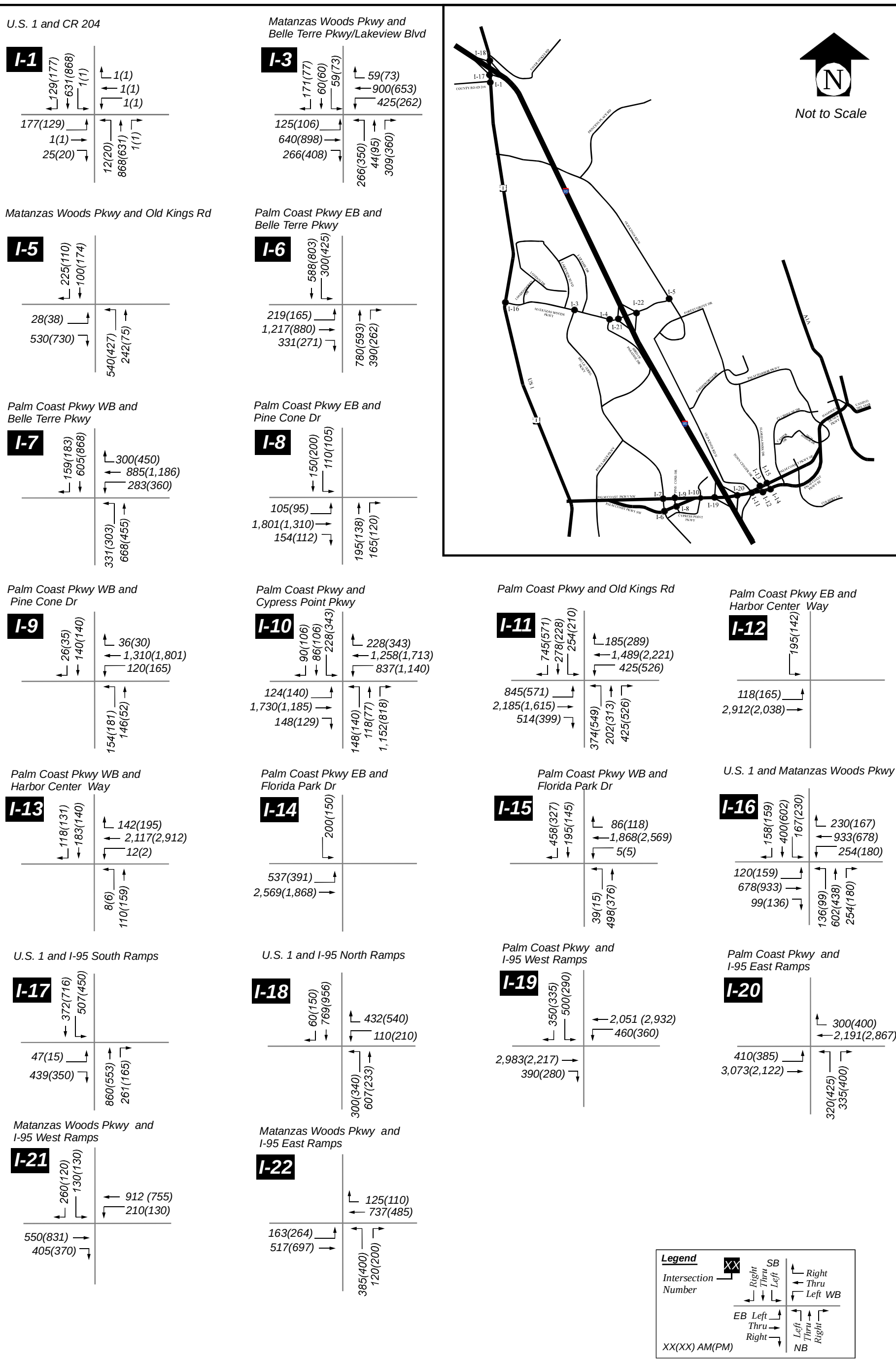
Figure 7-8



I-95 and Matanzas Woods Parkway Interchange Justification Report

2025 No Build AM and PM Peak Hour Intersection Turning Movement Volumes

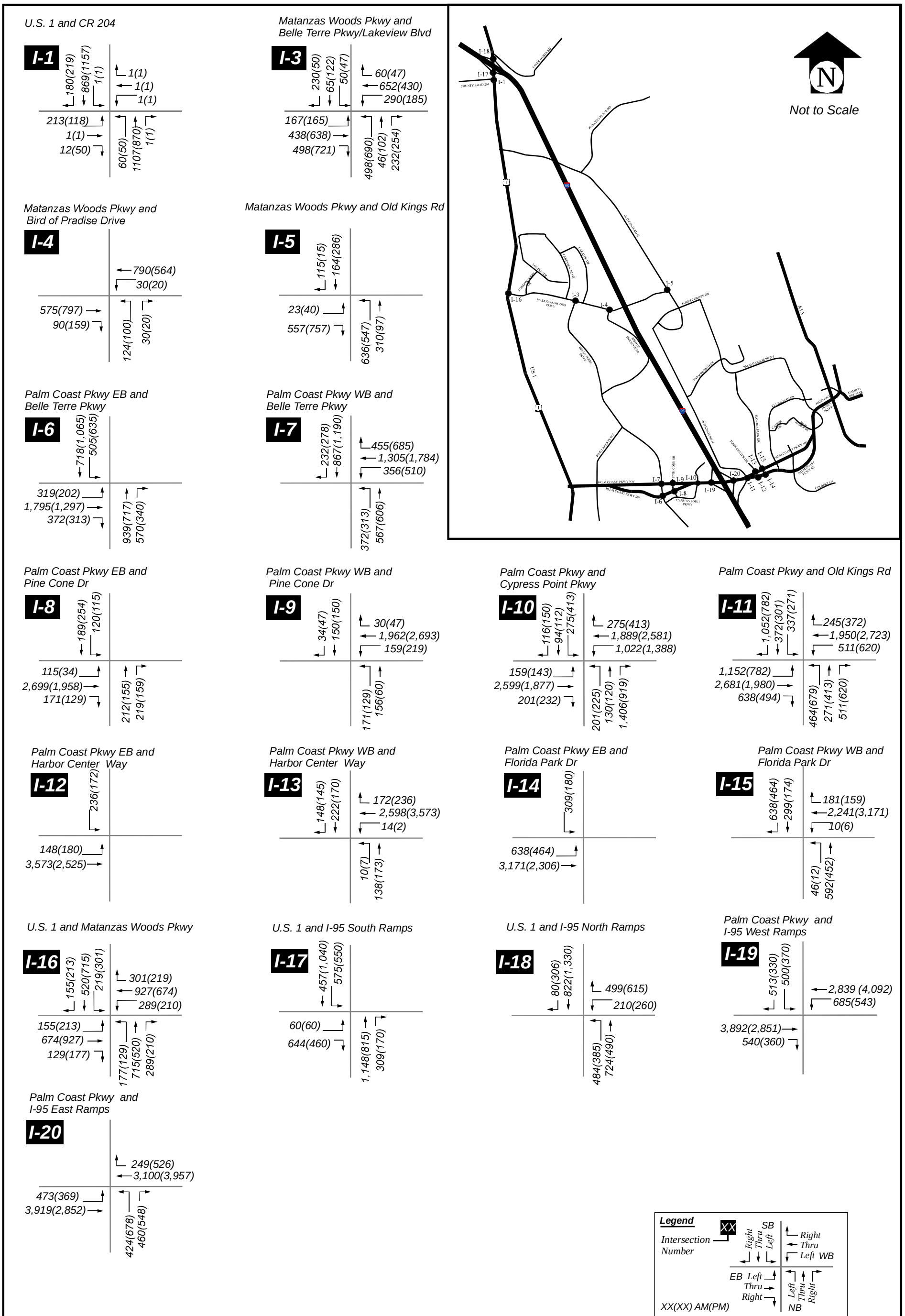
Figure 7-9



I-95 and Matanzas Woods Parkway Interchange Justification Report

2025 Build AM and PM Peak Hour Intersection Turning Movement Volumes

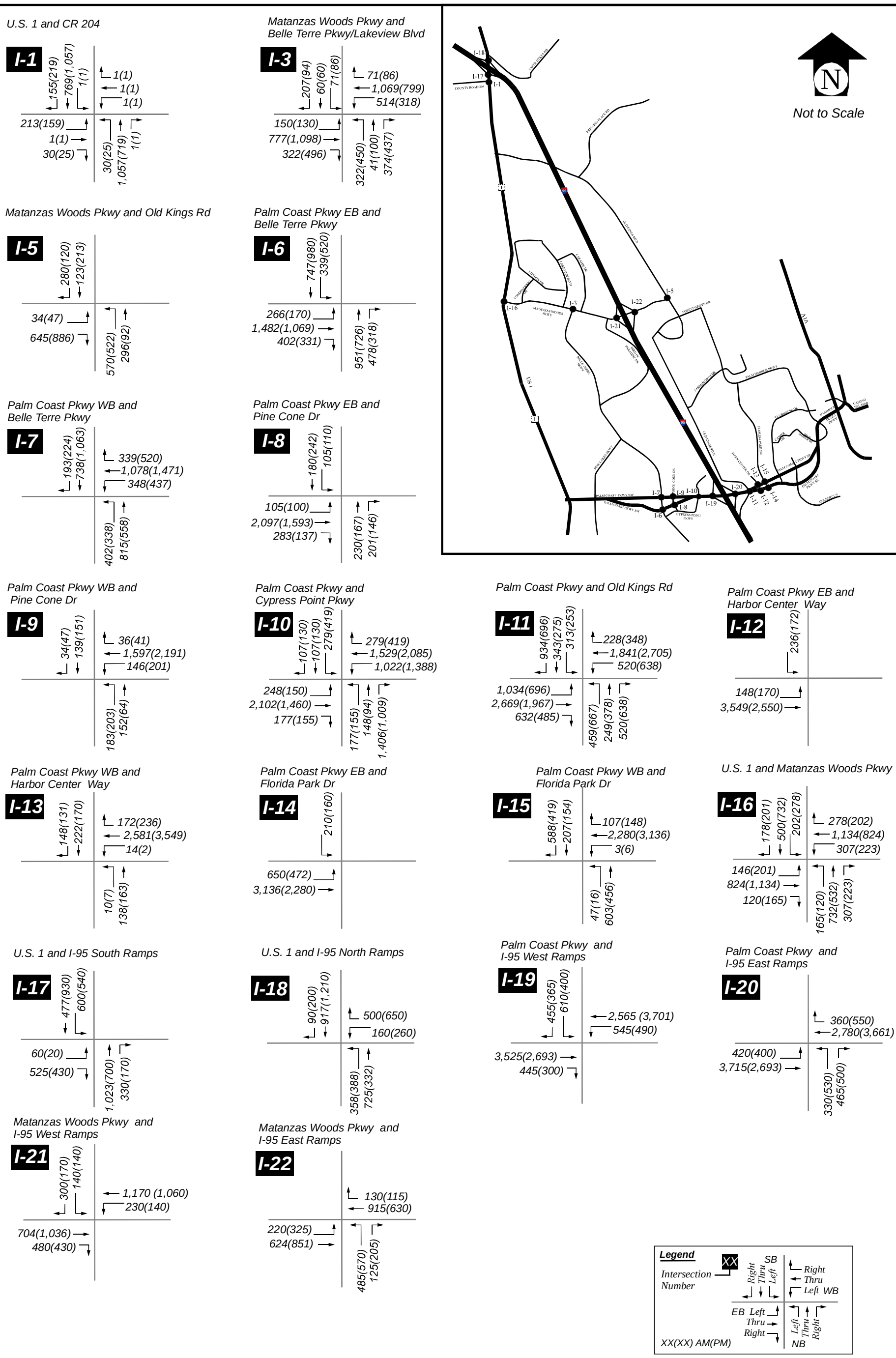
Figure 7-10



I-95 and Matanzas Woods Parkway Interchange Justification Report

2035 No Build AM and PM Peak Hour Intersection Turning Movement Volumes

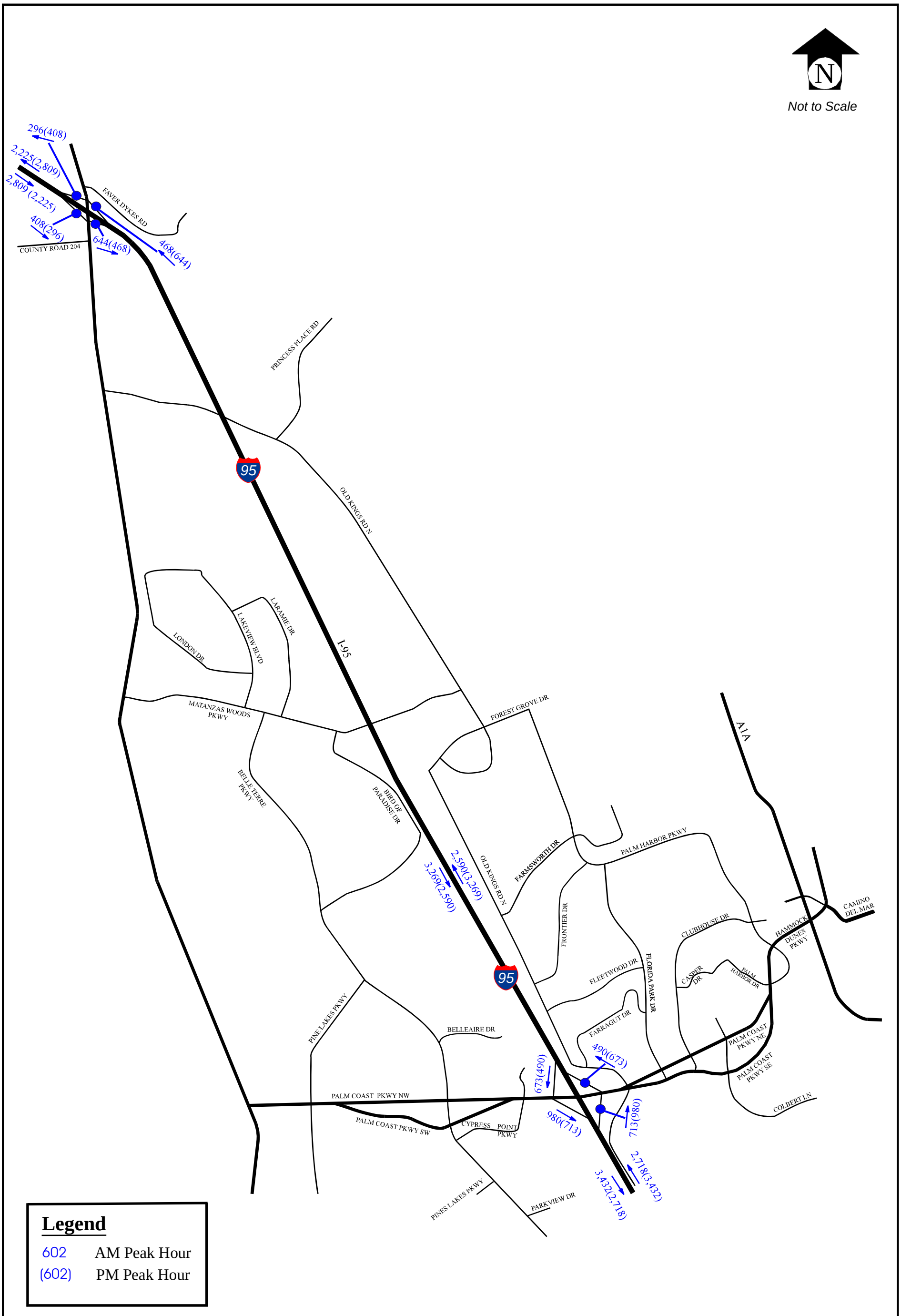
Figure 7-11



I-95 and Matanzas Woods Parkway Interchange Justification Report

2035 Build AM and PM Peak Hour Intersection Turning Movement Volumes

Figure 7-12



Legend

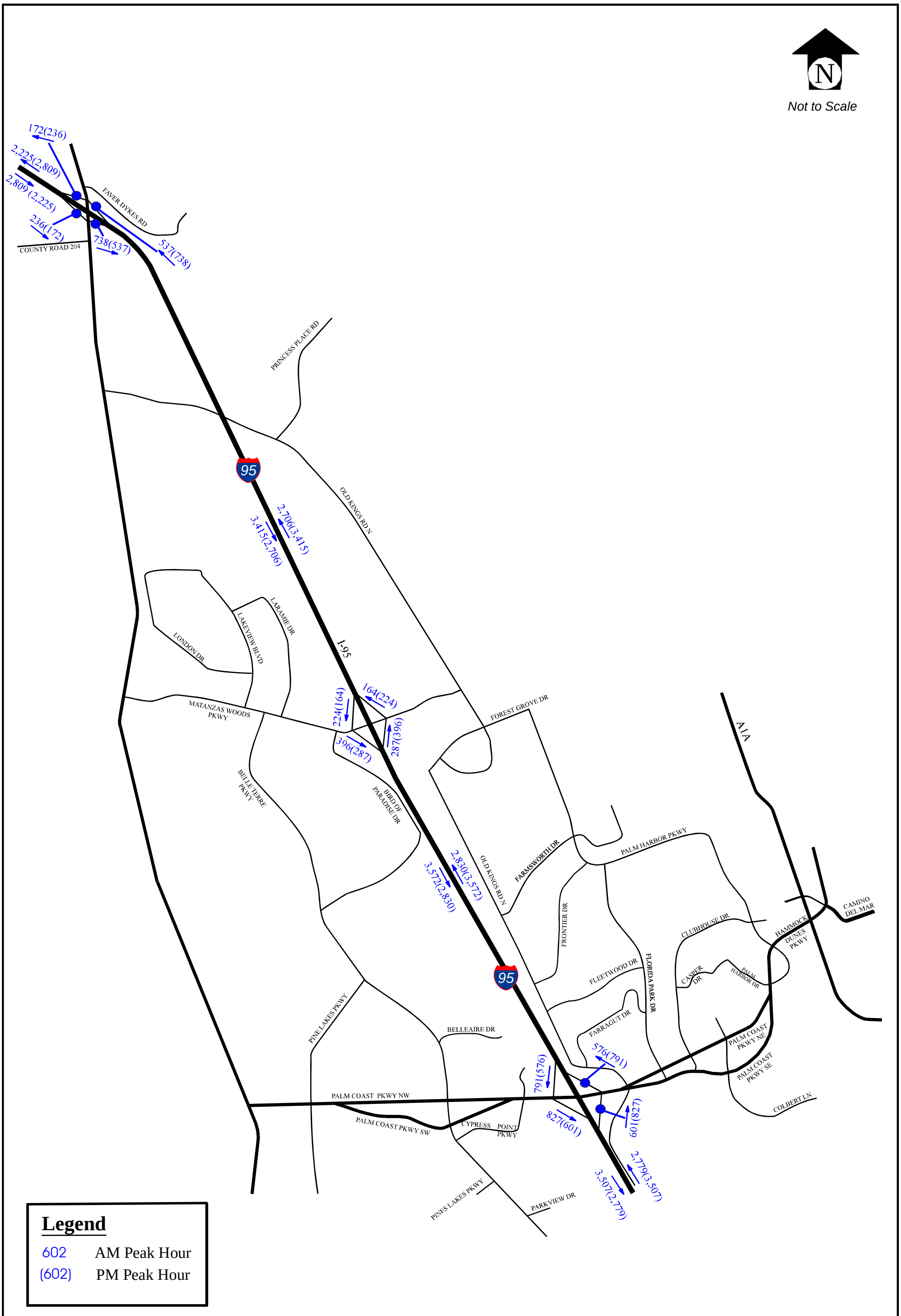
602 AM Peak Hour

(602) PM Peak Hour

I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 NO BUILD AM and PM Peak Hour Directional Volumes

Figure 7-13



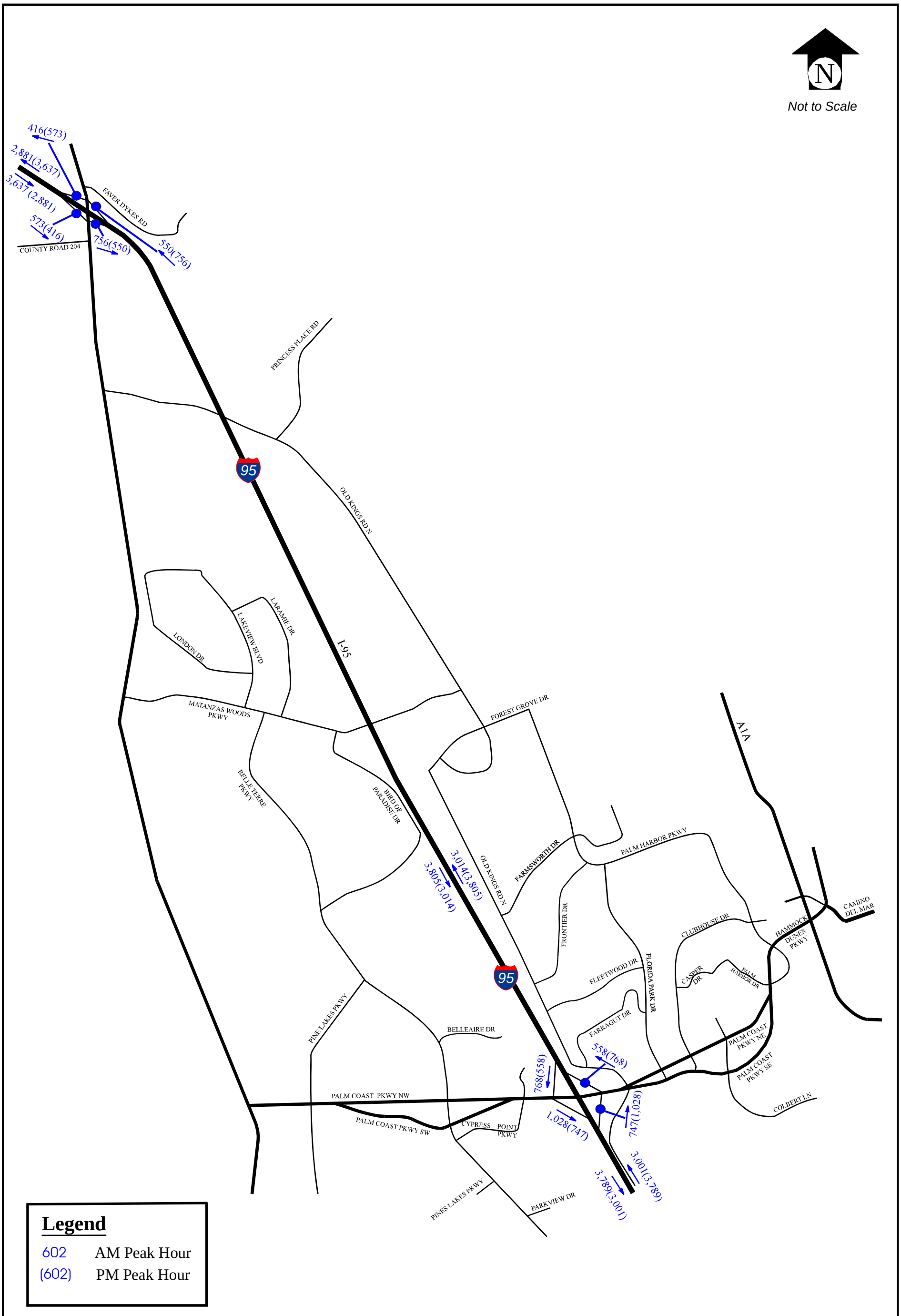
Legend

602	AM Peak Hour
(602)	PM Peak Hour

I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 BUILD AM and PM Peak Hour Directional Volumes

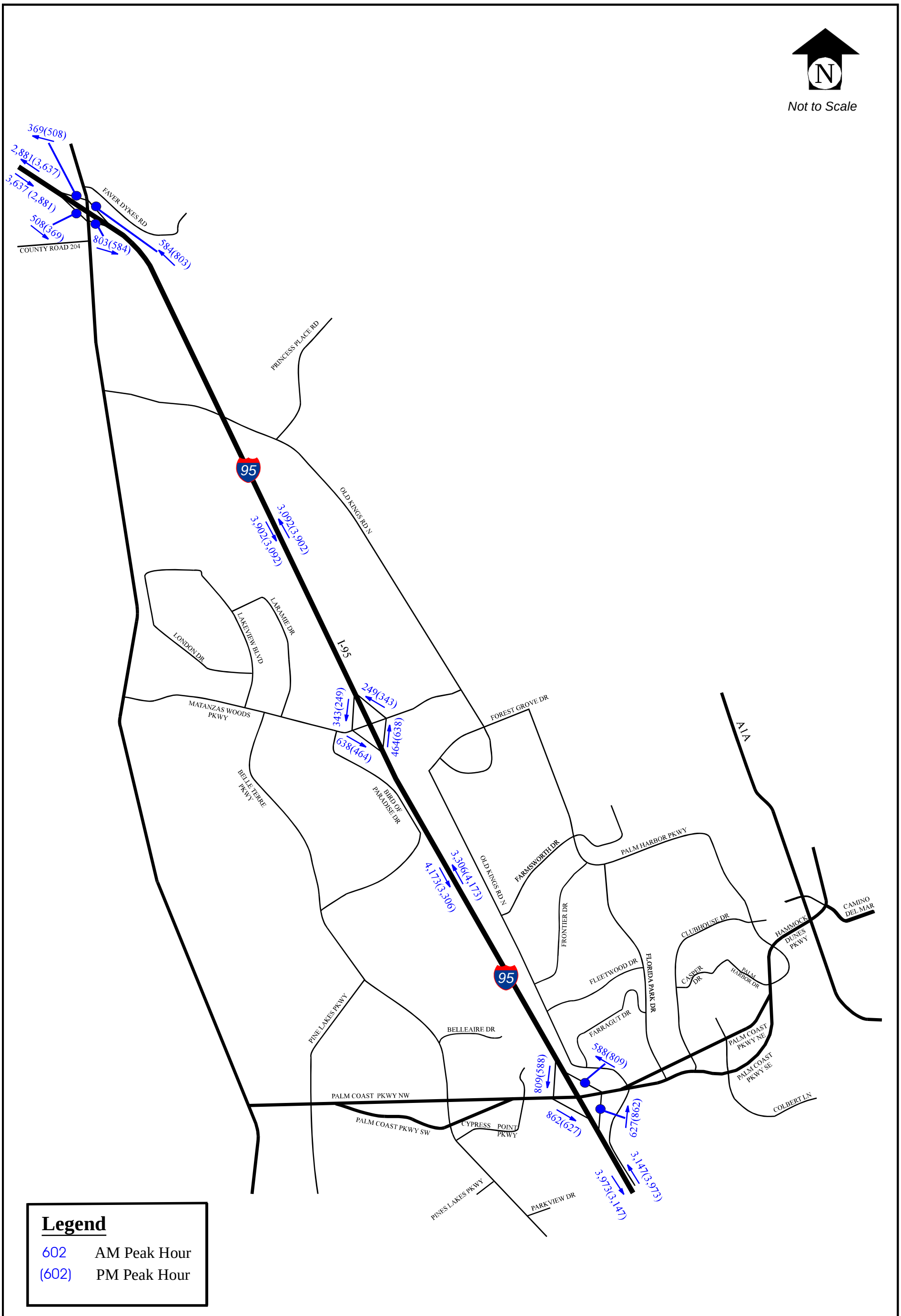
Figure 7-14



I-95 and Matanzas Woods Parkway Interchange Justification Report

2025 NO BUILD AM and PM Peak Hour Directional Volumes

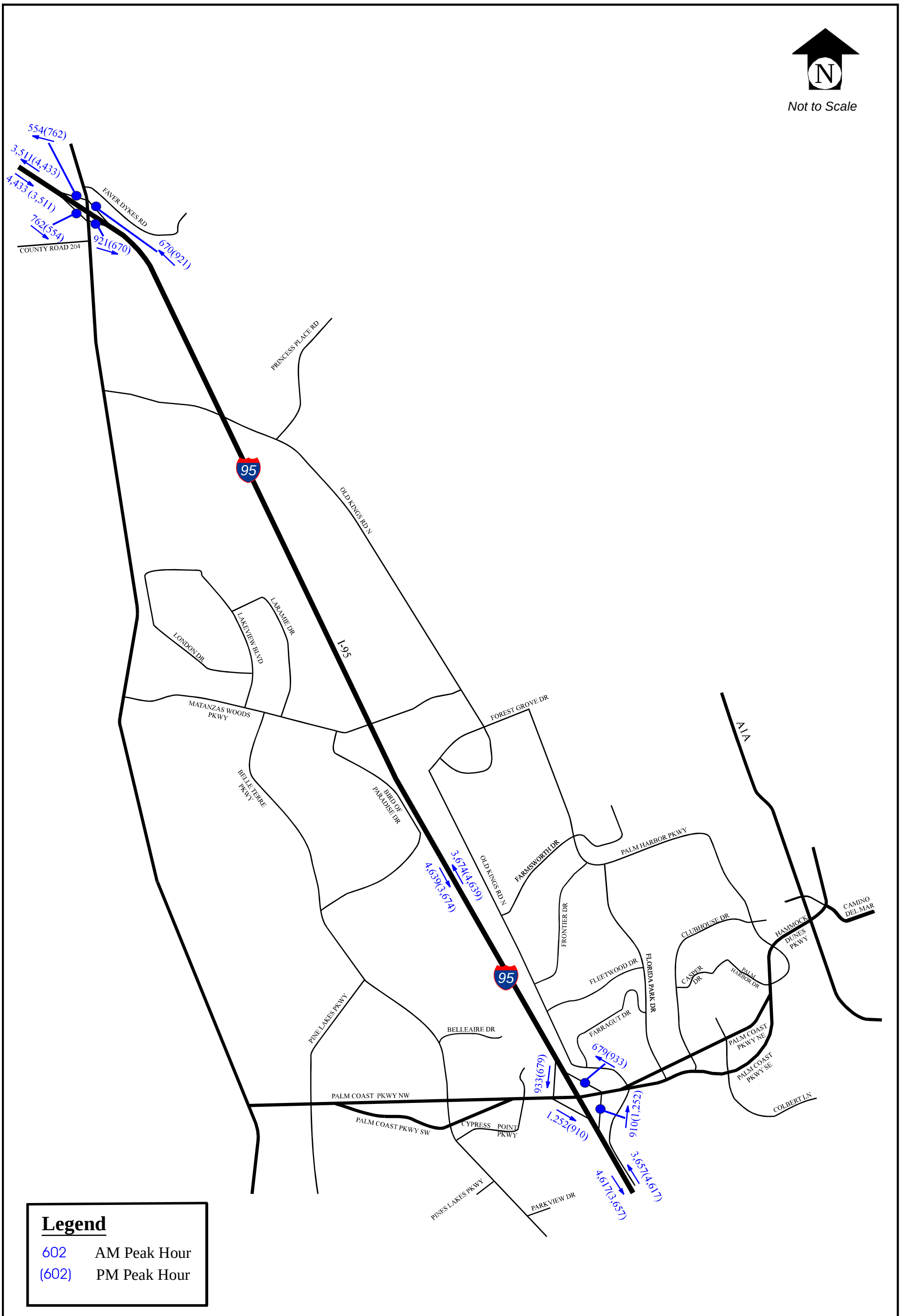
Figure 7-15



I-95 and Matanzas Woods Parkway Interchange Justification Report

2025 BUILD AM and PM Peak Hour Directional Volumes

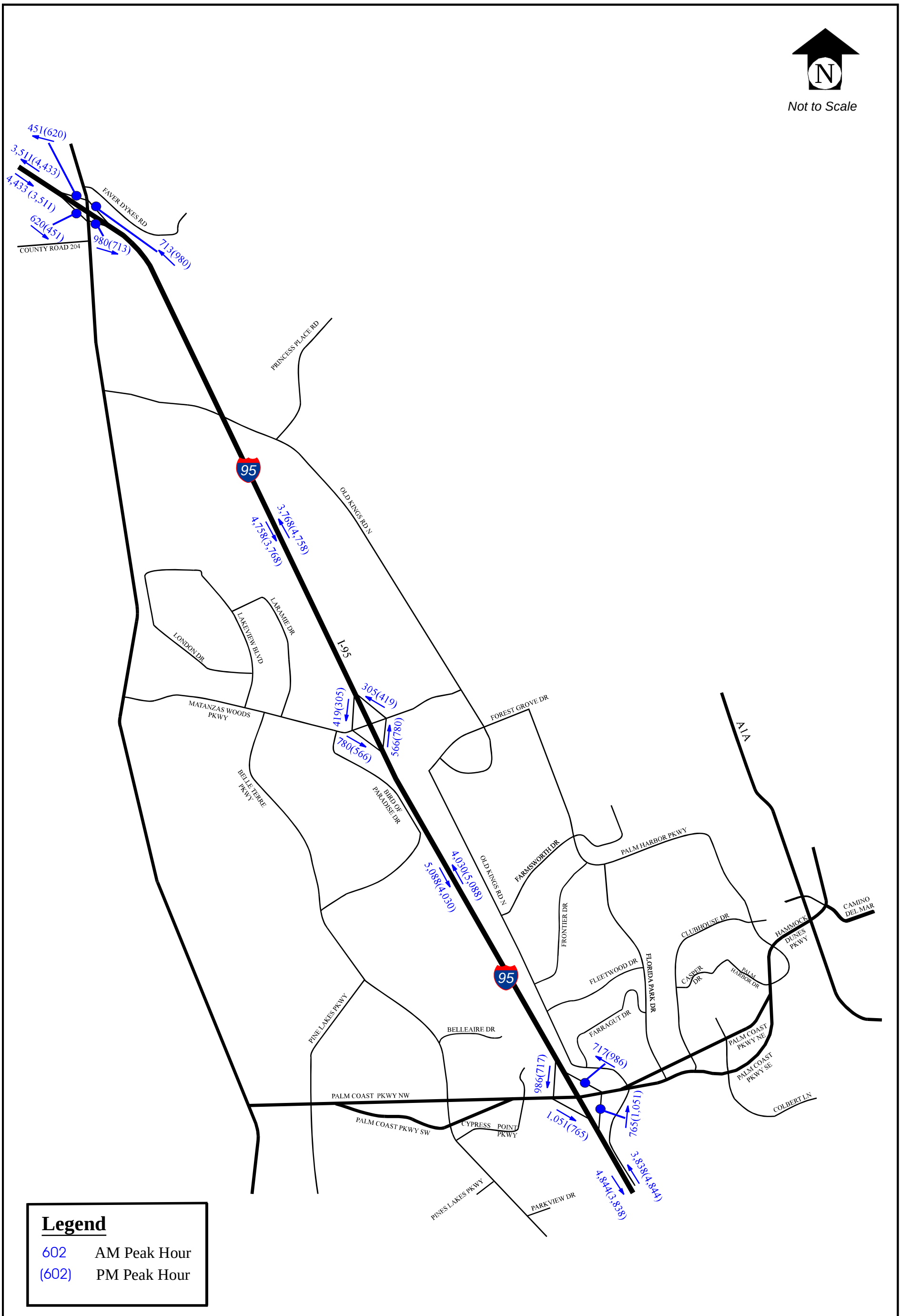
Figure 7-16



I-95 and Matanzas Woods Parkway Interchange Justification Report

2035 NO BUILD AM and PM Peak Hour Directional Volumes

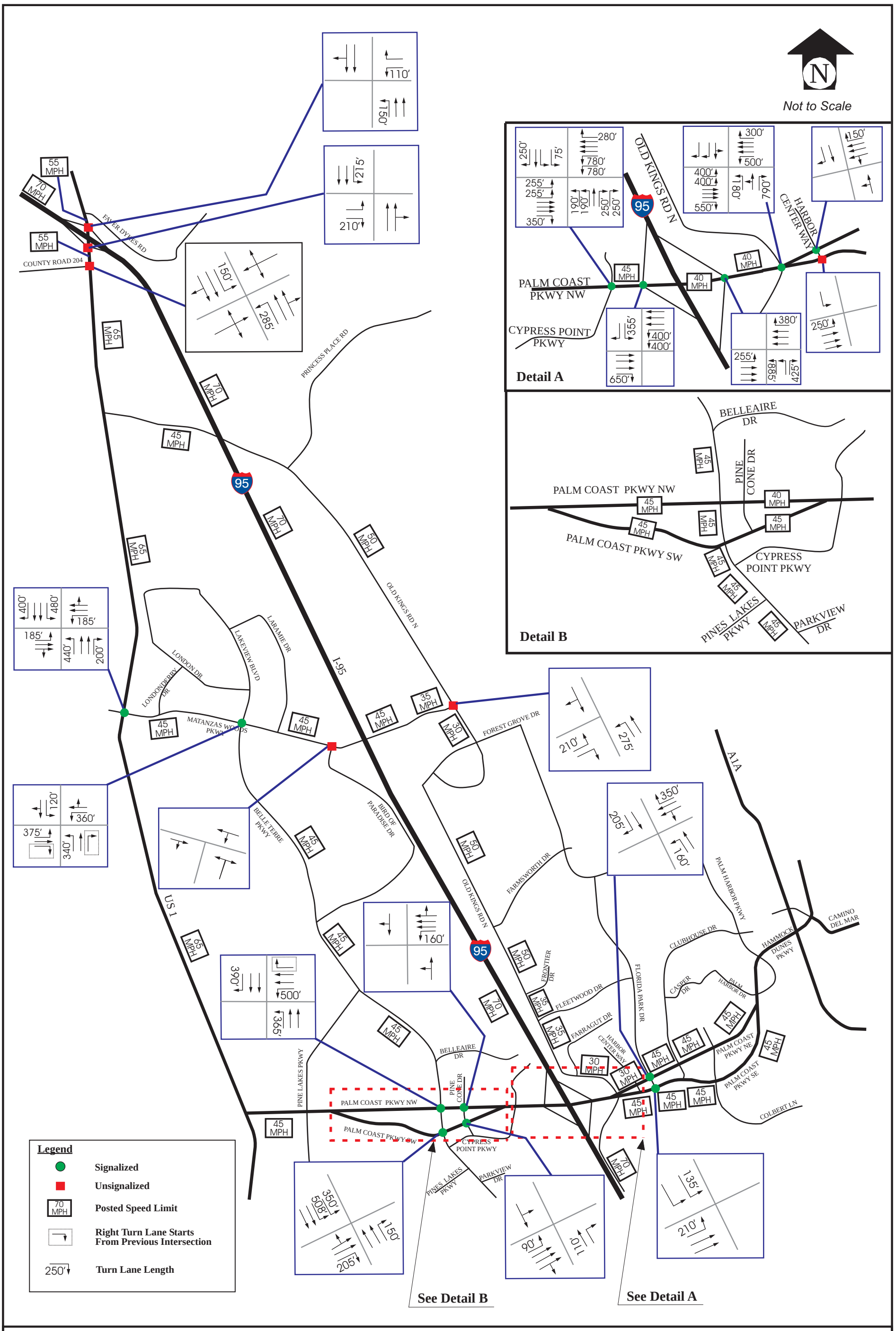
Figure 7-17



I-95 and Matanzas Woods Parkway Interchange Justification Report

2035 BUILD AM and PM Peak Hour Directional Volumes

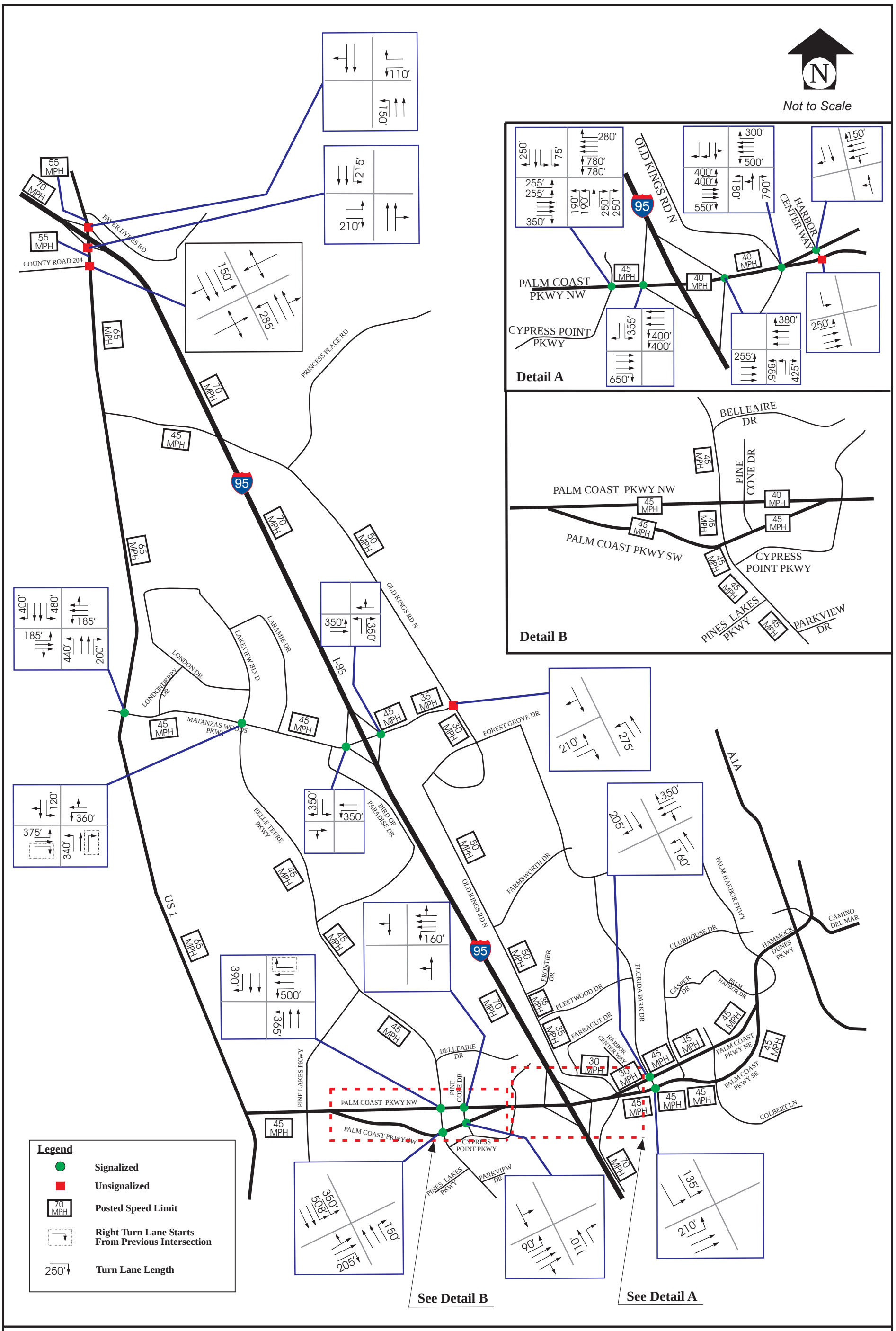
Figure 7-18



I-95 and Matanzas Woods Parkway Interchange Justification Report

No Build - Year 2015 Intersection Geometry

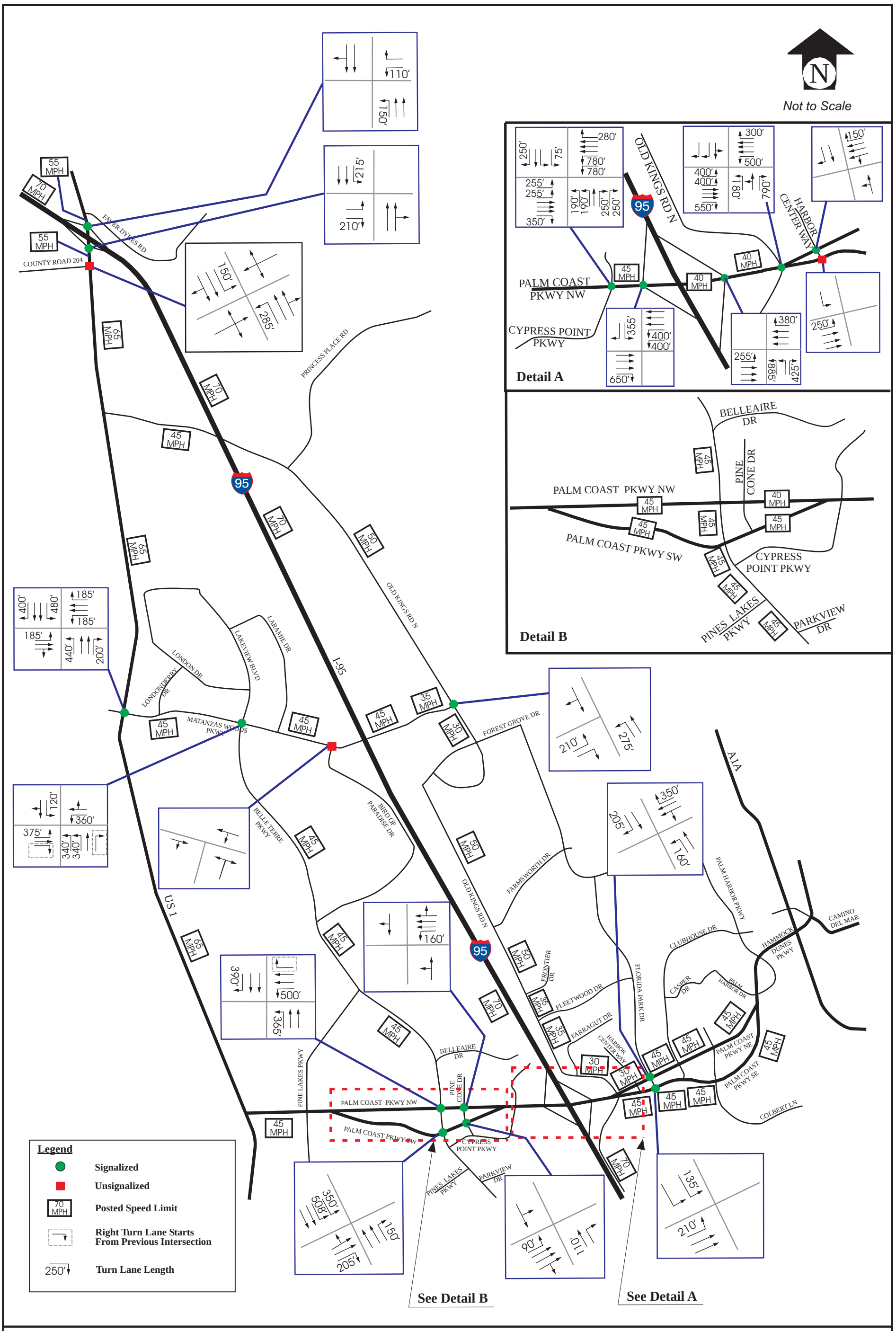
Figure 7-19



I-95 and Matanzas Woods Parkway Interchange Justification Report

Build - Year 2015 Intersection Geometry

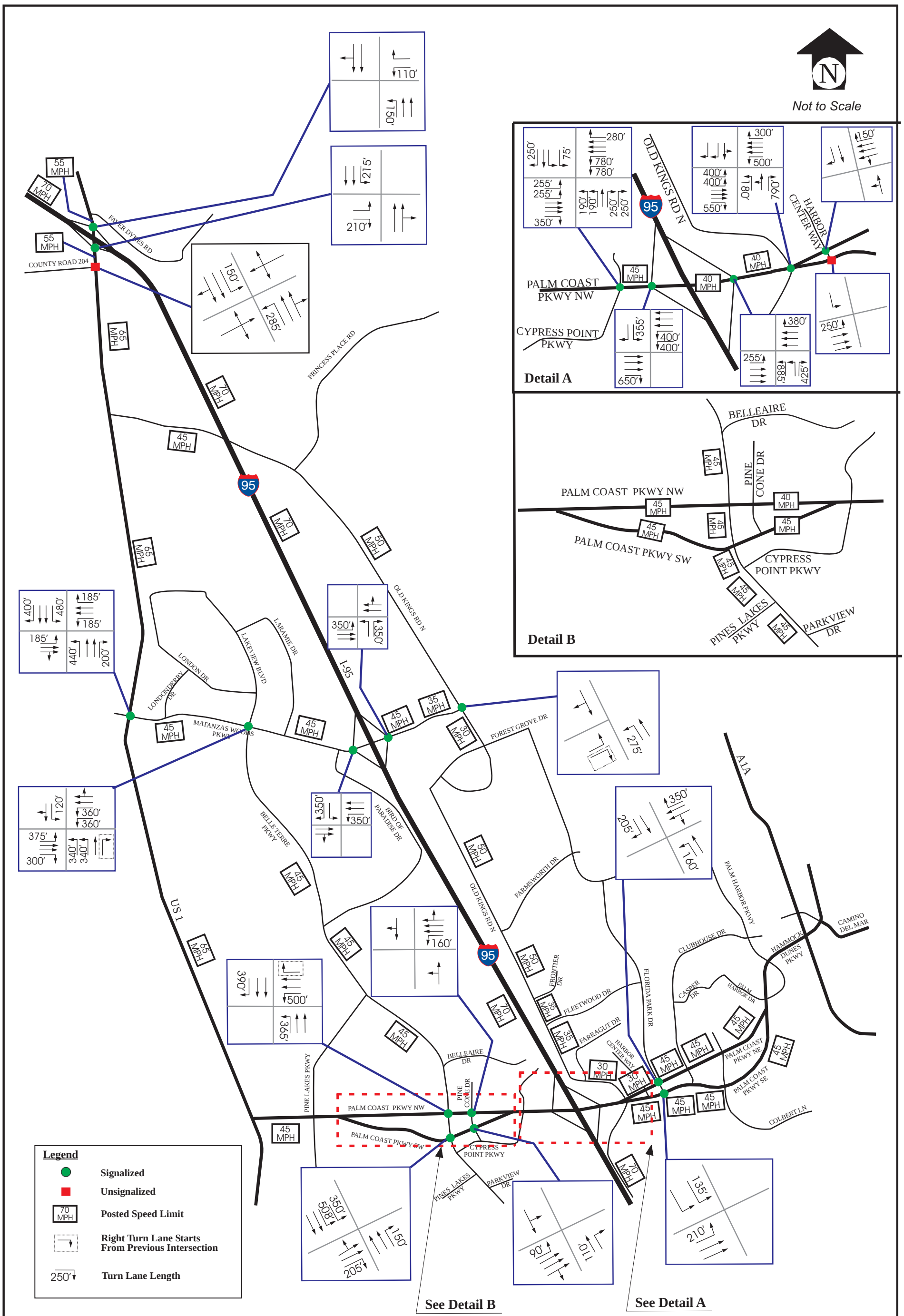
Figure 7-20



I-95 and Matanzas Woods Parkway Interchange Justification Report

No Build - Year 2025 and Year 2035 Intersection Geometry

Figure 7-21



I-95 and Matanzas Woods Parkway Interchange Justification Report

Build - Year 2025 and Year 2035 Intersection Geometry

Figure 7-22

8.0 ALTERNATIVES ANALYSIS

The No Build and Build alternatives were carefully evaluated in this IJR to compare relative impacts of the interchange proposal as well as the feasibility of conceptual configurations for the Build alternative.

8.1 Consistency with Master Plans

The Build alternative consisting of the proposed interchange is consistent with the adopted City of Palm Coast *2020 Comprehensive Plan Objective 2.1.6* to construct two new I-95 Interchanges and reduce traffic on Palm Coast Parkway and SR-100. The *City of Palm Coast Comprehensive Plan Map CP-2.8 – 2020 Number of Lanes* shows one of those two proposed interchanges at I-95 and Matanzas Woods Parkway.

8.2 Compliance with Policies and Engineering Standards

In addition to the City of Palm Coast Master Plan, the FDOT District 5 study *Transportation Planning Analysis for Potential I-95 Interchange in Flagler County (September 2000),* highlighted a need for additional access to I-95 in this specific area for hurricane evacuation. Public concerns regarding evacuation after the 1998 wildfires have been expressed through the media and at public meetings leading to the development of an evacuation plan and related policies for Flagler County and the City of Palm Coast. As stated previously, this interchange is a goal for the County's evacuation plan.

The Build alternative will also meet the adopted planning and engineering standards for interchange location and design. The proposed interchange at I-95 Milepost 14.65 will be located 3.6 miles north of Palm Coast Parkway, and 5.0 miles south of US-1. This spacing exceeds the urban interchange spacing standard of 2.0 miles. The 8.6 mile section of I-95 between the existing interchanges is classified as being within an urbanized area for 7.6 miles north of Palm Coast Parkway up to the St. Johns County line, after which it becomes rural for the remaining mile up to US-1.

8.3 Coordination with Land Use Changes

There are several large scale DRI developments that have been approved in the AOI and surrounding area that will generate well over 12,400 residential units and over 9 million square feet of non-residential development consisting of the Palm Coast Park DRI, Old Brick Township DRI and the Hammock Dunes DRI. Development order conditions related to DRI development include consideration for the potential interchange at Matanzas Woods Parkway and I-95 as well as obligations to widen Matanzas Woods

Parkway to a four lane roadway. Matanzas Woods Parkway west of the interchange will cross US-1 and become a feeder road into the Palm Coast Parkway DRI.

8.4 Operational Performance / LOS

8.4.1 Future Conditions / Arterial Roads / I-95

The model derived daily volumes converted to AADT form the basis for the alternatives analyses and ultimately the intersection analyses. AM and PM peak hour roadway segment analyses were performed for the arterial roadway segments that connect the roadway system and interchanges within the AOI. The LOS for each segment is reported for the No Build and Build alternatives for the AM and PM peak hours. Each peak hour volume is analyzed for total two-way as well as directional conditions. Daily (AADT) volume is provided for each segment and alternative for reference. The following Table 8-1 presents the total two-way peak hour LOS and the peak hour directional LOS for each segment of I-95 for future years 2015, 2025 and 2035.

Matanzas Woods Parkway is an Urban Minor Arterial City Road with an LOS D standard. Based on a comparison of the MSV and peak hour projections, the segment between US-1 and Old Kings Road may remain as a 2-lane undivided roadway in 2015 for both the No Build and Build forecast alternatives. By 2025 for both the No Build and Build forecast alternatives, the segment between US-1 and Belle Terre Parkway will require a four-lane divided cross-section. In the No Build forecast alternative, the segment between Belle Terre Parkway and Old Kings Road may remain as a 2-lane undivided for both 2025 and 2035. In the Build forecast alternative, the segment between Belle Terre Parkway and I-95 east ramps will require a four-lane divided cross-section for both 2025 and 2035. In the Build forecast alternative, the segment between I-95 east ramps and Old Kings Road may remain as a 2-lane undivided for both 2025 and 2035.

Palm Coast Parkway within the AOI is programmed to be improved from 4-lanes to 6-lanes divided. Palm Coast Parkway is an Urban Minor Arterial City Road with an LOS D standard. The IJR analyzed eight (8) segments of Palm Coast Parkway between Pine Lakes Parkway and Clubhouse Drive. Based on a comparison between the MSV and peak hour projections, there are three to four failing segments by 2015 for either the Build or No Build alternative. By 2025 there are four segments that fail in either alternative; and by 2035 five of the eight segments have LOS- E or LOS-F for either alternative. The overall daily traffic volume percent reduction between the No Build and Build forecast alternatives on Palm Coast Parkway west of I-95 is 4 percent for 2015 and 17 percent for both 2025 and 2035. The overall daily traffic volume percent reduction between the No Build and Build forecast alternatives on Palm Coast Parkway east of I-95 is 2 percent for 2015, 2025, and 2035. Thus, there is a benefit (traffic volume reduction) to Palm Coast Parkway with the proposed Matanzas Woods Parkway and I-95 interchange.

Table 8-1
I-95 AM and PM Peak Hour Directional Traffic Conditions
Years 2015, 2025 and 2035

Roadway			No Build										Build									
					AM Peak Hour				PM Peak Hour						AM Peak Hour				PM Peak Hour			
					Two-Way		Directional		Two-Way		Directional				Two-Way		Directional		Two-Way		Directional	
From	To	Dir	Lanes	AADT	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS	Lanes	AADT	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
I-95 Year 2015																						
North of U.S. 1	US-1	NB	6LD	51,900	5,034	B	2,225	B	5,034	B	2,809	B	6LD	51,900	5,034	B	2,225	B	5,034	B	2,809	B
		SB					2,809	B			2,225	B					2,809	B			2,225	B
US-1	Matanzas Woods Parkway	NB	6LD	60,400	5,859	B	2,590	B	5,859	B	3,269	B	6LD	63,100	6,121	C	2,706	B	6,121	C	3,415	C
		SB					3,269	B			2,590	B					3,415	C			2,706	B
Matanzas Woods Parkway	Palm Coast Parkway	NB	6LD	60,400	5,859	B	2,590	B	5,859	B	3,269	B	6LD	66,000	6,402	C	2,830	B	6,402	C	3,572	C
		SB					3,269	B			2,590	B					3,572	C			2,830	B
Palm Coast Parkway	South of Palm Coast Parkway	NB	6LD	63,400	6,150	C	2,718	B	6,150	C	3,432	C	6LD	64,800	6,286	C	2,779	B	6,286	C	3,507	C
		SB					3,432	C			2,718	B					3,507	C			2,779	B
I-95 Year 2025																						
North of U.S. 1	US-1	NB	6LD	67,200	6,518	C	2,881	B	6,518	C	3,637	C	6LD	67,200	6,518	C	2,881	B	6,518	C	3,637	C
		SB					3,637	C			2,881	B					3,637	C			2,881	B
US-1	Matanzas Woods Parkway	NB	6LD	70,300	6,819	C	3,014	B	6,819	C	3,805	C	6LD	72,100	6,994	C	3,092	B	6,994	C	3,902	C
		SB					3,805	C			3,014	B					3,902	C			3,092	B
Matanzas Woods Parkway	Palm Coast Parkway	NB	6LD	70,300	6,819	C	3,014	B	6,819	C	3,805	C	6LD	77,100	7,479	C	3,306	C	7,479	C	4,173	C
		SB					3,805	C			3,014	B					4,173	C			3,306	C
Palm Coast Parkway	South of Palm Coast Parkway	NB	6LD	70,000	6,790	C	3,001	B	6,790	C	3,789	C	6LD	73,400	7,120	C	3,147	B	7,120	C	3,973	C
		SB					3,789	C			3,001	B					3,973	C			3,147	B
I-95 Year 2035																						
North of U.S. 1	US-1	NB	6LD	81,900	7,944	C	3,511	C	7,944	C	4,433	C	6LD	81,900	7,944	C	3,511	C	7,944	C	4,433	C
		SB					4,433	C			3,511	C					4,433	C			3,511	C
US-1	Matanzas Woods Parkway	NB	6LD	85,700	8,313	C	3,674	C	8,313	C	4,639	D	6LD	87,900	8,526	D	3,768	C	8,526	D	4,758	D
		SB					4,639	D			3,674	C					4,758	D			3,768	C
Matanzas Woods Parkway	Palm Coast Parkway	NB	6LD	85,700	8,313	C	3,674	C	8,313	C	4,639	D	6LD	94,000	9,118	D	4,030	C	9,118	D	5,088	D
		SB					4,639	D			3,674	C					5,088	D			4,030	C
Palm Coast Parkway	South of Palm Coast Parkway	NB	6LD	85,300	8,274	C	3,657	C	8,274	C	4,617	D	6LD	89,500	8,682	D	3,838	C	8,682	D	4,844	D
		SB					4,617	D			3,657	C					4,844	D			3,838	C

Interstate 95 (I-95) within the AOI is a 6-lane Urban Freeway with an LOS C standard. Based on a comparison between the MSV and peak hour projections, I-95 will operate within an LOS B to C through year 2025 with either the No Build or Build alternative. By 2035 No Build and Build forecast alternatives between US-1 and South of Palm Coast Parkway exceed the MSV. In the No Build 2035, the AM peak hour has a total LOS of C while the directional LOS for three segments results in an LOS-D. The PM peak hour for the 2035 Build alternative results in both total peak hour LOS-D as well as directional LOS-D. For the most significantly impacted segment between Matanzas Woods Parkway and Palm Coast Parkway, the Build alternative adds 9,300 daily and 805 peak hour trips for both directions of travel.

US-1 within the AOI is a State Rural Principal Arterial from Faver Dykes Road to Old Kings Road. From Old Kings Road to Palm Coast Parkway it becomes an Urban Principal Arterial. The minimum LOS standard for US-1 as a multilane rural state highway as provided in the Q/LOS Handbook is LOS-B. However, since it is not a SIS facility, local governments may establish their own standards (Chapter 2009-96). The City of Palm Coast has adopted an LOS-D in their comprehensive plan for US-1. The distinction becomes irrelevant since the LOS for US-1 remains at LOS-B for all alternatives from 2015 through 2035.

The roadway segments within the AOI that result in either an LOS-E or LOS-F for the No Build or Build alternative years 2015, 2025 and 2035 are limited to Palm Coast Parkway and listed below;

Palm Coast Parkway

2015 No-Build

- Between Cypress Point Parkway and Old Kings Road;
- Between Town Center Drive and Clubhouse Drive.

2025 and 2035 No-Build

- Between Pine Lakes Parkway and Belle Terre Parkway
- Between Cypress Point Parkway and Clubhouse Drive

2015 Build

- Between Cypress Point Parkway and Old Kings Road;
- Between Town Center Drive and Clubhouse Drive.

2025 and 2035 Build

- Between Pine Lakes Parkway and Belle Terre Parkway
- Between Cypress Point Parkway and Clubhouse Drive

8.4.2 I-95 Freeway Analysis

An analysis of the I-95 freeway section within the AOI was performed for years 2015, 2025 and 2035, for both the No-Build and Build Scenarios. Tables 8-2 and 8-3 present the results of the analysis based on passenger cars per mile per lane and by direction and freeway segment for the No-Build and Build scenarios, respectively. The freeway facility analysis output sheets are presented in Appendix XII.

The I-95 Freeway analysis shows that for the No Build or Build alternatives the LOS remains at B or C for 2015 and 2025. By 2035, two (2) analysis segments drop to LOS-D for No Build in either the AM or PM peak hours, and six (6) analysis segments drop to LOS-D for 2035 with the Build alternative. The analysis segments that drop to LOS-D range in length from 1500 feet to 5800 feet.

8.4.3 I-95 Ramp Analysis

The merge and diverge ramp operational analyses were performed for years 2015, 2025 and 2035, for both the No-Build and Build Scenarios. Table 8-4 presents the levels of service for each of the interchange ramps. As shown in the table, all of the ramps operate at levels of service (LOS D or better). The ramp level of service output sheets are presented in Appendix XIII.

The ramp analysis includes 48 ramp analyses for the No Build alternative, and 72 ramp analyses for the Build alternative. For the No Build alternative, the ramp analysis shows that one (1) off ramp location operates at LOS-D by 2025; and seven (7) on or off ramp locations operate at LOS-D by 2035. For the Build alternative, two (2) off ramp locations operate at LOS-D by 2025, and eleven (11) on and off ramp locations operate at LOS-D by 2035.

8.4.4 Intersection Analysis

Intersections analyses were performed for the future analysis years as detailed in Section 7.0 Future Year Traffic. A review of the intersection LOS and overall delay as provided in Tables 7-6 through 7-8 results in the following general findings:

2015

A total of 5 intersections have one or both peak hours operating at LOS-E or LOS-F for 2015 No Build. This number decreases to 2 intersections for the Build alternative. The Palm Coast Parkway and I-95 ramp intersections experience a significant reduction in overall delay for the Build alternative. The southbound ramp intersection delay reduces by 23.3% in the AM and increases by 1.8% in the PM. The northbound ramp intersection reduces by 1.8% in the AM, and 22.2% in the PM.

Table 8-2
No Build – Future Year AM and PM Freeway (I-95) Analysis Based on HCS

7/22/2010

SEGMENT NUMBER	SEGMENT TYPE	SEGMENT LENGTH (FT)	DESTINATION	2015				2025				2035			
				AM PEAK		PM PEAK		AM PEAK		PM PEAK		AM PEAK		PM PEAK	
				Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I-95 NORTHBOUND DIRECTION															
1	Basic	2000	I-95	13.8	B	17.0	B	16.5	B	20.5	C	19.4	C	25.7	C
2	Off Ramp	1500	Palm Coast Pkwy Off Ramp	16.8	B	20.3	C	19.6	B	24.0	C	22.7	C	29.0	D
3	Basic	4400	I-95	10.2	A	12.2	B	12.6	B	15.5	B	14.9	B	18.9	C
4	On Ramp	1500	Palm Coast Pkwy On Ramp	15.4	B	18.0	B	18.2	B	22.1	C	21.3	C	26.6	C
5	Basic	9750	I-95	13.0	B	15.4	B	15.7	B	19.2	C	18.5	C	23.7	C
6	Basic	9750	I-95	13.0	B	15.4	B	15.7	B	19.2	C	18.5	C	23.7	C
7	Basic	9750	I-95	13.0	B	15.4	B	15.7	B	19.2	C	18.5	C	23.7	C
8	Basic	9750	I-95	13.0	B	15.4	B	15.7	B	19.2	C	18.5	C	23.7	C
9	Off Ramp	1500	US 1 Off Ramp	16.3	B	18.8	B	19.1	B	23.0	C	22.2	C	27.5	C
10	Basic	3400	I-95	10.4	A	12.3	B	12.6	B	15.8	B	15.0	B	19.0	C
11	On Ramp	1500	US 1 On Ramp	14.1	B	16.6	B	17.4	B	21.1	C	20.4	C	25.5	C
12	Basic	2000	I-95	11.8	B	14.3	B	15.0	B	18.6	C	17.9	B	22.6	C
I-95 SOUTHBOUND DIRECTION															
1	Basic	2000	I-95	14.5	B	11.4	B	18.6	C	14.6	B	22.6	C	17.8	B
2	Off Ramp	1500	US 1 Off Ramp	17.6	B	14.2	B	22.0	C	17.6	B	26.2	C	21.1	C
3	Basic	3400	I-95	12.6	B	10.0	A	15.8	B	12.7	B	18.9	C	15.2	B
4	On Ramp	1500	US 1 On Ramp	18.7	B	15.1	B	22.5	C	18.3	B	26.5	C	21.7	C
5	Basic	9750	I-95	16.1	B	12.5	B	19.6	C	15.5	B	23.7	C	18.8	C
6	Basic	9750	I-95	16.1	B	12.5	B	19.6	C	15.5	B	23.7	C	18.8	C
7	Basic	9750	I-95	16.1	B	12.5	B	19.6	C	15.5	B	23.7	C	18.8	C
8	Basic	9750	I-95	16.1	B	12.5	B	19.6	C	15.5	B	23.7	C	18.8	C
9	Off Ramp	1500	Palm Coast Pkwy Off Ramp	19.1	B	15.2	B	22.9	C	18.5	B	27.1	C	22.0	C
10	Basic	4400	I-95	12.3	B	10.0	A	15.3	B	12.6	B	18.3	C	15.3	B
11	On Ramp	1500	Palm Coast Pkwy On Ramp	20.7	C	16.9	B	24.3	C	19.8	B	28.4	D	23.4	C
12	Basic	2000	I-95	17.9	B	13.9	B	21.1	C	16.7	B	25.0	C	20.0	C

Table 8-3
Build – Future Year AM and PM Freeway (I-95) Analysis Based on HCS

7/22/2010

SEGMENT NUMBER	SEGMENT TYPE	SEGMENT LENGTH (FT)	DESTINATION	2015				2025				2035			
				AM PEAK		PM PEAK		AM PEAK		PM PEAK		AM PEAK		PM PEAK	
				Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I-95 NORTHBOUND DIRECTION															
1	Basic	2000	I-95	14.7	B	17.8	B	16.3	B	20.2	C	19.5	C	25.1	C
2	Off Ramp	1500	Palm Coast Pkwy Off Ramp	17.7	B	21.0	C	19.4	B	23.6	C	22.8	C	28.4	D
3	Basic	4400	I-95	11.8	B	13.8	B	12.9	B	16.0	B	15.4	B	19.4	C
4	On Ramp	1500	Palm Coast Pkwy On Ramp	17.7	B	20.4	C	19.3	B	23.0	C	22.4	C	27.6	C
5	Basic	5800	I-95	15.0	B	17.5	B	16.6	B	19.9	C	19.4	C	24.6	C
6	Basic	5800	I-95	15.0	B	17.5	B	16.6	B	19.9	C	19.4	C	24.6	C
7	Off Ramp	1500	Matanzas Woods Pkwy Off Ramp	17.9	B	20.6	C	19.6	B	23.3	C	22.7	C	27.9	C
8	Basic	4400	I-95	13.5	B	15.5	B	14.0	B	16.9	B	16.3	B	20.2	C
9	On Ramp	1500	Matanzas Woods Pkwy On Ramp	17.0	B	19.6	B	18.1	B	21.9	C	20.9	C	26.0	C
10	Basic	9900	I-95	14.4	B	16.6	B	15.5	B	18.8	C	18.1	C	22.6	C
11	Basic	9900	I-95	14.4	B	16.6	B	15.5	B	18.8	C	18.1	C	22.6	C
12	Off Ramp	1500	US 1 Off Ramp	17.8	B	20.1	C	18.9	B	22.5	C	21.7	C	26.5	C
13	Basic	3400	I-95	11.4	B	13.0	B	12.7	B	15.0	B	14.8	B	17.9	B
14	On Ramp	1500	US 1 On Ramp	14.5	B	16.6	B	16.9	B	20.1	C	19.5	B	23.7	C
15	Basic	2000	I-95	12.3	B	14.3	B	14.6	B	17.6	B	17.1	B	21.0	C
I-95 SOUTHBOUND DIRECTION															
1	Basic	2000	I-95	14.5	B	11.4	B	18.6	C	14.6	B	22.6	C	17.8	B
2	Off Ramp	1500	US 1 Off Ramp	17.5	B	14.1	B	22.0	C	17.6	B	26.1	C	21.1	C
3	Basic	3400	I-95	13.4	B	10.6	A	16.2	B	12.8	B	19.5	C	15.6	B
4	On Ramp	1500	US 1 On Ramp	19.8	B	16.0	B	23.3	C	18.6	B	27.6	C	22.0	C
5	Basic	9900	I-95	17.2	B	13.4	B	20.3	C	15.9	B	24.7	C	19.1	C
6	Basic	9900	I-95	17.2	B	13.4	B	20.3	C	15.9	B	24.7	C	19.1	C
7	Off Ramp	1500	Matanzas Woods Pkwy Off Ramp	20.1	C	16.1	B	23.6	C	18.8	B	27.9	C	22.3	C
8	Basic	4400	I-95	16.0	B	12.6	B	18.3	C	14.6	B	22.1	C	17.6	B
9	On Ramp	1500	Matanzas Woods Pkwy On Ramp	21.4	C	17.4	B	25.1	C	20.4	C	29.7	D	24.0	C
10	Basic	5800	I-95	18.0	C	14.1	B	21.5	C	17.1	B	26.4	D	20.5	C
11	Basic	5800	I-95	18.0	B	14.1	B	21.5	C	17.1	B	26.4	D	20.5	C
12	Off Ramp	1500	Palm Coast Pkwy Off Ramp	21.2	C	17.0	B	24.9	C	20.2	C	29.5	D	23.8	C
13	Basic	4400	I-95	13.9	B	11.2	B	17.1	B	14.0	B	20.2	C	16.6	B
14	On Ramp	1500	Palm Coast Pkwy On Ramp	21.6	C	17.4	B	24.9	C	20.5	C	29.2	D	24.1	C
15	Basic	2000	I-95	18.4	C	14.3	B	21.6	C	17.3	B	25.9	C	20.7	C

Table 8-4
Future Years AM and PM Peak Hour Ramp Analysis

I-95 INTERCHANGES	RAMPS [1]	2015				2025				2035			
		AM PEAK		PM PEAK		AM PEAK		PM PEAK		AM PEAK		PM PEAK	
		Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
NO BUILD													
US-1	NB Off-Ramp	20.7	C	23.4	C	27.0	C	27.6	C	26.9	C	31.9	D
	NB On-Ramp	15.2	B	17.7	B	18.7	B	22.2	C	21.7	C	26.7	C
	SB Off-Ramp	21.6	C	17.4	B	23.0	C	21.6	C	30.2	D	25.3	C
	SB On-Ramp	20.6	C	18.3	B	24.2	C	21.3	C	28.4	D	24.8	C
Palm Coast Parkway	NB Off-Ramp	21.6	C	25.4	C	24.8	C	28.9	D	27.4	C	33.5	D
	NB On-Ramp	17.1	B	19.8	B	19.9	B	23.9	C	23.1	C	28.4	D
	SB Off-Ramp	23.7	C	19.1	B	27.4	C	22.8	C	31.4	D	26.4	C
	SB On-Ramp	23.8	C	19.5	B	27.1	C	22.2	C	31.1	D	25.7	C
BUILD													
US-1	NB Off-Ramp	22.5	C	25.1	C	23.4	C	27.2	C	26.3	C	31.1	D
	NB On-Ramp	15.2	B	17.2	B	18.0	B	21.1	C	20.5	C	24.7	C
	SB Off-Ramp	21.3	C	17.6	B	26.1	C	21.6	C	30.0	D	25.2	C
	SB On-Ramp	21.8	C	19.4	B	25.1	C	21.8	C	29.4	D	25.1	C
Matanzas Woods Parkway	NB Off-Ramp	21.7	C	24.6	C	23.8	C	27.4	C	26.9	C	31.7	D
	NB On-Ramp	17.4	B	19.7	B	18.8	B	22.3	C	21.5	C	26.2	C
	SB Off-Ramp	23.8	C	19.6	B	27.3	C	22.5	C	31.1	D	26.0	C
	SB On-Ramp	22.3	C	18.3	B	26.4	C	21.8	C	30.8	D	25.3	C
Palm Coast Parkway	NB Off-Ramp	22.3	C	25.7	C	24.0	C	28.1	D	27.3	C	32.6	D
	NB On-Ramp	19.4	B	22.2	C	21.1	C	24.7	C	24.1	C	29.3	D
	SB Off-Ramp	25.8	C	21.3	C	29.3	D	24.6	C	33.5	D	28.1	D
	SB On-Ramp	23.6	C	19.2	B	26.8	C	22.4	C	31.2	D	26.0	C

NOTES:
[1] Consistent with the Highway Capacity Manual (HCM) procedures, adjacent ramps were considered where the distance between the ramps was less than 6,000 feet.

2025

A total of 11 intersections have one or both peak hours operating at LOS-E or LOS-F for 2025 No Build. This number decreases to 8 intersections for the Build alternative, resulting directly from the new interchange at Matanzas Woods Parkway. The Palm Coast Parkway and I-95 ramp intersections experience a significant reduction in overall delay for the Build alternative. The southbound ramp intersection delay reduces by 24.3% in the AM and 15.5% in the PM. The northbound ramp intersection reduces by 23.1% in the AM, and 24.7% in the PM. Two of the intersections that have LOS-E of LOS-F for the AM or PM for the No Build or Build alternatives are not signalized which results in poor LOS. These are US-1 and CR 204; and Palm Coast Parkway EB and Harbor Center Way.

2035

A total of 15 intersections have one or both peak hours operating at LOS-E or LOS-F for 2015 No Build. This number decreases to 11 intersections for the Build alternative, resulting directly from the new interchange at Matanzas Woods Parkway. The Palm Coast Parkway and I-95 ramp intersections experience a significant reduction in overall delay for the Build alternative. The southbound ramp intersection delay reduces by 35.5% in the AM and 44.5% in the PM. The northbound ramp intersection reduces by 36.4% in the AM, and 19.2% in the PM.

Two of the intersections that have LOS-E of LOS-F for the AM or PM for the No Build or Build alternatives are not signalized which results in poor LOS. These are the intersections of US-1 and CR 204; and Palm Coast Parkway EB and Harbor Center Way.

8.4.5 Build / Matanzas Woods Parkway Interchange Analysis

The Build alternative was evaluated for two potential configurations, a wide diamond and a partial cloverleaf. These configurations are illustrated on Figures 6-1 and 6-3. The interchange configurations were evaluated for LOS and queue length using SYNCHRO. The operational analyses indicate that both interchanges can provide an LOS-D or better for the AM and PM peak hours for all three analysis years. The results are provided in Table 8-5 which shows that the LOS ranges from A to C with only the PM peak hour for 2035 resulting in an LOS-D for the wide diamond configuration. While LOS-D is the adopted standard for Matanzas Woods Parkway, this LOS can be improved by providing dual turn lanes at the ramp approaches.

The queue length analysis is summarized in Table 8-6 for the wide diamond configuration, and Table 8-7 for the partial cloverleaf. The queue analysis summary clearly demonstrates that the forecasted design hour volumes will be accommodated within the vehicle storage provided.

8.5 Design Alternative Analysis

Tables 8-8 and 8-9 are comparison matrices for the proposed Matanzas Woods Parkway interchange design alternatives. Evaluation criteria consisting of Traffic Operations Performance, Wetlands, Social Impacts, Air Quality, Noise Sensitive Sites, and Right-of Way are included for each design alternative and compared using the following scale in the comparison matrices:

- No Significant Impact (NSI) - Rank 1
- Potential Significant Impact (PSI) - Rank 2
- Known Significant Impact (KSI) - Rank 3

The proposed Matanzas Woods Parkway interchange AOI is located in an attainment area in relation to the National Ambient Air Quality Standards (NAAQS). Projects that are in Florida and within the attainment area rarely fail the screening tests performed during the PD&E, even under worse case scenarios. The PD&E will fully address the air quality requirements. The approximate minimum Right-of-Way (ROW) necessary to build each design alternative is compared. The ROW for the wide diamond configuration (44.6 acres) is already available.

Table 8-5
Level of Service Comparison
Diamond and Partial Cloverleaf interchange Configuration Alternatives

Intersection	Diamond Configuration				Partial Cloverleaf Configuration			
Matanzas Woods Parkway and I-95 West Ramps	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
Opening Year 2015	10.1	B	11.6	B	11.0	B	10.1	B
Interim Year 2025	9.9	A	10.7	B	12.7	B	17.5	B
Design Year 2035	15.4	B	12.1	B	22.2	C	23.2	C
Matanzas Woods Parkway and I-95 East Ramps	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
Opening Year 2015	13.7	B	16.2	B	13.7	B	16.5	B
Interim Year 2025	19.1	B	22.6	C	15.4	B	15.9	B
Design Year 2035	32.4	C	35.8	D	23.1	C	22.6	C

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Table 8-6
Queue Length Analysis
Diamond Interchange Configuration Alternative

INTERSECTION	DIR.	Diamond Interchange Alternative				
			AM Peak Hour		PM Peak Hour	
		Storage Length (FT)	95% HCS Queue (FT)	Storage Meets Queue (Y/N)	95% HCS Queue (FT)	Storage Meets Queue (Y/N)
YEAR 2015						
I-21 Matanzas Woods Parkway and I-95 West Ramps [1] SIGNALIZED	WBL	350	23	YES	46	YES
	SBL SBR(350')	1,400	86 34	YES	92 31	YES
I-22 Matanzas Woods Parkway and I-95 East Ramps [1] SIGNALIZED	EBL	350	9	YES	52	YES
	NBL NBR(350')	1,400	132 38	YES	153 48	YES
YEAR 2025						
I-21 Matanzas Woods Parkway and I-95 West Ramps [1] SIGNALIZED	WBL	350	20	YES	93	YES
	SBL SBR(350')	1,400	130 151	YES	162 54	YES
I-22 Matanzas Woods Parkway and I-95 East Ramps [1] SIGNALIZED	EBL	350	43	YES	67	YES
	NBL NBR(350')	1,400	325 38	YES	383 75	YES
YEAR 2035						
I-21 Matanzas Woods Parkway and I-95 West Ramps [1] SIGNALIZED	WBL	350	102	YES	60	YES
	SBL SBR(350')	1,400	155 269	YES	197 89	YES
I-22 Matanzas Woods Parkway and I-95 East Ramps [1] SIGNALIZED	EBL	350	193	YES	278	YES
	NBL NBR(350')	1,400	548 42	YES	700 128	YES

Notes:

[1] The ramp length is used for the combined queue beyond the turn lane storages.

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Table 8-7
Queue Length Analysis
Partial Cloverleaf Interchange Configuration Alternatives

INTERSECTION	Direction	Partial Cloverleaf Interchange Alternative				
		Storage Length (Feet)	AM Peak Hour		PM Peak Hour	
			95% HCS Queue (FT)	Storage Meets Queue (Y/N)	95% HCS Queue (FT)	Storage Meets Queue (Y/N)
YEAR 2015						
I-21 Matanzas Woods Parkway and I-95 West Ramps [1]	EBL	400	53	YES	52	YES
	WBR	350	2	YES	3	YES
SIGNALIZED	SBL	1,400	134	YES	116	YES
	SBR(300')		45		36	
I-22 Matanzas Woods Parkway and I-95 East Ramps [1]	EBL	350	12	YES	30	YES
SIGNALIZED	SBL	1,400	126	YES	183	YES
	SBR(300')		58		58	
YEAR 2025						
I-21 Matanzas Woods Parkway and I-95 West Ramps [1]	EBL	400	19	YES	229	YES
	WBR	350	8	YES	49	YES
SIGNALIZED	SBL	1,400	140	YES	162	YES
	SBR(300')		70		54	
I-22 Matanzas Woods Parkway and I-95 East Ramps [1]	EBL	350	29	YES	53	YES
SIGNALIZED	SBL	1,400	117	YES	223	YES
	SBR(300')		136		87	
YEAR 2035						
I-21 Matanzas Woods Parkway and I-95 West Ramps [1]	EBL	400	97	YES	365	YES
	WBR	350	6	YES	48	YES
SIGNALIZED	SBL	1,400	180	YES	203	YES
	SBR(300')		87		70	
I-22 Matanzas Woods Parkway and I-95 East Ramps [1]	EBL	350	111	YES	280	YES
SIGNALIZED	SBL	1,400	126	YES	240	YES
	SBR(300')		255		217	

Notes:

[1] The ramp length is used for the combined queue beyond the turn lane storages.

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Table 8-8
Design Alternatives Comparison Matrix for Matanzas Woods Parkway Interchange

Criteria	Wide Diamond	Partial Cloverleaf
2035 Traffic Operations Performance	LOS A-D	LOS A-C
Wetlands	NSI	NSI
Social	NSI	NSI
Air Quality (Attainment Area)	YES	YES
Noise Sensitive	PSI	PSI
Right-of-Way Access (Acres)	44.6	30.6
Right-of-Way Taking (Acres)	0.0	5.0
Displaced Residential Dwellings	0	5
Conservation Easement	NSI	NSI

Notes:

- No Significant Impact (NSI); Rank 1
- Potential Significant Impact (PSI); Rank 2
- Known Significant Impact (KSI); Rank 3

While the partial cloverleaf configuration requires less overall ROW, the loop ramps push the outer ramps into the outside edges of the available ROW. Requiring additional ROW to be acquired, including the five residences built upon that additional ROW. Relative to Noise impacts, the west side of the proposed interchange has residential dwellings located close to the future ramp locations. While the wide diamond may impact both west quadrants and the partial cloverleaf may limit impacts to the northwest quadrant, the potential impact exists for both configurations. Neither configuration impacts the conservation easement.

Table 8-9 provides the ranking of evaluation criteria for the proposed Matanzas Woods Parkway interchange design alternatives. The two main factors contributing to the selection of the preferred design alternative are ROW and Social. These are related since the additional ROW needed for the partial cloverleaf also has social impacts since it will take a minimum of five existing single family residential dwellings.

Table 8-9 shows that the wide diamond results in a better (lower) performance score. As stated earlier, the IJR evaluated environmental conditions at a preliminary screen level, and these environmental aspects will be studied in detail in the PD&E that will follow IJR approval.

Table 8-9

Final Matanzas Woods Parkway Interchange Design Alternatives Ranking

Criteria	Wide Diamond	Partial Cloverleaf
2035 Traffic Operations Performance	1	1
Wetlands	1	1
Social	1	3
Air Quality	1	1
Noise Sensitive Sites	2	2
Right-of-Way Access	1	3
Displaced Residential Dwelling	1	3
Conservation Easement	1	1
Final Design Alternative Performance Score	7	11

Notes:

- No Significant Impact (NSI); Rank 1
- Potential Significant Impact (PSI); Rank 2
- Known Significant Impact (KSI); Rank 3
- The term "significant" in this context is synonymous with "major" or "substantial" and does not equate to its meaning in a formal PD&E study.

9.0 CONCEPTUAL FUNDING PLAN / CONSTRUCTION SCHEDULE

The project is identified as a new interchange in the Flagler County Long Range Transportation Plan and is shown as a publicly funded project. Flagler County and the City of Palm Coast will fund all of the required phases which include Project Development and Environment (PD&E) study, Design, Right-of-Way (ROW) and Construction.

The PD&E study, scheduled for completion in calendar year 2012, will be initiated following the approval of the Interchange Justification Report. After the PD&E approval, the Design phase will be initiated with anticipated completion in calendar year 2013. The Construction phase of the interchange is scheduled for completion during calendar year 2017, although a more aggressive schedule will be pursued. The interchange will provide for all movements and tie to the local road system.

If the time period between the interchange approval and the PD&E phase initiation exceeds two years (as determined by issuance of the advanced notification), the Applicant may be required to perform a re-evaluation. Further, if the Applicant does not have the approved interchange open to traffic within three years of the proposed opening date, the DIRC may initiate action to have the approval rescinded.

10.0 RECOMMENDATION

After a thorough review of the technical analysis and supportive data contained in this IJR including the evaluation matrix, the Build alternative is recommended for approval. The interchange configuration recommended for the Build alternative is a wide diamond as depicted in Figure 6-1.

10.1 Build Alternative

The Build alternative is recommended for approval which results in the construction of a new interchange at the existing Matanzas Woods Parkway bridge crossing over I-95 at Milepost 14.65 in Flagler County. The Build alternative will divert daily and peak hour volumes from Palm Coast Parkway on the approaches to the I-95 interchange. The analysis has shown that the existing LOS of the ramp intersections at this interchange are deteriorating and will continue to do so even after programmed widening. Reducing the additional volumes will mitigate the impacts of local and regional growth. Matanzas Woods Parkway will need to be widened to a four lane roadway from Belle Terre Parkway to Old Kings Road by year 2025 to result in a four lane roadway from US-1 to Old Kings Road.

The I-95 southbound off ramp at Palm Coast Parkway will have to be widened to provide two left turn lanes after 2025 and before 2035 according to forecasts to prevent queue spillback onto I-95 mainline.

10.2 Wide Diamond Configuration

10.2.1 Right-of-Way

The wide diamond is recommended for approval due to a number of factors. The wide diamond can be constructed within available right-of-way whereas the partial cloverleaf requires a taking of 3.4 acres along the northwest quadrant, and another 1.6 acres along the northeast quadrant. The taking in the northwest quadrant for the partial cloverleaf configuration will include at least five (5) existing single family residential dwellings and additional residential lots.

10.2.2 Level of Service (LOS)

The wide diamond ramp intersections result in an acceptable peak hour LOS, generally operating at LOS-A through LOS-C for 2015 through 2025. During design year 2035 the wide diamond will operate at LOS-A to LOS-D. The LOS-D can be further improved by adding a second left turn lane at the ramp approaches.

10.2.3 Cost

The wide diamond construction cost is estimated at $11,900,000 in year 2009 costs. The partial cloverleaf cost is estimated to be 9% higher. While this is not a very significant difference, the cost to acquire the additional 5.0 acres of land for the partial cloverleaf including the residential dwellings will cause a significant increase in the overall cost. The wide diamond will also allow the option to maintain the two lane bridge crossing for the initial opening year 2015 through 2025 which will reduce the initial cost by approximately $1,420,000.

10.2.4 Design Considerations

The recommended configuration is referred to as a "wide" diamond only to differentiate it from a tight diamond. This design is recommended since the applicant intends to maintain Matanzas Woods Parkway as a two lane roadway from Belle Terre Parkway to Old Kings Road from opening year 2015 through 2025 after which it will be widened to four lanes. The intent is to also maintain the existing two lane bridge over I-95 for the same period of time. This phased construction will require that sufficient left turn storage is provided between the bridge and the ramp intersections for left turns onto the ramps. A tight diamond for example, would push the left turn storage onto a portion of the bridge for which there is insufficient width. There is adequate right-of-way to accommodate the wider diamond configuration needed for this phased design.

10.3 Other Considerations

The intersection analyses have revealed that a number of intersections will experience poor operating conditions with the No Build as well as the Build alternative. While the Build alternative removes some of these failures and has overall benefits in reducing peak hour delays especially at Palm Coast Parkway and I-95 ramp intersections, additional intersection improvements may need to be considered in the AOI for 2025 and 2035. Candidates for future signalization include; US-1 and CR 204; Palm Coast Parkway EB and Harbor Center Way; and the interchange ramps of US-1 and I-95. Generally, intersections within the AOI that exhibit LOS-E or LOS-F for 2025 and 2035 appear to require improvements as a result of regional growth and not directly related to the interchange at Matanzas Woods Parkway.

Appendix E

PD&E Design Traffic Reevaluation Assessment Checklist from FDOT District Five

PD&E Design Traffi c Reevaluation Assessment Checklist

Florida Department of Transportation (FDOT) District Five

Project Name I-95 and Matanzas Woods Parkway Interchange (from US 1 to Old Kings Road)

FM # 411959-1 (LAP)

FDOT Reviewer John Zielinski **Date** 7/11/11

Reviewer Signature John Zielinski

This checklist is intended to assist the Department in assessing whether or not design traffic previously developed should be reevaluated as part of the PD&E study or other subsequent project stage. It is suggested that the reviewer investigate the following items and make a recommendation based on the criteria below using professional judgment on a case by case basis.

Criteria	Yes	No	Comments
A. Existing Year Analysis			
1. Is the previous data more than 2 years old?	X (Partially)		IJR Traffic utilized 2007 FTI roadway data and 2009 TMC data. In addition, PD&E study collected classification count for Matanzas Woods Parkway in April 2011. The IJR and PD&E data are similar and no significant changes to the analysis would occur.
2. Has the AADT or the LOS in the study area significantly changed on major corridors? *Refer to FTI DVD or District Five LOS_ALL.*		X	The traffic along US 1, Matanzas Woods Parkway and I-95 have not changed significantly since the IJR traffic was completed.
3. Has the transportation network changed significantly in the vicinity of the study area?		X	The existing year transportation network has not changed in the vicinity of the study area.
4. Has there been significant growth/ land use change in the study area in recent years?		X	Consistent with the latest traffic counts and the current state of the economy there has been no significant growth or land use change.
5. Based on field visits and coordination with the local governments, have there been operational changes to the extent that new turning movement counts should be collected for the reevaluation of any intersection?		X	The roadway network and traffic volumes have not changed and would not warrant a reevaluation.
B. Future Year Analysis			
6. Did the adopted future land use for the study area change since the last study?		X	The adopted future land use along the corridor has not changed since the IJR traffic was complete. The future land use has remained primarily residential along Matanzas Woods Parkway.

7. Did the planned and programmed transportation improvements change in the study area since the last study?	X		Since the approval of the IJR, two additional improvements (Old Kings Road and Palm Harbor Parkway Extensions) have been added to the future year roadway network. To account for these two projects, minor adjustments were made to the IJR design traffic forecasts and these adjustments do not have any impacts on future traffic operations. These adjustments were discussed with FDOT and FHWA and upon concurrence were incorporated into the analysis and documented in the PD&E report.
8. Did the regional travel demand model undergo any major update (which reflects major shifts in travel patterns in the region)?		X	A new CFRPM 2035 model was released in March 2011. However, travel patterns do not show any major shifts in the region.
C. Recommendations			
9. Utilize design traffic from the previous study	X		The minor difference in the future year roadway network will not have any impact on the traffic. It was agreed upon at the PD&E scope development that it would be acceptable to utilize the design traffic from the IJR as it just got approved in February 2011. It was further discussed and confirmed with FHWA.
10. Partial reevaluation of design traffic recommended		X	
11. Complete reevaluation of design traffic recommended		X	
Additional comments:			

FDOT Approver (Signature): Terry Rains **Date:** 7/13/2011

Note: This Traffic Reevaluation Assessment conducted by the Department is for internal purposes and subject to further discussions with FHWA.

Appendix J

Agency Letters

Florida Department of Transportation

719 South Woodland Boulevard
DeLand, FL 32720

RICK SCOTT
GOVERNOR

ANANTH PRASAD, P.E.
SECRETARY

FEB29 12 12:48PM
JAN26 12 12:46PM

Received
MAR 05 2012
FDOT
Environmental Management

RECEIVED
BUREAU OF
HISTORIC PRESERVATION
2012 FEB -6 P 2:00

January 24, 2012

Mr. Martin C. Knopp
U.S. Department of Transportation
Federal Highway Administration
Florida Division Office
545 John Knox Road, Suite 200
Tallahassee, FL 32303

Attn: Cathy Kendall

RE: *Cultural Resource Assessment Survey for the Interstate 95/Matanzas Woods Parkway Interchange Project Development and Environment Study, Flagler County, Florida*
From US 1 to Old Kings Road - Palm Coast, Flagler County
Financial Management # 411959-1-28-01

Dear Mr. Knopp,

Enclosed please the find report titled *Cultural Resource Assessment Survey for the Interstate 95/Matanzas Woods Parkway Interchange Project Development and Environment Study, Flagler County, Florida.* The following documents are included:

- Two bound copies of the final report
- One compact disk containing .pdf files for the final report
- One SHPO package containing one unbound copy of the CRAS final report, one completed Survey Log Sheet, and accompanying documentation

The enclosed reports document the findings of a Phase I cultural resource assessment survey (CRAS) conducted in support of the Interstate 95 (I-95)/Matanzas Woods Interchange Study in Flagler County, Florida. The Florida Department of Transportation (FDOT), District 5, in cooperation with Flagler County, is conducting a Project Development and Environment (PD&E) Study to consider the addition of on-ramps and off-ramps for northbound and southbound I-95 at Matanzas Woods Parkway and the addition of two lanes (i.e., widening from two lanes to four) along Matanzas Woods Parkway from US 1 to Old King's Road.

The APE was defined to include the existing right-of-way along Matanzas Woods Parkway and I-95 between US 1 and Old King's Road and was extended to the back or side property lines of parcels adjacent to the roadways, or up to 100 meters (330 feet) beyond the existing right-of-way. The archaeological survey was conducted within the existing and proposed right-of-way along Matanzas Woods Parkway and I-95; the architectural survey included the entire APE.

The archaeological survey included the excavation of 47 shovel tests within the existing and proposed right-of-way within the I-95/Matanzas Woods Parkway APE. No cultural material was recovered from any of the shovel tests, and no archaeological sites or occurrences were identified within the project APE.

No standing structures were found within the APE. However, the architectural survey resulted in the identification and evaluation of two previously recorded linear historic resources, King's Road (8FL186) and US 1/Philips Highway (8FL291). These resources were evaluated to determine their significance and potential for listing in the NRHP. The sections of both linear resources located within the current APE are recommended not eligible for the NRHP. No potential NRHP districts were located due to the lack of concentration of historic structures. No further work is recommended for the project corridor.

A separate CRAS was conducted for proposed pond and Floodplain Compensation areas (FPCs) associated with the project; this CRAS is presented as an appendix to the present corridor report. A total of 19 shovel tests was excavated within the preferred pond and FPC locations for the project. No archaeological sites or occurrences were identified within the project APE. A review of the FMSF and the Property Appraiser database, together with a pedestrian survey of the proposed ponds and FPCs, confirms there are no historic structures located within the project APE. No further work is recommended for the I-95/Matanzas Woods Parkway preferred ponds and FPCs.

Based on the results of this investigation, it is the opinion of the District that the proposed undertaking will have no effect on historic resources eligible or potentially eligible for listing in the NRHP. I respectfully request your concurrence with the findings of the enclosed CRAS report. Should you concur, please indicate such in the signature box below and submit the unbound copy of this document along with the accompanying Survey Log Sheet and electronic Florida Master Site File forms to the Florida State Historic Preservation Officer, for review and comment.

If you have any questions or need further assistance, please contact me at (386) 943-5411.

Sincerely,

William G. Walsh
FDOT District 5 Environmental Administrator

Enclosures

cc: Amy Sirmans - FDOT District 5 Project Manager
Beth Chambless - SEARCH
Brian Ribaric - HDR

The FHWA has reviewed the information provided in this cover letter and its attachments and ✓ concurs / ___ does not concur that the proposed undertaking will have no adverse effect on historic properties.

The FHWA requests the SHPO's opinion on the sufficiency of the attached information and the SHPO's opinion on the recommendations and findings contained in this cover letter and in the comment block below.

FHWA Comments:

/s/ CM

Martin C. Knopp
Division Administrator
Florida Division
Federal Highway Administration

2/8/12
Date

The Florida State Historic Preservation Officer:

✓ has reviewed the information provided in this cover letter and its attachments and concurs that the proposed undertaking will have no adverse effect on historic properties.

___ does not concur with the findings of this cover letter and attachments and requires additional information in order to provide an opinion on the potential effects of the proposed project on historic resources.

/s/ Barbara E. Mattick, DSHPO

Robert Bendus
Director and State Historic Preservation Officer
Florida Division of Historical Resources

2/23/2012
Date

2012-570
DHR Project No.

Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Blvd.
DeLand, FL 32720

ANANTH PRASAD, P.E.
SECRETARY

February 23, 2012

Ms. Jane Monaghan
USFWS-Ecological Services
7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517

RE: I-95/Matanzas Woods Parkway Interchange
from US 1 to Old Kings Road
Financial Project ID No.: 411959-1-28-01
Flagler County, Florida
Endangered Species Biological Assessment

Dear Ms. Monaghan:

Florida Department of Transportation, District 5, is evaluating the environmental impacts related to Flagler County's proposal to widen Matanzas Woods Parkway to four lanes from US 1 to Old Kings Road, including a new interchange with I-95. The proposed interchange and widening from an existing two-lane roadway to a four-lane divided roadway will occur in three phases, with the proposed interchange scheduled for construction in 2015.

The project was evaluated for potential impacts to threatened and endangered plant and animal species in accordance with 50 CFR 402.12, Section 7(c) of the Endangered Species Act of 1973 as amended by Rules 39-25.002, 39-27.002 and 39-27.011 of the Wildlife Code of the State of Florida (Chapter 39, FAC) and Part 2, Chapter 27 of the FOOT PD&E Manual.

We are proposing to prepare a Type II – Categorical Exclusion (CE) for this action and in accordance with 50 CFR Part 402.12, we are requesting your written concurrence with our assessment that no Federally listed species will be adversely affected by the action.

A copy of the Endangered Species Biological Assessment (ESBA) Report is enclosed for your review. Please refer to Sections 4.0 and 5.0 for habitat descriptions and species impact assessment, respectively.

If you have any questions concerning the proposed action, please feel free to contact me at (386) 943-5411.

Sincerely,

William G. Walsh
Environmental Administrator, FDOT – District 5

Enclosures: Endangered Species Biological Assessment

Cc: Chris Rizzolo, FDOT - District 5

United States Department of the Interior

U. S. FISH AND WILDLIFE SERVICE

7915 BAYMEADOWS WAY, SUITE 200
JACKSONVILLE, FLORIDA 32256-7517

IN REPLY REFER TO:
FWS Log No. 41910-2012-I-0120

Received

APR 16 2012

FDOT
Environmental Management

April 5, 2012

William Walsh
Environmental Administrator
Florida Dept. of Transportation
719 S. Woodland Blvd
Deland, FL 32720

Reference: FPID #411959-1-28-01

Dear Mr. Walsh:

Our office has reviewed your correspondence and accompanying Endangered Species Biological Assessment (ESBA), dated February 23, 2012, for the widening of Matanzas Parkway from U.S. 1 to Old Kings Road and for a new interchange at I-95 in Flagler County.

The Florida Department of Transportation (FDOT) proposes to widen Matanzas Woods Parkway to four lanes from U.S. 1 to Old Kings Road, including a new interchange with I-95. The construction will occur in three phases, with the interchange scheduled to begin in 2015. The project begins on the west side at latitude 29.603931N and longitude -81.234853W. The road work will end on the east side at latitude 29.609908 N and longitude -81.282594W.

We submit the following comments in accordance with Section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661 *et seq.*) and the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 1361 *et seq.*).

FDOT reviewed this project for potential impacts to federally-listed species and determined that the proposed project occurs within the range of the federally endangered wood stork (*Mycteria americana*), the federally threatened Florida scrub-jay (*Aphelocoma coerulescens*), the federally threatened eastern indigo snake (*Drymarchon corais couperi*) and the gopher tortoise (*Gopherus polyphemus*), recently listed as a federal candidate species. Candidate species are taxa for which the Service has on file sufficient information on biological vulnerability and threats to support issuance of a proposal to list, but issuance of a proposed rule is currently precluded by higher priority listing actions. [61 FR 7596-7613, February, 1996]

Wood Stork: The FDOT evaluated potential impacts to this species using The Corps of Engineers, Jacksonville District, U.S. Fish and Wildlife Service and the State of Florida Effect Determination Key for the Wood Stork in Central and North Peninsular Florida, dated September, 2008. The project falls within the core foraging area (less than ten miles) of the Matanzas Marsh rookery. Direct impacts to suitable foraging habitat should be avoided if possible. If wetland impacts are unavoidable, they should be minimized and best management practices should be employed to reduce sedimentation and maintain hydrologic connectivity. The ESBA does not state the actual acreage figures or locations for wetland impacts. Once the acreage is known and a mitigation plan is presented the Service can comment on the effects of the project on wood storks and other wetland dependent species. The Service prefers that any mitigation be within the core foraging area for this rookery and at a Service approved bank.

Eastern indigo snake and gopher tortoise: FDOT evaluated the potential impacts to this species using the Corps of Engineers, Jacksonville District and the U.S. Fish and Wildlife Service Eastern Indigo Snake Effect Determination Key, dated January 2010. Gopher tortoise surveys are recommended in the ESBA and a complete survey should be submitted to our office prior to permitting. The ESBA also states that FDOT will implement an indigo snake education plan for all contractors and follow the Standard Protection Measures for the Eastern Indigo Snake (Service, 2004) to avoid and minimize further impacts to this species. An education plan and sample poster should be submitted to our office thirty days prior to the commencement of construction activities.

Florida scrub-jay: This species is found only in the coastal scrub areas in Flagler County. The Service has determined that this project will have 'no effect' on this species.

Fish and Wildlife Coordination Act Comments: This project will expand an existing roadway and add connectivity to I-95 in an area that is already urbanized. The wider roadways and additional traffic are likely to cause increases in vehicle-wildlife collisions. Large, high quality wetlands are found within the footprint of the project. The majority of the wetlands found adjacent to the roadway are suitable foraging habitat for wood storks and other wading birds. Wetland impacts should be avoided.

If you have any questions regarding this response, please contact Ms. Jane Monaghan of my staff at the address on the letterhead, or by calling (904) 731-3119

Sincerely,

Heather Pa

for David L. Hankla
Field Supervisor

cc: Hannah Hernandez

Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Blvd.
DeLand, FL 32720

ANANTH PRASAD, P.E.
SECRETARY

May 10, 2012

Ms. Jane Monaghan
USFWS-Ecological Services
7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517

RE: I-95/Matanzas Woods Parkway Interchange from US 1 to Old Kings Road
Financial Project ID No.: 411959-1-28-01
Flagler County, Florida
Endangered Species Biological Assessment

Dear Ms. Monaghan:

Thank you for your letter of April 5 responding to our request for concurrence with our assessment of impacts to listed species (copy attached).

Please find attached the Wetland Evaluation Report for this project, which documents the acreage and locations of wetland impacts, and discusses the mitigation options available. As stated in the ESBA, the impacts are not likely to include suitable foraging habitat (SFH) for the wood stork, and if there were impacts to SFH equal to or greater than 0.5 acres, they would be mitigated at a bank or other means approved by FWS within the core foraging area. Please advise if there is any other information needed in order for the Service to comment on our determination that adverse impacts are not likely for the wood stork.

Similarly, for the eastern indigo snake, the U.S. Fish and Wildlife Service *Standard Protection Measures for the Eastern Indigo Snake* will be implemented during the construction phase, including prior submittal of the proposed education plan. We request your concurrence that adverse impacts are not likely for this species.

If you have any questions concerning the proposed action, please feel free to contact me at (386) 943-5411.

Sincerely,

William G. Walsh
Environmental Administrator, FDOT – District 5

Enclosures: Wetland Evaluation Report
USFWS letter of April 5 to William Walsh

Cc: Chris Rizzolo, FDOT - District 5

Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Blvd.
DeLand, FL 32720

ANANTH PRASAD, P.E.
SECRETARY

June 6, 2012

Ms. Jane Monaghan
USFWS-Ecological Services
7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517

RE: FWS Log No. 41910-2012-1-0120

I-95/Matanzas Woods Parkway Interchange
from US 1 to Old Kings Road
Financial Project ID No.: 411959-1-28-01
Flagler County, Florida
Endangered Species Biological Assessment

Dear Ms. Monaghan:

In accordance with your telephone conversation on June 5 with Steve Tonjes, we offer the following clarifications:

- In the Wetland Evaluation Report, many of the wetland descriptions mentioned their suitability for use by wading birds; therefore, it would be difficult to avoid any impacts to wood stork suitable foraging habitat. Our determination of effects is therefore based on our commitment to mitigate within the core foraging area any of these impacts equal to or greater than 0.5 acre at a bank or other means approved through re-initiation of informal consultation with FWS during permitting.
- For the eastern indigo snake, the U.S. Fish and Wildlife Service *Standard Protection Measures for the Eastern Indigo Snake* will be implemented during the construction phase. As noted in the ESBA, there is little suitable habitat and no gopher tortoise burrows were seen in or adjacent to areas expected to be impacted by the project; therefore, the project would impact fewer than 25 acres of xeric habitat supporting fewer than 25 burrows. The permit will be conditioned as provided in item E. of the Corps of Engineers' Eastern Indigo Snake Programmatic Effect Determination Key.

In light of the above, we request your concurrence that the project may affect but is not likely to adversely affect the wood stork or the eastern indigo snake.

If you have any questions concerning the proposed action, please feel free to contact me at (386) 943-5411.

Sincerely,

William G. Walsh
Environmental Administrator, FDOT – District 5

Cc: Chris Rizzolo, FDOT - District 5

Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Blvd.
DeLand, FL 32720

ANANTH PRASAD, P.E.
SECRETARY

June 6, 2012

Ms. Jane Monaghan
USFWS-Ecological Services
7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517

RE: FWS Log No. 41910-2012-1-0120

I-95/Matanzas Woods Parkway Interchange
from US 1 to Old Kings Road
Financial Project ID No.: 411959-1-28-01
Flagler County, Florida
Endangered Species Biological Assessment

Dear Ms. Monaghan:

In accordance with your telephone conversation on June 5 with Steve Tonjes, we offer the following clarifications:

- In the Wetland Evaluation Report, many of the wetland descriptions mentioned their suitability for use by wading birds; therefore, it would be difficult to avoid any impacts to wood stork suitable foraging habitat. Our determination of effects is therefore based on our commitment to mitigate within the core foraging area any of these impacts equal to or greater than 0.5 acre at a bank or other means approved through re-initiation of informal consultation with FWS during permitting.
- For the eastern indigo snake, the U.S. Fish and Wildlife Service *Standard Protection Measures for the Eastern Indigo Snake* will be implemented during the construction phase. As noted in the ESBA, there is little suitable habitat and no gopher tortoise burrows were seen in or adjacent to areas expected to be impacted by the project; therefore, the project would impact fewer than 25 acres of xeric habitat supporting fewer than 25 burrows. The permit will be conditioned as provided in item E. of the Corps of Engineers' Eastern Indigo Snake Programmatic Effect Determination Key.

In light of the above, we request your concurrence that the project may affect but is not likely to adversely affect the wood stork or the eastern indigo snake.

If you have any questions concerning the proposed action, please feel free to contact me at (386) 943-5411.

Sincerely,

William G. Walsh
Environmental Administrator, FDOT – District 5

Cc: Chris Rizzolo, FDOT - District 5

www.dot.sta

FWS Log No 41910-2012-I-012

The Proposed action is not likely to adversely aff
resources protected by the Endangered Specie
Act of 1973, as amended (16 U.S.C. 1531 et seq.
This finding fulfills the requirements of the Act.

for 6/7/12

David L. Hankla
Field Supervisor

Date

From: Stanger, Brian
Sent: Wednesday, June 13, 2012 1:48 PM
To: 'cdewey@sjrwmd.com'; 'Andrew.W.Phillips@saj02.usace.army.mil'
Subject: Matanzas Parkway & I-95 Project Development & Environment Study

Good afternoon. The FDOT is currently performing a Project Development & Environment Study for the Matanzas Parkway & I-95 Interchange in Flagler County. Attached is a project map, project description, proposed wetland impacts, and a proposed wetland mitigation plan. This is the email address for a more defined project view: http://www.flaglercounty.org/DocumentView.aspx?DID=2211 . I wanted to touch base we each of you to include any comments you may have for this proposed transportation improvement project. We are still in the PD&E phase and understand that we will come back to you in the design phase for pre-application and permits. If you need any other documentation, please let me know. Thank you for your assistance.

Brian Stanger, P.E.

District Environmental Management Engineer

District Five

Florida Department of Transportation

386-943-5391

From: Phillips, Andrew W SAJ [mailto:Andrew.W.Phillips@usace.army.mil]
Sent: Thursday, June 14, 2012 1:07 PM
To: Stanger, Brian
Cc: Hernandez, Hannah; Gilbert, Terry; cdewey@sjrwmd.com
Subject: RE: Matanzas Parkway & I-95 Project Development & Environment Study (UNCLASSIFIED)

Brian,

I must reiterate the comments provided in during the ETAT review of this project (#12516). "Wetlands associated with Nottingham Equestrian Village and the Flagler County Matanzas Woods Overpass where avoided and minimized during their development. Many of the subject wetlands may be encumbered in conservation easement and additional investigation is required. If a conservation easement has been placed over the subject wetlands there wetland value will be increased."

"The Flagler County Matanzas Woods Overpass was constructed with wildlife and hydrological crossing culverts which may require design considerations and incorporation."

Hannah Hernandez and I are exploring concepts which FDOT may use to evaluate impacts to suitable foraging habitat (SFH) of the endangered wood stork. It is important for your consultants to evaluate SFH and quantify any loss greater than 0.5 acre.

It appears that pond sites located within Segment 2 impact wetlands. These pond sites should be sited in uplands and the FDOT should enter into discussions with FFWCC on alternative pond site design which could have a beneficial effect on wetlands and wildlife along the roadway corridor. It is my understanding that your office has/will enter into discussions with FFWCC (Terry Gilbert) about alternative designs on other projects. The USACE is supportive of this alternative design.

I strongly encourage you to address these specific issues during the PD&E evaluation. Lastly I encourage your consultant to following the District 5 - Quality Enhancement Strategies (QES) which fully document the avoidance and minimization of aquatic resources during the PD&E process. These QES significantly reduce the duplicative efforts which must be put forth during permit evaluation.

Please let me know if you would like me to put this correspondence on USACE letterhead for the PD&E or if you have any questions. Thank you for allowing us the opportunity to provide comments. We look forward to working with you in the near future.

Respectfully,

AWP

Andrew Phillips
Project Manager

USACE
400 High Point Drive, Suite 600
Cocoa, Florida 32926

321-504-3771 ex 14
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Appendix K

FHWA Comments & Responses

Florida Department of Transportation

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ANANTH PRASAD, P.E.
SECRETARY

MEMORANDUM

Date: May 14, 2012

To: Phillip Bello, FHWA

From: Chris Rizzolo, P.E., URS/FDOT

Subject: **PDSR Responses to FHWA Comments**
I-95/Matanzas Woods Parkway Interchange PD&E Study
FPID 411959-2-28-01
Flagler County

Following are responses to FHWA comments on the PDSR developed for the I-95/Matanzas Woods Parkway Interchange PD&E Study.

1. Please remove the entire consultant's logo from the document, both cover sheet and inside documents.

   Response: Consultant logo removed from document.

2. Page 1-4, section 1.3.4, 2nd paragraph, fourth sentence, this statement is not clear, please review.

   Response: Sentence deleted.

3. Page 2-10, under segment # 3, second to the last sentence, the 50 mph speed designated within the Matanzas High School need to be re-visit (school zone)/safety.

   Response: The design speed is 50 mph. A lower posted speed and school zone signs can be utilized for the segment near the school. The final design phase will determine the limits of any reduced speed and school zone sign placement. The realignment of Matanzas Woods Parkway moves the roadway further away for the sidewalk.

4. Page 2-11, Alt. IC-1 (Diamond Interchange), table 2-4 omits impact to the greenbelt or conservation area (NE and SE quadrants) – see fig 2-6.

   Response: The conservation parcel is outside the limits of the right-of-way. There is no right-of-way proposed for acquisition from the existing conservation parcel.

5. Please insert clear legends to maps/plans, see fig 2-12, 2-13, etc.

   Response: Legends clarified and updated.

6. Page 2-16, under noise quality, the noise study/analysis identify 72 potential impacted noise sensitive sites along Matanzas Woods Parkway, any recommendation based on your finding? Locations were not identified.

   Response: Section 3.4.1 provides discussion on the results of the noise study, which was performed per Part 2, Chapter 17 of FDOT's *PD&E Manual*. Potential noise abatement measures appear to be neither reasonable nor feasible at any of the 12 potential noise barrier locations. One location was deemed infeasible for a noise barrier due to its inability to meet the FHWA minimum requirement of a 5.0 dBA reduction for at least two noise sites. The remaining 11 analyzed noise barrier locations did not meet the cost guidelines and were therefore not considered reasonable. Noise locations added to the concept plans.

7. Table 2-4 (under physical Environment) has not account for the total 72 potential impacts based on the noise analysis findings. Table 2-4 indicates the numbers of noise site sensitivity areas were 11 for Alt. IC-I and 9 for Alt. IC-2.

   Response: The 72 locations were for the entire project corridor not just the interchange area. Sentence revised. The noise locations have been added to the concept plans.

8. In addition, page 2-22, second paragraph, last sentence, (Noise Study August 2011) mentioned the outcome of the study, please include recommendation for noise impact findings especially at the NW and SW quadrant, see map on page 2-32.

   Response: Section 3.4.1 provides discussion on the results of the noise study, which was performed per Part 2, Chapter 17 of FDOT's *PD&E Manual*. Potential noise abatement measures appear to be neither reasonable nor feasible at any of the 12 potential noise barrier locations. One location was deemed infeasible for a noise barrier due to its inability to meet the FHWA minimum requirement of a 5.0 dBA reduction for at least two noise sites. The remaining 11 analyzed noise barrier locations (including the interchange area) did not meet the cost guidelines and were therefore not considered reasonable. Noise locations added to the concept plans.

9. Page 2-16, under wetlands, please discuss the mitigation process and location of impacts since the prefer alternative has been selected.

   Response: Section 3.1.11 provides discussion of the mitigation process and the impacts for each segment. The St. Johns River Water Management District (SJRWMD) will not discuss exact mitigation requirements with FDOT during the PD&E phase, but only after the Environmental Resources Permit has been submitted. Therefore, the mitigation will be determined during final design at the 60% plans phase. SJRWMD is included in the Public Involvement Plan for this project and has been notified of all public meetings, including the Public Hearing.

10. Page 2-16, section 2.2.1, the entire section omits the impacts to the greenbelt/conservation area based on prefer alternative.

    Response: The conservation parcel is outside the limits of the right-of-way. There is no right-of-way proposed for acquisition from the existing conservation parcel.

11. Page 2-22, second paragraph, how accurate are the 2006 FEMA flooding plain maps regarding the area of 100-year flood plain?

    Response: The 2006 FEMA maps are the latest available published data at this time.

12. Page 2-22, 2nd paragraph, any contamination site identify at the proposed location?

    Response: The contamination screening was executed per Part 2, Chapter 22 of FDOT's *PD&E Manual*. Section 3.1.4 states that the Contamination Screening Evaluation Report (CSER) concluded that there was no evidence of recognized environmental conditions with respect to current or past uses of the roadway corridor or proposed pond sites. The CSER also concluded that none of the adjacent sites to the project corridor has a reasonable potential to impact the roadway corridor or proposed pond site. Thus, Tables 2-1 to 2-4 do not identify any impacts to contaminated sites.

13. Page 3-4 under section 3.1.11, last paragraph, missing Wetland Evaluation Report dated August 2011.

    Response: The wetlands evaluation was performed per Part 2, Chapter 18 of FDOT's *PD&E* Manual and documented in the Wetlands Evaluation Report (August 2011). All supporting documentation is available upon request. Additional summary information from the WER regarding the results of the Wetland Evaluation has been added to the text.

14. Page 3-4, Last paragraph, what are the necessary plans developed for the 17.53 acres of wetland impacts?

    Response: In coordination with St. Johns River Water Management District and the US Army Corps of Engineers, the mitigation plans will be negotiated during the final design phase. Specific mitigation strategies are determined during the permitting phase of final design once 60% plans have been developed. Both SJRWMD and ACOE are included in the Public Involvement Plan for this project and have been notified of all public meetings, including the Public Hearing.

15. Page 3-13, section 3.4, please include the noise study locations (the 72 noise sensitive receptor stations)

    Response: Noise locations added to the concept plans.

16. Page 4-1, 4th paragraph, there is a need to coordinate with these agencies and include coordination steps in the document, U.S Army Corps of Engineers (USACE) – wetlands impacts within US 1 and east of I-95 (water of the US), and US Fish and Wildlife Services.

    Response: Coordination regarding specific mitigation strategies will begin at 60% design as part of the SJRWMD permitting process. Both SJRWMD and ACOE are included in the Public Involvement Plan for this project and have been notified of all public meetings, including the Public Hearing. The sentence will be revised to reflect this. As of the date of this memo, coordination with the US Fish and Wildlife Services is ongoing regarding concurrence with the findings of the ESBA. Once concurrence is received, the letter will be located in the appendix.

17. Concept Plans, sheet # 5, was there any noise study performed within the area of ramps A and D?

    Response: A noise study was competed along Matanzas Woods Parkway and the proposed interchange area per Part 2, Chapter 17 of FDOT's *PD&E Manual*. Locations of noise sensitive sites have been added to the Concept Plans.

18. Concept Plans, Sheet # 6, the greenbelt/conservation area not shown on the plans, any wetland impact within the areas of ramps C and B?

    Response: The conservation parcel is outside the limits of the right-of-way. There is no right-of-way proposed for acquisition from the existing conservation parcel.

19. All the Concept Plans quote; “Proposed Stormwater Pond (BY Others)” please be precise, who are the “others”?

    Response: Label indicating the ponds are proposed by the City of Palm Coast have been added.

20. Appendix C missing some documents, noise Study (August 2011), etc.

    Response: Appendix C is only a list of the supporting documents, all of which are available upon request.

21. Appendix E titled permits, but it contained meeting notes – dated June 10, 2011

    Response: Appendix title was mislabeled and has been revised.

22. What is the normal process when activities impact school property, right of way taken at the corner of the school property?

    Response: In the past after discussion between the School District and County Administration, the individual boards have worked through to a mutual agreement and understanding of each other’s need on a case by case basis. (e.g. the east side of Matanzas High School was built upon Old Kings Road right of way at no cost to the school district. In another instance the County purchased school district property using available grant funds for a park.)