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

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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.

Not to Scale

Milepost 0.953

FAVER DYKES RD

Milepost 0
St Johns County

Milepost 18.729
Flagler County

COUNTY ROAD 204

HIGHWAY SECTION
Number 780800000
Rural Principal
Arterial

HIGHWAY SECTION
Number 730010000
Urban Principal
Arterial

PRINCESS PLACE RD

5.0 MILES

OLD KINGS RD N

Milepost 14.65

I-95

LARAMIE DR

LAKEVIEW BLVD

LONDON DR

LONDONDERRY DR

MATANZAS WOODS PKWY

FOREST GROVE DR

A1A

BIRD OF PARADISE DR

BELLE TERRE PKWY

US 1

FARMSWORTH DR

PALM HARBOR PKWY

3.6 MILES

OLD KINGS RD N

CLUBHOUSE DR

HAMMOCK DUNES PKWY

CAMINO DEL MAR

CASPER DR

PALM HARBOR DR

FLORIDA PARK DR

TOWN CENTER DR

PALM COAST PKWY NE

PALM COAST PKWY SE

COLBERT LN

PINE LAKES PKWY

PINE CONE DR

PALM COAST PKWY NW

PALM COAST PKWY SW

CYPRESS POINT PKWY

Milepost 11.070

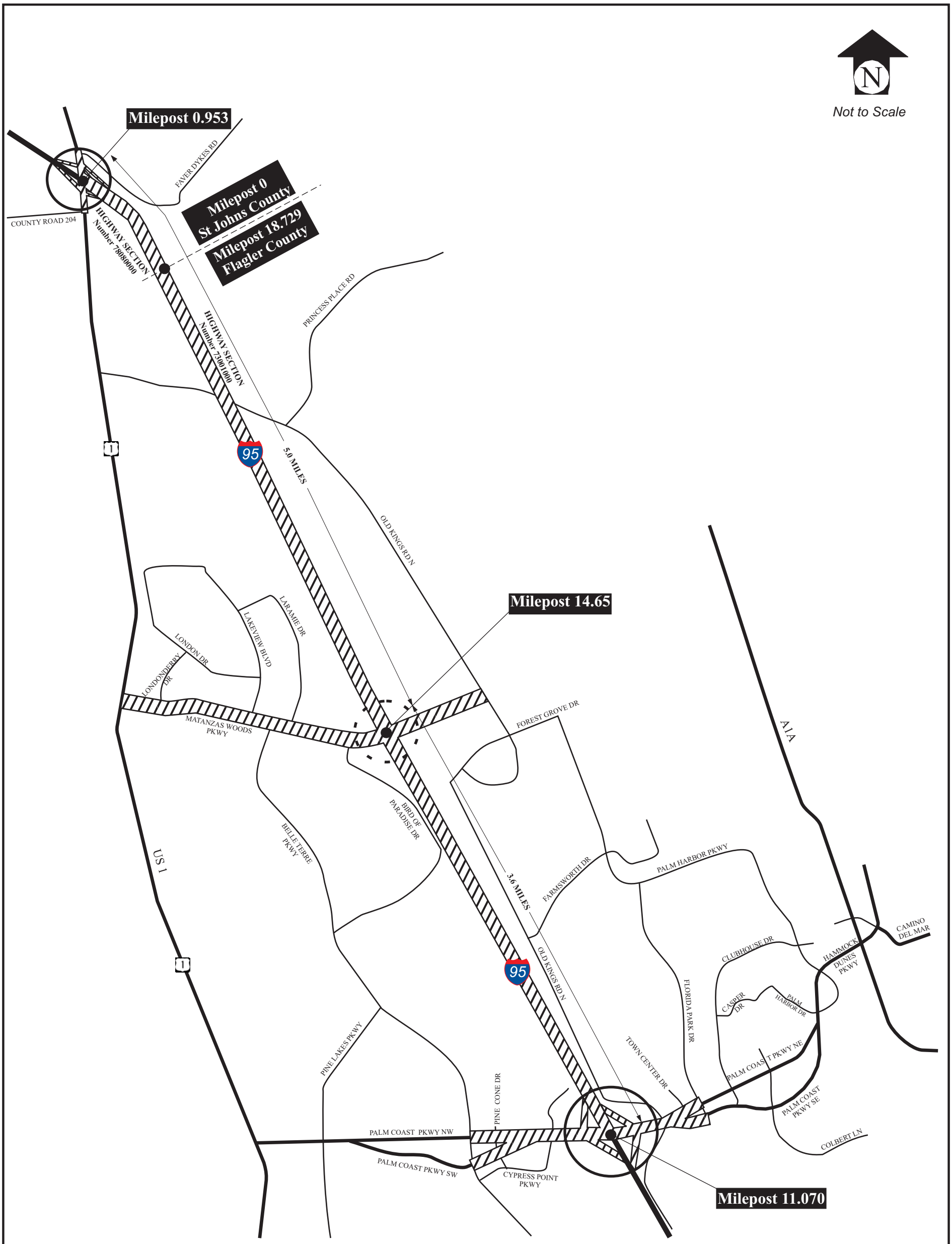
Legend

- Existing Interchange
- Proposed Interchange

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		DIR	[1] Existing Facility	[2] Facility Type	[2] Jurisdiction	[2] Adopted LOS
From	To					
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.

N

Not to Scale

FAVER DYKES RD

COUNTY ROAD 304

HIGHWAY SECTION Number 780800000

PRINCESS PLACE RD

1

95

OLD KINGS RD N

LARAMIE DR

LAKEVIEW BLVD

LONDON DR

LONDONDERRY DR

MATANZAS WOODS PKWY

I-95

FOREST GROVE DR

Palm Coast Park

BELLE TERRE PKWY

BIRD OF PARADISE DR

Hammock Dunes

A1A

FARMSWORTH DR

PALM HARBOR PKWY

CAMINO DEL MAR

CLUBHOUSE DR

HAMMOCK DUNES PKWY

CASPER DR

PALM HARBOR DR

FLORIDA PARK DR

TOWN CENTER DR

PALM COAST PKWY NE

PALM COAST PKWY SE

COLBERT LN

PINE LAKES PKWY

PINE CONE DR

PALM COAST PKWY NW

PALM COAST PKWY SW

CYPRESS POINT PKWY

Legend

EXISTING INTERCHANGE

PROPOSED INTERCHANGE

MAJOR DEVELOPMENT

COUNTY COMMISSION FLAGLER COUNTY, FLORIDA

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

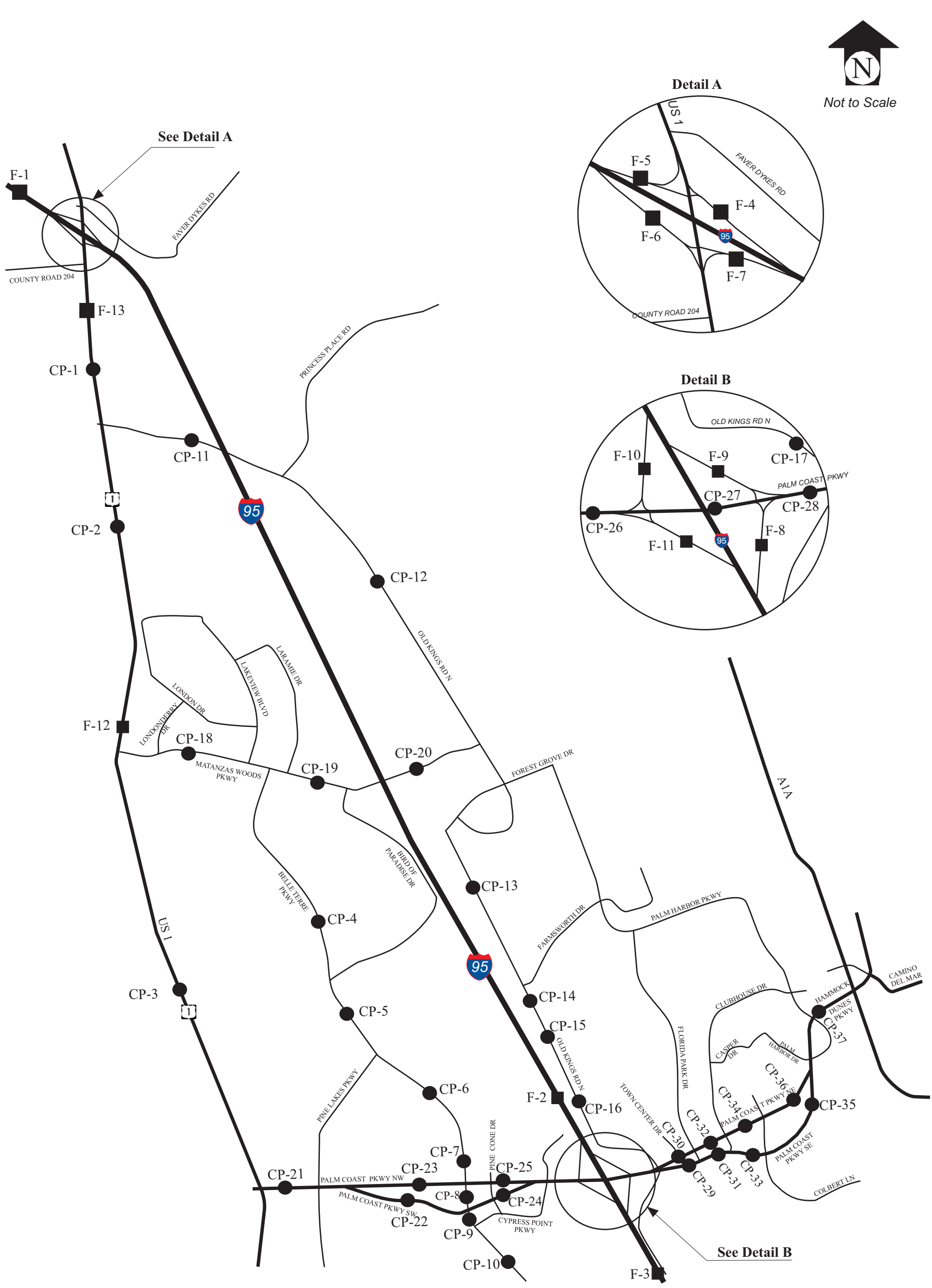
A summary of the AM and PM peak hour pedestrian volumes at 16 of the AOI intersections is presented in Table 4-8. The results indicate that the total pedestrian peak hour volume at each intersection is typically equal to or less than four persons per hour, indicating that minimum accommodation for pedestrians 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

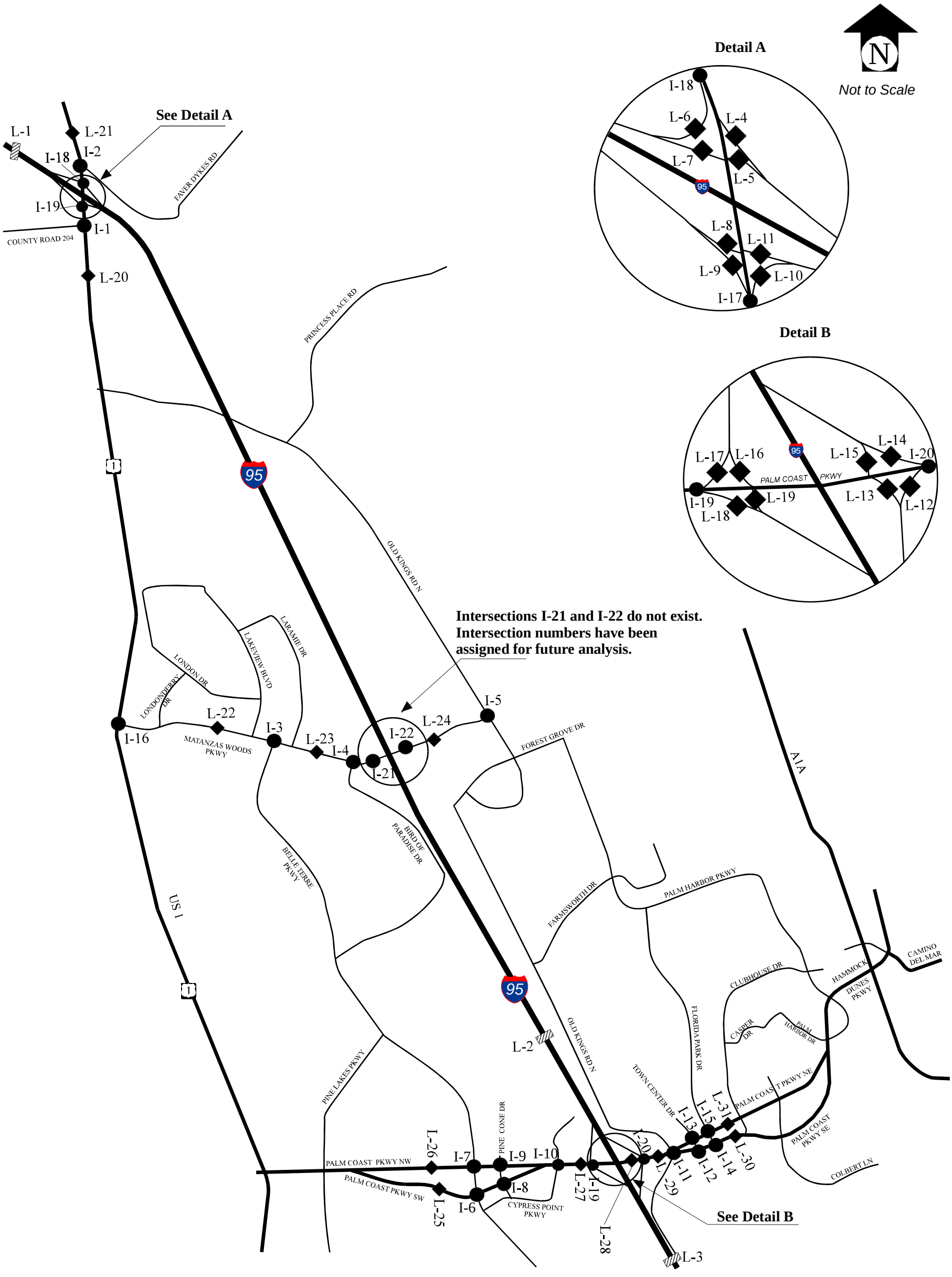
Intersection	AM Peak Hour Pedestrians				PM Peak Hour Pedestrians			
	Day 1	Day 2	Day 3	Average	Day 1	Day 2	Day 3	Average
I-1 US-1 AND CR 204	0	0	0	0	0	0	0	0
I-2 US-1 AND FAVER DYKES RD	0	0	0	0	0	0	0	0
I-3 MATANZAS WOODS PKWY AND BELLE TERRE PKWY	0	0	0	0	3	1	0	1
I-4 MATANZAS WOODS PKWY AND BIRD OF PARADISE 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



Legend

- ● 3-Day AM And PM Peak Hour Intersection Turning Movement (I)
- ◆ 24-Hour Bi-Directional Link Count (L)
- ▨ 72-Hour Classification Counts (L)

I-95 and Matanzas Woods Parkway Interchange Justification Report

Secondary Source Traffic Counts Locations

Figure 4-2

Not to Scale

Detail A

Detail B

See Detail A

See Detail B

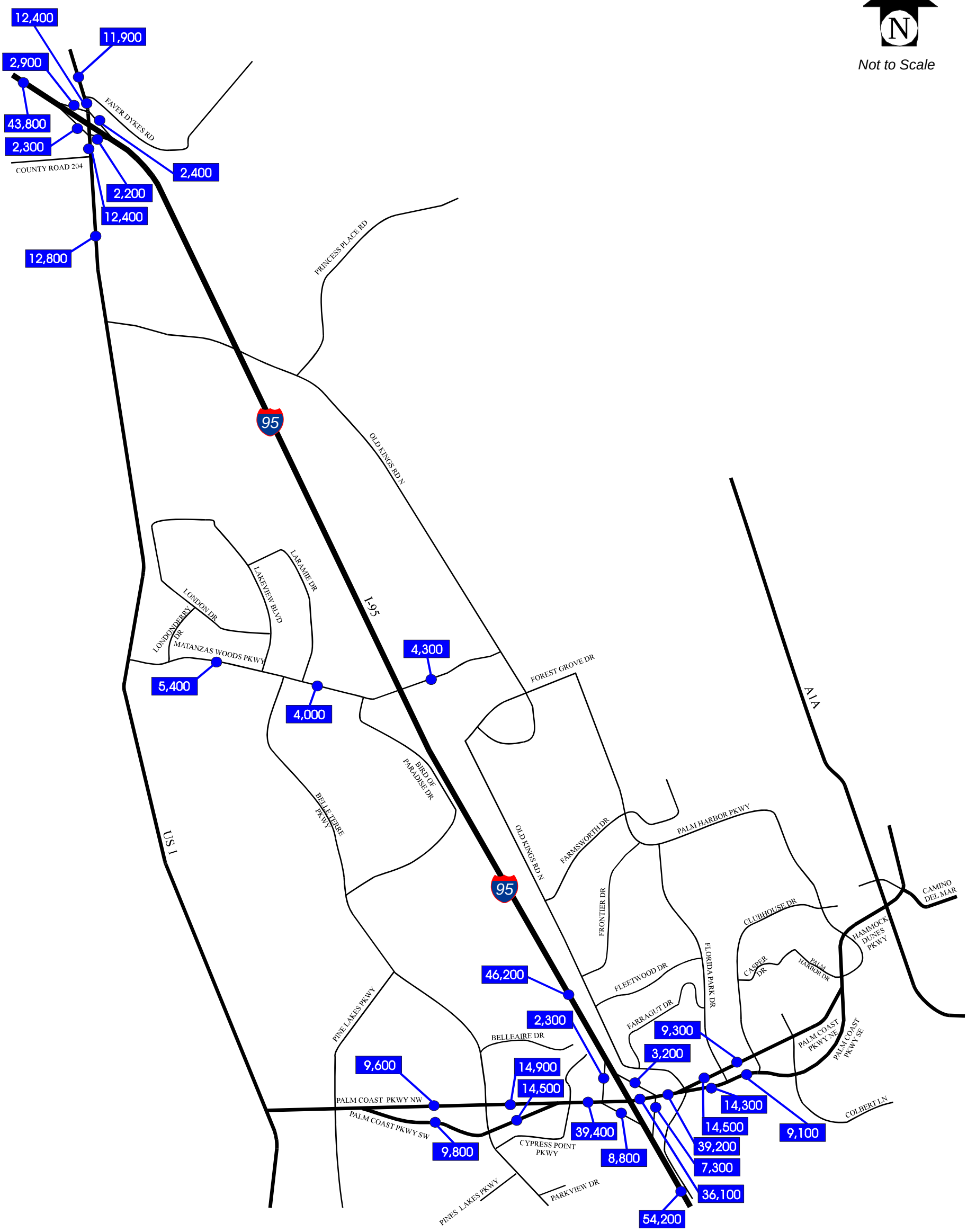
Legend

- Signalized
- Unsignalized
- 70 MPH — Posted Speed Limit
- Right Turn Lane Starts From Previous Intersection
- 250′ — Turn Lane Length

I-95 and Matanzas Woods Parkway Interchange Justification Report

Existing Intersection Geometry

Figure 4-3



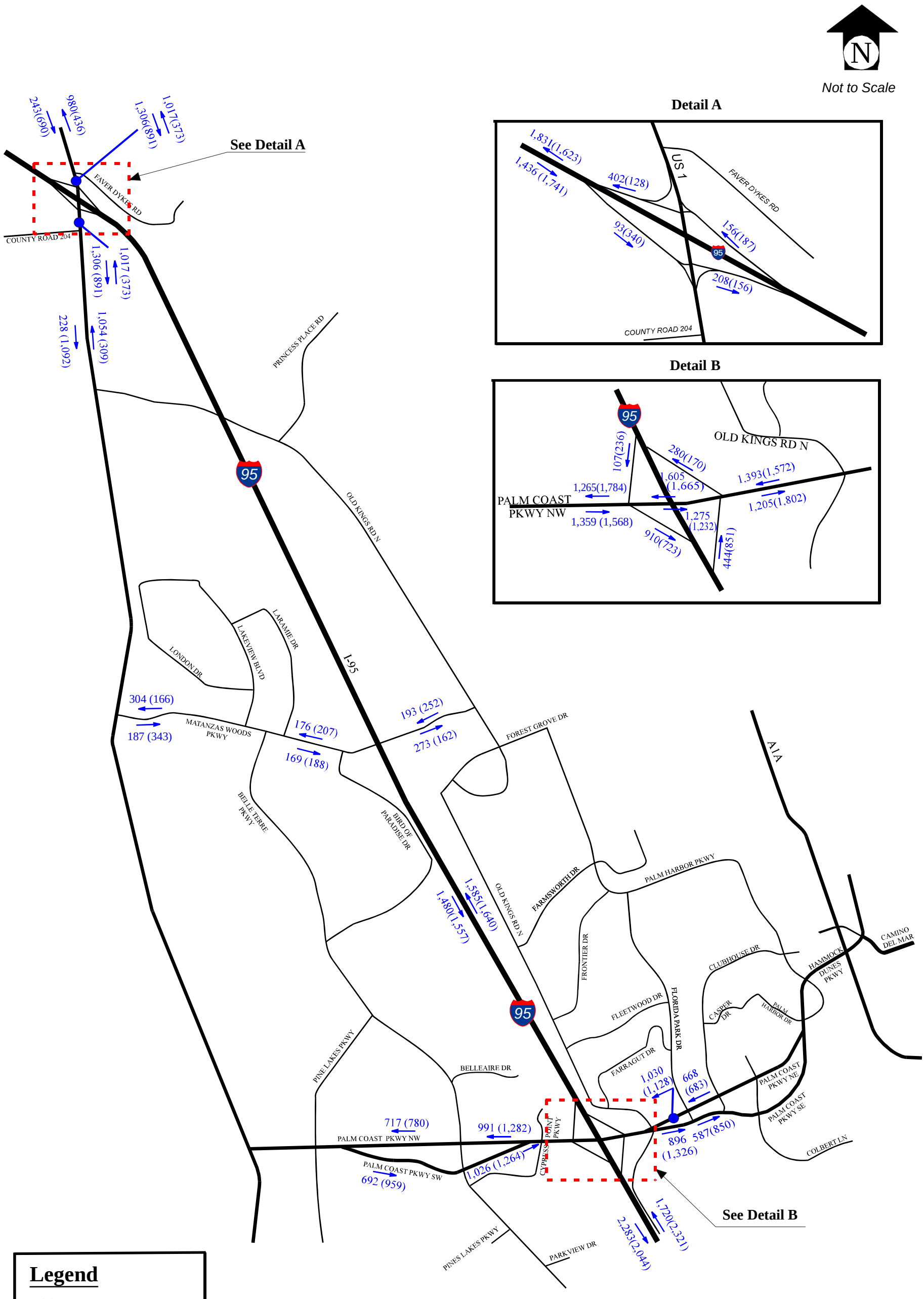
Legend

1,800 AADT

I-95 and Matanzas Woods Parkway Interchange Justification Report

2009 Annual Average Daily Traffic

Figure 4-4

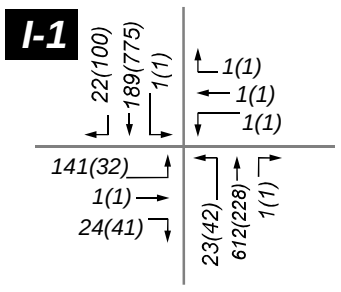


I-95 and Matanzas Woods Parkway Interchange Justification Report

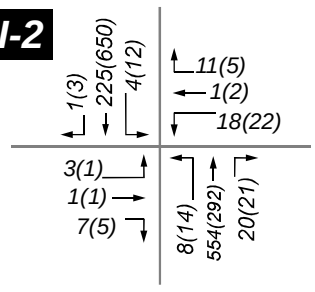
2009 AM and PM Peak Hour Directional Volumes

Figure 4-5

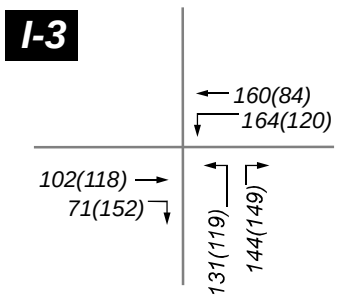
U.S. 1 and CR 204



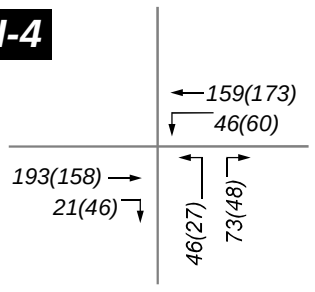
US-1 and Faver Dykes Road



Matanzas Woods Pkwy and Belle Terre Pkwy

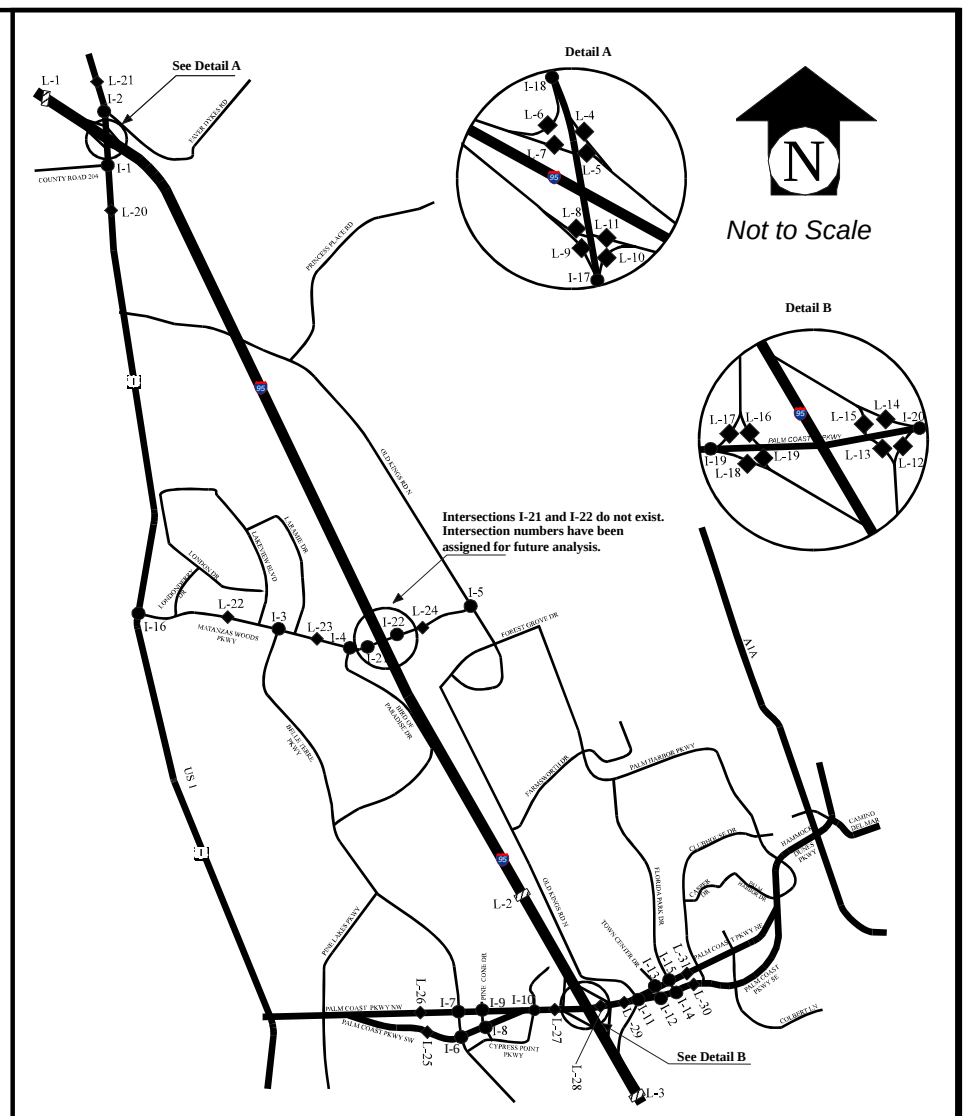


Matanzas Woods Pkwy and Bird of Pradise Drive

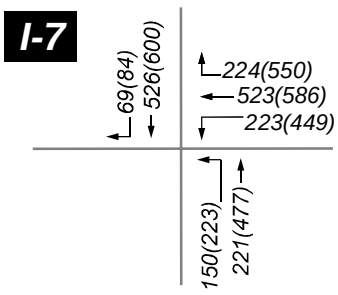


Matanzas Woods Pkwy and Old Kings Rd

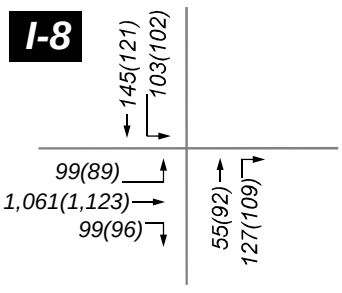
Palm Coast Pkwy EB and Belle Terre Pkwy



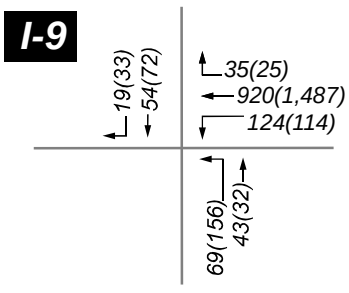
Palm Coast Pkwy WB and Belle Terre Pkwy



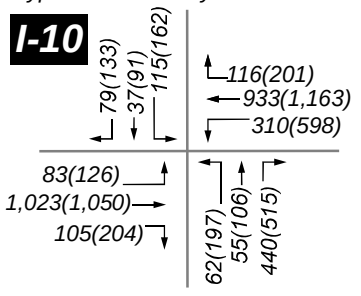
Palm Coast Pkwy EB and Pine Cone Dr



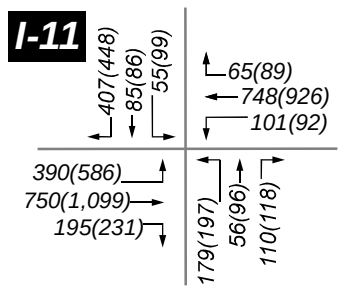
Palm Coast Pkwy WB and Pine Cone Dr



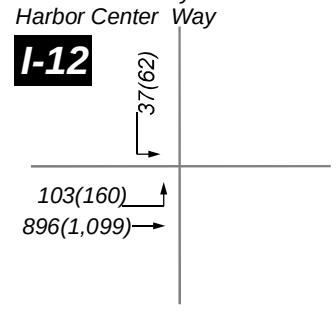
Palm Coast Pkwy and Cypress Point Pkwy



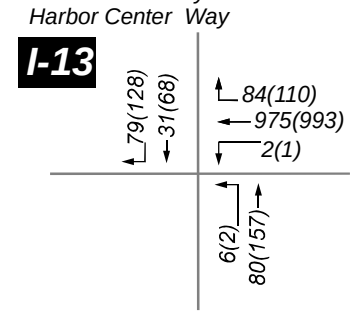
Palm Coast Pkwy and Old Kings Rd



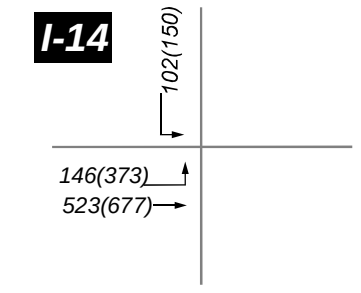
Palm Coast Pkwy EB and Harbor Center Way



Palm Coast Pkwy WB and Harbor Center Way



Palm Coast Pkwy EB and Florida Park Dr



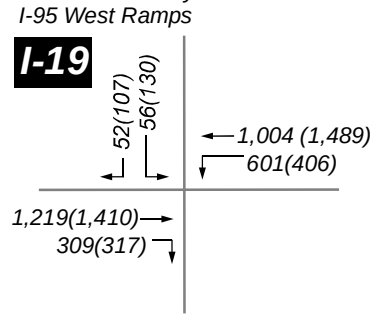
Palm Coast Pkwy WB and Florida Park Dr

U.S. 1 and Matanzas Woods Pkwy

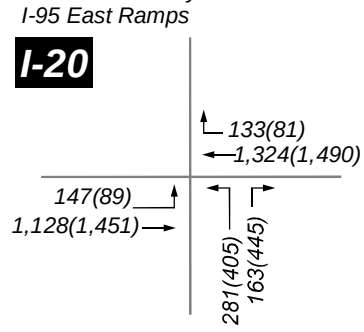
U.S. 1 and I-95 South Ramps

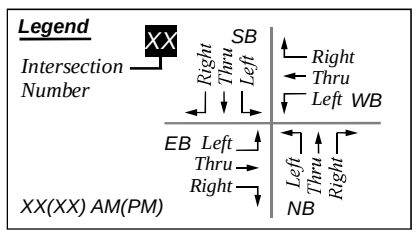
U.S. 1 and I-95 North Ramps

Palm Coast Pkwy and I-95 West Ramps



Palm Coast Pkwy and I-95 East Ramps



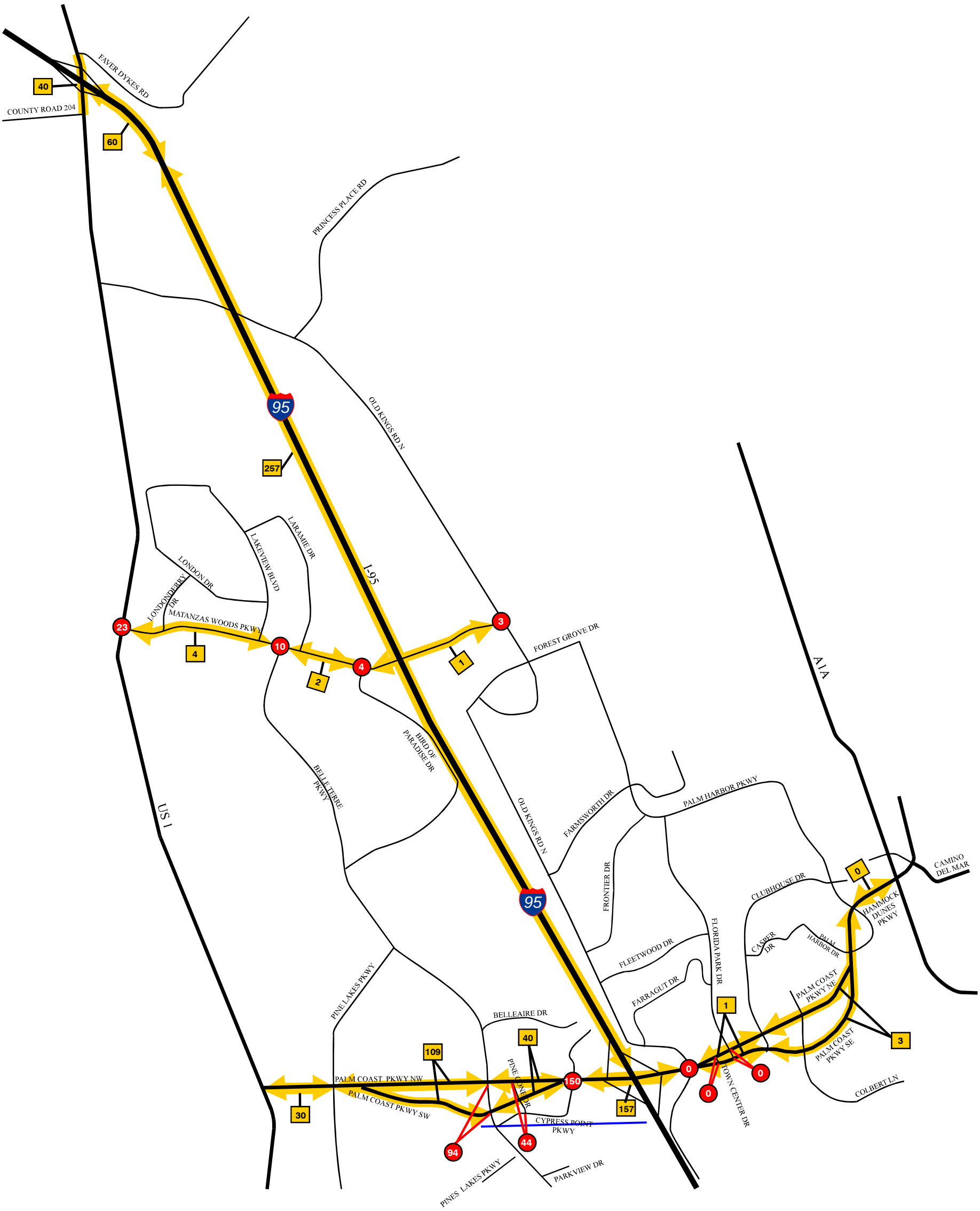


I-95 and Matanzas Woods Parkway Interchange Justification Report

2009 AM and PM Peak Hour Intersection Turning Movement Volumes

Figure 4-6

Not to Scale



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

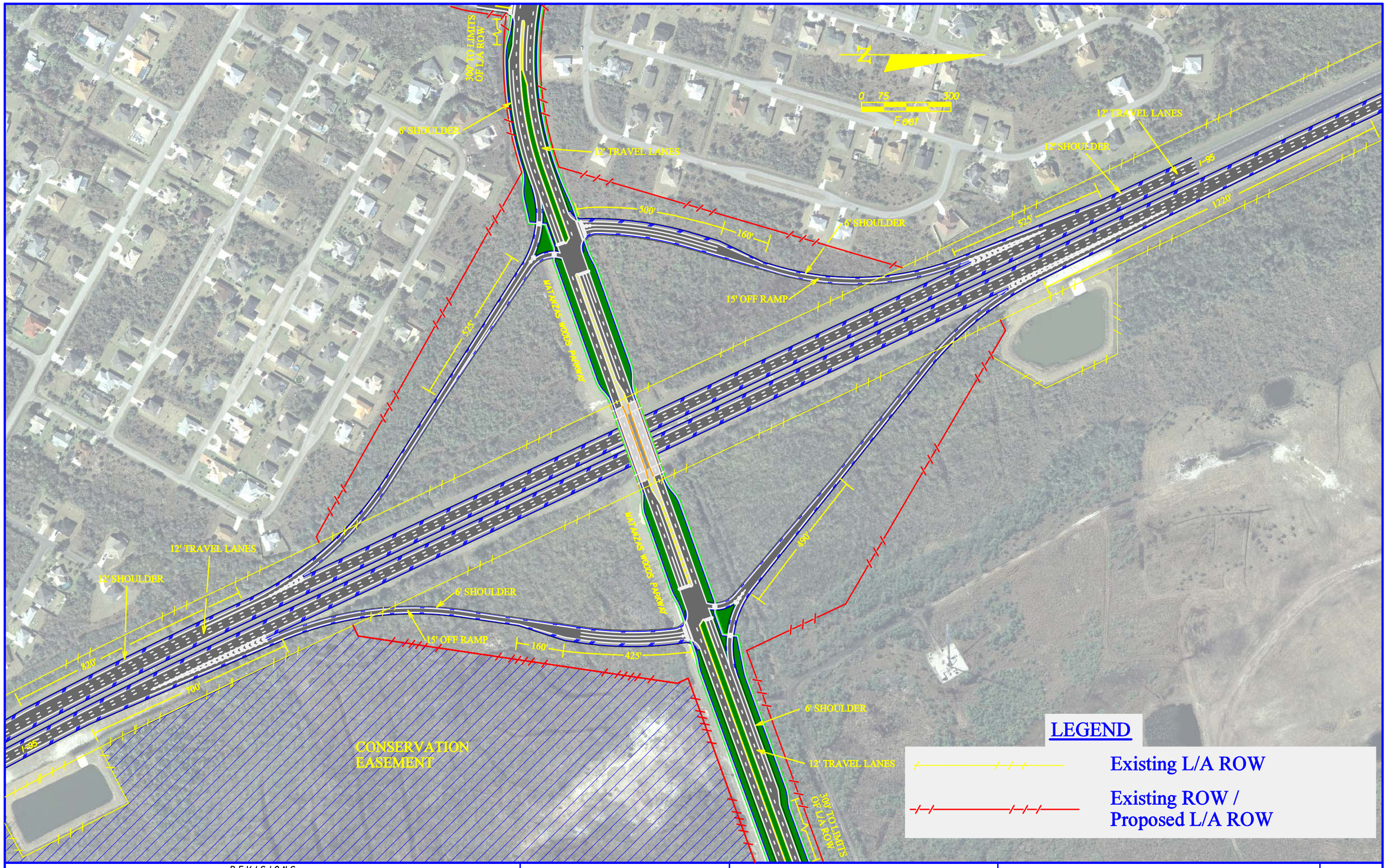
An Access Management Agreement may be required by FDOT during the final design and permit stage of the interchange approval. Since Matanzas Woods Parkway is not a state roadway, the interchange access management guidance provided in Chapter 14-97 F.A.C. can only be coordinated with the local government 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

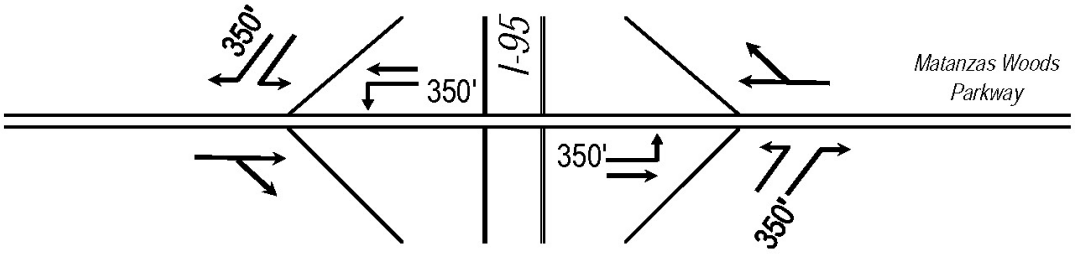
ROAD NO.	COUNTY	FINANCIAL PROJECT ID

SCHEMATIC DIAMOND INTERCHANGE CONFIGURATION ALTERNATIVE

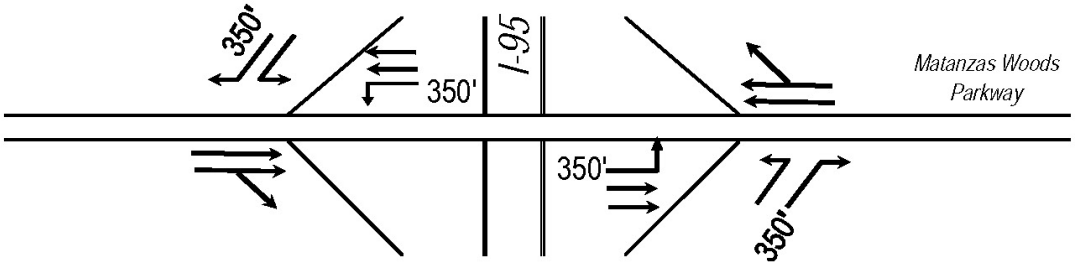
Figure 6-1 R

Wide Diamond Lane Configuration

Year 2015

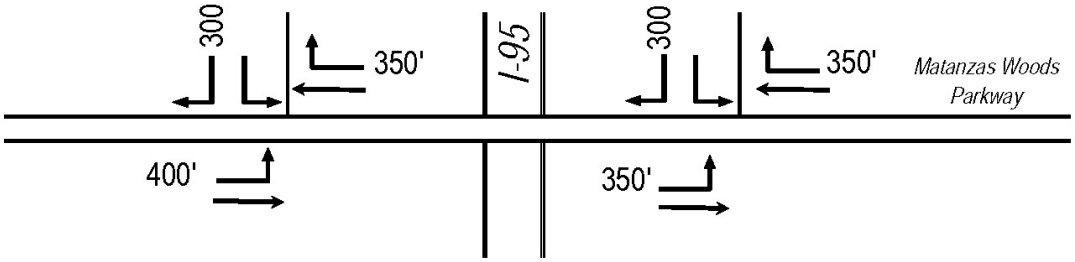


Years 2025 - 2035

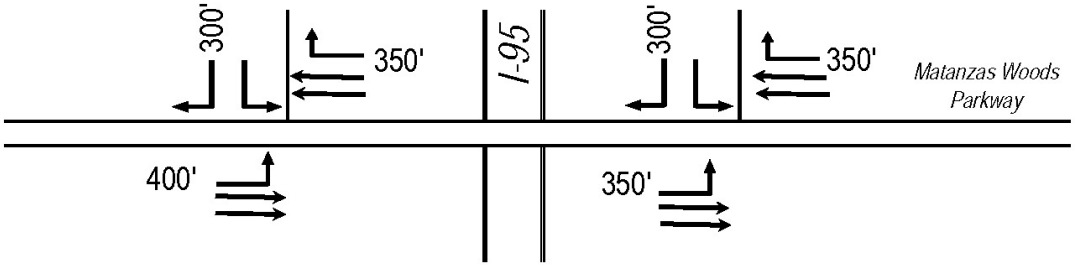


Partial Cloverleaf Lane Configuration

Year 2015



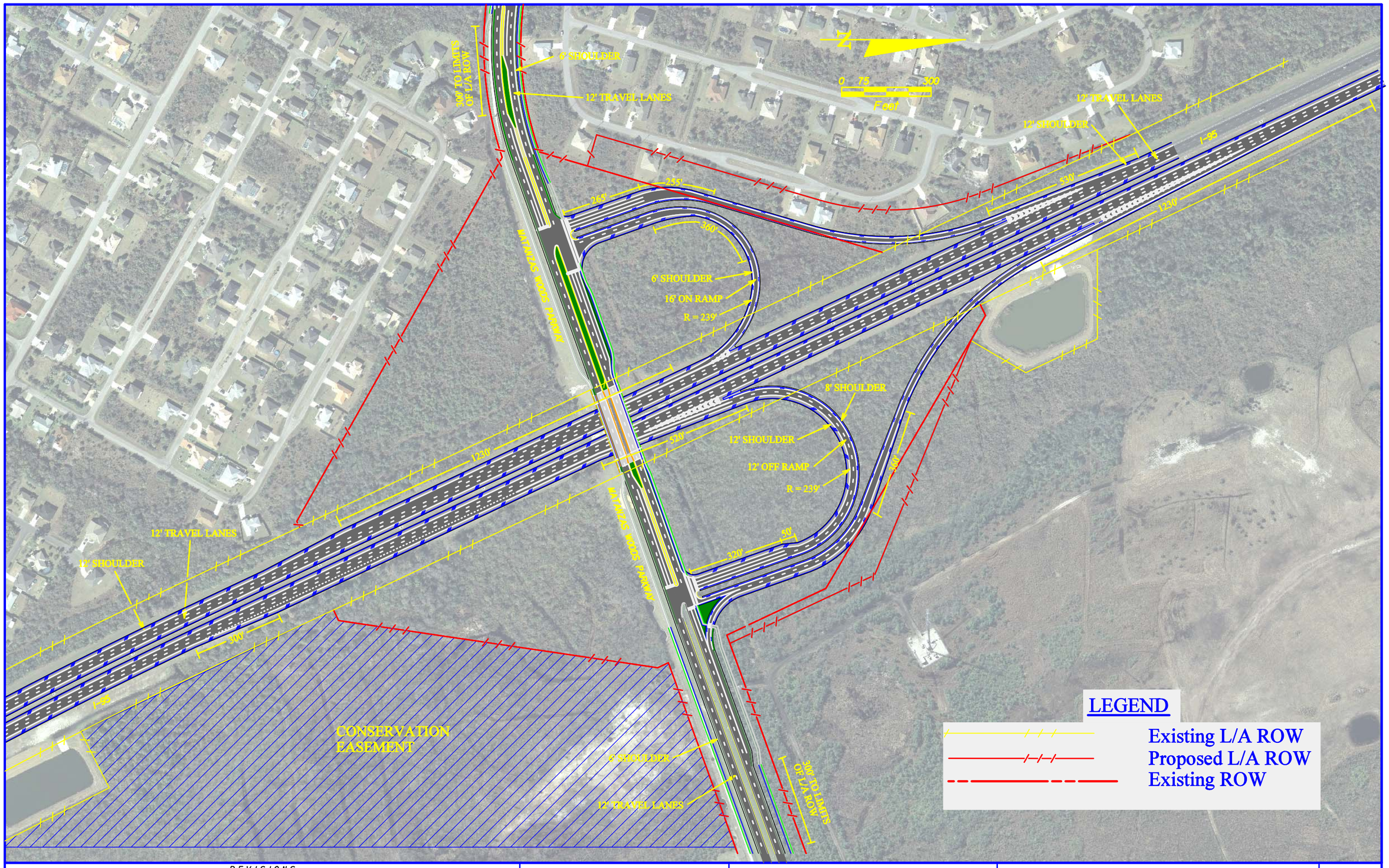
Years 2025 - 2035



I-95 and Matanzas Woods Parkway Interchange Justification Report

Lanes Interchange Configuration

Figure 6-2



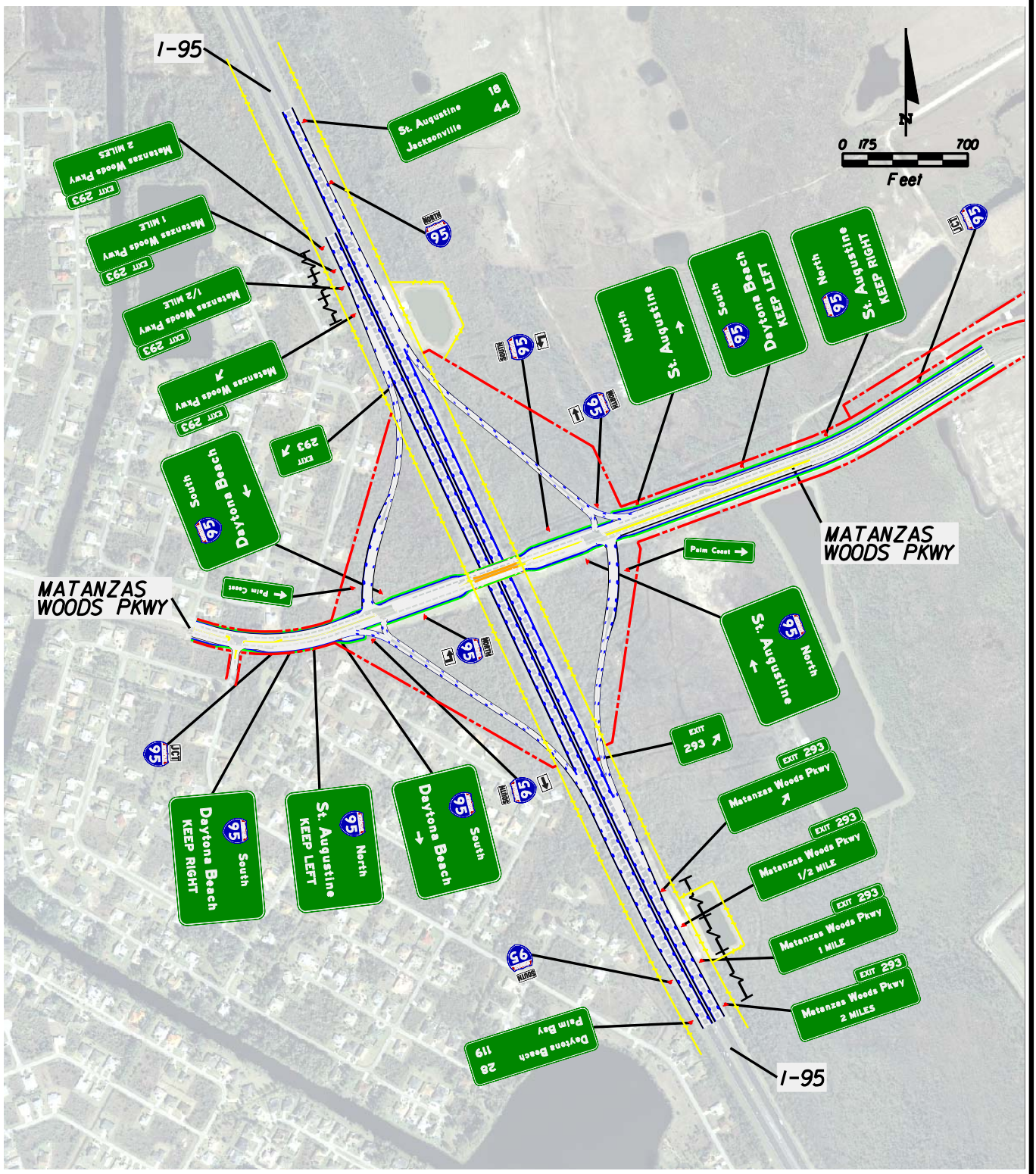
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

SCHEMATIC PARTIAL CLOVER INTERCHANGE CONFIGURATION ALTERNATIVE

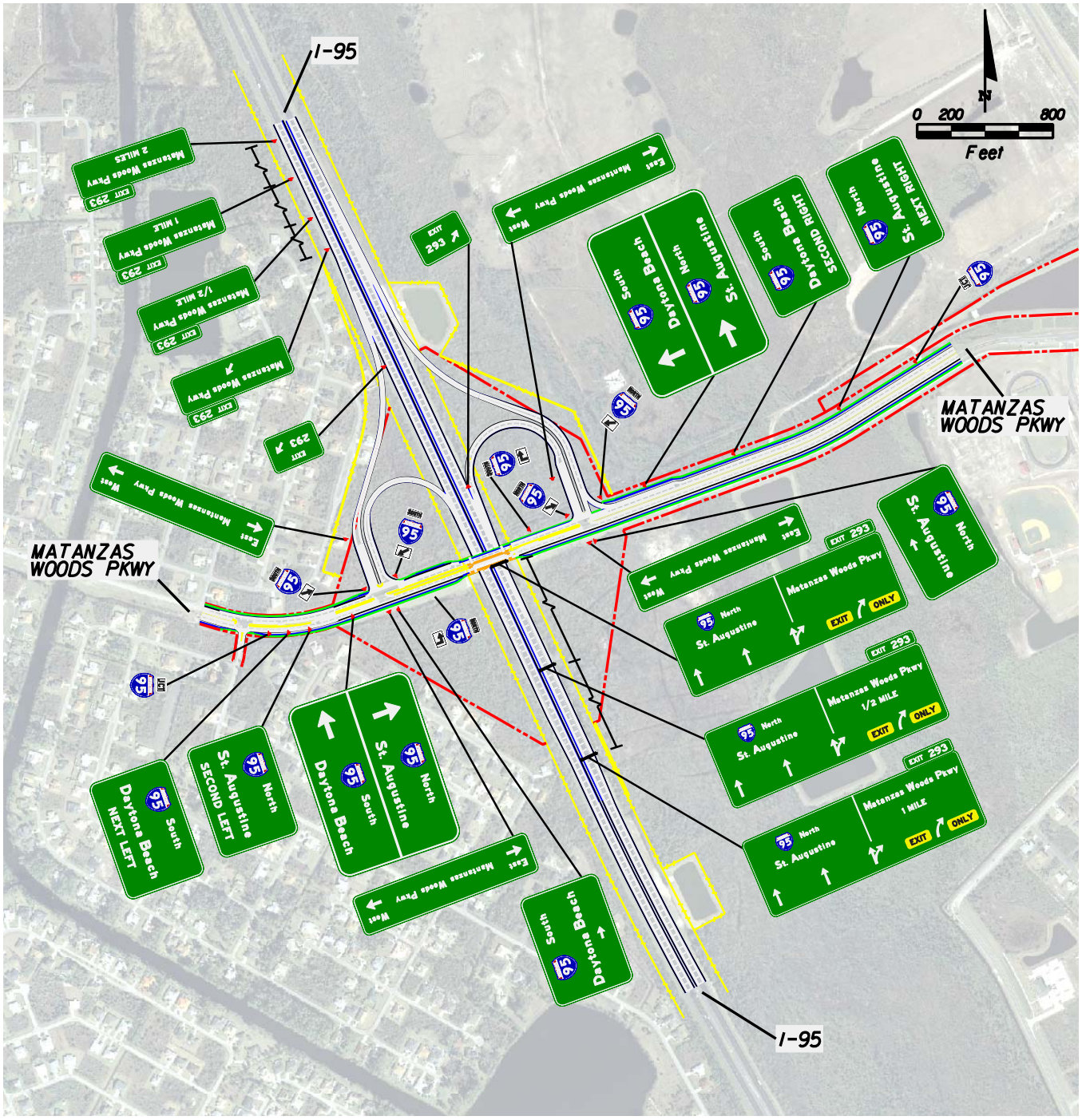
FIGURE 6-3 R



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.

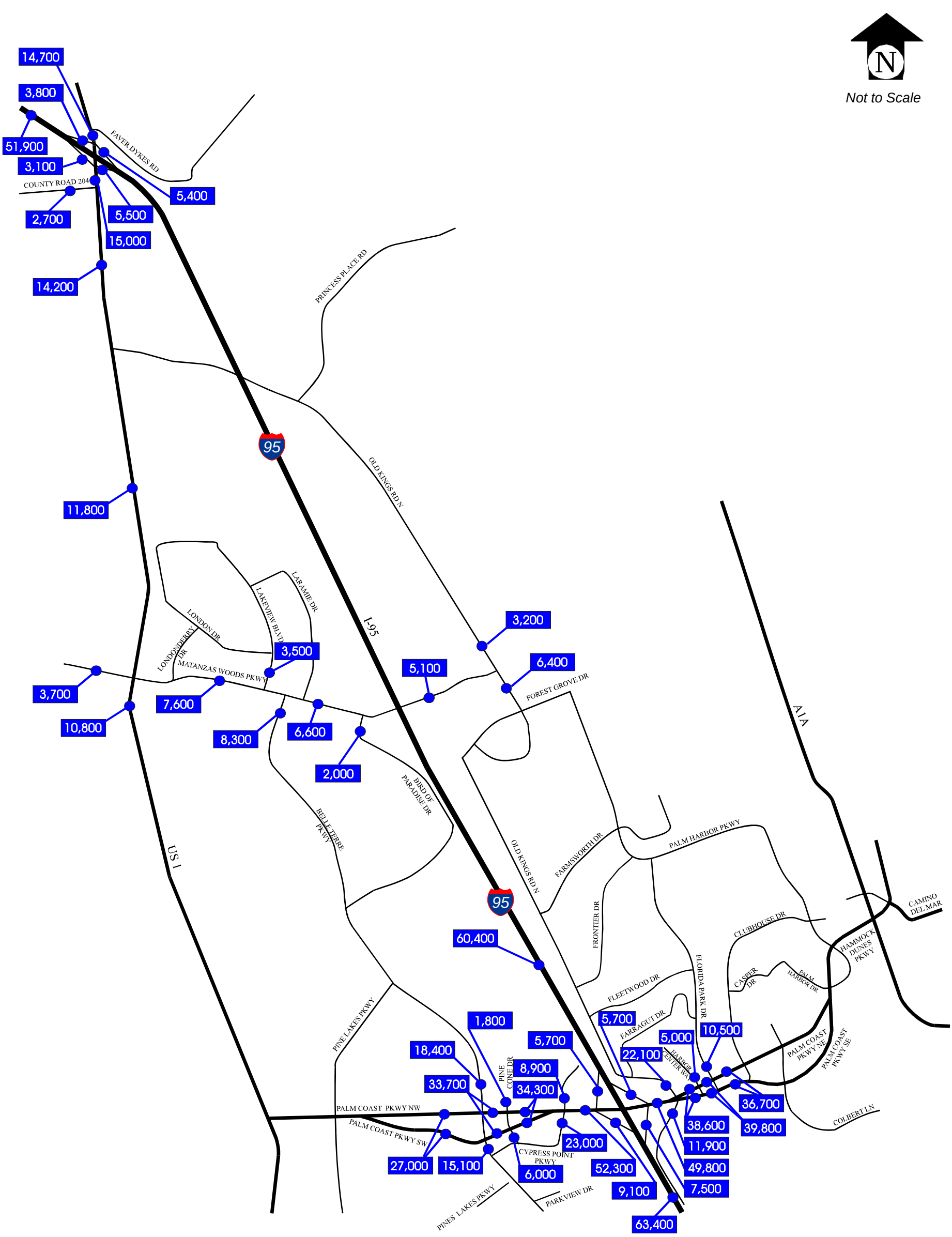
7.5 Programmed and Planned Roadway Improvements

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		--	--	--	--	--	--

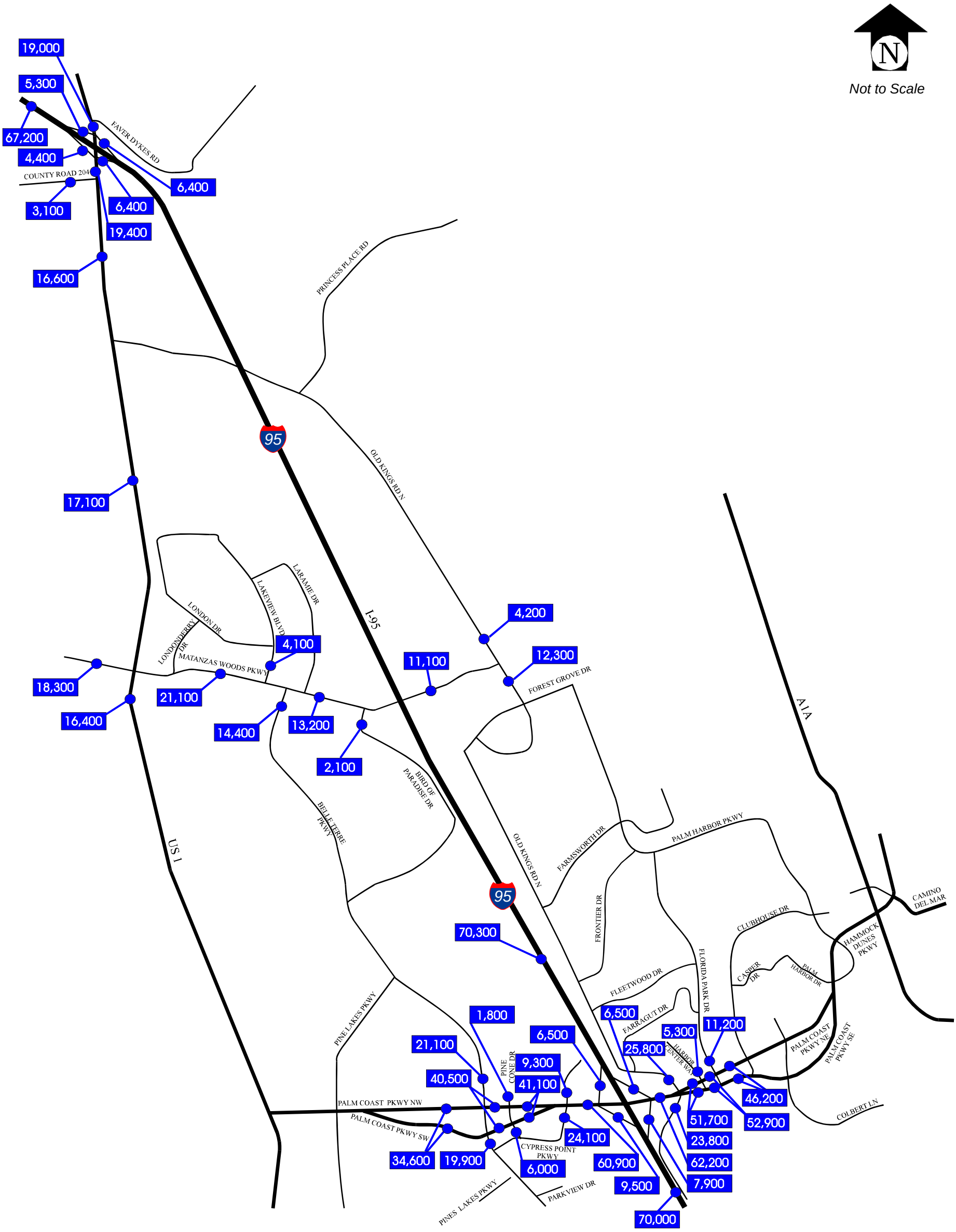
Notes:
[1] City of Palm Coast Palm Coast Parkway Widening.
[2] Palm Coast Park Development.
[3] Matanzas Woods IJR.
[4] City of Palm Coast Belle Terre Parkway 4-Laning Project.

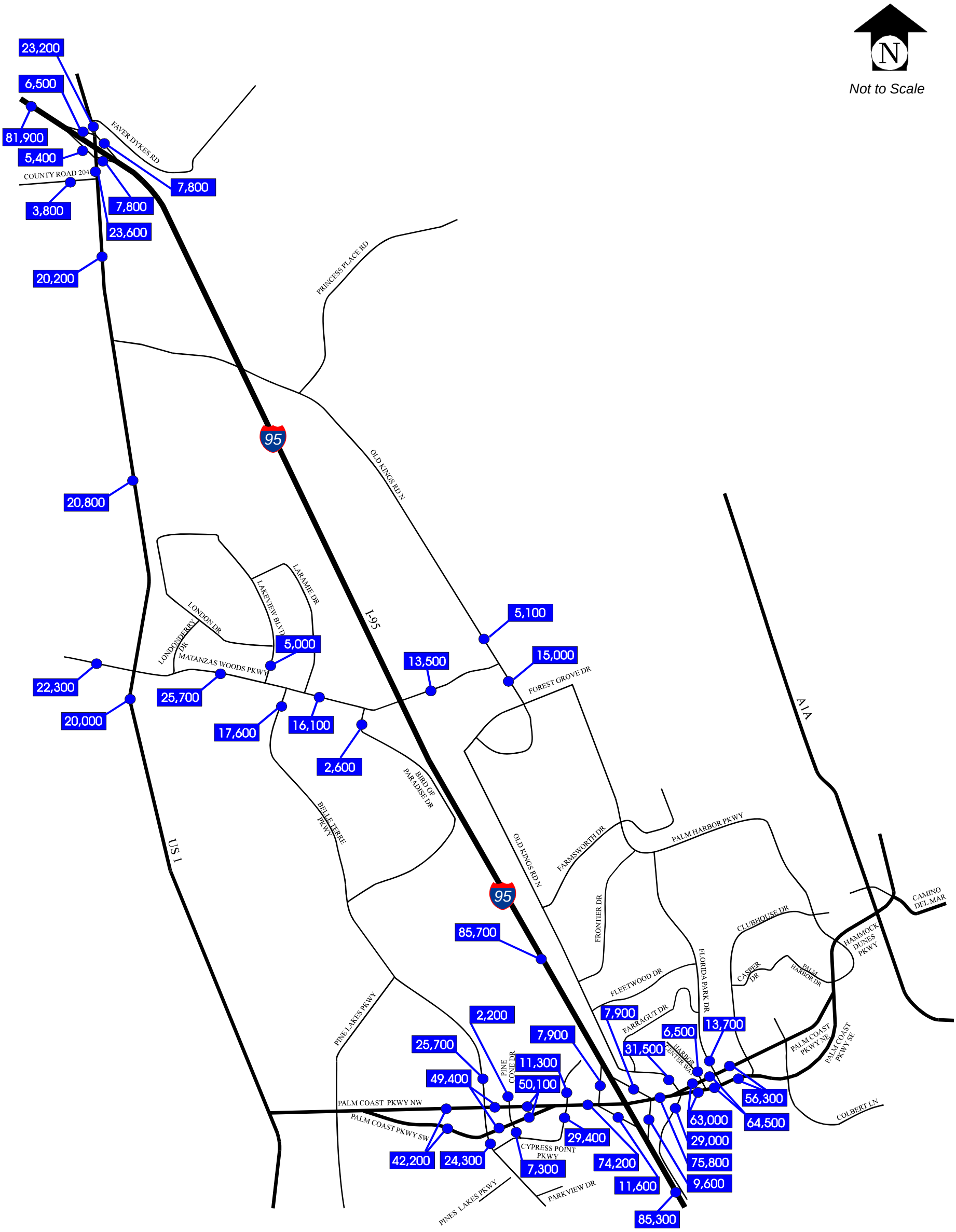


I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 No Build Alternative Annual Average Daily Traffic

Figure 7-1

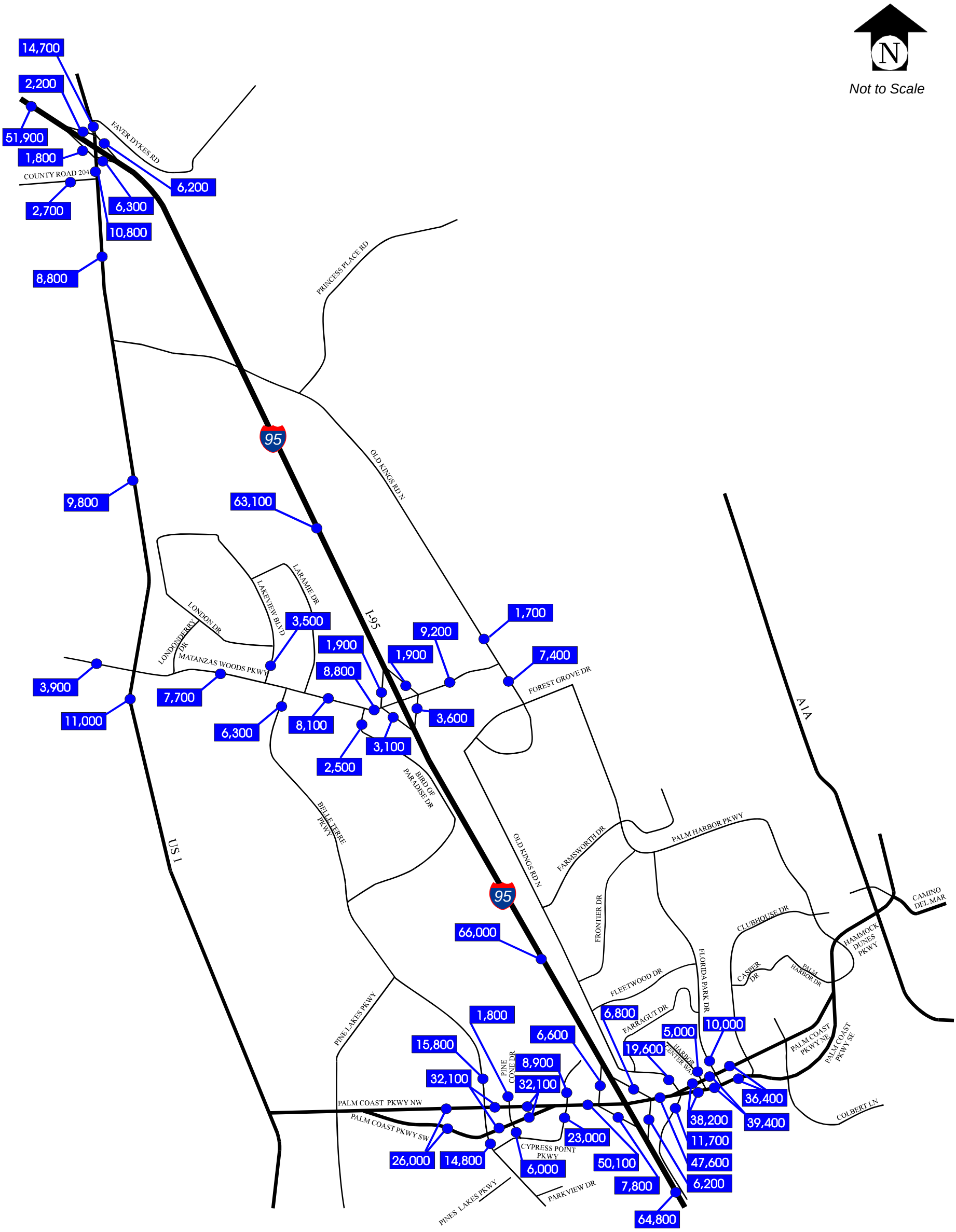

N
Not to Scale
19,000
5,300
67,200
4,400
COUNTY ROAD 204
3,100
6,400
6,400
19,400
16,600
FAVER DYKES RD
PRINCESS PLACE RD
95
17,100
OLD KINGS RD N
LARAMIE DR
LAKEVIEW BLVD
LONDON DR
LONDONDERRY DR
MATANZAS WOODS PKWY
4,100
18,300
16,400
21,100
14,400
13,200
2,100
11,100
4,200
12,300
FOREST GROVE DR
I-95
US 1
BIRD OF PARADISE DR
BELLE TERRE PKWY
A1A
OLD KINGS RD N
FARMSWORTH DR
PALM HARBOR PKWY
FRONTIER DR
95
70,300
CLUBHOUSE DR
CASPER DR
PALM HARBOR DR
HAMMOCK DUNES PKWY
CAMINO DEL MAR
FLEETWOOD DR
FARRAGUT DR
FLORIDA PARK DR
HARBOR CENTER WAY
PALM COAST PKWY NE
PALM COAST PKWY SE
COLBERT LN
1,800
21,100
40,500
PINE LAKES PKWY
PINE CONE DR
9,300
41,100
6,500
6,500
5,300
25,800
11,200
46,200
52,900
51,700
23,800
62,200
7,900
PALM COAST PKWY NW
PALM COAST PKWY SW
34,600
19,900
CYPRESS POINT PKWY
6,000
24,100
60,900
9,500
70,000
PINES LAKES PKWY
PARKVIEW DR
Legend
1,800 AADT



I-95 and Matanzas Woods Parkway Interchange Justification Report

2035 No Build Alternative Annual Average Daily Traffic

Figure7-3



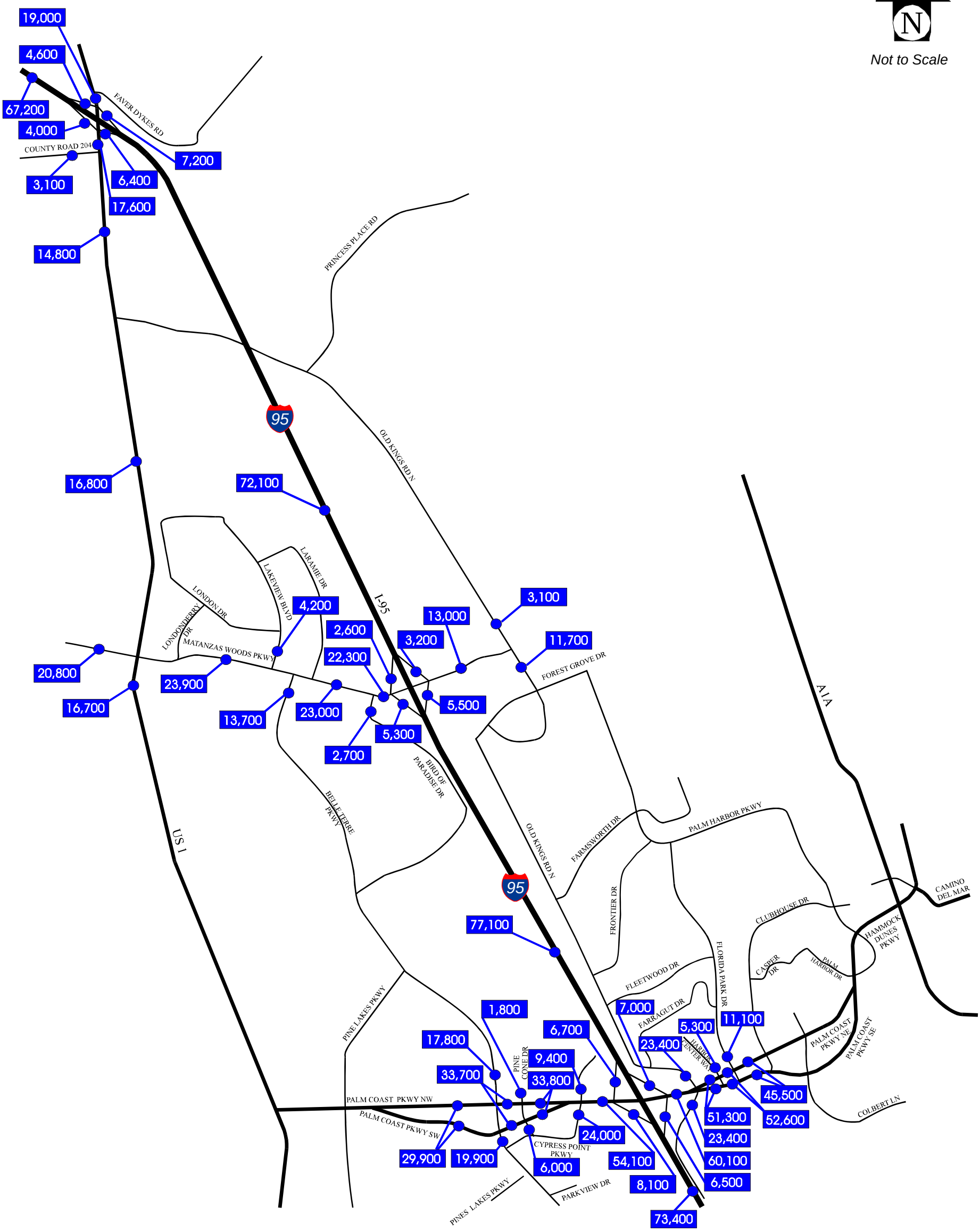
Legend

1,800 AADT

I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 Build Alternative Annual Average Daily Traffic

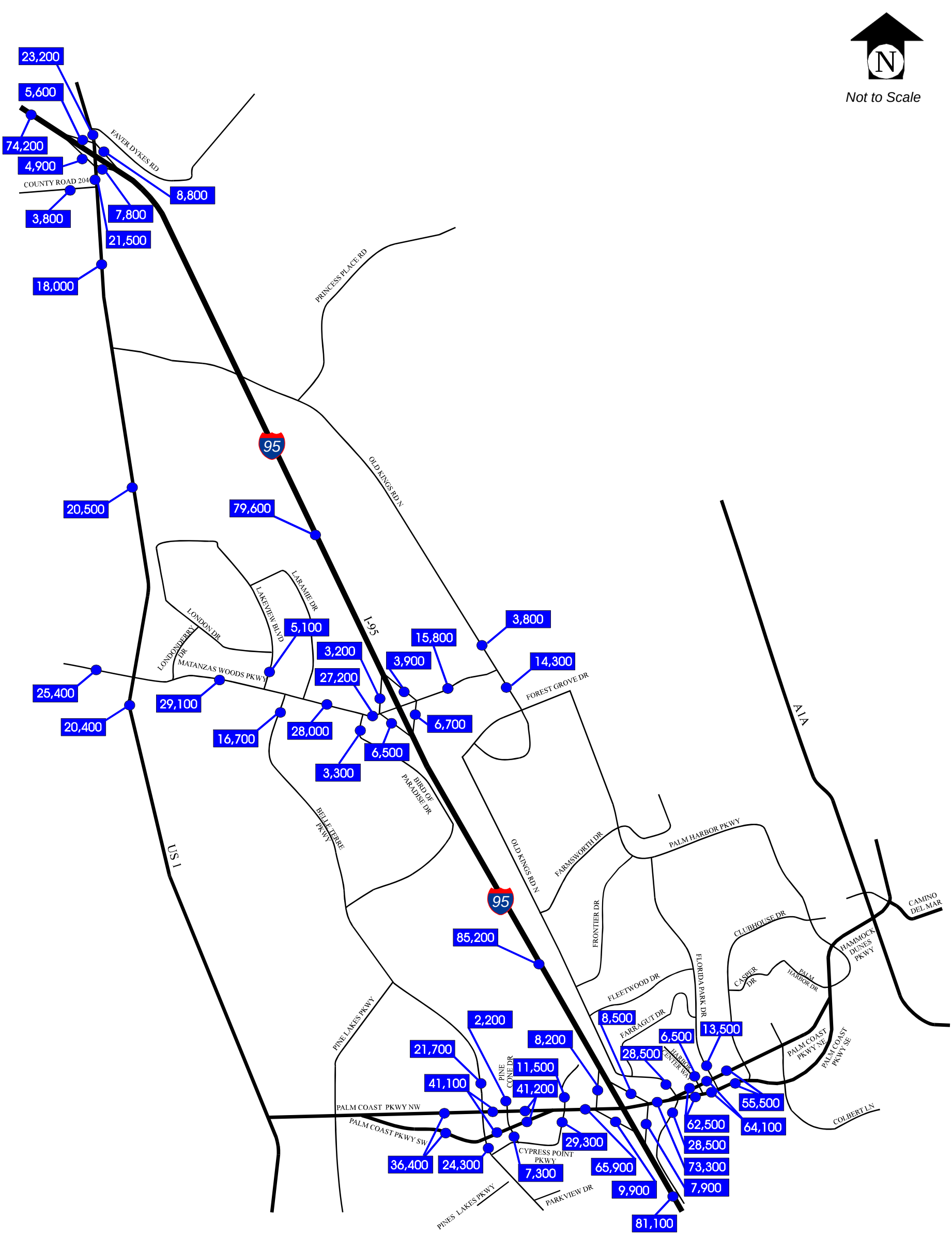
Figure 7-4



I-95 and Matanzas Woods Parkway Interchange Justification Report

2025 Build Alternative Annual Average Daily Traffic

Figure 7-5



Legend

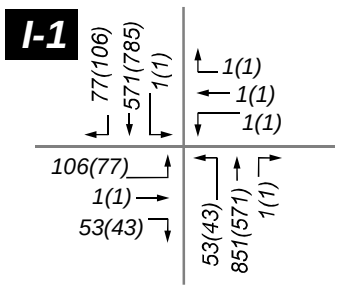
1,800 AADT

I-95 and Matanzas Woods Parkway Interchange Justification Report

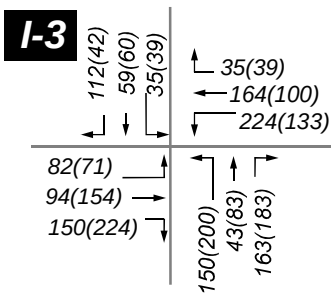
2035 Build Alternative Annual Average Daily Traffic

Figure 7-6

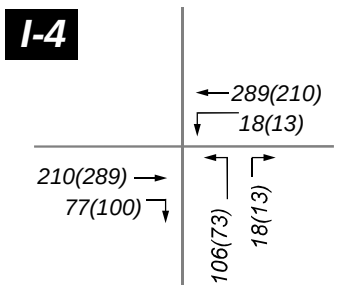
U.S. 1 and CR 204



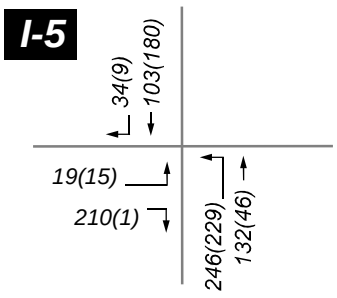
Matanzas Woods Pkwy and
Belle Terre Pkwy/Lakeview Blvd



Matanzas Woods Pkwy and
Bird of Pradise Drive

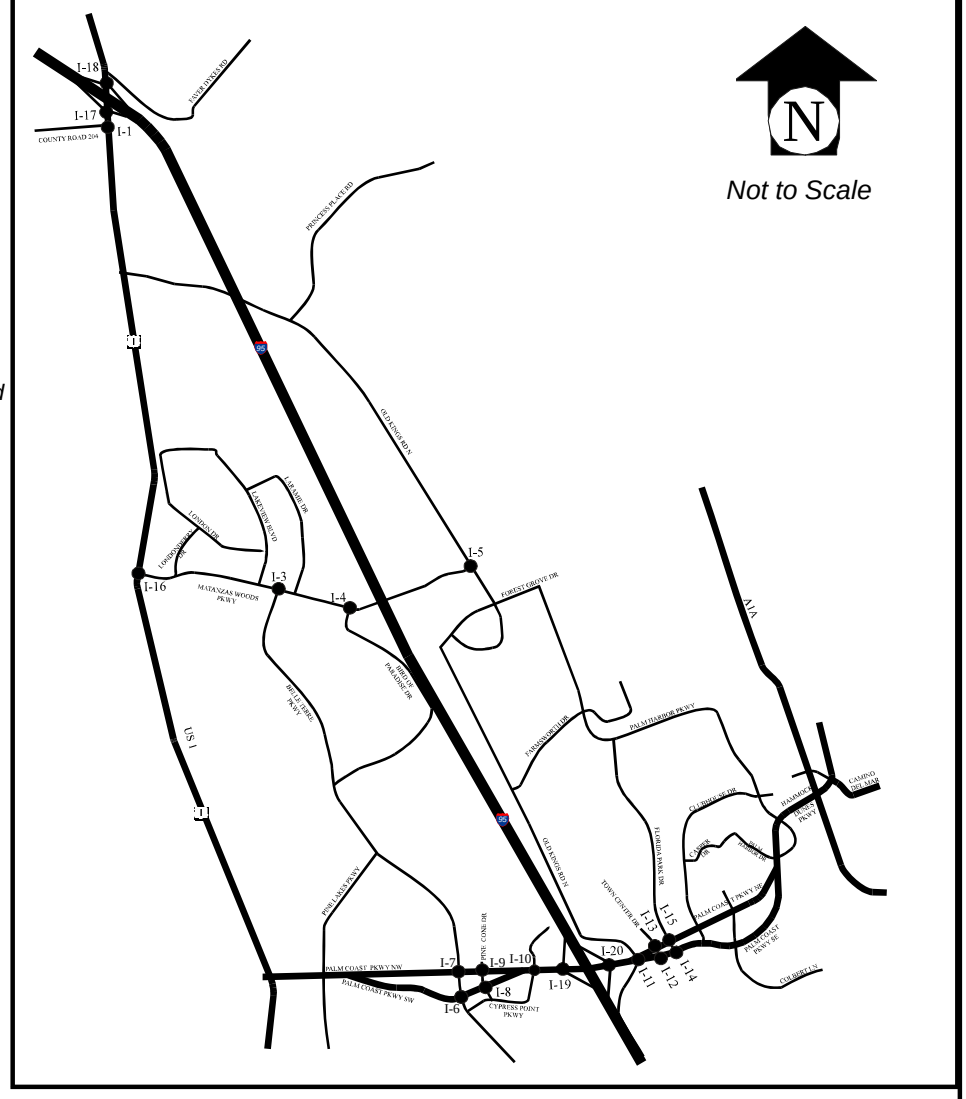


Matanzas Woods Pkwy and Old Kings Rd

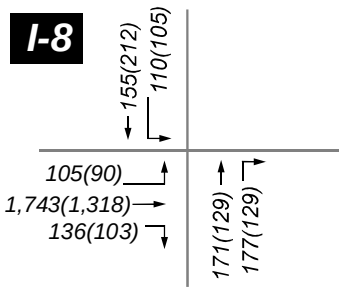


Palm Coast Pkwy EB and
Belle Terre Pkwy

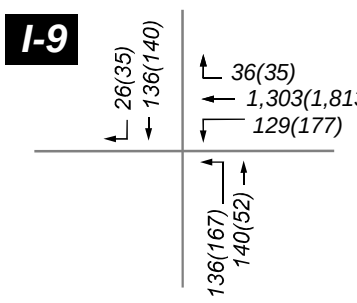
Palm Coast Pkwy WB and
Belle Terre Pkwy



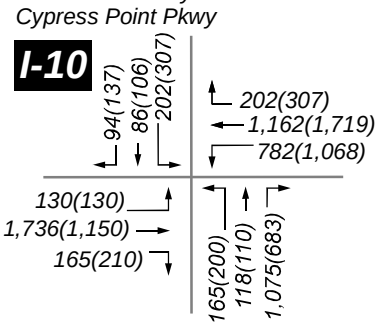
Palm Coast Pkwy EB and
Pine Cone Dr



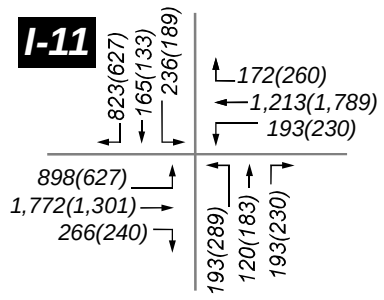
Palm Coast Pkwy WB and
Pine Cone Dr



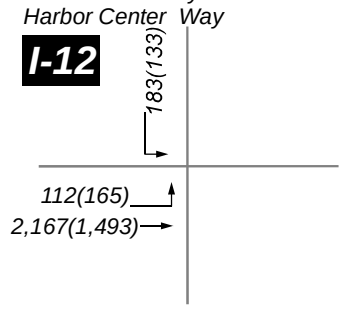
Palm Coast Pkwy and
Cypress Point Pkwy



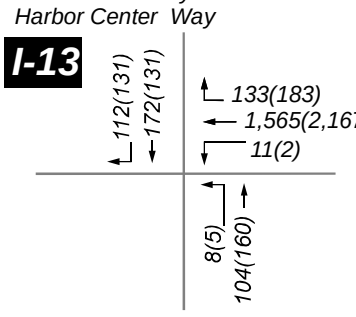
Palm Coast Pkwy and Old Kings Rd



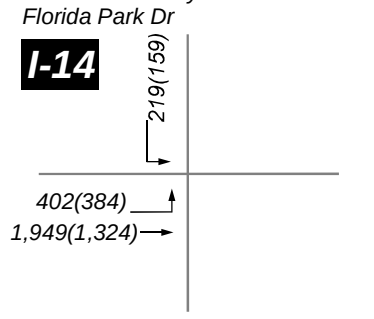
Palm Coast Pkwy EB and
Harbor Center Way



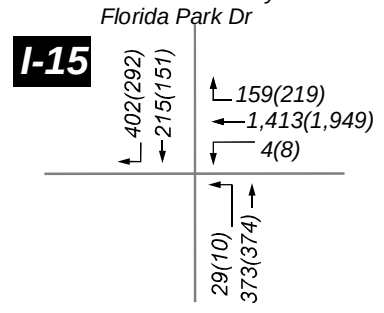
Palm Coast Pkwy WB and
Harbor Center Way



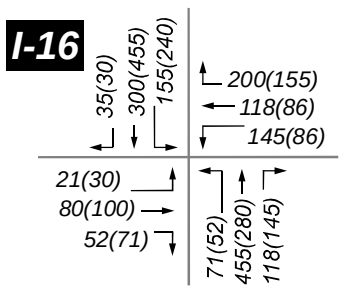
Palm Coast Pkwy EB and
Florida Park Dr



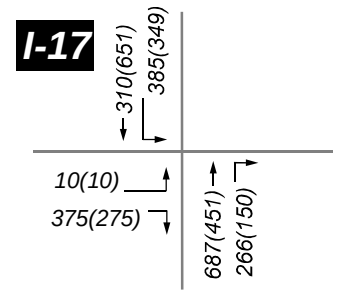
Palm Coast Pkwy WB and
Florida Park Dr



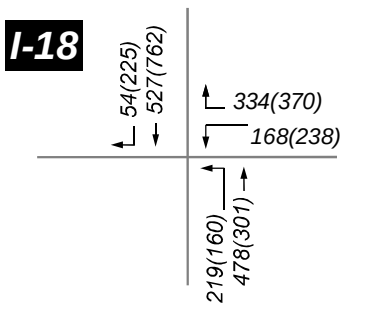
U.S. 1 and Matanzas Woods Pkwy



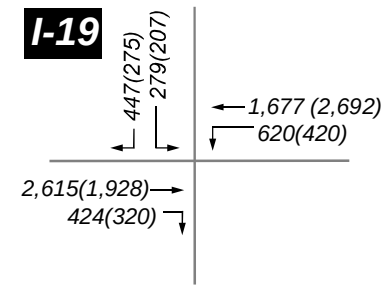
U.S. 1 and I-95 South Ramps



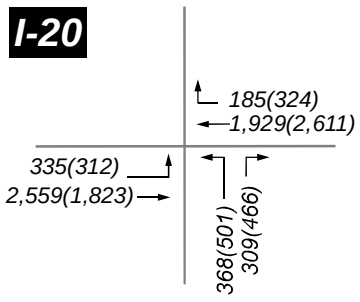
U.S. 1 and I-95 North Ramps

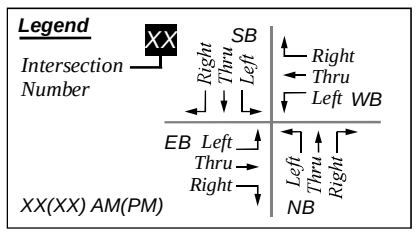


Palm Coast Pkwy and
I-95 West Ramps



Palm Coast Pkwy and
I-95 East Ramps





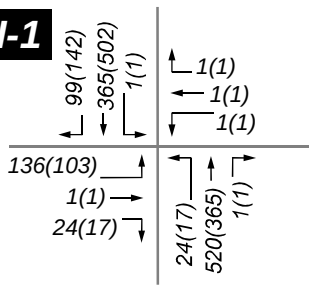
I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 No Build AM and PM Peak Hour Intersection Turning Movement Volumes

Figure 7-7

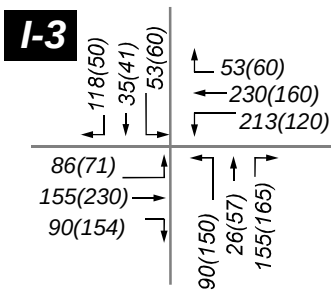
U.S. 1 and CR 204

I-1



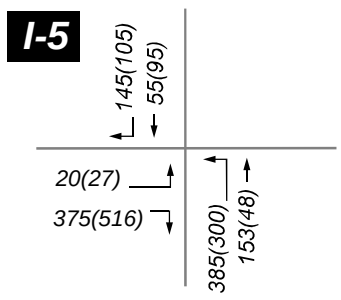
Matanzas Woods Pkwy and Belle Terre Pkwy/Lakeview Blvd

I-3



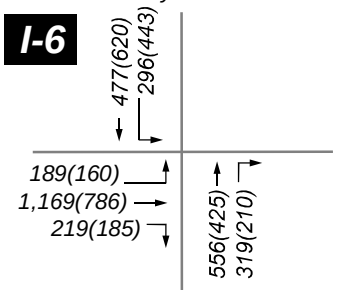
Matanzas Woods Pkwy and Old Kings Rd

I-5



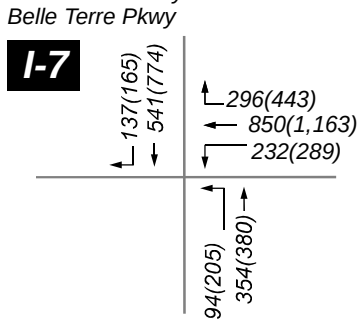
Palm Coast Pkwy EB and Belle Terre Pkwy

I-6



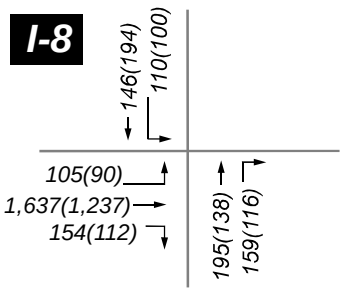
Palm Coast Pkwy WB and Belle Terre Pkwy

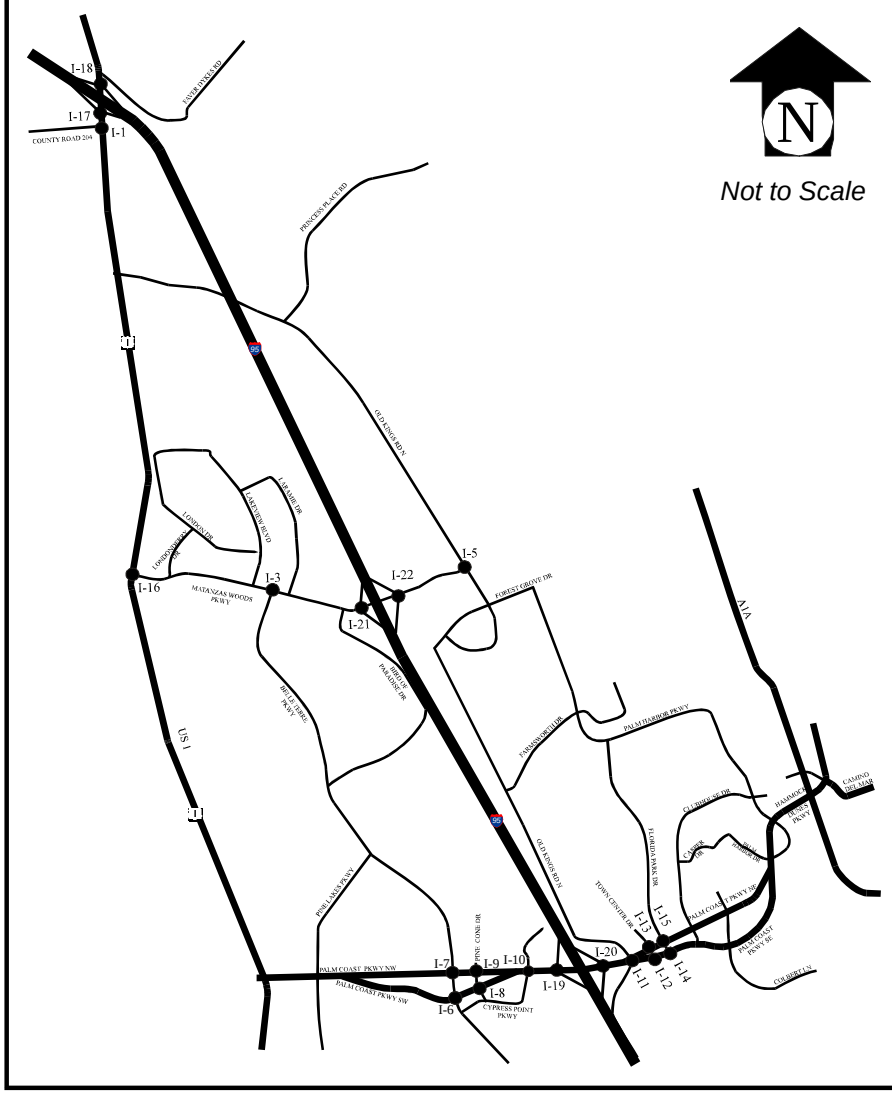
I-7



Palm Coast Pkwy EB and Pine Cone Dr

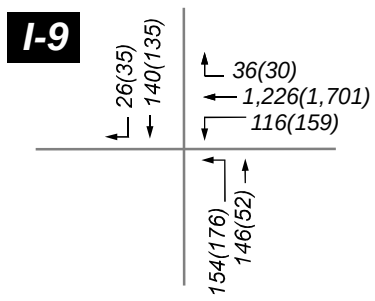
I-8





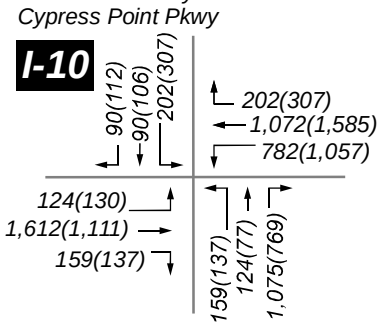
Palm Coast Pkwy WB and Pine Cone Dr

I-9



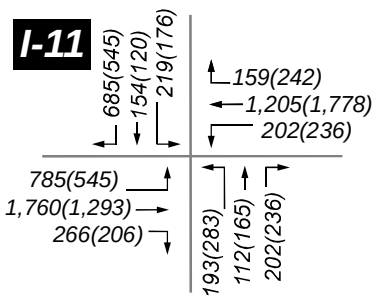
Palm Coast Pkwy and Cypress Point Pkwy

I-10



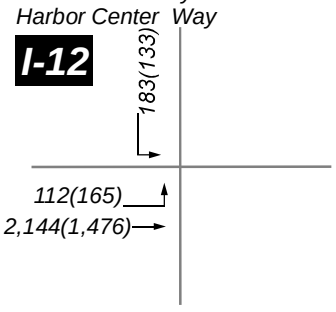
Palm Coast Pkwy and Old Kings Rd

I-11



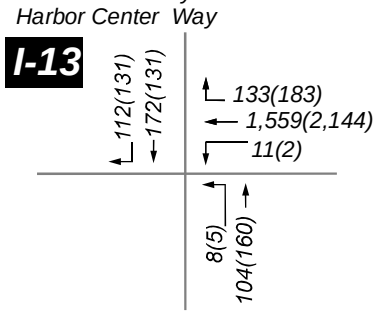
Palm Coast Pkwy EB and Harbor Center Way

I-12



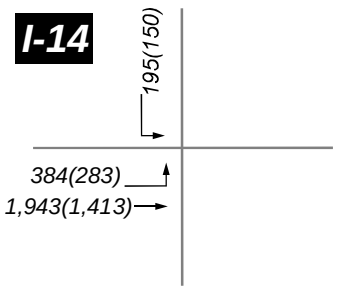
Palm Coast Pkwy WB and Harbor Center Way

I-13



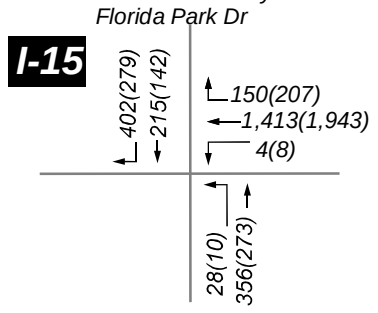
Palm Coast Pkwy EB and Florida Park Dr

I-14



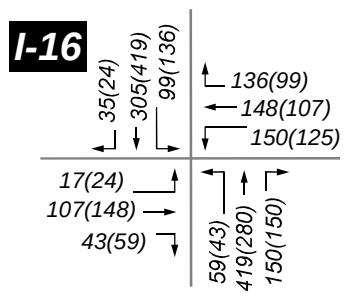
Palm Coast Pkwy WB and Florida Park Dr

I-15



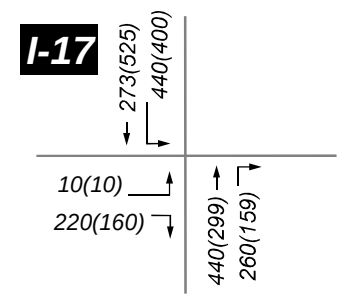
U.S. 1 and Matanzas Woods Pkwy

I-16



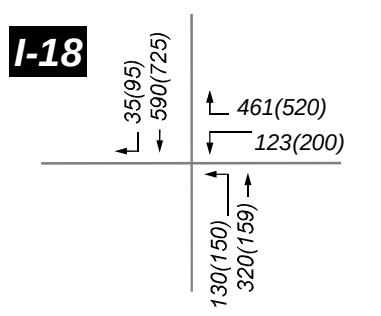
U.S. 1 and I-95 South Ramps

I-17



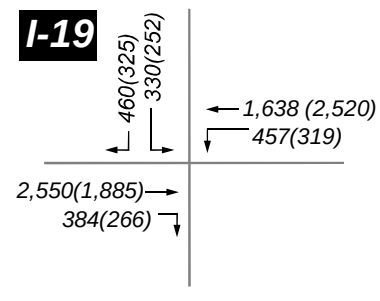
U.S. 1 and I-95 North Ramps

I-18



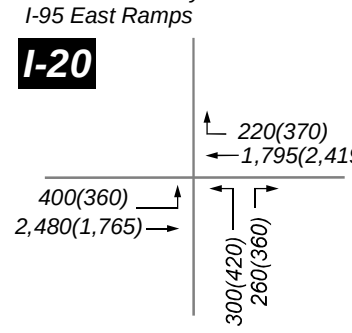
Palm Coast Pkwy and I-95 West Ramps

I-19



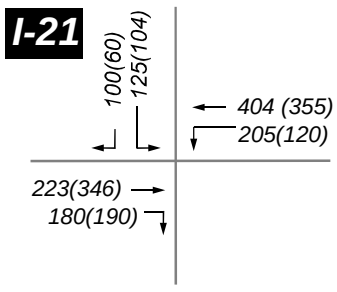
Palm Coast Pkwy and I-95 East Ramps

I-20



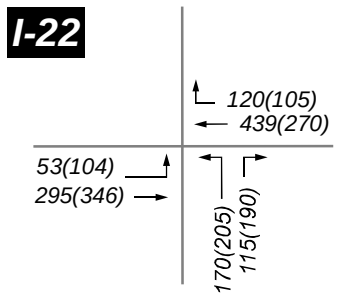
Matanzas Woods Pkwy and I-95 West Ramps

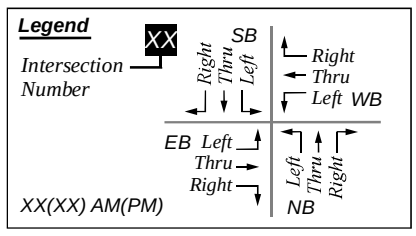
I-21



Matanzas Woods Pkwy and I-95 East Ramps

I-22





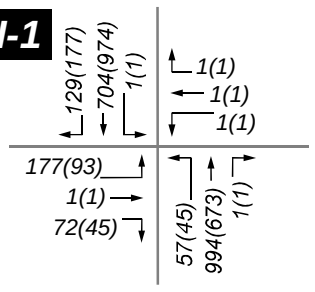
I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 Build AM and PM Peak Hour Intersection Turning Movement Volumes

Figure 7-8

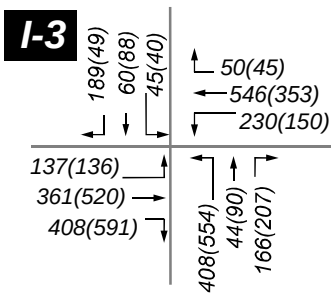
U.S. 1 and CR 204

I-1



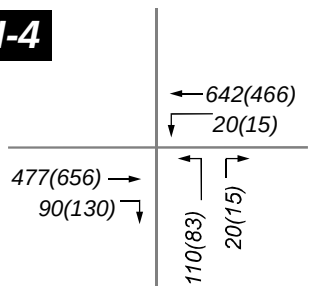
Matanzas Woods Pkwy and Belle Terre Pkwy/Lakeview Blvd

I-3



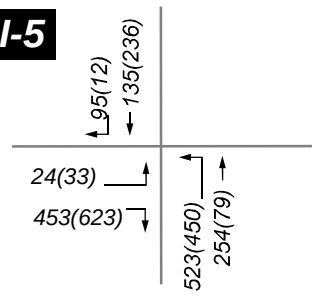
Matanzas Woods Pkwy and Bird of Pradise Drive

I-4



Matanzas Woods Pkwy and Old Kings Rd

I-5

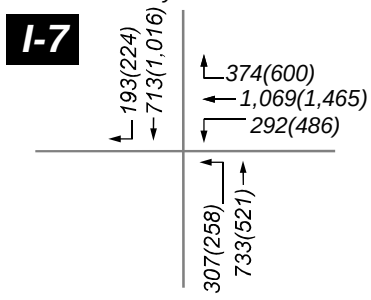


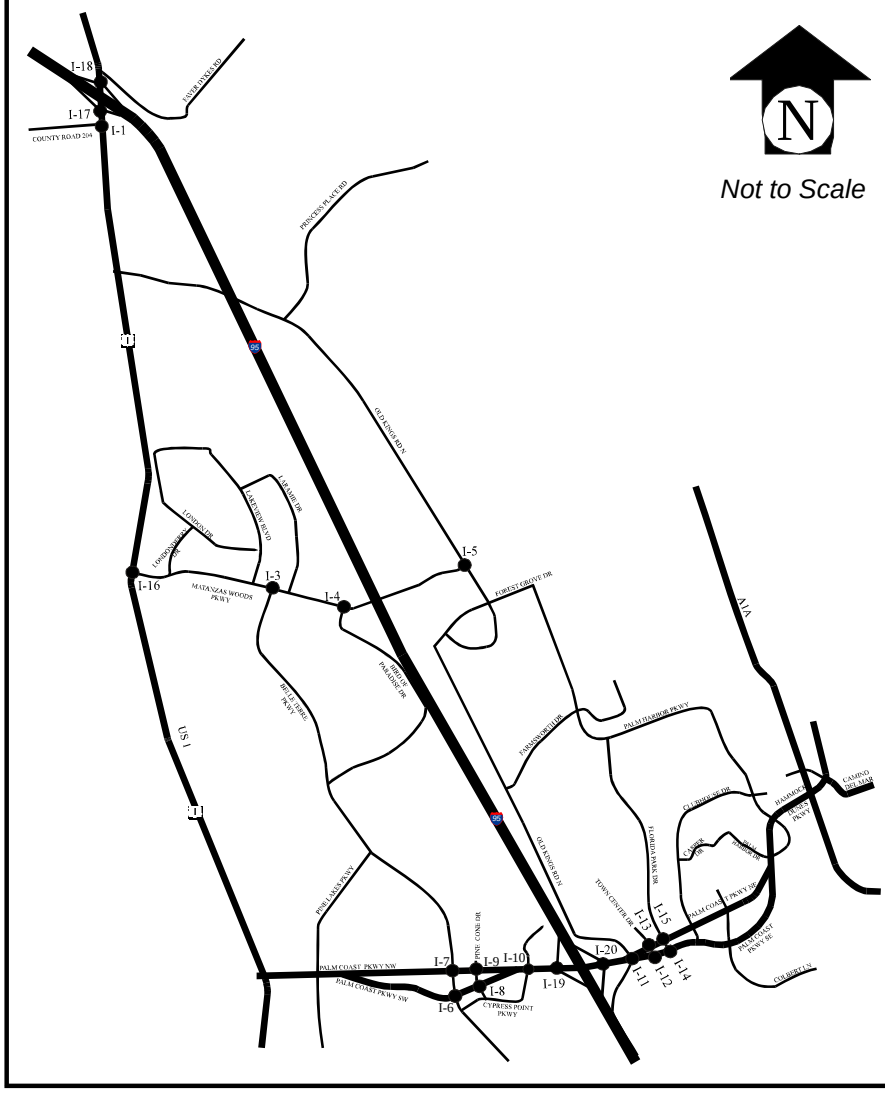
Palm Coast Pkwy EB and Belle Terre Pkwy

I-6

Palm Coast Pkwy WB and Belle Terre Pkwy

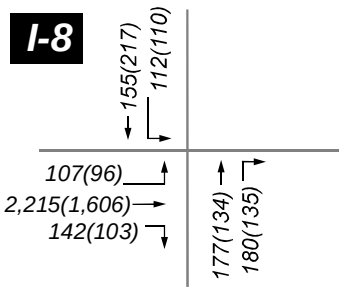
I-7





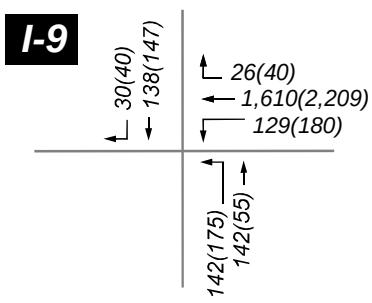
Palm Coast Pkwy EB and Pine Cone Dr

I-8



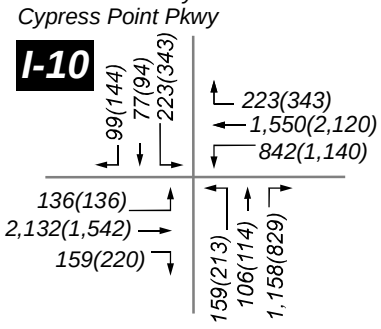
Palm Coast Pkwy WB and Pine Cone Dr

I-9



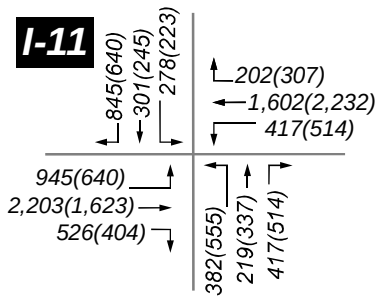
Palm Coast Pkwy and Cypress Point Pkwy

I-10



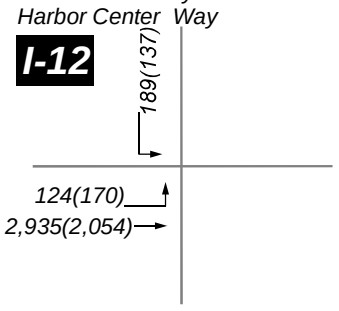
Palm Coast Pkwy and Old Kings Rd

I-11



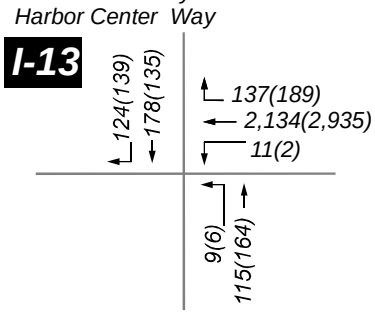
Palm Coast Pkwy EB and Harbor Center Way

I-12



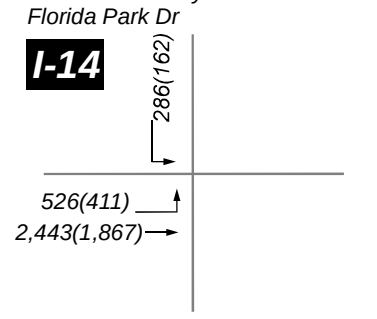
Palm Coast Pkwy WB and Harbor Center Way

I-13



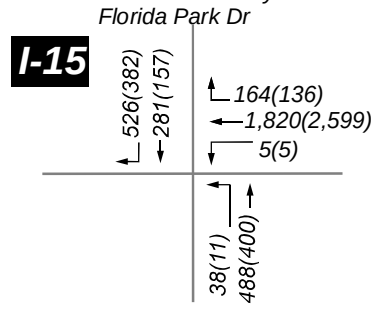
Palm Coast Pkwy EB and Florida Park Dr

I-14



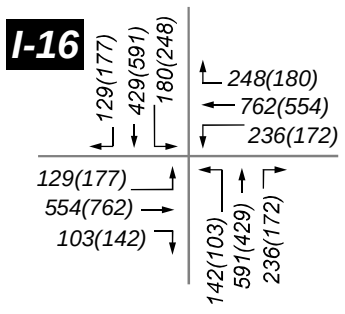
Palm Coast Pkwy WB and Florida Park Dr

I-15



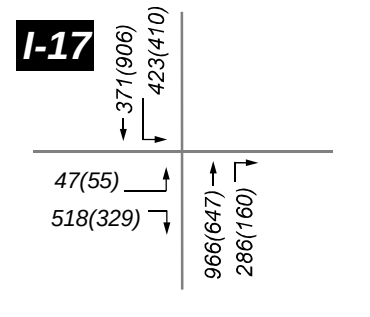
U.S. 1 and Matanzas Woods Pkwy

I-16



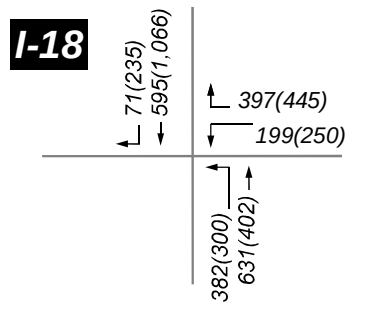
U.S. 1 and I-95 South Ramps

I-17



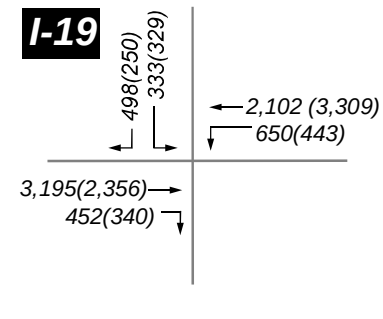
U.S. 1 and I-95 North Ramps

I-18



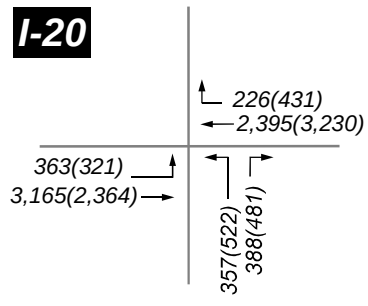
Palm Coast Pkwy and I-95 West Ramps

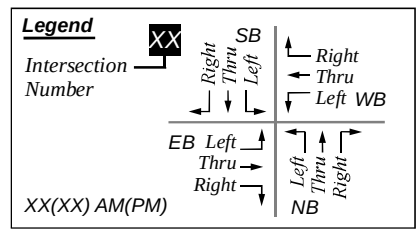
I-19



Palm Coast Pkwy and I-95 East Ramps

I-20



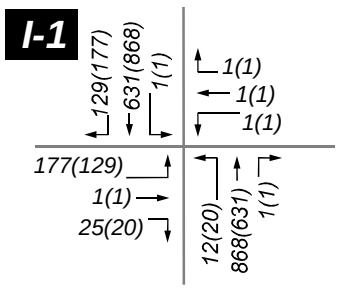


I-95 and Matanzas Woods Parkway Interchange Justification Report

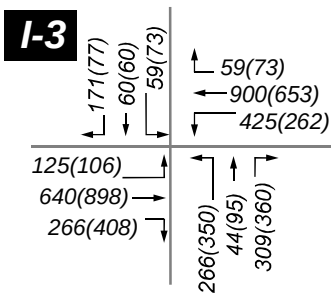
2025 No Build AM and PM Peak Hour Intersection Turning Movement Volumes

Figure 7-9

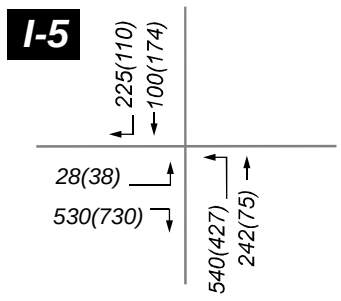
U.S. 1 and CR 204



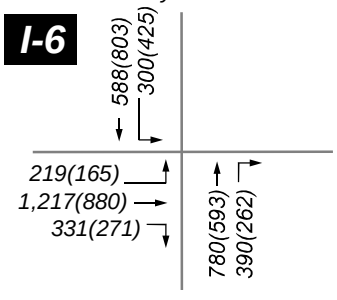
Matanzas Woods Pkwy and Belle Terre Pkwy/Lakeview Blvd



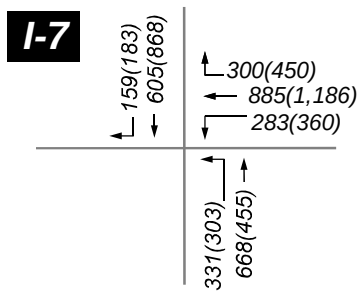
Matanzas Woods Pkwy and Old Kings Rd



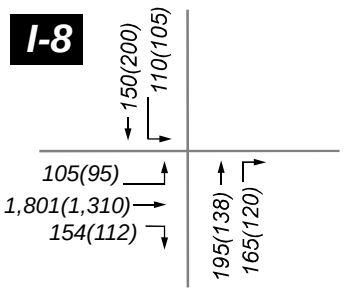
Palm Coast Pkwy EB and Belle Terre Pkwy



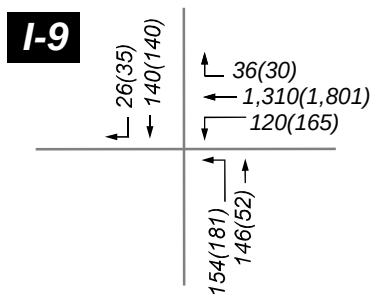
Palm Coast Pkwy WB and Belle Terre Pkwy



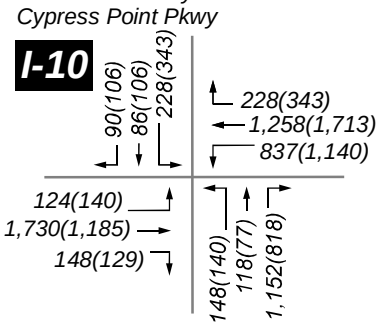
Palm Coast Pkwy EB and Pine Cone Dr



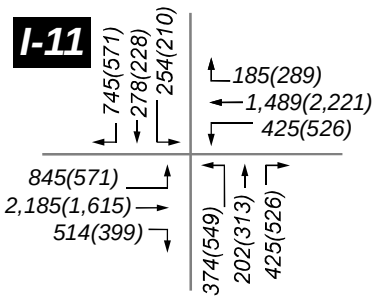
Palm Coast Pkwy WB and Pine Cone Dr



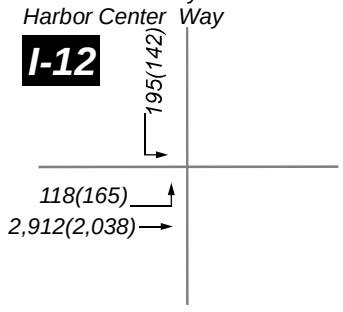
Palm Coast Pkwy and Cypress Point Pkwy



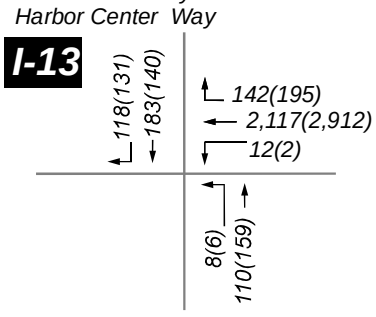
Palm Coast Pkwy and Old Kings Rd



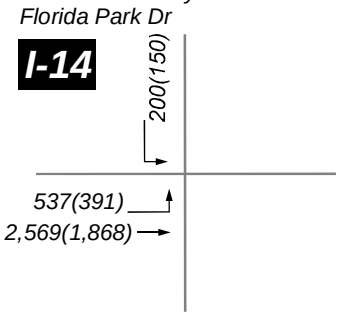
Palm Coast Pkwy EB and Harbor Center Way



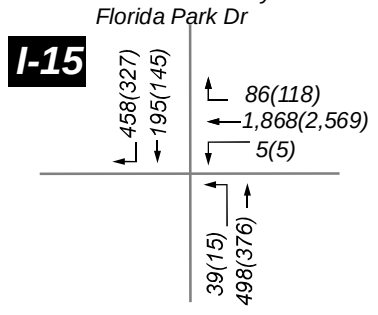
Palm Coast Pkwy WB and Harbor Center Way



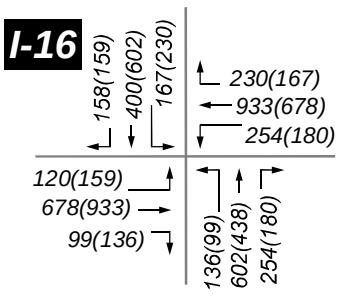
Palm Coast Pkwy EB and Florida Park Dr



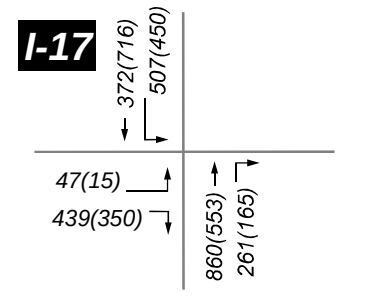
Palm Coast Pkwy WB and Florida Park Dr



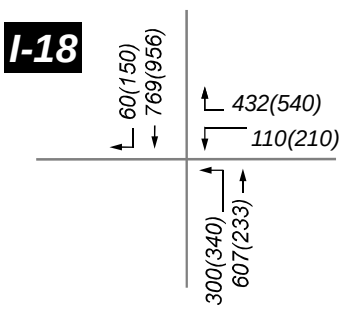
U.S. 1 and Matanzas Woods Pkwy



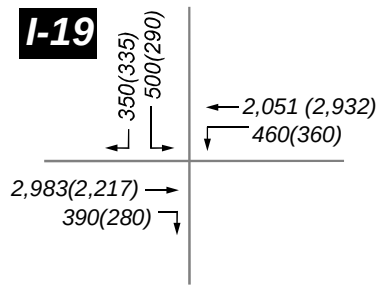
U.S. 1 and I-95 South Ramps



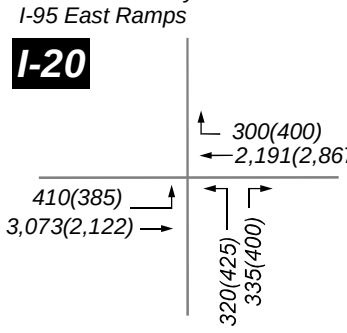
U.S. 1 and I-95 North Ramps



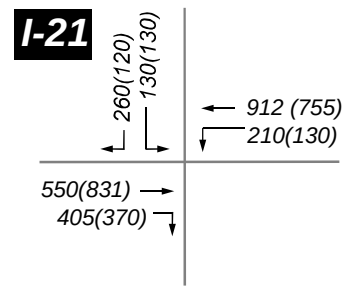
Palm Coast Pkwy and I-95 West Ramps



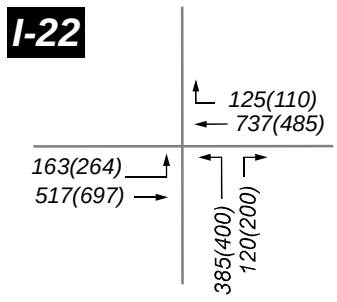
Palm Coast Pkwy and I-95 East Ramps

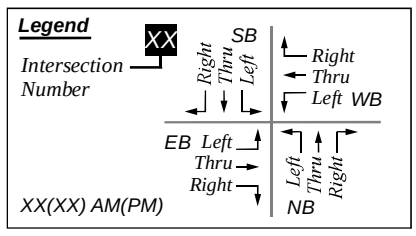


Matanzas Woods Pkwy and I-95 West Ramps



Matanzas Woods Pkwy and I-95 East Ramps





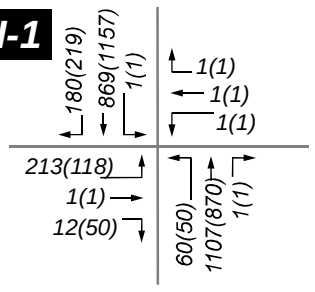
I-95 and Matanzas Woods Parkway Interchange Justification Report

2025 Build AM and PM Peak Hour Intersection Turning Movement Volumes

Figure 7-10

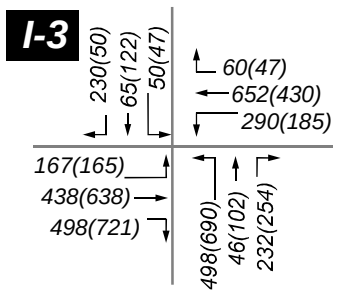
U.S. 1 and CR 204

I-1



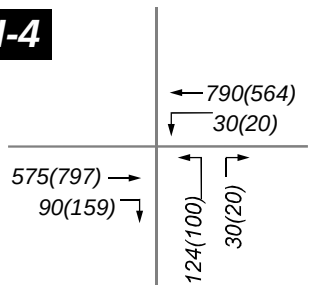
Matanzas Woods Pkwy and
Belle Terre Pkwy/Lakeview Blvd

I-3



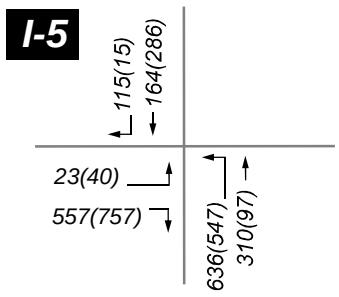
Matanzas Woods Pkwy and
Bird of Pradise Drive

I-4



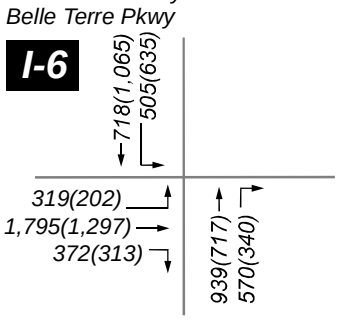
Matanzas Woods Pkwy and Old Kings Rd

I-5



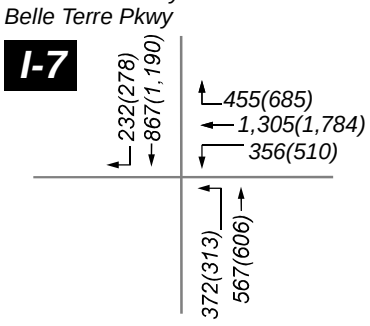
Palm Coast Pkwy EB and
Belle Terre Pkwy

I-6



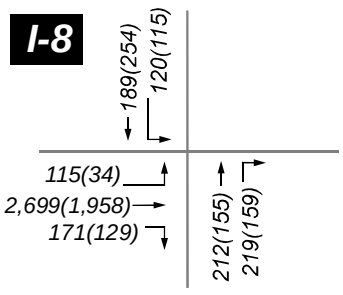
Palm Coast Pkwy WB and
Belle Terre Pkwy

I-7



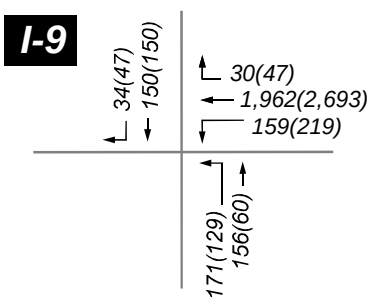
Palm Coast Pkwy EB and
Pine Cone Dr

I-8



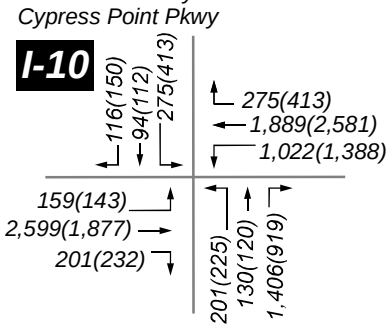
Palm Coast Pkwy WB and
Pine Cone Dr

I-9



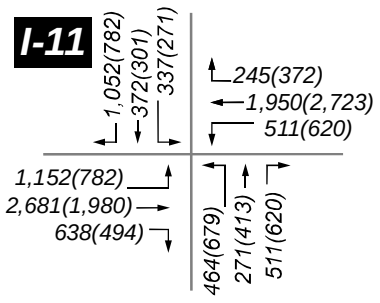
Palm Coast Pkwy and
Cypress Point Pkwy

I-10



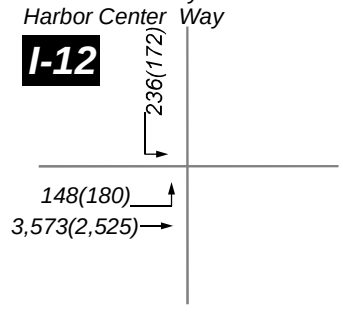
Palm Coast Pkwy and Old Kings Rd

I-11



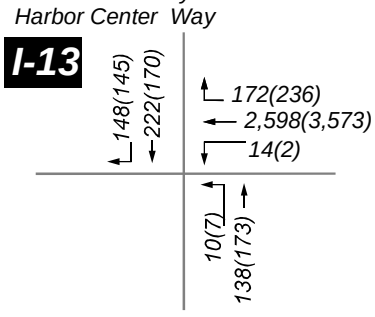
Palm Coast Pkwy EB and
Harbor Center Way

I-12



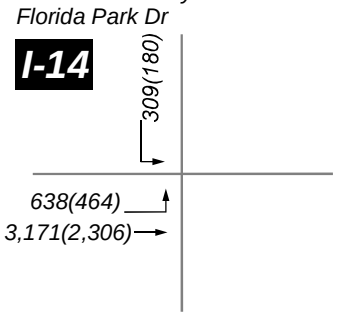
Palm Coast Pkwy WB and
Harbor Center Way

I-13



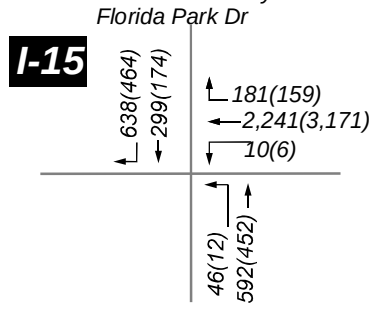
Palm Coast Pkwy EB and
Florida Park Dr

I-14



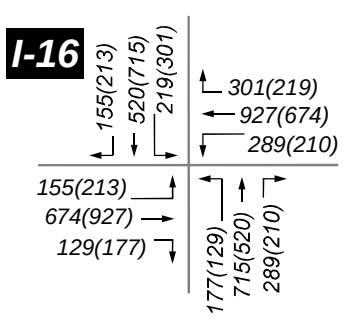
Palm Coast Pkwy WB and
Florida Park Dr

I-15



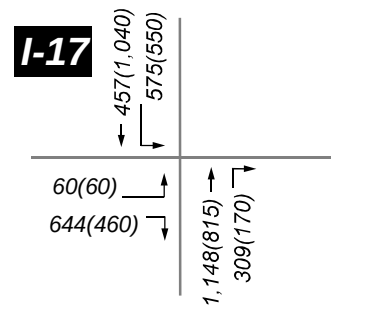
U.S. 1 and Matanzas Woods Pkwy

I-16



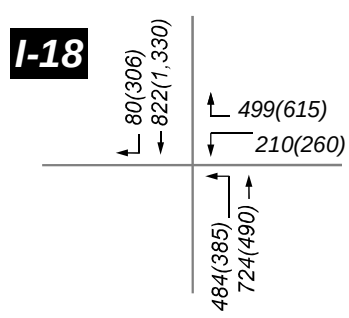
U.S. 1 and I-95 South Ramps

I-17



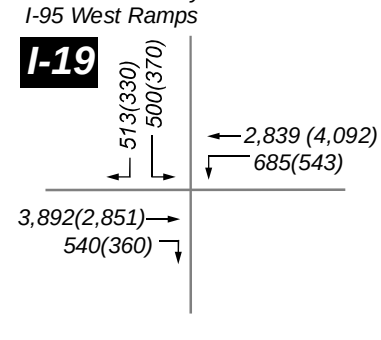
U.S. 1 and I-95 North Ramps

I-18



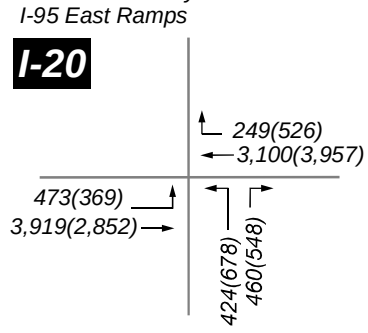
Palm Coast Pkwy and
I-95 West Ramps

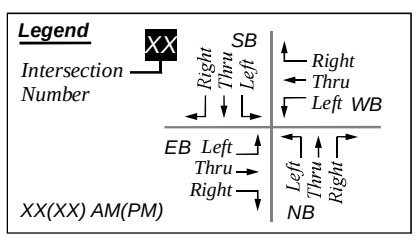
I-19



Palm Coast Pkwy and
I-95 East Ramps

I-20





I-95 and Matanzas Woods Parkway Interchange Justification Report

2035 No Build AM and PM Peak Hour Intersection Turning Movement Volumes

Figure 7-11

U.S. 1 and CR 204

I-1

155(219) 769(1,057) 1(1)
1(1)
1(1)
1(1)
213(159) 1(1) 30(25)
30(25) 1,057(719) 1(1)

Matanzas Woods Pkwy and Belle Terre Pkwy/Lakeview Blvd

I-3

207(94) 60(60) 71(86)
71(86)
1,069(799)
514(318)
150(130) 777(1,098) 322(496)
322(450) 41(100) 374(437)

Matanzas Woods Pkwy and Old Kings Rd

I-5

280(120) 123(213)
34(47) 645(886)
570(522) 296(92)

Palm Coast Pkwy EB and Belle Terre Pkwy

I-6

747(980) 339(520)
266(170) 1,482(1,069) 402(331)
951(726) 478(318)

Palm Coast Pkwy WB and Belle Terre Pkwy

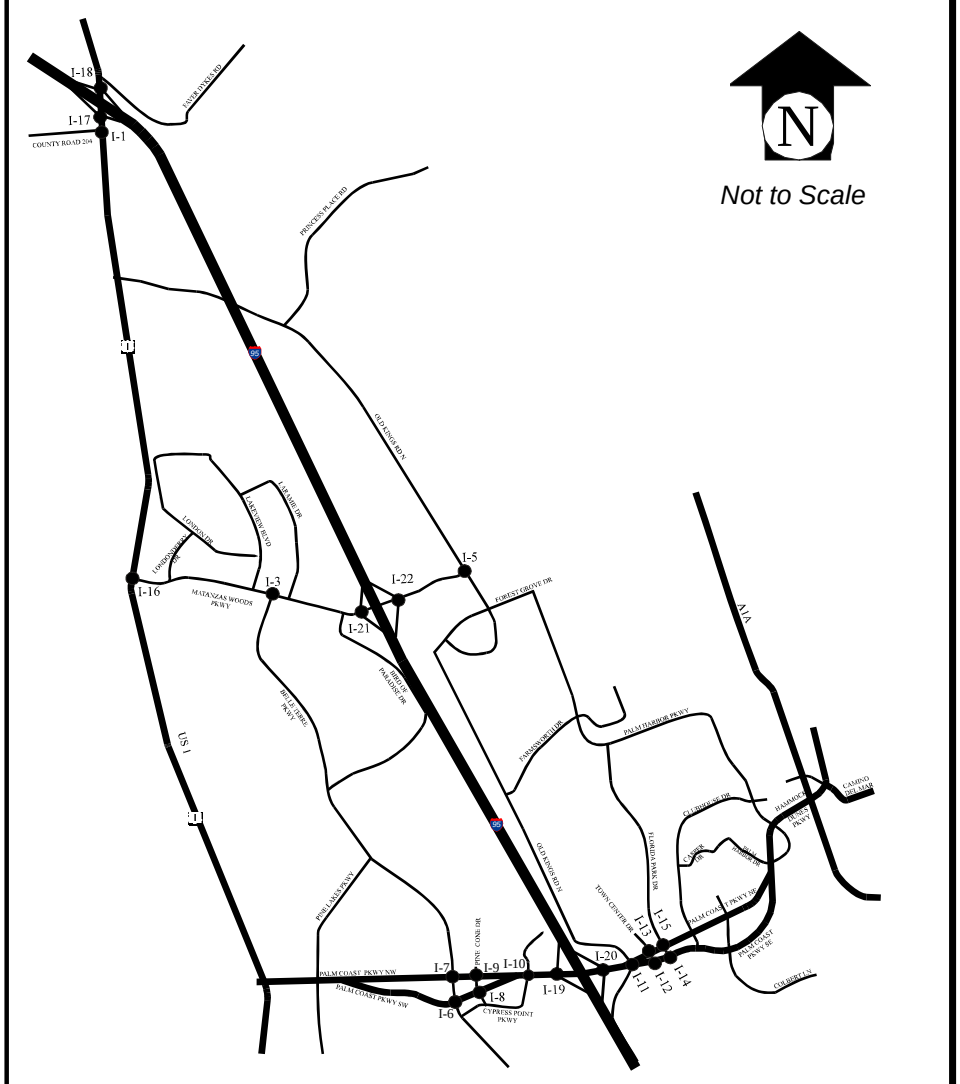
I-7

193(224) 738(1,063)
339(520)
1,078(1,471)
348(437)
402(338) 815(558)

Palm Coast Pkwy EB and Pine Cone Dr

I-8

180(242) 105(110)
105(100) 2,097(1,593) 283(137)
230(167) 201(146)



Palm Coast Pkwy WB and Pine Cone Dr

I-9

34(47) 139(151)
36(41)
1,597(2,191)
146(201)
183(203) 152(64)

Palm Coast Pkwy and Cypress Point Pkwy

I-10

107(130) 107(130) 279(419)
279(419)
1,529(2,085)
1,022(1,388)
248(150) 2,102(1,460) 177(155)
177(155) 148(94) 1,406(1,009)

Palm Coast Pkwy and Old Kings Rd

I-11

934(696) 343(275) 313(253)
228(348)
1,841(2,705)
520(638)
1,034(696) 2,669(1,967) 632(485)
459(667) 249(378) 520(638)

Palm Coast Pkwy EB and Harbor Center Way

I-12

236(172)
148(170) 3,549(2,550)

Palm Coast Pkwy WB and Harbor Center Way

I-13

148(131) 222(170)
172(236)
2,581(3,549)
14(2)
10(7) 138(163)

Palm Coast Pkwy EB and Florida Park Dr

I-14

210(160)
650(472) 3,136(2,280)

Palm Coast Pkwy WB and Florida Park Dr

I-15

588(419) 207(154)
107(148)
2,280(3,136)
3(6)
47(16) 603(456)

U.S. 1 and Matanzas Woods Pkwy

I-16

178(201) 500(732) 202(278)
278(202)
1,134(824)
307(223)
146(201) 824(1,134) 120(165)
165(120) 732(532) 307(223)

U.S. 1 and I-95 South Ramps

I-17

477(930) 600(540)
60(20) 525(430)
1,023(700) 330(170)

U.S. 1 and I-95 North Ramps

I-18

90(200) 917(1,210)
500(650)
160(260)
358(388) 725(332)

Palm Coast Pkwy and I-95 West Ramps

I-19

455(365) 610(400)
2,565 (3,701)
545(490)
3,525(2,693) 445(300)

Palm Coast Pkwy and I-95 East Ramps

I-20

360(550)
2,780(3,661)
420(400) 3,715(2,693)
330(530) 465(500)

Matanzas Woods Pkwy and I-95 West Ramps

I-21

300(170) 140(140)
1,170 (1,060)
230(140)
704(1,036) 480(430)

Matanzas Woods Pkwy and I-95 East Ramps

I-22

130(115)
915(630)
220(325) 624(851)
485(570) 125(205)

Legend

Intersection Number: XX

SB: Right, Thru, Left

EB: Left, Thru, Right

WB: Right, Thru, Left

NB: Left, Thru, Right

XX(XX) AM(PM)

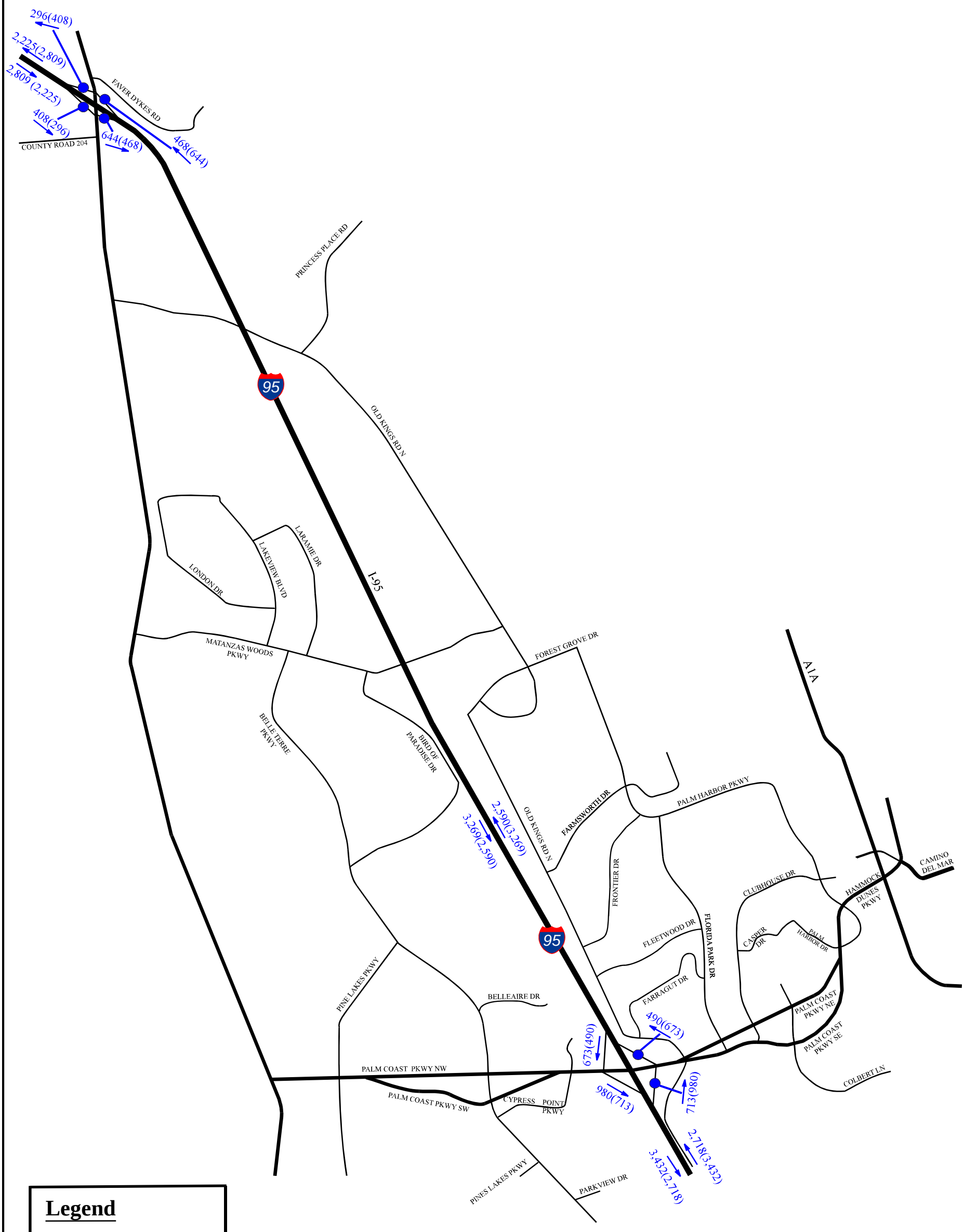
I-95 and Matanzas Woods Parkway Interchange Justification Report

2035 Build AM and PM Peak Hour Intersection Turning Movement Volumes

Figure 7-12

N

Not to Scale



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

N

Not to Scale

172(236)
2,225(2,809)
2,809 (2,225)
236(172)
738(537)
537(738)
FAVER DYKES RD
COUNTY ROAD 204
PRINCESS PLACE RD
95
2,706(3,415)
3,415(2,706)
OLD KINGS RD N
LARAMIE DR
LAKEVIEW BLVD
LONDON DR
I-95
MATANZAS WOODS PKWY
224(164)
164(224)
396(287)
287(396)
FOREST GROVE DR
BELLE TERRE PKWY
BIRD OF PARADISE DR
2,830(3,572)
3,572(2,830)
A1A
FARMSWORTH DR
PALM HARBOR PKWY
FRONTIER DR
CLUBHOUSE DR
HAMMOCK DUNES PKWY
CAMINO DEL MAR
FLEETWOOD DR
FLORIDA PARK DR
CASPER DR
PALM HARBOR DR
PINE LAKES PKWY
BELLEAIRE DR
FARRAGUT DR
PALM COAST PKWY NE
PALM COAST PKWY SE
576(791)
791(576)
PALM COAST PKWY NW
827(601)
601(827)
COLBERT LN
PALM COAST PKWY SW
CYPRESS POINT PKWY
2,779(3,507)
3,507(2,779)
PINES LAKES PKWY
PARKVIEW DR

Legend

602	AM Peak Hour
(602)	PM Peak Hour

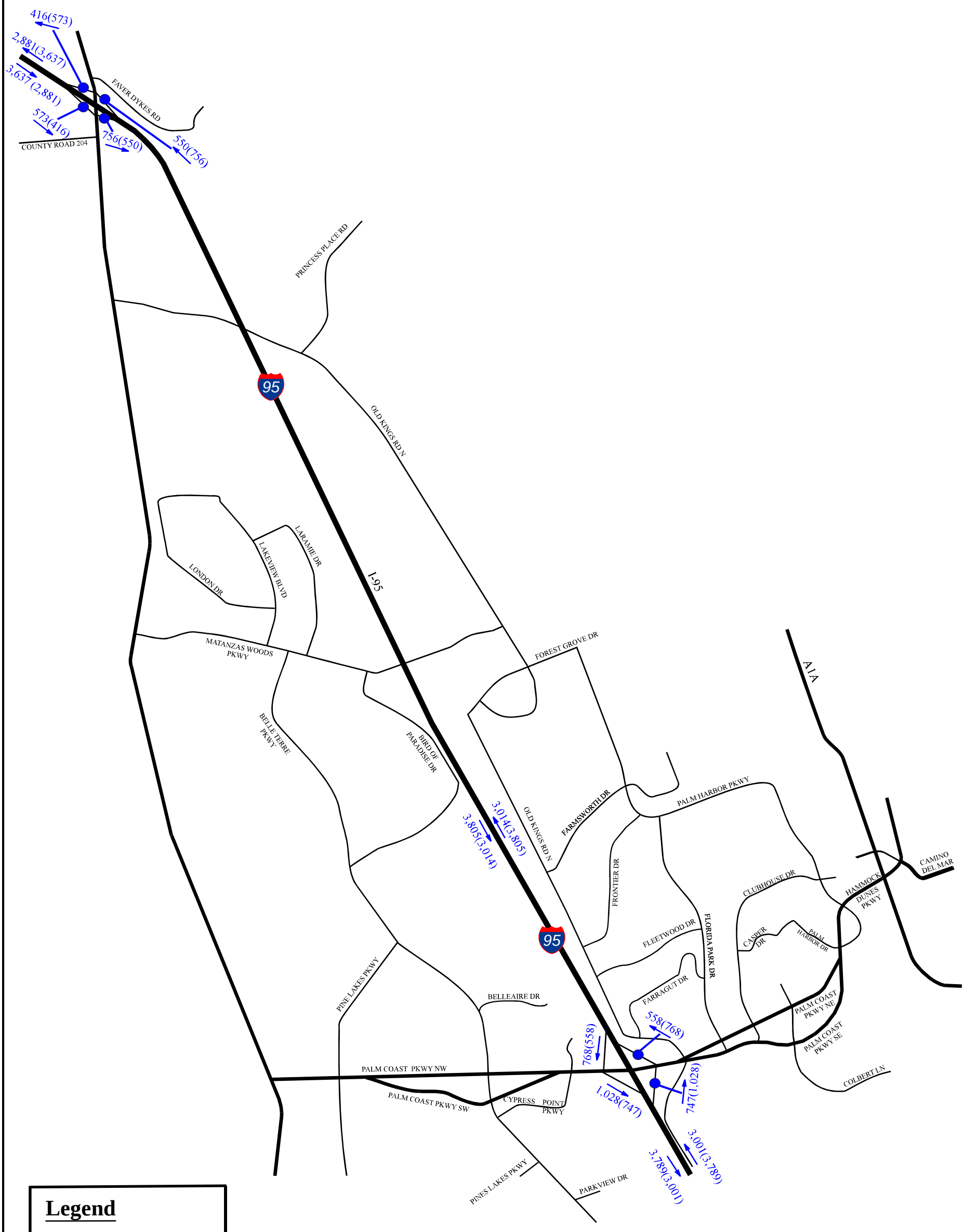
I-95 and Matanzas Woods Parkway Interchange Justification Report

2015 BUILD AM and PM Peak Hour Directional Volumes

Figure 7-14

N

Not to Scale



Legend

602	AM Peak Hour
(602)	PM Peak Hour

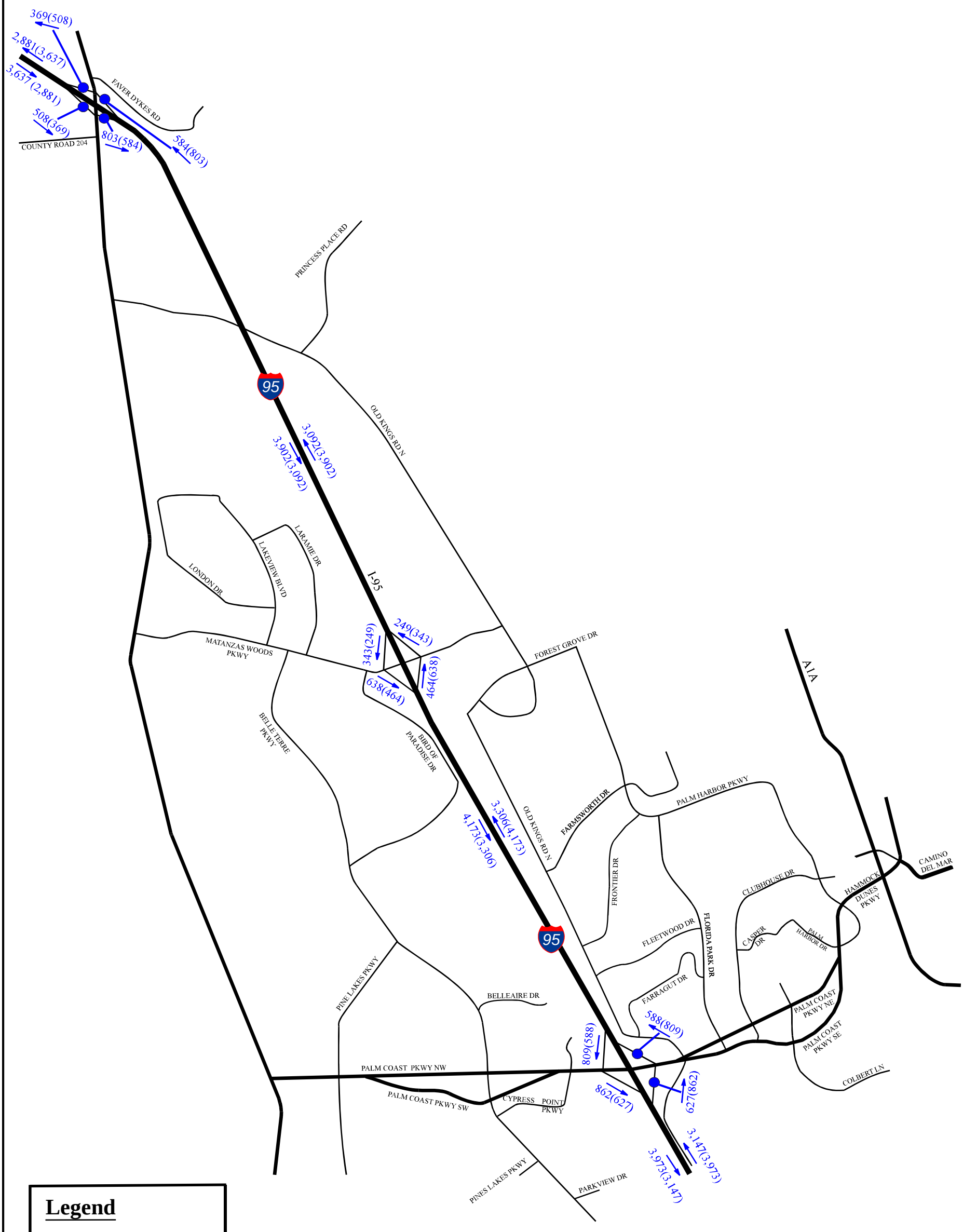
I-95 and Matanzas Woods Parkway Interchange Justification Report

2025 NO BUILD AM and PM Peak Hour Directional Volumes

Figure 7-15

N

Not to Scale



Legend

602	AM Peak Hour
(602)	PM Peak Hour

I-95 and Matanzas Woods Parkway Interchange Justification Report

2025 BUILD AM and PM Peak Hour Directional Volumes

Figure 7-16

N

Not to Scale

554(762)
3,511(4,433)
4,433 (3,511)
762(554)
921(670)
670(921)
FAVER DYKES RD
COUNTY ROAD 204
PRINCESS PLACE RD
95
OLD KINGS RD N
LONDON DR
LAKEVIEW BLVD
LARAMIE DR
I-95
MATANZAS WOODS PKWY
BELLE TERRE PKWY
BIRD OF PARADISE DR
FOREST GROVE DR
A1A
3,674(4,639)
4,639(3,674)
OLD KINGS RD N
FARMSWORTH DR
PALM HARBOR PKWY
FRONTIER DR
CLUBHOUSE DR
HAMMOCK DUNES PKWY
CAMINO DEL MAR
FLEETWOOD DR
FLORIDA PARK DR
CASPER DR
PALM HARBOR DR
FARRAGUT DR
PALM COAST PKWY NE
PALM COAST PKWY SE
COLBERT LN
679(933)
933(679)
PINE LAKES PKWY
BELLEAIRE DR
PALM COAST PKWY NW
PALM COAST PKWY SW
CYPRESS POINT PKWY
1,252(910)
910(1,252)
3,657(4,617)
4,617(3,657)
PINES LAKES PKWY
PARKVIEW DR

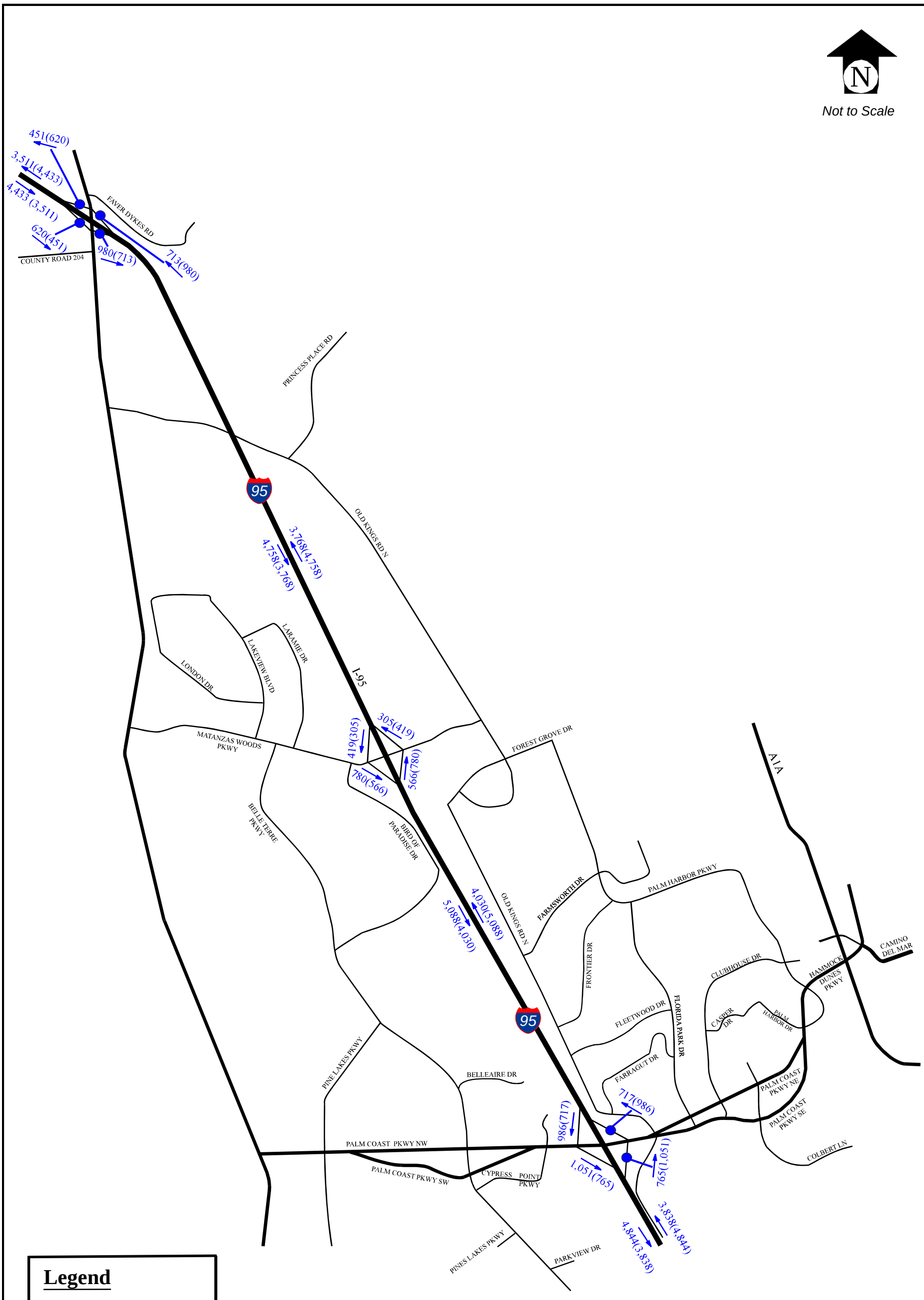
Legend

602	AM Peak Hour
(602)	PM Peak Hour

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

Not to Scale

Detail A

Detail B

See Detail B

See Detail A

Legend

- Signalized
- Unsignalized
- 70 MPH — Posted Speed Limit
- Right Turn Lane Starts From Previous Intersection
- 250′ — Turn Lane Length

I-95 and Matanzas Woods Parkway Interchange Justification Report

No Build - Year 2015 Intersection Geometry

Figure 7-19

N

Not to Scale

Detail A

Detail B

Legend

- Signalized
- Unsignalized
- 70 MPH — Posted Speed Limit
- Right Turn Lane Starts From Previous Intersection
- 250′ — Turn Lane Length

See Detail B

See Detail A

I-95 and Matanzas Woods Parkway Interchange Justification Report

Build - Year 2015 Intersection Geometry

Figure 7-20

N

Not to Scale

Detail A

Detail B

Legend

- Signalized
- Unsignalized
- 70 MPH — Posted Speed Limit
- Right Turn Lane Starts From Previous Intersection
- 250′ — Turn Lane Length

See Detail B

See Detail A

I-95 and Matanzas Woods Parkway Interchange Justification Report

No Build - Year 2025 and Year 2035 Intersection Geometry

Figure 7-21

N

Not to Scale

Detail A

Detail B

Legend

- Signalized
- Unsignalized
- 70 MPH — Posted Speed Limit
- Right Turn Lane Starts From Previous Intersection
- 250′ — Turn Lane Length

See Detail B

See Detail A

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				
		Storage Length (FT)	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] 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 I

Response to FHWA Comments
Dated February 28, 2011

Response to FDOT Comments

MLOU and Correspondence

KEITH and SCHNARS, P.A.
FLORIDA'S Big LOCAL FIRM

February 28, 2011

Faith Alkhatib, P.E.
Flagler County
1769 East Moody Boulevard, Suite 309
Bunnell, FL 32110

Re: I-95 and Matanzas Woods Parkway IJR
Responses to Federal Highway Administration Comments
Keith and Schnars Project No. 17844.00

Dear Ms. Alkhatib,

Below are the responses to the Federal Highway Administration (FHWA) comments received via e-mail from the Florida Department of Transportation (FDOT) District 5 District Interchange Review Committee (DIRC) on January 21, 2011 and January 27, 2011. The comments are in reference to the I-95 and Matanzas Woods Parkway Final Interchange Justification Report (IJR), dated December 2010. These responses address the discussion with FDOT and FHWA that occurred on February 23, 2011.

Comments from Phillip Bello, District 5 Transportation Engineer (FHWA)

1. Page ES-1, 5th paragraph, please include the IJR Existing Conditions Report that speculate no significant environmental impacts that could be considered a fatal flaw due to the proposed interchange at I-95 and Matanzas Woods Parkway.

   Response: The existing conditions report was incorporated in the submitted December 2010 final IJR. Please see *Section 2.3 Environmental Methodology and Data Sources* (page 2-3), *Section 3.3 Environmental Conditions* (page 3-3), and *Section 3.3.8 Summary of Environmental Findings* (page 3-8). Also, the environmental report has been incorporated into the Revised Appendix II.

2. From page ES-2 (last paragraph) to page ES-4, the eight FHWA requirements/criteria brief were reviewed, these are the Division Office's concerns based on missing information:

   a. Under criteria (policy) number 1, please insert the established baseline transportation networks and future land use projections for the study area. The baseline transportation network typically includes local, regional, and state transportation improvement projects that are funded. The land use projection includes population and employment forecast consistent with the regional MPO and local jurisdiction forecast.

      Response: The information is in Appendix IX as stated in *Section 7.1 Sub-area Refinements* (page 7-1). Appendix IX-A includes the model coordination memorandums dated November 5, 2009 and April 26, 2010 summarizing the baseline transportation network and refinement; assumptions to future land uses; and transportation improvement projects included in the future model. Also, at the request of the DIRC, the summary of the Central Florida Regional Planning Model (CFRPM) sub-area model refinements/adjustments was removed from the body of the final IJR and included in Appendix IX-C.

b. In addition, include the analyzed current traffic volumes used to develop current year, year of opening, and design year peak hour traffic estimates for the regional and local systems in the area of the proposal.

Response: Year 2008 traffic volumes used in the sub-area model refinement and used to develop the forecasts are located in Appendices IX-A and IX-C. Please see response to comment 2(a).

c. Develop travel demand forecasts corresponding to assumed improvements that might be made to the local system: widen, add new surface routes, coordinate the signal system, control access, improve local circulation, or improve parallel roads or streets.

Response: The refined CFRPM included local improvements as documented in Appendices IX-A and IX-C. Table 7-9 Programmed and Planned Roadway Improvements (page 7-11) provides a summary. Please see response to item 2a.

d. Insert the No- Build Alternative evaluation.

Response: *Section 8.0 Alternatives Analysis* includes the No-Build evaluation.

e. Under criteria (policy) number 2, the reasonable alternatives were not evaluated in details and no justification as to why the preferred alternative was chosen. Only the preferred alternative was evaluated. Explain why reasonable alternatives were omitted or dismissed from further consideration.

Response: Please see page ES-1, last sentence of first paragraph which states that the most critical need is for system linkage and wildfire evacuation which other alternatives such as TSM, HOV lanes, mass transit or ramp metering would not provide.

f. Include the Transportation System Management (i.e. HOV, ITS, Ramp Metering, Transit, etc.) options that were evaluated as an alternative to a new interchange.

Response: Please see response to comment 2(e). Additionally, the ramp merges with the freeway at the US-1 and Palm Coast Parkway interchanges do not result in poor levels of service through the design year (Tables 8.2 and 8.3) thus ramp metering would not be justified.

g. Under criteria (policy) number 3, how will the proposal affect safety and traffic operations at year of opening and design year?

Response: The detailed traffic operation analysis for the proposal is in *Section 8.4 Operational Performance/LOS*. The proposal causes a reduction in traffic on Palm Coast Parkway as documented in *Section 8.4 Operational Performance/LOS*; thus, reducing congestion and potentially improving safety. The proposal will be consistent with design guidelines and is not seeking any exceptions resulting in a safe design.

h. Describe the procedures used to conduct the operational and collision analyses and the results that support the proposal.

Response: The procedures are outlined in the signed Methodology Letter of Understanding included in Appendix I. Comments from FDOT District 5 and Central Office which may have caused deviation from the MLOU are also documented in Appendix I. Section 2.0 Methodology provides a summary of the analysis procedures. *Section 4.3 Crash Data Analysis* provides a summary of the safety analyses and *Section 8.4 Operational Performance/LOS* provides a summary of the operation analyses. See also response on comment 2(g).

i. Provide justification that the preferred operational alternative selected, in part, by showing that it will meet the access needs without causing a significant adverse impact on the operation and safety of the freeway and the affected local network. If there are proposal impacts, explain how the impacts will be mitigated.

Response: Please see *Section 8.5 Design Alternative Analysis* and *Section 10.0 Recommendation*.

j. Any location where a congestion point will be improved or eliminated by the proposal, such as proposed auxiliary lanes or collector-distributor (CD) roads for weave section.

Response: Section *4.2.3 I-95 Ramp Volumes and Analysis* (page 4-5) documents that 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. Further, the proposed Matanzas Woods Parkway interchange will not create weave sections since the existing interchanges to the north and south will be spaced by approximately 5.0 and 3.6 miles, respectively. Spacing of all ramp entry and exit points from US-1 through Palm Coast Parkway including Matanzas Woods Parkway at midpoint are well beyond the 2,500 feet maximum length for which weaving analysis is conducted by the 2000 Highway Capacity Manual (page 24-9 of the manual).

k. All of the alternatives need to be compared to the no-build condition. The report should document the calibration process and results that show the current year operations match actual field conditions.

Response: The alternatives have been compared to the no-build condition in *Section 8.4 Operational Performance / LOS.* Field observations at the intersection level (such as queues and signal operations) was conducted to ensure that the existing analysis is consistent with field conditions.

l. Include the pedestrians and/or bicycle facilities if is included (as appropriate) and do these facilities provide for reasonable accommodation?

Response: The existing Matanzas Woods Parkway between Bird of Paradise Drive and Old Kings Road including the two-lane bridge over I-95 provide a pedestrian sidewalk on one side. Neither Matanzas Woods Parkway nor the existing bridge provides bike lanes. The initial two-lane opening day option will maintain the existing bridge configuration. The future bridge expansion to four lanes will include accommodation for both bicycles and pedestrians. The FDOT five year work program includes design for a sidewalk along Matanzas Woods Parkway from US-1 to Bird of Paradise Drive, which is just west of I-95 and the proposed interchange. The work program item is attached as Exhibit 1.

m. Show that the proposed access secure sufficient Limits of Access adjacent to the interchange ramps, especially around the conservation/preservation areas found within the southeast quadrant of the proposed I-95 and Matanzas Woods Parkway interchange ,see page 3-3, section 3.3.1.

Response: The conceptual Limits of Access that are feasible are now depicted on revised Figures 6-1 and 6-3. The conservation easement is also depicted on these figures and further described by parcel and legal description in Appendix II. The conservation easement will be addressed in greater detail during the PD&E process.

n. Justify if the project is to be built in stages, has the traffic operational and safety analysis considered the interim stages of the proposal?

Response: The interim stage was analyzed in the opening year analysis with Matanzas Woods Parkway as a two lane roadway between Belle Terre Parkway and Old Kings Road. Both interchange configurations were also analyzed with a two-lane option for Opening Day 2015. Further discussion of the two-lane analysis for Matanzas Woods Parkway was provided in response to comment No. A-4 of the October 2010 FDOT comments contained in Appendix I of the December 2010 Final Interchange Justification Report. There is no change in impacts within the entire AOI or on I-95 for the 2015 two-lane option other than the immediate interchange area on Matanzas Woods Parkway itself, which was analyzed in Section 7.0 and Section 8.0.

o. Under criteria (policy) number 4, develop the proposal in sufficient detail to conduct a design and operational analysis, include the number of lanes, horizontal and vertical curvature, lateral clearance, lane width, shoulder width, weaving distance, ramp taper, length of tapers, lane continuity/balance, lane and all traffic movements. This information can be represented or presented as a sketch or a more complex layout.

Response: Interchange configuration Figures 6.1 and 6.3 have been enlarged with additional detail provided. The PD&E will include development of detailed design well beyond the geometric feasibility that is confirmed in this IJR. Spacing of all ramp entry and exit points from US-1 through Palm Coast Parkway including Matanzas Woods Parkway at midpoint are well beyond the 2,500 feet maximum length for which weaving analysis is conducted by the 2000 Highway Capacity Manual (page 24-9 of the manual).

p. Under criteria (policy) number 5, provide details that show the proposed access point revision is it compatible with all land use and transportation plans for the area? Show that the proposal is consistent with local and regional land use and transportation plans, STIP or TIP.

Response: The proposed interchange is consistent with the adopted City of Palm Coast 2020 Comprehensive Plan as documented in *Section 8.1 Consistency with Master Plans*. *Section 8.2 Compliance with Policies and Engineering Standards* documents that FDOT District 5 conducted a study, *Transportation Planning Analysis for Potential I-95 Interchange in Flagler County dated September 2000*, highlighting the need for additional access to I-95 in this area. Further, the proposed I-95 and Matanzas Woods Parkway interchange is included in the tentative FDOT District 5 work program fiscal year 2011/12 to 2015/16 (FM 4119592).

q. Note, before final approval, all requests for access point revisions must be consistent with the regional or statewide transportation plan, as appropriate.

Response: The proposal is consistent with the City of Palm Coast Comprehensive Plan. It is our understanding that "final" approval is obtained at Location Design Concept Acceptance (LDCA) of the NEPA document. Flagler County will work with FDOT to incorporate the proposal into the next update of the SIS long range transportation plan, and prior to NEPA approval, the County will verify with FDOT that the project is consistent with STIP.

Note that the proposed interchange is not within a Metropolitan Planning Area. As such consistency with the area Long Range Plan can best be demonstrated by its consistency with the current long range plan for the area which is the FDOT 2060 Florida Transportation Plan (FTP). The following discussion highlights how the proposed interchange is consistent with the FTP.

The 2060 FTP identifies as part of its Transportation Vision for 2060 the following point:

Enhanced stewardship of transportation resources through effective planning, efficient decision making, wise investments, proper accountability, and rigorous performance measurement and reporting.

The proposed new interchange is consistent with this Vision. It will improve regional access for the Cities of Palm Coast, Bunnell and Flagler County, and will in turn enhance evacuation opportunities for this high growth area of Florida which is prone to wildfires. The location was identified by FDOT as a potential site for new access during previous planning studies. This proposal demonstrates effective planning by continuing and sharing in that planning effort at the local level. The proposal demonstrates wise investment and accountability by securing funding from a variety of sources including federal funding from an earmark to complete the IJR and PD&E studies, local funding from the community that will be served by the interchange, and additional funding from the regional partner (FDOT) as identified in their Tentative Work Program.

There are six long range Goals identified in the FTP to guide the State towards its Vision. The proposed interchange is specifically consistent with 2 of those Goals and associated objectives and strategies.

Goal:	*Provide a safe and secure transportation system for all users.*
Objective:	*Support emergency evacuation, response, and post-disaster recovery activities through transportation planning and management decisions.*
Strategy:	*Improve Florida's ability to use the transportation system to respond to emergencies and security risks.*

The FTP notes that, "Hurricanes, wildfires, and other natural disasters in Florida have highlighted the importance of effective emergency response and the vulnerability of the transportation system to major disruption." The proposed interchange will provide increased regional access to I-95, the primary evacuation route within Flagler County. The area is prone to wildfires and as a coastal county is very

susceptible to hurricane evacuations. Flagler County is one of the fastest growing areas in the state. It's population has grown 84% percent since 2000, but regional access has remained unchanged. During the last two decades there have been two wildfires which required countywide evacuation. The proposed interchange takes a proactive step to improve this situation should there be another occurrence.

Goal:	*Improve mobility and connectivity for people and freight.*
Objective:	Increase the efficiency and reliability of travel for people and freight.
Strategy:	Increase access to housing, jobs, schools, services, and amenities through convenient and affordable transportation choices for residents and visitors; and Increase access to the global supply chain and distribution networks for businesses.

The FTP notes that, "The most fundamental purpose of transportation is mobility and connectivity – linking people to jobs and services, businesses to suppliers and customers, visitors to destinations, and students to schools." The proposed interchange will provide increased access to the primary regional facility serving this County. I-95 is the primary route connecting Flagler County with the Orlando and Jacksonville metropolitan areas.

r. Any funding available for this project?

Response: Yes. Section 9.0 page 9-1 identifies the funding strategy and plan. In addition to the funding commitments by Flagler County and the City of Palm Coast, the FDOT Tentative Five Year Work Program for District 5 includes an allocation of $5,000,000 dollars for this interchange, labeled as "B" on the attached Exhibit 2.

s. The proposed access point revision may affect adjacent land use and, conversely, land use may affect the travel demand generated.

Response: The adjacent land use within the area of influence has been approved for significant development (see attached Exhibit 3) leading to the inclusion of this interchange in the future planning of the areas' roadway system.

t. Include the traffic volumes generated by any future additional interchanges within a vicinity of the influence that are proposed.

Response: There are no other proposed interchanges that will influence the future travel demand for the proposed I-95 and Matanzas Woods Parkway interchange.

u. Under criteria (policy) number 6, how is the proposed interchange/access point revision compatible with a comprehensive network plan?

Response: See response to comment 2(p).

v. The report must demonstrate that the proposed access point revision is compatible with other planned access points and revisions to existing points.

Response: There are no other planned access points that will influence the proposed I-95 and Matanzas Woods Parkway interchange.

w. Under criteria (policy) number 7, are all coordinating projects and actions programmed funded? When the request for an access point revision is generated by new or expanded development, demonstrate appropriate coordination between the development and the changes to the transportation system.

Response: The new development referenced in the IJR consists of multiple very large scale Developments of Regional Impact (DRI) as defined by Florida statutes. These developments have been reviewed and approved by State and local governments resulting in development orders (DO) with specific phased roadway mitigation requirements. These DOs grant specific land use and density entitlements that span over 20 years.

x. If the proposed improvements are founded on the need for providing access to new development, are appropriate commitments in place to ensure that the development will likely occur as planned?

Response: The new development referenced in the IJR consists of multiple very large scale Developments of Regional Impact (DRI) as defined by Florida statutes. These developments have been reviewed and approved by State and local governments resulting in development orders (DO) with specific phased roadway mitigation requirements. These DOs grant specific land use and density entitlements that span over 20 years. We anticipate the construction of these developments to continue with the recovery of the housing market.

y. If future reconstruction is part of the mitigation for design year level of service, the reconstruction projects must be in the State Highway System Plan and Regional Transportation Plan.

Response: The proposed I-95 and Matanzas Woods Parkway interchange is included in the tentative FDOT District 5 work program fiscal year 2011/12 to 2015/16 (FM 4119592). Prior to NEPA approval, the County will verify with FDOT that the project is consistent with STIP. See also response to comment 2(q)

z. If project is privately funded, are appropriate measures in place to ensure improvements will be completed if the developer is unable to meet financial obligations?

Response: This interchange is not programmed to be privately funded.

aa. Under criteria (policy) number 8, what is the status of the proposal's environmental processes?

Response: The status of the environmental process was documented in page ES-4: "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)."

bb. Is the proposed interchange/project consistent with the current TIP/STIP and LRTP and/or proposed amendments to the plan?

Response: The proposed I-95 and Matanzas Woods Parkway interchange is included in the tentative FDOT District 5 work program fiscal year 2011/12 to 2015/16 (FM 4119592). Prior to NEPA approval, the County will verify with FDOT that the project is consistent with STIP. See also response to comment 2(q).

cc. What applicable permits and approvals have been obtained and/or are pending?

Response: There are no known permits and approvals that have been obtained or pending as part of this proposal.

dd. It is recommended that the proposal should include supporting information and current status of the environmental processing as per 23 CFR 771.111.

Response: See response the comment 2(aa).

3. Page 1-1, insert demographic (map & schematic diagrams) map showing proposed developments and current growth.

Response: *Section 3.1 Existing and Approved Land Use* documents the location of the proposed developments (Figure 3-1). The current growth rate is summarized in *Section 7.2.2 Design Year 2035.* The growth rate is documented in the coordination memorandum dated November 5, 2009 provided in appendix IX-A.

4. Page 2-3, section 2-3, was the environmental study extended to the logical terminals or within 1 mile to the north and south of the I-95?

Response: The environmental study area, as part of the IJR process, is ½ mile to the east and west of I-95 and Matanzas Woods Parkway, and 1 mile to the north and south from Matanzas Woods Parkway. The PD&E Study will assess the environmental impacts in more detail within the study area

5. Page 3-3 (section 3.3), and page 4-11(last paragraph) during the preliminary environmental evaluation, has any class of action determination occurred with the FHWA?

Response: Based on the information obtained from the ETDM (see Exhibit 4), FHWA has accepted a proposed Class of Action as a Type 2 Categorical Exclusion.

6. Page 3-3, section 3.3 (last sentence) all alternatives, including No Build, necessitate evaluation/analysis i.e. comparison, assessment, and preferred alternative selection.

Response: *Section 8.0 Alternatives Analysis* includes the No-Build evaluation.

7. Page 3-3 sections 3.3.1 (3rd paragraph) insert location of the preservation areas on the project map, plus the proposed interchange.

   Response: See response to comment 2(m). Figures 6-1 and 6-3 which illustrate the interchange configurations now include the limits of the conservation easement. The parcel maps and legal description of the conservation easement is included in Appendix II.

8. Page 3-5, 2nd paragraph, is the proposed interchange impacting wetland and what is the acre? , see page 3-8 (section 3.3.8).

   Response: The environmental analysis will be done in detail during the PD&E phase of this project. The IJR only requires ensuring that the proposed action does not have environmental fatal flaws. Both alternatives will be reassessed in terms of wetland impacts in more detail during the PD&E study.

9. Page 4-1, section 4.1, according to the 2nd sentence, the bi-directional traffic counts were obtained in 15-minute intervals, but the appendix III shows traffic counts at interval of one, one, hour (sixty minutes intervals); the entire section of the report is lacking consistency, please consider revising.

   Response: The bi-directional counts in Appendix III are shown in 15-minute intervals.

10. Page 4-4, second paragraph, what is the actual truck percentage within this area? And what is the acceptable delay/second?

    Response: The second paragraph indicated that the truck percentages are documented in Appendix V (see Table 4-D in appendix V). The acceptable signalized intersection's delay in seconds per vehicle (sec/veh) depends on the roadway's government of jurisdiction adopted level of service. The adopted level of service for US-1, Matanzas Woods Parkway, and Palm Coast Parkway is 'D" as documented in Table 3-1 Flagler County Roadway Characteristics. The corresponding level of service 'D" threshold is 55 sec/veh and it is obtained from the 2000 Highway Capacity Manual Exhibit 16-2.

11. Page 4-8, section 4.3, what is the overall crash data compared to statewide crash average? In addition, page 4-10, fifth paragraph, what was the purpose for using year 2007 crashed data as year base line (calculated crash rate) and compare with the statewide average instead of 2009?

    Response: Table 4-7 Crash Rates (page 4-11) shows the comparison between the calculated 2007 crash rate and the statewide average for similar facilities. Year 2009 crash data was not available when the existing conditions report was prepared in April 2009.

12. Page 4-8, last paragraph, your narrative in regards to crashes between year 2004 and 2006 wasn't clear and why discussing these periods and omitted 2007 to 2009? Were your comments based on the data obtained from Flagler County or the ones obtained from the FDOT District 5 (see table 4-5)? Also, Table 4-5 is missing some information.

    Response: The last paragraph refers to the number of crashes on I-95 between Palm Coast Parkway and US-1; thus, the data is obtained from FDOT District 5 from Table 4-5. The discussion between 2004 and 2006 was intended to point out that the majority of crashes occurred in this period. The number of crashes between year 2004 and 2006 increased as compared to year 2003. In year 2007 the number of crashes decreased.

    Year 2008 and 2009 data was not available when the existing conditions report was prepared in April 2009. The information in 4-5 labeled "N/A" is not missing, the data was not available.

13. Page 4-10, first paragraph, what is your recommendation in regards to the crashes at this intersection? Second paragraph, any reasons for the significant increase in crashes 2008 at Palm Coast Parkway between Belle Terre Parkway and Cypress Point Parkway?

    Response: As stated, the database did not provide specific breakdown of crash type or explanation. The crashes may warrant a separate safety study.

14. Page 4-10, table 4-7 (page 4-11) and table 4-9 (page 4-20) identified crash numbers at various locations within the study area, what is the acceptable FDOT crash rate/per year in a facility?

    Response: The FDOT average crash rates ("2007 State Crash Rate) are shown in Table 4-7 (page 4-11).

15. Since 2009 is the base line for analyzing and justifying the purpose and need of the proposed interchange (page 2-1, paragraph two), the Summary of Crash Types at Roadway Segments should include the 2009 data. Likewise, Table 4-6 omitted data for the year 2009.

    Response: The existing conditions report was prepared in April 2009. The crash data was not available.

16. Page 4-11, section 4.4 and table 4-8; one of the main purpose and need for this interchange was due to number of new major developments within the cities of Palm Coast and Bunnell (three major development approved DRI developments know as Palm Coast Park, Hammock Dunes and Old Brick Township), see page 3-1 2nd paragraph and page 5-1 last paragraph. Recommendation: There is a need for pedestrians and bicyclist considered in the alternative evaluation, 23 CFR 652.2(a) and (c) (FHWA criteria number 2).

    Response: The main purpose and need for the interchange is stated in the last sentence of the first paragraph in the Executive Summary; "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 wildfires."* Accommodation and planning for pedestrians and bicycles will be included in the detailed design phase of the PD&E as discussed in response to comment 2(l) above.

17. Page 4-17, fig. 4-5; the 2009 AM and PM Peak Hour Directional Volume are not linking accurately (traffic volume) please analyze.

    Response: In the AM and PM peak hour, I-95 northbound and southbound mainline between Palm Coast Parkway and US-1 differ by less than 5 percent. The difference will not change the outcome of the existing conditions analysis.

18. Page 4-19, fig. 4-7; there is a need to include 2008 & 2009 to the number of crashes at intersection and on roadway segment, see comment 17 above.

    Response: The existing conditions report was prepared in April 2009. The crash data was not available.

19. Page 6-1, section 6.0 (first paragraph), the reasonable alternatives were not evaluated in details and no justification as to why the preferred alternative was chosen. Only the preferred alternative was evaluated. Explain why reasonable alternatives were omitted or dismissed from further consideration. Please provide the Transportation System Management (i.e. HOV, ITS, Ramp Metering, Transit, CD, etc.) options that were evaluated as an alternative to a new interchange.

    Response: Please see response to 2(e) and 2(f) which address these alternatives. A collector-distributor (CD) road should not be considered since it is rarely used unless there is a spacing issue between interchanges causing merge points or weaving sections to exhibit severe operational problems. The substantial interchange spacing for all interchanges in the AOI places them beyond the realm of weaving, thus CD roads do not warrant consideration.

20. Page 6-1, second paragraph, last sentence; around the southeast quadrant of the proposed I-95 and Matanzas Woods Parkway Interchange, impact on the conservation/preservation areas needs analysis, see page 3-3 section 3.3.1.

    Response: The conservation easement is not within the right-of-way used for the ramp in the southeast quadrant of the interchange. The interchange right-of-way and conservation easement abut, requiring consideration during detailed design to avoid impacts. This will be studied further during the PD&E however at this stage of analysis there does not appear to be any significant concern. The conservation easement is now shown on both interchange concepts Figures 6-1 and 6-3.

21. Page 6-1, cost determination wasn't clear, was the overall cost based on the opening or interim year?

    Response: The cost was broken down for opening year 2015 and interim year 2025 based on 2009 construction costs. If the phased option is taken to maintain a two-lane configuration until 2025, the line item for the additional bridge would be removed.

22. On page 6-5 (fig. 6-1); the on and off ramps required traffic volume analysis, how was the ramps length determined, base on what year?

    Response: Figure 6-1 shows the ramp terminal intersection with Matanzas Woods Parkway lane arrangement for the diamond and partial cloverleaf interchange alternatives. Figure 6-1 does not show the ramp lengths, it shows the required turn lanes storage length based on the analysis provided in Tables 8-6 (diamond) and Tables 8-7 (partial cloverleaf) for each of the analysis years (opening, interim, and design). The ramp lengths are determined based on geometric design standards outlined in *A Policy on Geometric Design of Highways and Streets, 2004*. There is no design exceptions required with the proposed interchange.

23. During the traffic analysis, was the current/proposed improvement projects (old Kings Road, US 1, etc.) put into consideration during the analysis process? Analysis report not available for review.

    Response: The improvement projects at the time of the analysis have been documented. See response to comments 2(a) and 2(c).

24. Appendix IX-A, last page, the FDOT representative (John Zielinski, P.E) has not acknowledge/approve the projected growth rates that is establish 2035 design volumes from 2025 model volume.

    Response: FDOT representative provided confirmation via e-mail on November 13, 2009 providing acceptance of the findings based on the documentation provided. The e-mail has been included as Exhibit 5.

25. Page 8-1, section 8.1, is the proposed interchange included in the current City of Palm Coast Comprehensive Plan?

    Response: The proposed interchange is included in the current City of Palm Coast Comprehensive Plan.

26. Page 8-1, section 8.2 (1st paragraph) when and where was these public meetings held, any transcripts?

    Response: There were multiple Board of County Commissioner meetings when this was discussed. A July 1998 meeting resulted in the news article attached as Exhibit 6. We are not in possession of 1998 Commission minutes.

27. Page 8-2, 2nd paragraph, Is Matanzas woods Parkway classified as an urban Minor or rural principal arterial?

    Response: Matanzas Woods Parkway is an urban minor arterial as documented in Table 3-1.

28. Page 8-2 and table 8-1, the I-95 AM and PM Peak Hour Directional Traffic Conditions for Year 2015, 2025, and 2030 LOS do not provide justification of traffic reduction on I-95.

    Response: In general, a new point of access to the Interstate system would be expected to increase traffic onto the Interstate at some level. However, Table 8-1 shows that the additional traffic to the interstate does not negatively impact the LOS in the AM and PM peak hour directional traffic conditions.

29. Page 8-4, first paragraph, the last sentence connotes additional local traffic within US 1 and Palm Coast PKWY to I-95, how do you mitigate the additional traffic to the interstate?

    Response: Table 8-1 shows that the additional traffic to the interstate does not negatively impact the LOS in the AM and PM peak hour directional traffic conditions.

30. Page 8-5/table 8-4, the no-build and build analysis has not justify any traffic relief on I-95 (main line) when the proposed Matanzas Woods interchange is built.

    Response: The no-build and build analysis indicated a benefit to Palm Coast Parkway as described in Section 8.4.1 (page 8-2). The primary purpose of the proposal is to provide emergency evacuation during wild fires, provide system linkage to accommodate the future growth in the area, and provide traffic relief to Palm Coast Parkway as described in the Executive Summary (page ES-1, first paragraph) and described in detail in *Section 5.0 Need*.

31. Page 8-11/table 8-6, what were the factors for storage length determination for the year 2015, 2025, and 2035 at these various locations?

    Response: The factors that determine the queue length requirements are traffic volumes and signal operations. The storage length must accommodate the queue length requirements. The storage length is then designed based on geometric design standards outlined in *A Policy on Geometric Design of Highways and Streets, 2004*.

32. Page 8-13/table 8-8, 1st paragraphs (last sentence) clarify if the proposed wide diamond interchange has an impact on the conservation site at the southeast quadrant.

    Response: Clarification has been added to the 1st paragraph and the item added to the comparison matrix in Table 8-8 and alternative ranking shown in Table 8-9. Pages 8-13 and 8-14 have been revised accordingly. No direct encroachment into the conservation area is anticipated under the diamond interchange proposal. However, the environmental impacts will be evaluated in more detail in the PD&E study.

33. Pages 8-13, 2nd paragraph, table 8-8, include the number of residential dwellings impacts under partial cloverleaf.

    Response: The item has been added to the comparison matrix in Table 8-8 and alternative ranking shown in Table 8-9. Pages 8-13 and 8-14 have been revised accordingly.

Comments from Lokesh Hebbani, ITS & Traffic Operations Engineer (FHWA)

34. Under eight FHWA requirements for approval of new access to interstate system, fourth requirement states that they need to look into TSM options such as ITS, Ramp metering & HOV as the options to be evaluated as an alternative to the new interchange and this requirement needs to be explained in detail.

    Response: These alternatives would not mitigate impacts or obviate the need for the interchange proposal as responded to for comments 2(e)(f) and 19 above.

35. In Figures 7.1-7.6, the traffic volumes doesn't add up from upstream to downstream and vice-versa and hence needs to be verified.

    Response: These figures are AADT. The traffic volumes were balanced for the AM and PM peak hour peak directions.

36. Needs to include traffic volume projections generated by any future planned additional interchanges within the area of influence that are proposed.

    Response: See response to Comment 2(a).

Please call me if you have any questions at 954-776-1616.

Sincerely,

Veronica A. Altuve, P.E.
Assistant Director of Traffic Engineering

Enclosure

Exhibits

Exhibit 1

Florida Department Of Transportation

Office of Work Program
Lisa Saliba - Director

Five Year Work Program
2011-2015 AD
(Updated: 2/3/2011-02:10:32)
District 05 - Flagler County
Category: Highways
Phase: Preliminary Engineering
Item Number: 430266-1

Transportation System Description	District	Length	Type of Work	Item
NON-INTRASTATE OFF STATE HIGHW	District 05 - Flagler County	2.987	SIDEWALK	430266-1
Matanzas Woods Pkwy From Us 1 To Bird Of Paradise Drive				

Fiscal Year:	2011	2012	2013	2014	2015
Highways /Preliminary Engineering	$60,000				
Highways /Construction	$500,000				

FLORIDA DEPARTMENT OF TRANSPORTATION · DISTRICT FIVE WORK PROGRAM PUBLIC HEARING

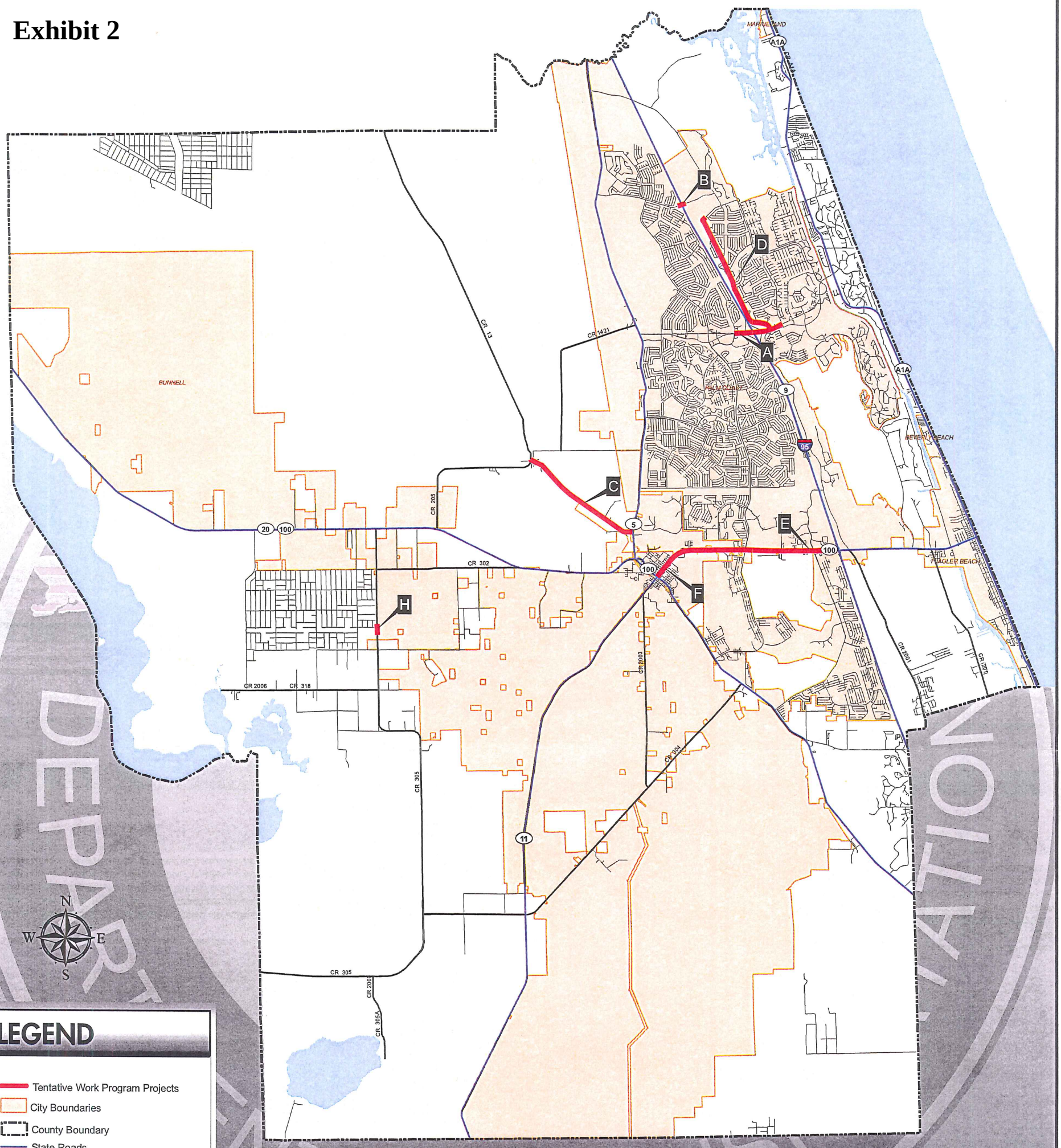
FLAGLER COUNTY TENTATIVE PROJECTS

FISCAL YEARS 2011/12 to 2015/16

D5WPPh

INVOLVING OUR COMMUNITY

Exhibit 2



Work Program Projects as of December 3, 2010
Map Date: December 3, 2010

Projects highlighted in Grey are not mappable

ID	FM	PROJECT NAME	FROM	TO	PHASE	FY	AMOUNT	WORK DESCRIPTION
A	4159631	PALM COAST PARKWAY	BOULDER ROCK DR	FLORIDA PARK DR	CST	2013	$4,000,000	ADD THRU LANE(S)
B	4119592	MATANZAS WOODS PKWY	INTERCHANGE WITH I-95		CST	2014	$5,000,000	NEW ROAD CONSTRUCTION
C	4300931	CR 13	CR 205	US 1	PE	2015	$243,000	WIDEN/RESURFACE EXIST LANES
					CST	2016	$3,500,000	
D	4159621	OLD KINGS DRIVE	FORREST GROVE DR	OLD KINGS RD	PE	2013	$1,350,000	NEW ROAD CONSTRUCTION
D	4159641	OLD KINGS RD	PALM COAST PARKWAY	FORREST GROVE DR	PE	2013	$2,000,000	ADD THRU LANE(S)
E	4301351	SR 100	I-95	BELLE TERRE PKWY	PDE	2013	$800,000	PD&E/EMO STUDY
F	4271181	SR 100 / US 1 CONNECTOR	BELLE TERRE PKWY	US 1	PDE	2011	$675,000	PD&E/EMO STUDY
G	4301371	RAILROAD ST ENHANCEMENT	WOODLAND AVE	ELM AVE	PDE	2013	$828,000	PD&E/EMO STUDY
H	4074633	CR 305	2.5 MILES SOUTH OF SR 100		CST	2012	$2,200,000	WIDEN/RESURFACE EXIST LANES
I	4302511	WHITEVIEW PARKWAY OVERPASS	AT OLD KINGS ROAD		PDE	2015	$350,000	PEDESTRIAN OVERPASS

Exhibit 3

SECTION 4: STATUS OF MAJOR DEVELOPMENTS

Four (4) major developments, or Developments of Regional Impact (DRI), are approved within the City and will contribute to the overall growth of the City over the long term (up to 20 years). The Grand Haven DRI is substantially complete, with the exception of the remaining non-residential component. The other three (3) major approved developments could contribute 7,511 dwelling units and 7,985,000 square feet of non-residential space over the next 20 years. A location map of these major developments is below and the pages following provide a detailed status of the three (3) active and approved major developments. In addition, two (2) major developers are currently proposed: Neoga Lakes DRI and Old Brick Township DRI.

FIGURE 4.1 — MAJOR DEVELOPMENT LOCATION MAP

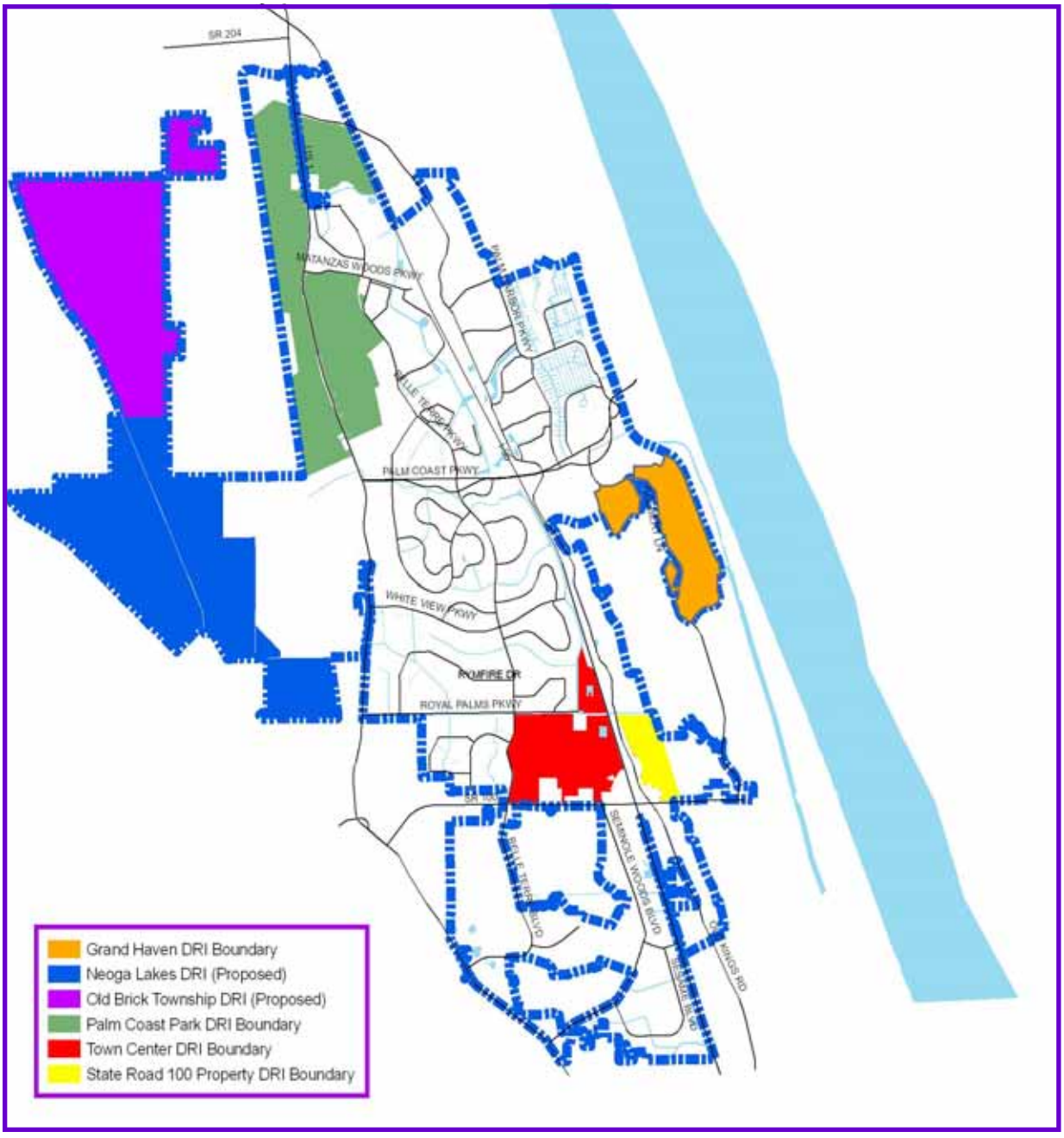


Exhibit 4

Summary Report

12516 - Matanzas Woods Parkway Interchange @ I-95 ** Most Recent Data

Submit Comment Request Response Watch Project

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
Contact Name / Phone:	Lance Decuir (386) 943-5383	**Contact Email:**	lance.decuir@dot.state.fl.us
Project Milestone Dates:	7/13/2010 | 3/09/2010		

Project Milestone: Project Re-Published 7/13/2010
Click one of the date links above to view other historical snapshots of the data.

make changes

Summary Report Overview

- Class of Action

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.		

back to top

Exhibit 5

From: Dan D'Antonio [ddantonio@lassitertransportation.com]
Sent: 2009-11-13 14:53
To: 'Weiss, Jon'
Cc: 'Zielinski, John'; 'Khuwaja, Mansoor A.'; falkhatib@flaglercounty.org; John P. Krane; Veronica Altuve
Subject: RE: Matanzas Woods IJR - Modeling and Growth Rate Memo

Thanks, Jon. We'll remove the signature spaces from the last page.

Dan D'Antonio, PE
Lassiter Transportation Group, Inc.
123 Live Oak Avenue
Daytona Beach, FL 32114

PH: 386.257.2571 ext. 318
FX: 386.257.6996
www.lassitertransportation.com

lassiter logo-true color copy

From: Weiss, Jon [mailto:Jon.Weiss@dot.state.fl.us]
Sent: Friday, November 13, 2009 1:05 PM
To: Dan D'Antonio
Cc: Zielinski, John; 'Khuwaja, Mansoor A.'; falkhatib@flaglercounty.org; 'John P. Krane'
Subject: RE: Matanzas Woods IJR - Modeling and Growth Rate Memo

John and Dan,
I have reviewed the Tech Memo and followed up with discussions with Dan, Faith and Mansoor. I am comfortable with the tech memo findings and recommendations for the traffic forecasting for the Matanzas Woods IJR project, including the growth rate which was the major "new" recommendation from our previous discussions. Mansoor is also okay with the current direction.

I noticed the Tech Memo included a signature page. I would recommend taking that out of the final version. This email should suffice in confirming the Department's status of the review and acceptance of the findings based on the information that has been documented and provided. We have also expressed concerns about the possible findings in the next phase of this report, but those will be more formally developed and discussed when that information becomes analyzed. We look forward to working with you in those efforts.

Thank you.

Jon V. Weiss, P.E.
Government Operations Manager
Florida Department of Transportation, District 5
Orlando Urban Office
133 S. Semoran Boulevard
Orlando, FL 32807

ph. (407) 482-7881
fax (407) 275-4188

From: Dan D'Antonio [mailto:ddantonio@lassitertransportation.com]
Sent: Thursday, November 05, 2009 12:10 PM
To: Weiss, Jon

Cc: Zielinski, John
Subject: FW: Matanzas Woods IJR - Modeling and Growth Rate Memo

Gentlemen –

The e-mail below was returned to me undeliverable. It was 3.8 MB so I thought it would make it through your size limit. However, I am now sending the document in two parts. Attached is the text portion of the memo, without Figures 1 and 2. Figures 1 and 2 will follow immediately after this e-mail. I assume this is easier than retrieving from our FTP site. I apologize for the inconvenience.

Dan D'Antonio, PE
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lassiter logo-true color copy

From: Dan D'Antonio [mailto:ddantonio@lassitertransportation.com]
Sent: Thursday, November 05, 2009 11:52 AM
To: 'Weiss, Jon'
Cc: 'Zielinski, John'; 'Khuwaja, Mansoor A.'; 'falkhatib@flaglercounty.org'; 'rgordon@flaglercounty.org'; 'Veronica Altuve'; 'John P. Krane'; 'Colleen Nicoulin'
Subject: Matanzas Woods IJR - Modeling and Growth Rate Memo

Attached is the final memorandum which documents the modeling and 2035 growth rate recommendations for the Matanzas Woods Parkway IJR. Please let me know if you would like hard copies, and how many, sent to your office.

Dan D'Antonio, PE
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www.lassitertransportation.com

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Exhibit 6

CENTRAL FLORIDA IN FLAMES

The Beginning | The Buildup | Firestorm! | Relief | Aftermath

July 14, 1998

Flagler residents complain about handling of fires

By MICHAEL SASSO
Staff Writer

BUNNELL — Residents of Flagler County demanded explanation from county and emergency management officials Monday night for what they believe were errors made in the massive firefight and evacuation of the county earlier this month.

Flagler County commissioners, battle-worn from rampant criticism, defended their own actions during the emergency. They also passed several measures aimed at preventing future calamities, including looking into an early warning system for county residents.

The anger seemed to focus on what critics said was a lack of emergency communication during the evacuation.

Residents complained that as they sat in their hotel rooms, after having spent hours trying to get out of the county on packed roads, they found little information about the fires on television news. They blamed the County Commission and county Emergency Management Services officials for not giving out up-to-date information on the fires' whereabouts.

One resident said the media was starved for information and no county commissioners stepped forward to give any information.

"I hold you people responsible," the man said.

A resident of the Seminole Woods neighborhood, which was hit hard by fires in early June, told commissioners that after a major fire wiped out 131 homes in 1985 local officials had controlled burns in her neighborhood for a while. But then they stopped, she said, and she wanted to know why.

At one point in Monday's meeting, commissioners took turns explaining what they had done during the emergency, going back to the initial fire in Seminole Woods on June 6. That fire destroyed 20 houses in the south Palm Coast neighborhood.

Commission Chairman Jim Darby said he first heard about the Seminole Woods fire at about 3 p.m. on June 6 and was at the county's Emergency Management building within 20 minutes. Among other things, he and Commissioner Mike Des Parte went to the county's emergency shelter to assist people forced out of their homes. Meanwhile, Trivett set up a telephone system to answer questions about the fire, and Commissioner George Hanns worked the phones.

Des Parte grew emotional while explaining his role in the evacuation of the entire county July 3. He and other commissioners were at the EMS building early that morning to discuss the status of the fires, when they were told by forestry officials monitoring the blazes that there were "at least a thousand fires west of U.S. 1."

Des Parte worried the county could be faced with a wall of fire 60 feet high stretching from north Flagler County to Bunnell. Darby said he was in North Carolina for part of the evacuation, but he flew back himself in a private airplane on July 4.

"I'm proud to be a member of this commission. Each one of us worked together," Des Parte said.

In response to the complaints, commissioners directed county staff to look into a early warning telephone system that would be operated by BellSouth.

Commissioners also directed staff to work with the state Division of Forestry to remove the burned pine trees from areas affected by fire. The money raised from the sale of the trees will go to replanting hardwood trees, Trivett said.

Finally, the commission voted to create a citizens' advisory panel to critique the job the county and emergency management officials did during the fire fight and evacuation. The panel will include residents from areas affected by the fires and representatives of the county's four municipalities.

Revised Final IJR Pages

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**.**

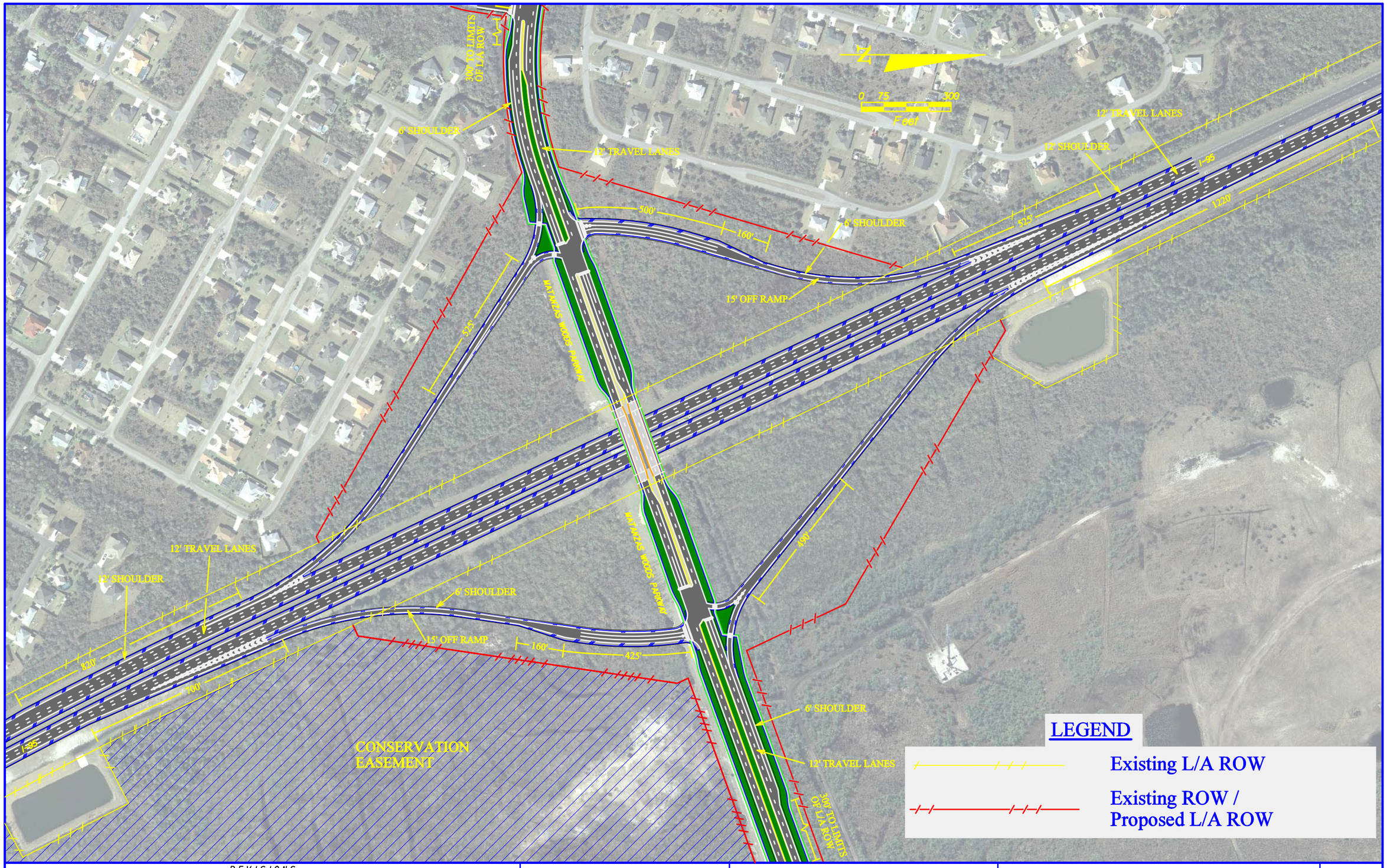
Table 8-9 shows that the wide diamond results in a better (lower) performance score. As stated earlier, the IJR evaluated environmental conditions at a preliminary screen level, and these environmental aspects will be studied in detail in the PD&E that will follow IJR approval.

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.



NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

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

SHEET NO. 6-1

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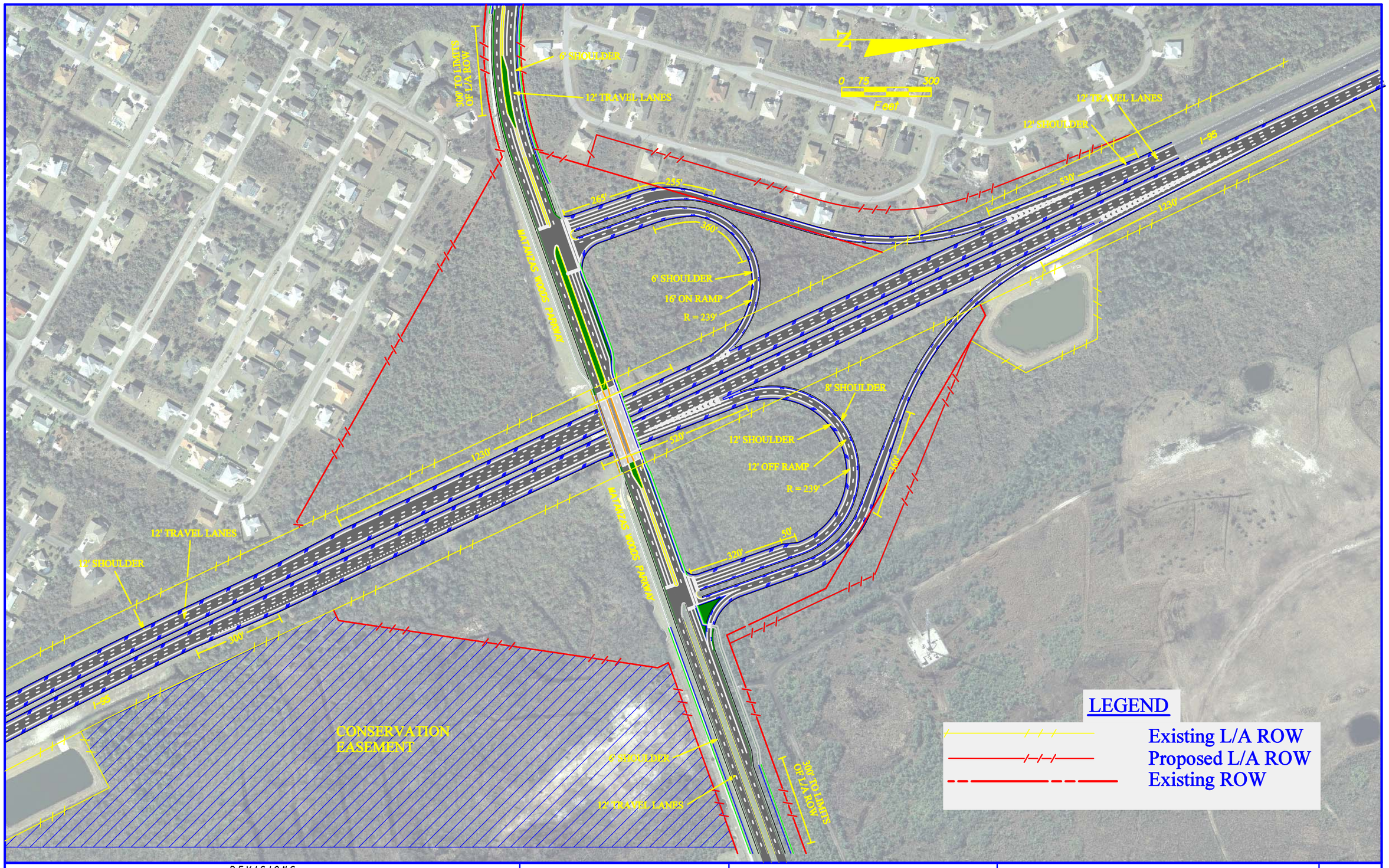

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

SCHEMATIC PARTIAL CLOVER INTERCHANGE CONFIGURATION ALTERNATIVE

FIGURE 6-3

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Appendix II

Environmental Report
and
Conservation Easement

Interstate 95 and Matanzas Woods Parkway Interchange Justification Report

ENVIRONMENTAL CONSIDERATIONS

Purpose

Keith and Schnars, P.A. performed a screening-level analysis 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.

Methodology

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 one-half mile to the east and west of the intersection of Matanzas Woods Parkway and I-95, and one mile to the north and south of the intersection.

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;
- U.S. Geological Service 7.5 Minute Quadrangle Map;
- U.S. Department of Agriculture, 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), U.S. Fish and Wildlife Service (USFWS);
- Flagler County Federally Listed Species, USFWS;
- Rare Plants and Animals of Flagler County, Florida Natural Areas Inventory (FNAI); and
- GIS information provided by the Florida Fish and Wildlife Conservation Commission (FWC), including Species Occurrence, Biodiversity Hotspots, Priority Wetlands, and Florida Land Cover, 2003.

After the desktop review, Keith and Schnars conducted field reconnaissance on December 30 and 31, 2008 to ground-truth information gathered during the desktop review.

Findings

Existing Conservation Easement

A Conservation Easement exists adjacent to the project area. There are 197.12 acres of wetland and upland preservation in the southeast quadrant of the proposed interchange

(Attachment 1). These 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 U.S. Army Corps of Engineers (ACOE) permit requirements (SJRWMD Permit No. 4-035-83039-1, ACOE Permit No. 200200905 [IP-MLH], 2003). The preservation areas serve as mitigation for the Matanzas Woods Parkway Extension which consisted of 1.2 miles of roadway improvements beginning at Bird of Paradise Drive and continuing east of I-95 to Old Kings Road. Design included the extension of a two-lane rural section with a bridge crossing the I-95 corridor. The project included the acquisition of right-of-way outside the preservation areas for a potential future I-95 interchange.

The Conservation 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, a primary issue for this project will be avoiding impacts to the preservation areas to the extent practicable. Generally, Conservation Easements cannot be impacted unless no viable alternatives exist.

Land Use

Much of the western portion of the study area is developed or under construction. According to the FLUCCS map **(Figure 1)**, the land uses in this portion include Residential, Low Density: <2 Dwelling Units/Acre (FLUCCS Code 110), and Low Density Under Construction (FLUCCS Code 119).

The NWI map **(Figure 2)** 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 **(Figure 3)**, hydric pine flatwoods, wetland forested mixed, wet prairie, and mixed scrub-shrub. Streams and waterways, and reservoirs (surface waters[1]) are also present. Principal land use types are discussed below.

The field reconnaissance found that the FLUCCS and NWI maps are in reasonably good agreement with actual field conditions.

Uplands

Shrub and Brushland (FLUCCS Code 320)
This category is comprised of saw palmetto (*Serenoa repens*) [2], gallberry (*Ilex glabra*), wax myrtle (*Myrica cerifera*), coastal scrub, and other shrubs and brush. Saw palmetto is generally the most predominant plant cover, intermixed with a wide variety of other woody scrub plants, as well as various types of short herbs and grasses.

Mixed Upland Nonforested (FLUCCS Code 330)
This is a mixture of grassland and shrub-brushland.

Disturbed Lands (FLUCCS Code 740)

[1] Surface waters are defined as waters contained in bounds created naturally or artificially, 62-340.600 F.A.C.
[2] Taxonomic names follow Wunderlin, University Of South Florida, ISB Atlas of Vascular Plants www.plantatlas.usf.edu

Disturbed lands are those areas that have been changed due primarily to human activities other than mining.

Rural Land in Transition Without Positive Indicators of Intended Activity (FLUCCS Code 741)
These lands are cleared but not developed.

Communications (FLUCCS Code 820)
Airwave communications, radar, and television antennas with associated structures are typical major facilities included in this category.

Wetlands

Streams and Waterways (FLUCCS Code 510), Reservoirs (FLUCCS Code 530)
This category includes rivers, creeks, canals, and other linear water bodies. Where the water course is interrupted by a control structure, the impounded water area is categorized as a reservoir. Reservoirs are artificial impoundments of water that are used variously for irrigation, flood control, municipal and rural water supplies, recreation, and hydro-electric power generation.

Mixed Wetland Hardwoods (FLUCCS Code 617)
This habitat is a wetland hardwood community that is comprised of a large variety of hardwood species tolerant of hydric conditions, but which exhibits an ill-defined mixture of species.

Cypress Swamp (FLUCCS Code 621)
A cypress swamp is comprised of pond cypress (*Taxodium ascendens*) or bald cypress (*Taxodium distichum*) which is either pure or predominant. Typical cypress associates are swamp tupelo (*Nyssa sylvatica* var. *biflora*), slash pine (*Pinus elliottii*), and black titi (*Cyrilla racemiflora*). Bald cypress associates are water tupelo (*Nyssa aquatica*), red maple (*Acer rubrum*), American elm (*Ulmus americana*), pumpkin ash (*Fraxinus pennsylvanica*), Carolina ash (*Fraxinus caroliniana*), overcup oak (*Quercus lyrata*), and water hickory (*Carya aquatica*). On less moist sites, other associates include laurel oak (*Quercus laurifolia*), sweetgum (*Liquidambar styraciflua*), and sweetbay (*Magnolia virginiana*).

Hydric Pine Flatwoods (FLUCCS Code 625)
This is a forest with a sparse to moderate canopy of slash pine, and an understory of grasses, wiregrass (*Aristida stricta*), forbs, and sometimes sparse saw palmetto.

Wetland Forested Mixed (FLUCCS Code 630)
This category includes mixed wetlands forest communities in which neither hardwoods nor conifers provide a 66 percent dominance of the tree canopy.

Wet Prairie (FLUCCS Code 643)
This community is comprised predominantly of grassy vegetation on hydric soils, and is usually distinguished from marshes by having less water and shorter herbage.

Mixed Scrub-Shrub Wetland (FLUCCS Code 646)
This category is typically dominated by wiregrass or cutthroat grass (*Panicum abscissum*) along with wetland plant associates.

Wildlife

A list of federal and state-listed species for the County is included as **Table 1**. 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 (discussed below).

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 one mile from the study area to the northeast. This nest does not pose any obstacles to the proposed interchange.

Table 1. Endangered, Threatened, and Species of Special Concern in Flagler County

Scientific Name	Common Name	Agency	Classification
MAMMALS			
Podomys floridanus	Florida mouse	FWC	SSC
Sciurus níger shermani	Sherman's fox squirrel	FWC	SSC
Ursus americanus floridanus	Florida black bear	FWC	T
BIRDS			
Ajaia ajaja	Roseate spoonbill	FWC	SSC
Aphoelocoma coerulescens	Florida scrub jay	USFWS/FWC	T
Aramus guarauna	Limpkin	FWC	SSC
Egretta caerulea	Little blue heron	FWC	SSC
Egretta rufescens	Reddish egret	FWC	SSC
Egretta thula	Snowy egret	FWC	SSC
Egretta tricolor	Tricolored heron	FWC	SSC
Eudocimus albus	White ibis	FWC	SSC
Mycteria americana	Wood stork	USFWS/FWC	E
Picoides borealis	Red-cockaded woodpecker	USFWS/FWC	E, T
REPTILES			
Alligator mississippiensis	American alligator	USFWS/FWC	T/SA
Drymarchon corais couperi	Eastern indigo snake	USFWS/FWC	T
Gopherus polyphemus	Gopher tortoise	FWC	T
Pituophis melanoleucus mugitus	Florida pine snake	FWC	SSC
AMPHIBIANS			
Rana capito	Gopher frog	FWC	SSC
PLANTS			
Helianthus carnosus	Lakeside sunflower	FDACS/DPI	E
Nemastylis floridana	Celestial lily	FDACS/DPI	E

(T) = threatened, (E) = endangered, (SA) = similarity of appearance, (SSC) = species of special concern
USFWS = United States Fish and Wildlife Service

FWC = Florida Fish and Wildlife Conservation Commission
FDACS = Florida Department of Agriculture and Consumer Services
DPI = Division of Plant Industry
*Exclusively marine species are not included

Listed species are subject to protection under the Endangered Species Act of 1973, as amended, and Chapter 68A-27 F.A.C., "Rules Relating to Endangered or Threatened Species."

Florida Mouse (*Podomys floridanus*)
The Florida mouse is a Species of Special Concern in Florida. It is found in dry, upland communities such as scrub, sandhill, and dry fields where it inhabits gopher tortoise burrows. When gopher tortoises are absent, the mouse will dig its own burrow or use the burrows of other oldfield mice. It is active throughout the year. There is little potential for the mouse to occur within the study area. There is minimal suitable habitat, but if gopher tortoise burrows are present, this [3]commensal species may be found.

Sherman's Fox Squirrel (*Sciurus niger shermanii*)
Sherman's fox squirrel is a state Species of Special Concern. It inhabits sandhills (high pine), pine flatwoods, pastures, and other open, weedy habitats with scattered pines and oaks. It depends on a variety of oak trees for seasonal food and nest material. The squirrel usually nests in oak trees, and constructs its nest of oak leaves and Spanish moss. There is a slight potential for the squirrel to occur within the study area.

Florida Black Bear (*Ursus americanus floridanus*)
The state-threatened black bear is a large mammal with glossy black hair and a brown muzzle. Some individuals may have a white chest patch. Females average 180 pounds; males average 250 pounds. The bear prefers a variety of forested habitats to support its seasonal diet. Forested wetlands may provide daytime cover. The bear is active year-round. There is little potential for bear to occur within the study area.

Wading Birds (Herons, Egrets, White Ibis, Roseate Spoonbill, Limpkin)
Wading birds including the little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*) reddish egret (*Egretta rufescens*), snowy egret (*Egretta thula*), white ibis (*Eudocimus albus*), roseate spoonbill (*Ajaia ajaja*), and limpkin (*Aramus guarauna*) are listed by the FWC as Species of Special Concern. Their preferred habitats are predominantly forested wetlands, ponds, river edges and freshwater marshes. There is appropriate habitat for wading birds within the study area; however, none was observed during the field investigation.

Florida Scrub Jay (*Aphelocoma coeruluscens*)
The Florida scrub jay is a federal and state-threatened species. It is similar in size and shape to the blue jay (*Cyanocitta cristata*); however, the scrub jay lacks the crest and white spotting on its wings and tail which are characteristic of the blue jay. Its head, nape, wings, and tail are pale blue, and its back and belly pale gray. Juveniles have fluffy brown heads. The scrub jay's preferred habitat is fire-dominated, low-growing, oak scrub with well-drained sandy soils. This habitat is not present within the study area.

[3] Commensal - an organism living with another in which one species derives some benefit while the other is unaffected.

Wood Stork (*Mycteria americana*)
The wood stork is a large, white wading bird with black along the length of its wings and a short black tail. It is a federal and state-endangered species. The wood stork soars with its neck and legs extended. Adults have bare, scaly, dark-gray heads and necks, and long, heavy, decurved bills. Juveniles have grayish brown feathering on their heads and necks, and their bills are yellowish. The wood stork nests colonially in a variety of inundated forested wetlands including cypress strands and domes, mixed hardwood swamps, and sloughs. It also can be found nesting in artificial habitats (e.g., impoundments and dredged areas with native or exotic vegetation) in North and Central Florida. The wood stork forages primarily in shallow freshwater wetlands where falling water levels concentrate food sources. No wood stork nests were observed during the field investigation, but storks potentially use the study area wetlands for foraging. During preparation of the ERP application, there will be an assessment of any impacts to wood stork Core Foraging Areas (CFA) and any impacts to these areas may require mitigation. Preliminary review indicates the project area is within a North Florida (13 mile radius) CFA. Coordination would be through the USFWS Jacksonville Ecological Services Field Office.

Red-Cockaded Woodpecker (*Picoides borealis*)
The red-cockaded woodpecker is a federally endangered and state-threatened bird. This small woodpecker has a barred, black and white back and wings, a black cap and nape, and white cheek patches. Adult males have red streaks on either side of their head which are rarely visible. Juvenile males have a small, circular patch of red on top of their heads; this is absent in immature females. The woodpecker's preferred habitat is open, mature pine woodlands containing a variety of grasses, forbs, and shrub species. It generally occupies longleaf pine flatwoods in North and Central Florida. This habitat is not present within the study area.

Osprey (*Pandion haliaetus*)
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…" The osprey is a large, soaring bird-of-prey with a dark brown back and mostly white undersides. There is a distinctive brown streak extending through the eye. Like bald eagles, the osprey is dependent on water bodies for foraging, and for feeding young.

Osprey nests **(Figure 4)** are located in the northeast and northwest quadrants of the project study area, approximately one-quarter mile north of the 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.

American Alligator (*Alligator mississippiensis*)

The alligator is listed by the USFWS as threatened by Similarity of Appearance to the endangered American crocodile (*Crocodylus acutus*), and as a Species of Special Concern by the FWC. It can be found in freshwater ponds, and in areas with adequate access to fresh water. There is a slight potential for the alligator to occur within the study area, although its presence would not have a significant effect on the feasibility of the project.

Eastern Indigo Snake (*Drymarchon corais couperi*)

The Eastern indigo snake is listed as threatened by the USFWS and the state. It is the largest non-venomous snake in North America, reaching lengths of up to 8.5 feet. Its color is uniformly lustrous-black, dorsally and ventrally, except for a red or cream-colored suffusion of the chin, throat, and sometimes the cheeks. The Eastern indigo requires sheltered retreats from winter cold and desiccating conditions, and often uses burrows of the gopher tortoise (*Gopherus polyphemus*) when available. In habitats lacking gopher tortoises, the Eastern indigo snake may take shelter in hollowed root channels, hollow logs, or the burrows of rodents and armadillos (*Dasypus novemcinctus)*. Over most of its range in Florida, the Eastern indigo snake frequents diverse habitats such as pine flatwoods, scrubby flatwoods, floodplain edges, sand ridges, edges of freshwater marshes, muckland fields, and xeric sandhill communities. In the northern part of its range, the snake often winters in gopher tortoise burrows in sandy uplands but forages in more hydric habitats. There is a slight potential for the snake to occur within the study area. If the snake is encountered during construction, "Standard Protection Measures for the Eastern Indigo Snake" (USFWS, 2004) would apply.

Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise is classified as a state-threatened species. The previous Matanzas Woods Parkway Extension required the acquisition of Gopher Tortoise Incidental Take Permit FLG-17 issued by the FWC in October 2003. Incidental takes of gopher tortoises are no longer allowed under a revised permitting system of the FWC (Gopher Tortoise Management Plan, September 2007). The gopher tortoise is medium size (to 10 inches), and fully adapted to life on land. It excavates deep burrows for protection from predators, weather, and fire. Typical habitats are dry upland communities including sandhills, scrub, xeric oak hammocks, and dry pineland. The tortoise also can be found in disturbed areas such as pastures, oldfields, and road shoulders. Tortoises in North Florida may remain below ground for months in cold weather. Although the habitat in the study area is not ideal for gopher tortoises, the fact that they were encountered during construction of the Matanzas Woods Parkway Extension suggests they may be encountered again during this project.

Florida Pine Snake (*Pituophis melanoleucus mugitis*)

The Florida pine snake is a Species of Special Concern. It inhabits areas with open canopies and dry sandy soils typical of sandhills, pine scrub, scrubby flatwoods, and oldfields. Its pointed conical head is well adapted to burrowing. The pine snake often coexists in the burrows of pocket gophers or gopher tortoises. Most of its time is spent below ground, with occasional surface activity in the spring and fall. It has become rare due to collecting and habitat loss. There is little potential for the snake to occur within the study area. There is minimal suitable habitat, but if gopher tortoise burrows are present, this commensal species may be found.

Gopher Frog (*Rana capito*)

The gopher frog is listed by the FWC as a Species of Special Concern. It inhabits dry, sandy uplands, typically sandhills and scrub. Nearby isolated wetlands or ponds are required for reproduction. The frog is nocturnal, spending daytimes hidden in shallow depressions or in the burrows of pocket gophers or gopher tortoises. There is little potential for the frog to occur within the study area. There is minimal suitable habitat, but if gopher tortoise burrows are present, this commensal species may be found.

Lakeside Sunflower (*Helianthus carnosus*)
This perennial herb is endangered in Florida. It is the only *Helianthus* in northeast Florida with nearly leafless stems and yellow disk flowers. The sunflower may reach 2.5 feet, and flowers from August to October. It is found in wet flatwoods and prairies. There is a slight potential for the sunflower to occur within the study area.

Celestial Lily (*Nemastylis floridana*)
The celestial lily is a perennial herb from a bulb, and is the only iris-like species in Florida to open in the late afternoon in the fall (flowering from 4-6 p.m., August to October). It is state-endangered. The lily has a single, tall, slender stem, with occasional branching on larger plants. Its habitats include wet flatwoods, prairies, marshes, and cabbage palm hammock edges. There is a slight potential for the sunflower to occur within the study area.

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 to 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.

Figure 5 is a map of soils from the U.S. Department of Agriculture, National Resources Conservation Service. According to the Service, a majority of the soils within the project study area are hydric. These soils are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). 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. The principal soil types are described below.

Hicoria, Riviera, and Gator Soils, Depressional (4)
These soils have slopes of 0 to 1 percent, are very poorly drained, and pond frequently. Typical profiles are 0 to 10 inches of mucky fine sand (Hicoria), 0 to 22 inches of fine sand (Riviera), and 0 to 26 inches of muck (Gator). Depth to the water table is about 0 inches.

Myakka Fine Sand (7)
This soil is poorly drained with a 0 to 2 percent slope, and a depth to water table of about 6 to 18 inches. A typical profile is 0 to 80 inches fine sand.

Pineda-Wabasso Complex (9)
These soils are poorly drained with a 0 to 2 percent gradient, and a typical profile of 0 to 32 inches of fine sand underlain by sandy clay loam. Depth to the water table is about 6 to 18 inches.

Placid, Basinger, and St. Johns Soils, Depressional (12)
These soils are very poorly drained, with 0 to 1 percent slopes. Ponding is frequent. Placid and St. Johns have a depth to the water table from 0 to 12 inches; Basinger has about 0 inches to the water table.

Riviera Fine Sand (14)
Riviera is a poorly drained soil with a slope of 0 to 2 percent. Its typical profile is 0 to 28 inches of fine sand underlain by loam and sand. Depth to the water table is about 6 to 18 inches.

Samsula and Hontoon Soils, Depressional (15)
These are very poorly drained soils with 0 to 2 percent slopes, and typical profiles of muck from 0 to 31 inches underlain by fine sand (Samsula), and 0 to 80 inches muck (Hontoon). Depth to the water table is about 0 inches, and ponding is frequent.

Smyrna Fine Sand (17)
Smyrna occurs on 0 to 2 percent slopes and is poorly drained. It has fine sand to a depth of 80 inches. Depth to the water table is about 6 to 18 inches.

Udarents, Moderately Wet (21)
Udarents are somewhat poorly drained with a slope of 0 to 2 percent. The typical profile is 0 to 80 inches of fine sand, and a depth to the water table of 18 to 36 inches.

Valkaria-Smyrna Complex (23)
These soils have 0 to 2 percent slopes and are poorly drained. Their profiles are 0 to 80 inches of fine sand. Depth to the water table is about 0 to 12 inches (Valkaria), and 6 to 18 inches (Smyrna).

Valkaria Fine Sand (24)
Valkaria is a poorly drained soil with a 0 to 2 percent slope and fine sand to a depth of 80 inches. Depth to the water table is about 0 to 6 inches.

Flood Zones

The project area contains two Federal Emergency Management Agency (FEMA) flood zone designations **(Figure 6**). Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk.

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.

Contamination

A contamination screening was performed in 2003 to support the Matanzas Woods Parkway Extension:

> "*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.

The Contamination Screening Evaluation Report (CSER) included an Environmental FirstSearch Database Report to locate available regulatory agency information pertaining to hazardous materials. The following files were searched for any sites with hazardous or petroleum material records and/or violations: Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Toxic Site Directory (TSD); Generators (GEN); Emergency Response Notification System (ERNS); National Priority List (NPL); Resource Conservation and Recovery Information System (RCRIS); Facility Index System (FINDS); RCRA Administrative Action Tracking System (RAATS); Registered Underground Storage Tanks (UST); Leaking Registered Underground Storage Tanks (LUST); Toxic Release Inventory (TRI); State Superfund Sites; Solid Waste Facilities; and orphan reports for Flagler County including Civil Enforcement Docket and Leaking Tank Sites. The area investigated was a radius of up to 1.25 miles from a point located near the gun range, approximately 0.7 miles northeast of the I-95 / Matanzas Woods Parkway overpass. The FirstSearch Database Report revealed underground storage tanks associated with the Matanzas Woods Golf Course, and businesses that generate or store small amounts of hazardous waste (such as the Community Animal Clinic, tire centers, and a pharmacy), highway and railway spills, and identified the potential for cattle dipping vats in the area. The CSER did not identify any of these sites as potentially significant contamination sites.

The CSER identified the former Flagler Gun and Archery Range as a contaminated site. This facility is located at 2525 Old Kings Road, Palm Coast, Florida. The site operated as a target range from 1975 to 2000. In 2001, lead was identified above cleanup standards in the upper 3 inches of soil. Groundwater concentrations of lead did not exceed state groundwater cleanup levels. Contaminated soil was removed in 2002 and documented in a Source Removal Report dated November 6, 2002. The Florida Department of Environmental Protection (FDEP) issued a "no further action letter" on June 18, 2003. A review of hardcopy files at FDEP on October 10, 2008 revealed that 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. No further records were available at FDEP. This site is identified in the FDEP's contamination database OCULUS as site COM_190204 "PALM COAST GUN AND ARCHERY CLUB," but as of October 2008, no records were available in the database. 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.

Keith and Schnars conducted field reconnaissance 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.

Summary

- No environmental fatal flaws were identified in the screening-level analysis.
- There is an existing Conservation Easement 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.

Figure 3: Cypress Swamp North of Matanzas Woods Overpass

Figure 4: Osprey Nest in Northwest Quadrant of Matanzas Woods Parkway and I-95.

Attachment 1

Conservation Easement

83039-1

1721

Compliance Submittal

1721

Flagler County
Board of County Commissioners
Engineering
1200 E. Moody Blvd., #7
Bunnell, FL 32110
(386) 437-7496 FAX: (386) 437-8212

August 17, 2005

Mr. Vance Kidder
Assistant General Counsel
Office of General Counsel
St. Johns River Water Management District
P.O. Box 1429
Palatka, Florida 32178-1429

RE: Matanzas Woods Parkway Extension
Flagler County
S.J.R.W.M.D. Permit No. 4-035-83039-1

Dear Mr. Kidder:

Please find the enclosed original recorded Conservation Easement document for this project. It is provided for keeping in the District's office of Central Files.

Please contact me should you have any questions and thank you for your help in completing this.

Sincerely,
FLAGLER COUNTY ENGINEERING

Richard G. Gordon, P.E.
Assistant County Engineer

RGG/rs

cc: S. McGee Fax
L. Bosch
T. Roberts Fax
F. Alkhatib/AEK/File

OK to close file
8/31/05
SJ

Inst No: 2005[illegible]368 08/12/2005
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GAIL WADSWORTH, FLAGLER Co.

Return recorded original to:
Office of General Counsel
St. Johns River Water Management District
P.O. Box 1429
Palatka, FL 32178-1429

CONSERVATION EASEMENT

THIS CONSERVATION EASEMENT is made this 8TH day of AUGUST, 2005 by the Flagler County Board of County Commissioners having an address at 1200 East Moody Boulevard, No. 1, Bunnell, Florida 32110 ("Grantor"), in favor of the ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, a public body existing under Chapter 373, Florida Statutes, having a mailing address at P.O. Box 1429, Palatka, Florida 32178 ("Grantee").

WITNESSETH:

WHEREAS, Grantor solely owns in fee simple certain real property in Flagler County, Florida, more particularly described in Exhibit "A" attached hereto and incorporated by this reference as (the "Property"); and

WHEREAS, Grantor grants this conservation easement as a condition of permit # 4-035-83039-1 issued by Grantee for the Matanzas Woods Parkway Extension Project, solely to off-set adverse impacts to natural resources, fish and wildlife, and wetland functions; and

WHEREAS, Grantor desires to preserve the Property in its natural condition in perpetuity;

NOW THEREFORE, in consideration of the above and the mutual covenants, terms, conditions and restrictions contained herein, and pursuant to the provisions of section 704.06, Florida Statutes. Grantor hereby voluntarily grants and conveys to Grantee a conservation easement in perpetuity over the Property of the nature and character and to the extent hereinafter set forth (the "Conservation Easement"). Grantor fully warrants title to said Property, and will warrant and defend the same against the lawful claims of all persons whomsoever.

1. Purpose. The purpose of this Conservation Easement is 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 the environmental value of the Property while allowing the continued use for environmental education, information and enjoyment by the Public. Specifically, natural grade

and/or elevated public pedestrian walkway(s) and observation area(s) permitted and authorized by the Grantee may use the property.

2. Prohibited Uses. Any activity on or use of the Property inconsistent with the purpose of this Conservation Easement is prohibited. Without limiting the generality of the forgoing, the following activities and uses are expressly prohibited:

a. Construction or placing buildings, roads, signs, billboards or other advertising, utilities or other structures on or above the ground with the exception of mitigation/enhancement activities approved as a part of an ERP Permit issued by the District and/or an Individual Permit and/or Nationwide Permit issued by the U.S. Army Corps of Engineers. Dumping or placing soil or other substance or material as landfill or dumping or placing of trash, waste or unsightly or offensive materials ground with the exception of mitigation/enhancement activities approved as a part of an ERP Permit issued by the District and/or an Individual Permit and/or Nationwide Permit issued by the U.S. Army Corps of Engineers.

b. Removing or destroying trees, shrubs, or other vegetation with the exception of areas to be enhanced/ restored as mitigation approved as part of an ERP Permit issued by the District and/or an Individual Permit and/or Nationwide Permit issued by the U.S. Army Corps of Engineers.

c. Excavating, dredging or removing loam, peat, gravel, soil, rock or other material substances in such a manner as to affect the surface.

d. Surface use, except for activities related to the existing forty (40) foot wide drainage easement, recorded in Official Records Book 549, Pages 991-994 of the public records of Flagler County, Florida, located along a portion of the extreme southerly boundary of the West Parcel as depicted in the attached Exhibit "A" and purposes that permit the land or water area to remain predominantly in its natural condition.

e. Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation.

f. Acts or uses detrimental to such retention of land or water areas.

g. Acts or uses detrimental to the preservation of the structural integrity or physical appearance of sites of properties of historical, architectural, archaeological, or cultural significance.

3. Reserved Rights. Grantor reserves unto itself, and its successors and assigns, all rights accruing from its ownership of the Property, including the right to engage in or permit or invite others to engage in all uses of the Property, that are not expressly prohibited herein and are not inconsistent with the purpose of this Conservation Easement.

4. Rights of Grantee. To accomplish the purposes stated herein, Grantor conveys the following rights to Grantee:

a. To enter upon and inspect the Property in a reasonable manner and at reasonable times to determine if Grantor or its successors and assigns are complying with the covenants and prohibitions contained in this Conservation Easement.

b. To proceed at law or in equity to enforce the provisions of this Conservation Easement and the covenants set forth herein, to prevent the occurrence of any of the prohibited activities set forth herein, and require the restoration of areas or features of the Property that may be damaged by and activity inconsistent with this Conservation Easement.

5. Grantee's Discretion. Grantee may enforce the terms of this Conservation Easement at its discretion, but if Grantor breaches any term of this Conservation Easement and Grantee does not exercise its rights under this Conservation Easement, Grantee's forbearance shall not be construed to be a waiver by Grantee of such term, or of any subsequent breach of the same, or any other term of this Conservation Easement, or of any of the Grantee's rights under this Conservation Easement. No delay or omission by Grantee in the exercise of any right or remedy upon any breach by Grantor shall impair such right or remedy or be construed as a waiver. Grantee shall not be obligated to Grantor, or to any other person or entity, to enforce the provisions of this Conservation Easement.

6. Grantee's Liability. Grantor will assume all liability of any injury or damage to the person or property of third parties which may occur on the Property arising from Grantor's ownership of the Property. Neither Grantors, nor any person or entity claiming by or through

Grantors, shall hold Grantee liable for any damage or injury to person or personal property which may occur on the Property.

7. Acts Beyond Grantor's Control. Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury to or change in the Property resulting from natural causes beyond Grantor's control, including, without limitation, fire, flood, storm and earth movement, or from any necessary action taken by Grantor under emergency conditions to prevent, abate or mitigate significant injury to the Property or to persons resulting from such causes.

8. Recordation. Grantor shall record this Conservation Easement in timely fashion in the Official Records of Flagler County, Florida, and shall rerecord it at any time Grantee may require to preserve its rights. Grantor shall pay all recording costs and taxes necessary to record this Conservation Easement in the public records. Grantor will hold Grantee harmless from any recording costs or taxes necessary to record this Conservation Easement in the public records.

9. Venue. The exclusive jurisdiction and venue for resolving any dispute relating to this easement shall be the Circuit Court of Flagler County, Florida

10. Successors. The covenants, terms, conditions and restrictions of this Conservation Easement shall be binding upon, and inure to the benefit of the parties hereto and their respective personal representatives, heirs, successors and assigns and shall continue as a servitude running in perpetuity with the Property.

IN WITNESS WHEREOF, Grantor has executed this Conservation Easement on the day and year first above written.

GRANTOR: FLAGLER COUNTY BOARD
OF COUNTY COMMISSIONERS

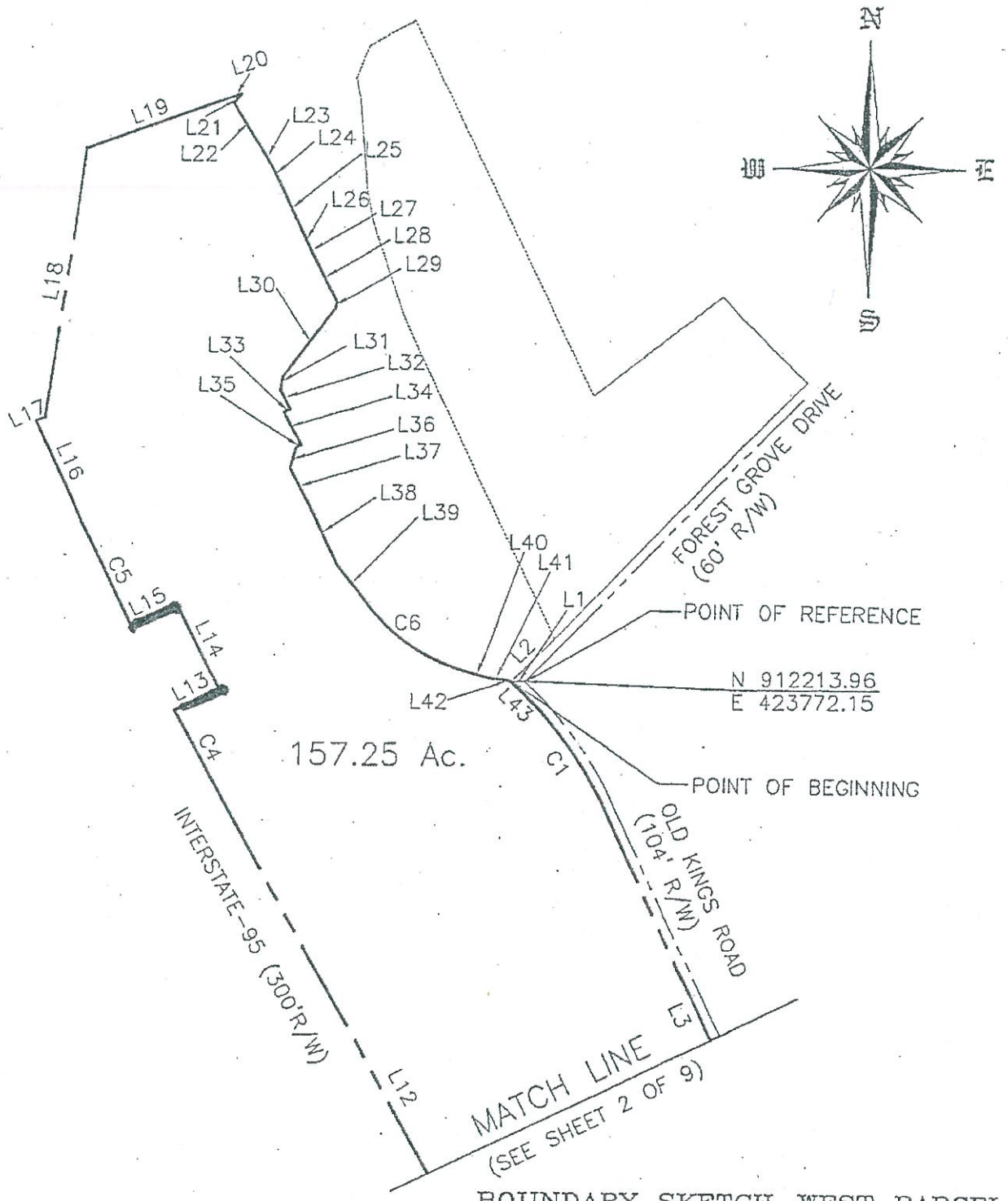
8.8.05
BY: _____
James A. Darby, Chairman

ATTEST: _____
Gail Wadsworth, Clerk and Ex Officio
Clerk to the Board of County
Commissioners of Flagler County

APPROVED AS TO FORM

_____
Carl Kern, County Attorney 7/20/05

EXHIBIT "A"



BOUNDARY SKETCH–WEST PARCEL

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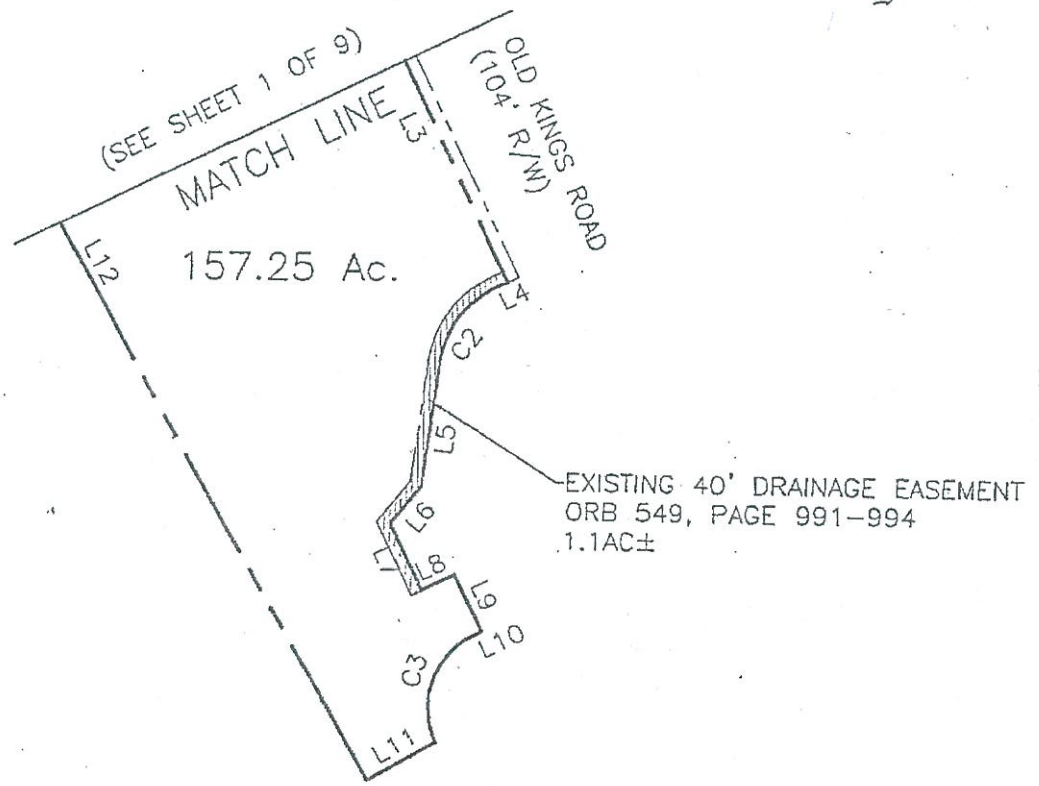
FLAGLER COUNTY
ENGINEERING
1200 EAST MOODY BOULEVARD, #7
BUNNELL, FLORIDA 32110
TEL. (386) 437-7496 FAX (386) 437-8212

SKETCH AND DESCRIPTION
ST. JOHNS RIVER WATER MANAGEMENT
DISTRICT CONSERVATION EASEMENT

MANTANZAS WOODS PARKWAY EXTENSION
SJRWMD PERMIT#4-035-83039-1

ISSUED 6/14/05

EXHIBIT "A"



BOUNDARY SKETCH-WEST PARCEL

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MANTANZAS WOODS PARKWAY EXTENSION
SJRWMD PERMIT#4-035-83039-1

8.5"x11" sheet = 600'
ISSUED 6/14/05

SHEET 2 OF 9

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EXHIBIT "A"

LINE TABLE		
LINE	LENGTH	BEARING
L1	56.57	S89°31'26"W
L3	1923.35	S25°37'42"E
L4	52.96	S64°22'18"W
L5	426.57	S08°03'42"W
L6	166.52	S38°38'06"W
L7	253.04	S25°37'42"E
L8	125.00	N64°22'18"E
L9	215.00	S25°37'42"E
L10	25.00	S64°22'18"W
L11	265.64	S60°16'53"W
L12	3968.73	N29°43'07"W
L13	206.51	N61°59'42"E
L14	397.80	N27°00'18"W
L15	211.00	S63°05'19"W
L16	428.24	N25°15'02"W
L17	40.00	N64°44'58"E
L18	1127.25	N08°24'38"E
L19	591.47	N70°02'55"E
L20	93.24	N70°02'40"E
L21	50.16	S40°07'00"W
L22	224.20	S32°44'21"E
L23	101.09	S30°48'24"E
L24	62.53	S26°42'37"E
L25	251.70	S26°15'00"E
L26	44.80	S26°37'16"E
L27	44.80	S26°37'12"E
L28	201.55	S26°59'51"E
L29	25.90	S05°42'45"W
L30	367.49	S37°06'30"W
L31	51.71	S06°51'07"W
L32	90.29	S26°35'06"E
L33	28.62	S61°56'54"W
L34	152.66	S28°38'58"E
L35	25.19	S56°27'43"W
L36	87.09	S15°02'22"W
L37	180.04	S28°21'35"E
L38	261.43	S25°18'31"E
L39	214.84	S38°16'50"E
L40	108.73	S74°24'13"E
L41	55.89	S85°58'52"E

LINE TABLE		
LINE	LENGTH	BEARING
L42	28.29	S73°32'05"E
L43	100.00	S45°28'35"E

REVISED 01/18/05

FLAGLER COUNTY
ENGINEERING
1200 EAST MOODY BOULEVARD, #7
BUNNELL, FLORIDA 32110
TEL. (386) 437-7496 FAX (386) 437-8212

SKETCH AND DESCRIPTION
ST. JOHNS RIVER WATER MANAGEMENT
DISTRICT CONSERVATION EASEMENT

MANTANZAS WOODS PARKWAY EXTENSION
SJRWMD PERMIT#4-035-83039-1

ISSUED 6/14/05

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EXHIBIT "A"

CURVE TABLE					
CURVE	RADIUS	LENGTH	DELTA	CHORD BRG	CHORD LENGTH
C1	1572.40	544.70	19°50'53"	S35°33'09"E	541.98
C2	325.00	319.41	56°18'36"	S36°13'00"W	306.71
C3	275.00	431.97	90°00'00"	S19°22'18"W	388.91
C4	17038.73	414.43	01°23'37"	N29°01'19"W	414.42
C5	17038.73	512.49	01°43'24"	N26°06'44"W	512.47
C6	806.00	508.16	36°07'23"	S56°20'31"E	499.78

REVISED 01/18/05

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ST. JOHNS RIVER WATER MANAGEMENT
DISTRICT CONSERVATION EASEMENT

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SJRWMD PERMIT#4-035-83039-1

ISSUED 6/14/05

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SKETCH AND DESCRIPTION EXHIBIT "A"

LEGAL DESCRIPTION

A PARCEL OF LAND BEING A PORTION OF PARCEL 612.02 ACCORDING TO THAT DEED RECORDED IN OFFICIAL RECORDS BOOK 637, PAGES 899 THROUGH 910, OF THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA, SAID PARCEL LYING EAST OF INTERSTATE-95 (300' R/W) WITHIN GOVERNMENT SECTIONS 26, 35 AND 36, TOWNSHIP 10 SOUTH, RANGE 30 EAST, FLAGLER COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS; A POINT OF REFERENCE BEING THE NORTHWEST CORNER OF THE SUBDIVISION PLAT FLORIDA PARK SECTION-10, PALM COAST, RECORDED IN MAP BOOK 6, PAGES 43 THROUGH 53, OF THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA, SAID POINT BEING THE INTERSECTION OF THE NORTHERLY RIGHT-OF-WAY LINE OF FOREST GROVE DRIVE (60'R/W) WITH THE WESTERLY RIGHT-OF-WAY LINE OF OLD KINGS ROAD (104'R/W) ALL ACCORDING TO SAID SUBDIVISION MAP SECTION-10; THENCE LEAVING THE BOUNDARY OF SAID SUBDIVISION MAP SECTION-10, SOUTH 89°31'26" WEST A DISTANCE OF 56.57 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION;

THENCE SOUTH 45°28'35" EAST A DISTANCE OF 100.00 FEET TO A POINT OF CURVATURE; THENCE SOUTHEASTERLY A DISTANCE OF 544.70 FEET ALONG THE ARC OF SAID CURVE TO THE RIGHT, CONCAVE SOUTHWESTERLY, HAVING A CENTRAL ANGLE OF 19°50'53", A RADIUS OF 1572.40 FEET, A CHORD BEARING OF SOUTH 35°33'09" EAST AND A CHORD DISTANCE OF 541.98 FEET TO A POINT OF TANGENCY; THENCE SOUTH 25°37'42" EAST A DISTANCE OF 1,923.35 FEET TO A POINT ON AFORESAID BOUNDARY OF SUBDIVISION MAP SECTION-10; THENCE ALONG THE BOUNDARY OF SAID SUBDIVISION MAP SECTION-10 THE FOLLOWING COURSES; SOUTH 64°22'18" WEST A DISTANCE OF 52.96 FEET TO A POINT OF CURVATURE; THENCE SOUTHWESTERLY A DISTANCE OF 319.41 FEET ALONG THE ARC OF SAID CURVE TO THE LEFT, CONCAVE SOUTHEASTERLY, HAVING A CENTRAL ANGLE OF 56°18'36", A RADIUS OF 325.00 FEET, A CHORD BEARING OF SOUTH 36°13'00" WEST AND A CHORD DISTANCE OF 306.71 FEET TO A POINT OF TANGENCY; THENCE SOUTH 08°03'42" WEST A DISTANCE OF 426.57 FEET; THENCE SOUTH 38°38'06" WEST A DISTANCE OF 166.52 FEET; THENCE SOUTH 25°37'42" EAST A DISTANCE OF 253.04 FEET; THENCE NORTH 64°22'18" EAST A DISTANCE OF 125.00 FEET; THENCE SOUTH 25°37'42" EAST A DISTANCE OF 215.00 FEET; THENCE SOUTH 64°22'18" WEST A DISTANCE OF 25.00 FEET TO A POINT OF CURVATURE; THENCE SOUTHWESTERLY A DISTANCE OF 431.97 FEET ALONG THE ARC OF SAID CURVE TO THE LEFT, CONCAVE SOUTHEASTERLY, HAVING A CENTRAL ANGLE OF 90°00'00", A RADIUS OF 275.00 FEET, A CHORD BEARING OF SOUTH 19°22'18" WEST AND A CHORD DISTANCE OF 388.91 FEET TO THE POINT OF INTERSECTION WITH A NON-TANGENT LINE; THENCE DEPARTING SAID BOUNDARY OF SUBDIVISION MAP SECTION-10 SOUTH 60°16'53" WEST A DISTANCE OF 265.64 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF INTERSTATE-95 (300' R/W); THENCE NORTH 29°43'07" WEST A DISTANCE OF 3,968.73 FEET TO A POINT OF CURVATURE; THENCE NORTHWESTERLY A DISTANCE OF 414.43 FEET ALONG THE ARC OF SAID CURVE TO THE RIGHT,CONCAVE NORTHEASTERLY, HAVING A CENTRAL ANGLE OF 01°23'37", A RADIUS OF 17,038.73 FEET, A CHORD BEARING OF NORTH 29°01'19" WEST AND A CHORD DISTANCE OF 414.42 FEET TO A POINT; THENCE DEPARTING SAID RIGHT-OF-WAY LINE OF INTERSTATE-95 (300' R/W) NORTH 61°59'42" EAST ALONG THE SOUTHERLY LINE OF A PARCEL RECORDED IN OFFICIAL RECORDS BOOK 852, PAGES 868 THROUGH 872, OF THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA, A DISTANCE OF 206.51 FEET; THENCE NORTH 27°00'18" WEST ALONG THE EASTERLY LINE OF SAID PARCEL A DISTANCE OF 397.80 FEET; THENCE SOUTH 63°05'19" WEST ALONG THE NORTHERLY LINE OF SAID PARCEL RECORDED IN BOOK 852, PAGE 868, A DISTANCE OF 211.00 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY OF INTERSTATE-95 (300' R/W), SAID POINT BEING ON A CURVE; THENCE 512.49 FEET ALONG THE ARC OF A CURVE TO THE RIGHT, CONCAVE NORTHEASTERLY, HAVING A CENTRAL ANGLE OF 01°43'24", A RADIUS OF 17,038.73 FEET, A CHORD BEARING OF NORTH 26°06'44" WEST AND A CHORD DISTANCE OF 512.47 FEET TO A POINT OF TANGENCY; THENCE NORTH 25°15'02" WEST A DISTANCE OF 428.24 FEET; THENCE DEPARTING THE EASTERLY RIGHT-OF-WAY LINE OF INTERSTATE-95 (300' R/W) NORTH 64°44'58" EAST ALONG THE SOUTHERLY LINE OF THE PARCEL DESCRIBED IN OFFICIAL RECORDS BOOK 793, PAGES 499 THROUGH 501, OF THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA, A DISTANCE OF 40.00 FEET; THENCE NORTH 08°24'38" EAST A DISTANCE OF 1,127.25 FEET; THENCE NORTH 70°02'55" EAST A DISTANCE OF 591.47 FEET; THENCE NORTH 70°02'40" EAST FOR A DISTANCE OF 93.24 FEET, THENCE DEPARTING THE SOUTHERLY LINE OF THE PARCEL DESCRIBED IN OFFICIAL RECORDS BOOK 793, PAGES 499 THROUGH 501,OF THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA, SOUTH 40°07'00" WEST A DISTANCE OF 50.16 FEET;

FLAGLER COUNTY
ENGINEERING
1200 EAST MOODY BOULEVARD, #7
BUNNELL, FLORIDA 32110
TEL. (386) 437-7496 FAX (386) 437-8212

SKETCH AND DESCRIPTION
ST. JOHNS RIVER WATER MANAGEMENT
DISTRICT CONSERVATION EASEMENT

MANTANZAS WOODS PARKWAY EXTENSION
SJRWMD PERMIT#4-035-83039-1

ISSUED 6/14/05

SKETCH AND DESCRIPTION
LEGAL DESCRIPTION CONTINUED

EXHIBIT "A"

THENCE SOUTH 32°44'21" EAST A DISTANCE OF 224.20 FEET; THENCE SOUTH 30°48'24" EAST A DISTANCE OF 101.09 FEET; THENCE SOUTH 26°42'37" EAST A DISTANCE OF 62.53 FEET; THENCE SOUTH 26°15'00" EAST A DISTANCE OF 251.70 FEET; THENCE SOUTH 26°37'16" EAST A DISTANCE OF 44.80 FEET; THENCE SOUTH 26°37'12" EAST A DISTANCE OF 44.80 FEET; THENCE SOUTH 26°59'51" EAST A DISTANCE OF 201.55 FEET; THENCE SOUTH 05°42'45" WEST A DISTANCE OF 25.90 FEET; THENCE SOUTH 37°06'30" WEST A DISTANCE OF 367.49 FEET; THENCE SOUTH 06°51'07" WEST A DISTANCE OF 51.71 FEET; THENCE SOUTH 26°35'06" EAST A DISTANCE OF 90.29 FEET; THENCE SOUTH 61°56'54" WEST A DISTANCE OF 28.62 FEET; THENCE SOUTH 28°38'58" EAST A DISTANCE OF 152.66 FEET; THENCE SOUTH 56°27'43" WEST A DISTANCE OF 25.19 FEET; THENCE SOUTH 15°02'22" WEST A DISTANCE OF 87.09 FEET; THENCE SOUTH 28°21'35" EAST A DISTANCE OF 180.04 FEET; THENCE SOUTH 25°18'31" EAST A DISTANCE OF 261.43 FEET; THENCE SOUTH 38°16'50" EAST A DISTANCE OF 214.84 FEET TO A POINT OF CURVATURE; THENCE SOUTHEASTERLY A DISTANCE OF 508.16 FEET ALONG THE ARC OF SAID CURVE TO THE LEFT, CONCAVE NORTHEASTERLY, HAVING A CENTRAL ANGLE OF 36°07'23", A RADIUS OF 806.00 FEET, A CHORD BEARING OF SOUTH 56°20'31" EAST AND A CHORD DISTANCE OF 499.78 FEET TO A POINT OF TANGENCY; THENCE SOUTH 74°24'13" EAST A DISTANCE OF 108.73; THENCE SOUTH 85°58'52" EAST A DISTANCE OF 55.89 FEET; THENCE SOUTH 73°32'05" EAST A DISTANCE OF 28.29 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION.

PARCEL CONTAINING 157.25 ACRES MORE OR LESS

NOTES:

1. BEARINGS LOCALLY REFERENCED TO THE NORTH RIGHT OF WAY LINE OF FOREST GROVE DRIVE ACCORDING TO THE PLAT OF FLORIDA PARK SECTION-10, MAP BOOK 6, PAGES 43 THROUGH 53, OF THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA, BEING SOUTH 44°31'25" WEST.
2. THERE MAY BE ADDITIONAL EASEMENTS, RESTRICTIONS AND/OR OTHER MATTERS NOT SHOWN ON THIS DRAWING, WHICH MAY BE FOUND IN THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA.
3. THIS IS NOT A BOUNDARY SURVEY.

S:\Mantanzas Woods Parkway Extension II\Easement sketches\MWP-SJRWMD-153.70AC Complete Description (as REVISED(-5-05).rtf

S:\Mantanzas Woods Parkway Extension II\Easement sketches\dwgs\sjrwmd conservation01.dwg 1/24/2005 10:15:58 AM EST

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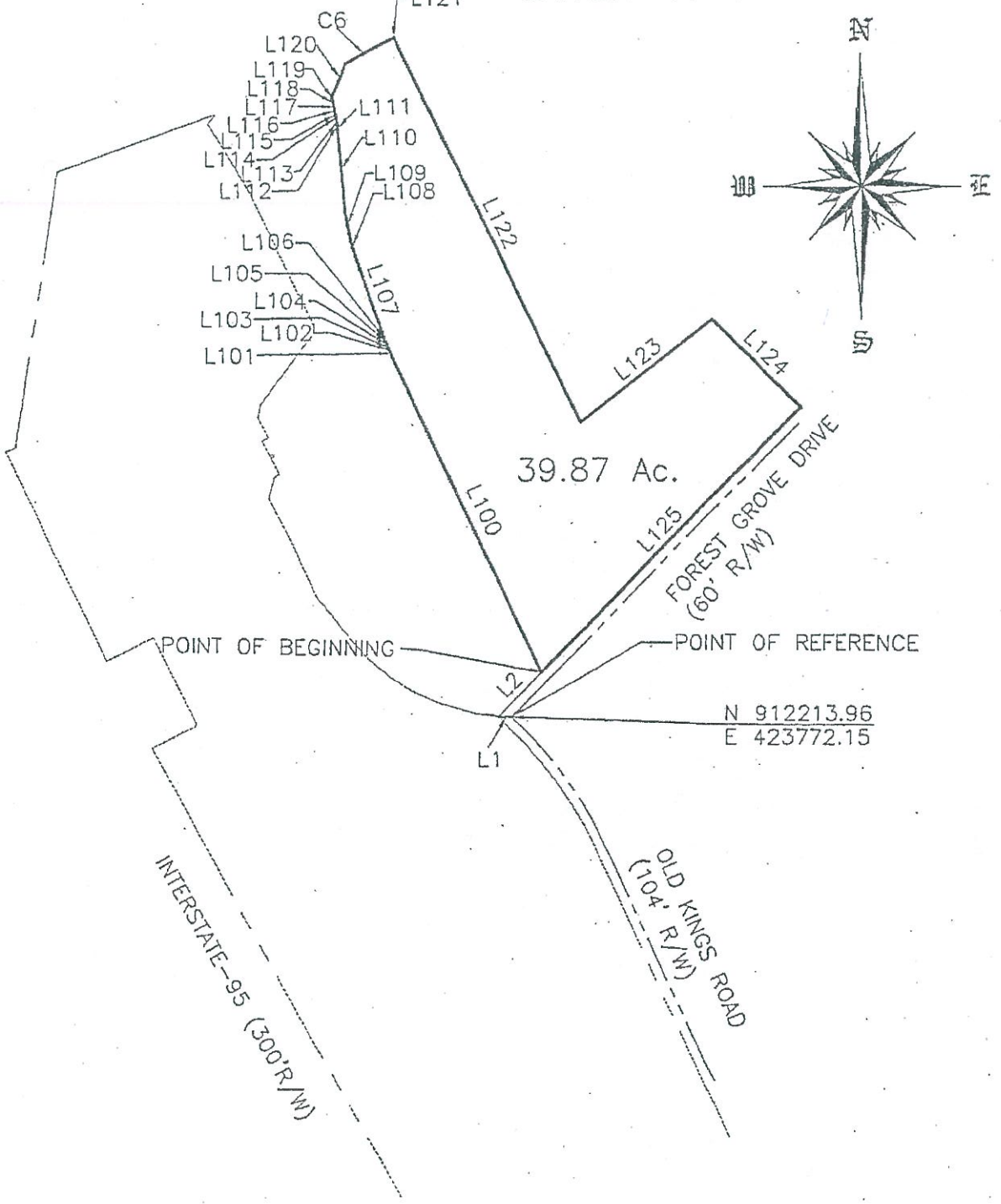
ST. JOHNS RIVER WATER MANAGEMENT
DISTRICT CONSERVATION EASEMENT

MANTANZAS WOODS PARKWAY EXTENSION
SJRWMD PERMIT#4-035-83039-1

ISSUED 6/14/05

EXHIBIT "A"



BOUNDARY SKETCH–EAST PARCEL

FLAGLER COUNTY ENGINEERING 1200 EAST MOODY BOULEVARD, #7 BUNNELL, FLORIDA 32110 TEL. (386) 437-7496 FAX (386) 437-8212	SKETCH AND DESCRIPTION ST. JOHNS RIVER WATER MANAGEMENT DISTRICT CONSERVATION EASEMENT MANTANZAS WOOD PARKWAY EXTENSION SJRWMD PERMIT #4-035-83039-1	ISSUED 6/14/05 SHEET 7 OF 9

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EXHIBIT "A"

LINE TABLE		
LINE	LENGTH	BEARING
L1	56.57	S89°31'26"W
L2	253.91	N44°31'34"E
L100	1429.28	N25°37'57"W
L101	11.71	N25°10'04"W
L102	12.71	N24°12'25"W
L103	12.71	N23°12'25"W
L104	12.71	N22°12'25"W
L105	12.71	N21°12'25"W
L106	12.71	N20°12'29"W
L107	356.06	N19°42'25"W
L108	57.08	N17°27'37"W
L109	126.90	N10°12'49"W
L110	326.15	N05°12'49"W
L111	8.07	N05°28'44"W
L112	15.22	N06°14'38"W
L113	15.22	N07°14'38"W
L114	15.22	N08°14'38"W
L115	15.22	N09°14'38"W
L116	15.22	N10°14'38"W
L117	15.22	N11°14'38"W
L118	15.22	N12°14'38"W
L119	15.22	N13°14'43"W
L120	144.55	N21°43'20"E
L121	11.75	N58°22'07"E
L122	1730.00	S26°15'10"E
L123	684.15	N52°42'41"E
L124	501.82	S45°28'35"E
L125	1510.98	S44°31'25"W

CURVE TABLE					
CURVE	RADIUS	LENGTH	DELTA	CHORD BRG	CHORD LENGTH
C6	2116.00	212.06	5°44'32"	N61°44'33"E	211.98

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SKETCH AND DESCRIPTION
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT CONSERVATION EASEMENT

MANTANZAS WOOD PARKWAY EXTENSION
MATANZAS WOODS PARKWAY

ISSUED 6/14/05

SKETCH AND DESCRIPTION EXHIBIT "A"

LEGAL DESCRIPTION

A PARCEL OF LAND BEING A PORTION OF PARCEL 612.02 ACCORDING TO THAT DEED RECORDED IN OFFICIAL RECORDS BOOK 637, PAGES 899 THROUGH 910 OF THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA, SAID PARCEL LYING EAST OF INTERSTATE-95 (300' R/W) WITHIN GOVERNMENT SECTIONS 25, 26, 35 AND 36, TOWNSHIP 10 SOUTH, RANGE 30 EAST, FLAGLER COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS;

A POINT OF REFERENCE BEING THE NORTHWEST CORNER OF THE SUBDIVISION PLAT FLORIDA PARK SECTION-10, PALM COAST, RECORDED IN MAP BOOK 6, PAGES 43 THROUGH 53, OF THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA, SAID POINT BEING THE INTERSECTION OF THE NORTHERLY RIGHT-OF-WAY LINE OF FOREST GROVE DRIVE (60'R/W) WITH THE WESTERLY RIGHT-OF-WAY LINE OF OLD KINGS ROAD (104'R/W) ALL ACCORDING TO SAID SUBDIVISION MAP SECTION-10; THENCE SOUTH 89°31'26" WEST A DISTANCE OF 56.57 FEET; THENCE ALONG A LINE 40.00 FEET NORTHWESTERLY OF AND PARALLEL TO THE BOUNDARY OF SAID SUBDIVISION MAP SECTION-10, NORTH 44°31'34" EAST A DISTANCE OF 253.91 FEET, TO THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE NORTH 25°37'57" WEST A DISTANCE OF 1,429.28 FEET; THENCE NORTH 25°10'04" WEST A DISTANCE OF 11.71 FEET; THENCE NORTH 24°12'25" WEST A DISTANCE OF 12.71 FEET; THENCE NORTH 23°12'25" WEST A DISTANCE OF 12.71 FEET; THENCE NORTH 22°12'25" WEST A DISTANCE OF 12.71 FEET; THENCE NORTH 21°12'25" WEST A DISTANCE OF 12.71 FEET; THENCE NORTH 20°12'29" WEST A DISTANCE OF 12.71 FEET; THENCE NORTH 19°42'25" WEST A DISTANCE OF 356.06 FEET; THENCE NORTH 17°27'37" WEST A DISTANCE OF 57.08 FEET; THENCE NORTH 10°12'49" WEST A DISTANCE OF 126.90 FEET; THENCE NORTH 05°12'49" WEST A DISTANCE OF 326.15 FEET; THENCE NORTH 05°28'44" WEST A DISTANCE OF 8.07 FEET; THENCE NORTH 06°14'38" WEST A DISTANCE OF 15.22 FEET; THENCE NORTH 07°14'38" WEST A DISTANCE OF 15.22 FEET; THENCE NORTH 08°14'38" WEST A DISTANCE OF 15.22 FEET; THENCE NORTH 09°14'38" WEST A DISTANCE OF 15.22 FEET; THENCE NORTH 10°14'38" WEST A DISTANCE OF 15.22 FEET; THENCE NORTH 11°14'38" WEST A DISTANCE OF 15.22 FEET; THENCE NORTH 12°14'38" WEST A DISTANCE OF 15.22 FEET; THENCE NORTH 13°14'43" WEST A DISTANCE OF 15.22 FEET; THENCE NORTH 21°43'20" EAST A DISTANCE OF 144.55 FEET TO A POINT OF CURVATURE; THENCE NORTHEASTERLY A DISTANCE OF 212.06 FEET ALONG THE ARC OF SAID CURVE TO THE LEFT, CONCAVE NORTHWESTERLY, HAVING A CENTRAL ANGLE OF 5°44'32", A RADIUS OF 2,116.00 FEET, A CHORD BEARING OF NORTH 61°44'33" EAST AND A CHORD DISTANCE OF 211.98 FEET TO THE POINT OF INTERSECTION WITH A NON-TANGENT LINE; THENCE NORTH 58°22'07" EAST A DISTANCE OF 11.75 FEET; THENCE SOUTH 26°15'10" EAST A DISTANCE OF 1,730.00 FEET; THENCE NORTH 52°42'41" EAST A DISTANCE OF 684.15 FEET; THENCE SOUTH 45°28'35" EAST A DISTANCE OF 501.82 FEET; THENCE SOUTH 44°31'25" WEST A DISTANCE OF 1,510.98 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION.

PARCEL CONTAINING 39.87 ACRES MORE OR LESS

NOTES:

1. BEARINGS LOCALLY REFERENCED TO THE NORTH RIGHT OF WAY LINE OF FOREST GROVE DRIVE ACCORDING TO PLAT OF FLORIDA PARK SECTION-10, MAP BOOK 6, PAGES 43 THROUGH 53, OF THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA, BEING SOUTH 44°31'25" WEST.
2. THERE MAY BE ADDITIONAL EASEMENTS, RESTRICTIONS AND/OR OTHER MATTERS NOT SHOWN ON THIS DRAWING, WHICH MAY BE FOUND IN THE PUBLIC RECORDS OF FLAGLER COUNTY, FLORIDA.
3. THIS IS NOT A BOUNDARY SURVEY.

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SKETCH AND DESCRIPTION
ST. JOHNS RIVER WATER MANAGEMENT
DISTRICT CONSERVATION EASEMENT

MANTANZAS WOOD PARKWAY EXTENSION
MATANZAS WOODS PARKWAY

ISSUED 6/14/05

Comments on the October 2010 Final Interchange Justification Report.

A. Comments from Bikram Wadhawan, FDOT Central Office November 23, 2010.

1. Comment 3 from August 2010 submittal has not been addressed. Figure 4-3 (previously figure 5) still shows 2 eastbound lanes at the intersection.

   Response: Figure 4-3 has been corrected to show 3 eastbound lanes at Palm Coast Parkway and NW/Cypress Point Parkway. The related intersection analysis was audited and updated as needed in Table 4-2 (now Table 4-1) and Appendix VI.

2. Remove Table 4-1 from the report.

   Response: Table 4-1 has been removed as well as reference to that table in the text. All section 4 tables have been renumbered accordingly.

3. Rename "Wide Diamond" to "Diamond" interchange throughout the document.

   Response: The wide diamond is specifically referenced since it is the only diamond configuration (as opposed to a tight diamond) that will allow the initial 2015 design to keep Matanzas Woods Parkway and the bridge at two lanes. A tight diamond would not have sufficient space between the two lane bridge and ramp intersections to provide a left turn lane onto the ramps with sufficient storage. A sub-section has been added (10.2.4 Design Considerations) under section 10 Recommendations, to explain why the wider design is necessary to maintain that two lane option.

4. Response 10b to comment 10 on August 2010 submittal is not satisfactory. The lane configuration in the cost feasible model should be included in the No-Build. What was the reason for modeling Matanzas Woods Pkwy as 2 lanes in the future No-Build condition when the cost feasible model has it as 4 lanes?

   Response: The cost feasible model had Matanzas Woods Parkway as 2 lanes between US-1 and Old Kings Road. One of the 2025 model refinements as noted in the Technical Memorandum (April 26, 2010) included 4 lanes for Matanzas Woods Parkway from US-1 to Old Kings Road. There were numerous discussions and meetings regarding model approach with the FDOT. The approved methodology included maintaining Matanzas Woods Parkway as 4 lanes for the modeling of both the Build and No Build for consistency in the analysis, and to avoid having a potential constrained condition skew the comparison of Build and No Build model output. On page 11 of the April 26, 2010 Technical Memorandum it states "*The 2025 adjusted model, including all of the zonal, roadway and model parameter revisions, was run for both the Build and No Build scenarios of the Matanzas Woods Parkway interchange".*

5. Comment 18 from August 2010 submittal has not been fully addressed. Table 8-8 still shows that storage length of 350 feet does not meet queue length requirement for I-22, EBL movement.

   Response: The storage was previously increased, but the YES/NO box was not updated. The NO (inadequate storage) has been corrected to YES (adequate storage).

6. Remove arterial information (volumes and LOS) from Tables 8-1, 8-2 and 8-3. Show only information pertaining to I-95.

   Response: Table 8-1 is now a consolidation of Tables 8-1, 8-2 and 8-3 and only shows information for I-95. Remaining tables in section 8 have been appropriately renumbered.

7. Remove Section 10.3 from the report.

   Response: Section 10.3 has been removed.

8. Remove Consultant name from CD cover and foot notes under the tables.

   Response: Consultant name and logo have been removed.

B. Comments from Mansoor Khuwaja HDR November 22, 2010.

1. Table 4-3: Foot Notes are missing.

   Response: Reference footnotes for the factors applied in the table have been added, the table is now Table 4-2.

2. Page 4-10: A reference is given to Table 7-10. That Table should be 4-10.

   Response: Table 7-10 has been re-labeled as 4-9 (to account for the removal of Table 4-1).

3. Page 4-20: The table should read 4-10.

   Response: Table 4-10 is now Table 4-9 due to the removal of Table 4-1.

C. Comments from Sean Castello, Ghyabi & Associates November 22, 2010.

1. Table 8-6 – The border on the right side of the table is missing.

   Response: The border has been fixed, it is now Table 8-4.

2. Table 8-8 – For the Year 2035 in the PM Peak Hour columns, I-22 should be labeled as “yes”.

Response: This has been corrected; see comment A-5. The table is now Table 8-6 due to the removal/consolidation of Tables 8-2 and 8-3.

3. General: Intersection I-11 (Palm Coast Parkway at Old Kings Road) - The NB and SB approach should use a split phasing since a single left turn lane along with a shared left-through lane should not run permitted due to safety reason. Running these approaches as splits would also significantly reduce the overall delay experienced at this intersection.

   Response: The signal timing was coded as shown to replicate the existing timing, cycle length and phasing provided by the City. While coded as "permissive", in this case the note "permissive" relates to the conflict with the pedestrian phase which runs concurrently with both split phases. The signal is analyzed as a split phase. Coding it as a split phase in Synchro forces the software to add an exclusive pedestrian phase, which also increases the cycle length. As coded, it operates as a split phase, consistent with existing conditions. This coding routine is discussed in the Synchro Studio 7 User Guide page 21-16.

Comments on the August 4, 2010 Submittal of the Draft Interchange Justification Report

Comments from Central Office FDOT — Responses October 2010

General Document Comments:

- It is recommended that the document follow the format for IJRs outlined in the Interchange Handbook.

  Response: The document format has been revised to generally be more consistent with section 2.3.3.1 *Suggested Document Format* in the Interchange Handbook. This reformatting has caused the sections, tables and figures to be renumbered and relocated in the document. Responses to comments on tables or figures provide the new numbers with the responses for ease of review.

- Provide an Executive Summary at the beginning of the document. Include a stand alone "Need" Section in the document.

  Response: An Executive Summary has been provided at the beginning of the IJR and includes discussion of the FHWA eight requirements for interchange approval as suggested in the Interchange Handbook. The Need section has been expanded as a standalone section (See 5.0 NEED).

- Please provide figures in the report showing directional daily and peak hour volumes on I-95 mainline and ramps for existing and future years. Also show intersection turning movement volumes on figures for future years No-Build and Build scenarios. There are no tables or figures in the report showing future years AM and PM peak hour ramp volumes.

  Response: All future year AADT figures already show AADT on I-95 mainline and ramps. Existing AADT figures have been revised to include I-95 mainline and ramps. Directional daily and peak hour volume figures and future year intersection turning movement figures are now provided for existing and future years.

- A lot of unnecessary information has been provided in the document. For example arterial analysis, daily volume analyses etc are not required in Interchange documents.

  Response: Daily volumes are reported but no longer analyzed for Level of Service. The arterial analysis was requested during an earlier review but has been deleted with the exception of I-95 mainline where static segment LOS and HCS arterial LOS is provided.

- Under Alternatives, provide discussion on Transportation System Management (TSM) and Transportation Demand Management (TDM) alternatives.

  Response: Discussion has been added as requested.

- The IJR does not make a recommendation on the preferred interchange configuration: diamond or partial cloverleaf. A preferred alternative should be recommended based on operational analyses results, cost comparison and preliminary environmental and social impacts. Include an Alternatives Comparison table in the document comparing the No-Build and the two Build alternatives based on traffic operational performance, environmental impacts (air quality, contamination sites, navigable waterways, wetlands, noise sites, schools, churches, historical sites) and cost.

  Response: A new section has been added; 10.0 Recommendation. The section discusses the recommendation for Build alternative as well as the configuration. A comparison matrix has been added for the applicable criteria (See Tables 8-10 and 8-11).

- The IJR should include preliminary environmental impacts of the Build alternatives such as information on contamination sites, impacts to wetlands (acres) and impacts to community facilities or cultural features. Also indicate if Flagler County is currently a maintenance area for air quality. The IJR should also include ROW and Construction costs of the Build alternatives.

  Response: Environmental Impacts are included in section; 4.0 Existing Conditions. The analysis and applicable environmental criteria are part of the comparison matrix in section; 8.0 Alternatives Analysis. Flagler County is a maintenance area. Costs have been included and discussed in section 6.0 Alternatives, and 10.0 Recommendation.

- The results of future years No-Build and Build mainline, ramps and intersections are provided in tables included in the report but there is no discussion of results in the text. It is recommended to include discussion on results of mainline, ramps and intersections highlighting benefits of the Build alternative as compared to the No-Build.

  Response: Discussion has been added.

- Remove Consultant names from front cover, figures and any other inside pages of the document.

  Response: Consultant names have been removed.

Specific Comments on the Document:

Comment 1: Table 1, Page 3 – The adopted LOS mentioned for US-1 in the table is "D" for rural facility. US-1 is a state highway and the adopted LOS should be based on FDOT's 2002 QLOS Handbook. As per the Handbook, LOS for rural state highways is "B". Please check and make revisions as needed.

Response 1: The Handbook under Applicability of Standards cites Chapter 2009-96 and states that for FIHS and TRIP funded roads not part of the SIS; local governments may establish their own standards for these transportation facilities. US-1 is not designated a SIS roadway. Regardless of a final determination on this issue, as indicated in Tables 8-1 through 8-3 the LOS of US-1 does not fall below LOS-B for any alternative,

2015 through 2035. Table 1 is now Table 3-1.

Comment 2: Table 1, Page 3 – Footnote 2 under the table states that adopted LOS obtained from City of Palm Coast's Transportation Facility Status Report. For interstates and state highways, the adopted LOS standard should be obtained from Department's QLOS Handbook. Please revise.

Response 2: Footnote 2 has been expanded to include reference to FDOT/LOS standards. Table 1 is now Table 3-1.

Comment 3: Figure 5 – For Palm Coast Pkwy NW/Cypress Point Pkwy intersection, 2 eastbound lanes are shown in the figure but aerial photography (from Google) shows 3 eastbound lanes. The third through lane is a shared through/right turn lane. Please check.

Response 3: Lane geometry has been corrected to a shared through/right lane. Figure 5 is now Figure 4-3.

Comment 4: Table 4, Page 24 – Please provide source/analysis tool for the 2009 Daily and Peak Hour LOS values listed in the table.

Response 4: A footnote [5] has been added to table 4 as "Roadway Level of Service based on the 2009 FDOT Quality/Level of Service Handbook Generalized Tables. Table 4 is now Table 4-1.

Comment 5: Table 4, Page 24 – IJRs are operational documents that include analyses for peak hour and not daily volumes. Please remove daily maximum service volume and daily LOS information from this table and any other locations in the report.

Response 5: Daily service volume and LOS information has been removed from the document. Table 4 is now Table 4-1.

Comment 6: Figure 7 – Traffic volumes along I-95 are not balanced. Please check. Also provide ramp volumes in this figure.

Response 6: Figure 7 has been revised to show balanced I-95 volumes. Figure 7 is now Figure 4-5.

Comment 7: Intersections analyses – It is mentioned on page 8 of the report that Synchro was used to code operations of signalized intersections. But analyses results provided in later sections of the report show HCS results for intersections. It is recommended that all signalized intersections analyses be done using Synchro and not HCS. Please remove intersections results based on HCS and provide only results from Synchro.

Response 7: HCS analysis has been removed from all signalized intersections and Synchro analysis has been applied. All unsignalized intersection analyses will remain in HCS.

Comment 8: Table 9 – HCS is not the appropriate tool for estimating queue lengths. Please use Synchro to

perform queue analyses at intersections.

Response 8: Queue length analysis will be based on Synchro at signalized intersections and HCS will be applied for unsignalized intersections. Table 9 is now located in Appendix XI.

Comment 9: Section VI.2, page 66 – Under "US-1 between I-95 and Matanzas Woods Parkway", it is mentioned that the 2015 Build AADT was developed by comparing the 2015 No Build CFRPM volume to the 2015 Build CFRPM volumes. Please check this sentence. Shouldn't the comparison be between 2025 No Build and 2025 Build CFRPM volumes?

Response 9: No. The 2015 No Build and 2015 Build was used to only derive the difference between these alternatives. That difference was then added to the interpolated 2015 that was derived by comparing 2009 to 2025 to correct for No Build volume that was lower than existing. This is the correct procedure to estimate 2015 Build in this particular instance.

Comment 10: The CFRPM 4.5 model shows Belle Terre as 4 lanes south of Matanzas Woods Parkway in year 2012 and year 2025. But figures 23-26 in the document show Belle Terre as 2 lanes for this section. The model shows Matanzas Parkway as 4 lanes in year 2025. But figure 25 in the document shows Matanzas as 2 lanes under No-Build condition. The laneage shown in the cost feasible model should be incorporated in the No-Build and Build scenarios. Please check and revise the report and analyses.

Response 10a: The City's Belle Terre Parkway Four Laning project indicates that Belle Terre is a 4-lane road south of Matanzas Woods Parkway for all future years. In the figures 23-26, the northbound approach has two full lanes that are delineated as one through lane and the other becomes one exclusive right turn lane. Belle Terre Parkway's southbound approach has one full lane which is a shared through/right turn lane. The southbound departure is two lanes. Each approach has a separate left turn pocket. The figures only show entering laneage but not departure laneage, and are therefore correct. Figures 23-26 are now Figures 7-19 through 7-22.

Response 10b: Matanzas Woods Parkway was intentionally assumed to remain as a two lane roadway between Belle Terre Parkway and Old Kings Road for No Build alternatives. Build alternatives for 2025 and 2035 assumed that the road would be four lanes. The 2025 forecast for the No Build alternative in this section is well within the adopted MSV. The LOS only deteriorates in the No Build by 2035. However, the LOS for Matanzas Woods Parkway is not used for justification of the interchange proposal.

Comment 11: Please provide a Legend for figures 27 and 28.

Response: Legends have been added for figure 27 and 28. These figures are now Figure 6-1 and 6-3.

Comment 12: Existing conditions, Synchro Analyses – There are 2 eastbound through lanes entering the Palm Coast Pkwy NE/Palm Coast Pkwy intersection but no receiving lanes at any downstream intersections.

Please check and correct network coding in the Synchro model. Also check this coding in the future years Synchro models.

Response 12: Synchro networks have been corrected accordingly.

Comment 13: Year 2015, Synchro Analyses – At the Old Kings Road/Palm Coast Pkwy intersection, the storage length for the westbound left turn lane is more than the length of the link. Please correct this in the year 2015 model and other future year models.

Response 13: Synchro networks have been revised to correct the storage length.

Comment 14: Intersection Analyses – The channelized or free flow right turn movements have been coded as stop/signal controlled in both HCS and Synchro analyses. For example, under existing conditions, at I-95 NB/US 1 ramp terminal intersection, the southbound right turn lane and westbound (at off ramp) right turn lane are free flow but they have been coded as stop controlled/non channelized in the HCS and Synchro analyses. Please check and correct the coding of right turn movements under existing and future years analyses.

Response 14: Both southbound right turn lane and westbound right turn lane will be revised to be channelized with yield control. However, the westbound right turn lane is not free flow since it merges into the northbound through lane immediately after turning right. Also, the southbound right turn traffic cannot be free flow due to merging with the traffic from northbound left turn.

Comment 15: Figure 8, I-95 East and West Ramps/Palm Coast Parkway intersections – The traffic volumes through the intersections are not balanced. At the I-95 West Ramp, the EB through volume during AM peak hour is 1269 and the SB left turn volume is 56. Therefore the total volume going through the intersection is 1325. The volume arriving at the I-95 East Ramp in the EB direction is 1128(through) plus 147(left turn) = 1275. Please check.

Response 15: The typo on Figure 8 has been revised. Eastbound through volume is 1219 not 1269. Figure 8 is now Figure 4-6.

Comment 16: Page 94, Section VII.1 Second paragraph – It is mentioned that a second left turn lane will be needed at the southbound I-95 ramp terminal intersection and Palm Coast Pkwy. Add text clarifying that the second left turn lane is needed for both the No-Build and Build conditions. Also mention that the analyses show a reduction in intersection delay under the Build condition as compared to the No-Build.

Response 16: Text has been added to that effect.

Comment 17: Page 112, Section VII.4 – It is mentioned in this section that all the ramps operate at acceptable LOS D or better. Is LOS D the acceptable LOS for I-95? As per Table 1 on page 3, the acceptable LOS on I-95 is C. The ramps should have the same LOS standards as the mainline.

Response 17: There are a minimum number of ramp analysis periods out of all the analysis years, AM and PM, that result in LOS-D. These are discussed in detail in the ramps section of 8.4.5 Ramp Analysis in 8.0 *Alternatives Analysis*. It should also be noted that many of these LOS-D conditions occur for No Build as well as Build alternatives.

Comment 18: Page 118, Table 46 – It is indicated in the Table that the storage length does not meet queue length requirement for I-22, EBL movement. Why? For the proposed interchange adequate storage lengths need to be provided to accommodate queue lengths obtained from intersection analyses.

Response 18: We agree with the comment. The EBL storage was increased from 350 feet to 400 feet to accommodate queue lengths. Table 46 is now Table 8-9.

Comment 19: The intersections along Palm Coast Pkwy have been coded as "Pretimed". It is recommended to code these intersections as "actuated coordinated".

Response 19: Intersections along Palm Coast Pkwy have been revised to be actuated, coordinated, or fully actuated in the Synchro network based on the actual signal timing sheets.

Comment 20: Page 119, Section X Conceptual Funding Plan – Information provided in this section is not adequate. Please provide more information on funding plan and sources in this section. Is funding currently available for any project phases other than the IJR? Also mention if there are any agreements at this time between the funding sources.

Response 20: Conceptual Funding Plan information has been expanded to include as much information as available at this time. See section 9.0 Funding Plan.

Comment 21: Provide a conceptual signing plan (11*17) for the Build alternative.

Response 21: A conceptual signing plan has been added to the report. FHWA interchange proposal policy/criteria # 3 (2009) now requires a signing plan for each design alternative. Both have been added as Figure 6-4 and Figure 6-5.

<u>Comments from Mansoor Khuwaja, DIRC District 5/HDR Engineering, INC.</u>

While we are still waiting on the comments from Jon Weiss and Central Office, I am forwarding you the comments from John Zielinski. I will send you the rest of the comments as soon as I receive them. After you receive all comments, please prepare a response for each comment on how it was addressed and include it as an appendix to the IJR. After you incorporated all comments, we will review the final IJR in-house and then submit it to FHWA for their review and approval. Here are the comments from John Zielinski's group:

1. Overall, the consultant has done a good job of conducting a thorough analysis and documenting the results. However, the organization of the document could be improved significantly – too much details in the body of the report is diluting the big picture message for the reviewer – the figures, tables, and discussions within the body of the report could be simplified for a better understanding of the results (as opposed to the data or the analysis) – the details could be included in the appendix. The entire sub area model refinement section, for example, could be moved to the appendix section.

   Response 1: The IJR document has been reorganized to be generally consistent with section 2.3.3.1 of the Interchange Handbook. The Sub-are Model Refinement / Adjustments section has been moved into the Appendix with other refinement/validation documents

2. FHWA doesn't receive draft IJR – delete draft stamp before submittal to FHWA.

   Response 2: "Draft" has been deleted.

3. Add a signature/ approval page in the front (see example attached – Please update with latest names).

   Response 3: Signature page has been added with current names and titles.

4. Include an Executive Summary (2 pages or so, see attached example).

   Response 4; Executive Summary has been added. Per the Interchange Handbook, the eight FHWA requirements should be addressed in this section, which expanded the section to four pages.

5. Section IV (page 22) – rename section name to "Existing Conditions Analysis."

   Response 5: Section has been reorganized into 3.0 Existing Conditions, and 4.0 Existing Operational Performance; consistent with the Interchange Handbook 2.3.3.1.

6. Figure 7: change 2009 pm peak hour EB directional volume east of Palm Coast Pkwy at I-95 NB ramp terminus from 1,1802 to 1,802 (typo in Detail A inset).

   Response 6: The typo in Figure 7 has been corrected. Figure 7 is now Figure 4-5.

7. Table 12 (page 44) – footnote [4] - change "peak season directional volume" to "peak hour directional volume" as the counts have been adjusted for seasonality.

   Response 7: The footnotes in Table 12 have been rearranged due to the removal of daily volumes as mentioned in FDOT Central Office Comment 5. Previous note [4] becomes note [2] which will be revised to: 2009 AM and PM peak hour directional volumes derived by applying the PSCF Axle factor to the link count.

8. Table 15 and Table 16: tables missing segments of Matanzas Woods Pkwy.

   Response 8: Table 15 included all segments of Matanzas Woods Pkwy. In Table 16, there was no data reported for the missing segments of Matanzas Woods Pkwy, and as such they were left out. The table

has been restructured to now include the missing sections with the appropriate notations regarding the lack of data. Table 15 is now Table 4-10.

9. Table 19 (Page 53) – the existing crash rates in the study area are found to be higher than the statewide average. Please include some discussion to how the new interchange will help increase safety.

   Response 9: The two intersections with the highest crash rate Palm Coast parkway and Belle Terre Parkway; and Palm Coast Parkway and Cypress Point Parkway are operating at LOS-E or LOS-F under existing conditions, and 2035. It would appear that a safety study is necessary to identify specific effective improvements.

10. List all planned/programmed improvements in the study area – the future year network assumptions are not adequately documented in the report.

    Response 10. A table has been added to show all roadway improvements used in the analysis for 2015, 2025 and 2035. See Table 7-9.

11. Section VII.1 (Page 94): this section indicates that "the 95th queue percentile for the intersection's turn lanes for 2015, 2025, and 2035 are based on HCS and summarized in Tables 34 through 36". However, Tables 34 through 36 contain only delay and Level of Service (LOS) for no build and build conditions from SYNCHRO. Please report the results of the queue analysis for future conditions (similar to Table 9).

    Response 11: Queue analysis summary tables for signalized intersections will be provided based on SYNCHRO queue analysis only.

12. At many places in the report the build conditions show worse results than the no build condition, such as:

    Note: Tables 31 through 33 have been deleted and are now Tables 7-6 (2015), Table 7-7 (2025) and Table 7-8 (2035). All analysis for signalized intersections is now with SYNCHRO causing all LOS values to have changed.

    i. Table 31: Intersection I-14 AM peak hour LOS is D under build conditions vs. LOS B under no build conditions.

       Response i: See note above.

       Table 32: Intersection I-3 PM peak hour LOS is E under build conditions vs. LOS D under no build conditions.

       Response ii:See note above.

       Table 32: Intersection I-16 PM peak hour LOS is D under build conditions vs. LOS C under no build conditions.

       Response iii: See note above.

ii. Table 33: Intersection I-5 PM peak hour LOS is C under build conditions vs. LOS B under no build conditions.

Response iv: See note above..

iii. Table 33: Intersection I-16 PM peak hour LOS of E under build conditions vs. LOS D under no build conditions.

Response v: See note above.

viii. Table 35: Intersection I-5 AM peak hour LOS of E under build conditions vs. LOS B under no build conditions.

Response viii: Intersection I-5 (Matanzas Woods Pkwy and Old King Rd), due to the presence of the new interchange, the build alternative has higher volume than no build. In addition, in the build alternative, the signal at intersection I-5 is coordinated with the I-95 interchange ramp signals, which improves corridor operation but may not result in optimum operations for each individual intersection.

ix. Table 38 (page 106): the results show queue backups onto I-95 mainline under build conditions.

Response ix: As previously discussed, table 38 was revised based on the SYNCHRO analysis, and correct storage dimensions. All queues are now accommodated within the ramp storage. Discussion in the text identifies a need to provide a dual left turn lane southbound after 2025.

x. Table 41: Palm Coast Pkwy NB on-ramp and SB off-ramp ramp LOS is worse under build conditions as compared to no build conditions.

Response ix: Due to higher volume, those two ramps are expected to have a worse LOS under the build scenario.

What justification do we have for these deteriorating conditions in the build scenario? Could any additional improvements be considered to make the build scenario better?

Response: Most of the decreased LOS is shown by design year 2035. At intersections where minor shifts in turning volumes can have significant impacts on the LOS, the forecasts will need to be ground truthed with monitoring over time, and future intersection improvements may need to be programmed in the TIP of the local governments. This is consistent with direction given to the IJR consultants by the DIRC and Flagler County to only consider programmed roadway and interchange improvements within the AOI with the exception of adding turn lanes at Palm Coast Parkway and I-95 if they mitigate an LOS or operational problem.

13. Section IX (Page 119) - There is no need for the Access Management Agreement; just include some language as highlighted in the attachment and a graphic as shown in the attachment (see attached example).

Response: Similar language and has been included in the Final IJR.

14. Section X (Page 119) - Include a Conceptual Funding Pan in the IJR (see attached example).

    Response: Conceptual Funding Plan language has been added as suggested, it is now section 9.0 Conceptual Funding Plan.

15. Add a new Section between IX and X "Conceptual Signing Plan" - now it is a requirement to provide a conceptual signing plan. Use the example attached.

    Response: A conceptual signing plan has been prepared for both interchange configurations and inserted into the document as Figure 6-4 and Figure 6-5.

16. On Page 123 – After discussing the eight points, add a few sentences to reaffirm that the Matanzas Woods Parkway Interchange meets the FHWA criteria.

    Response: The eight FHWA criteria have been moved into the Executive Summary as suggested in the Interchange Handbook.

Comments from FDOT D5 (John Weiss)

1. Table 40: No Build – Palm Coast Pkwy Eastbound – Year 2025 PM Peak shows an Overall Speed of 150.0 MPH. Please verify.

   Response 1: The arterial overall Speed should have been revised to 10.8mph based on the SYNCHRO outputs. However, the comments from Central Office that arterial analyses are unnecessary information in interchange documents caused the removal of the arterial analysis for Palm Coast Parkway.

2. Table 40: No Build – Palm Coast Pkwy Eastbound – Year 2035 PM Peak shows an Overall Speed of 1.9 MPH. Please verify.

   Response 2: The arterial overall Speed would have been revised to 8.4mph based on the SYNCHRO outputs. See Response 1 regarding the deletion of the Palm Coast parkway arterial analysis.

3. Page 94: The future conditions analysis of the No-build and Build condition introduces the addition of a second southbound left turn lane at Palm Coast Pkwy and the I-95 West Ramps (I-19). As stated in the report, with this improvement, there is a noticeable improvement to the overall LOS for the intersection, especially to the southbound approach. Was the addition of a third southbound left turn lane considered to help further reduce queue length and overall delay for this intersection? Likewise, please discuss if an additional northbound right turn lane or an additional eastbound left turn lane was considered at the Palm Coast Parkway and the I-95 East Ramps (I-20).

   Response: This interchange was reevaluated to test other turn lane improvements in addition to the second left turn lane at the southbound ramp terminal. These consisted of a third southbound left turn

lane, a second northbound right turn lane at the ramp terminal, and a second left turn lane eastbound off Palm Coast Parkway. While these additional improvements further reduce some of the delay, they still result in LOS E or F at one or both interchange intersections during the AM or PM peak hours. Since these additional improvements did not resolve the LOS failures they were not included in the analysis document. Please see the response to Comment# 12 from HDR.

4. Please discuss how the proposed signal timings for the future conditions analysis were developed in coordination with the planned widening to Palm Coast Parkway. Specifically for the I-95 interchange ramps (I-19 and I-20), the operational assessment reflects that existing free-flow right turn lanes remain and that turning movements that are currently permitted across two lanes of traffic remain permitted across three lanes.

   Response 4a: It was assumed that the existing cycle length and phasing patterns applied to the future conditions. The SYNCHRO signal timing optimization based on the future traffic conditions was applied to develop future signal timing.

   Response 4b: All existing free-flow right turns remain and some of them were coded with Yield condition based on the field observation.

   Response 4c: Providing permissive phasing across 3 lanes is not prohibited by the Traffic Engineering Manual. In this case, permissive phasing provides additional time for left turn "sneakers" to make the turn thus helping to reduce the queue that can impact through movements.

5. The future conditions HCS analysis utilizes some questionable values for Right Turn on Red (RTOR) and lane utilization factors that have a significant potential to affect the conclusions regarding level of service and queuing at the I-95 at Palm Coast Parkway intersections (I-19 and I-20). The 2035 PM build condition HCS analysis clearly demonstrate these issues. This includes a large assumed RTOR volume even when opposing movements have a high volume to capacity ratio. In addition, queue spillback from turn lanes will reduce capacity for other movements in the lane group. The impact of this concern may be that level of service conclusions, or more critically, back-of-queue calculations are understated. This concern may be compounded by Comment 6 below. Please review the HCS input values developed for these intersections to address these concerns. It may be appropriate or necessary to propose additional improvements to these intersections to support adequate operations.

   Response 5: All the intersection analysis will be based on the Synchro. Synchro calculates Right Turn on Red (RTOR) and lane utilization factors automatically based on the input conditions. Analysis results for 2035 shows that the I-95 interchange at the Palm Coast Parkway may require monitoring and be a candidate for future programmed improvements. Please see the response to Comment# 12 from HDR.

6. Table 37 and 38: These table shows that the operational benefits of the Build condition to the Palm Coast Parkway interchange intersections are marginal, even resulting in an increase in queue storage requirements for some movements. Of particular note are instances where the I-95 Southbound and I-95 Northbound off-ramps are being heavily utilized for queue storage. Please review the documented queue storage length to ensure that these numbers are being appropriately developed for a comparison to HCS queue reports. This review should focus on single or dual lane needs, and where appropriate, when queue lengths are exceeded for certain movements, that those excess storage needs are added to other lanes. The I-95 Northbound off-ramp right turn lane is an example where this needs to be verified. In addition, please verify that available queue storage lengths have been reduced for adequate deceleration distances from the I-95 mainline to back-of-queue.

   Response 6: As discussed during the recent conference call, queue length analysis will now be based on SYNCHRO output. The deceleration distance will be removed from total ramp storage length.

7. Due to the interaction of traffic between the Matanzas Woods Parkway and the Palm Coast Parkway interchanges and the future deficiencies along Palm Coast Parkway that are not solved with the addition of the Matanzas Woods Parkway interchange, approval of the Matanzas Woods Parkway interchange should be conditioned with major improvements being completed to Palm Coast Parkway in the vicinity of the I-95 interchange. This specifically should include the six-laning of Palm Coast Parkway and any improvements identified to provide adequate queue storage for the I-95 off-ramps.

   Response 7: Palm Coast Parkway queue storage for the ramps has been resolved and is now sufficient. Palm Coast Parkway widening to six lanes was coded in the analysis in both no build and build alternatives. Under both no build and build conditions, the future deficiencies along Palm Coast Parkway were noted. Please note that direction given to the IJR consultants by the DIRC and Flagler County was to only consider programmed roadway and interchange improvements within the AOI with the exception of adding turn lanes at Palm Coast Parkway and I-95 if they mitigate an LOS or operational problem. The intersection analysis at this interchange shows better results for the Build alternative than the No Build alternative.

8. Table 40: Please confirm that the HCS arterial analysis in No Build and Build condition reflects the operational improvements to Palm Coast Pkwy and the I-95 West Ramps (I-19), specifically the additional southbound left turn lane?

   Response 8: As discussed during the conference call arterial analysis will be based on the SYNCHRO. Table 40 will be revised to show SYNCHRO results and reflect I-95 West Ramp dual left turn lane as the operational improvements. This improvement has shown to be needed after Interim Year 2025.

FDOT Traffic Count Stations

Station Number	Description	Count Date(s)
78-0256	F-1: I-95, north of US-1	6/5/07 & 6/6/07
73-0251	F-2: I-95, north of Palm Coast Parkway	3/12/07 & 3/13/07
73-0292	F-3: I-95, south of Palm Coast Parkway	Continuous
73-4005	F-4: I-95 and US-1 Northbound Off Ramp	6/5/07
73-4006	F-5: I-95 and US-1 Northbound On Ramp	6/5/07
73-4007	F-6: I-95 and US-1 Southbound Off Ramp	6/5/07
73-4008	F-7: I-95 and US-1 Southbound On Ramp	6/5/07
73-2006	F-8: I-95 and Palm Coast Parkway Northbound Off Ramp	9/4/07 & 9/5/07
73-2007	F-9: I-95 and Palm Coast Parkway Northbound On Ramp	9/4/07 & 9/5/07
73-2008	F-10: I-95 and Palm Coast Parkway Southbound Off Ramp	9/4/07 & 9/5/07
73-2009	F-11: I-95 and Palm Coast Parkway Southbound On Ramp	9/4/07 & 9/5/07
73-0102	F-12: US-1, north of Matanzas Woods Parkway	9/11/07 & 9/12/07
78-0021	F-13: US-1, south of C-204	6/5/07 & 6/6/07

City of Palm Coast Traffic Count Stations

Count Station	Description	Count Date
CP-1	US-1, St. Johns County Line to Old Kings Road	2/26/08
CP-2	US-1, Old Kings Road to Matanzas Woods Parkway	2/26/08
CP-3	US-1, Matanzas Woods Parkway to Palm Coast Parkway	2/26/08
CP-4	Belle Terre Parkway, Matanzas Woods Parkway to Bird of Paradise Drive	2/26/08
CP-5	Belle Terre Parkway, Bird of Paradise Drive to Pine Lakes Parkway-N	2/26/08
CP-6	Belle Terre Parkway, Pine Lakes Parkway-N to Bellaire Drive	2/26/08
CP-7	Belle Terre Parkway, Bellaire Drive to Palm Coast Parkway (WB)	2/26/08
CP-8	Belle Terre Parkway, Palm Coast Parkway WB to EB	3/11/08
CP-9	Belle Terre Parkway, Palm Coast Parkway EB to Cypress Point Parkway	3/11/08
CP-10	Belle Terre Parkway, Cypress Point Parkway to Pine Lakes Parkway-S	2/26/08
CP-11	Old Kings Road, US-1 to Princess Place Road	3/11/08
CP-12	Old Kings Road, Princess Place Road to Forest Grove Drive	3/11/08
CP-13	Old Kings Road, Forest Grove Drive to Farmsworth Drive	2/27/08
CP-14	Old Kings Road, Farmsworth Drive to Frontier Drive	2/27/08
CP-15	Old Kings Road, Frontier Drive to Fleetwood Drive	2/27/08
CP-16	Old Kings Road, Fleetwood Drive to Farragut Drive	2/27/08
CP-17	Old Kings Road, Farragut Drive to Palm Coast Parkway	2/27/08
CP-18	Matanzas Woods Parkway, US-1 to Belle Terre Parkway	2/26/08
CP-19	Matanzas Woods Parkway, Belle Terre Parkway to Bird of Paradise Drive	2/26/08
CP-20	Matanzas Woods Parkway, Bird of Paradise Drive to Old Kings Road	3/11/08
CP-21	Palm Coast Parkway, US-1 to Pine Lakes Parkway	3/11/08
CP-22	Palm Coast Parkway EB, Pine Lakes Parkway to Belle Terre Parkway	2/26/08
CP-23	Palm Coast Parkway WB, Pine Lakes Parkway to Belle Terre Parkway	2/26/08
CP-24	Palm Coast Parkway EB, Belle Terre Parkway to Cypress Point Parkway	2/26/08
CP-25	Palm Coast Parkway WB, Belle Terre Parkway to Cypress Point Parkway	2/26/08
CP-26	Palm Coast Parkway, Cypress Point Parkway to I-95 West Ramps	3/11/08
CP-27	Palm Coast Parkway, I-95 West to East Ramps	3/7/08
CP-28	Palm Coast Parkway, I-95 East Ramps to Old Kings Road	3/11/08
CP-29	Palm Coast Parkway EB, Old Kings Road to Florida Park Drive	2/26/08
CP-30	Palm Coast Parkway WB, Old Kings Road to Florida Park Drive	3/11/08
CP-31	Palm Coast Parkway EB, Florida Park Drive to Club House Drive	2/26/08
CP-32	Palm Coast Parkway WB, Florida Park Drive to Club House Drive	2/26/08
CP-33	Palm Coast Parkway EB, Club House Drive to Colbert Lane	2/26/08
CP-34	Palm Coast Parkway WB, Club House Drive to Colbert Lane	2/26/08
CP-35	Palm Coast Parkway EB, Colbert Lane to Palm Harbor Parkway	2/26/08
CP-36	Palm Coast Parkway WB, Colbert Lane to Palm Harbor Parkway	2/26/08
CP-37	Palm Coast Parkway, Palm Harbor Parkway to SR A1A	2/26/08

2009 Traffic Data from Secondary Sources

- L-1: I-95, north of US-1 (includes vehicle classification count);
- L-2: I-95, north of Palm Coast Parkway (includes vehicle classification count);
- L-3: I-95, south of Palm Coast Parkway (includes vehicle classification count);
- L-4: I-95 and US-1 northbound off ramp – right;
- L-5: I-95 and US-1 northbound off ramp – left;
- L-6: I-95 and US-1 northbound on ramp from east (westbound right);
- L-7: I-95 and US-1 northbound on ramp from west (eastbound left);
- L-8: I-95 and US-1 southbound off ramp – right;
- L-9: I-95 and US-1 southbound off ramp – left;
- L-10: I-95 and US-1 southbound on ramp from east (westbound right);
- L-11: I-95 and US-1 southbound on ramp from west (eastbound left);
- L-12: I-95 and Palm Coast Parkway northbound off ramp – right;
- L-13: I-95 and Palm Coast Parkway northbound off ramp – left;
- L-14: I-95 and Palm Coast Parkway northbound on ramp from east (westbound right);
- L-15: I-95 and Palm Coast Parkway northbound on ramp from west (eastbound left);
- L-16: I-95 and Palm Coast Parkway southbound off ramp – right;
- L-17: I-95 and Palm Coast Parkway southbound off ramp – left;
- L-18: I-95 and Palm Coast Parkway southbound on ramp from east (westbound right);
- L-19: I-95 and Palm Coast Parkway southbound on ramp from west (eastbound left);
- L-20: US-1, south of County Road 204;
- L-21: US-1, north of Faver Dykes Road;
- L-22: Matanzas Woods Parkway, west of Lakeview Drive;
- L-23: Matanzas Woods Parkway, west of Bird of Paradise Drive;
- L-24: Matanzas Woods Parkway, east of I-95 Bridge;
- L-25: Palm Coast Parkway EB, west of Belle Terre Parkway;
- L-26: Palm Coast Parkway WB, west of Belle Terre Parkway;
- L-27: Palm Coast Parkway, east of Cypress Point Parkway;
- L-28: Palm Coast Parkway, between I-95 west and east ramps (bridge area);
- L-29: Palm Coast Parkway, west of Old Kings Road;
- L-30: Palm Coast Parkway EB, west of Clubhouse Drive; and
- L-31: Palm Coast Parkway WB, west of Clubhouse Drive.

Intersection Turning Movement Count Data from Secondary Sources

- 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.

FINAL MLOU

Interchange Justification Report

Interstate 95 and Matanzas Woods Parkway

Prepared for:

Flagler County

November 24, 2008

Prepared by:

KEITH and SCHNARS, P.A.
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1. INTRODUCTION

Keith and Schnars, P.A. was retained by Flagler County (Applicant) to prepare the Interchange Justification Report (IJR) for the proposed interchange with Interstate 95 (I-95) and Matanzas Woods Parkway located in the City of Palm Coast, Flagler County. The purpose of this study is to establish the need and justification for the proposed interchange through the preparation of the IJR.

This document will serve as the Methodology Letter of Understanding (MLOU) between the Florida Department of Transportation (FDOT) District Five Interchange Review Committee (DIRC), the Federal Highway Administration (FHWA), FDOT Systems Planning Office (SPO), and Flagler County (Applicant). The MLOU 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. Also, the comments received during the Project Study Design meeting held on September 24, 2008, the comments received by FHWA on October 20, 2008 and by FDOT District Five on October 24, 2008 have been incorporated in the MLOU.

2. PURPOSE AND NEED FOR PROJECT

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.

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. **Figure 1** shows the location of the two major developments in the area and a brief summary is provided 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 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 nearly completed 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 space and over 400 acres of golf course area.

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, that two (2) additional lanes are also needed along I-95 from SR-100 to beyond the St. Johns County Line (to I-295 in Jacksonville) by 2030.

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.

3. PROJECT SCHEDULE

The anticipated project schedule is as follows:

Notice to Proceed (NTP)	August 25,2008
MLOU Submittal	Oct-2008
MLOU Approval	Nov-2008
Preliminary IJR:	
Existing Conditions Submittal	Feb-2009
Design Traffic Submittal	May-2009
Operations Analysis Submittal	Aug-2009
Final IJR Submittal	Nov-2009
Master Plan Amendment	Dec-2009
Approval Decision	Feb-2010
Project Development and Environmental (PD&E) Study	Jan-2010
Projected Opening Year	2015

Not to Scale

FAVER DYKES RD

COUNTY ROAD 304

HIGHWAY SECTION Number 780800000

PRINCESS PLACE RD

OLD KINGS RD N

LARAMIE DR

LAKEVIEW BLVD

LONDON DR

LONDONDERRY DR

MATANZAS WOODS PKWY

I-95

FOREST GROVE DR

Palm Coast Park

BELLE TERRE PKWY

BIRD OF PARADISE DR

US 1

Hammock Dunes

A1A

FARMSWORTH DR

PALM HARBOR PKWY

CAMINO DEL MAR

CLUBHOUSE DR

HAMMOCK DUNES PKWY

CASPER DR

PALM HARBOR DR

FLORIDA PARK DR

TOWN CENTER DR

PALM COAST PKWY NE

PALM COAST PKWY SE

COLBERT LN

PINE LAKES PKWY

PINE CONE DR

PALM COAST PKWY NW

PALM COAST PKWY SW

CYPRESS POINT PKWY

Legend

EXISTING INTERCHANGE

PROPOSED INTERCHANGE

MAJOR DEVELOPMENT

N:\TRANPLAN\Projects\2008\Matanzas Woods IJR\Existing Conditions

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ENGINEERS, PLANNERS, SURVEYORS

FLAGLER COUNTY INTERCHANGE JUSTIFICATION REPORT

MAJOR DEVELOPMENTS LOCATION MAP

Figure 1

4. PROJECT LOCATION

The proposed I-95 and Matanzas Woods Parkway interchange lies within the City of Palm Coast. Matanzas Woods Parkway is a two lane undivided roadway extending from US-1 to Old Kings Road.

The proposed Matanzas Woods Parkway interchange will be located approximately 3.6 miles north of the existing Palm Coast Parkway interchange and 5.0 miles south of the existing US-1 interchange, approximately at milepost 14.65 on highway section number 73001000 (I-95). Interstate-95 in this area is functionally classified as interstate urban principal arterial. The existing US-1 interchange is located along I-95 (State section number 78080000). Here I-95 is functionally classified as interstate rural principal arterial within St. Johns County. **Figure 2** and **Exhibit 1** (1=600 scale) identify the location, the relationship to adjacent existing interchanges, and system linkages of the proposed interchange.

5. CONSIDERED ALTERNATIVES

The following alternatives will be evaluated for the IJR:

- No Build,
- Modifying existing interchanges by applying Transportation System Management (TSM) alternatives and other improvements on adjacent interchanges,
- Alternative travel modes, and
- Build alternatives.

For the build alternatives, two interchange configurations will be considered:

- Diamond, and
- Partial Cloverleaf.

A full cloverleaf design alternative cannot be considered due to the space constraint from the Conservation Easement on the southeast quadrant of the proposed I-95 and Matanzas Woods Parkway interchange. The Conservation Easement specifics are explained in *Section 16 – Environmental Considerations* of this document.

N

Not to Scale

Milepost 0.953

FAVER DYKES RD

Milepost 0
St Johns County

Milepost 18.729
Flagler County

COUNTY ROAD 204

HIGHWAY SECTION
Number 780800000
Rural Principal
Arterial

HIGHWAY SECTION
Number 730010000
Urban Principal
Arterial

PRINCESS PLACE RD

1

95

5.0 MILES

OLD KINGS RD N

Milepost 14.65

LARAMIE DR

LAKEVIEW BLVD

LONDON DR

LONDONDERRY DR

I-95

MATANZAS WOODS PKWY

FOREST GROVE DR

A1A

BIRD OF PARADISE DR

BELLE TERRE PKWY

US 1

FARMSWORTH DR

PALM HARBOR PKWY

3.6 MILES

OLD KINGS RD N

CLUBHOUSE DR

HAMMOCK DUNES PKWY

CAMINO DEL MAR

FLORIDA PARK DR

CASPER DR

PALM HARBOR DR

TOWN CENTER DR

PALM COAST PKWY NE

PALM COAST PKWY SE

PINE LAKES PKWY

PINE CONE DR

PALM COAST PKWY NW

PALM COAST PKWY SW

CYPRESS POINT PKWY

COLBERT LN

Milepost 11.070

Legend

- EXISTING INTERCHANGE
- PROPOSED INTERCHANGE

N:\TRANPLAN\Projects\2008\Matanzas Woods IJR\Existing Conditions

COUNTY COMMISSION FLAGLER COUNTY, FLORIDA

KEITH and SCHNARS, P.A.
ENGINEERS, PLANNERS, SURVEYORS

FLAGLER COUNTY INTERCHANGE JUSTIFICATION REPORT

LOCATION MAP

Figure 2

6. ANTICIPATED AREA OF INFLUENCE (AOI)

6.1 Area of Influence along Limited-Access Mainline

Consistent with the Interchange Handbook guidelines, the area of influence (AOI) for the proposed interchanges along the limited-access facility (I-95) will include one adjacent interchange in each direction. Therefore, the proposed area of influence will extend approximately 8.6 miles along I-95 from Palm Coast Parkway to US-1 as presented in **Figure 3**.

6.2 Area of Influence along Crossroads

The Interchange Handbook indicates the AOI for the cross roads will normally extend up to one half mile in both directions of the proposed new and two adjacent interchanges. All intersections within one half mile or the first signalized intersection on the cross roads will be analyzed. If there is a signalized intersection within the AOI that is part of an integrated signal system, the AOI may be expanded to include analysis of all potentially affected signals.

The proposed AOI for the crossroads is as follows and presented in **Figure 3**:

- 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.

If needed, the DIRC may ask for additional analysis during the IJR process.

7. ANALYSIS YEARS

Data for the IJR base year analysis will be collected within the proposed study area in 2008 to report base year traffic conditions. Based on the anticipated schedule shown in *Section 2 – Project Schedule*, the opening year is assumed as 2015. Consistent with the IJR guidelines of the Technical Resource Document 3, the interim year is defined as ten years after the proposed improvement's opening year, i.e. year 2025 in this study. Only one interim year is proposed for this study since there are no major transportation systems within the area that will add new capacity on related limited-access facilities, major intermodal center development, or new or enhanced transit service implementations outside the proposed analyses years. The proposed design year is 2035, consistent with FDOT guidelines. The Applicant will show the improvements that will be in place and the proposed ultimate configuration of the interchange.

N

Not to Scale

Milepost 0.953

FAVER DYKES RD

Milepost 0
St Johns County

Milepost 18.729
Flagler County

COUNTY ROAD 204

HIGHWAY SECTION
Number 780800000

HIGHWAY SECTION
Number 730010000

PRINCESS PLACE RD

5.0 MILES

OLD KINGS RD N

Milepost 14.65

LONDONDERRY DR

LONDON DR

LAKEVIEW BLVD

LARAMIE DR

MATANZAS WOODS PKWY

FOREST GROVE DR

A1A

US 1

BELLE TERRE PKWY

BIRD OF PARADISE DR

3.6 MILES

FARMSWORTH DR

PALM HARBOR PKWY

CLUBHOUSE DR

HAMMOCK DUNES PKWY

CAMINO DEL MAR

FLORIDA PARK DR

CASPER DR

PALM HARBOR DR

PINE LAKES PKWY

PINE CONE DR

TOWN CENTER DR

PALM COAST PKWY NE

PALM COAST PKWY SE

COLBERT LN

PALM COAST PKWY NW

PALM COAST PKWY SW

CYPRESS POINT PKWY

Milepost 11.070

Legend

- EXISTING INTERCHANGE
- PROPOSED INTERCHANGE
- PROPOSED AREA OF INFLUENCE

N:\TRANPLAN\Projects\2008\Matanzas Woods IJR\Existing Conditions

COUNTY COMMISSION FLAGLER COUNTY, FLORIDA

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FLAGLER COUNTY INTERCHANGE JUSTIFICATION REPORT

PROPOSED AREA OF INFLUENCE

Figure 3

8. EXISTING CONDITIONS

The ***Existing Conditions Report*** will be prepared to document traffic conditions on the I-95 mainline, adjacent interchanges and the surrounding local roadway network within the proposed AOI of the IJR. The report will also identify any existing known environmental or cultural impacts that could be a fatal flaw or result in significant mitigation efforts which will include wetlands, public lands, noise sensitive sites, historical or archaeological sites, impacts to neighborhoods or any other environmental or cultural factors.

I-95 mainline within the study area is currently a six-lane freeway with diamond interchanges at US-1 and Palm Coast Parkway. I-95 mainline has a 70 mph posted speed limit and is classified as an 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.

US-1 is a four-lane divided arterial between Faver Dykes Road and Palm Coast Parkway with posted speed limits ranging between 55 and 65 mph. Matanzas Woods Parkway is a two-lane undivided roadway between US-1 and Old Kings Road with a 45 mph posted speed limit. Palm Coast Parkway is a four-lane divided arterial from US 1 to SR A1A with posted speed limits of 40 and 45 mph.

9. TRAVEL DEMAND FORECASTING

The latest version of the Central Florida Regional Planning Model (CFRPM 4.5) will be used to develop traffic projections for the IJR 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.

The roadway network of CFRPM 4.5 will be expanded to include the interchange of I-95 and US-1 as well as all the cross streets feeding that interchange. The zonal data will be adjusted if necessary to include new Traffic Analysis Zones (TAZ) representing large projects located in the north section of Flagler County, as well as, TAZs in southern St. Johns County if they contain approved development that could impact the I-95 and US-1 interchange. Model results will be compared to historical growth trends to insure reasonableness.

9.1 Base Year (2008)

A new CFRPM will be developed for a 2008 base year by interpolating zonal data between the 2000 validated and 2012 CFRPM models. The adjustment procedures are explained in *Section 10 – Model and Network Validation Procedures*.

9.2 Opening Year (2015)

A new CFRPM will be developed for a 2015 opening year by interpolating zonal data between the 2012 year and the 2025 cost feasible CFRPM models. Zonal data will be adjusted within the influence area to incorporate approved projects and development phases. Public and privately-funded roadway improvements identified for the year 2015 will be incorporated into the CFRPM 2015 model. The 2015

interpolated model will be run with and without the proposed interchange to develop 2015 opening year traffic volumes for the Build and No-Build alternatives.

9.3 Interim Year (2025)

The 2025 cost feasible model will be adjusted to incorporate all the zonal and roadway improvements identified within the influence area. The 2025 adjusted model will be run with and without the proposed interchange to develop 2025 interim year traffic volumes for the Build and No-Build alternatives.

9.4 Design Year (2035)

Traffic volumes for the 2035 Build and No-Build alternatives will be based on extrapolated 2025 traffic volumes using reasonable growth rates derived by comparing the 2000 validated and 2025 cost feasible models. Facility specific growth rates will be developed as appropriate.

10. MODEL AND NETWORK VALIDATION PROCEDURES

A model validation will be performed for existing conditions. An interpolated 2008 CFRPM will be created by interpolating zonal data for 2008, revising the ZDATA files for the influence area TAZs, adjusting the roadway network within the influence area to reflect current conditions, and creating new TAZs if needed to reflect new projects. The projected volumes will be compared to 2008 traffic counts to check reasonableness of the 2008 model. Appropriate modifications to network parameters (area type, facility type, speed, capacity, centroid connectors, etc.) will be performed to achieve acceptable validation, especially for the expanded area and the external trips on I-95 and US-1. The Root Mean Squared Errors (RMSE) will be used to measure the validity of the refinement for each of the major roadways, highway facilities, and the study area as a whole. The recommended maximum percent deviation errors by volume range used will conform to the Florida Standard Urban Transportation Model Structure (FSUTMS) standards. All modifications to the network, zonal structure and model parameters will be documented in the model validation technical report and will be carried forward to all future year models.

11. ADJUSTMENT PROCEDURES

11.1 Directional Design Hour Volumes

The development of Directional Design Hour Volumes (DDHV) will be based on the conversion of the model derived volumes by applying the Model Output Conversion Factor (MOCF), K_{30}, and D_{30} factors consistent with the *Project Traffic Forecasting Handbook, dated October 2002*. The resulting DDHV will be compared with historic trends and other studies in the project area to ensure reasonableness.

11.2 Turning Movements

The future year estimates of intersection turning movements will be will be done consistent with the *Project Traffic Forecasting Handbook, dated October 2002*. The daily turn volumes from the FSUTMS at the proposed interchange intersections with Matanzas Woods Parkway will be utilized to develop the percent turns. These percentages will be applied to the DDHV to derive the peak hour turning movement volumes. FDOT TURNS 5 tool will be used to estimate future years turning movements at the existing

intersections. The turning movement volume estimates will be checked for reasonableness and manually adjusted where necessary and appropriate. Peak hour volumes will be used in the merge / diverge, and intersection analysis.

The ***Future Travel Demand Report*** will document the forecasting of future travel demand for each of the alternatives and model validation procedure as outlined in *Sections 9 and 10* above within the area of influence in the opening, interim and design years. The report will also document the development of the DDHV and turning movement volume estimates for review and approval from FDOT D-5 prior to commencing the future operations analysis.

12. DATA COLLECTION SOURCES AND METHODOLOGY

12.1 Existing Traffic Count Data from Primary Sources

24-hour or 48-hour bi-directional machine counts have been obtained from FDOT (year 2007) and the City of Palm Coast (year 2008) at the following locations (also shown in **Figure 4**):

FDOT

Station No.	Description	Count Date
78-0256	F-1: I-95, north of US-1	6/5/07 & 6/6/07
73-0251	F-2: I-95, north of Palm Coast Parkway	3/12/07 & 3/13/07
73-0292	F-3: I-95, south of Palm Coast Parkway	Continuous
73-4005	F-4: I-95 and US-1 Northbound Off Ramp	6/5/07
73-4006	F-5: I-95 and US-1 Northbound On Ramp	6/5/07
73-4007	F-6: I-95 and US-1 Southbound Off Ramp	6/5/07
73-4008	F-7: I-95 and US-1 Southbound On Ramp	6/5/07
73-2006	F-8: I-95 and Palm Coast Parkway Northbound Off Ramp	9/4/07 & 9/5/07
73-2007	F-9: I-95 and Palm Coast Parkway Northbound On Ramp	9/4/07 & 9/5/07
73-2008	F-10: I-95 and Palm Coast Parkway Southbound Off Ramp	9/4/07 & 9/5/07
73-2009	F-11: I-95 and Palm Coast Parkway Southbound On Ramp	9/4/07 & 9/5/07
73-0102	F-12: US-1, north of Matanzas Woods Parkway	9/11/07 & 9/12/07
78-0021	F-13: US-1, south of C-204	6/5/07 & 6/6/07

City of Palm Coast

Description	Count Date
CP-1: US-1, St. Johns County Line to Old Kings Road	2/26/08
CP-2: US-1, Old Kings Road to Matanzas Woods Parkway	2/26/08
CP-3: US-1, Matanzas Woods Parkway to Palm Coast Parkway	2/26/08
CP-4: Belle Terre Parkway, Matanzas Woods Parkway to Bird of Paradise Drive	2/26/08
CP-5: Belle Terre Parkway, Bird of Paradise Drive to Pine Lakes Parkway-N	2/26/08
CP-6: Belle Terre Parkway, Pine Lakes Parkway-N to Bellaire Drive	2/26/08
CP-7: Belle Terre Parkway, Bellaire Drive to Palm Coast Parkway (WB)	2/26/08
CP-8: Belle Terre Parkway, Palm Coast Parkway WB to EB	3/11/08
CP-9: Belle Terre Parkway, Palm Coast Parkway EB to Cypress Point Parkway	3/11/08
CP-10: Belle Terre Parkway, Cypress Point Parkway to Pine Lakes Parkway-S	2/26/08

CP-11: Old Kings Road, US-1 to Princess Place Road	3/11/08
CP-12: Old Kings Road, Princess Place Road to Forest Grove Drive	3/11/08
CP-13: Old Kings Road, Forest Grove Drive to Farmsworth Drive	2/27/08
CP-14: Old Kings Road, Farmsworth Drive to Frontier Drive	2/27/08
CP-15: Old Kings Road, Frontier Drive to Fleetwood Drive	2/27/08
CP-16: Old Kings Road, Fleetwood Drive to Farragut Drive	2/27/08
CP-17: Old Kings Road, Farragut Drive to Palm Coast Parkway	2/27/08
CP-18: Matanzas Woods Parkway, US-1 to Belle Terre Parkway	2/26/08
CP-19 Matanzas Woods Parkway, Belle Terre Parkway to Bird of Paradise Drive	2/26/08
CP-20: Matanzas Woods Parkway, Bird of Paradise Drive to Old Kings Road	3/11/08
CP-21: Palm Coast Parkway, US-1 to Pine Lakes Parkway	3/11/08
CP-22: Palm Coast Parkway EB, Pine Lakes Parkway to Belle Terre Parkway	2/26/08
CP-23: Palm Coast Parkway WB, Pine Lakes Parkway to Belle Terre Parkway	2/26/08
CP-24: Palm Coast Parkway EB, Belle Terre Parkway to Cypress Point Parkway	2/26/08
CP-25: Palm Coast Parkway WB, Belle Terre Parkway to Cypress Point Parkway	2/26/08
CP-26: Palm Coast Parkway, Cypress Point Parkway to I-95 West Ramps	3/11/08
CP-27: Palm Coast Parkway, I-95 West to East Ramps	3/7/08
CP-28: Palm Coast Parkway, I-95 East Ramps to Old Kings Road	3/11/08
CP-29 Palm Coast Parkway EB, Old Kings Road to Florida Park Drive	2/26/08
CP-30: Palm Coast Parkway WB, Old Kings Road to Florida Park Drive	3/11/08
CP-31: Palm Coast Parkway EB, Florida Park Drive to Club House Drive	2/26/08
CP-32: Palm Coast Parkway WB, Florida Park Drive to Club House Drive	2/26/08
CP-33: Palm Coast Parkway EB, Club House Drive to Colbert Lane	2/26/08
CP-34: Palm Coast Parkway WB, Club House Drive to Colbert Lane	2/26/08
CP-35: Palm Coast Parkway EB, Colbert Lane to Palm Harbor Parkway	2/26/08
CP-36: Palm Coast Parkway WB, Colbert Lane to Palm Harbor Parkway	2/26/08
CP-37: Palm Coast Parkway, Palm Harbor Parkway to SR A1A	2/26/08

12.2 Additional Traffic Count Data by the Applicant

Additional year 2008 traffic data will be collected at the locations shown in **Figure 5** to supplement the aforementioned primary traffic count data (also described below). Three days AM (7:00-9:00) and PM (4:00-6:00) peak hours intersection turning movement will be collected at the following locations within the AOI:

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

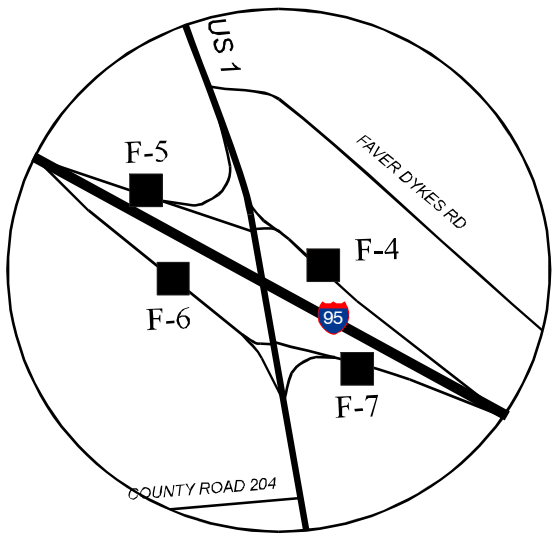
I-12: Palm Coast Parkway EB and Town Center Drive
I-13: Palm Coast Parkway WB and Town Center Drive
I-14: Palm Coast Parkway EB and Florida Park Drive
I-15: Palm Coast Parkway WB and Florida Park Drive
I-16. Matanzas Woods Parkway and US-1

Twenty-four-hour bi-directional machine counts at 15-minute intervals will be collected on typical weekdays of a five-day workweek (Tuesday, Wednesday and Thursday) at the following locations within the AOI:

L-1: I-95, north of US-1 (includes vehicle classification count)
L-2: I-95, north of Palm Coast Parkway (includes vehicle classification count)
L-3: I-95, south of Palm Coast Parkway (includes vehicle classification count)
L-4: I-95 and US-1 northbound off ramp – right
L-5: I-95 and US-1 northbound off ramp – left
L-6: I-95 and US-1 northbound on ramp from east (westbound right)
L-7: I-95 and US-1 northbound on ramp from west (eastbound left)
L-8: I-95 and US-1 southbound off ramp – right
L-9: I-95 and US-1 southbound off ramp – left
L-10: I-95 and US-1 southbound on ramp from east (westbound right)
L-11: I-95 and US-1 southbound on ramp from west (eastbound left)
L-12: I-95 and Palm Coast Parkway northbound off ramp – right
L-13: I-95 and Palm Coast Parkway northbound off ramp – left
L-14: I-95 and Palm Coast Parkway northbound on ramp from east (westbound right)
L-15: I-95 and Palm Coast Parkway northbound on ramp from west (eastbound left)
L-16: I-95 and Palm Coast Parkway southbound off ramp – right
L-17: I-95 and Palm Coast Parkway southbound off ramp – left
L-18: I-95 and Palm Coast Parkway southbound on ramp from east (westbound right)
L-19: I-95 and Palm Coast Parkway southbound on ramp from west (eastbound left)
L-20: US-1, south of County Road 204
L-21: US-1, north of Faver Dykes Road
L-22: Matanzas Woods Parkway, west of Lakeview Drive
L-23: Matanzas Woods Parkway, west of Bird of Paradise Drive
L-24: Matanzas Woods Parkway, east of I-95 Bridge
L-25: Palm Coast Parkway EB, west of Belle Terre Parkway
L-26: Palm Coast Parkway WB, west of Belle Terre Parkway
L-27: Palm Coast Parkway, east of Cypress Point Parkway
L-28: Palm Coast Parkway, between I-95 west and east ramps (bridge area)
L-29: Palm Coast Parkway, west of Old Kings Road
L-30: Palm Coast Parkway EB, west of Clubhouse Drive
L-31: Palm Coast Parkway WB, west of Clubhouse Drive

Counts will be checked for reasonableness against the FDOT Traffic CD information where applicable.

Detail A

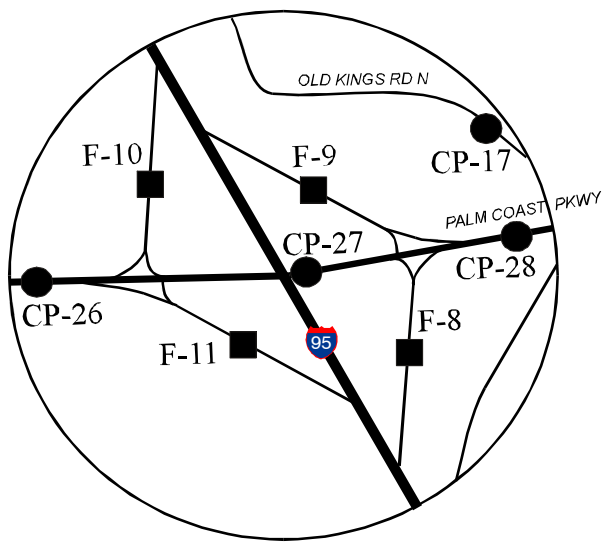


N

Not to Scale

See Detail A

Detail B



Insert Figure 4

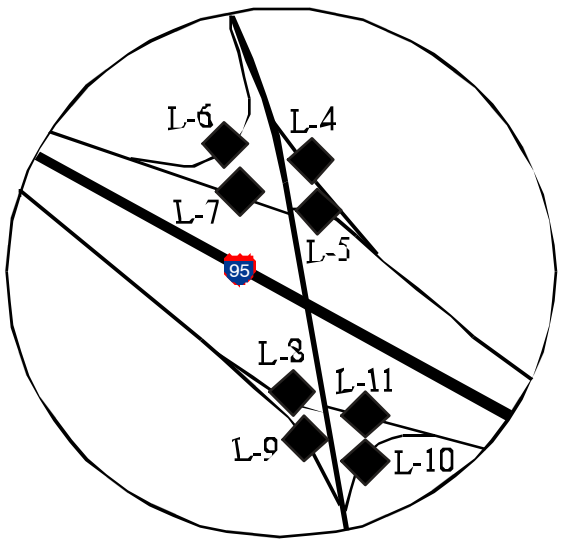
Legend

City of Palm Coast(CP)	Bi-Directional Count
FDOT(F)	Bi-Directional Count

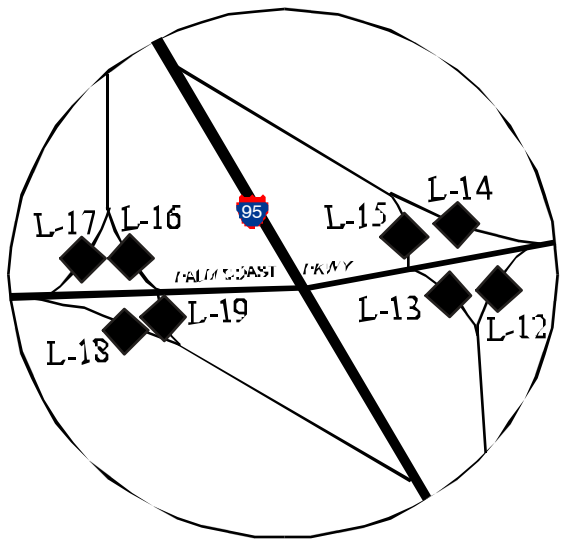
N:\TRANPLAN\Projects\2008\Matanzas Woods IJR\Existing Conditions

Not to Scale

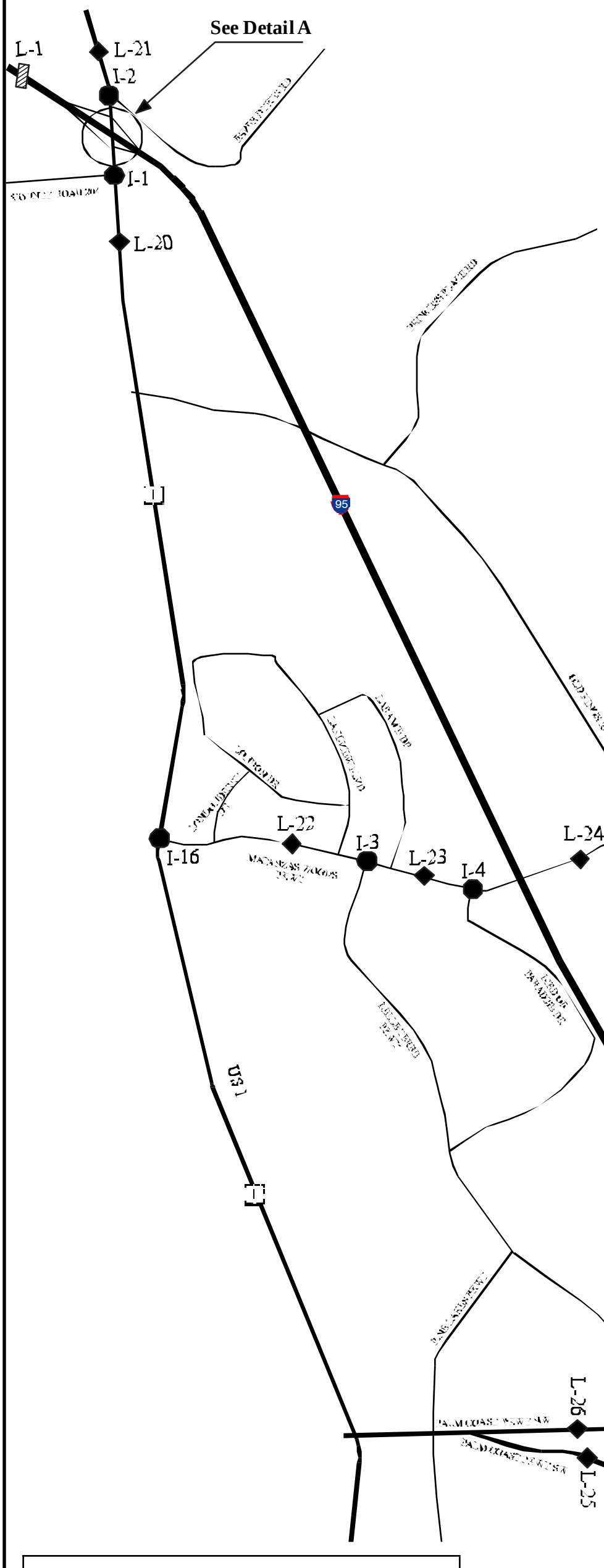
Detail A



Detail B



See Detail A



See Detail B

Legend

- 3-Day AM And PM Peak Hour Intersection Turning Movement (I)
- 24-Hour Bi-Directional Link Count (L)
- 72-Hour Classification Counts (L)

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KEITH and SCHNARS, P.A.
ENGINEERS, PLANNERS, SURVEYORS

FLAGLER COUNTY INTERCHANGE JUSTIFICATION REPORT

ADDITIONAL TRAFFIC COUNT DATA

Figure 5

12.3 Traffic Accident Data

The most recent three years of crash data in the study area will be gathered from FDOT, Flagler County, St. Johns County and City of Palm Coast. The crash data will be analyzed to identify any current safety issues that may be addressed through future geometric configurations.

12.4 Transportation System Data

The existing transportation network will be based on field verification and transportation improvements which will affect the analysis of the proposed interchange will be obtained from the following documents:

- FDOT Work Program/FDOT SIS Plan;
- Flagler County Comprehensive Plan; and
- 2020 City of Palm Coast Comprehensive Plan, adopted April 6, 2004 and last amended on June 17, 2008.

12.5 Approved Developments of Regional Impact

The approved Developments of Regional Impact (DRI) land use, densities and transportation improvements will be collected from their respective studies and used in the IJR analysis. Also, major DRI's under review will be incorporated in the appropriate model analysis year to account for these committed trips in the traffic volume forecasts.

12.6 Environmental Data

The following resources will be utilized for a desktop review of wetlands and habitats within the study area. They also will be used to assess the potential for the occurrence of protected plant and animal species within the project vicinity.

- Aerial photographs dated 2007 at a scale of 1:24,000;
- Historical aerials dated 1943, 1952, 1980, and 1995;
- U.S. Department of Agriculture Soil Conservation Service Soil Survey, Flagler County;
- Florida Land Use, Cover and Forms Classification System Map, Florida Department of Transportation;
- National Wetlands Inventory Map, U.S. Fish and Wildlife Service;
- Flagler County Federally Listed Species, U.S. Fish and Wildlife Service;
- Rare Plants and Animals of Flagler County, Florida Natural Areas Inventory; and
- GIS information provided by the Florida Fish and Wildlife Conservation Commission including Species Occurrence, Biodiversity Hotspots, Priority Wetlands, and Florida Land Cover – 2003
- US Geological Service 7.5 Minute Quadrangle Map.

Database information will be ground-truthed through on-site field surveys to document existing conditions including wetlands, habitats, and the presence of, or potential for, listed species within the project area.

13. TRAFFIC FACTORS

Factors will be used and/or developed for adjusting field collected data and for calculating DDHV for each of the analysis years consistent with the following documents:

- *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; and
- *2007 Florida Traffic Information CD-ROM*, Published by the FDOT (2007 FTI).

All factors will be checked for reasonableness.

13.1 Peak Season Conversion Factor

Peak Season Conversion Factors (PSCF) will be obtained from the 2007 FTI and applied to peak hour volumes that will be used in the operation analysis of existing conditions.

13.2 Axle Factors

Axle factors will be applied to the collected counts as appropriate, and will be obtained from the 2007 FTI.

13.3 Model Output Conversion Factor

The MOCF, obtained from the 2007 FTI, will be applied to the model generated Peak Season Weekday Average Daily Traffic (PSWADT) to obtain AADT. The MOCF for Flagler County roads and I-95 are 0.93 and 0.94, respectively.

13.4 Peak Hour Factor (PHF)

Consistent with Table 10.1 of the *Development of Design Traffic - Technical Resource Document 10* from the Interchange Handbook, the default PHFs for urban uninterrupted and interrupted flow facilities are 0.95 and 0.925, respectively. Therefore, the proposed PHFs for I-95 and the arterial crossroads will be consistent with the aforementioned default values.

13.5 Design Hour Factor (K_{30}), Directional Distribution (D_{30}) and Truck Percent (T_{24}) Factors

For informational purposes, K_{30}, D_{30} and T_{24} for I-95 and other area roadways based on the 2007 FTI are summarized in **Table 1**. The recommended K_{30} factor as obtained from the *Project Traffic Forecast Handbook* for urban freeways ranges from 9.4 to 10.0 and for urban arterial facilities ranges from 9.2 to 11.5. The recommended D_{30} factor for urban freeways ranges from 50.4 to 61.2 and for urban arterial facilities ranges from 50.8 to 67.1. Based upon the *Interchange Handbook*, the default T_{24} percentages for urbanized areas range from 2% to 16% and the *Project Traffic Forecast Handbook* defines the Design Hour Truck (DHT) factor as half of T_{24}.

Tables 1 and **2** provide the peak to daily ratios and directional distributions based on 2007 FDOT synopsis reports and 2008 City of Palm Coast Traffic counts, respectively. Based on the information presented, the proposed $\mathbf{K_{30}}$ factors for I-95 and the other area roadways are **9.7** and **10.2**, respectively. The proposed $\mathbf{D_{30}}$ factors for I-95 and the other area roadways are **55.8** and **57.9**, respectively. Finally, the proposed **DHT** for the future operations analysis of I-95 and the other area roadways are **8%** and **4%**, respectively.

14. CONSISTENCY WITH MASTER PLANS, LRTP AND LGCP

The proposed interchange is consistent with the 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 the proposed interchange at I-95 and Matanzas Woods Parkway.

15. OPERATIONAL ANALYSIS PROCEDURES

The operational analysis will be performed for the opening, interim and design years consistent with the following documents:

- *2002 Quality Level of Service Handbook*, Published by the FDOT (referred to as the 2002 FDOT LOS Handbook);
- *2000 Highway Capacity Manual*, Transportation Research Board (TRB) (referred to as the 2000 HCM);
- *Advanced CORSIM Training Manual*, Published by the Minnesota Department of Transportation (MnDOT), SEH No. A-MNDOT0318.00, Updated May 27, 2004 (referred to as the MnDOT CORSIM Manual); and
- *Traffic Analysis Toolbox,* Publication No. FHWA-HRT-04-038; Published by the US. Department of Transportation, Federal Highway Administration, July 2004. (referred to as the FHWA Traffic Analysis Toolbox).

Three software packages may be used in the operational analysis as necessary:

1. HCS will be used first for a preliminary merging, diverging and weaving analysis;
2. SYNCHRO will then be used to optimize the operation of the signalized intersections of the ramps in coordination with nearby intersections; and
3. If requested by the DIRC, CORSIM will finally be used for a detailed operational analysis of the entire interchange system assuming optimized and coordinated signal timings.

HCS results will be summarized using a spreadsheet format. The main MOEs for freeways include volume, speed, density and LOS. Arterial analysis MOEs include delay, LOS, queue length and storage length.

The ***Operational Analysis Report*** will document the findings of the system operational analysis and submitted for review.

Table 1
K30, D30 and T24 Factors Based on 2007 FTI

Revised 11/24/2008

Location	Station	[1] K30	[1] D30	[1] T24	[2] Count Date	[2] 24-hour Volume	[2] Two-way PM Peak Hour Vol	[2] Highest Directional Volume	Peak to Daily Ratio	Directional Distribution	Project Traffic Forecast Handbook Recommended Ranges K30	Project Traffic Forecast Handbook Recommended Ranges D30
I-95												
NORTH OF US-1	78-0256	9.39	55.54	8.95	6/5/2007	43,375	2,971	1,678 SB	6.8%	56.5%		
					6/6/2007	45,626	2,993	1,689 SB	6.6%	56.4%		
NORTH OF PALM COAST PKWY	73-0251	9.17	56.75	19.88	3/12/2007	52,809	3,341	1,677 SB	6.3%	50.2%	9.4% - 10.0%	50.4% - 61.2%
					3/13/2007	48,676	3,189	1,630 SB	6.6%	51.1%		
SOUTH OF PALM COAST PKWY [3]	73-0292	8.46	54.44	16.87	11/5/2008	54,854	3,896	2,072 SB	7.1%	53.2%		
US-1 AND I-95 RAMPS												
NB OFF RAMP TO US-1	78-4005	9.39	n/a	8.95	6/5/2007	2,335	190	n/a	8.1%	n/a		
NB ON RAMP TO I-95	78-4006	9.39	n/a	8.95	6/5/2007	2,887	166	n/a	5.7%	n/a	9.2% - 11.5%	n/a
SB OFF RAMP TO US-1	78-4007	9.39	n/a	8.95	6/5/2007	2,469	351	n/a	14.2%	n/a		
SB ON RAMP TO I-95	78-4008	9.39	n/a	8.95	6/5/2007	1,959	159	n/a	8.1%	n/a		
PALM COAST PKWY AND I-95 RAMPS												
NB OFF RAMP TO PALM COAST PKWY	73-2006	9.17	n/a	7.00	9/4/2007	8,040	791	n/a	9.8%	n/a		
					9/5/2007	8,105	792	n/a	9.8%	n/a		
NB ON RAMP TO I-95	73-2007	9.17	n/a	7.00	9/4/2007	2,910	167	n/a	5.7%	n/a		
					9/5/2007	2,909	182	n/a	6.3%	n/a	9.2% - 11.5%	n/a
SB OFF RAMP TO PALM COAST PKWY	73-2008	9.17	n/a	7.00	9/4/2007	2,654	233	n/a	8.8%	n/a		
					9/5/2007	2,705	233	n/a	8.6%	n/a		
SB ON RAMP TO I-95	73-2009	9.17	n/a	7.00	9/4/2007	8,782	610	n/a	6.9%	n/a		
					9/5/2007	8,865	655	n/a	7.4%	n/a		
US-1												
SOUTH OF C-204	78-0021	9.31	57.44	3.04	6/5/2007	12,190	1,222	890 SB	10.0%	72.8%		
					6/6/2007	12,218	1,181	872 SB	9.7%	73.8%		
NORTH OF MATANZAS WOODS PKWY	73-0102	9.41	60.67	6.78	9/11/2007	9,918	1,000	701 SB	10.1%	70.1%	9.2% - 11.5%	50.8% - 67.1%
					9/12/2007	10,164	1,040	753 SB	10.2%	72.4%		
SOUTH OF WHITEVIEW PKWY	73-0005	9.41	60.67	8.95	9/11/2007	15,347	1,353	730 NB	8.8%	54.0%		
					9/12/2007	15,860	1,459	773 SB	9.2%	53.0%		

Notes:

[1] Factors obtained from 2007 FTI

[2] Obtained from 2007 FDOT Synopsis Reports.

[3] Continuous count station obtained from http://www3.dot.state.fl.us/trafficinformation/

TABLE 2
EXISTING PEAK TO DAILY RATIOS BASED ON CITY OF PALM COAST 2008 COUNTS

Revised 11/24/2008

ROADWAY FROM	TO	CITY OF PALM COAST 2008 COUNTS				PM PEAK HOUR PEAK DIRECTION	DIRECTIONAL DISTRIBUTION	PROJECT TRAFFIC FORECAST HANDBOOK RECOMMENDED RANGES	
		COUNT DATE	24-HOUR COUNT	TWO WAY PM PK HOUR	PEAK TO DAILY RATIO			K30	D30
PALM COAST PARKWAY SW/SE									
US-1	PINE LAKES PKWY	3/11/2008	16,847	1,540	9.1%	895 EB	58.1%		
PINE LAKES PKWY	BELLE TERRE PKY	2/26/2008	19,961	1,905	9.5%	1,069 EB	56.1%		
BELLE TERRE PKY	CYPRESS POINT PKWY	2/26/2008	34,508	2,835	8.2%	1,436 WB	50.7%		
CYPRESS POINT PKWY	I-95 W RAMPS	3/11/2008	46,607	3,506	7.5%	1,910 WB	54.5%		
I-95 W RAMPS	I-95 E RAMPS	6/8/2008	44,027	3,288	7.5%	1,857 WB	56.5%		
I-95 E RAMPS	OLD KINGS RD	3/11/2008	45,455	3,445	7.6%	1,779 WB	51.6%		
OLD KINGS RD	FLORIDA PARK DR	2/26/2008	30,722	2,528	8.2%	1,370 EB	54.2%	9.2% - 11.5%	50.8% - 67.1%
FLORIDA PARK DR	CLUBHOUSE DR	2/26/2008	25,972	2,125	8.2%	1,185 EB	55.8%		
CLUBHOUSE DR	COLBERT LN	2/26/2008	19,496	1,612	8.3%	870 EB	54.0%		
COLBERT LN	PALM HARBOR PKWY	2/26/2008	12,215	988	8.1%	498 WB	50.4%		
PALM HARBOR PKWY	SR A1A / N OCEANSHORE BLVD	2/26/2008	9,148	894	9.8%	503 WB	56.3%		
	AVERAGE =				**8.4%**		**54.4%**		
MATANZAS WOODS PARKWAY									
US-1	BELLE TERRE PKWY	2/26/2008	6,111	600	9.8%	377 EB	62.8%		
BELLE TERRE PKWY	BIRDS OF PARADISE DR	2/26/2008	4,264	385	9.0%	212 EB	55.1%		
BIRDS OF PARADISE DR	OLD KINGS RD	3/11/2008	4,880	443	9.1%	264 WB	59.6%	9.2% - 11.5%	50.8% - 67.1%
	AVERAGE =				**9.3%**		**59.2%**		
US-1									
CR 204	OLD KINGS RD	2/26/2008	10,706	1,178	11.0%	895 WB	76.0%		
OLD KINGS RD	MATANZAS WOODS PKWY	2/26/2008	9,369	1,014	10.8%	764 WB	75.3%		
MATANZAS WOODS PKWY	PALM COAST PKWY	2/26/2008	8,594	907	10.6%	564 WB	62.2%	9.2% - 11.5%	50.8% - 67.1%
	AVERAGE =				**10.8%**		**71.2%**		
BELLE TERRE PKWY									
MATANZAS WOOD PKY	BIRD OF PARADISE DR	2/26/2008	6,304	579	9.2%	307 WB	53.0%		
BIRD OF PARADISE DR	PINES LAKES PKWY	2/26/2008	14,150	1,296	9.2%	731 EB	56.4%		
PINES LAKES PKWY	BELLAIRE DR	2/26/2008	15,451	1,394	9.0%	803 EB	57.6%		
BELLAIRE DR	PALM COAST PKWY WB	2/26/2008	17,938	1,613	9.0%	984 EB	61.0%	9.2% - 11.5%	50.8% - 67.1%
PALM COAST PKWY WB	PALM COAST PKWY EB	3/11/2008	10,942	927	8.5%	484 EB	52.2%		
PALM COAST PKWY EB	CYPRESS POINT PKWY	3/11/2008	16,676	1,241	7.4%	707 WB	57.0%		
	AVERAGE =				**8.7%**		**56.2%**		
OLD KINGS RD									
US-1	PRINCESS PL PRESERVE	3/8/2008	1,824	197	10.8%	134 WB	68.0%		
PRINCESS PL PRESERVE	FOREST GROVE DR	3/8/2008	1,947	215	11.0%	157 WB	73.0%		
FOREST GROVE DR	FARMSWORTH DR	2/27/2008	4,688	386	8.2%	200 EB	51.8%		
FARMSWORTH DR	FRONTIER DR	2/27/2008	7,997	651	8.1%	359 EB	55.1%		
FRONTIER DR	FLEETWOOD DR	2/27/2008	11,030	907	8.2%	520 EB	57.3%	9.2% - 11.5%	50.8% - 67.1%
FLEETWOOD DR	FARRAGUT DR	2/27/2008	14,143	1,119	7.9%	636 EB	56.8%		
FARRAGUT DR	PALM COAST PKWY	2/27/2008	16,921	1,295	7.7%	707 EB	54.6%		
	AVERAGE =				**8.9%**		**59.5%**		

16. ENVIRONMENTAL CONSIDERATIONS

A primary issue for this project is the avoidance of impacts to 197.2 acres of wetland and upland preservation areas in the southeast quadrant of the proposed Matanzas Wood Parkway and I-95 interchange. 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 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. Design included the extension of a two-lane rural section with a bridge 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. No significant impacts are expected as a result of the proposed interchange to the natural, physical, socio-cultural, or economic aspects of the environment. Further investigation will be performed and documented in the ***Existing Conditions Report***.

17. CONCEPTUAL FUNDING PLAN AND CONSTRUCTION SCHEDULE

A conceptual funding plan and schedule will be outlined and submitted to the DIRC for their concurrence. After the funding plan is deemed acceptable by the DIRC, it will be included in the IJR, and formalized into a binding agreement for all parties to sign.

18. ANTICIPATED EXCEPTIONS

No variances or exceptions are expected in association with the proposed interchange.

Access Management

The area of "special concern" defined as the area within ¼ mile from any of the quadrant off ramps (Rule 14-97) will be carefully planned to ensure the operational efficiency, safety and integrity of the limited-access facility and interchange area. An access management agreement will be developed to be executed by all the affected entities.

19. CONSIDERATION OF OTHER INTERCHANGE PROPOSALS

No other interchanges are proposed along I-95 that would directly affect the AOI for this project.

20. PUBLIC INVOLVEMENT

A public involvement plan will be developed during the PD&E study for this project. This plan will be in compliance with the FDOT PD&E Manual.

21. QUALIFIYING PROVISIONS

Full compliance with all MLOU requirements does not obligate FDOT or FHWA to approve the Interchange Proposal. Signing by FDOT is non-binding to approve the Interchange Proposal under any circumstances.

22. SIGNATURE BLOCK

The MLOU has been agreed upon and therefore serves as the scope of work and notice to proceed in the development of the Interchange Proposal.

Craig M. Coffey

Craig Coffey
Flagler County Administrator

Date 25 Nov 2008

Mark Robinson, P.E.
District Interchange Review Committee Chair

Date 1/8/09

Peter Tyndall
System Planning Office

Date 1/13/09

Chad Thompson, P.E.
Federal Highway Administration

Date 2/17/09