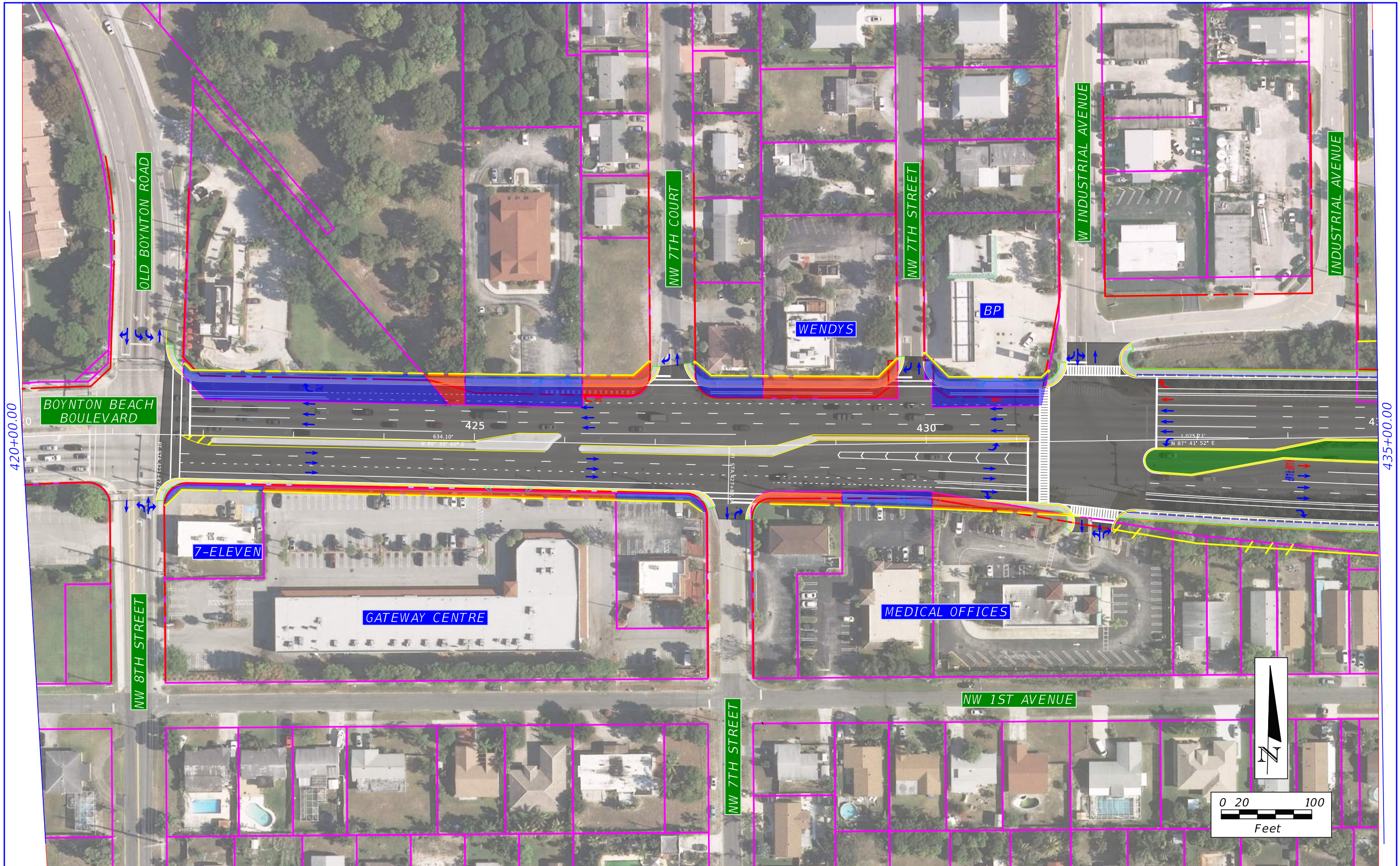


Appendix A


Preliminary Alternatives
Boynton Beach Boulevard

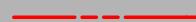



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435+00.00

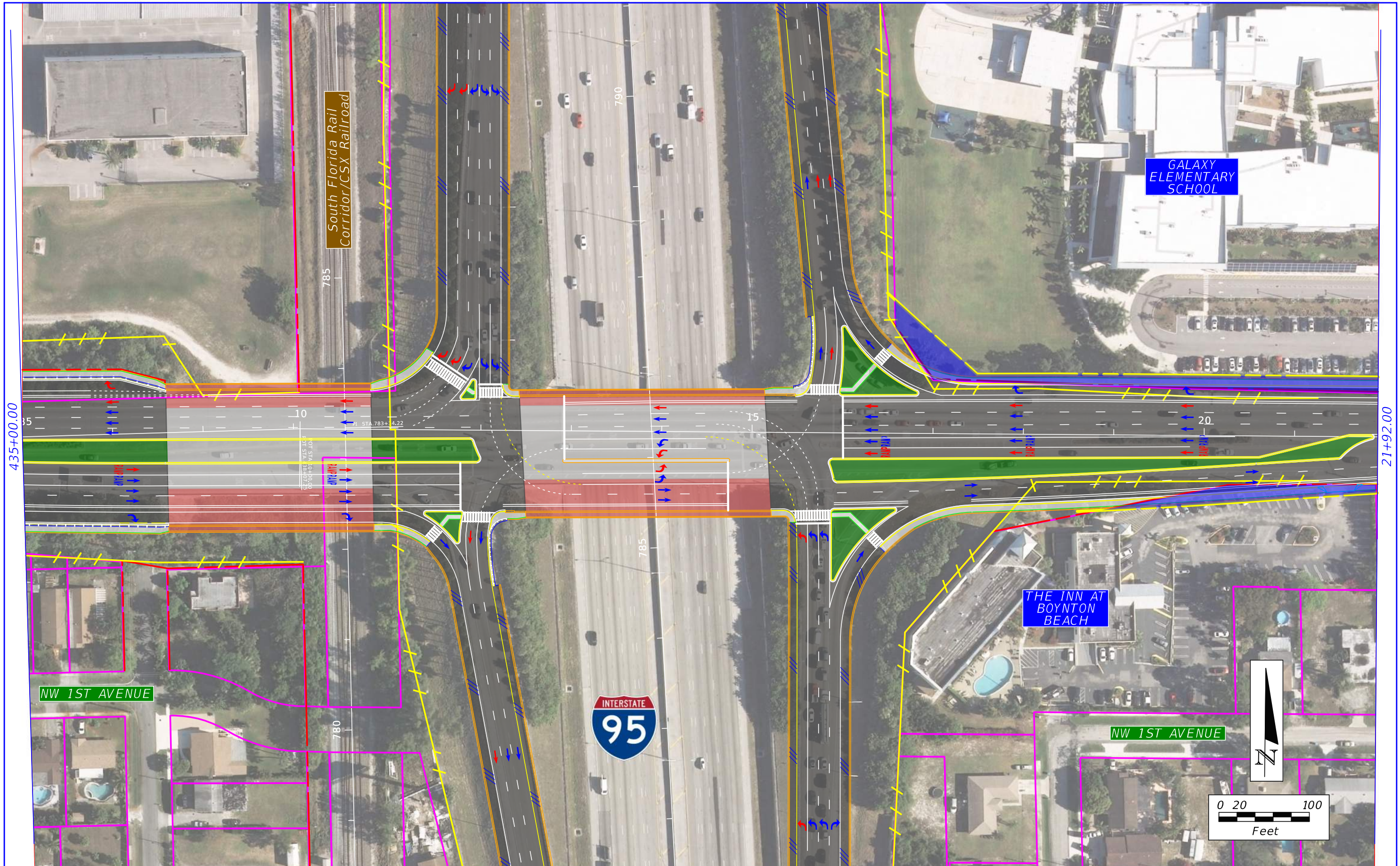

 PD&E Study
 SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange
 SR 9/I-95 at Gateway Boulevard Interchange
 FPID Nos.: 435804-1-22-01; 231932-1-22-01
 ETDM Nos.: 14180 and 14181

-  EXISTING R/W
-  PROPOSED R/W
-  EXISTING LIMITED ACCESS R/W
-  PROPOSED LIMITED ACCESS R/W

-  PROPOSED PARCEL IMPACTS
-  PROPERTY LINE


Alternative 1
CDA

SHEET
 NO.
 1 OF 4



435+00.00

21+92.00

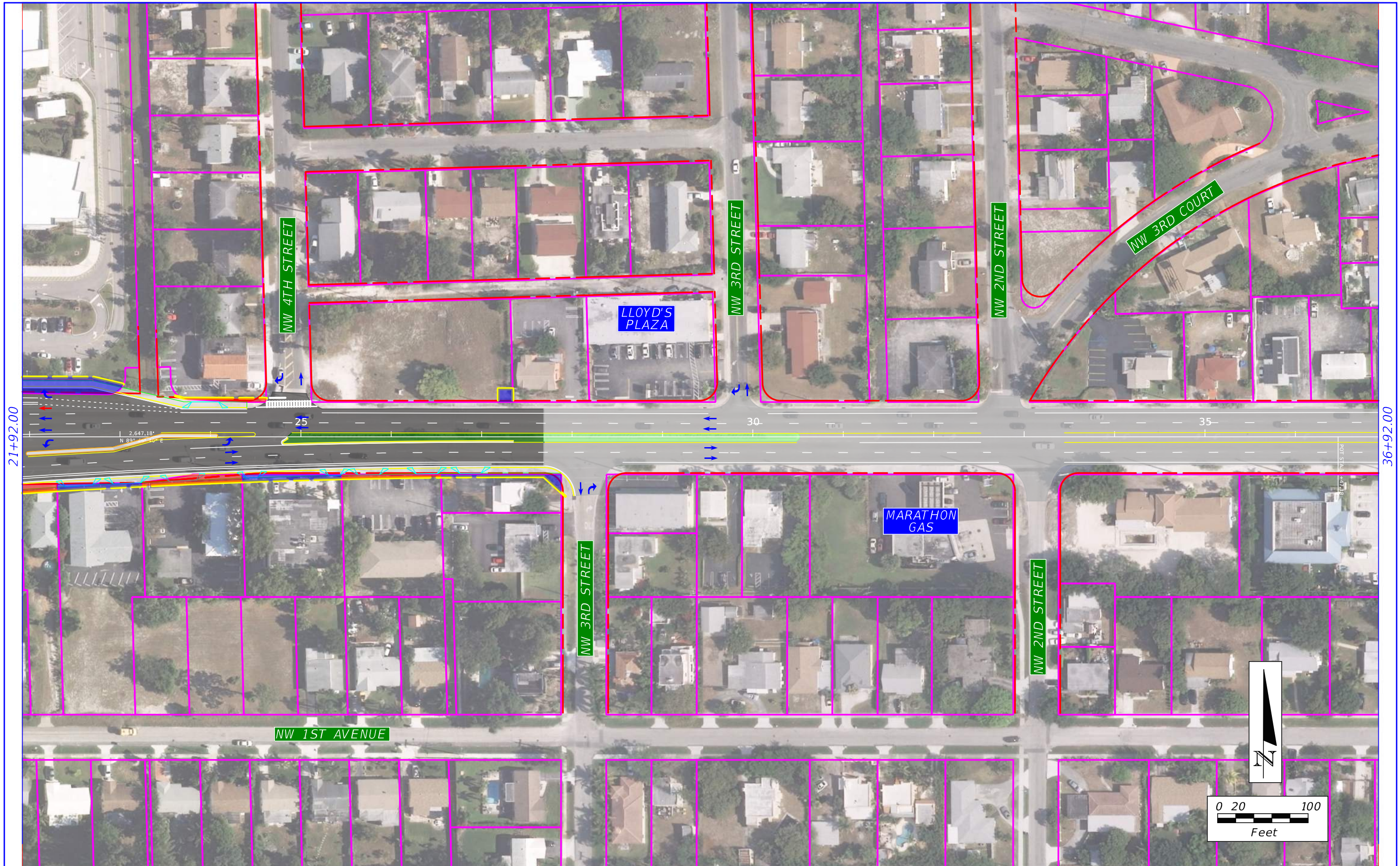

 PD&E Study
 SR 91-95 at SR-804/Boynton Beach Boulevard Interchange
 SR 91-95 at Gateway Boulevard Interchange
 FPID Nos.: 435804-1-22-01; 231932-1-22-01
 ETDM Nos.: 14180 and 14181

- EXISTING RW
- PROPOSED RW
- EXISTING LIMITED ACCESS RW
- PROPOSED LIMITED ACCESS RW

- PROPOSED PARCEL IMPACTS
- PROPOSED PARCEL IMPACTS
- PROPERTY LINE


Alternative 1
CDA

SHEET
 NO.
 2 OF 4



21+92.00

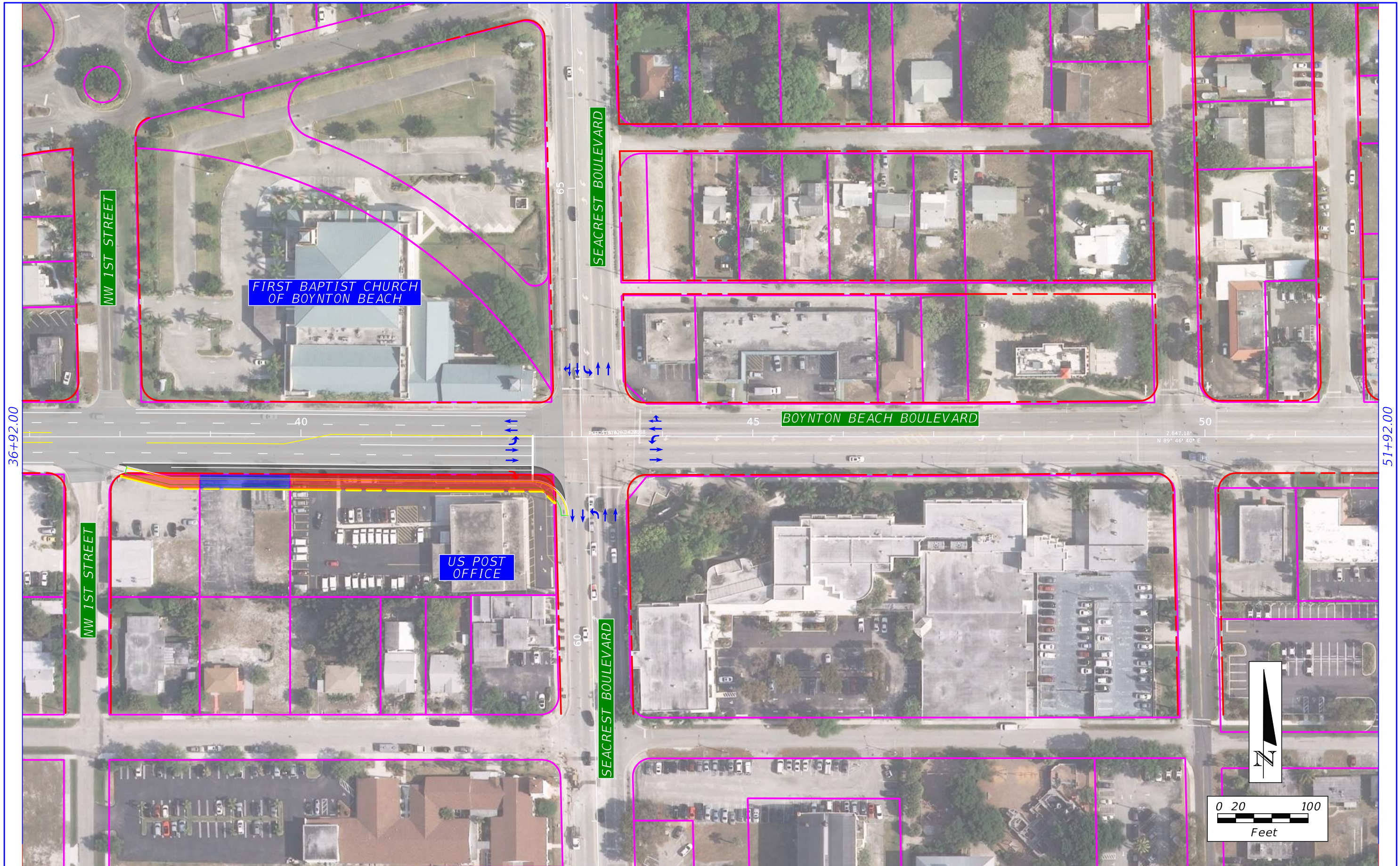
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 PD&E Study
 SR 9/1-95 at SR-804/Boynton Beach Boulevard Interchange
 SR 9/1-95 at Gateway Boulevard Interchange
 FPID Nos.: 435804-1-22-01; 231932-1-22-01
 ETDM Nos.: 14180 and 14181

	EXISTING RW		PROPOSED PARCEL IMPACTS
	PROPOSED RW		
	EXISTING LIMITED ACCESS RW		PROPERTY LINE
	PROPOSED LIMITED ACCESS RW		

Alternative 1
 CDA

SHEET
 NO.
 3 OF 4



36+92.00

51+92.00

FIRST BAPTIST CHURCH
OF BOYNTON BEACH

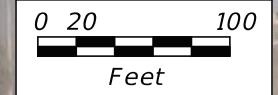
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OFFICE


NW 1ST STREET

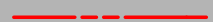



SEACREST BOULEVARD




BOYNTON BEACH BOULEVARD

SEACREST BOULEVARD



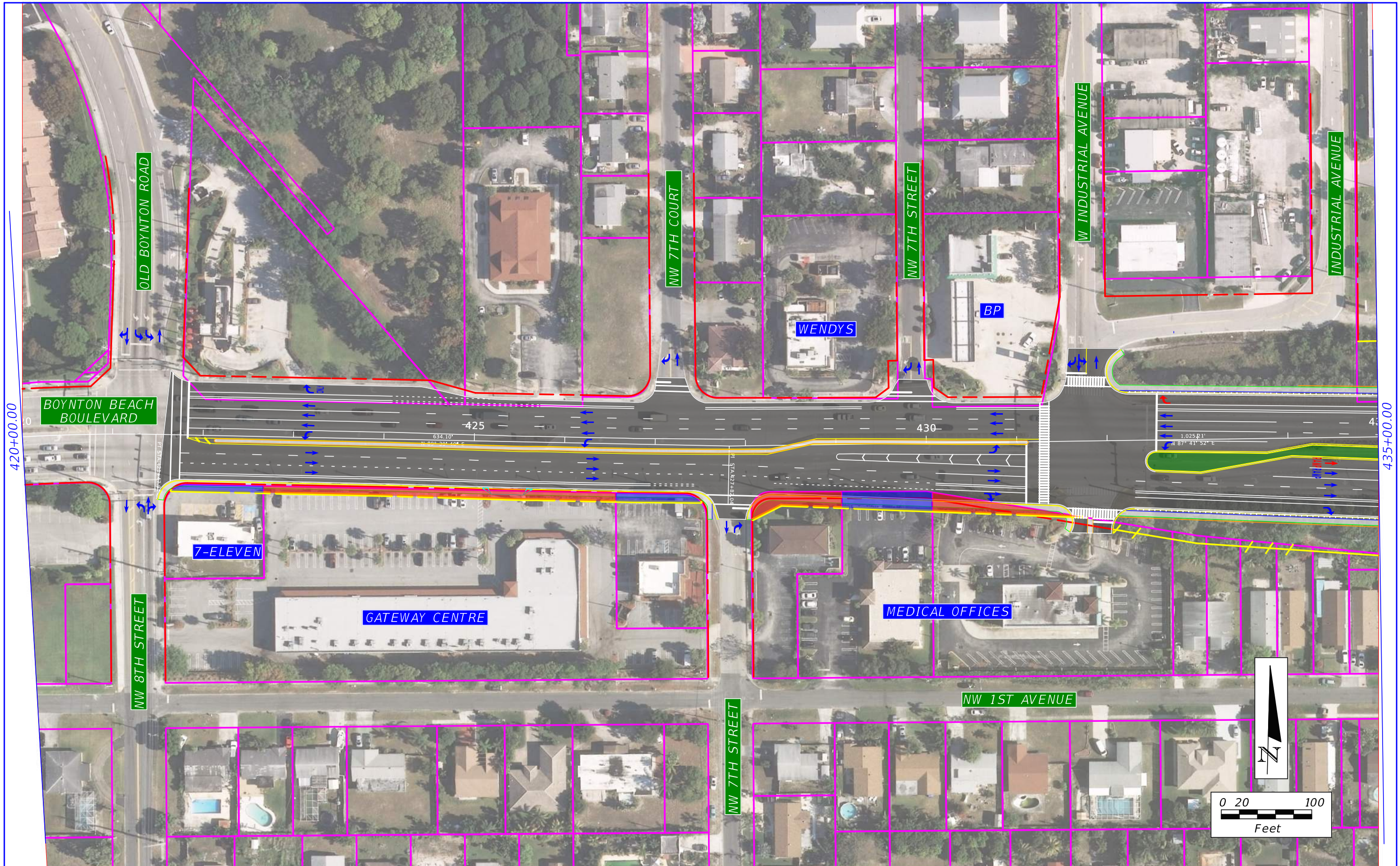

 PD&E Study
 SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange
 SR 9/I-95 at Gateway Boulevard Interchange
 FPID Nos.: 435804-1-22-01; 231932-1-22-01
 ETDM Nos.: 14180 and 14181


-  EXISTING R/W
-  PROPOSED R/W
-  EXISTING LIMITED ACCESS R/W
-  PROPOSED LIMITED ACCESS R/W

-  PROPOSED PARCEL IMPACTS
- 
-  PROPERTY LINE

Alternative 1
CDA

SHEET
 NO.
 4 OF 4



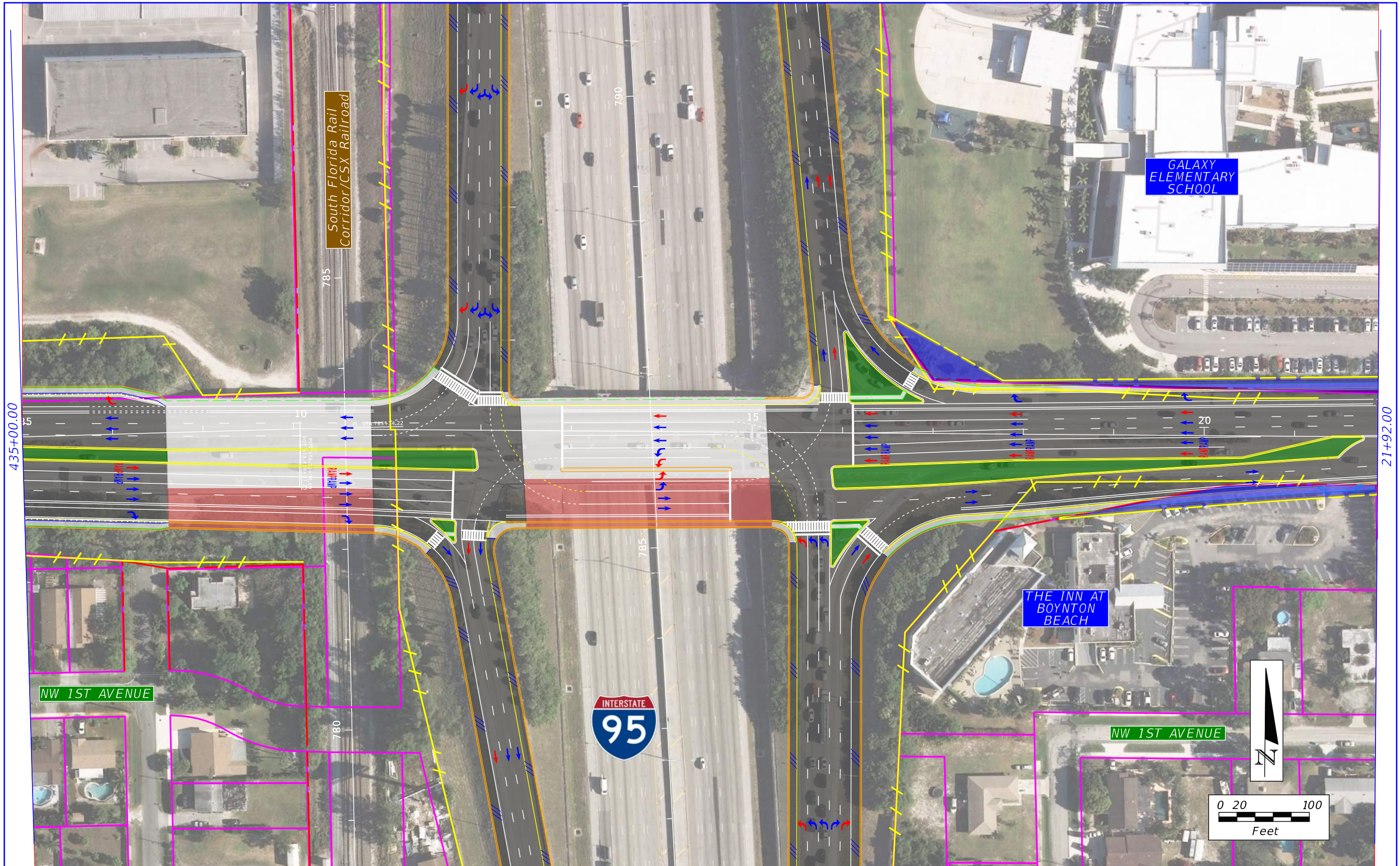

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 SR 9/1-95 at SR-804/Boynton Beach Boulevard Interchange
 SR 9/1-95 at Gateway Boulevard Interchange
 FPID Nos.: 435804-1-22-01; 231932-1-22-01
 ETDM Nos.: 14180 and 14181

- - - - - EXISTING R/W
- - - - - PROPOSED R/W
- - - - - EXISTING LIMITED ACCESS R/W
- - - - - PROPOSED LIMITED ACCESS R/W

- █ PROPOSED PARCEL IMPACTS
- █ PROPERTY LINE


Alternative 2
Streamlined CDA

SHEET
 NO.
 1 OF 3



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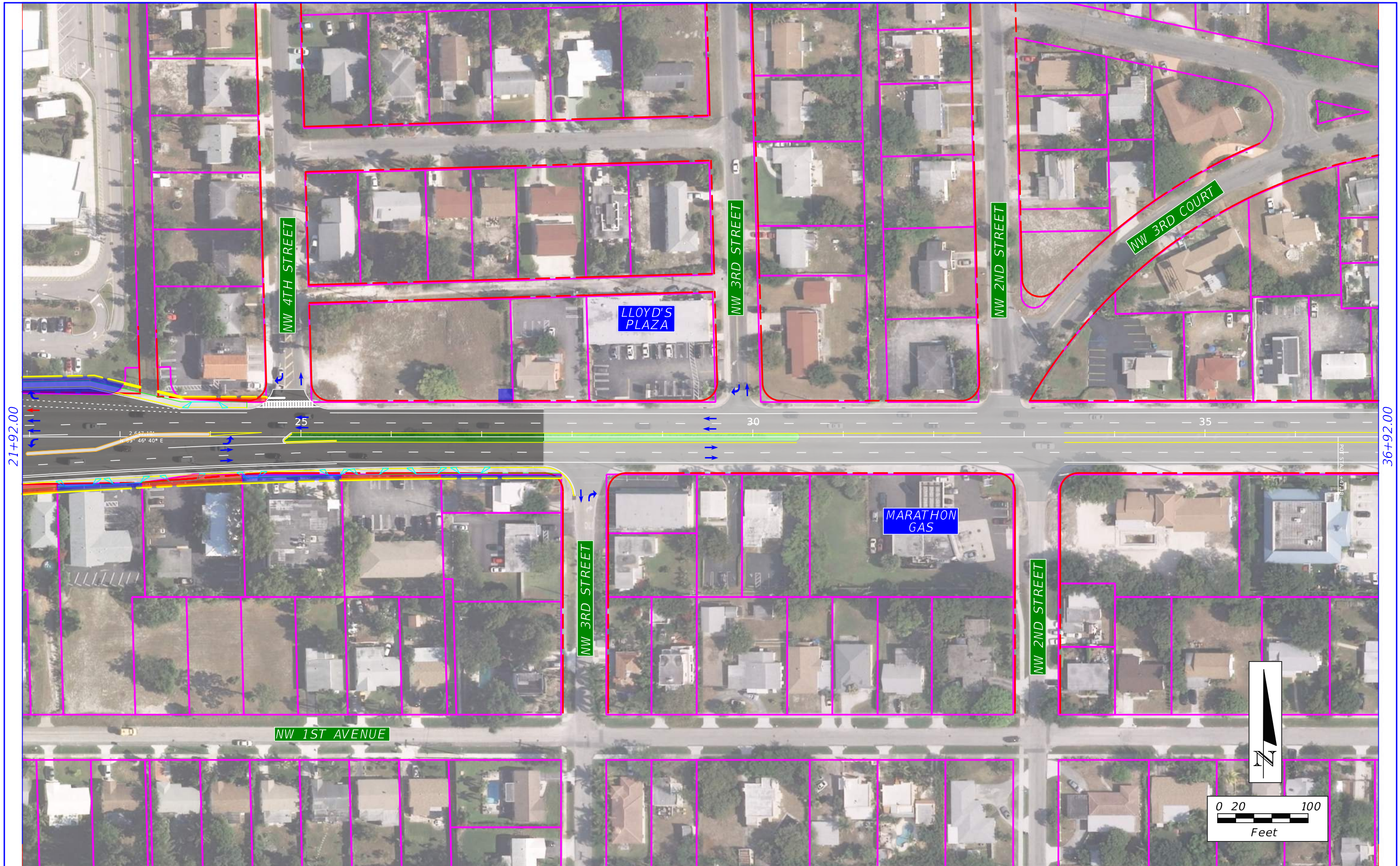
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 PD&E Study
 SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange
 SR 9/I-95 at Gateway Boulevard Interchange
 FPID Nos.: 435804-1-22-01; 231932-1-22-01
 ETDM Nos.: 14180 and 14181

	EXISTING R/W		PROPOSED PARCEL IMPACTS
	PROPOSED R/W		
	EXISTING LIMITED ACCESS R/W		PROPERTY LINE
	PROPOSED LIMITED ACCESS R/W		


Alternative 2
Streamlined CDA

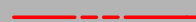



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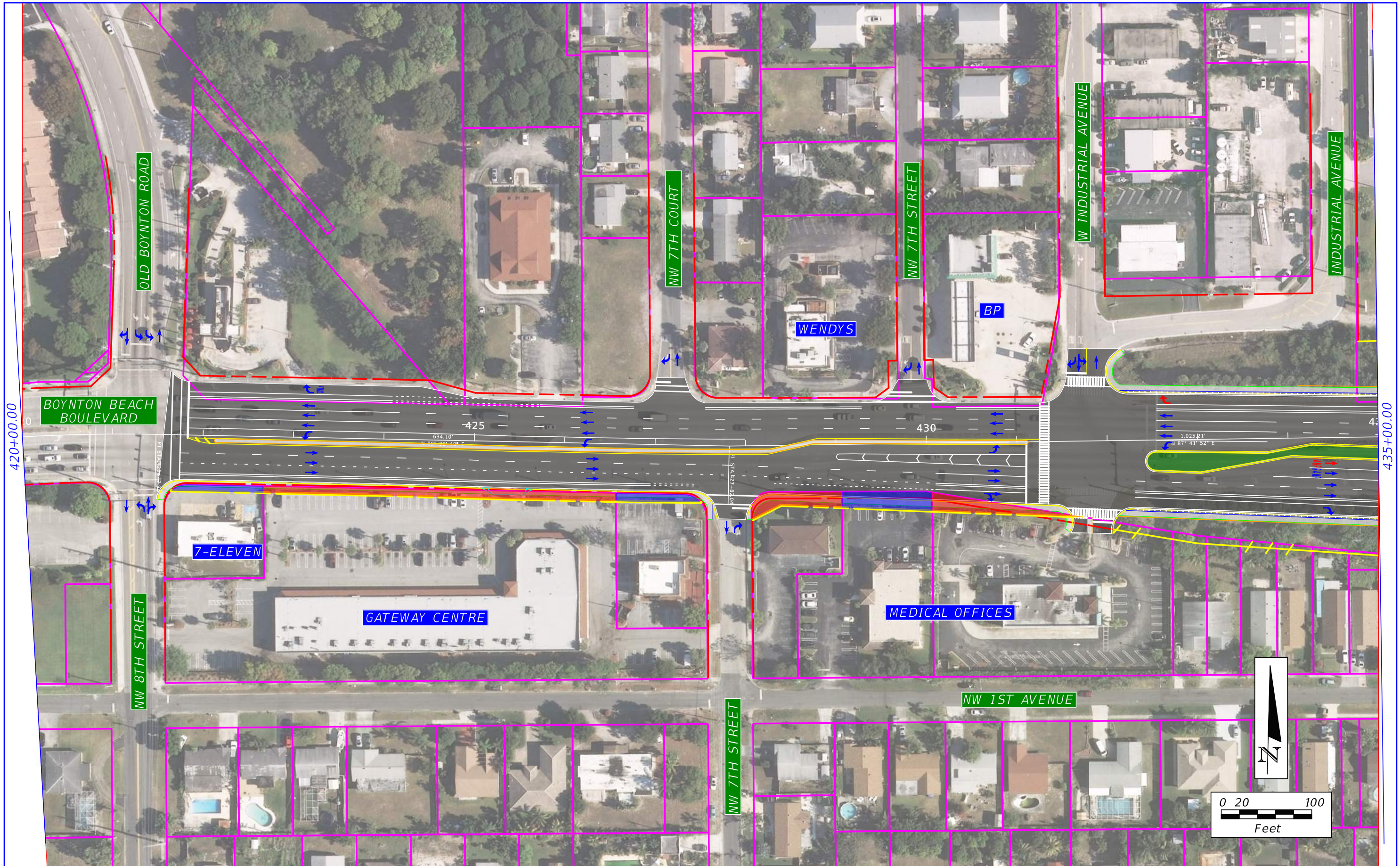

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 SR 9/1-95 at SR-804/Boynton Beach Boulevard Interchange
 SR 9/1-95 at Gateway Boulevard Interchange
 FPID Nos.: 435804-1-22-01; 231932-1-22-01
 ETDM Nos.: 14180 and 14181


 EXISTING RW
 PROPOSED RW
 EXISTING LIMITED ACCESS RW
 PROPOSED LIMITED ACCESS RW

 PROPOSED PARCEL IMPACTS

 PROPERTY LINE

Alternative 2
Streamlined CDA

SHEET
 NO.
 3 OF 3

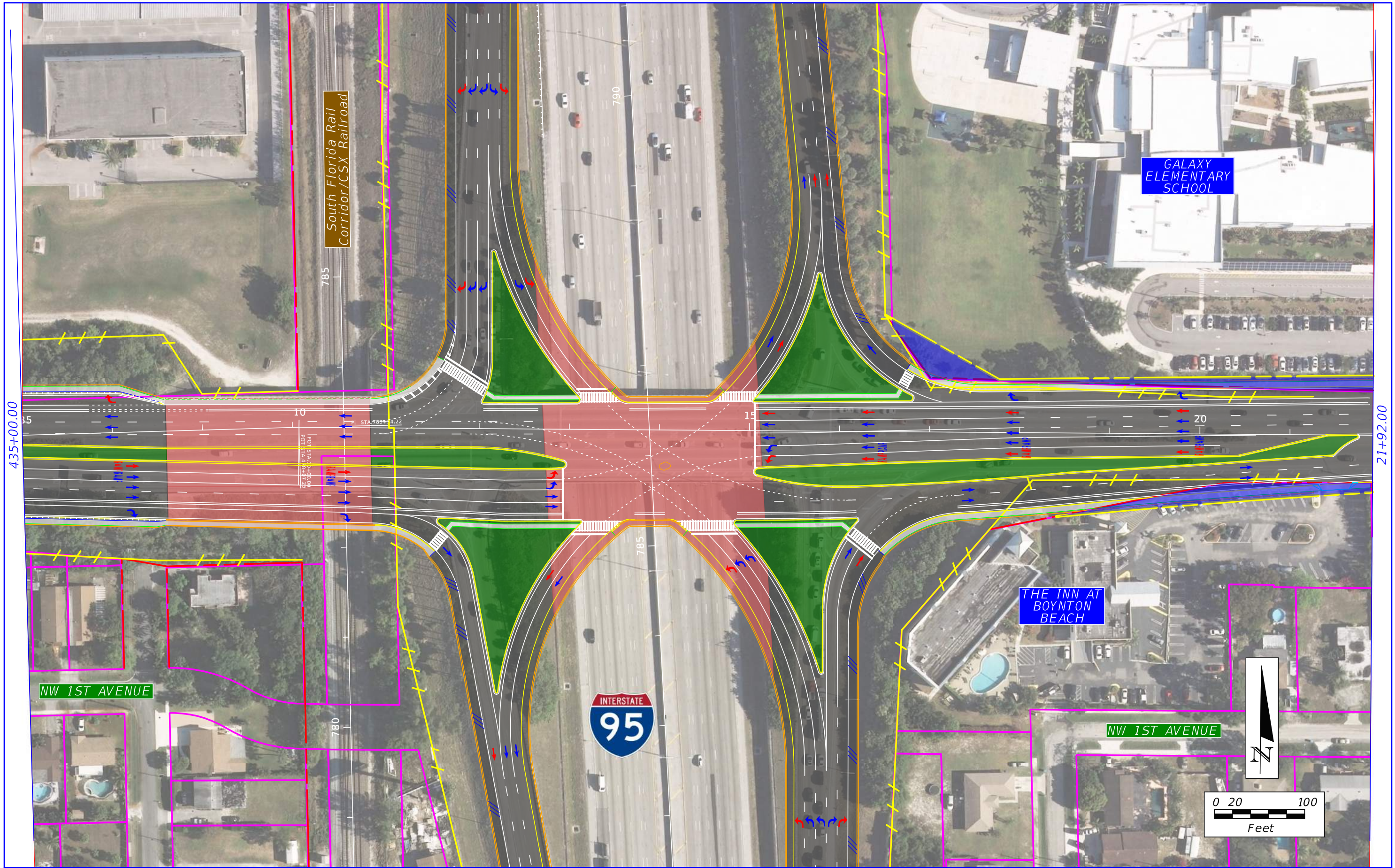




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 SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange
 SR 9/I-95 at Gateway Boulevard Interchange
 FPID Nos.: 435804-1-22-01; 231932-1-22-01
 ETDM Nos.: 14180 and 14181

	EXISTING R/W		PROPOSED PARCEL IMPACTS
	PROPOSED R/W		
	EXISTING LIMITED ACCESS R/W		PROPERTY LINE
	PROPOSED LIMITED ACCESS R/W		

Alternative 3
SPUI

SHEET
 NO.
 1 OF 3



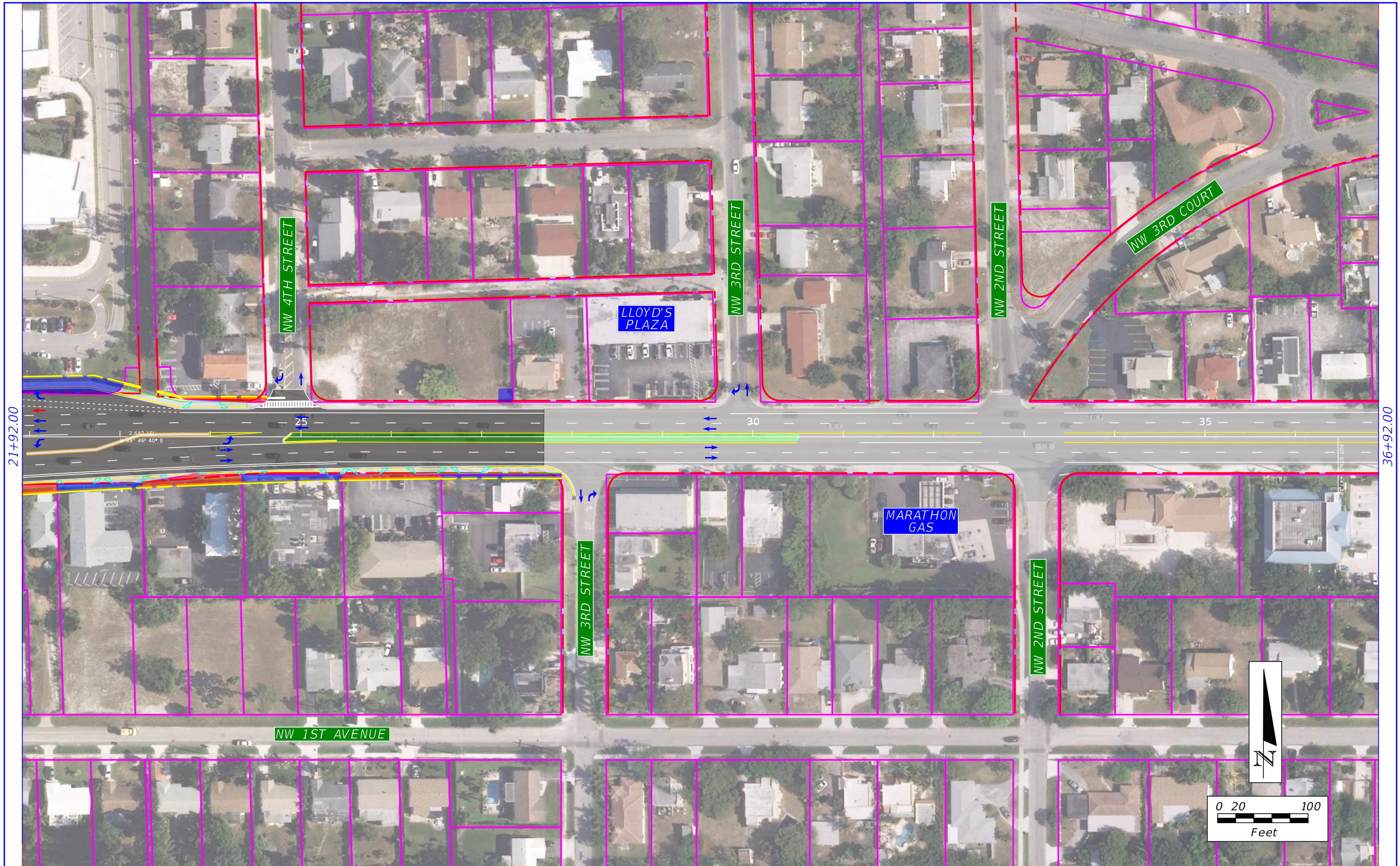

 PD&E Study
 SR 91-95 at SR-804/Boynton Beach Boulevard Interchange
 SR 91-95 at Gateway Boulevard Interchange
 FPID Nos.: 435804-1-22-01; 231932-1-22-01
 ETDM Nos.: 14180 and 14181

- EXISTING RW
- PROPOSED RW
- EXISTING LIMITED ACCESS RW
- PROPOSED LIMITED ACCESS RW

- PROPOSED PARCEL IMPACTS
- PROPOSED PARCEL IMPACTS
- PROPERTY LINE


Alternative 3
SPUI

SHEET
 NO.
 2 OF 3



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 PD&E Study
 SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange
 SR 9/I-95 at Gateway Boulevard Interchange
 FPID Nos.: 435804-1-22-01; 231932-1-22-01
 ETDM Nos.: 14180 and 14181

- EXISTING RW
- PROPOSED RW
- EXISTING LIMITED ACCESS RW
- PROPOSED LIMITED ACCESS RW

- █ PROPOSED PARCEL IMPACTS
- █ PROPOSED PARCEL IMPACTS
- PROPERTY LINE

Alternative 3
SPUI

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 3 OF 3

Appendix B

Preliminary Alternatives
Gateway Boulevard

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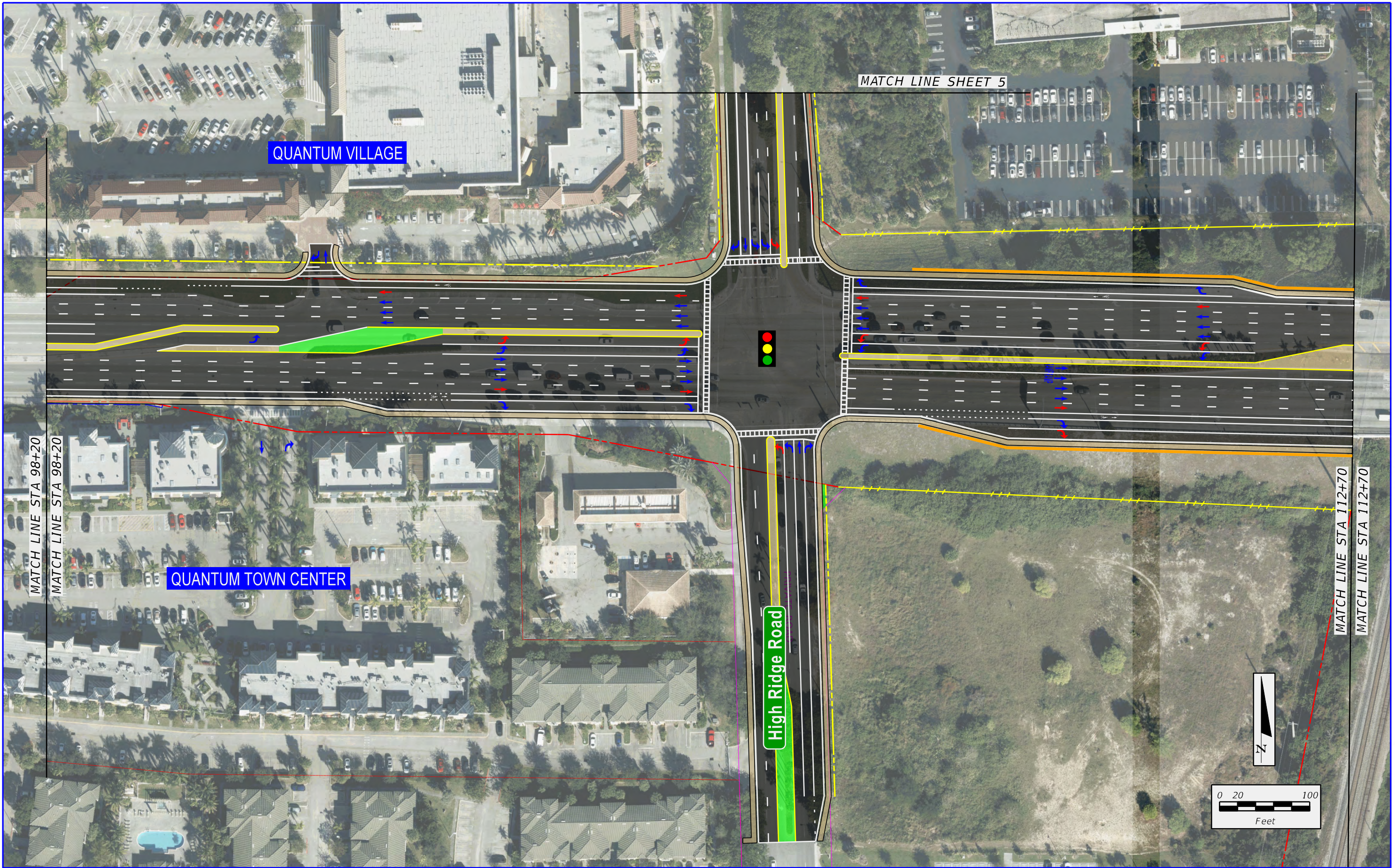
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	PROPERTY LINE		BARRIER WALL		PROPOSED BRIDGE		PROPOSED LANE
	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
CDA Best Fit

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- EXISTING R/W
- PROPERTY LINE
- EXISTING L/A R/W
- PROPOSED R/W

- PROPOSED L/A R/W
- BARRIER WALL
- GRASSED AREA
- CONC SIDEWALK /MEDIAN

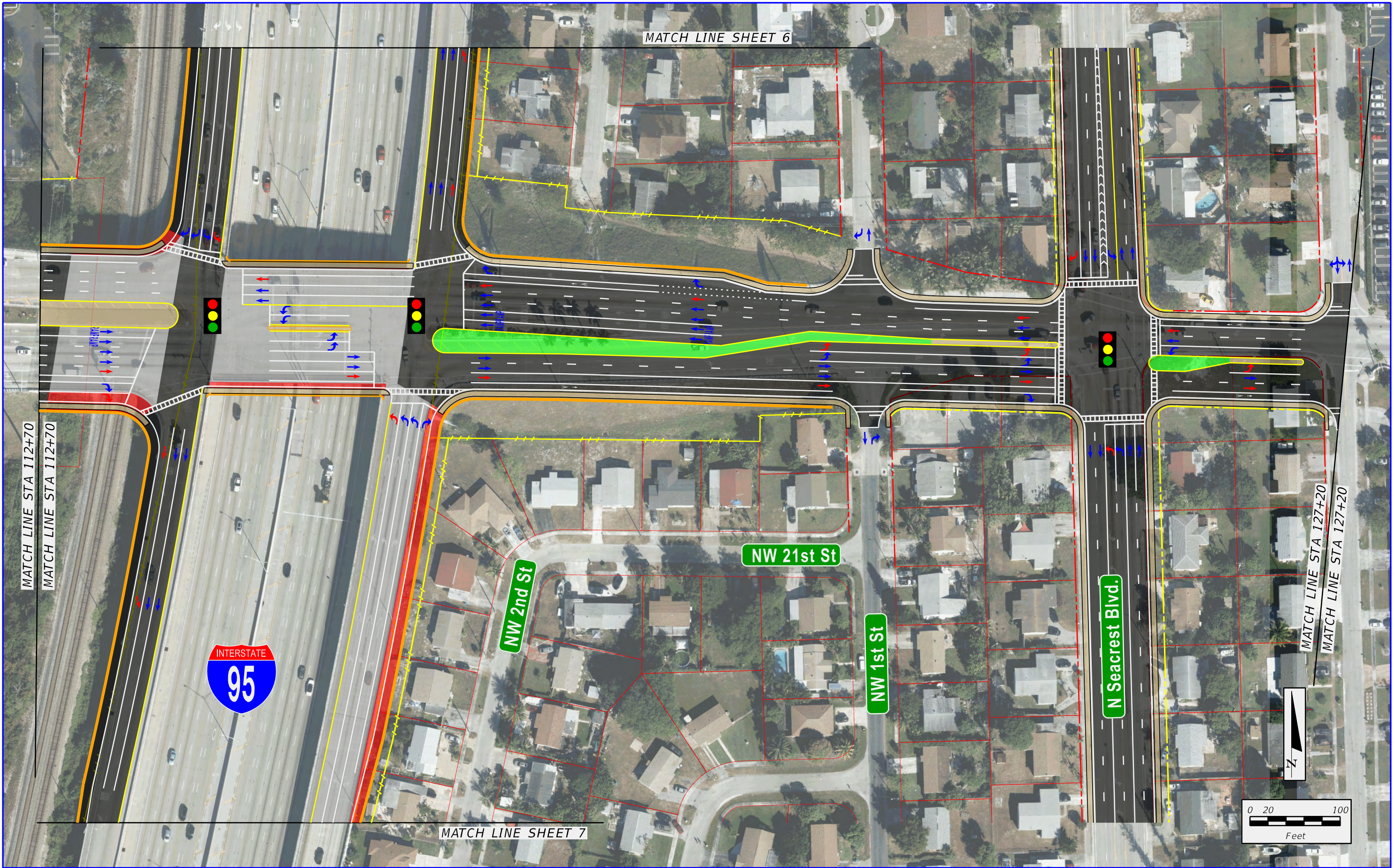
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- PROPOSED BRIDGE
- PROPOSED PAVEMENT

- EXISTING LANE
- PROPOSED LANE

I-95 and Gateway Blvd. Interchange
CDA Best Fit

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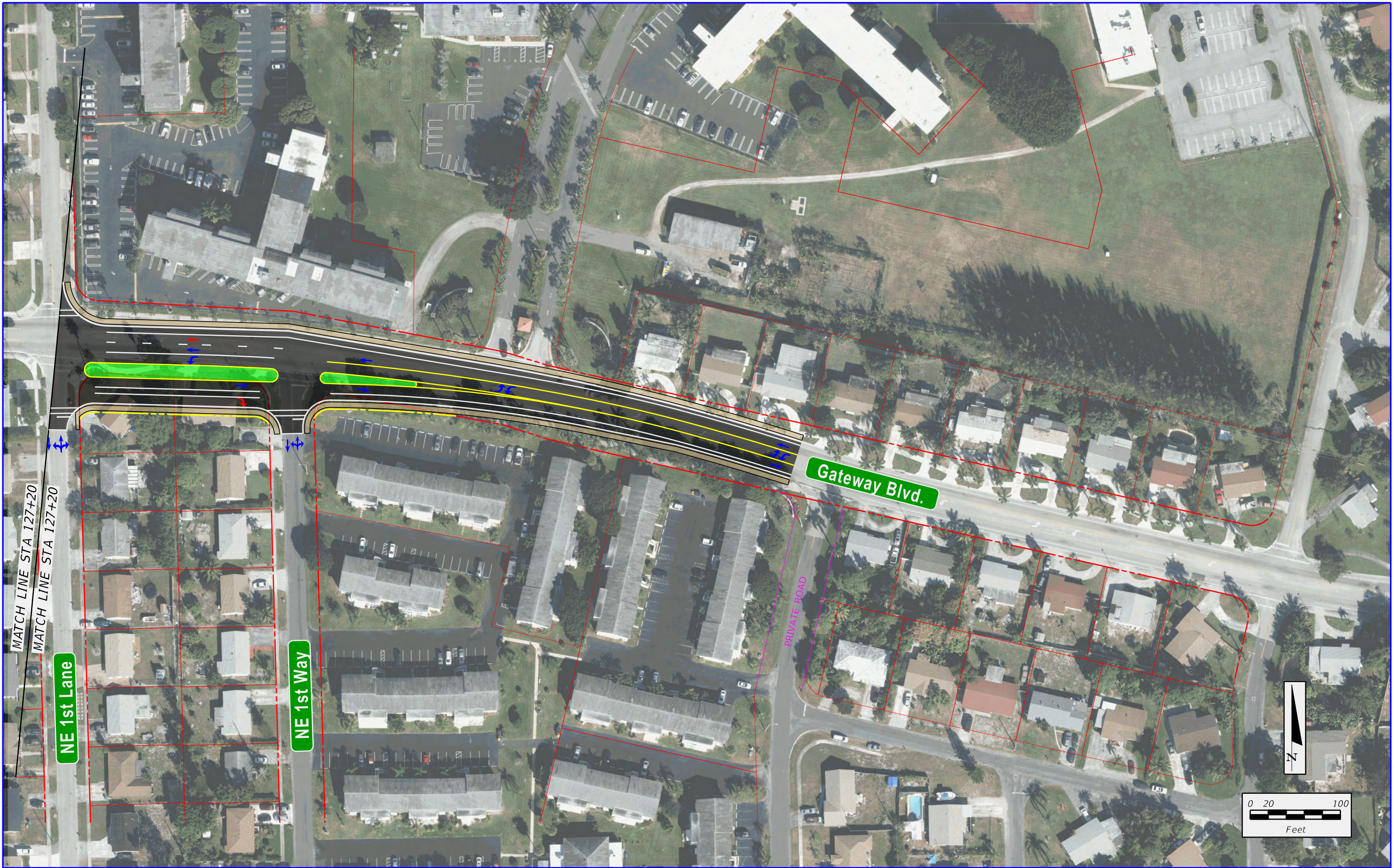
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	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
CDA Best Fit

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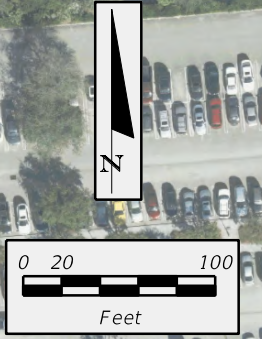
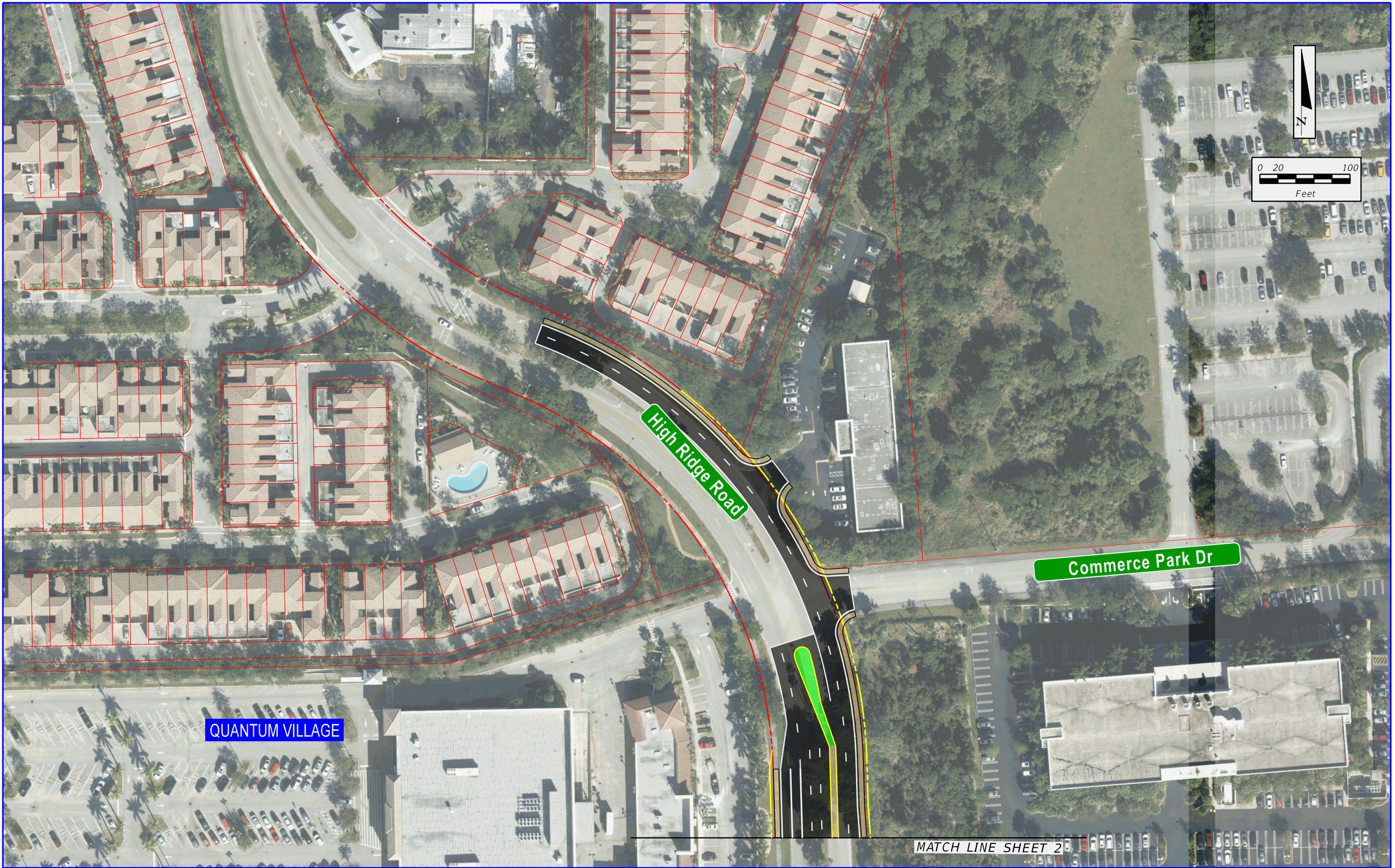
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| | EXISTING R/W | | PROPOSED L/A R/W | | EXISTING BRIDGE | | EXISTING LANE |
| | PROPERTY LINE | | BARRIER WALL | | PROPOSED BRIDGE | | PROPOSED LANE |
| | EXISTING L/A R/W | | GRASSED AREA | | PROPOSED PAVEMENT | | |
| | PROPOSED R/W | | CONC SIDEWALK /MEDIAN | | | | |

I-95 and Gateway Blvd. Interchange
CDA Best Fit

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	PROPERTY LINE		BARRIER WALL		PROPOSED BRIDGE		PROPOSED LANE
	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
CDA Best Fit

SHEET NO.
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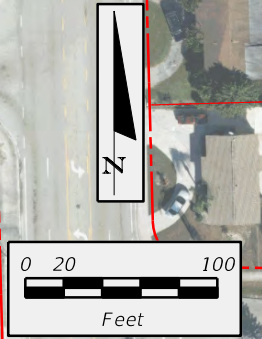
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	PROPERTY LINE		BARRIER WALL		PROPOSED BRIDGE		PROPOSED LANE
	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
CDA Best Fit

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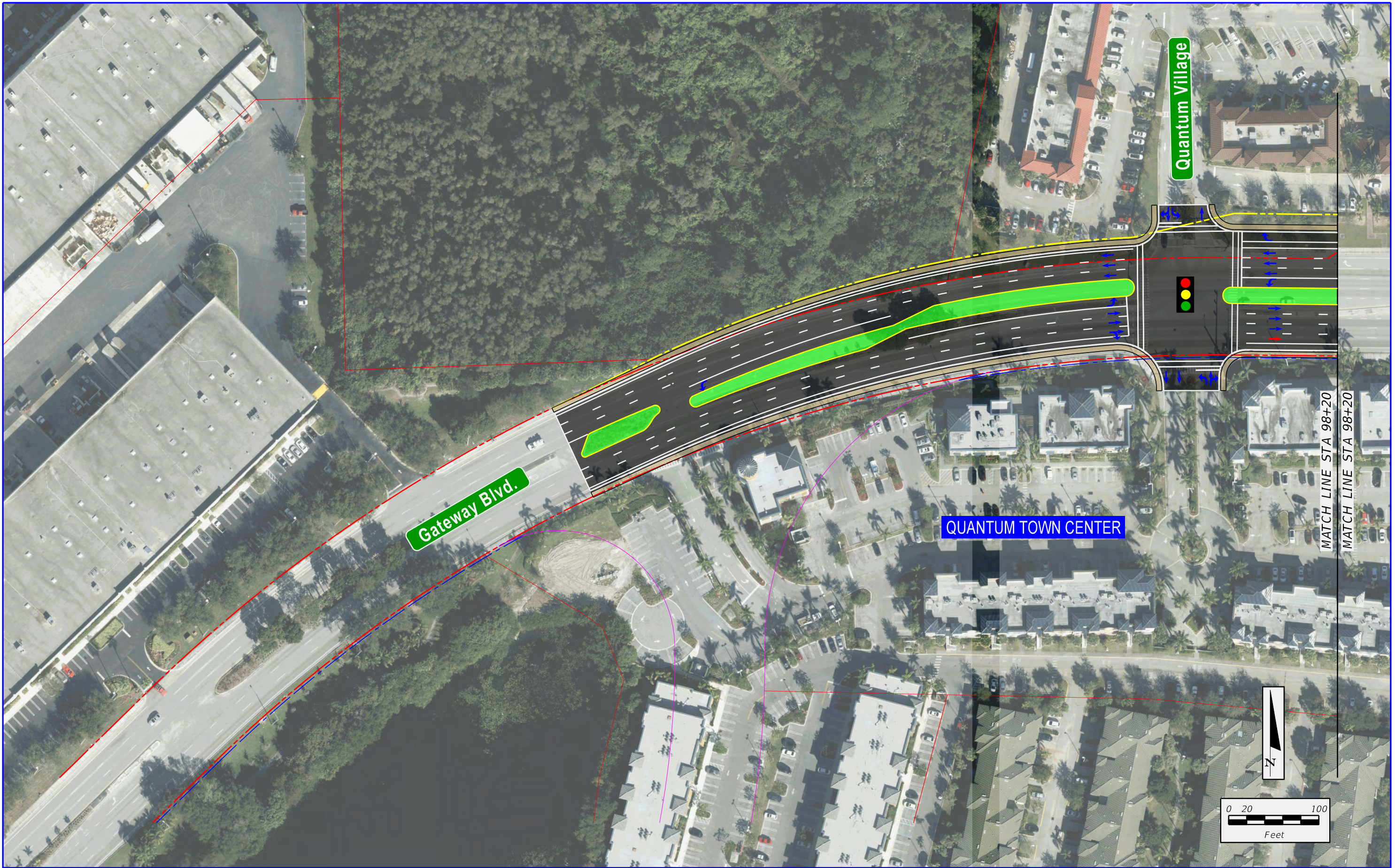
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	PROPERTY LINE		BARRIER WALL		PROPOSED BRIDGE		PROPOSED LANE
	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
CDA Best Fit

SHEET NO.
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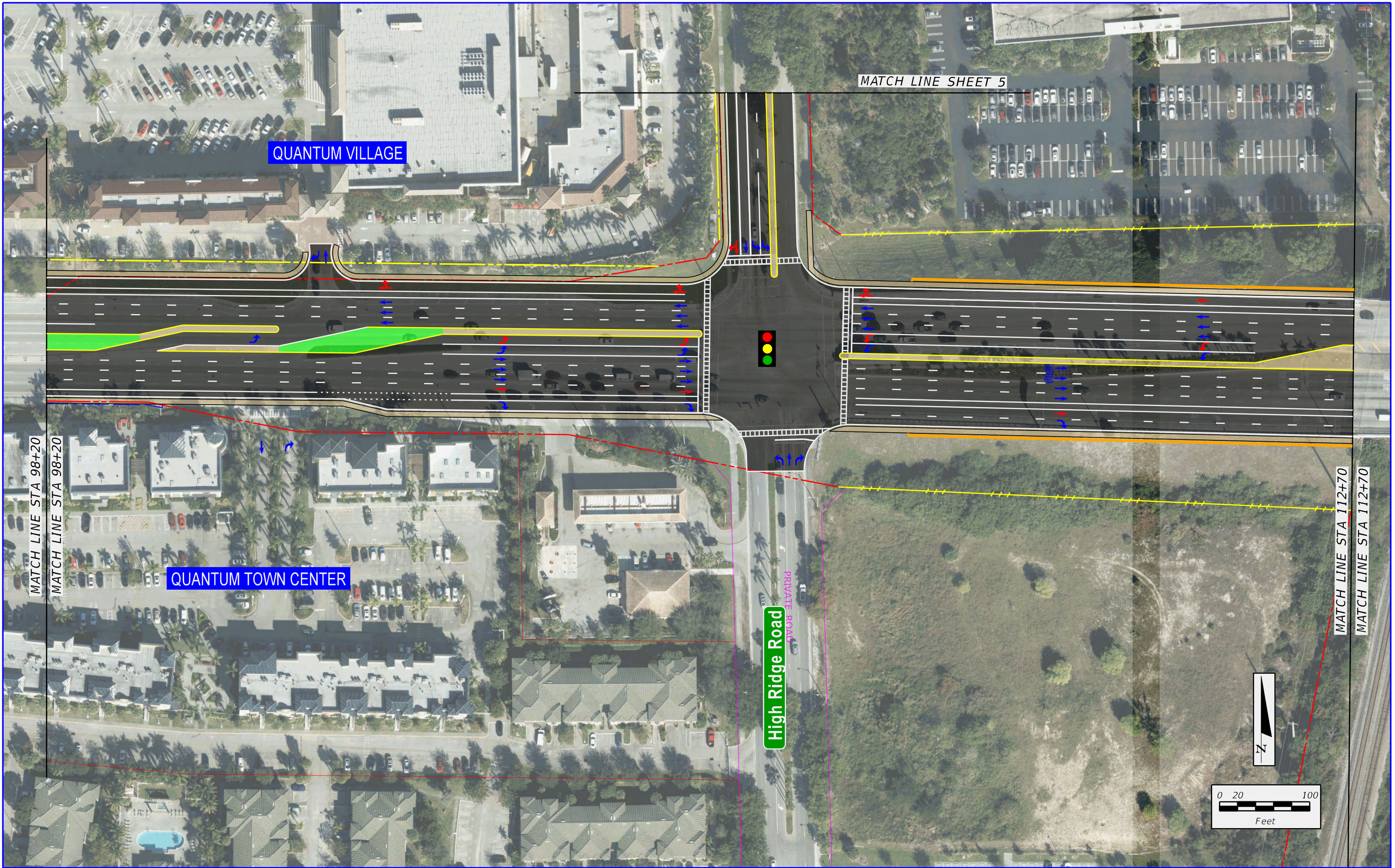
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	PROPERTY LINE		BARRIER WALL		PROPOSED BRIDGE		PROPOSED LANE
	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
CDA Streamlined Best Fit

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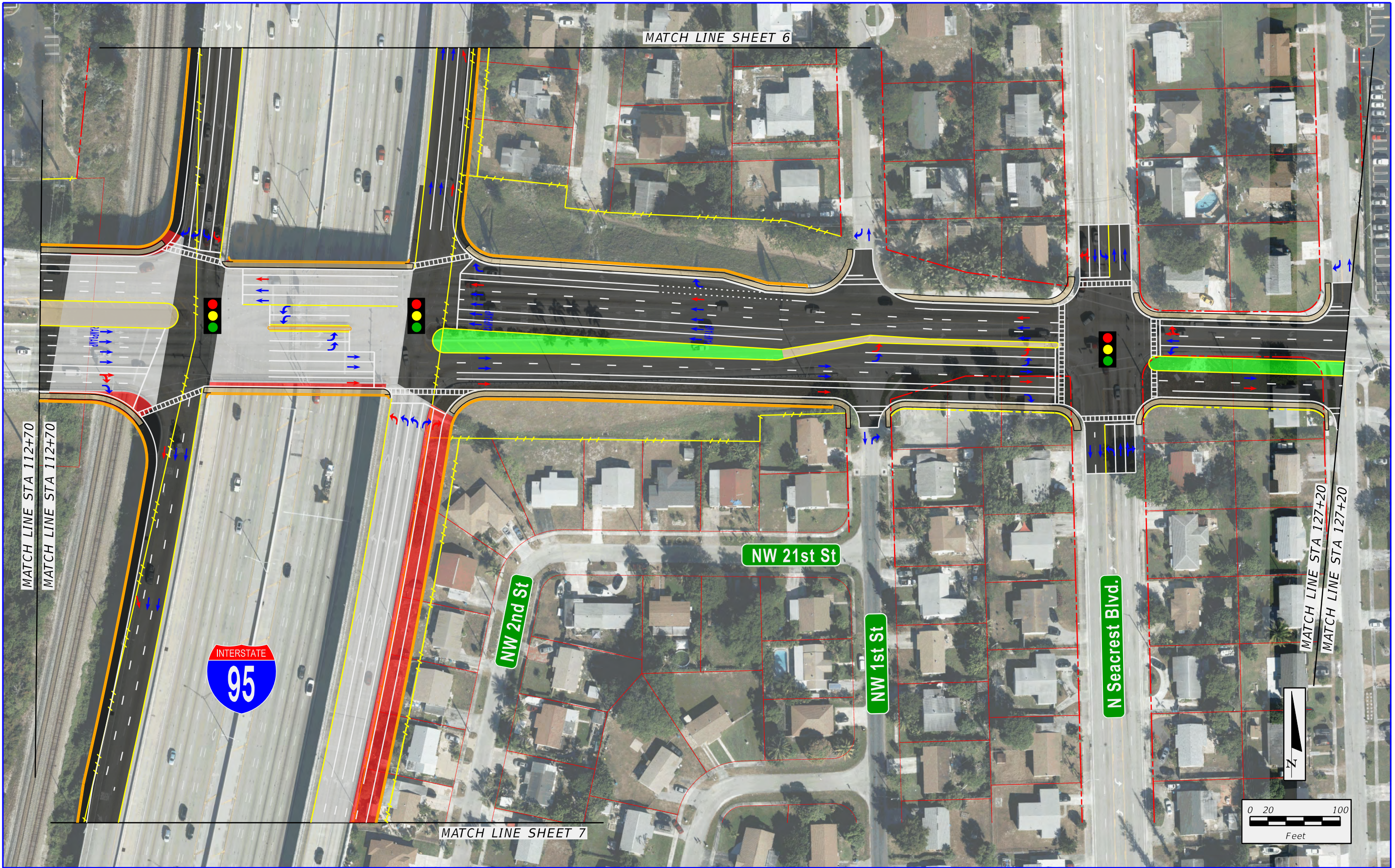
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	PROPERTY LINE		BARRIER WALL		PROPOSED BRIDGE		PROPOSED LANE
	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
CDA Streamlined Best Fit

SHEET NO.
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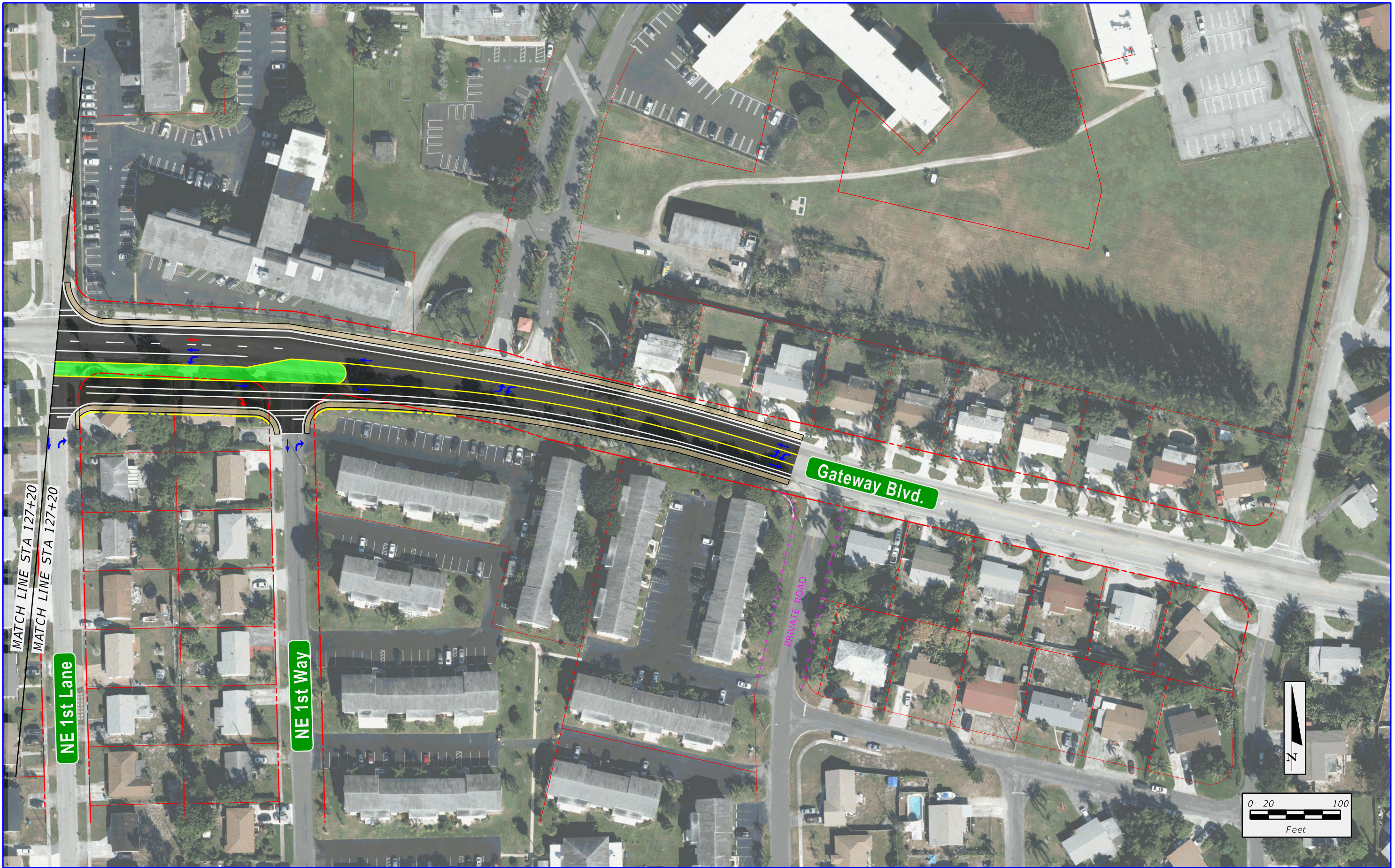
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	PROPERTY LINE		BARRIER WALL		PROPOSED BRIDGE		PROPOSED LANE
	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
CDA Streamlined Best Fit

SHEET NO.
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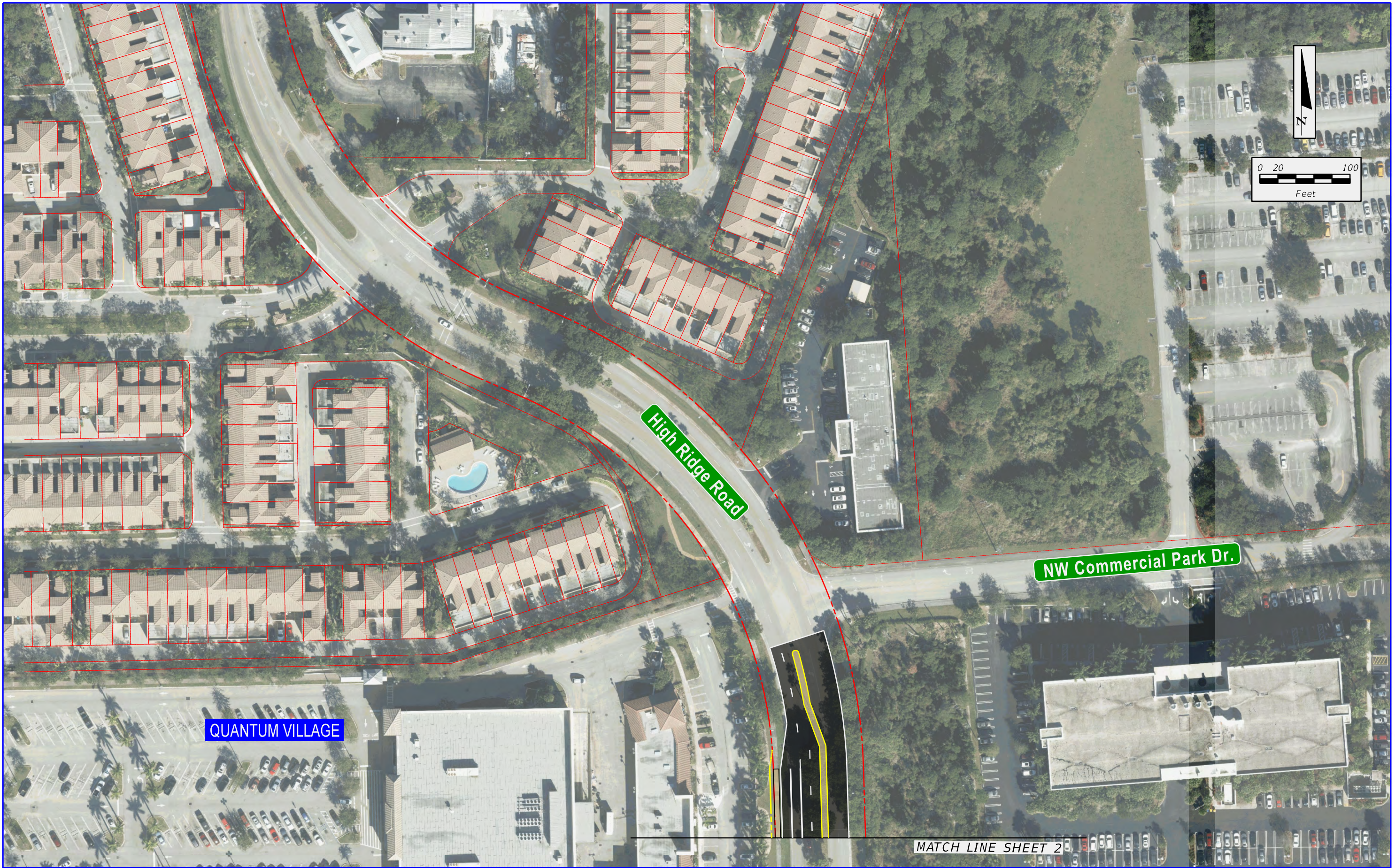
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| | EXISTING R/W | | PROPOSED L/A R/W | | EXISTING BRIDGE | | EXISTING LANE |
| | PROPERTY LINE | | BARRIER WALL | | PROPOSED BRIDGE | | PROPOSED LANE |
| | EXISTING L/A R/W | | GRASSED AREA | | PROPOSED PAVEMENT | | |
| | PROPOSED R/W | | CONC SIDEWALK /MEDIAN | | | | |

I-95 and Gateway Blvd. Interchange
CDA Streamlined Best Fit

SHEET NO.
4

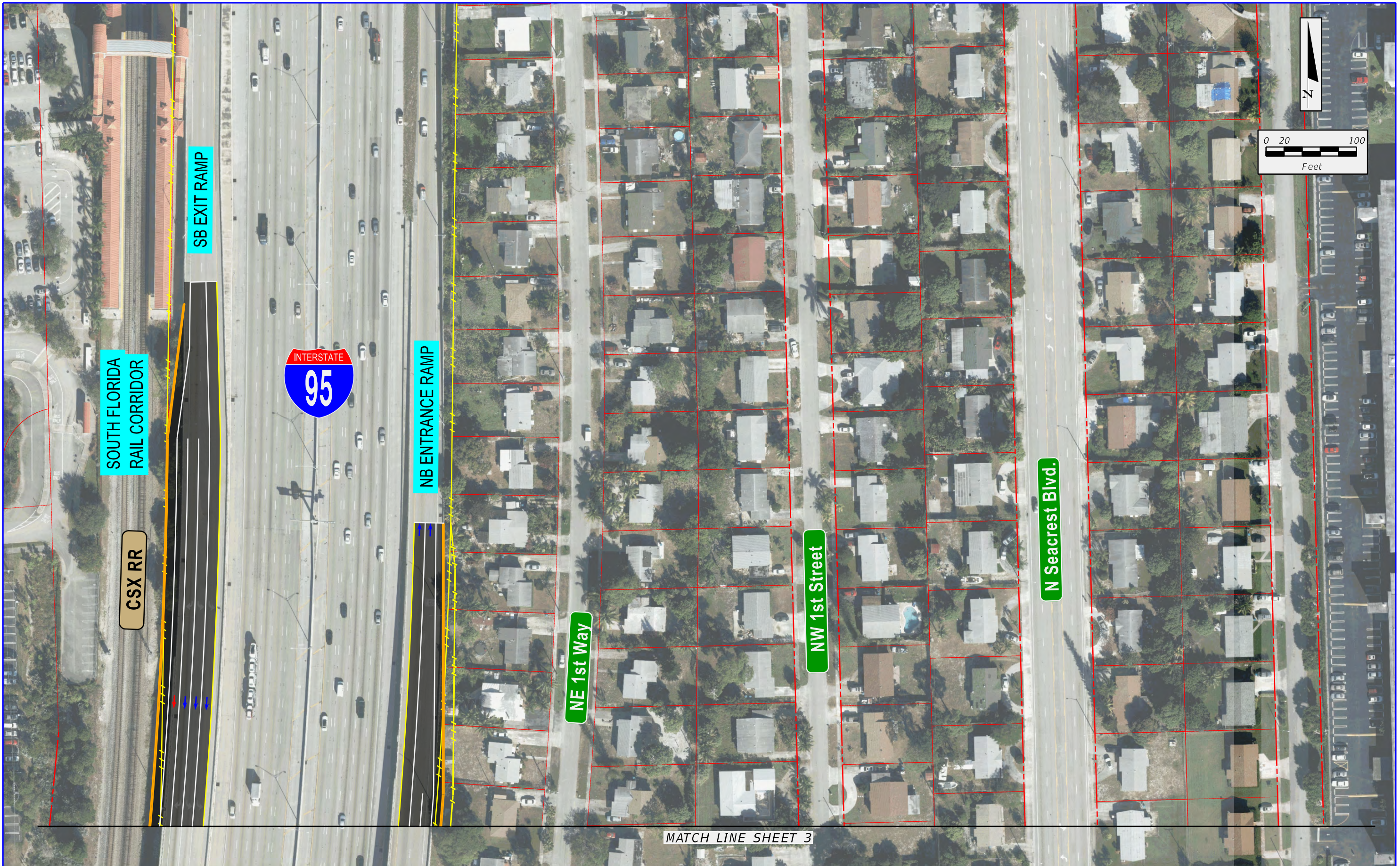
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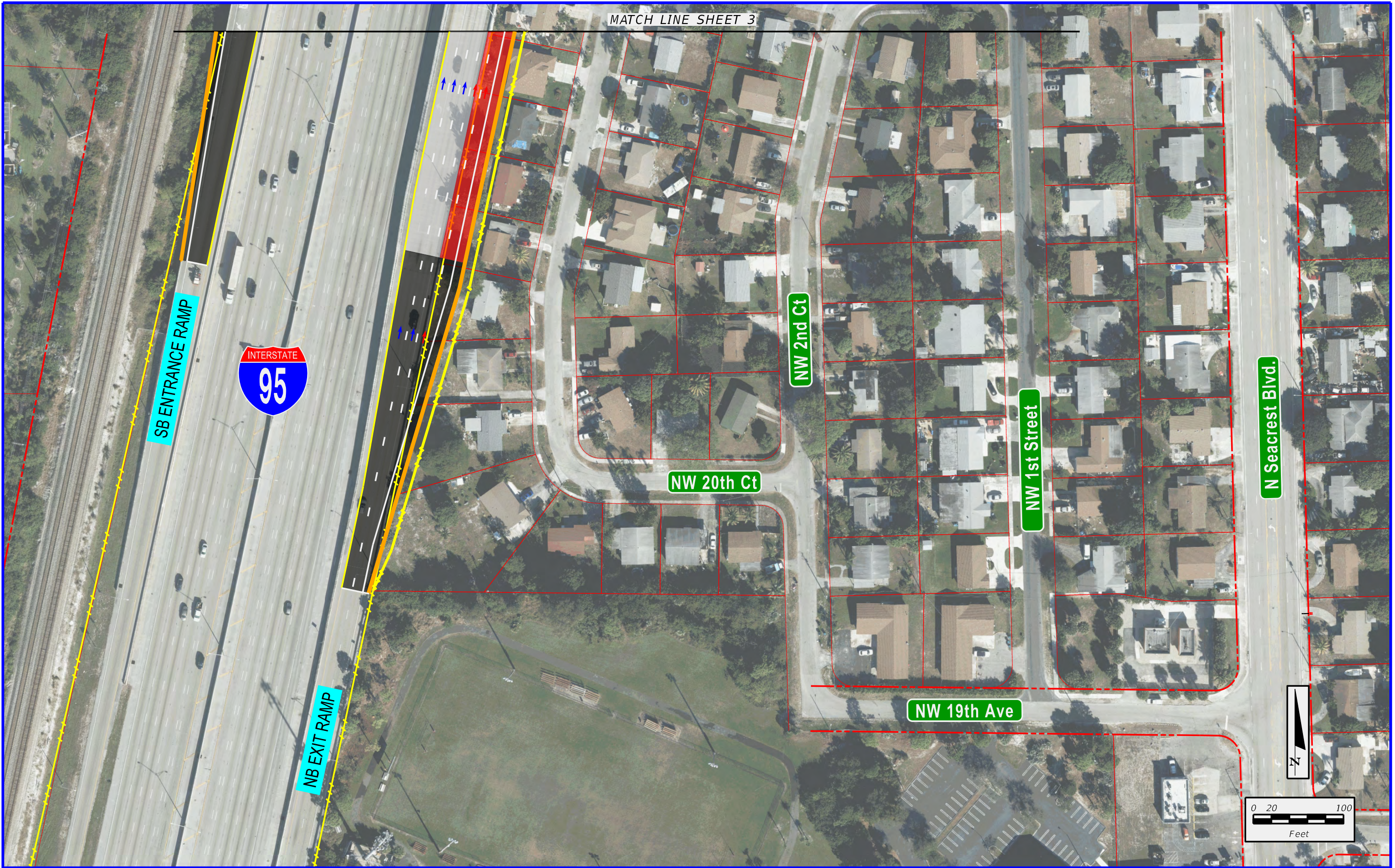


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	PROPERTY LINE		BARRIER WALL		PROPOSED BRIDGE		PROPOSED LANE
	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
CDA Streamlined Best Fit

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- EXISTING R/W
- PROPERTY LINE
- EXISTING L/A R/W
- PROPOSED R/W

- PROPOSED L/A R/W
- BARRIER WALL
- GRASSED AREA
- CONC SIDEWALK /MEDIAN

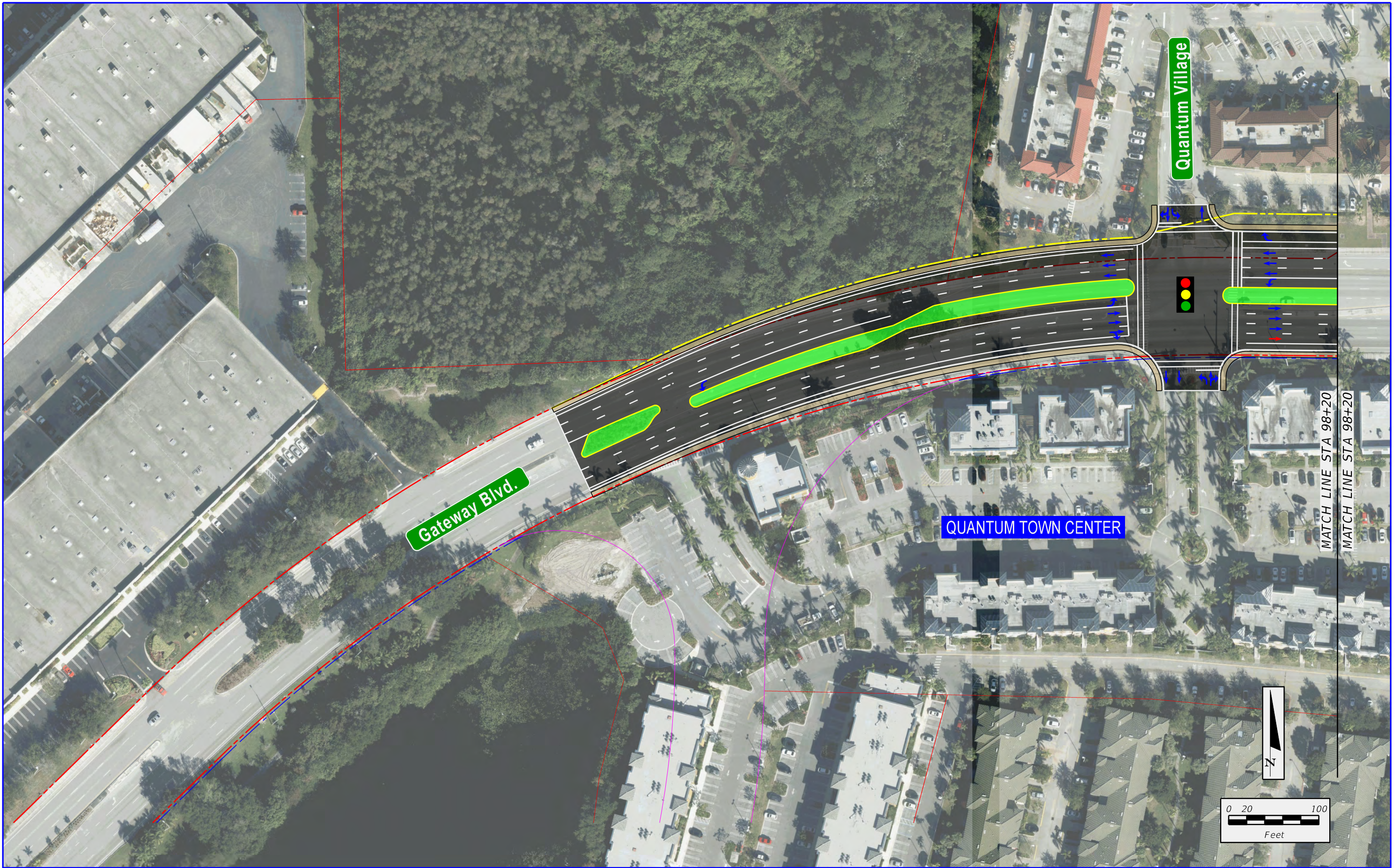
- EXISTING BRIDGE
- PROPOSED BRIDGE
- PROPOSED PAVEMENT

- EXISTING LANE
- PROPOSED LANE

I-95 and Gateway Blvd. Interchange
CDA Streamlined Best Fit

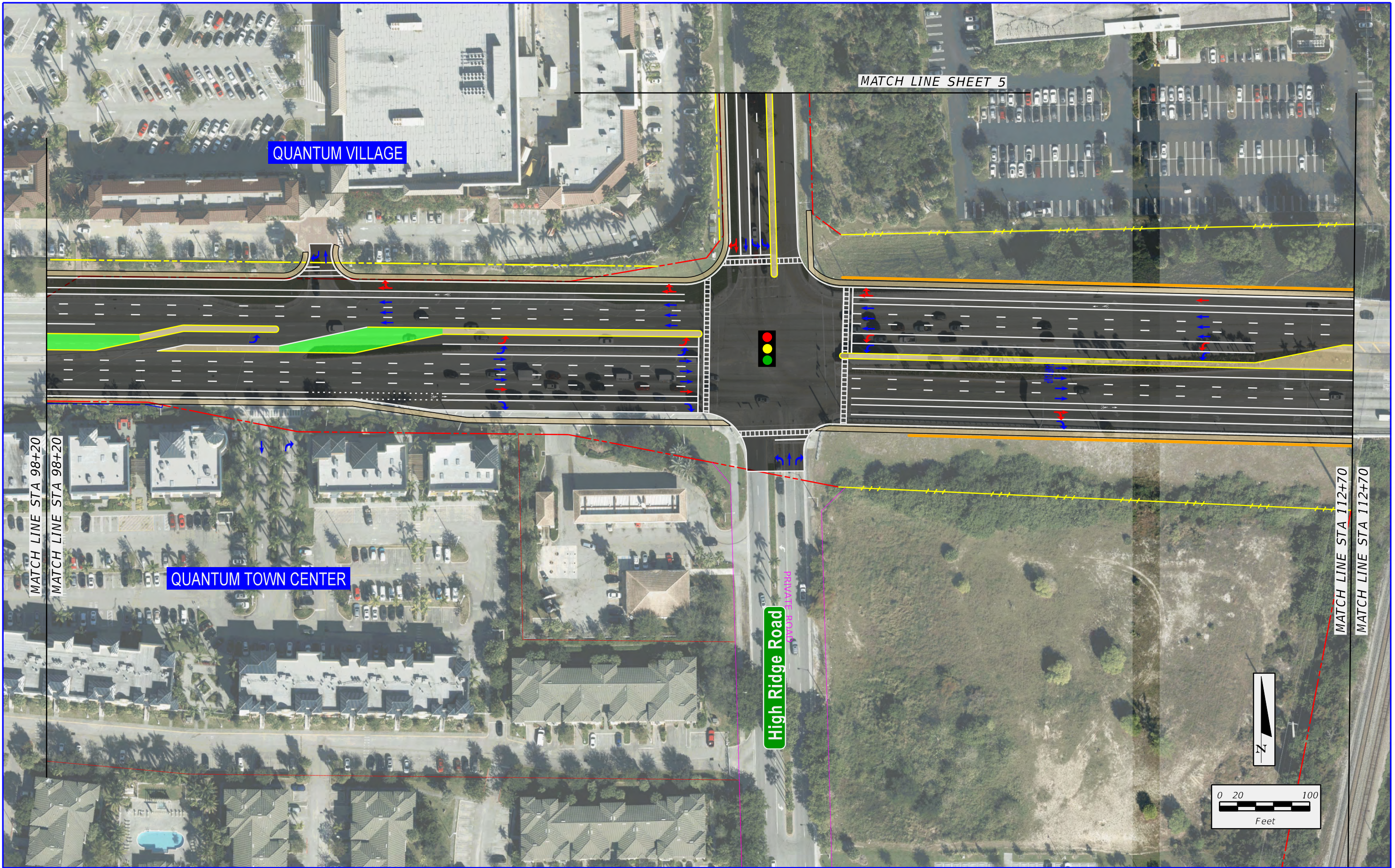
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1	2	3	4																
		7																	

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	5	6	
1	2	3	4
		7	

- EXISTING R/W
- PROPERTY LINE
- EXISTING L/A R/W
- PROPOSED R/W

- PROPOSED L/A R/W
- BARRIER WALL
- GRASSED AREA
- CONC SIDEWALK /MEDIAN

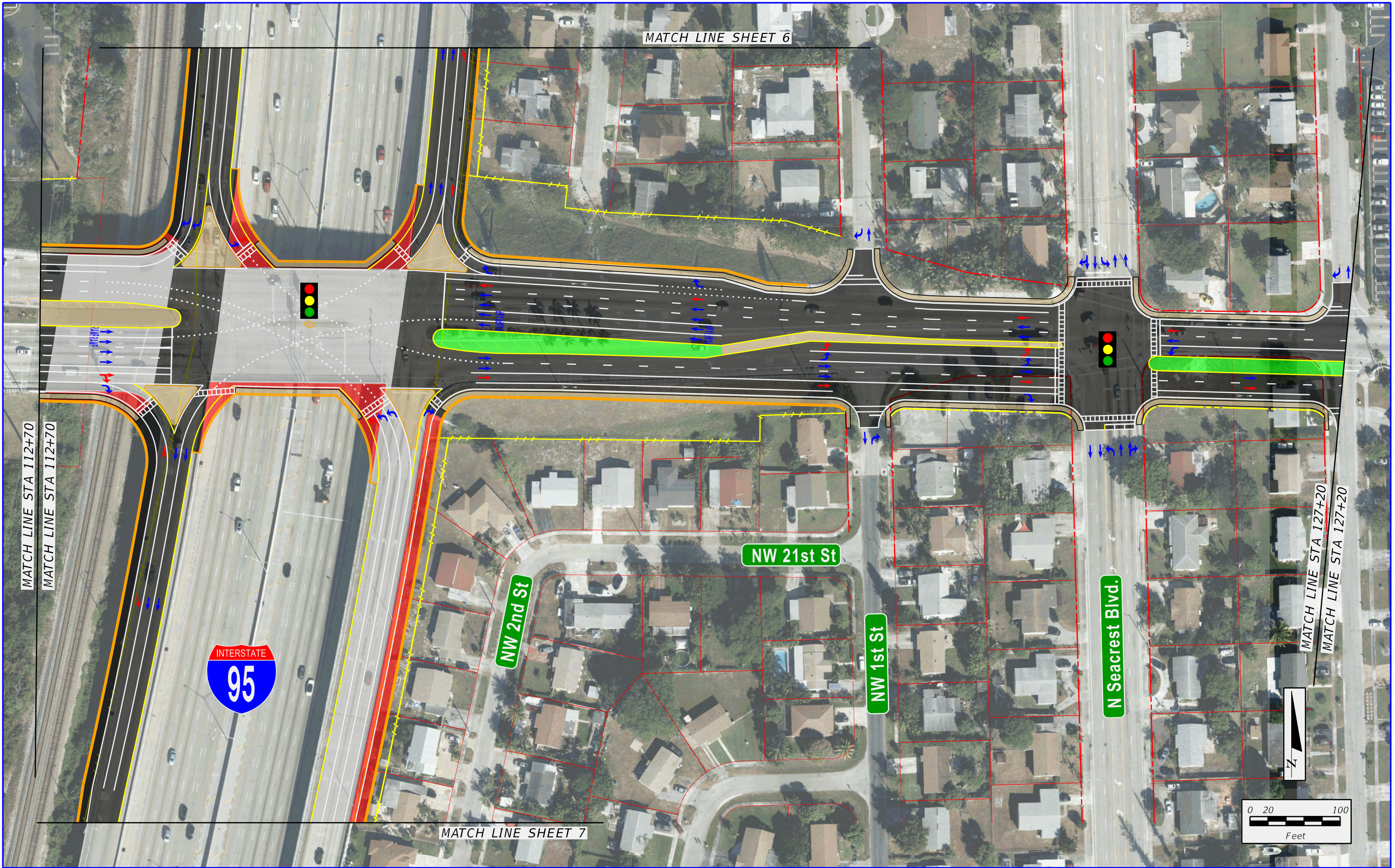
- EXISTING BRIDGE
- PROPOSED BRIDGE
- PROPOSED PAVEMENT

- EXISTING LANE
- PROPOSED LANE

I-95 and Gateway Blvd. Interchange
SPUI Best Fit

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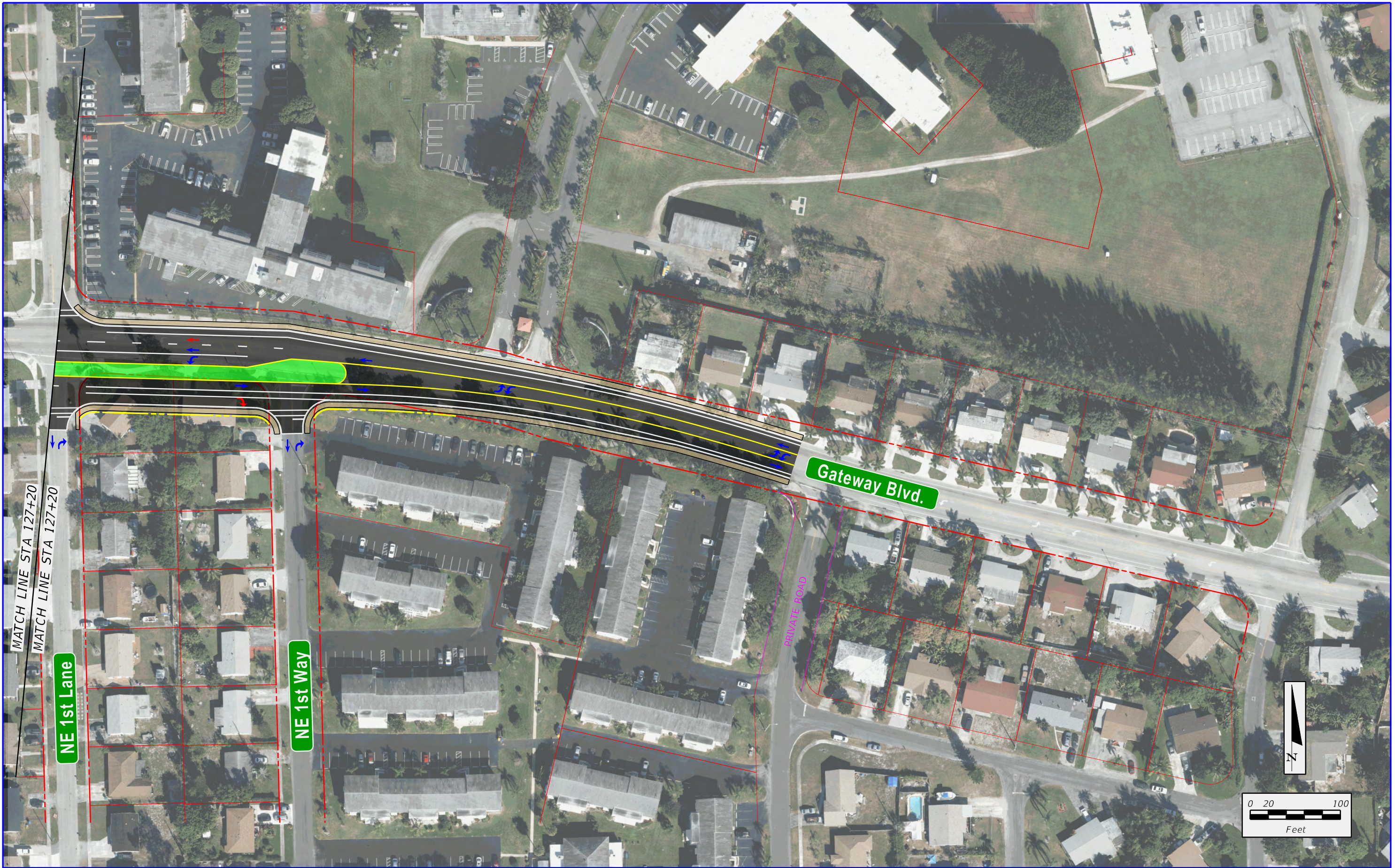
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I-95 and Gateway Blvd. Interchange
SPUI Best Fit

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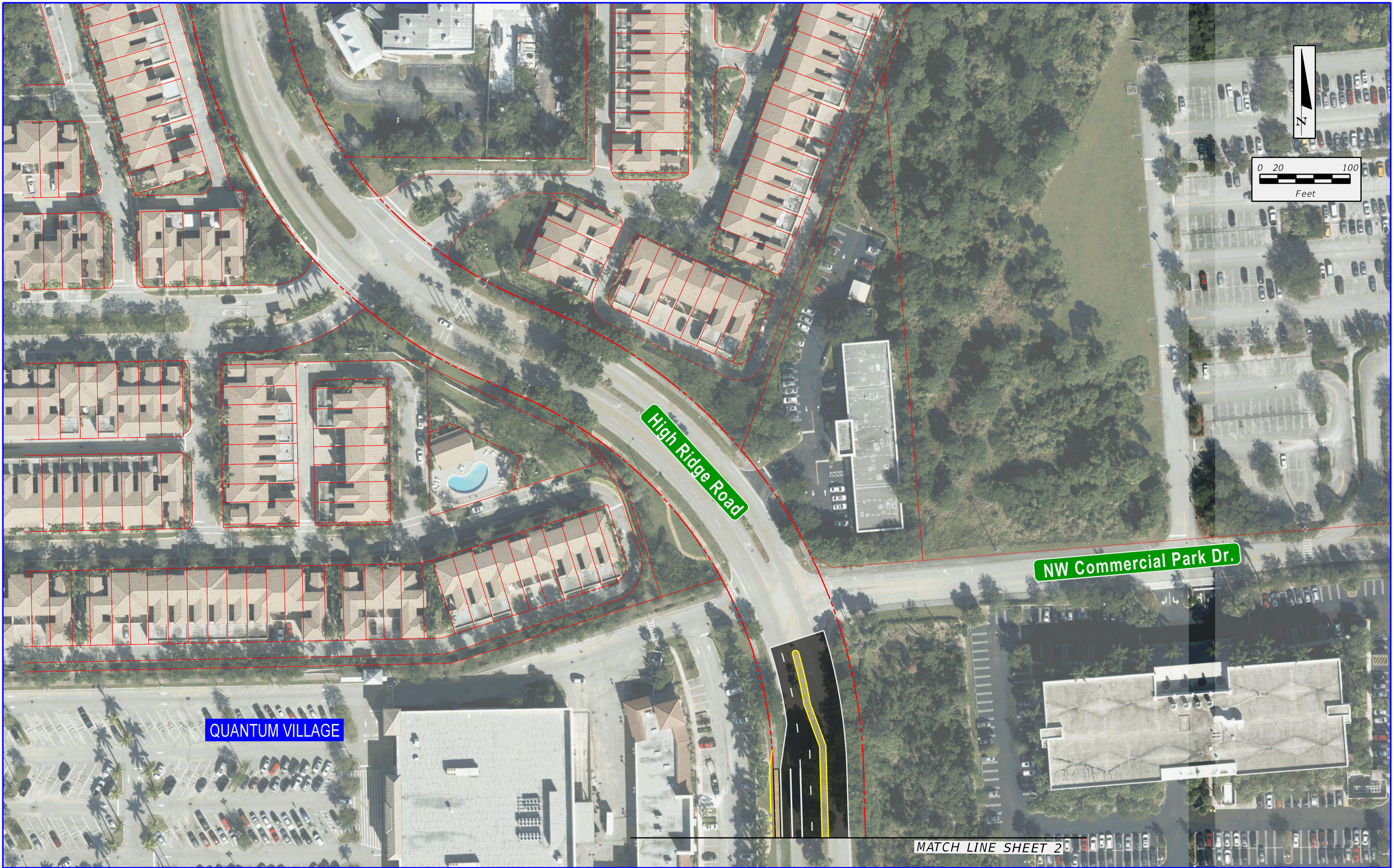
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	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
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I-95 and Gateway Blvd. Interchange
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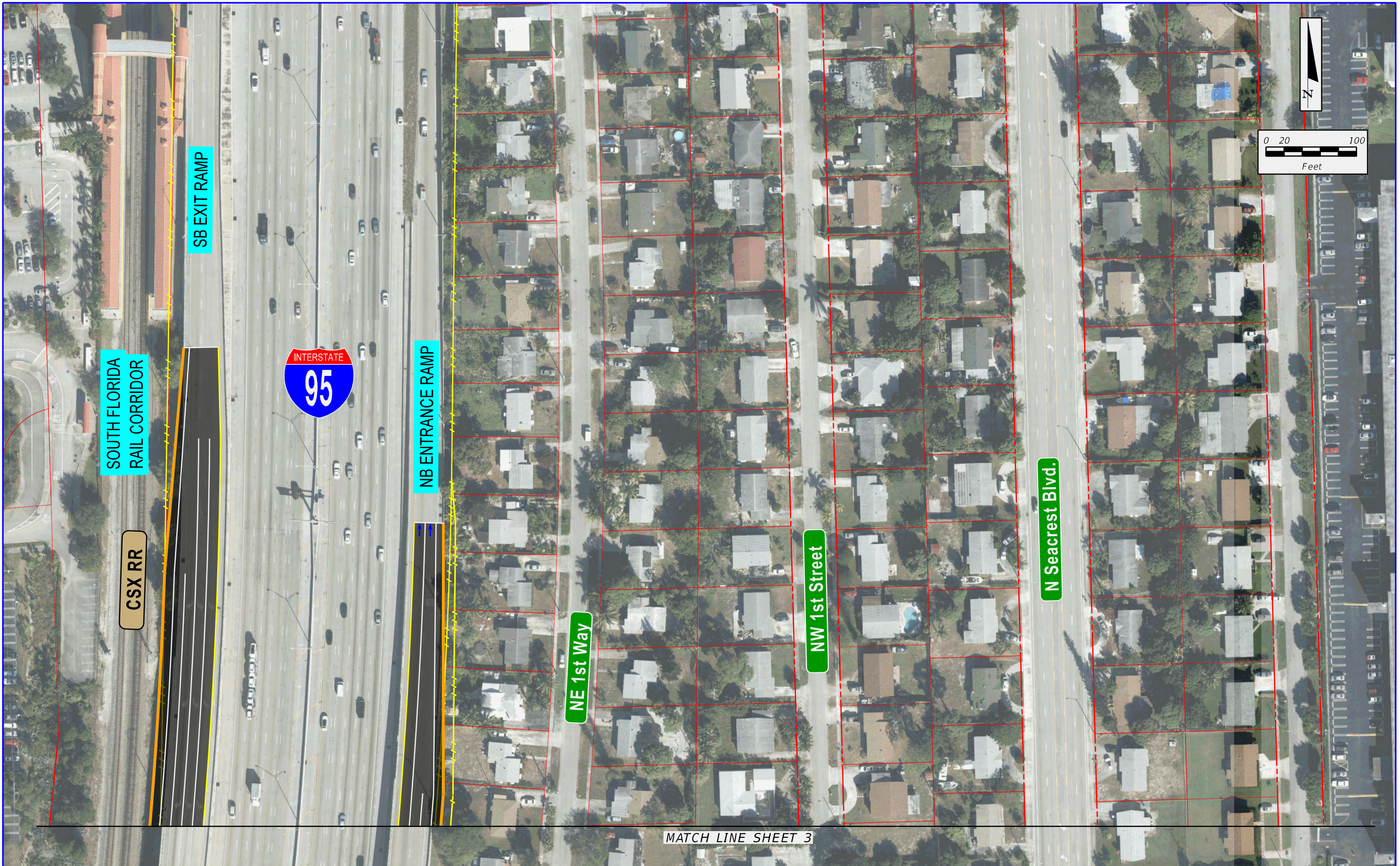
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	PROPERTY LINE		BARRIER WALL		PROPOSED BRIDGE		PROPOSED LANE
	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
SPUI Best Fit

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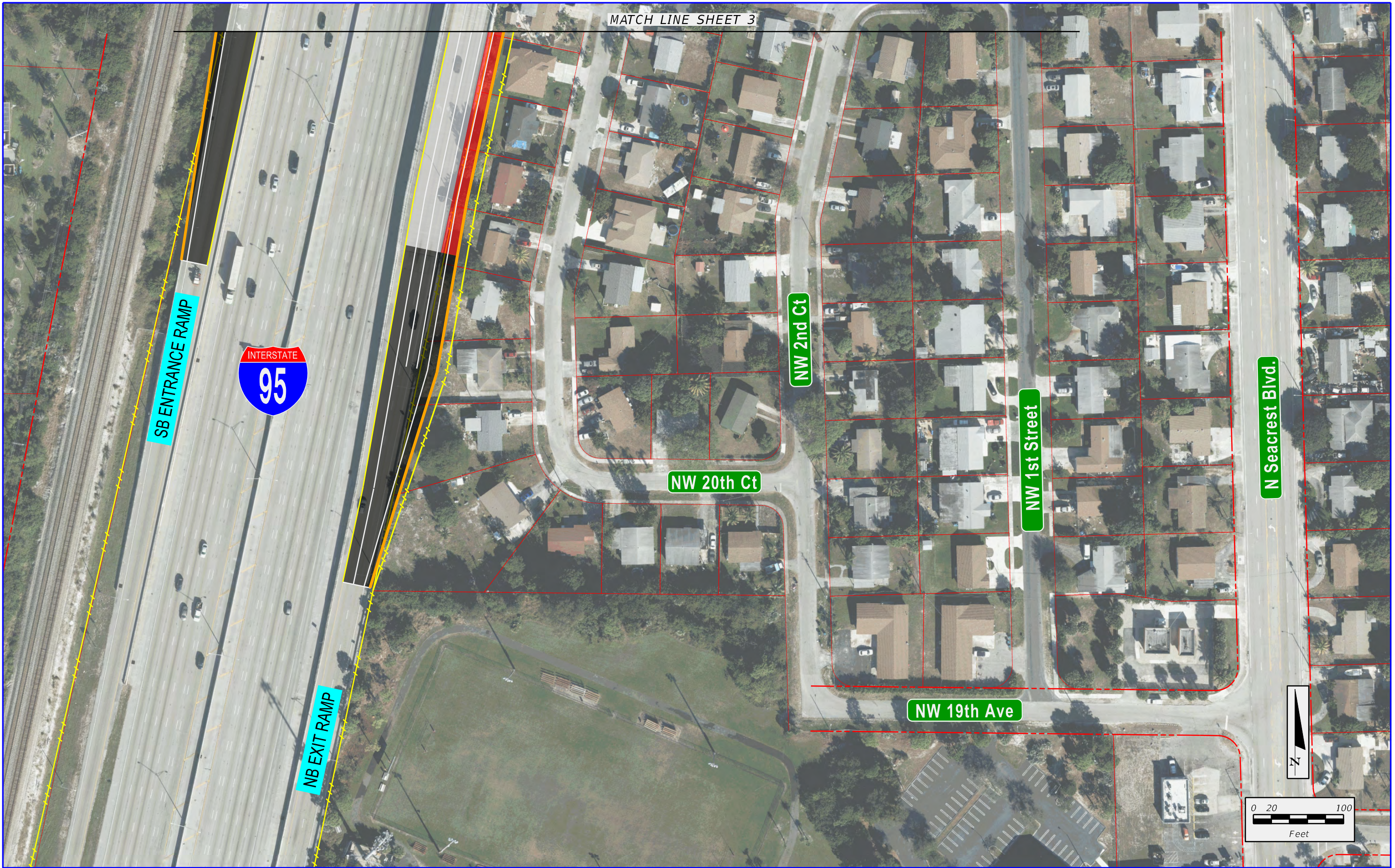


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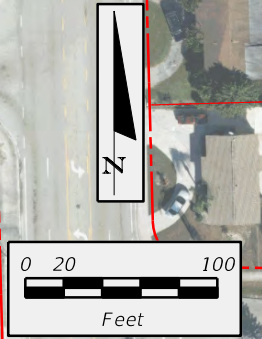
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	EXISTING L/A R/W		GRASSED AREA		PROPOSED PAVEMENT		
	PROPOSED R/W		CONC SIDEWALK /MEDIAN				

I-95 and Gateway Blvd. Interchange
SPUI Best Fit

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Appendix C

Geotechnical Technical Memorandum

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TIERRA SOUTH FLORIDA, INC.
Geotechnical Engineering / Material Testing / Inspection Services

November 20, 2015

ARCADIS
2081 Vista Parkway, Suite 305
West Palm Beach, FL 33411

Attn: Mr. Hank Deibel, Jr. P.E.

RE: **Geotechnical Technical Memorandum**
SR 9/I-95 @ SR 804/Boynton Beach Blvd. Interchange & SR 9/I-95 @ Gateway
Bld. Interchange – PD&E Study
Palm Beach County
FPID Nos.: 435804-1-22-01 & 231932-1-22-01
TSF Project No.: 7111-15-219

Dear Hank:

Tierra South Florida, Inc. (TSF) has completed a preliminary geotechnical engineering data review for the SR 9/I-95 at SR 804/Boynton Beach Blvd. Interchange & SR 9/I-95 at Gateway Blvd. Interchange PD&E Study in Palm Beach County, Florida. The results of our data review are presented in this technical memorandum.

TSF appreciates the opportunity to be of service to ARCADIS on this project and looks forward to working with you on future projects. If you have any questions or comments regarding this memorandum, please contact our office at your earliest convenience.

Sincerely,

TIERRA SOUTH FLORIDA, INC.

Raj Krishnasamy, P.E.
Principal Geotechnical Engineer
FL Registration No. 53567

Wenbin Zhao, Ph.D., P.E.
Project Engineer
FL Registration No. 78558

N. Manoharan, Ph.D.
Senior Specialist

Attachments

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APPENDIX: Project Location Map
 USDA Soil Survey Information

1.0 PROJECT DESCRIPTION AND SCOPE OF SERVICES

We understand the purpose of this PD&E Study is to evaluate alternatives for the interchange improvements of SR 9/I-95 at SR 804/Boynton Beach Blvd. Interchange & SR 9/I-95 at Gateway Blvd. Interchange in Palm Beach County.

Scope of geotechnical services for the PD&E Study was to perform a desk top review of available subsurface information and provide a technical memorandum. For this, the following services were provided:

1. Reviewed readily available published topographic and soils information. This information was obtained from the "Soil Survey of Palm Beach County Area, Florida" published by the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS), and USGS Maps.
2. Reviewed existing subsurface information from previous projects in the project area.
3. Prepared this Geotechnical Memorandum.

2.0 REVIEW OF EXISTING SUBSURFACE INFORMATION

2.1 Review of USDA Soil Survey

Based on a review of the Palm Beach County Area Soil Maps published by USDA-NRCS, the soil-mapping units noted in the vicinity are predominantly as follows:

- Arents-Urban land complex, 0 to 5 percent slopes
- Basinger fine sand, 0 to 2 percent slopes
- Basinger and Myakka sands, Depressional
- Immokalee fine sand, 0 to 2 percent slopes
- Okeelanta muck, drained, 0 to 1 percent slopes
- Pomello fine sand, 0 to 5 percent slopes
- Quartzipsamments, shaped, 0 to 5 percent slopes
- Sanibel muck
- St. Lucie-Paola-Urban land complex, 0 to 8 percent slopes
- Udorthents, 2 to 35 percent slopes
- Urban land

Project Location Map and USDA soil survey information are presented in the Appendix.

2.2 Review of USGS Maps for Seasonal High Groundwater Estimates

Seasonal high groundwater levels are expected to be controlled by existing drainage features present at the project vicinity. Estimated seasonal high groundwater table levels are expected to be at about elevation 2.5 to 3.5 NAVD, 1988 (about 4 to 5 NGVD, 1929). This estimate is based on the Altitude of Water Table in the Biscayne Aquifer in Palm Beach County published by United States Geological Survey (between 1984 and 1987).

2.3 Review of Subsurface Information from Previous Projects

Subsurface information obtained in the project vicinity from previous projects was reviewed. The subsurface conditions from the following projects were reviewed. Some of the data were collected by Professional Service Industries, Inc. (PSI) while data for some of the projects were made available to us.

- I-95 HOV Lanes Report of Core Boring Sheets, FPID No. 231917-1-52-01, Dated December 18, 1998.
- I-95 HOV Lanes Plans, FPID No. 231916-1-52-01.
- I-95 HOV Lanes, Phase II, Boynton Beach, Florida, FPID No. 231937-1-52-01 (from North of Gateway Boulevard to South of 6th Avenue).
- I-95 Widening Final Plan, F.A Proj. No. 1-IR-95-1(387)46.
- I-95 Intelligent Transportation System (ITS) Deployment (Phase B), Palm Beach County, Florida, FPID No. 404827-1-52-01.

Review of soil information for previous projects indicates that the subsoils in the project vicinity are typically sandy soils (sand, sand/shell, and silty sand) sometimes with limerock fragments. ASSHTO classifications of the soils are predominantly A-3, A-2-4, and A-1-b. Sand with organics (A-8) and sandy silt (A-4) materials were encountered in isolated areas. Review of USDA soil survey information indicates that pockets of Sanibel muck (A-8 material) are located on the Boynton Beach Boulevard, about 2500 feet west of I-95.

3.0 ENGINEERING EVALUATION AND PRELIMINARY RECOMMENDATIONS

3.1 General

In general, based on the review of the existing subsurface information, we do not anticipate any major constraint to the proposed improvements that is currently under consideration. Based on existing soil information, organic soils (muck) will be encountered at isolated locations and should be anticipated at some pocketed locations.

Removal of organic soils and plastic soils (if any) should be performed in accordance with the Standard Index 500. Backfill should consist of materials conforming to FDOT Standard Index 505 and compacted in accordance with Section 120-9 of the Standard Specification for Road and Bridge Construction, latest edition.

3.2 Embankment Construction

We anticipate that fills will be required for the proposed roadway improvements. Assuming proper subgrade preparation and adequate fill materials are utilized, we recommend that all proposed permanent side slopes be constructed on 2.0 horizontal to 1.0 vertical (2H:1V) or flatter. To prevent minor sloughing at the surface, we recommend that the slopes be seeded, mulched and maintained to enhance slope stability soon after being completed.

3.3 Excavations

All excavations should be performed in accordance with FDOT Standard Index 500, the latest Standard Specifications for Road and Bridge Construction, and in accordance with OSHA Standards. We recommend that sides of temporary excavations be sloped to 2H:1V or flatter or supported by temporary shoring.

3.4 Groundwater Control

In our opinion, groundwater may not have impact on the proposed roadway widening provided the proposed finish level is at the existing roadway level. However, depending upon groundwater levels at the time of construction, some form of dewatering may be required for utility excavations.

3.5 General Guideline for Design Phase Geotechnical Study

A design phase geotechnical study will be required for this project during design phase of the project and should be performed in accordance with FDOT Soils and Foundations Handbook.

3.6 Bridges

Based on the available project plans that are available to us, Gateway Boulevard and Boynton Beach Boulevard Bridges over I-95 are not included in any of the plans. However, a review of the Plans showed that all the bridges in the vicinity of this project are supported on 18-inch precast prestressed concrete square piles. It is our opinion that the bridge widening, if any in the proposed project, can be founded on similar concrete piles.

4.0 LIMITATIONS

Our Geotechnical engineering evaluation of the site and subsurface conditions with respect to the planned improvements are based upon the following: (1) site observations, (2) review of existing subsurface information and (3) our understanding of the project information as presented in this report.

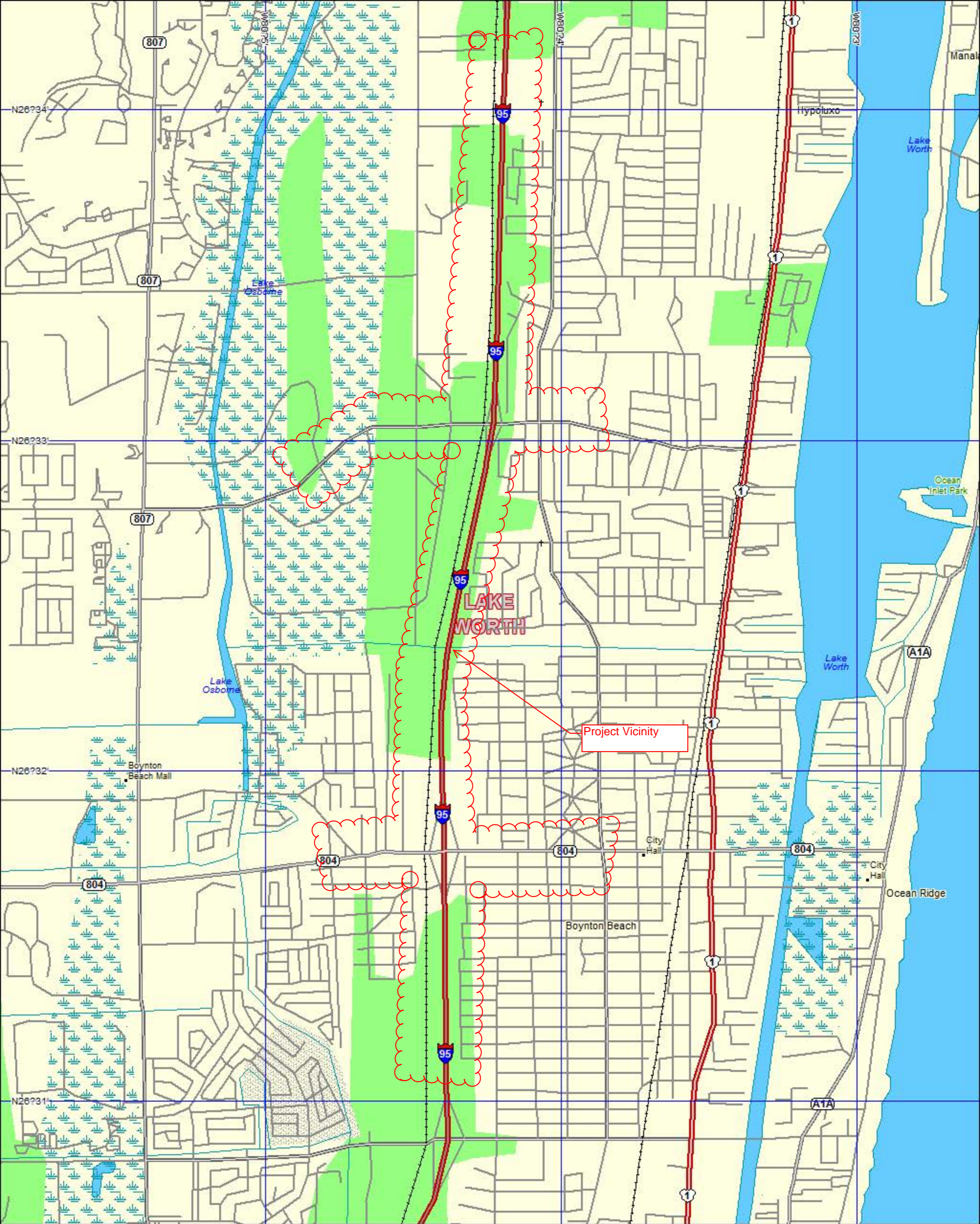
We recommend that a detail geotechnical study should be planned and performed in accordance with FDOT "Soils and Foundations Handbook" during the design phase of this project.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

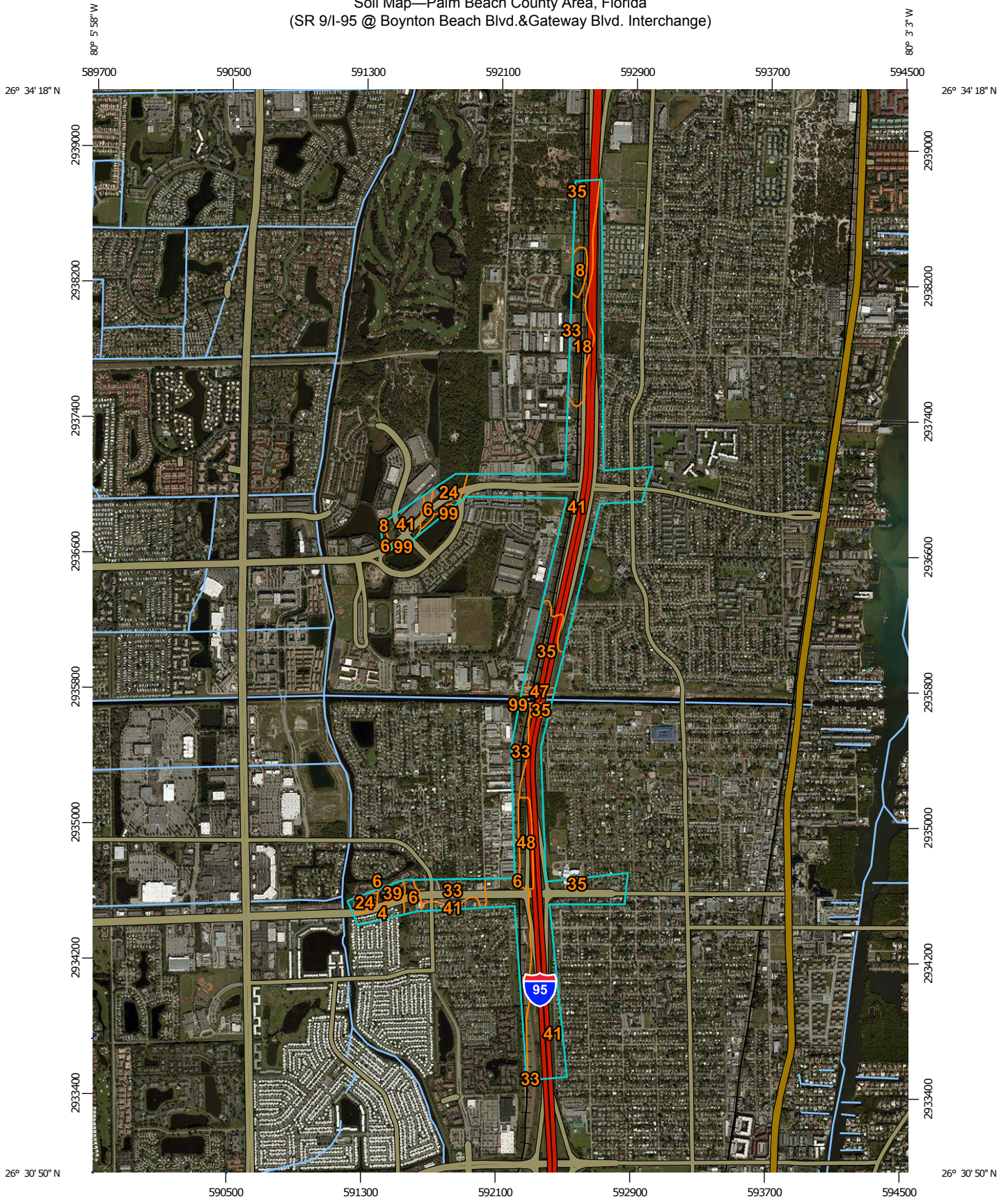
This Geotechnical Technical Memorandum has been prepared for the specific application to the PD&E Study for the improvements of SR 9/I-95 at SR 804/Boynton Beach Blvd. Interchange & SR 9/I-95 at Gateway Blvd. Interchange in Palm Beach County, Florida.

APPENDIX

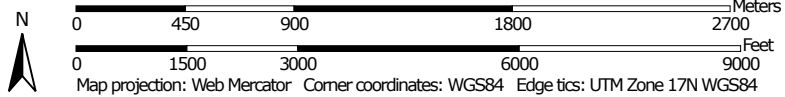
Project Location Map
USDA Soil Survey Information



Soil Map—Palm Beach County Area, Florida
 (SR 9/1-95 @ Boynton Beach Blvd.&Gateway Blvd. Interchange)




Map Scale: 1:31,200 if printed on A portrait (8.5" x 11") sheet.



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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Palm Beach County Area, Florida
Survey Area Data: Version 10, Sep 21, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 13, 2014—Dec 11, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Map Unit Legend

Palm Beach County Area, Florida (FL611)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4	Arents-Urban land complex, 0 to 5 percent slopes	5.9	1.5%
6	Basinger fine sand, 0 to 2 percent slopes	31.6	8.3%
8	Basinger and Myakka sands, depressional	5.3	1.4%
18	Immokalee fine sand, 0 to 2 percent slopes	31.8	8.4%
24	Okeelanta muck, drained, 0 to 1 percent slopes	11.4	3.0%
33	Pomello fine sand, 0 to 5 percent slopes	26.4	7.0%
35	Quartzipsamments, shaped, 0 to 5 percent slopes	23.0	6.1%
39	Sanibel muck	4.1	1.1%
41	St. Lucie-Paola-Urban land complex, 0 to 8 percent slopes	223.9	58.9%
47	Udorthents, 2 to 35 percent slopes	1.9	0.5%
48	Urban land	10.4	2.7%
99	Water	4.3	1.1%
Totals for Area of Interest		380.2	100.0%

Palm Beach County Area, Florida

4—Arents-Urban land complex, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1j7cp
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Arents and similar soils: 60 percent
Urban land: 35 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arents

Setting

Landform: Rises on marine terraces
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile

A - 0 to 4 inches: sand
C1 - 4 to 32 inches: sand
C2 - 32 to 72 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Description of Urban Land

Setting

Landform: Marine terraces

Custom Soil Resource Report

Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: No parent material

Interpretive groups

Land capability classification (irrigated): None specified
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)

Minor Components

Basinger

Percent of map unit: 5 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)

6—Basinger fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2svym
Elevation: 0 to 20 feet
Mean annual precipitation: 38 to 62 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Basinger and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Basinger

Setting

Landform: Drainageways on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Convex, concave
Across-slope shape: Linear, concave
Parent material: Sandy marine deposits

Typical profile

Ag - 0 to 2 inches: fine sand
Eg - 2 to 18 inches: fine sand
Bh/E - 18 to 36 inches: fine sand
Cg - 36 to 80 inches: fine sand

Custom Soil Resource Report

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 2 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Other vegetative classification: Slough (R155XY011FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Minor Components

Eaugallie

Percent of map unit: 4 percent
Landform: — error in exists on —
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: South Florida Flatwoods (R155XY003FL)
Other vegetative classification: South Florida Flatwoods (R155XY003FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Margate

Percent of map unit: 3 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Convex, linear
Across-slope shape: Linear, concave
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)

Placid, depressional

Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Convex, concave
Across-slope shape: Linear, concave
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)

8—Basinger and Myakka sands, depressional

Map Unit Setting

National map unit symbol: 1j7ct
Elevation: 10 to 100 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Myakka, depressional, and similar soils: 47 percent
Basinger, depressional, and similar soils: 47 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Basinger, Depressional

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy marine deposits

Typical profile

A - 0 to 4 inches: sand
Eg - 4 to 29 inches: sand
Bh/Eg - 29 to 36 inches: sand
Cg - 36 to 72 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D

Custom Soil Resource Report

Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)

Description of Myakka, Depressional

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy marine deposits

Typical profile

A - 0 to 6 inches: sand
E - 6 to 26 inches: sand
Bh - 26 to 47 inches: sand
C - 47 to 72 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)

Minor Components

Pompano

Percent of map unit: 2 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G156AC141FL)

Anclote

Percent of map unit: 2 percent
Landform: Drainageways on marine terraces, flats on marine terraces
Landform position (three-dimensional): Dip, talff
Down-slope shape: Linear
Across-slope shape: Concave

Custom Soil Resource Report

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G156AC141FL)

Sanibel

Percent of map unit: 2 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Other vegetative classification: Organic soils in depressions and on flood plains
(G156AC645FL)

18—Immokalee fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2s3lk

Elevation: 10 to 150 feet

Mean annual precipitation: 38 to 62 inches

Mean annual air temperature: 68 to 77 degrees F

Frost-free period: 300 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Immokalee and similar soils: 87 percent

Minor components: 13 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Immokalee

Setting

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Sandy marine deposits

Typical profile

A - 0 to 6 inches: fine sand

E - 6 to 35 inches: fine sand

Bh - 35 to 54 inches: fine sand

BC - 54 to 80 inches: loamy fine sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Poorly drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: About 6 to 18 inches

Custom Soil Resource Report

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: B/D

Other vegetative classification: South Florida Flatwoods (R155XY003FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Minor Components

Basinger

Percent of map unit: 5 percent

Landform: Drainageways on marine terraces

Landform position (three-dimensional): Tread, dip

Down-slope shape: Concave, convex

Across-slope shape: Concave, linear

Other vegetative classification: Slough (R155XY011FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Margate

Percent of map unit: 3 percent

Landform: Drainageways on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Convex, linear

Across-slope shape: Linear, concave

Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)

Pomona

Percent of map unit: 3 percent

Landform: Flatwoods on marine terraces

Landform position (three-dimensional): Tread, talf

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: South Florida Flatwoods (R155XY003FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Placid, depressional

Percent of map unit: 2 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave, convex

Across-slope shape: Concave, linear

Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)

24—Okeelanta muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tzwc
Elevation: 0 to 30 feet
Mean annual precipitation: 48 to 68 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Okeelanta, drained, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Okeelanta, Drained

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material over sandy marine deposits

Typical profile

Oa - 0 to 31 inches: muck
Cg - 31 to 65 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: High (about 11.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL)

Minor Components

Sanibel

Percent of map unit: 5 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Tread, dip, talf

Down-slope shape: Concave

Across-slope shape: Concave

Other vegetative classification: Organic soils in depressions and on flood plains
(G156AC645FL)

Tequesta

Percent of map unit: 3 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Tread, dip, talf

Down-slope shape: Concave

Across-slope shape: Concave

Other vegetative classification: Organic soils in depressions and on flood plains
(G156AC645FL)

Basinger

Percent of map unit: 2 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Tread, dip, talf

Down-slope shape: Concave

Across-slope shape: Concave

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G156AC141FL)

33—Pomello fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1j7dk

Elevation: 10 to 20 feet

Mean annual precipitation: 48 to 56 inches

Mean annual air temperature: 70 to 77 degrees F

Frost-free period: 358 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Pomello and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pomello

Setting

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Interfluvium

Down-slope shape: Convex

Custom Soil Resource Report

Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 4 inches: fine sand
E - 4 to 44 inches: fine sand
Bh - 44 to 60 inches: fine sand
Bw/C - 60 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands
(G156AC131FL)

Minor Components

Myakka

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G156AC141FL)

Immokalee

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G156AC141FL)

Basinger

Percent of map unit: 3 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G156AC141FL)

Palm beach

Percent of map unit: 2 percent
Landform: Dunes on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G156AC111FL)

Paola

Percent of map unit: 2 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G156AC111FL)

St. lucie

Percent of map unit: 2 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G156AC111FL)

35—Quartzipsamments, shaped, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1j7dm
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Quartzipsamments and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Quartzipsamments

Setting

Landform: Rises on marine terraces
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Custom Soil Resource Report

Typical profile

A - 0 to 6 inches: fine sand
C - 6 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

39—Sanibel muck

Map Unit Setting

National map unit symbol: 1j7dr
Elevation: 10 to 100 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Sanibel and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sanibel

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Thin organic material over sandy marine deposits

Typical profile

Oa - 0 to 12 inches: muck
A - 12 to 18 inches: sand

Custom Soil Resource Report

Cg - 18 to 72 inches: sand

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: A/D

Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL)

Minor Components

Holopaw

Percent of map unit: 4 percent

Landform: Drainageways on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Concave

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G156AC141FL)

Anclote

Percent of map unit: 4 percent

Landform: Drainageways on marine terraces, flats on marine terraces

Landform position (three-dimensional): Dip, talf

Down-slope shape: Linear

Across-slope shape: Concave

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G156AC141FL)

Okeelanta, drained

Percent of map unit: 4 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL)

Tequesta

Percent of map unit: 3 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Custom Soil Resource Report

Across-slope shape: Concave

Other vegetative classification: Organic soils in depressions and on flood plains
(G156AC645FL)

41—St. Lucie-Paola-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1j7ds

Elevation: 10 to 20 feet

Mean annual precipitation: 48 to 56 inches

Mean annual air temperature: 70 to 77 degrees F

Frost-free period: 358 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

St. lucie and similar soils: 35 percent

Paola and similar soils: 33 percent

Urban land: 30 percent

Minor components: 2 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of St. Lucie

Setting

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Side slope, interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Eolian or sandy marine deposits

Typical profile

A - 0 to 5 inches: sand

C - 5 to 80 inches: sand

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Custom Soil Resource Report

Hydrologic Soil Group: A

*Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)*

Description of Paola

Setting

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Interfluve, side slope

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Sandy marine deposits

Typical profile

A - 0 to 3 inches: sand

E - 3 to 20 inches: sand

C - 20 to 80 inches: sand

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Negligible

*Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96
in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

*Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)*

Description of Urban Land

Setting

Landform: Marine terraces

Landform position (three-dimensional): Interfluve, talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: No parent material

Interpretive groups

Land capability classification (irrigated): None specified

*Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)*

Minor Components

Pomello

Percent of map unit: 1 percent

Landform: Knolls on marine terraces, ridges on marine terraces

Custom Soil Resource Report

Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)

Palm beach

Percent of map unit: 1 percent
Landform: Dunes on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)

47—Udorthents, 2 to 35 percent slopes

Map Unit Setting

National map unit symbol: 1j7dz
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile

A - 0 to 7 inches: gravelly sand
C1 - 7 to 57 inches: gravelly sand
C2 - 57 to 80 inches: gravelly sand

Properties and qualities

Slope: 2 to 65 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Minor Components

Riviera

Percent of map unit: 5 percent

Landform: Drainageways on marine terraces, flats on marine terraces

Landform position (three-dimensional): Dip, talf

Down-slope shape: Linear

Across-slope shape: Concave

Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G156AC241FL)

48—Urban land

Map Unit Composition

Urban land: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Marine terraces

Landform position (three-dimensional): Interfluve, talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: No parent material

Interpretive groups

Land capability classification (irrigated): None specified

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

99—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified

Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)

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Appendix D

Design Traffic Technical Memorandum

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Florida Department of
TRANSPORTATION

TRAFFIC FORECASTING TECHNICAL MEMORANDUM

PD&E STUDY

For SR 9/I-95 at
SR-804/Boynton Beach Boulevard Interchange
and
Gateway Boulevard Interchange
Palm Beach County, Florida

Financial Management Number: 435804-1-22-01

Financial Management Number: 231932-1-22-01

Efficient Transportation Decision Making (ETDM) Numbers: 14180 and 14181

January 2016

TRAFFIC FORECASTING

MEMORANDUM

PD&E STUDY

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange
and

SR-9/I-95 at Gateway Boulevard Interchange
Palm Beach County, Florida

Financial Management Number: 435804-1-22-01

Financial Management Number: 231932-1-22-01

Efficient Transportation Decision Making (ETDM) Numbers: 14180 and 14181

Prepared for

Florida Department of Transportation - District Four
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PD&E Study

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and
SR-9/I-95 at Gateway Boulevard Interchange



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PD&E Study

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and
SR-9/I-95 at Gateway Boulevard Interchange



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APPENDICES

- Appendix A: Existing (2015) Balanced Turning Movement Volumes**
- Appendix B: Years 2015, 2020, 2030, and 2040 Recommended AADTs**
- Appendix C: TM Tool Input and Output**

PD&E Study

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and
SR-9/I-95 at Gateway Boulevard Interchange



LIST OF ACRONYMS

AADT	Average Annual Daily Traffic
DDHVs	Directional Design Hourly Volumes
FDOT	Florida Department of Transportation
FY	Fiscal Year
FHWA	Federal Highway Administration
GIS	Geographic Information System
LDCA	Location and Design Concept Acceptance
L RTP	Long Range Transportation Plan
MAP-21, 2012	Moving Ahead for Progress in the 21 st Century
MPO	Palm Beach Metropolitan Planning Organization
NEPA	National Environmental Policy Act
PD&E	Project Development and Environment
SIS	Strategic Intermodal System
SR	State Road
STIP	State Transportation Improvement Program
TDM	Transportation Demand Model
TIP	Transportation Improvement Plan
TMCs	Turning Movement Counts

PD&E Study

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and
SR-9/I-95 at Gateway Boulevard Interchange



1. Objective and Description of Proposed Action

The objective of this technical memorandum is to forecast Directional Design Hourly Volumes (DDHVs) and intersection volumes, to be used in the operational analysis for the SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange and SR-9/I-95 at Gateway Boulevard interchange Project Development and Environment (PD&E) Study in Palm Beach County, Florida. This PD&E study evaluates interchange improvements at these two locations. The Florida Department of Transportation (FDOT) has provided a previously approved Traffic Data Collection & Traffic Projections for I-95 Interchange PD&E Studies, completed by CTS, Inc., in June 2015, as a basis to forecast the DDHVs and intersection volumes. Sections of the study have been directly incorporated into this report to facilitate continuity. The complete referenced study is provided as a companion document.

This PD&E Study is for interchange improvements located at the SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange and the SR-9/I-95 at Gateway Boulevard interchange in Palm Beach County, Florida. The alternatives developed in this PD&E study and the associated social, economic, and environmental analyses are being evaluated according to the requirements of the National Environmental Policy Act (NEPA) and FDOT's PD&E Manual, Part 1, Chapter 5 in order to receive Location and Design Acceptance (LDCA) from the Federal Highway Administration (FHWA).

The federal Moving Ahead for Progress in the 21st Century (MAP-21, 2012) serves as the current regulatory and funding framework for transportation planning. The Palm Beach Metropolitan Planning Organization (MPO) is the government organization that provides both long-range and short-term transportation planning for Palm Beach County. The Palm Beach MPO 2040 Long Range Transportation Plan (LRTP, October 2014) represents long-term transportation planning for Palm Beach County. Short-term planning is represented by the MPO's Transportation Improvement Program (TIP). The purpose of the LRTP is to identify the transportation needs of the community and establish priorities for funding those improvements in the TIP. The MPO priority projects are listed in the TIP Priority Projects FY 2016-2020 (April 2015).

FDOT lists planned projects with federal participation, including all MPO TIPs, in the State Transportation Improvement Program (STIP) which was submitted to and approved by the FHWA. The PD&E Study for SR-9/I-95 at SR-804 Boynton Beach Boulevard Interchange and at Gateway Boulevard Interchange is programmed for PD&E Study under the Fiscal Year 2015-2018 STIP.

While the improvements at both interchanges are not included in the cost feasible component of the 2040 LRTP, one highway project in the vicinity of the interchanges is provided in the LRTP needs component. This project is for the Strategic Intermodal System (SIS) implementation of managed lanes on I-95 from the Palm Beach County/Broward County Line to Indiantown Road. Projects in the vicinity of both interchanges and identified in the STIP include preliminary engineering for future capacity of SR-9/I-95 from Linton Boulevard to Indiantown Road (FM# 433109) and planned interchange improvements at SR-9/I-95 and Hypoluxo Road (FM# 413257) and at Woolbright Boulevard (FM #231932).

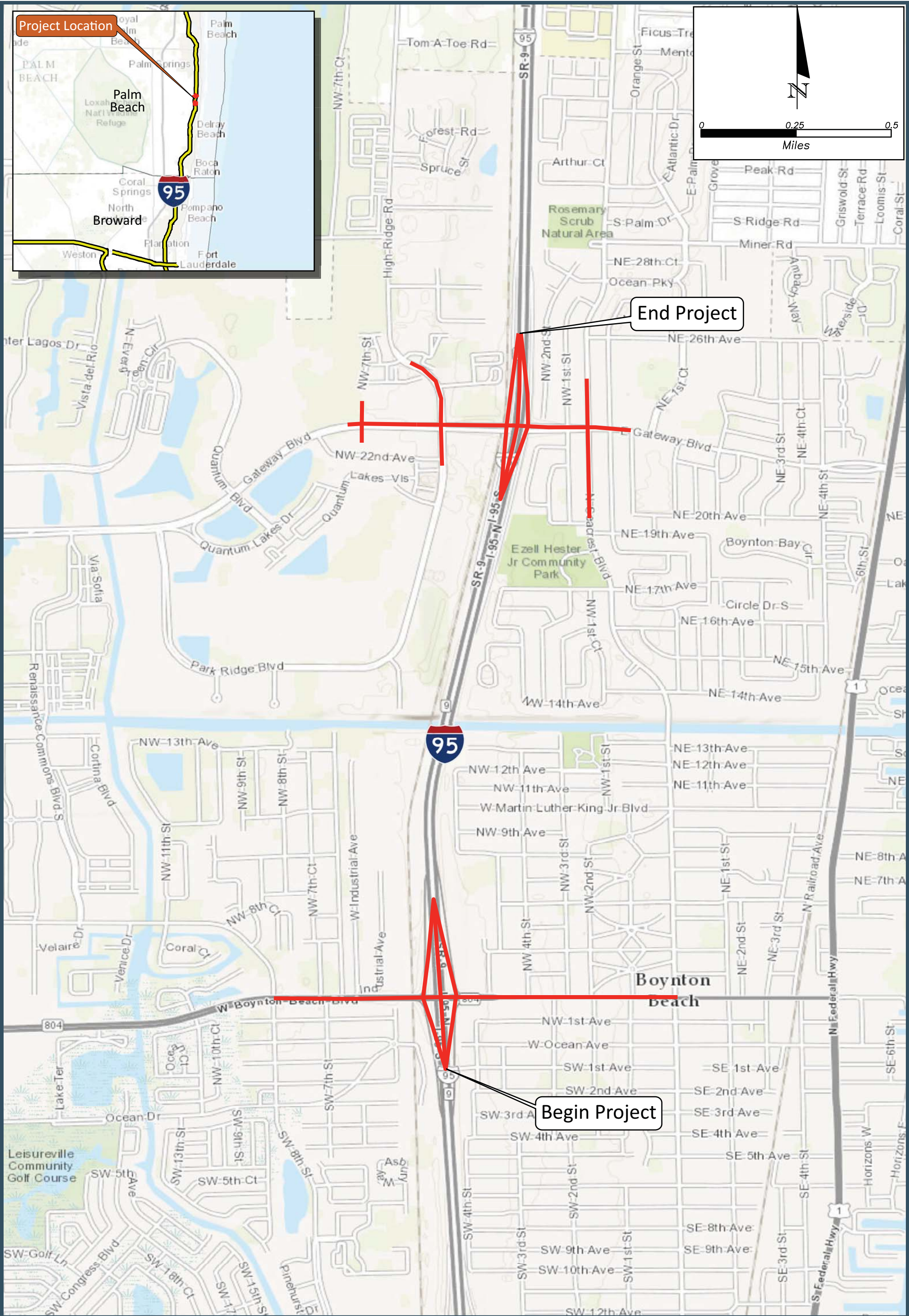
PD&E Study

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and
SR-9/I-95 at Gateway Boulevard Interchange



1.1 Project Description

The project study area (study area) is located in eastern Palm Beach County within the City of Boynton Beach between SR-9/I-95 Woolbright Road to the south and SR-9/I-95 at Hypoluxo Road to the north. The SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange is located on I-95 between the Gateway Boulevard interchange (1.5 miles to the north) and the Woolbright Road interchange (1.0 mile to the south). The SR-9/I-95 at Gateway Boulevard interchange is located on SR-9/I-95 between the Hypoluxo Road interchange (1.5 miles to the north) and the Boynton Beach Boulevard interchange (1.5 miles to the south). At Gateway Boulevard, the project area extends from west of High Ridge Road to east of Seacrest Boulevard. At Boynton Beach Boulevard, the project area extends from west of Industrial Avenue to east of Seacrest Boulevard. A project location map is provided in **Figure 1**.



PD&E Study

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and
SR-9/I-95 at Gateway Boulevard Interchange



2. Data Collection:

The information presented in this section is a summary of the *Traffic Data Collection & Traffic Projections for I-95 Interchange PD&E Studies* report, a companion document to this PD&E study. Traffic data was collected to evaluate the 2015 existing conditions and to provide a basis for future traffic analysis. The traffic counts were performed during typical weekdays (Tuesday through Thursday) from February 2015 to May 2015 at arterials, interchange ramps and freeway segments within the project study limits. For each intersection, the traffic data collection effort consisted of 72-hour approach/departure machine counts for all approaches and 6-hour intersection Turning Movement Counts (TMCs) (including Right-Turn-On-Red volumes) on three consecutive days. The 6-hour TMCs were performed during the AM peak period (3 hours, from 6:00 AM to 9:00 AM) and the PM peak period (3 hours, from 4:00 PM to 7:00PM). Based on the traffic volumes on major crossing facilities, 7:30 AM to 8:30 AM and 5:00 PM to 6:00 PM were recommended as AM and PM peak hour for all study intersections.

In order to consider the potential impact to adjacent interchanges and corresponding major intersections, the data collection and traffic analysis effort were extended to the interchange north and south of the study interchanges, and signalized intersections east and west of the interchange termini. This study considered 17 intersections listed below:

- a. Woolbright Road Corridor
 1. Woolbright Road at SW 8th Street
 2. Woolbright Road at I-95 Southbound Off-Ramp
 3. Woolbright Road at I-95 Northbound Off-Ramp
 4. Woolbright Road at Seacrest Boulevard

- b. Boynton Beach Boulevard Corridor
 1. Boynton Beach Boulevard at NW 8th Street
 2. Boynton Beach Boulevard at Industrial Avenue
 3. Boynton Beach Boulevard at I-95 Southbound Off-Ramp
 4. Boynton Beach Boulevard at I-95 Northbound Off-Ramp
 5. Boynton Beach Boulevard at Seacrest Boulevard

- c. Gateway Boulevard Corridor
 1. Gateway Boulevard at High Ridge Road
 2. Gateway Boulevard at I-95 Southbound Off-Ramp
 3. Gateway Boulevard at I-95 Northbound Off-Ramp
 4. Gateway Boulevard at Seacrest Boulevard

- d. Hypoluxo Road Corridor
 1. Hypoluxo Road at High Ridge Road
 2. Hypoluxo Road at I-95 Northbound Off-Ramp
 3. Hypoluxo Road at I-95 Southbound Off-Ramp
 4. Hypoluxo Road at Seacrest Boulevard

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Locations where the 2015 count data is available from the FDOT annual traffic data collection program, traffic data for I-95 mainline was obtained from the District Statistics Unit. For the remaining mainline segments with no 2015 data, the AADT was calculated based on 2012/2013 historical counts and a recommended growth rate of 0.5%. The following locations along the mainline are provided from the annual count program:

1. I-95 North of Woolbright Road
2. I-95 North of Boynton Beach Boulevard
3. I-95 North of Gateway Boulevard

Existing 2015 AADT and DDHV volumes were balanced and smoothed for the entire study area following the approved processes and techniques consistent with the FDOT *Project Traffic Forecasting Handbook*. It was found that there were differences between the TMCs and 72-hour road tube counts during the same period at some intersection approaches. Such differences were mainly due to long queues at intersections, which caused the traffic counter to double count stopped and/or low speed vehicles. The assessment confirmed that these differences would not have significant impact on the traffic projections for this PD&E study.

The existing 2015 balanced peak- hour turning movement volumes as well as the development of 2015 AADT and DDHV volumes were documented in the companion document, *Traffic Data Collection & Traffic Projections for I-95 Interchange PD&E Studies*. For ease of reference, the existing 2015 balanced peak-hour volumes are also provided in **Appendix A**.

3. Travel Demand Model Review

SERPM 7.0 was officially released in February 2015 and it is the first Activity Based Model in Florida. The model structure has been dramatically changed compared to the travel demand model structure of SERPM 6.5. The base year of SERPM 7.0 is 2010, and the future year is 2040. SERPM 7.0 adopted the region's 2040 LRTP. Based on the Department's guidance, SERPM 7.0 was used to develop the future 2040 traffic projections for this I-95 Interchange PD&E Study. To evaluate the model performance, the output from SERPM 7.0 was summarized and compared with the traffic projection performed using I-95 Corridor Design Consultant Corridor Model (the base year is 2010, and future year is 2040) and traffic projections from SERPM 6.5 (the base year of 2005 and the future planning horizon year of 2035). The population and employment data in Palm Beach County, Broward County, and Miami-Dade County, and the TAZs within the 2-mile buffer area of the study interchanges were also compared for the three models. The results of these comparisons are summarized and presented in the *Traffic Data Collection & Traffic Projections for I-95 Interchange PD&E Studies*.

4. Travel Demand Forecasting/ Development of AADT Volumes

Any regional model has a margin of error associated with its results. A subarea validation was performed in order to better validate the model results and prepare the tool for a more reliable forecasting. Even with a subarea validation, achieving a perfect match with traffic counts is nearly impossible.

In order to obtain reasonable and consistent traffic projections, various traffic forecasting methodologies were evaluated and summarized under the *Traffic Data Collection & Traffic Projections for I-95 Interchange PD&E Studies*. This study summarized and compared growth rates obtained through historical counts, historical counts plus model projections, SERPM socioeconomic growth, and the comprehensive model to model projections methodology.

Based on the comparison and discussions with the FDOT Project Manager, the comprehensive traffic forecasting method was used to develop AADTs for the PD&E study. The traffic forecasting methodology used for each approach of each intersection was based on the 2015 AADT (from field), and 2010 and 2040 SERPM 7.0 model volumes. The 2015 model volume was interpolated using 2010 and 2040 model volumes. Then the differences of 2015 AADT (from field) and interpolated 2015 forecasted AADT from model was calculated. The recommended 2040 AADT were calculated by applying this difference to the 2040 SERPM 7.0 model volumes. Then the 2020 and 2030 volumes were interpolated using 2015 AADT and recommended 2040 volumes. For the roadway segments where the SERPM 7 2040 model volumes are lower than the SERPM 7 2010 model volumes, or are not included in the SERPM 7 network, the future 2020, 2030, and 2040 AADTs were calculated using 2015 AADT and a compound growth factor of 0.5%. For all the roadway links, the 2015 and 2040 AADT has been compared, and a minimum compound growth rate of 0.5% has been adopted. The AADTs used in this study to project future turning movement volumes at the study intersections were based on the recommended AADTs listed in *Traffic Data Collection & Traffic Projections for I-95 Interchange PD&E Studies*. **Table 1** summarizes all recommended growth rate factors and AADTs on each approach of the study intersections. Most of growth rate factors are adapted from Table 7 of *Traffic Data Collection & Traffic Projections for I-95 Interchange PD&E Studies*. The roadway segments did not have the growth rates available in that table; a compound

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growth factor of 0.5% was applied (Page 39, *Traffic Data Collection & Traffic Projections for I-95 Interchange PD&E Studies* Report). The recommended AADTs (2015, 2020, 2030 and 2040) are also provided in **Appendix B**.

Table 1: Summary of Recommended Intersection Approach Growth Rates and AADTs for Study Intersection Approaches

Interchange	Intersection	Location	Approach	GR	2015	2020	2030	2040
Woolbright Blvd. &	I-95	I-95 North of Woolbright Rd.	North	0.30%	232,000	237,000	249,000	262,000
		Woolbright Rd. East of I-95 NB Ramps	East	0.53%	43,000	44,000	47,000	49,000
		I-95 South of Woolbright Rd.	South	0.28%	221,000	224,000	234,000	243,000
		Woolbright Rd. West of I-95 SB Ramps	West	0.50%	45,000	46,000	49,000	51,000
	SW 8th St	SW 8th St. North of Woolbright Rd.	North	0.72%	18,000	19,000	20,000	22,000
		Woolbright Rd. East of SW 8th St	East	0.50%	45,000	46,000	49,000	51,000
		SW 8th St. South of Woolbright Rd.	South	0.50%	7,100	7,300	7,600	8,000
		Woolbright Rd. West of SW 8th St	West	0.48%	39,000	40,000	42,000	44,000
	Seacrest Blvd.	Seacrest Blvd. North of Woolbright Rd.	North	0.66%	17,000	18,000	19,000	20,000
		Woolbright Rd East of Seacrest Blvd.	East	0.73%	28,000	29,000	31,000	34,000
		Seacrest Blvd. South of Woolbright Rd.	South	0.53%	21,000	22,000	23,000	24,000
		Woolbright Rd West of Seacrest Blvd.	West	0.54%	41,000	42,000	45,000	47,000
Boynton Blvd. &	I-95	I-95 North of Boynton Blvd.	North	0.35%	235,000	241,000	253,000	266,000
		Boynton Beach Blvd. East of I-95 NB Ramps	East	1.21%	34,000	36,000	41,000	46,000
		I-95 South of Boynton Blvd.	South	0.30%	232,000	237,000	249,000	262,000
		Boynton Beach Blvd. West of I-95 SB Ramps	West	0.40%	50,000	51,000	54,000	57,000
	NW 8th St	NW 8th St. North of Boynton Beach Blvd.	North	0.11%	15,000	15,000	16,000	17,000
		Boynton Beach Blvd. East of SW 8th St.	East	0.37%	52,000	53,000	56,000	59,000
		NW 8th St. South of Boynton Beach Blvd.	South	0.82%	10,000	10,000	11,000	12,000
		Boynton Beach Blvd. West of SW 8th St.	West	0.55%	35,000	36,000	38,000	40,000
	Seacrest Blvd.	Seacrest Blvd. North of Boynton Beach Blvd.	North	1.53%	18,000	19,000	22,000	26,000
		Boynton Beach Blvd. East of Seacrest Blvd.	East	1.20%	20,000	21,000	24,000	27,000
		Seacrest Blvd. South of Boynton Beach Blvd.	South	1.78%	12,000	13,000	16,000	19,000
		Boynton Beach Blvd West of Seacrest Blvd.	West	1.22%	30,000	32,000	36,000	41,000
	Industrial Ave.	Industrial Ave. North of Boynton Beach Blvd.	North	0.50%	7,900	8,100	8,500	8,900
		Boynton Blvd. East of Industrial Ave.	East	0.40%	50,000	51,000	54,000	57,000
		Industrial Ave. South of Boynton Beach Blvd.	South	0.50%	400	410	430	450
		Boynton Blvd. West of Industrial Ave.	West	0.40%	50,000	51,000	54,000	57,000
Gateway Blvd. &	I-95	I-95 North of Gateway Blvd.	North	0.39%	218,000	224,000	235,000	247,000
		Gateway Blvd. East of I-95 NB Ramps	East	0.71%	29,000	30,000	32,000	35,000
		I-95 South of Gateway Blvd.	South	0.35%	235,000	241,000	253,000	266,000
		Gateway Blvd. West of I-95 SB Ramps	West	0.52%	49,000	50,000	53,000	56,000
	High Ridge Rd.	High Ridge Rd. North of Gateway Blvd.	North	0.54%	13,000	13,000	14,000	15,000
		Gateway Blvd. East of High Ridge Rd.	East	0.52%	49,000	50,000	53,000	56,000
		High Ridge Rd. South of Gateway Blvd.	South	0.40%	11,000	11,000	12,000	12,000
		Gateway Blvd. West of High Ridge Rd.	West	0.49%	42,000	43,000	46,000	48,000
	Seacrest Blvd.	Seacrest Blvd. North of Gateway Blvd.	North	0.71%	9,300	9,600	10,000	11,000
		Gateway Blvd. East of Seacrest Blvd.	East	0.21%	18,000	18,000	19,000	20,000
		Seacrest Blvd. South of Gateway Blvd.	South	1.35%	14,000	15,000	17,000	20,000
		Gateway Blvd. West of Seacrest Blvd.	West	0.71%	29,000	30,000	32,000	35,000
Hypoluxo Rd. &	I-95	I-95 North of Hypoluxo Rd.	North	0.44%	221,000	227,000	238,000	251,000
		Hypoluxo Rd. East of I-95 NB Ramps	East	0.40%	35,000	36,000	38,000	40,000
		I-95 South of Hypoluxo Rd.	South	0.39%	218,000	224,000	235,000	247,000
		Hypoluxo Rd. West of I-95 SB Ramps	West	0.42%	44,000	45,000	48,000	50,000
	High Ridge Rd.	High Ridge Rd. North of Hypoluxo Rd.	North	1.75%	3,200	3,500	4,100	4,900
		Hypoluxo Rd. East of High Ridge Rd.	East	0.42%	45,000	46,000	49,000	51,000
		High Ridge Rd. South of Hypoluxo Rd.	South	1.09%	8,300	8,800	9,800	11,000
		Hypoluxo Rd. West of High Ridge Rd.	West	0.47%	41,000	42,000	44,000	46,000
	Seacrest Blvd.	Seacrest Blvd. North of Hypoluxo Rd.	North	0.19%	7,000	7,200	7,500	7,900
		Hypoluxo Rd. East of Seacrest Blvd.	East	0.56%	23,000	24,000	25,000	26,000
		Seacrest Blvd. South of Hypoluxo Rd.	South	1.50%	15,000	16,000	19,000	22,000
		Hypoluxo Rd. West of Seacrest Blvd.	West	0.40%	35,000	36,000	38,000	40,000

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5. Development of Traffic Factors (K and D)

Design traffic factors (K and D) are necessary to determine the future year Directional Design Hourly Volumes (DDHV). These factors are basic traffic parameters that will influence the planning and design of the project study. The traffic factors for the subject PD&E Study will be consistent with the adopted standard FDOT factors (K factor) and with the calculated factors approved for this study (D factor). **Table 2** summarizes the recommended D and K factors used in this study.

Table 2: Recommended Traffic Factors

FDOT DATA				Calculated Data
Seg. No.	Roadway	Limits	K-factor	Averaged D-Factor
1	I-95	South of Woolbright Rd.	8.0%	63.5%
2		Woolbright Rd. to Boynton Beach Blvd.	8.0%	61.5%
3		Boynton Beach Blvd. to Gateway Blvd.	8.0%	59.0%
4		Gateway Blvd. to Hypoluxo Rd.	8.0%	57.0%
5		North of Hypoluxo Rd.	8.0%	53.5%
1	Woolbright Rd	West of I-95	9.0%	52.1%
2		East of I-95	9.0%	53.4%
1	Boynton Beach Blvd	West of I-95	9.0%	58.0%
2		East of I-95	9.0%	53.6%
1	Gateway Blvd	West of I-95	9.0%	56.5%
2		East of I-95	9.0%	60.3%
1	Hypoluxo Rd	West of I-95	9.0%	63.4%
2		East of I-95	9.0%	56.1%
Other Arterials			9.0%	57.5%
				55.8%

6. Development of DDHV Volumes

Directional Design Hourly Volumes (DDHVs) were developed for this study area by following processes and techniques consistent with the FDOT *Project Traffic Forecasting Handbook*. As part of this study, TM Tool, Version 2 was used to determine DDHVs for each intersection approach based on the recommended AADTs (2015, 2020, 2030, and 2040), existing 2015 turning movement counts and approved traffic factors. The TM Tool input and output for each study intersection is summarized in **Appendix C**. Some of the keys steps are listed below:

- 1) The DDHVs were computed by multiplying the AADT volumes by the adopted K and D traffic factors (identified in MLOU).
- 2) The existing traffic patterns were used as a reference to determine the peak directions for the future conditions.
- 3) Future traffic volumes were balanced through the interchanges and intersections throughout the study area. In some instances, the DDHVs may deviate from the adopted design hour factors as a result of balancing.
- 4) The DDHVs were first established for the freeway mainlines and ramps. The volumes developed at the intersection approaches were used as control values in the subsequent development of the intersection turning movement volumes.
- 5) The turning movement percentages from existing traffic volumes were applied to DDHVs at the intersection approaches to develop intersection turning volumes.

TM Tool, as outputs, produces balanced turning movement volumes at study intersections for the years 2020, 2030, and 2040. Traffic projections were checked for reasonableness.

In summary, The DDHVs for years of 2020, 2030 and 2040 are presented in **Figures 2** through **5**. The balanced turning movement volumes for years of 2020, 2030 and 2040 are depicted in **Figures 6** to **17**.

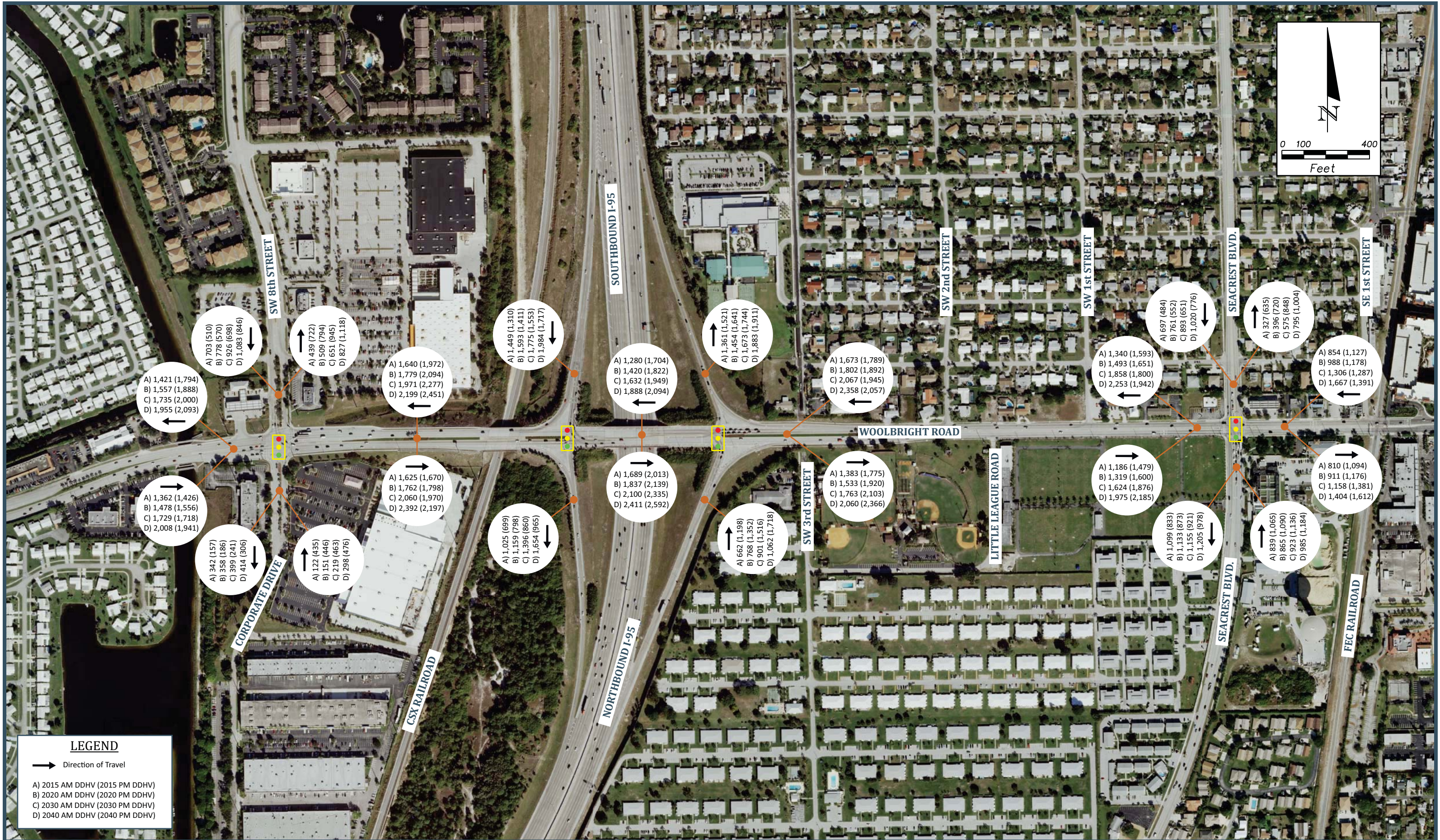


Figure 2: Directional Design Hourly Volumes
I-95 at Woolbright Road Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

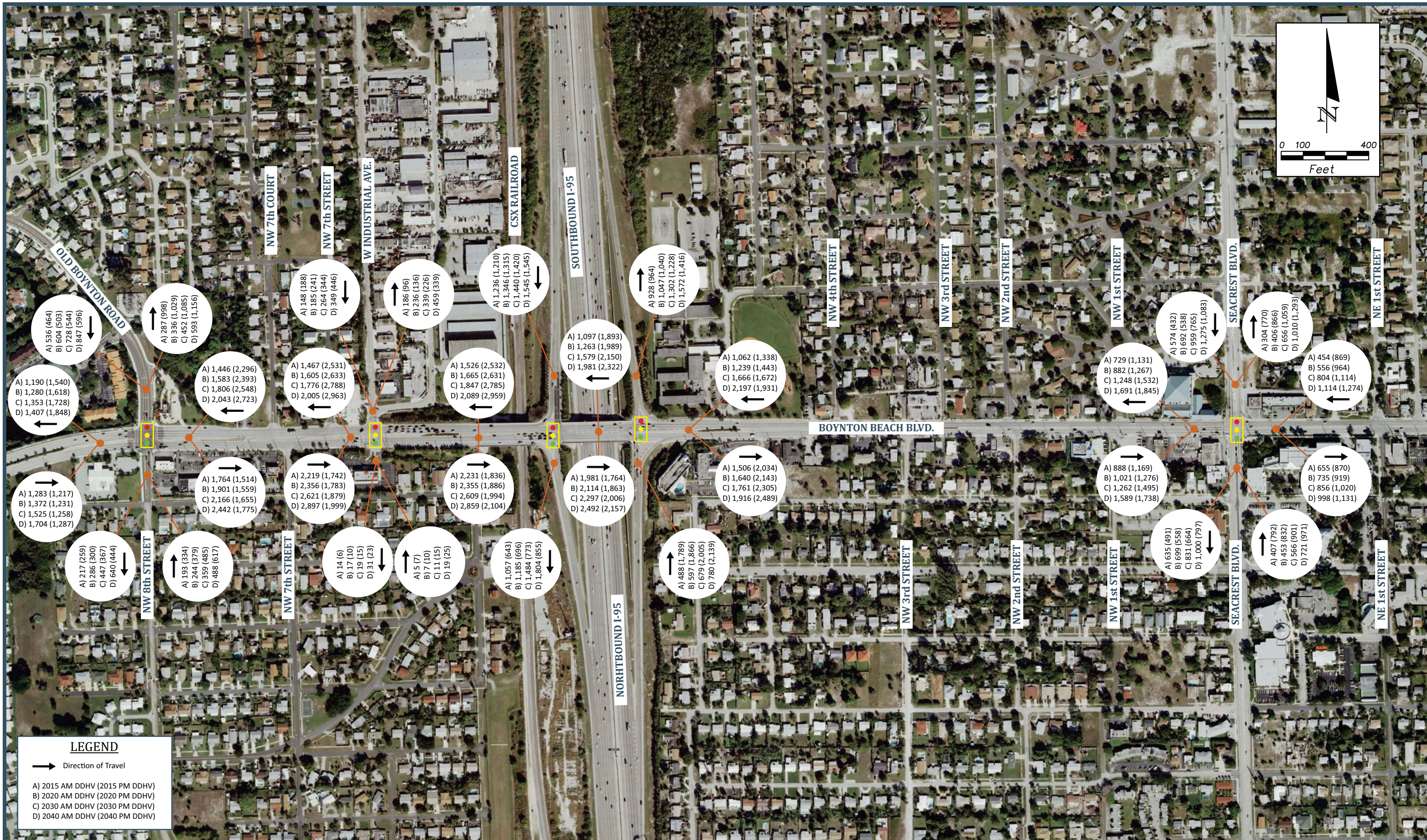


Figure 3: Directional Design Hourly Volumes
 I-95 at Boynton Beach Boulevard Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

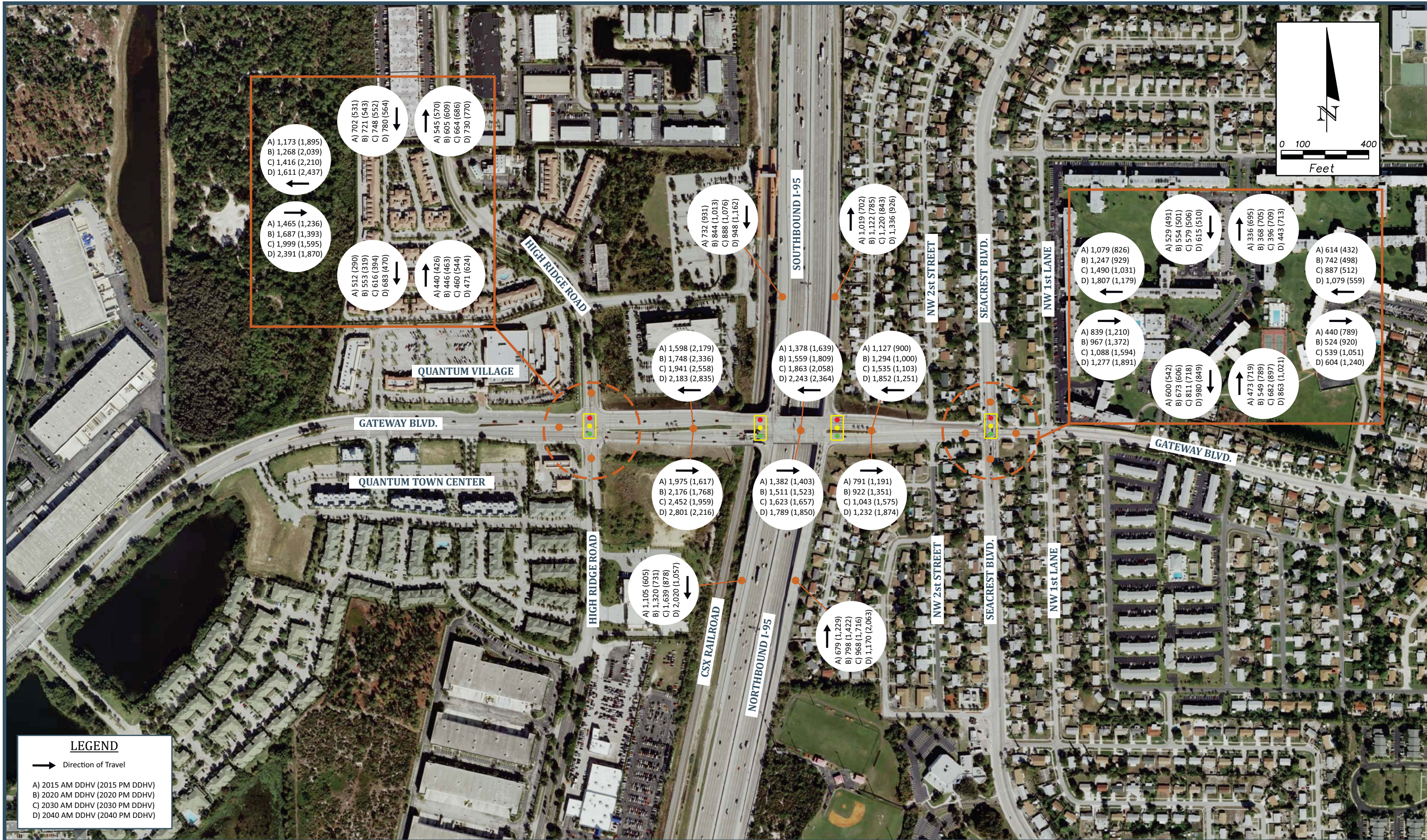


Figure 4: Directional Design Hourly Volumes
I-95 at Gateway Boulevard Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges



Figure 5: Directional Design Hourly Volumes
I-95 at Hypoluxo Road Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

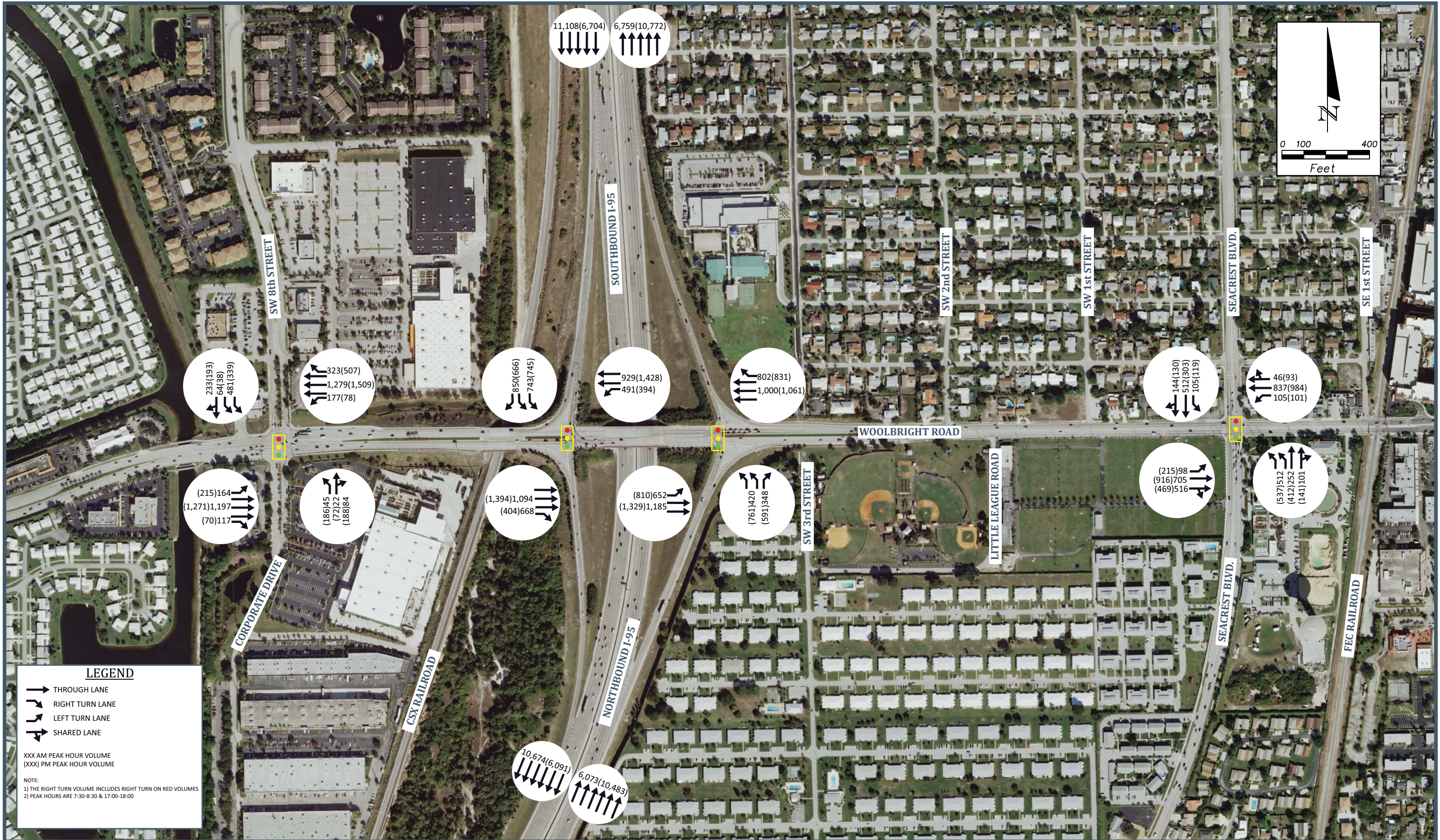
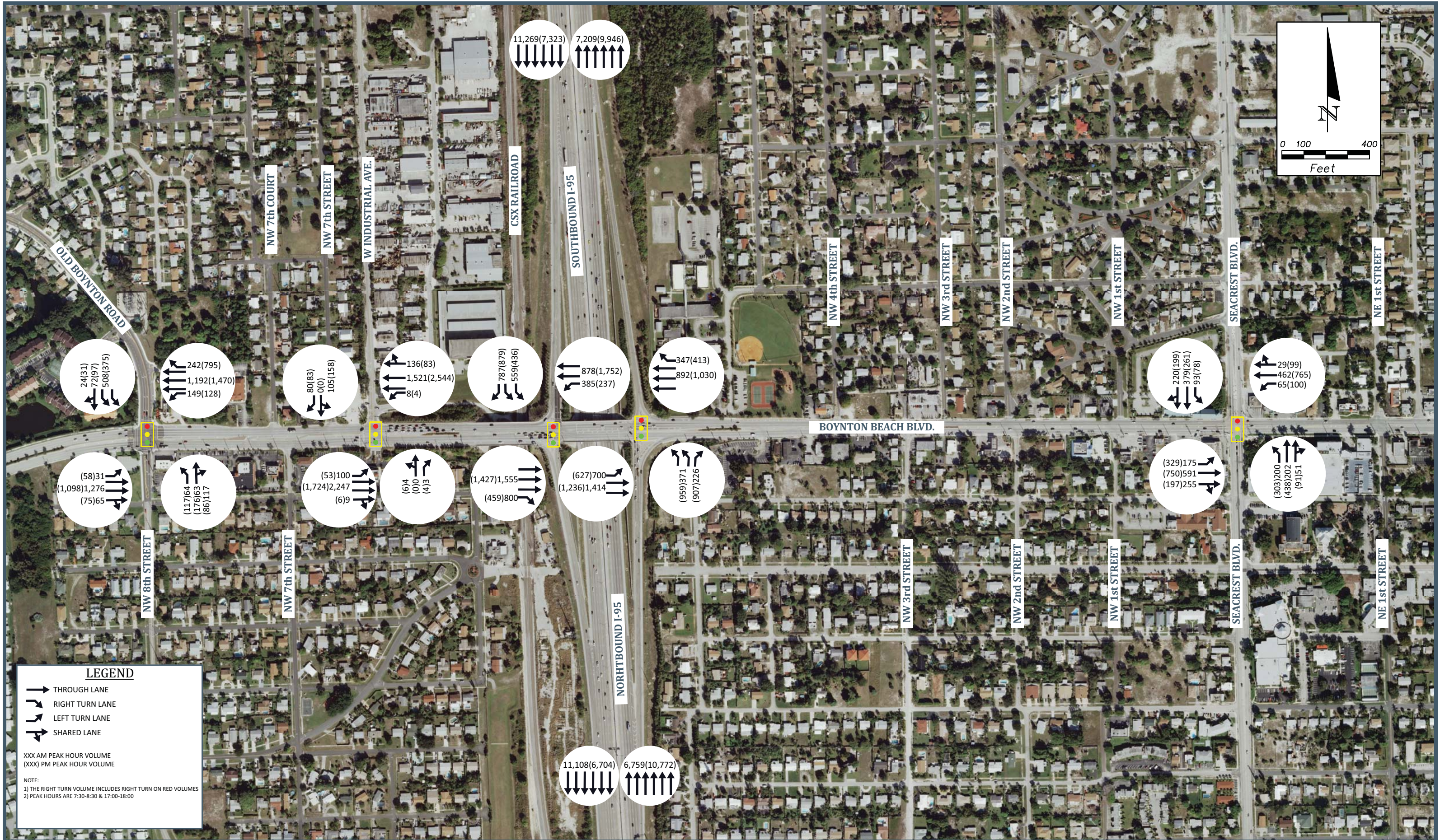


Figure 6: Opening Year (2020) Balanced Intersection Turning Movement Volumes
 I-95 at Woolbright Road Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges



LEGEND

- THROUGH LANE
- ↘ RIGHT TURN LANE
- ↙ LEFT TURN LANE
- ↔ SHARED LANE

XXX AM PEAK HOUR VOLUME
 (XXX) PM PEAK HOUR VOLUME

NOTE:
 1) THE RIGHT TURN VOLUME INCLUDES RIGHT TURN ON RED VOLUMES
 2) PEAK HOURS ARE 7:30-8:30 & 17:00-18:00

Figure 7: Opening Year (2020) Balanced Intersection Turning Movement Volumes
I-95 at Boynton Beach Boulevard Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

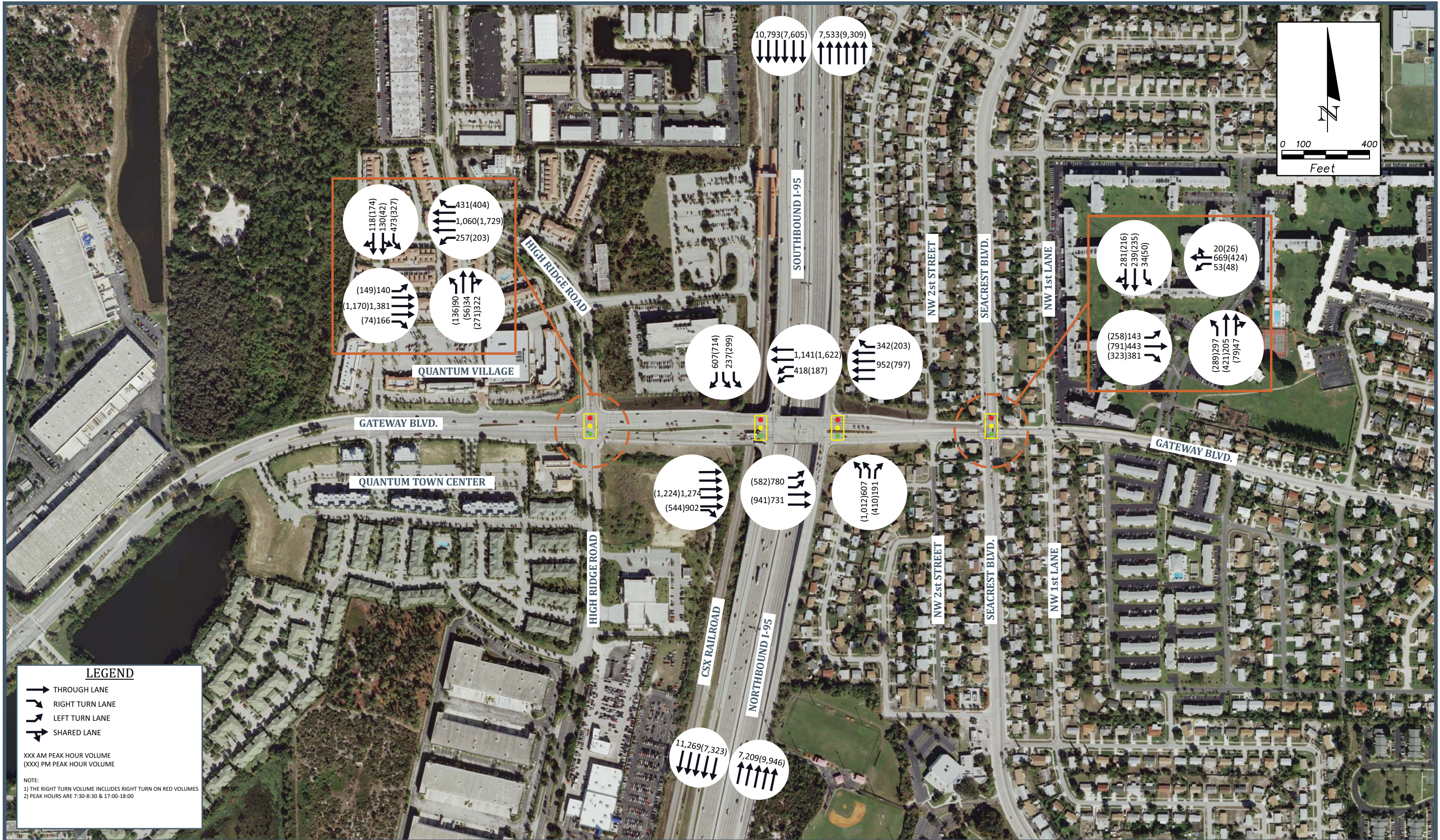


Figure 8: Opening Year (2020) Balanced Intersection Turning Movement Volumes
 I-95 at Gateway Boulevard Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

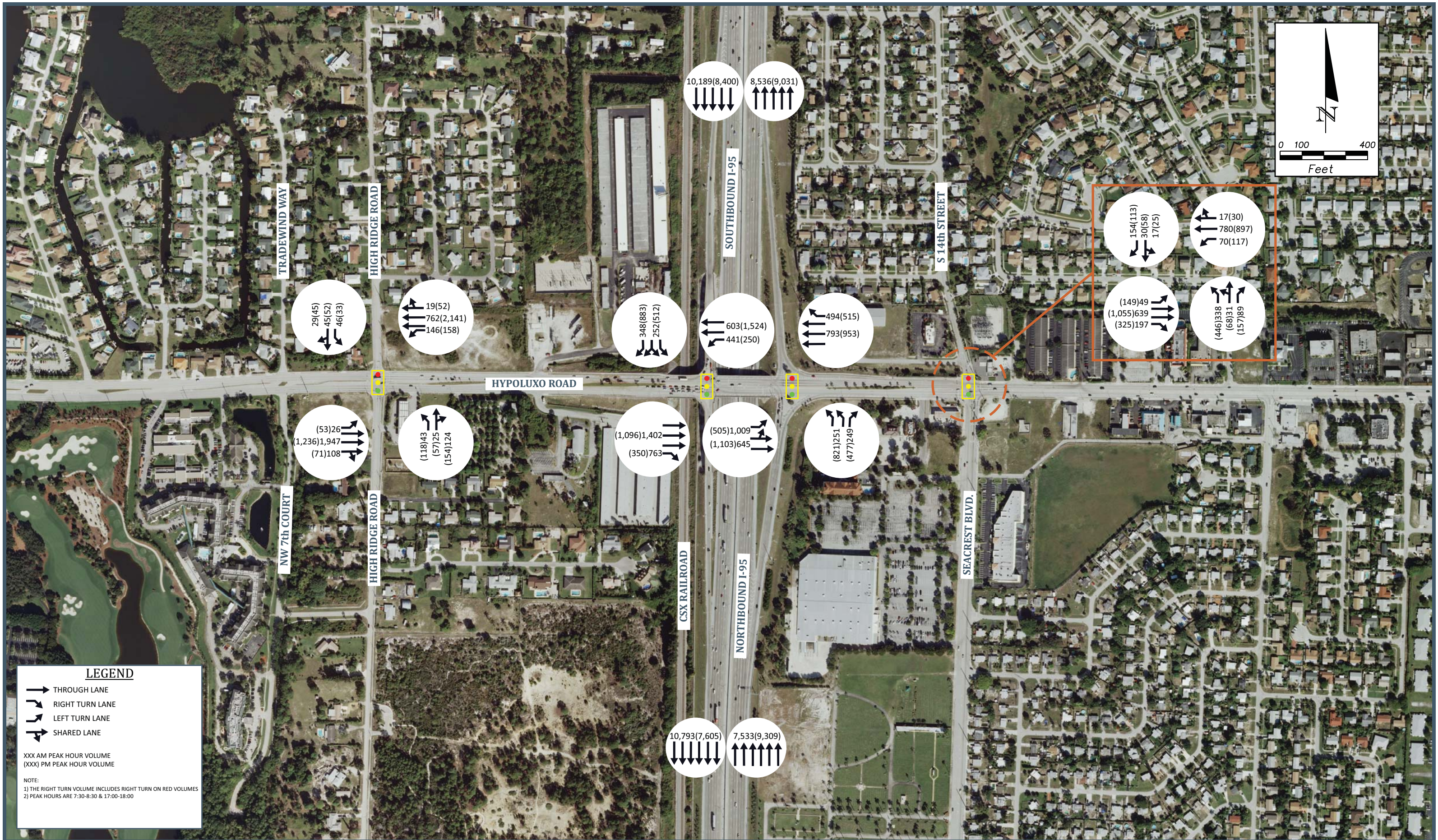


Figure 9: Opening Year (2020) Balanced Intersection Turning Movement Volumes
I-95 at Hypoluxo Road Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

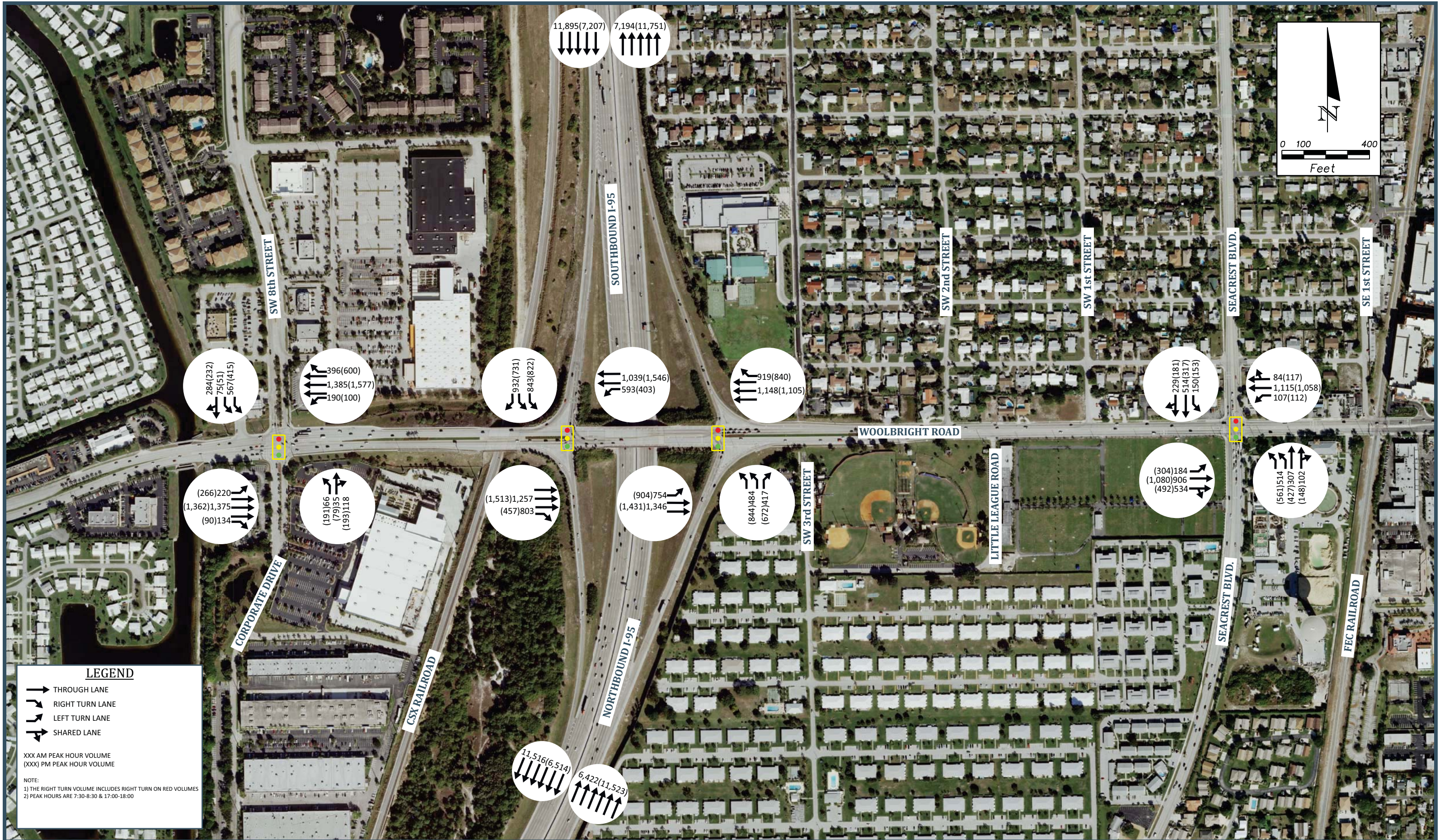


Figure 10: Interim Year (2030) Balanced Intersection Turning Movement Volumes
 I-95 at Woolbright Road Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

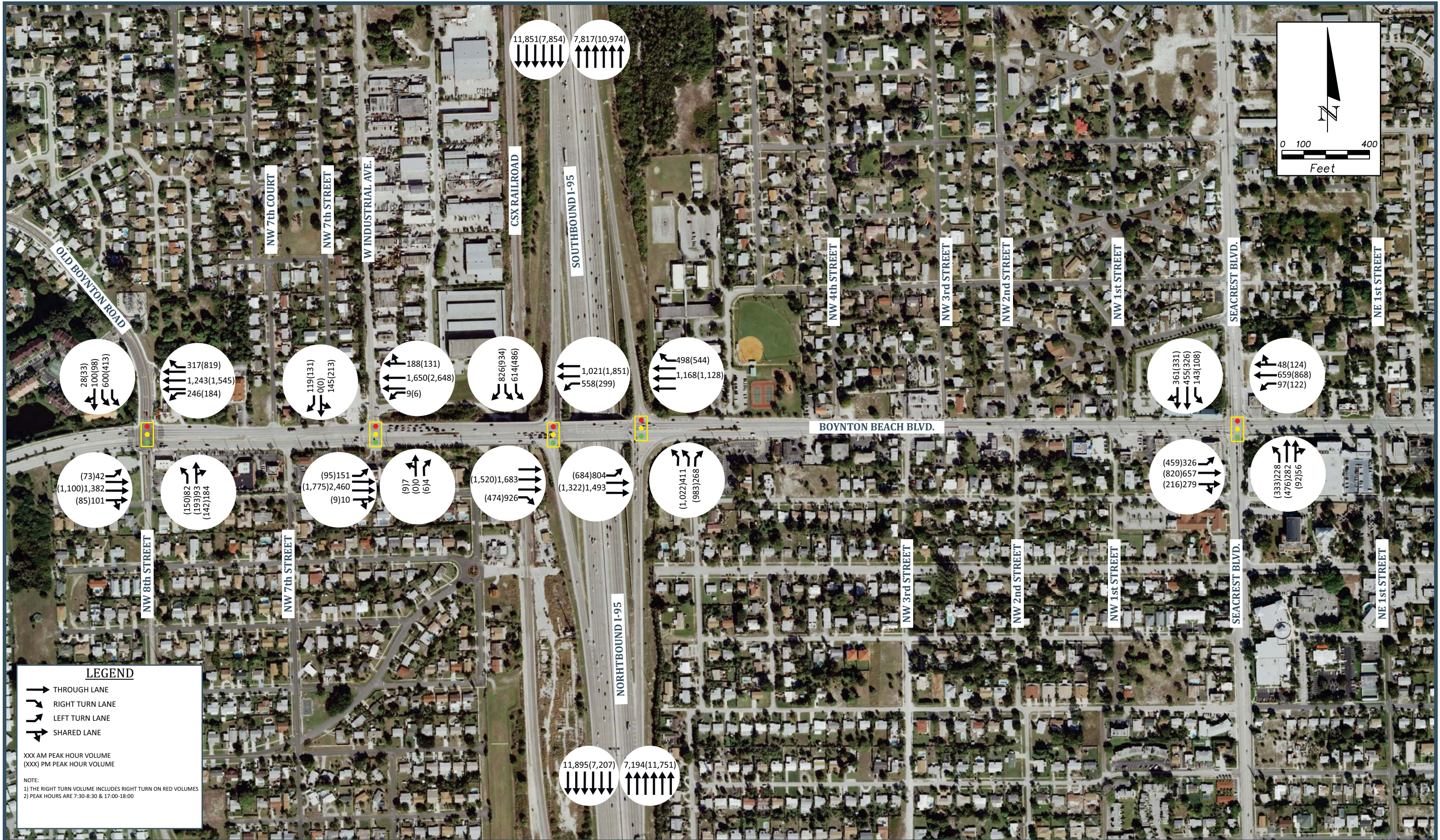


Figure 11: Interim Year (2030) Balanced Intersection Turning Movement Volumes
I-95 at Boynton Beach Boulevard Interchange
PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

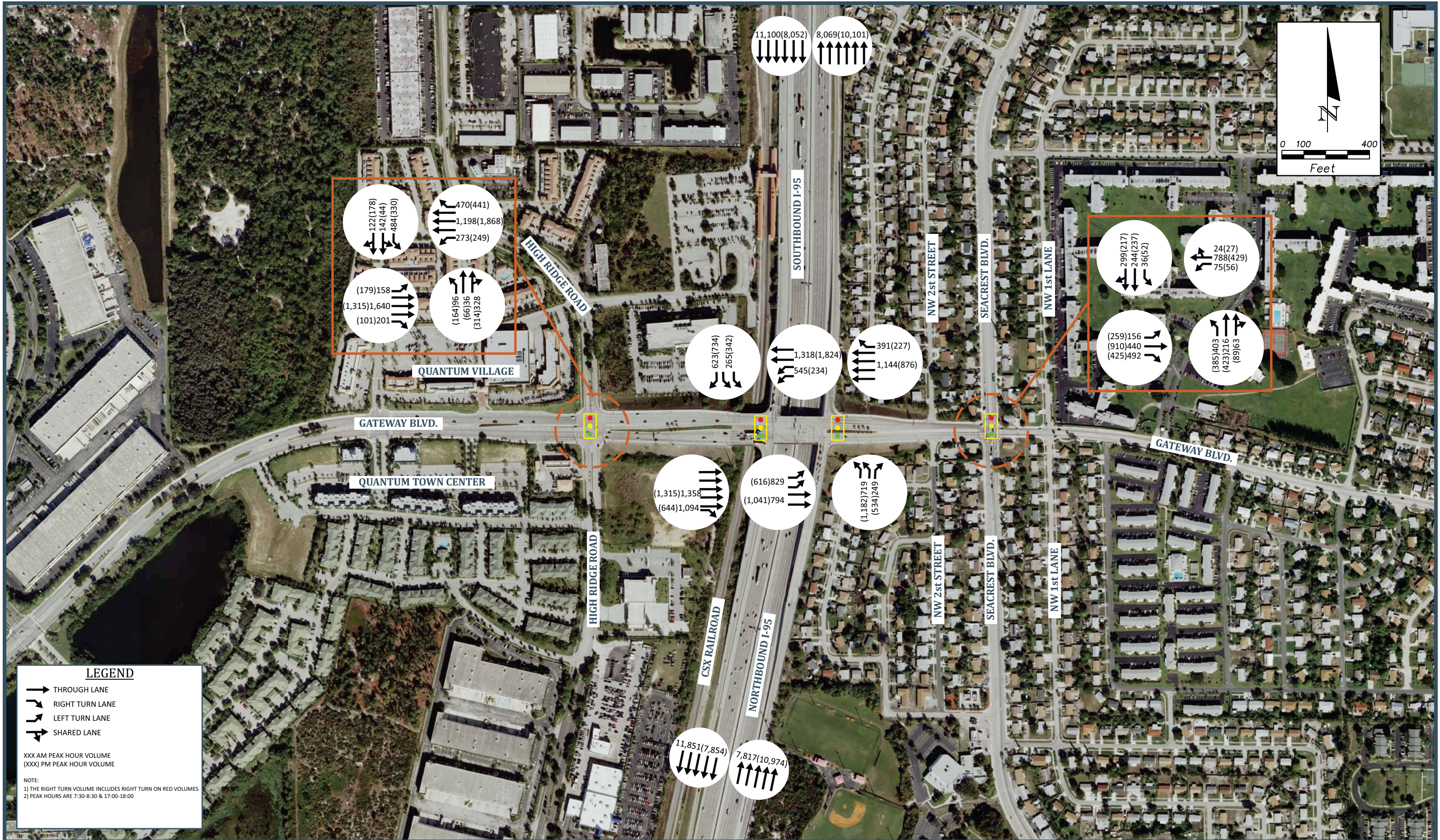


Figure 12: Interim Year (2030) Balanced Intersection Turning Movement Volumes
I-95 at Gateway Boulevard Interchange
PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

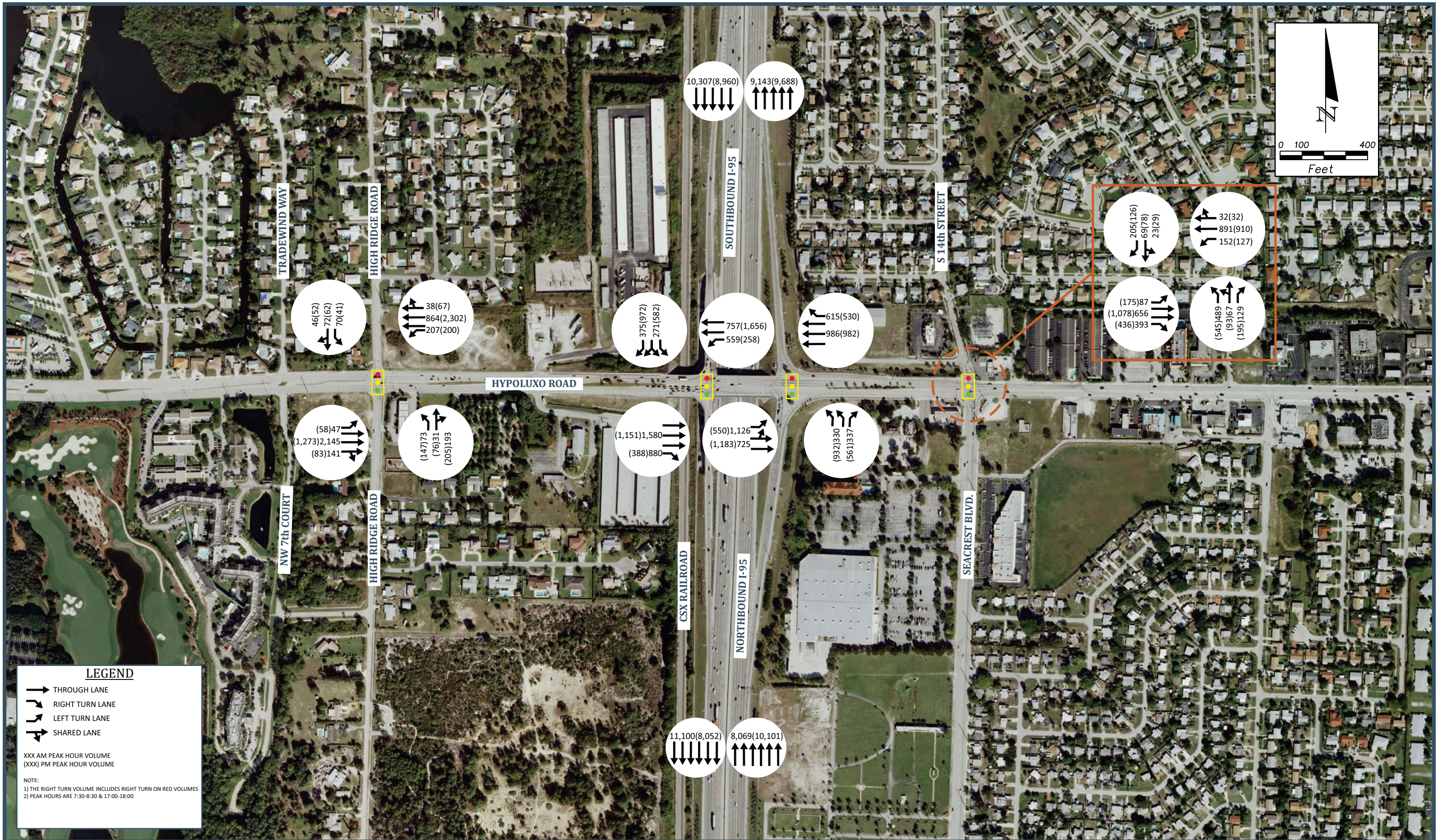


Figure 13: Interim Year (2030) Balanced Intersection Turning Movement Volumes
I-95 at Hypoluxo Road Interchange
PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

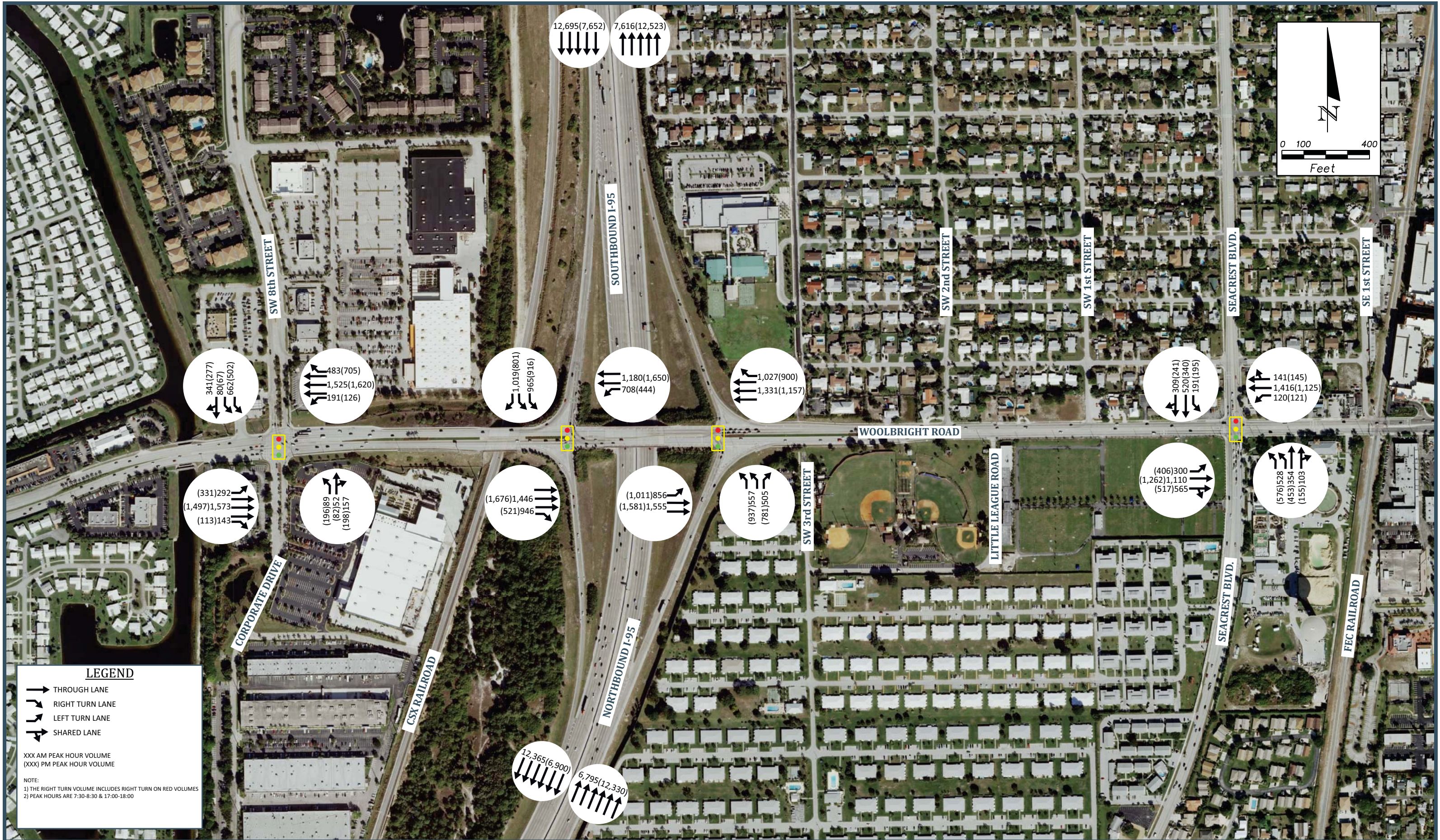


Figure 14: Design Year (2040) Balanced Intersection Turning Movement Volumes
 I-95 at Woolbright Road Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

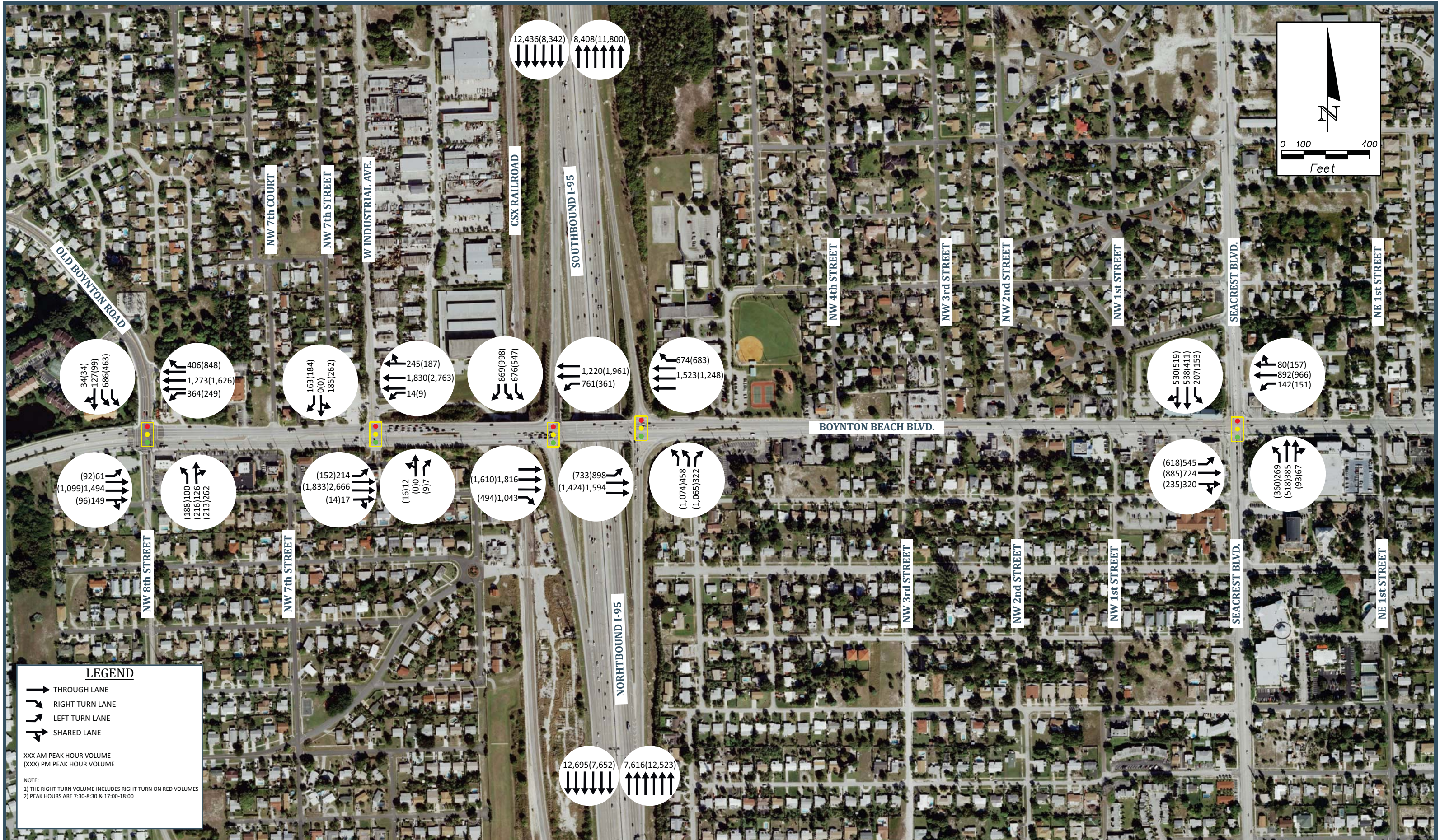


Figure 15: Design Year (2040) Balanced Intersection Turning Movement Volumes
 I-95 at Boynton Beach Boulevard Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

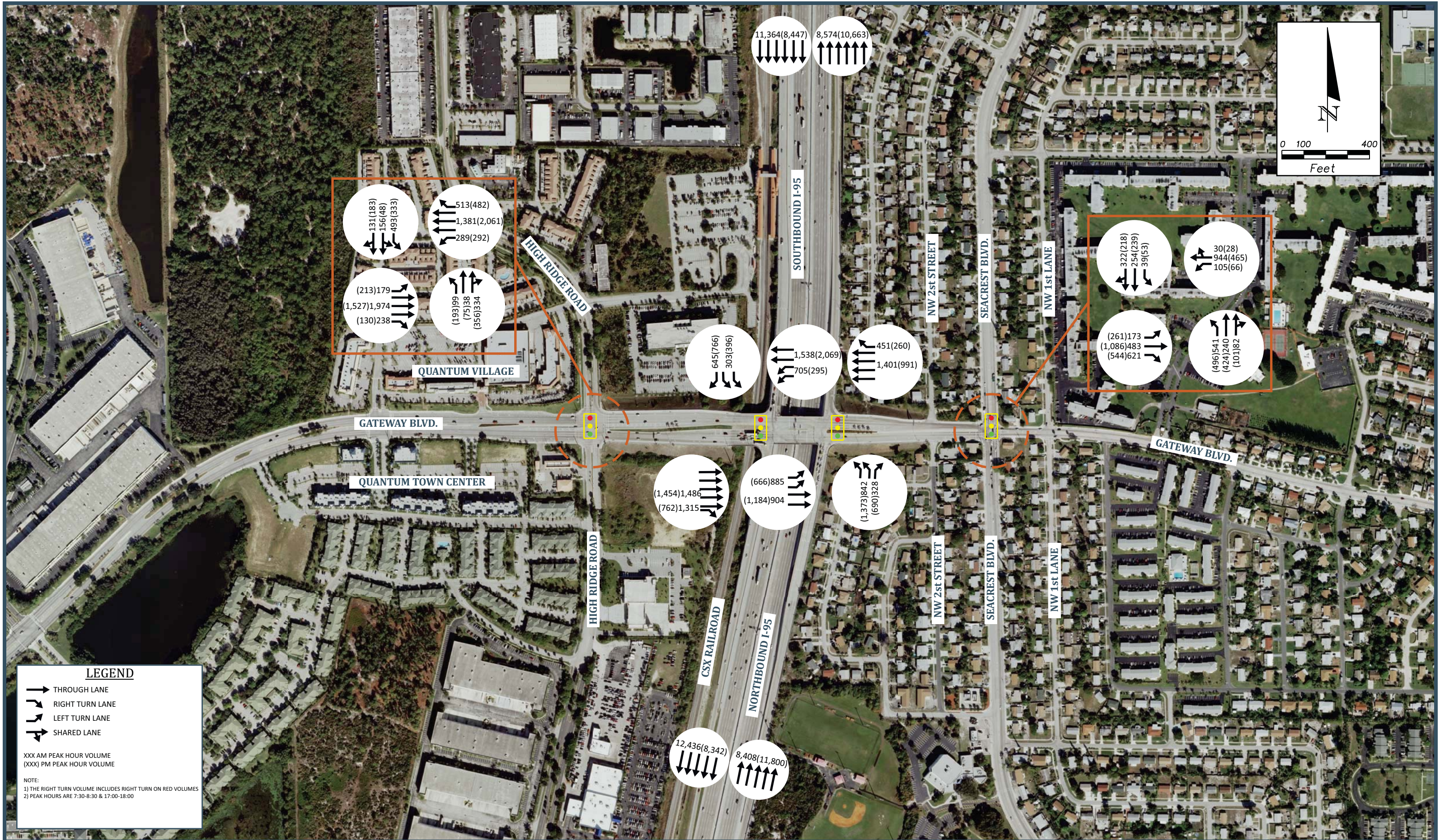


Figure 16: Design Year (2040) Balanced Intersection Turning Movement Volumes
 I-95 at Gateway Boulevard Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

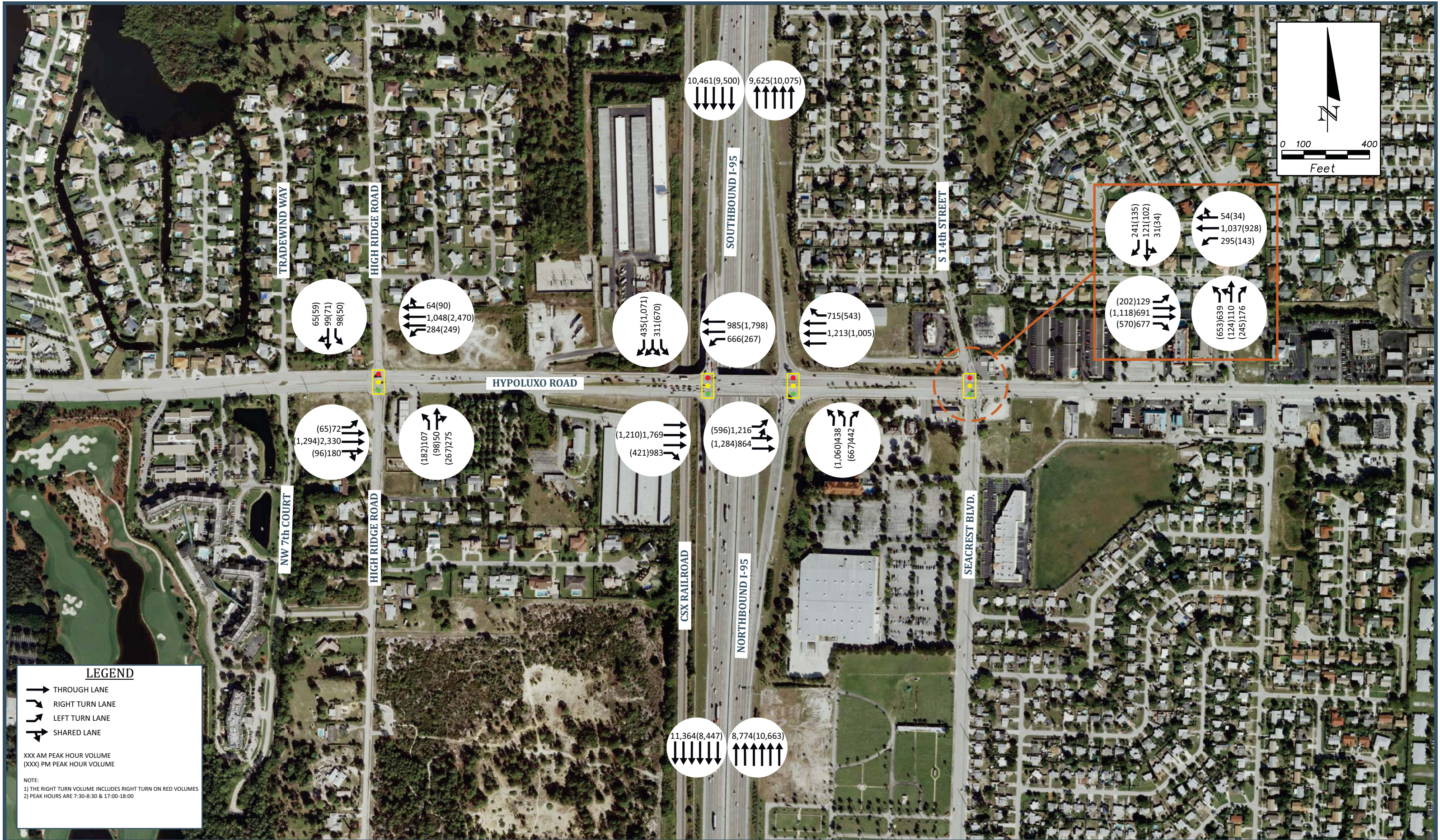


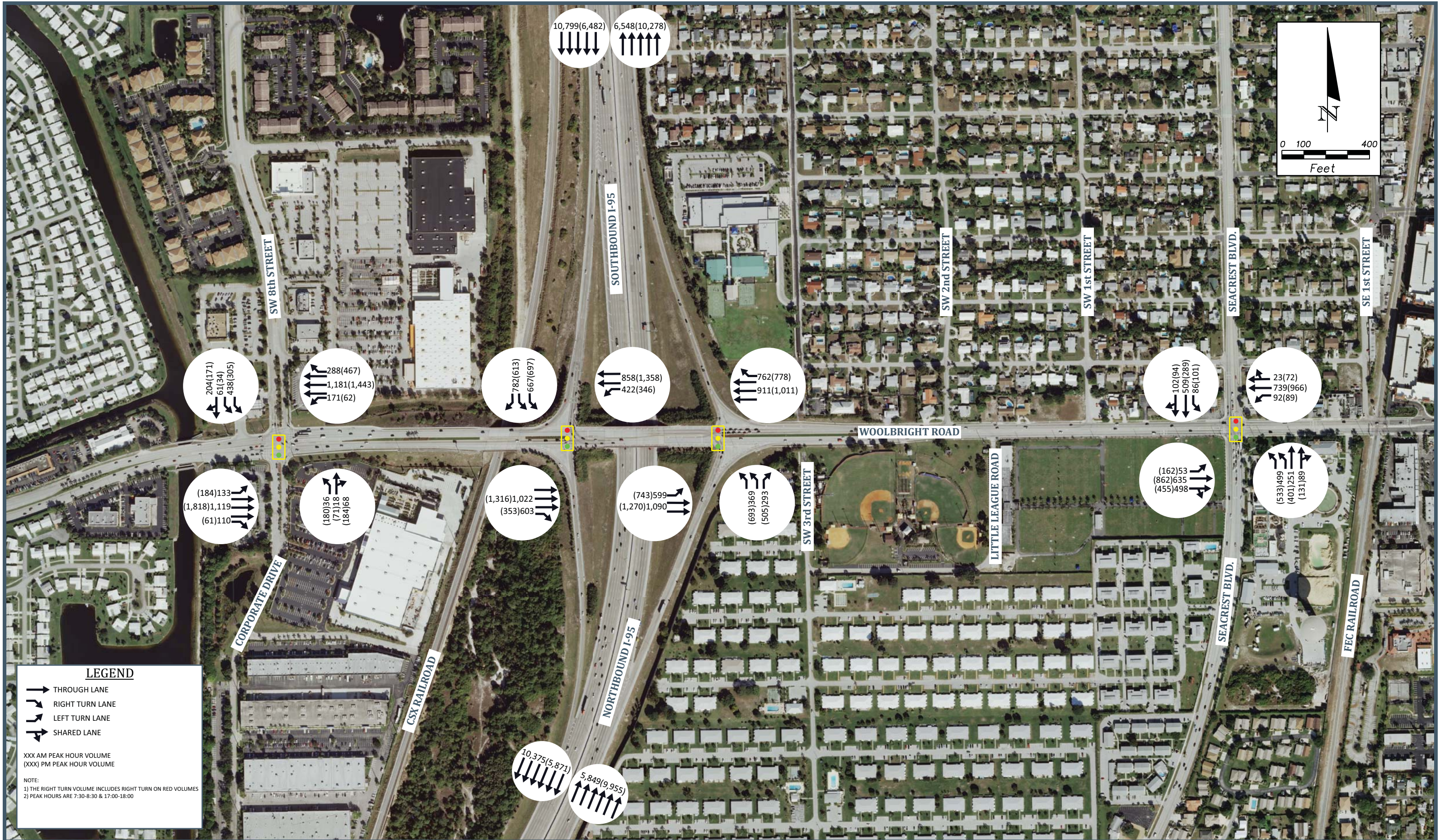
Figure 17: Design Year (2040) Balanced Intersection Turning Movement Volumes
 I-95 at Hypoluxo Road Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges



Appendix: A

Existing (2015) Balanced Turning Movement Volumes

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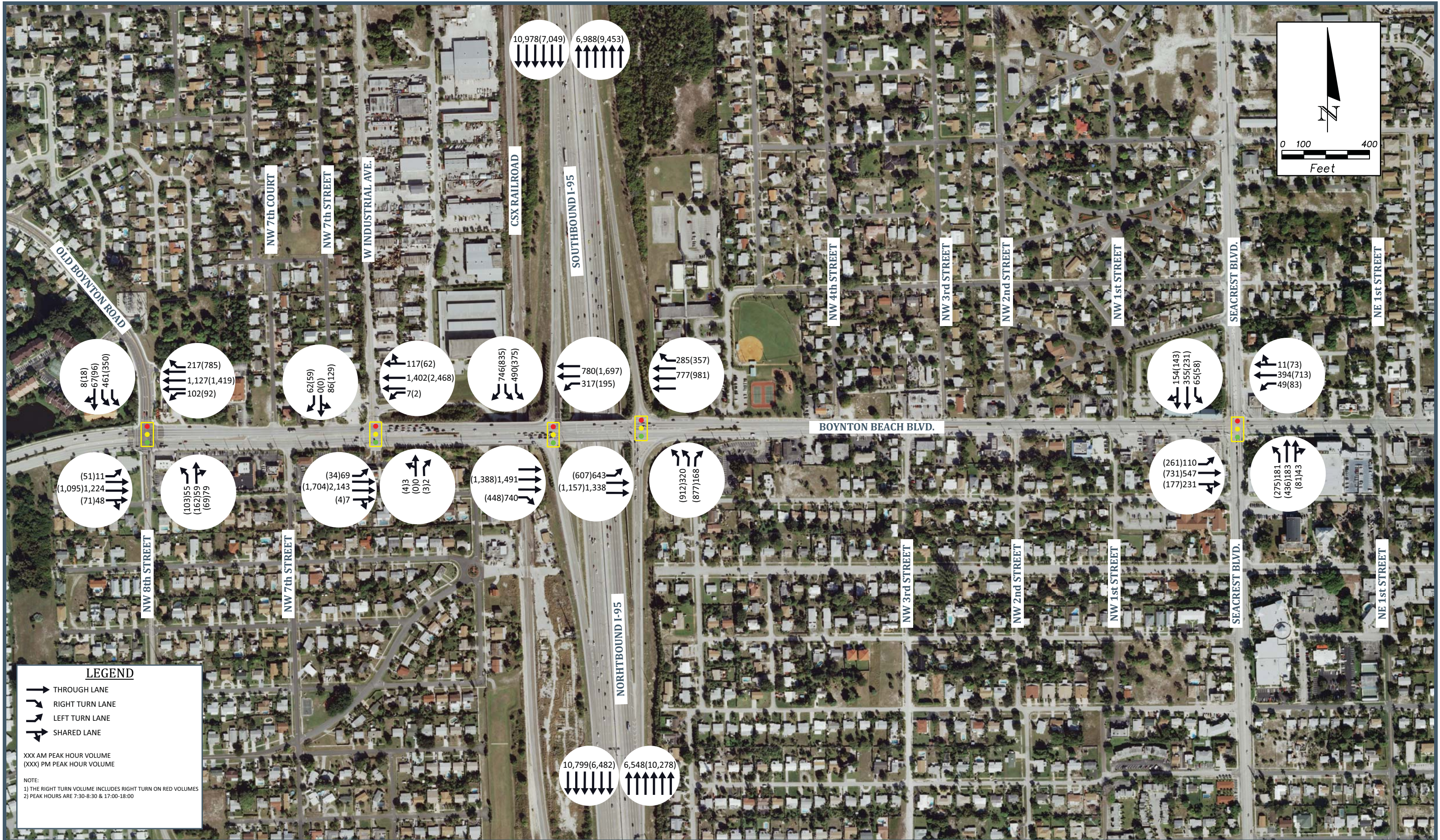
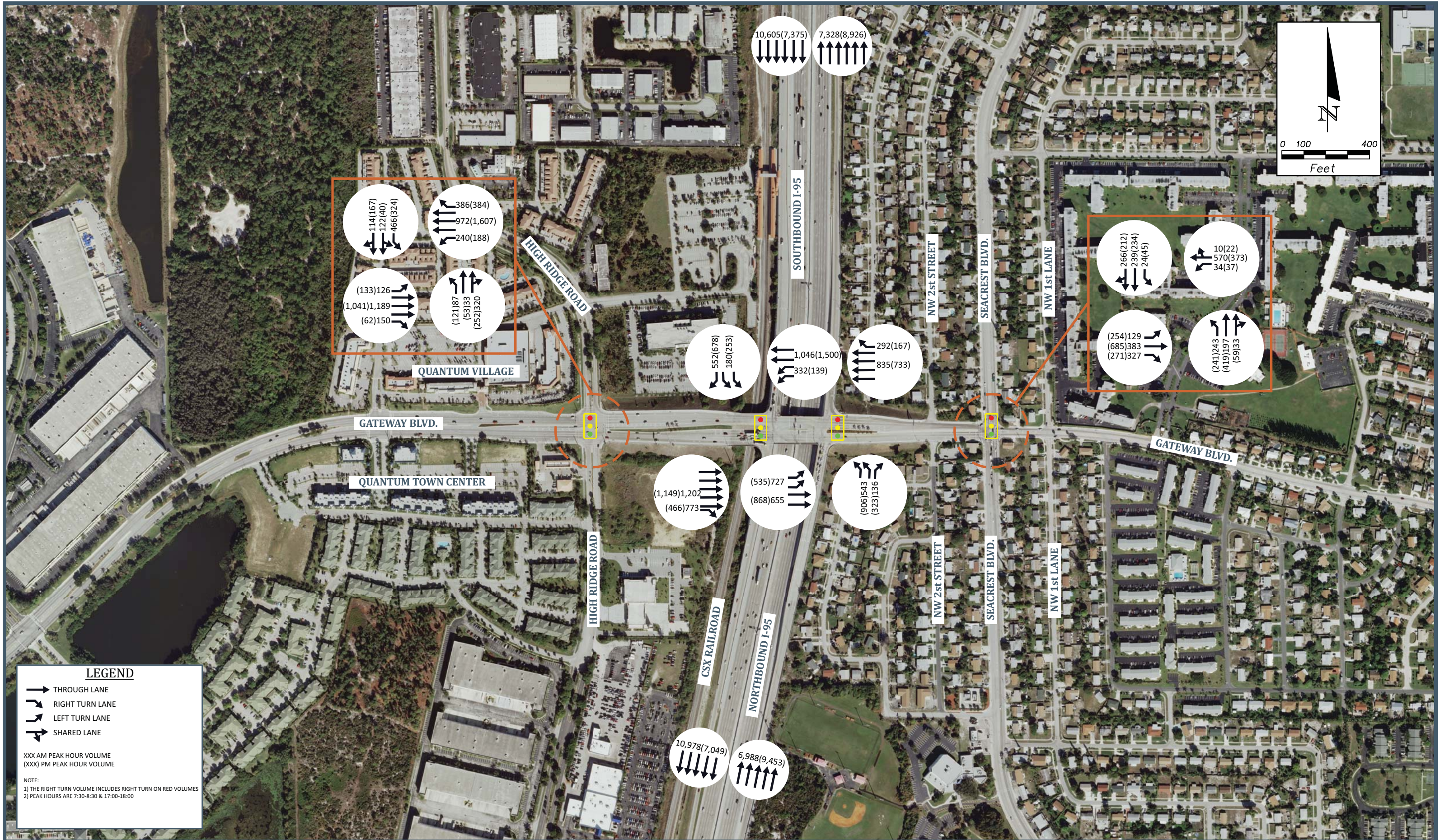
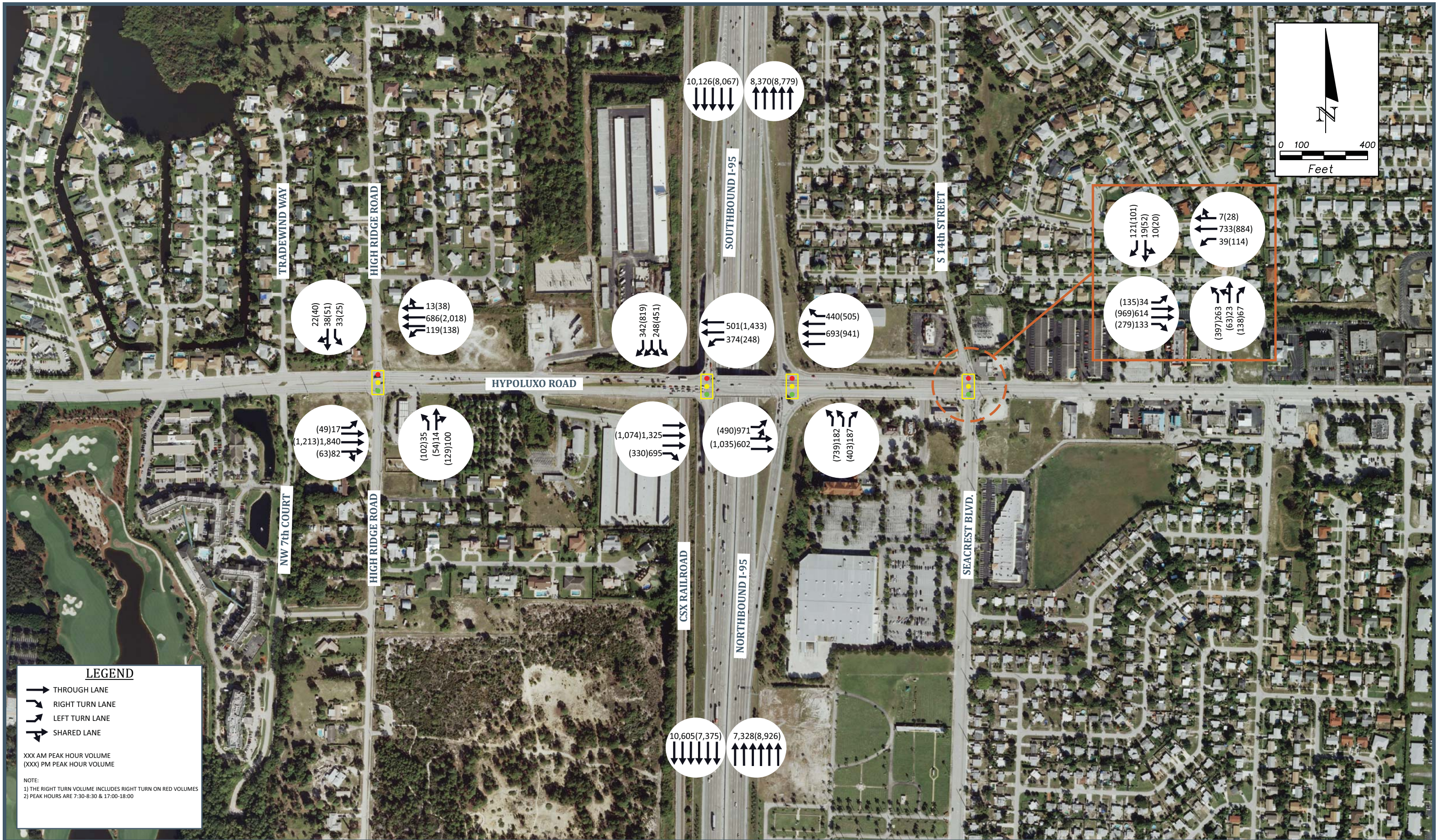


Figure A2: Existing (2015) Balanced Intersection Turning Movement Volumes
 I-95 at Boynton Beach Boulevard Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

Source: Traffic Data Collection & Traffic Projections for I-95 PD&E Studies
 June 18, 2015



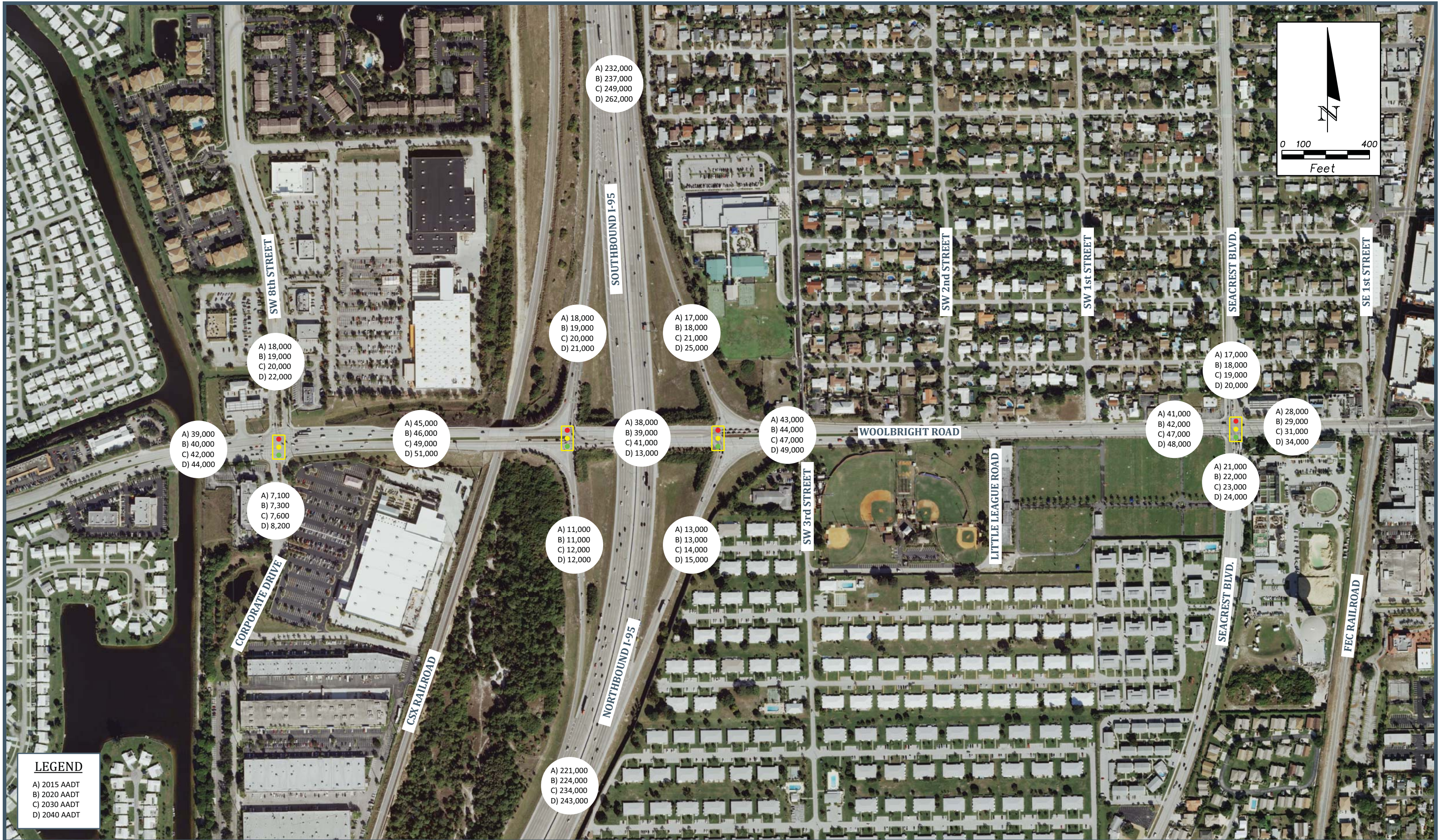


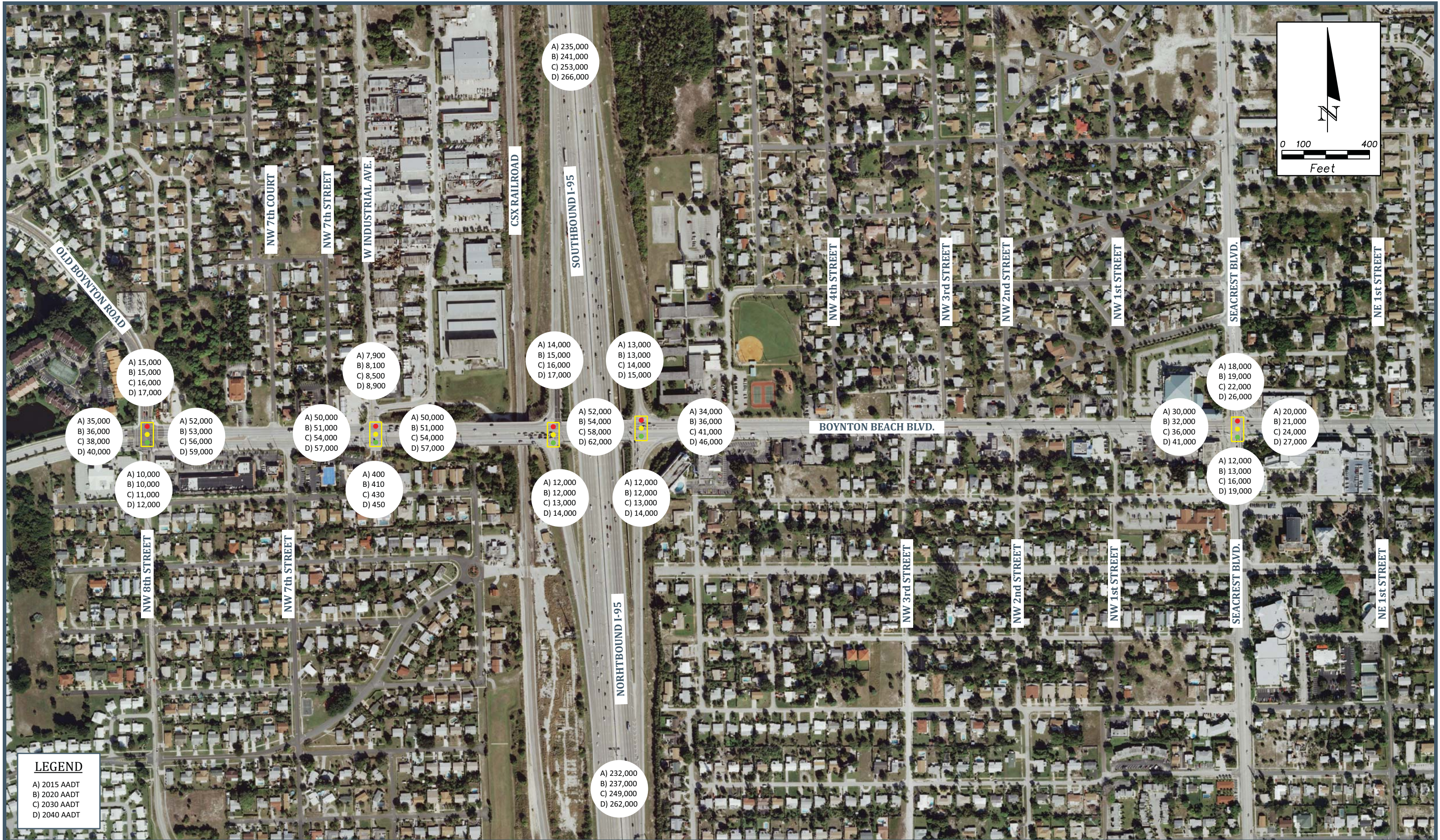


Appendix: B

Years 2015, 2020, 2030, and 2040 Recommended AADTs

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LEGEND
 A) 2015 AADT
 B) 2020 AADT
 C) 2030 AADT
 D) 2040 AADT

Figure B2: Recommended Future AADT
I-95 at Boynton Beach Boulevard Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

Source: Traffic Data Collection & Traffic Projections for I-95 PD&E Studies
 June 18, 2015

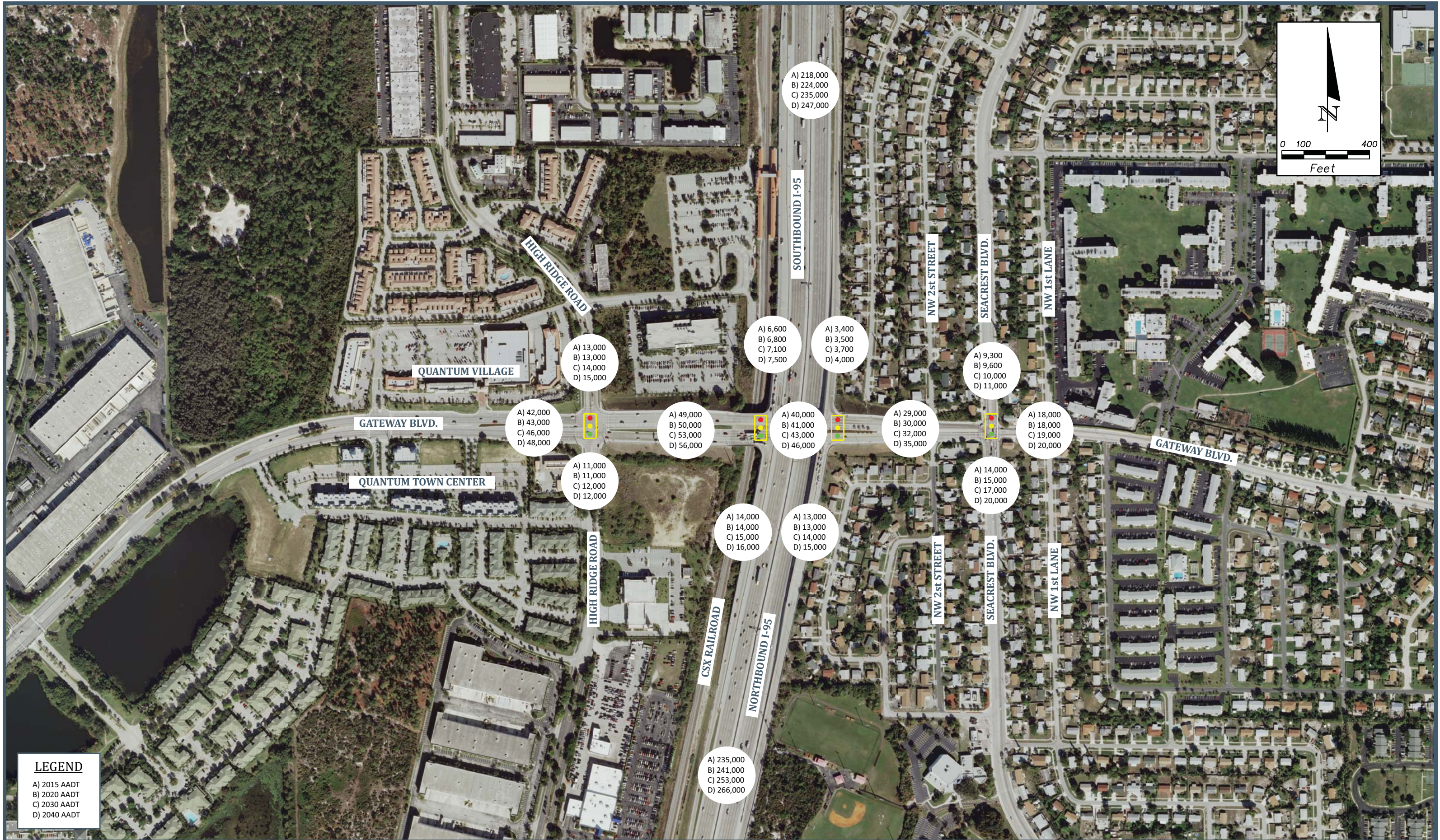
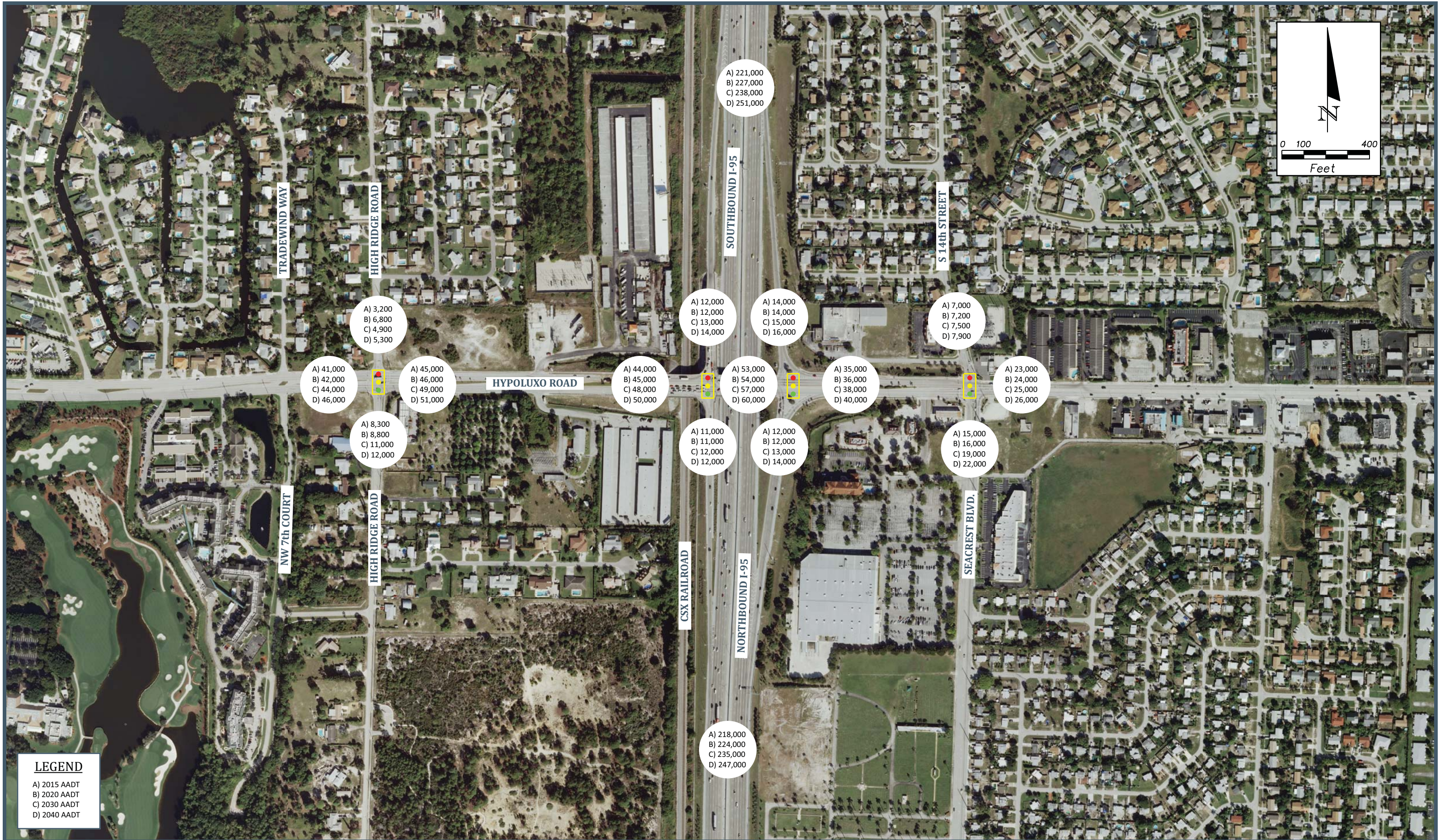


Figure B3: Recommended Future AADT
I-95 at Gateway Boulevard Interchange
 PD&E Study for I-95 at Boynton Beach Boulevard and Gateway Boulevard Interchanges

Source: Traffic Data Collection & Traffic Projections for I-95 PD&E Studies
 June 18, 2015



The background of the page is a light gray map of a city grid. A prominent river, likely the Hudson River, flows diagonally from the top right towards the bottom left. The grid consists of various street patterns, including a regular grid and some irregular, winding paths.

Appendix: C

TM Tool Input and Output

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I-95 AT WOOLBRIGHT ROAD INTERCHANGE

TMTOOL INPUT SHEET

Project Description:

SECTION NO.:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Woolbright Blvd. & SW 8th St		

NOTES:

Historical AADTs:

YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
	AADT	AADT	AADT	AADT
Model Volume:				

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	0.72%	CGR	0.50%	CGR	0.50%	CGR	0.48%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
	2015		18,000		45,000		7,100		39,000	
NO. YEARS	5	2020	1.037	18,700	1.025	46,100	1.025	7,300	1.024	39,900
NO. YEARS	15	2030	1.114	20,000	1.078	48,500	1.078	7,700	1.074	41,900
NO. YEARS	25	2040	1.196	21,500	1.133	51,000	1.133	8,000	1.127	44,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.	2-Way Pk Hr Vol: 1,142												
10/5/2015	204	61	438	288	1,181	171	68	18	36	110	1,119	133	3,827
% TURNS:	29%	9%	62%	18%	72%	10%	56%	15%	30%	8%	82%	10%	
P.M.	2-Way Pk Hr Vol: 1,232												
10/5/2015	171	34	305	467	1,443	62	184	71	180	61	1,181	184	4,343
% TURNS:	34%	7%	60%	24%	73%	3%	42%	16%	41%	4%	83%	13%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	29%	9%	62%	18%	72%	10%	56%	15%	30%	8%	82%	10%
2020	30%	9%	61%	19%	71%	10%	55%	15%	30%	8%	80%	11%
2030	31%	9%	61%	19%	71%	11%	54%	15%	31%	8%	80%	12%
2040	31%	9%	60%	20%	70%	11%	54%	15%	31%	8%	79%	13%
P.M.												
2015	34%	7%	60%	24%	73%	3%	42%	16%	41%	4%	83%	13%
2020	34%	7%	59%	24%	72%	4%	42%	16%	41%	5%	81%	14%
2030	35%	7%	59%	24%	72%	4%	43%	17%	41%	5%	80%	15%
2040	35%	7%	58%	25%	71%	4%	43%	17%	41%	5%	80%	15%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	6.3%	6.8%	7.3%	8.1%	6.5%	8.3%	7.1%	8.3%
2020	6.9%	7.3%	7.6%	8.3%	7.0%	8.5%	7.5%	8.4%
2030	7.9%	8.1%	8.3%	8.6%	8.0%	8.7%	8.3%	8.7%
2040	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
D FACTOR								
2015	61.6%	41.4%	50.2%	54.1%	26.3%	73.5%	48.9%	44.3%
2020	60.7%	41.6%	49.8%	53.7%	29.5%	70.3%	49.6%	45.0%
2030	59.1%	42.1%	48.8%	52.9%	36.0%	63.9%	50.8%	46.5%
2040	57.5%	42.5%	47.9%	52.1%	42.5%	57.5%	52.1%	47.9%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Woolbright Blvd. & SW 8th St
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
24 HR EST. AADT	2015	18,000			45,000			7,100			39,000		
24 HR EST. AADT	2020	18,700			46,100			7,300			39,900		
24 HR EST. AADT	2030	20,000			48,500			7,700			41,900		
24 HR EST. AADT	2040	21,500			51,000			8,000			44,000		

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	2-WAY ADT	18,000			45,000			7,100			39,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		39,000	7,100	45,000	18,000	39,000	7,100	45,000	18,000	39,000	7,100	45,000	18,000
		43%	8%	49%	28%	61%	11%	44%	18%	38%	10%	64%	26%
2020	2-WAY ADT	18,700			46,100			7,300			39,900		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		39,900	7,300	46,100	18,700	39,900	7,300	46,100	18,700	39,900	7,300	46,100	18,700
		43%	8%	49%	28%	61%	11%	44%	18%	38%	10%	64%	26%
2030	2-WAY ADT	20,000			48,500			7,700			41,900		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		41,900	7,700	48,500	20,000	41,900	7,700	48,500	20,000	41,900	7,700	48,500	20,000
		43%	8%	49%	29%	60%	11%	44%	18%	38%	10%	64%	26%
2040	2-WAY ADT	21,500			51,000			8,000			44,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		44,000	8,000	51,000	21,500	44,000	8,000	51,000	21,500	44,000	8,000	51,000	21,500
		43%	8%	50%	29%	60%	11%	44%	18%	38%	10%	63%	27%

A.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG							
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT					
2015	EST. TURNS	202	60	440	288	1,180	170	68	18	36	108	1,122	132					
		2020	EST. TURNS	233	64	481	323	1,236	177	84	22	45	117	1,200	164			
				2030	EST. TURNS	284	75	567	396	1,352	190	118	35	66	134	1,379	220	
						2040	EST. TURNS	341	80	662	483	1,467	191	157	52	89	143	1,572
P.M. DESIGN HR. TURNS	2015							EST. TURNS	171	34	305	465	1,443	61	184	71	180	60
		2020	EST. TURNS						193	38	339	507	1,472	78	188	72	186	70
				2030	EST. TURNS				232	51	415	600	1,553	100	193	79	191	90
						2040	EST. TURNS		277	67	502	705	1,625	126	198	82	196	113

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
DESIGN HOUR A.M.:	CONTROL LINK VOLUMES	703	437	1,140	1,640	1,630	3,270	122	338	460	1,362	1,418	2,780
	2015	702	437	1,139	1,637	1,630	3,267	122	338	460	1,361	1,418	2,779
	CONTROL LINK VOLUMES	781	509	1,290	1,745	1,765	3,510	152	358	510	1,485	1,515	3,000
	2020	778	509	1,287	1,736	1,765	3,501	151	358	509	1,481	1,515	2,996
CONTROL LINK VOLUMES	CONTROL LINK VOLUMES	939	651	1,590	1,966	2,064	4,030	222	398	620	1,758	1,702	3,460
	2030	926	651	1,577	1,938	2,064	4,002	219	398	617	1,733	1,702	3,435
	CONTROL LINK VOLUMES	1,113	827	1,940	2,199	2,391	4,590	306	414	720	2,063	1,897	3,960
	2040	1,083	827	1,910	2,141	2,391	4,532	298	414	712	2,007	1,897	3,904
DESIGN HOUR P.M.:	CONTROL LINK VOLUMES	510	720	1,230	1,972	1,668	3,640	435	155	590	1,426	1,794	3,220
	2015	509	720	1,229	1,969	1,668	3,637	434	155	589	1,424	1,794	3,218
	CONTROL LINK VOLUMES	566	794	1,360	2,050	1,760	3,810	435	185	620	1,509	1,841	3,350
	2020	570	794	1,364	2,057	1,760	3,817	447	187	633	1,517	1,851	3,368
CONTROL LINK VOLUMES	CONTROL LINK VOLUMES	685	945	1,630	2,217	1,973	4,190	430	240	670	1,694	1,956	3,650
	2030	697	945	1,642	2,253	1,978	4,231	463	240	703	1,726	1,976	3,702
	CONTROL LINK VOLUMES	822	1,118	1,940	2,391	2,199	4,590	414	306	720	1,897	2,063	3,960
	2040	847	1,118	1,965	2,457	2,214	4,671	476	306	782	1,956	2,098	4,054

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO.:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Woolbright Blvd. & I-95		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
Model Volume:					

Growth Rates:

	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
Historic Trend GR =				
Historic + Model Trend GR =				
Base Year Model to Future Year Model GR =				
Recommended Growth Rate:	0.30% CGR	0.53% CGR	0.28% CGR	0.50% CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
 2 = Linear Growth Throughout All Years
 3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	1	1	1	1
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	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
	2015		232,000		43,000		221,000		45,000	
NO. YEARS	5	2020	1.015	235,500	1.027	44,200	1.014	224,100	1.025	46,100
NO. YEARS	15	2030	1.046	242,700	1.083	46,500	1.043	230,500	1.078	48,500
NO. YEARS	25	2040	1.078	250,000	1.141	49,100	1.072	237,000	1.133	51,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.	2-Way Pk Hr Vol: 17,347			3,056			16,224			3,265			
7/20/2014	782	9,350	667	762	489	422	293	5,187	369	603	423	599	19,946
% TURNS:	7%	87%	6%	46%	29%	25%	5%	89%	6%	37%	26%	37%	
P.M.	2-Way Pk Hr Vol: 16,750			3,564			15,816			3,640			
7/20/2014	613	5,162	697	778	665	346	505	8,757	693	353	573	743	19,885
% TURNS:	9%	80%	11%	43%	37%	19%	5%	88%	7%	21%	34%	45%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	7%	87%	6%	46%	29%	25%	5%	89%	6%	37%	26%	37%
2020	8%	85%	7%	46%	27%	27%	6%	87%	7%	38%	24%	38%
2030	8%	85%	7%	46%	27%	28%	6%	87%	7%	38%	24%	38%
2040	9%	84%	8%	46%	26%	28%	7%	86%	8%	38%	23%	38%
P.M.												
2015	9%	80%	11%	43%	37%	19%	5%	88%	7%	21%	34%	45%
2020	10%	79%	11%	44%	34%	22%	6%	86%	8%	23%	32%	45%
2030	10%	79%	11%	44%	34%	22%	6%	86%	8%	24%	31%	45%
2040	10%	78%	11%	44%	33%	23%	7%	85%	8%	25%	30%	45%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	7.5%	7.2%	7.1%	8.3%	7.3%	7.2%	7.3%	8.1%
2020	7.6%	7.4%	7.5%	8.4%	7.5%	7.3%	7.6%	8.3%
2030	7.8%	7.7%	8.2%	8.7%	7.7%	7.7%	8.3%	8.6%
2040	8.0%	8.0%	9.0%	9.0%	8.0%	9.0%	9.0%	9.0%
D FACTOR								
2015	62.3%	38.6%	54.7%	50.2%	36.1%	62.9%	49.8%	45.9%
2020	62.1%	38.6%	54.5%	49.5%	36.1%	63.1%	50.2%	46.3%
2030	61.8%	38.6%	53.9%	48.0%	36.3%	63.3%	51.2%	47.1%
2040	61.5%	38.5%	53.4%	46.6%	36.5%	63.5%	52.1%	47.9%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Woolbright Blvd. & I-95
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	232,000	43,000	221,000	45,000
24 HR EST. AADT	2020	235,500	44,200	224,100	46,100
24 HR EST. AADT	2030	242,700	46,500	230,500	48,500
24 HR EST. AADT	2040	250,000	49,100	237,000	51,000

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	2-WAY ADT	232,000			43,000			221,000			45,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		45,000	221,000	43,000	232,000	45,000	221,000	43,000	232,000	45,000	221,000	43,000	232,000
		15%	72%	14%	47%	9%	44%	13%	73%	14%	45%	9%	47%
2020	2-WAY ADT	235,500			44,200			224,100			46,100		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		46,100	224,100	44,200	235,500	46,100	224,100	44,200	235,500	46,100	224,100	44,200	235,500
		15%	71%	14%	47%	9%	44%	14%	72%	14%	44%	9%	47%
2030	2-WAY ADT	242,700			46,500			230,500			48,500		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		48,500	230,500	46,500	242,700	48,500	230,500	46,500	242,700	48,500	230,500	46,500	242,700
		15%	71%	14%	47%	9%	44%	14%	72%	14%	44%	9%	47%
2040	2-WAY ADT	250,000			49,100			237,000			51,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		51,000	237,000	49,100	250,000	51,000	237,000	49,100	250,000	51,000	237,000	49,100	250,000
		15%	70%	15%	46%	9%	44%	14%	71%	15%	44%	9%	47%

A.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	785	9,348	669	762	490	421	294	5,189	370	602	424	600
2020	EST. TURNS	850	9,515	743	802	509	491	348	5,276	420	668	442	652
2030	EST. TURNS	932	9,957	843	919	555	593	417	5,552	484	803	503	754
2040	EST. TURNS	1,019	10,386	965	1,027	623	708	505	5,817	557	946	590	856
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	613	5,165	695	778	665	346	504	8,757	693	354	572	743
2020	EST. TURNS	666	5,293	745	791	679	374	591	9,022	761	394	585	790
2030	EST. TURNS	731	5,604	822	840	702	403	672	9,682	844	457	609	904
2040	EST. TURNS	801	5,935	916	900	713	444	781	10,349	937	521	665	1,011

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES	2015	10,799	6,551	17,350	1,673	1,387	3,060	5,849	10,371	16,220	1,625	1,645	3,270
	TURN SUMMARY	10,802	6,551	17,353	1,674	1,387	3,061	5,852	10,371	16,223	1,626	1,645	3,271
CONTROL LINK VOLUMES	2020	11,088	6,762	17,850	1,802	1,508	3,310	6,053	10,697	16,750	1,761	1,749	3,510
	TURN SUMMARY	11,108	6,730	17,838	1,802	1,533	3,335	6,044	10,674	16,718	1,762	1,779	3,541
CONTROL LINK VOLUMES	2030	11,686	7,224	18,910	2,067	1,763	3,830	6,477	11,353	17,830	2,060	1,970	4,030
	TURN SUMMARY	11,732	7,224	18,956	2,066	1,763	3,829	6,452	11,353	17,805	2,061	1,970	4,031
CONTROL LINK VOLUMES	2040	12,300	7,700	20,000	2,360	2,060	4,420	6,920	12,040	18,960	2,391	2,199	4,590
	TURN SUMMARY	12,371	7,700	20,071	2,358	2,060	4,418	6,879	12,040	18,919	2,392	2,199	4,591
DESIGN HOUR P.M.:													
CONTROL LINK VOLUMES	2015	6,472	10,278	16,750	1,789	1,771	3,560	9,955	5,865	15,820	1,669	1,971	3,640
	TURN SUMMARY	6,473	10,278	16,751	1,789	1,771	3,560	9,954	5,865	15,819	1,669	1,971	3,640
CONTROL LINK VOLUMES	2020	6,707	10,663	17,370	1,844	1,886	3,730	10,351	6,069	16,420	1,764	2,046	3,810
	TURN SUMMARY	6,704	10,603	17,307	1,844	1,921	3,765	10,374	6,061	16,435	1,769	2,106	3,875
CONTROL LINK VOLUMES	2030	7,194	11,466	18,660	1,947	2,103	4,050	11,176	6,484	17,660	1,972	2,218	4,190
	TURN SUMMARY	7,157	11,426	18,583	1,946	2,103	4,049	11,198	6,464	17,662	1,970	2,278	4,248
CONTROL LINK VOLUMES	2040	7,700	12,300	20,000	2,059	2,361	4,420	12,040	6,920	18,960	2,199	2,391	4,590
	TURN SUMMARY	7,652	12,260	19,912	2,057	2,361	4,418	12,066	6,900	18,966	2,196	2,451	4,647

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO.:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Woolbright Blvd. & Seacrest Blvd.		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
Model Volume:					

Growth Rates:

	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
Historic Trend GR =				
Historic + Model Trend GR =				
Base Year Model to Future Year Model GR =				
Recommended Growth Rate:	0.66% CGR	0.73% CGR	0.53% CGR	0.54% CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
	2015		17,000		28,000		21,000		41,000	
NO. YEARS	5	2020	1.033	17,600	1.037	29,000	1.027	21,600	1.027	42,100
NO. YEARS	15	2030	1.104	18,800	1.115	31,200	1.083	22,700	1.084	44,400
NO. YEARS	25	2040	1.179	20,000	1.199	33,600	1.141	24,000	1.144	46,900

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.	2-Way Pk Hr Vol: 1,024												
10/5/2015	102	509	86	23	739	92	89	251	499	498	635	53	3,576
% TURNS:	15%	73%	12%	3%	87%	11%	11%	30%	59%	42%	54%	4%	
P.M.	2-Way Pk Hr Vol: 1,119												
10/5/2015	94	289	101	72	966	89	131	401	533	455	862	162	4,155
% TURNS:	19%	60%	21%	6%	86%	8%	12%	38%	50%	31%	58%	11%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	15%	73%	12%	3%	87%	11%	11%	30%	59%	42%	54%	4%
2020	18%	68%	14%	5%	83%	12%	13%	29%	58%	41%	52%	7%
2030	18%	67%	15%	5%	82%	13%	13%	29%	58%	41%	52%	7%
2040	20%	65%	16%	6%	81%	13%	14%	28%	57%	40%	52%	8%
P.M.												
2015	19%	60%	21%	6%	86%	8%	12%	38%	50%	31%	58%	11%
2020	22%	56%	22%	8%	82%	10%	14%	36%	50%	31%	57%	12%
2030	23%	55%	22%	8%	81%	10%	15%	35%	50%	31%	56%	13%
2040	24%	54%	23%	9%	80%	11%	16%	35%	49%	31%	56%	13%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	6.0%	6.6%	5.9%	7.9%	9.2%	9.0%	6.2%	7.5%
2020	6.6%	7.1%	6.6%	8.1%	9.2%	9.0%	6.7%	7.8%
2030	7.8%	8.0%	7.8%	8.6%	9.1%	9.0%	7.9%	8.4%
2040	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
D FACTOR								
2015	68.1%	43.3%	51.3%	50.7%	43.3%	56.1%	47.0%	48.1%
2020	65.6%	43.4%	51.7%	49.9%	43.5%	56.0%	46.9%	49.2%
2030	60.7%	43.8%	52.6%	48.3%	43.8%	55.9%	46.7%	51.3%
2040	55.8%	44.2%	53.4%	46.6%	44.2%	55.8%	46.6%	53.4%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Woolbright Blvd. & Seacrest Blvd.
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	17,000	28,000	21,000	41,000
24 HR EST. AADT	2020	17,600	29,000	21,600	42,100
24 HR EST. AADT	2030	18,800	31,200	22,700	44,400
24 HR EST. AADT	2040	20,000	33,600	24,000	46,900

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	2-WAY ADT	17,000	28,000	21,000	41,000	17,000	29,000	21,600	42,100	18,800	31,200	22,700	44,400
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		41,000	21,000	28,000	17,000	41,000	21,000	29,000	17,600	42,100	21,600	29,000	17,600
		46%	23%	31%	22%	52%	27%	33%	20%	48%	32%	42%	26%
2020	2-WAY ADT	17,600	29,000	21,600	42,100	17,600	29,000	21,600	42,100	18,800	31,200	22,700	44,400
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		42,100	21,600	29,000	17,600	42,100	21,600	29,000	17,600	42,100	21,600	29,000	17,600
		45%	23%	31%	22%	52%	27%	33%	20%	47%	32%	43%	26%
2030	2-WAY ADT	18,800	31,200	22,700	44,400	18,800	31,200	22,700	44,400	20,000	33,600	24,000	46,900
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		44,400	22,700	31,200	18,800	44,400	22,700	31,200	18,800	44,400	22,700	31,200	18,800
		45%	23%	32%	22%	52%	26%	33%	20%	47%	31%	43%	26%
2040	2-WAY ADT	20,000	33,600	24,000	46,900	20,000	33,600	24,000	46,900	24,000	33,600	24,000	46,900
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		46,900	24,000	33,600	20,000	46,900	24,000	33,600	20,000	46,900	24,000	33,600	20,000
		45%	23%	32%	22%	52%	26%	33%	20%	47%	31%	43%	26%

A.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	102	509	85	23	739	92	88	248	502	500	632	52
2020	EST. TURNS	144	512	105	46	837	105	101	252	512	516	705	98
2030	EST. TURNS	229	514	150	84	1,115	107	102	307	514	534	906	184
2040	EST. TURNS	309	520	191	141	1,416	120	103	354	528	565	1,110	300
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	94	290	101	72	965	89	131	402	532	456	861	162
2020	EST. TURNS	130	303	119	93	984	101	141	412	537	469	916	215
2030	EST. TURNS	181	317	153	117	1,058	112	148	427	561	492	1,080	304
2040	EST. TURNS	241	340	195	145	1,125	121	155	453	576	517	1,262	406

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
DESIGN HOUR A.M.:													
CONTROL LINK VOLUMES		697	323	1,020	854	806	1,660	839	1,101	1,940	1,186	1,344	2,530
2015	TURN SUMMARY	697	323	1,020	854	806	1,660	839	1,101	1,940	1,185	1,344	2,529
CONTROL LINK VOLUMES		764	396	1,160	983	917	1,900	862	1,118	1,980	1,328	1,502	2,830
2020	TURN SUMMARY	761	396	1,157	988	911	1,899	865	1,133	1,998	1,319	1,493	2,812
CONTROL LINK VOLUMES		891	579	1,470	1,276	1,154	2,430	905	1,155	2,060	1,632	1,858	3,490
2030	TURN SUMMARY	893	575	1,468	1,307	1,158	2,465	923	1,155	2,078	1,624	1,858	3,482
CONTROL LINK VOLUMES		1,004	796	1,800	1,615	1,405	3,020	955	1,205	2,160	1,967	2,253	4,220
2040	TURN SUMMARY	1,019	796	1,815	1,678	1,405	3,083	986	1,205	2,191	1,976	2,253	4,229
DESIGN HOUR P.M.:													
CONTROL LINK VOLUMES		484	636	1,120	1,127	1,093	2,220	1,065	835	1,900	1,479	1,591	3,070
2015	TURN SUMMARY	484	636	1,120	1,127	1,093	2,220	1,065	835	1,900	1,479	1,591	3,070
CONTROL LINK VOLUMES		540	700	1,240	1,179	1,181	2,360	1,093	857	1,950	1,614	1,666	3,280
2020	TURN SUMMARY	552	720	1,272	1,178	1,176	2,354	1,090	873	1,963	1,600	1,651	3,251
CONTROL LINK VOLUMES		662	848	1,510	1,291	1,379	2,670	1,144	906	2,050	1,913	1,817	3,730
2030	TURN SUMMARY	652	847	1,499	1,286	1,382	2,668	1,136	921	2,057	1,876	1,800	3,676
CONTROL LINK VOLUMES		796	1,004	1,800	1,409	1,611	3,020	1,205	955	2,160	2,254	1,966	4,220
2040	TURN SUMMARY	776	1,004	1,780	1,391	1,611	3,002	1,184	978	2,162	2,185	1,943	4,128

Note: Boxed number indicates manual adjustment.

I-95 AT BOYNTON BEACH BLVD INTERCHANGE

TMTOOL INPUT SHEET

Project Description:

SECTION NO.:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Boynton Blvd. & SW 8th St		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
Model Volume:					

Growth Rates:

	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
Historic Trend GR =				
Historic + Model Trend GR =				
Base Year Model to Future Year Model GR =				
Recommended Growth Rate:	0.11% CGR	0.37% CGR	0.82% CGR	0.55% CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
	2015		15,000		52,000		10,000		35,000	
NO. YEARS	5	2020	1.006	15,100	1.019	53,000	1.042	10,400	1.028	36,000
NO. YEARS	15	2030	1.017	15,200	1.057	55,000	1.130	11,300	1.086	38,000
NO. YEARS	25	2040	1.028	15,400	1.097	57,000	1.226	12,300	1.147	40,100

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.	2-Way Pk Hr Vol: 823												
10/5/2015	8	67	461	217	1,127	102	79	59	55	48	1,224	11	3,458
% TURNS:	1%	13%	86%	15%	78%	7%	41%	31%	28%	4%	95%	1%	
P.M.	2-Way Pk Hr Vol: 1,462												
10/5/2015	18	96	350	785	1,419	92	69	162	103	71	1,095	51	4,311
% TURNS:	4%	21%	75%	34%	62%	4%	21%	49%	31%	6%	90%	4%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	1%	13%	86%	15%	78%	7%	41%	31%	28%	4%	95%	1%
2020	5%	12%	83%	16%	76%	8%	42%	29%	29%	5%	93%	3%
2030	6%	12%	82%	16%	76%	8%	42%	29%	29%	5%	92%	3%
2040	7%	12%	80%	16%	75%	9%	43%	28%	30%	6%	91%	4%
P.M.												
2015	4%	21%	75%	34%	62%	4%	21%	49%	31%	6%	90%	4%
2020	7%	20%	73%	33%	61%	5%	24%	45%	31%	7%	88%	6%
2030	8%	19%	73%	33%	61%	6%	24%	44%	31%	7%	87%	6%
2040	9%	19%	72%	32%	61%	6%	26%	43%	32%	7%	86%	7%

K & D FACTORS:

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR												
2015	5.5%	9.7%	6.2%	7.3%	4.1%	5.9%	7.1%	7.9%				
2020	6.2%	9.6%	6.7%	7.7%	5.1%	6.5%	7.5%	8.1%				
2030	7.6%	9.3%	7.9%	8.3%	7.0%	7.8%	8.2%	8.6%				
2040	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%				
D FACTOR												
2015	65.1%	31.7%	45.0%	60.3%	47.1%	56.3%	51.9%	44.1%				
2020	63.6%	33.9%	44.4%	59.8%	46.2%	56.6%	53.1%	43.7%				
2030	60.6%	38.2%	43.2%	58.9%	44.3%	57.0%	55.6%	42.9%				
2040	57.5%	42.5%	42.0%	58.0%	42.5%	57.5%	58.0%	42.0%				

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Boynton Blvd. & SW 8th St
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	15,000	52,000	10,000	35,000
24 HR EST. AADT	2020	15,100	53,000	10,400	36,000
24 HR EST. AADT	2030	15,200	55,000	11,300	38,000
24 HR EST. AADT	2040	15,400	57,000	12,300	40,100

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	2-WAY ADT	35,000	10,000	52,000	15,000	35,000	10,000	52,000	15,000	35,000	10,000	52,000	15,000
		36%	10%	54%	25%	58%	17%	51%	15%	34%	13%	68%	19%
2020	2-WAY ADT	36,000	10,400	53,000	15,100	36,000	10,400	53,000	15,100	36,000	10,400	53,000	15,100
		36%	10%	53%	25%	59%	17%	51%	15%	35%	13%	68%	19%
2030	2-WAY ADT	38,000	11,300	55,000	15,200	38,000	11,300	55,000	15,200	38,000	11,300	55,000	15,200
		36%	11%	53%	24%	59%	18%	51%	14%	35%	14%	67%	19%
2040	2-WAY ADT	40,100	12,300	57,000	15,400	40,100	12,300	57,000	15,400	40,100	12,300	57,000	15,400
		37%	11%	52%	23%	59%	18%	51%	14%	36%	15%	67%	18%

A.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	8	67	461	215	1,124	102	80	58	55	48	1,224	11
2020	EST. TURNS	24	72	508	242	1,167	149	117	63	64	65	1,357	31
2030	EST. TURNS	28	100	600	317	1,283	246	184	93	82	101	1,674	42
2040	EST. TURNS	34	127	686	406	1,383	364	262	126	100	149	2,026	61
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	18	95	350	783	1,422	91	69	162	103	70	1,095	51
2020	EST. TURNS	31	97	375	795	1,452	128	86	176	117	75	1,150	58
2030	EST. TURNS	33	98	413	819	1,542	184	142	193	150	85	1,255	73
2040	EST. TURNS	34	99	463	848	1,663	249	213	216	188	96	1,363	92

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
DESIGN HOUR A.M.:													
CONTROL LINK VOLUMES		536	284	820	1,446	1,764	3,210	193	217	410	1,283	1,187	2,470
2015	TURN SUMMARY	536	284	820	1,442	1,764	3,206	193	217	410	1,282	1,187	2,469
CONTROL LINK VOLUMES		594	336	930	1,587	1,983	3,570	244	286	530	1,425	1,255	2,680
2020	TURN SUMMARY	604	336	940	1,558	1,983	3,541	244	286	530	1,454	1,255	2,709
CONTROL LINK VOLUMES		699	451	1,150	1,871	2,459	4,330	353	447	800	1,737	1,393	3,130
2030	TURN SUMMARY	728	451	1,179	1,845	2,459	4,304	359	447	806	1,817	1,393	3,210
CONTROL LINK VOLUMES		797	593	1,390	2,155	2,975	5,130	470	640	1,110	2,093	1,517	3,610
2040	TURN SUMMARY	847	593	1,440	2,153	2,975	5,128	488	640	1,128	2,237	1,517	3,754
DESIGN HOUR P.M.:													
CONTROL LINK VOLUMES		464	996	1,460	2,296	1,514	3,810	334	256	590	1,217	1,543	2,760
2015	TURN SUMMARY	464	996	1,460	2,296	1,514	3,810	334	256	590	1,216	1,543	2,759
CONTROL LINK VOLUMES		491	959	1,450	2,429	1,631	4,060	385	295	680	1,275	1,645	2,920
2020	TURN SUMMARY	502	1,029	1,531	2,374	1,611	3,985	380	299	679	1,283	1,600	2,883
CONTROL LINK VOLUMES		540	870	1,410	2,699	1,881	4,580	501	379	880	1,393	1,857	3,250
2030	TURN SUMMARY	544	1,085	1,629	2,545	1,810	4,355	485	367	852	1,413	1,725	3,138
CONTROL LINK VOLUMES		589	801	1,390	2,975	2,155	5,130	637	473	1,110	1,516	2,094	3,610
2040	TURN SUMMARY	596	1,156	1,752	2,759	2,040	4,799	617	443	1,060	1,551	1,884	3,435

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Boynton Blvd. & Industrial Ave.		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
Model Volume:					

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	0.50%	CGR	0.40%	CGR	0.50%	CGR	0.40%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
	2015		7,900		50,000		400		50,000
NO. YEARS	5	1.025	8,100	1.020	51,000	1.025	400	1.020	51,000
NO. YEARS	15	1.078	8,500	1.062	53,100	1.078	400	1.062	53,100
NO. YEARS	25	1.133	8,900	1.105	55,200	1.133	500	1.105	55,200

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.													
2-Way Pk Hr Vol:	334				3,757				19				3,686
10/5/2015	62	0	86	117	1,402	7	2	0	3	7	2,143	69	3,898
% TURNS:	42%	0%	58%	8%	92%	0%	40%	0%	60%	0%	97%	3%	
P.M.													
2-Way Pk Hr Vol:	284				4,368				13				4,273
10/5/2015	59	0	129	62	2,468	2	3	0	4	4	1,704	34	4,469
% TURNS:	31%	0%	69%	2%	97%	0%	43%	0%	57%	0%	98%	2%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
2015	42%	0%	58%	8%	92%	0%	40%	0%	60%	0%	97%	3%	
2020	43%	0%	57%	8%	91%	0%	41%	1%	59%	0%	95%	4%	
2030	43%	0%	57%	8%	91%	0%	41%	1%	58%	0%	95%	4%	
2040	43%	0%	57%	9%	91%	1%	41%	1%	58%	0%	95%	5%	
P.M.													
2015	31%	0%	69%	2%	97%	0%	43%	0%	57%	0%	98%	2%	
2020	33%	0%	67%	4%	96%	0%	43%	1%	56%	0%	97%	3%	
2030	34%	0%	66%	4%	96%	0%	43%	1%	56%	0%	96%	3%	
2040	34%	0%	65%	4%	95%	0%	43%	1%	55%	0%	96%	4%	

K & D FACTORS:

		NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG		
		AM	PM	AM	PM	AM	PM	AM	PM	
K FACTOR										
2015	4.2%	3.6%	7.5%	8.7%	4.8%	3.3%	7.4%	8.5%		
2020	5.2%	4.7%	7.8%	8.8%	5.6%	4.4%	7.7%	8.6%		
2030	7.1%	6.8%	8.4%	8.9%	7.3%	6.7%	8.3%	8.8%		
2040	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%		
D FACTOR										
2015	44.3%	66.2%	40.6%	58.0%	26.3%	53.8%	60.2%	40.8%		
2020	43.9%	64.5%	40.9%	58.0%	29.6%	54.6%	59.8%	41.0%		
2030	43.2%	61.0%	41.4%	58.0%	36.0%	56.0%	58.9%	41.5%		
2040	42.5%	57.5%	42.0%	58.0%	42.5%	57.5%	58.0%	42.0%		

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Boynton Blvd. & Industrial Ave.
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
24 HR EST. AADT	2015	7,900			50,000			400			50,000		
24 HR EST. AADT	2020	8,100			51,000			400			51,000		
24 HR EST. AADT	2030	8,500			53,100			400			53,100		
24 HR EST. AADT	2040	8,900			55,200			500			55,200		

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	2-WAY ADT	7,900			50,000			400			50,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		50,000	400	50,000	7,900	50,000	400	50,000	7,900	50,000	400	50,000	7,900
		50%	0%	50%	14%	86%	1%	46%	7%	46%	1%	86%	14%
2020	2-WAY ADT	8,100			51,000			400			51,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		51,000	400	51,000	8,100	51,000	400	51,000	8,100	51,000	400	51,000	8,100
		50%	0%	50%	14%	86%	1%	46%	7%	46%	1%	86%	14%
2030	2-WAY ADT	8,500			53,100			400			53,100		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		53,100	400	53,100	8,500	53,100	400	53,100	8,500	53,100	400	53,100	8,500
		50%	0%	50%	14%	86%	1%	46%	7%	46%	1%	86%	14%
2040	2-WAY ADT	8,900			55,200			500			55,200		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		55,200	500	55,200	8,900	55,200	500	55,200	8,900	55,200	500	55,200	8,900
		50%	0%	50%	14%	85%	1%	46%	7%	46%	1%	85%	14%

A.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	62	0	86	114	1,406	7	2	0	3	8	2,146	68
2020	EST. TURNS	80	0	105	136	1,498	8	3	0	4	9	2,242	100
2030	EST. TURNS	119	0	145	188	1,694	9	4	0	7	10	2,461	151
2040	EST. TURNS	163	0	186	245	1,914	14	7	0	12	17	2,690	214
2015	EST. TURNS	59	0	129	60	2,465	1	3	0	4	2	1,706	32
2020	EST. TURNS	83	0	158	83	2,504	4	4	0	6	6	1,719	53
2030	EST. TURNS	131	0	213	131	2,596	6	6	0	9	9	1,762	95
2040	EST. TURNS	184	0	262	187	2,684	9	9	0	16	14	1,817	152

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
DESIGN HOUR A.M.:													
CONTROL LINK VOLUMES		148	182	330	1,526	2,234	3,760	5	15	20	2,219	1,471	3,690
2015	TURN SUMMARY	148	182	330	1,528	2,234	3,762	5	15	20	2,221	1,471	3,692
CONTROL LINK VOLUMES		184	236	420	1,629	2,351	3,980	7	13	20	2,346	1,584	3,930
2020	TURN SUMMARY	185	236	421	1,641	2,349	3,990	7	17	24	2,351	1,582	3,933
CONTROL LINK VOLUMES		261	339	600	1,850	2,610	4,460	11	19	30	2,610	1,820	4,430
2030	TURN SUMMARY	264	339	603	1,891	2,610	4,501	11	19	30	2,621	1,820	4,441
CONTROL LINK VOLUMES		340	460	800	2,087	2,883	4,970	19	31	50	2,881	2,089	4,970
2040	TURN SUMMARY	349	460	808	2,174	2,883	5,057	19	31	50	2,921	2,089	5,010
DESIGN HOUR P.M.:													
CONTROL LINK VOLUMES		188	92	280	2,532	1,838	4,370	7	3	10	1,742	2,528	4,270
2015	TURN SUMMARY	188	92	280	2,526	1,838	4,364	7	3	10	1,740	2,528	4,268
CONTROL LINK VOLUMES		244	136	380	2,599	1,881	4,480	10	10	20	1,807	2,593	4,400
2020	TURN SUMMARY	241	136	377	2,591	1,881	4,472	10	10	20	1,778	2,593	4,371
CONTROL LINK VOLUMES		354	226	580	2,739	1,981	4,720	15	15	30	1,944	2,736	4,680
2030	TURN SUMMARY	344	226	570	2,732	1,981	4,713	15	15	29	1,867	2,736	4,603
CONTROL LINK VOLUMES		461	339	800	2,881	2,089	4,970	26	24	50	2,087	2,883	4,970
2040	TURN SUMMARY	446	338	785	2,880	2,089	4,969	25	23	48	1,983	2,883	4,866

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Boynton Blvd. & I-95		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
Model Volume:					

Growth Rates:

	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
Historic Trend GR =				
Historic + Model Trend GR =				
Base Year Model to Future Year Model GR =				
Recommended Growth Rate:	0.35% CGR	1.21% CGR	0.30% CGR	0.40% CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
 2 = Linear Growth Throughout All Years
 3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	1	1	1	1
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	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
NO. YEARS	2015		235,000		34,000		232,000		50,000	
NO. YEARS	5	2020	1.018	239,100	1.062	36,100	1.015	235,500	1.020	51,000
NO. YEARS	15	2030	1.054	247,600	1.198	40,700	1.046	242,700	1.062	53,100
NO. YEARS	25	2040	1.091	256,400	1.351	45,900	1.078	250,000	1.105	55,200

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.													
2-Way Pk Hr Vol:	17,966			2,568			17,347			3,757			
7/20/2014	746	9,742	490	285	460	317	168	6,060	320	740	848	643	20,819
% TURNS:	7%	89%	4%	27%	43%	30%	3%	93%	5%	33%	38%	29%	
P.M.													
2-Way Pk Hr Vol:	16,492			3,371			16,750			4,369			
7/20/2014	835	5,829	375	357	786	195	877	8,489	912	448	781	607	20,491
% TURNS:	12%	83%	5%	27%	59%	15%	9%	83%	9%	24%	43%	33%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
2015	7%	89%	4%	27%	43%	30%	3%	93%	5%	33%	38%	29%	
2020	8%	87%	5%	29%	40%	31%	3%	91%	6%	34%	35%	31%	
2030	8%	87%	5%	29%	39%	32%	4%	90%	6%	35%	34%	31%	
2040	8%	86%	6%	30%	38%	32%	4%	89%	7%	35%	33%	32%	
P.M.													
2015	12%	83%	5%	27%	59%	15%	9%	83%	9%	24%	43%	33%	
2020	12%	82%	6%	29%	54%	18%	9%	82%	10%	27%	39%	34%	
2030	12%	81%	6%	29%	53%	18%	9%	81%	10%	27%	38%	35%	
2040	13%	81%	7%	30%	51%	20%	9%	81%	10%	28%	37%	35%	

K & D FACTORS:

		NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
		AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR									
2015	7.6%	7.0%	7.6%	9.9%	7.5%	7.2%	7.5%	8.7%	
2020	7.7%	7.2%	7.8%	9.7%	7.6%	7.4%	7.8%	8.8%	
2030	7.9%	7.6%	8.4%	9.4%	7.8%	7.7%	8.4%	8.9%	
2040	8.0%	8.0%	9.0%	9.0%	8.0%	8.0%	9.0%	9.0%	
D FACTOR									
2015	61.1%	42.7%	41.4%	39.7%	37.7%	61.4%	59.4%	42.0%	
2020	60.7%	42.3%	43.8%	41.0%	37.9%	61.4%	59.1%	42.0%	
2030	59.8%	41.7%	48.7%	43.7%	38.2%	61.4%	58.6%	42.0%	
2040	59.0%	41.0%	53.6%	46.4%	38.5%	61.5%	58.0%	42.0%	

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Boynton Blvd. & I-95
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	235,000	34,000	232,000	50,000
24 HR EST. AADT	2020	239,100	36,100	235,500	51,000
24 HR EST. AADT	2030	247,600	40,700	242,700	53,100
24 HR EST. AADT	2040	256,400	45,900	250,000	55,200

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	2-WAY ADT	235,000		34,000		232,000		50,000		235,000		51,000	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		50,000	232,000	34,000	235,000	50,000	232,000	34,000	235,000	50,000	232,000	34,000	235,000
2020	2-WAY ADT	239,100		36,100		235,500		51,000		239,100		53,100	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		51,000	235,500	36,100	239,100	51,000	235,500	36,100	239,100	51,000	235,500	36,100	239,100
2030	2-WAY ADT	247,600		40,700		242,700		53,100		247,600		55,200	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		53,100	242,700	40,700	247,600	53,100	242,700	40,700	247,600	53,100	242,700	40,700	247,600
2040	2-WAY ADT	256,400		45,900		250,000		55,200		256,400		55,200	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		55,200	250,000	45,900	256,400	55,200	250,000	45,900	256,400	55,200	250,000	45,900	256,400

A.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	748	9,745	491	285	461	317	168	6,064	321	740	849	643
2020	EST. TURNS	787	9,853	559	347	507	385	226	6,162	371	800	855	700
2030	EST. TURNS	826	10,203	614	498	610	558	268	6,515	411	926	879	804
2040	EST. TURNS	869	10,496	676	674	762	761	322	6,836	458	1,043	918	898
2015	EST. TURNS	835	5,829	375	357	786	195	877	8,487	913	448	781	607
2020	EST. TURNS	879	5,977	436	413	793	237	907	8,841	959	459	800	627
2030	EST. TURNS	934	6,384	486	544	829	299	983	9,591	1,022	474	836	684
2040	EST. TURNS	998	6,795	547	683	887	361	1,065	10,384	1,074	494	877	733

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
DESIGN HOUR A.M.:		10,978	6,992	17,970	1,062	1,508	2,570	6,548	10,802	17,350	2,231	1,529	3,760
CONTROL LINK VOLUMES		10,984	6,992	17,976	1,063	1,508	2,571	6,552	10,802	17,354	2,232	1,529	3,761
2015	TURN SUMMARY	11,196	7,254	18,450	1,240	1,590	2,830	6,767	11,083	17,850	2,355	1,625	3,980
CONTROL LINK VOLUMES		11,199	7,209	18,408	1,240	1,640	2,880	6,759	11,038	17,797	2,354	1,665	4,019
2020	TURN SUMMARY	11,643	7,817	19,460	1,669	1,761	3,430	7,223	11,687	18,910	2,613	1,847	4,460
CONTROL LINK VOLUMES		11,643	7,817	19,460	1,666	1,761	3,427	7,194	11,687	18,881	2,609	1,847	4,456
2030	TURN SUMMARY	12,102	8,408	20,510	2,214	1,916	4,130	7,700	12,300	20,000	2,881	2,089	4,970
CONTROL LINK VOLUMES		12,041	8,408	20,449	2,197	1,916	4,113	7,616	12,300	19,916	2,859	2,089	4,948
2040	TURN SUMMARY												

DESIGN HOUR P.M.:		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		7,039	9,451	16,490	1,338	2,032	3,370	10,278	6,472	16,750	1,836	2,534	4,370
2015	TURN SUMMARY	7,039	9,451	16,490	1,338	2,032	3,370	10,277	6,472	16,749	1,836	2,534	4,370
CONTROL LINK VOLUMES		7,304	9,946	17,250	1,442	2,068	3,510	10,663	6,707	17,370	1,884	2,596	4,480
2020	TURN SUMMARY	7,292	9,881	17,173	1,443	2,143	3,586	10,706	6,673	17,379	1,886	2,631	4,517
CONTROL LINK VOLUMES		7,849	10,991	18,840	1,666	2,144	3,810	11,465	7,195	18,660	1,984	2,736	4,720
2030	TURN SUMMARY	7,804	10,819	18,623	1,673	2,304	3,977	11,596	7,157	18,753	1,994	2,786	4,780
CONTROL LINK VOLUMES		8,410	12,100	20,510	1,917	2,213	4,130	12,300	7,700	20,000	2,087	2,883	4,970
2040	TURN SUMMARY	8,340	11,800	20,140	1,930	2,488	4,418	12,522	7,650	20,172	2,104	2,958	5,062

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO.:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Boynton Blvd. & S. Seacrest Blvd.		

NOTES:

Historical AADTs:

YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
	AADT	AADT	AADT	AADT
Model Volume:				

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	1.53%	CGR	1.20%	CGR	1.78%	CGR	1.22%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
	2015		18,000		20,000		12,000		30,000	
NO. YEARS	5	2020	1.079	19,400	1.061	21,200	1.092	13,100	1.063	31,900
NO. YEARS	15	2030	1.256	22,600	1.196	23,900	1.303	15,600	1.199	36,000
NO. YEARS	25	2040	1.462	26,300	1.347	26,900	1.554	18,700	1.354	40,600

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT		
A.M.	2-Way Pk Hr Vol:	878			1,109			1,042			1,617			
10/5/2015		154	355	65	11	394	49	43	183	181	231	547	110	2,323
% TURNS:		27%	62%	11%	2%	87%	11%	11%	45%	44%	26%	62%	12%	
P.M.	2-Way Pk Hr Vol:	1,202			1,739			1,283			2,300			
10/5/2015		143	231	58	73	713	83	81	436	275	177	731	261	3,262
% TURNS:		33%	53%	13%	8%	82%	10%	10%	55%	35%	15%	63%	22%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	27%	62%	11%	2%	87%	11%	11%	45%	44%	26%	62%	12%
2020	29%	58%	13%	5%	83%	12%	12%	43%	44%	26%	59%	15%
2030	29%	57%	14%	6%	82%	12%	13%	43%	44%	26%	59%	15%
2040	30%	55%	15%	7%	80%	13%	14%	42%	44%	26%	58%	16%
P.M.												
2015	33%	53%	13%	8%	82%	10%	10%	55%	35%	15%	63%	22%
2020	35%	50%	15%	11%	79%	11%	12%	52%	36%	16%	60%	24%
2030	35%	49%	16%	11%	78%	11%	13%	52%	36%	16%	60%	24%
2040	35%	48%	16%	12%	76%	12%	13%	51%	36%	17%	58%	25%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	4.9%	6.7%	5.5%	8.7%	8.7%	10.7%	5.4%	7.7%
2020	5.7%	7.1%	6.2%	8.8%	8.7%	10.4%	6.1%	7.9%
2030	7.4%	8.1%	7.6%	8.9%	8.9%	9.7%	7.6%	8.5%
2040	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
D FACTOR								
2015	65.4%	35.9%	40.9%	50.0%	39.1%	61.7%	54.9%	50.8%
2020	63.5%	37.6%	42.0%	50.7%	40.1%	60.5%	54.7%	49.9%
2030	59.6%	40.9%	44.2%	52.1%	42.1%	58.2%	54.1%	48.2%
2040	55.8%	44.2%	46.4%	53.6%	44.2%	55.8%	53.6%	46.4%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Boynton Blvd. & S. Seacrest Blvd.
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	<u>YEAR</u>	<u>NORTH LEG</u>			<u>EAST LEG</u>			<u>SOUTH LEG</u>			<u>WEST LEG</u>		
24 HR EST. AADT	2015	18,000			20,000			12,000			30,000		
24 HR EST. AADT	2020	19,400			21,200			13,100			31,900		
24 HR EST. AADT	2030	22,600			23,900			15,600			36,000		
24 HR EST. AADT	2040	26,300			26,900			18,700			40,600		

Percent Turns Calculated From Base Year AADTs:

JKTURNS		<u>FROM NORTH LEG</u>			<u>FROM EAST LEG</u>			<u>FROM SOUTH LEG</u>			<u>FROM WEST LEG</u>		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
	2015 2-WAY ADT	30,000	12,000	20,000	18,000	30,000	12,000	20,000	18,000	30,000	12,000	20,000	18,000
		48%	19%	32%	30%	50%	20%	29%	26%	44%	24%	40%	36%
	2020 2-WAY ADT	31,900	13,100	21,200	19,400	31,900	13,100	21,200	19,400	31,900	13,100	21,200	19,400
		48%	20%	32%	30%	50%	20%	29%	27%	44%	24%	39%	36%
	2030 2-WAY ADT	36,000	15,600	23,900	22,600	36,000	15,600	23,900	22,600	36,000	15,600	23,900	22,600
		48%	21%	32%	30%	49%	21%	29%	27%	44%	25%	38%	36%
	2040 2-WAY ADT	40,600	18,700	26,900	26,300	40,600	18,700	26,900	26,300	40,600	18,700	26,900	26,300
		47%	22%	31%	31%	47%	22%	29%	28%	43%	26%	37%	37%

A.M. DESIGN HR. TURNS		<u>NORTH LEG</u>			<u>EAST LEG</u>			<u>SOUTH LEG</u>			<u>WEST LEG</u>		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
	2015 EST. TURNS	155	354	65	11	395	49	43	184	181	230	548	111
	2020 EST. TURNS	220	379	93	29	462	65	51	202	200	255	620	175
	2030 EST. TURNS	361	455	143	48	659	97	56	282	228	279	816	326
	2040 EST. TURNS	530	538	207	80	892	142	67	385	269	320	1,024	545
P.M. DESIGN HR. TURNS		<u>NORTH LEG</u>			<u>EAST LEG</u>			<u>SOUTH LEG</u>			<u>WEST LEG</u>		
	2015 EST. TURNS	143	230	58	73	713	82	81	435	275	176	732	260
	2020 EST. TURNS	199	261	78	99	765	100	91	438	303	197	750	329
	2030 EST. TURNS	331	326	108	124	918	122	92	476	333	216	820	459
	2040 EST. TURNS	519	411	153	157	1,076	151	93	518	360	235	885	618

LINK VOLUME CHECK		<u>NORTH LEG</u>			<u>EAST LEG</u>			<u>SOUTH LEG</u>			<u>WEST LEG</u>		
<u>DESIGN HOUR A.M.:</u>		<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>
CONTROL LINK VOLUMES		574	306	880	454	656	1,110	407	633	1,040	888	732	1,620
2015	TURN SUMMARY	575	306	881	455	656	1,111	408	633	1,041	889	732	1,621
CONTROL LINK VOLUMES		702	408	1,110	556	764	1,320	459	691	1,150	1,066	884	1,950
2020	TURN SUMMARY	693	407	1,099	556	764	1,320	454	700	1,153	1,050	882	1,932
CONTROL LINK VOLUMES		991	669	1,660	805	1,015	1,820	583	797	1,380	1,472	1,248	2,720
2030	TURN SUMMARY	959	656	1,615	804	1,015	1,819	566	831	1,397	1,421	1,248	2,669
CONTROL LINK VOLUMES		1,321	1,049	2,370	1,123	1,297	2,420	744	936	1,680	1,959	1,691	3,650
2040	TURN SUMMARY	1,275	1,010	2,285	1,114	1,297	2,411	721	1,000	1,721	1,888	1,691	3,579
<u>DESIGN HOUR P.M.:</u>		<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>
CONTROL LINK VOLUMES		432	768	1,200	869	871	1,740	792	488	1,280	1,169	1,131	2,300
2015	TURN SUMMARY	431	768	1,199	868	871	1,739	791	488	1,279	1,168	1,131	2,299
CONTROL LINK VOLUMES		521	869	1,390	941	919	1,860	821	539	1,360	1,264	1,266	2,530
2020	TURN SUMMARY	537	867	1,405	964	919	1,883	832	558	1,391	1,277	1,266	2,543
CONTROL LINK VOLUMES		746	1,074	1,820	1,107	1,013	2,120	878	632	1,510	1,468	1,582	3,050
2030	TURN SUMMARY	765	1,058	1,823	1,163	1,020	2,183	901	663	1,564	1,494	1,582	3,076
CONTROL LINK VOLUMES		1,046	1,324	2,370	1,298	1,122	2,420	939	741	1,680	1,695	1,955	3,650
2040	TURN SUMMARY	1,082	1,293	2,376	1,384	1,131	2,515	971	796	1,767	1,738	1,955	3,693

Note: Boxed number indicates manual adjustment.

I-95 AT GATEWAY BLVD INTERCHANGE

TMTOOL INPUT SHEET

Project Description:

SECTION NO.:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Gateway Blvd. & High Ridge Rd.		

NOTES:

Need to check AADT for East Leg at this intersection. There is NO data for this leg

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
Model Volume:					

Growth Rates:

	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
Historic Trend GR =				
Historic + Model Trend GR =				
Base Year Model to Future Year Model GR =				
Recommended Growth Rate:	0.54% CGR	0.52% CGR	0.40% CGR	0.49% CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

- 1 = Compound Growth Throughout All Years
 2 = Linear Growth Throughout All Years
 3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
	2015		13,000		49,000		11,000		42,000	
NO. YEARS	5	2020	1.027	13,400	1.026	50,300	1.020	11,200	1.025	43,000
NO. YEARS	15	2030	1.084	14,100	1.081	53,000	1.062	11,700	1.076	45,200
NO. YEARS	25	2040	1.144	14,900	1.138	55,800	1.105	12,200	1.130	47,500

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.	2-Way Pk Hr Vol: 1,247			3,573			952			2,638			
10/5/2015	114	122	466	386	972	240	320	33	87	150	1,189	126	4,205
% TURNS:	16%	17%	66%	24%	61%	15%	73%	8%	20%	10%	81%	9%	
P.M.	2-Way Pk Hr Vol: 1,101			3,796			716			3,131			
10/5/2015	167	40	324	384	1,607	188	252	53	121	62	1,041	133	4,372
% TURNS:	31%	8%	61%	18%	74%	9%	59%	12%	28%	5%	84%	11%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	16%	17%	66%	24%	61%	15%	73%	8%	20%	10%	81%	9%
2020	19%	17%	65%	24%	61%	15%	70%	8%	22%	11%	80%	10%
2030	19%	17%	64%	24%	61%	15%	70%	8%	22%	11%	79%	10%
2040	20%	16%	63%	23%	61%	15%	68%	8%	23%	11%	79%	10%
P.M.												
2015	31%	8%	61%	18%	74%	9%	59%	12%	28%	5%	84%	11%
2020	32%	8%	60%	18%	73%	9%	58%	12%	30%	6%	83%	11%
2030	33%	8%	59%	18%	72%	10%	58%	12%	30%	6%	82%	12%
2040	33%	8%	59%	18%	72%	10%	57%	12%	30%	7%	81%	12%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	9.6%	8.5%	7.3%	7.7%	8.7%	6.5%	6.3%	7.5%
2020	9.5%	8.6%	7.6%	8.0%	8.7%	7.0%	6.8%	7.8%
2030	9.2%	8.8%	8.3%	8.5%	8.9%	8.0%	7.9%	8.4%
2040	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
D FACTOR								
2015	56.3%	48.2%	44.7%	57.4%	46.2%	59.5%	55.5%	39.5%
2020	56.5%	47.1%	44.5%	57.2%	45.5%	59.1%	55.7%	40.3%
2030	57.0%	44.8%	44.0%	56.9%	44.0%	58.3%	56.1%	41.9%
2040	57.5%	42.5%	43.5%	56.5%	42.5%	57.5%	56.5%	43.5%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Gateway Blvd. & High Ridge Rd.
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
24 HR EST. AADT	2015	13,000			49,000			11,000			42,000		
24 HR EST. AADT	2020	13,400			50,300			11,200			43,000		
24 HR EST. AADT	2030	14,100			53,000			11,700			45,200		
24 HR EST. AADT	2040	14,900			55,800			12,200			47,500		

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	2-WAY ADT	13,000			49,000			11,000			42,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		42,000	11,000	49,000	13,000	42,000	11,000	49,000	13,000	42,000	11,000	49,000	13,000
2020	2-WAY ADT	13,400			50,300			11,200			43,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		43,000	11,200	50,300	13,400	43,000	11,200	50,300	13,400	43,000	11,200	50,300	13,400
2030	2-WAY ADT	14,100			53,000			11,700			45,200		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		45,200	11,700	53,000	14,100	45,200	11,700	53,000	14,100	45,200	11,700	53,000	14,100
2040	2-WAY ADT	14,900			55,800			12,200			47,500		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		47,500	12,200	55,800	14,900	47,500	12,200	55,800	14,900	47,500	12,200	55,800	14,900

A.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	115	122	465	387	973	238	319	33	87	150	1,188	127
2020	EST. TURNS	118	130	473	431	1,019	257	322	34	90	166	1,337	140
2030	EST. TURNS	122	142	484	470	1,210	273	328	36	96	201	1,665	158
2040	EST. TURNS	131	156	493	513	1,412	289	334	38	99	238	2,021	179

P.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	166	40	325	384	1,607	191	253	53	121	63	1,043	132
2020	EST. TURNS	174	42	327	404	1,686	203	271	56	136	74	1,120	149
2030	EST. TURNS	178	44	330	441	1,858	249	314	66	164	101	1,299	179
2040	EST. TURNS	183	48	333	482	2,038	292	356	75	193	130	1,498	213

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
DESIGN HOUR A.M.:													
CONTROL LINK VOLUMES		702	548	1,250	1,598	1,972	3,570	440	510	950	1,465	1,175	2,640
2015	TURN SUMMARY	702	548	1,250	1,599	1,972	3,571	440	510	950	1,465	1,175	2,640
CONTROL LINK VOLUMES		718	552	1,270	1,708	2,132	3,840	444	536	980	1,635	1,295	2,930
2020	TURN SUMMARY	721	604	1,325	1,706	2,132	3,838	446	552	998	1,642	1,227	2,869
CONTROL LINK VOLUMES		743	557	1,300	1,939	2,471	4,410	456	584	1,040	2,007	1,573	3,580
2030	TURN SUMMARY	749	664	1,413	1,953	2,477	4,430	460	616	1,076	2,024	1,428	3,452
CONTROL LINK VOLUMES		771	569	1,340	2,185	2,835	5,020	467	633	1,100	2,415	1,865	4,280
2040	TURN SUMMARY	779	730	1,509	2,213	2,848	5,061	472	682	1,154	2,438	1,642	4,080

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
DESIGN HOUR P.M.:													
CONTROL LINK VOLUMES		531	569	1,100	2,179	1,621	3,800	426	294	720	1,236	1,894	3,130
2015	TURN SUMMARY	532	569	1,101	2,181	1,621	3,802	427	294	721	1,238	1,894	3,132
CONTROL LINK VOLUMES		541	609	1,150	2,302	1,718	4,020	464	316	780	1,345	1,995	3,340
2020	TURN SUMMARY	543	609	1,152	2,293	1,718	4,011	463	319	782	1,343	1,995	3,338
CONTROL LINK VOLUMES		555	685	1,240	2,561	1,939	4,500	546	394	940	1,587	2,203	3,790
2030	TURN SUMMARY	552	685	1,237	2,548	1,942	4,490	543	394	937	1,578	2,200	3,778
CONTROL LINK VOLUMES		570	770	1,340	2,837	2,183	5,020	631	469	1,100	1,860	2,420	4,280
2040	TURN SUMMARY	564	770	1,334	2,812	2,188	5,000	625	469	1,094	1,841	2,415	4,256

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Gateway Blvd. & I-95		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
Model Volume:					

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	0.39%	CGR	0.71%	CGR	0.35%	CGR	0.52%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
	2015		218,000		29,000		235,000		49,000	
NO. YEARS	5	2020	1.020	222,300	1.036	30,000	1.018	239,100	1.026	50,300
NO. YEARS	15	2030	1.060	231,100	1.112	32,200	1.054	247,600	1.081	53,000
NO. YEARS	25	2040	1.102	240,300	1.193	34,600	1.091	256,400	1.138	55,800

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.	2-Way Pk Hr Vol: 17,933			1,918			17,966			3,573			
7/20/2014	552	9,873	180	292	503	332	136	6,309	543	773	475	727	20,695
% TURNS:	5%	93%	2%	26%	45%	29%	2%	90%	8%	39%	24%	37%	
P.M.	2-Way Pk Hr Vol: 16,291			2,090			16,492			3,793			
7/20/2014	678	6,434	253	167	594	139	323	8,224	906	466	614	535	19,333
% TURNS:	9%	87%	3%	19%	66%	15%	3%	87%	10%	29%	38%	33%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	5%	93%	2%	26%	45%	29%	2%	90%	8%	39%	24%	37%
2020	6%	91%	2%	28%	41%	31%	3%	89%	9%	40%	22%	38%
2030	7%	91%	3%	28%	40%	32%	3%	88%	9%	40%	22%	38%
2040	7%	90%	3%	29%	39%	32%	3%	87%	9%	41%	21%	38%
P.M.												
2015	9%	87%	3%	19%	66%	15%	3%	87%	10%	29%	38%	33%
2020	10%	86%	4%	21%	60%	19%	4%	86%	10%	31%	35%	34%
2030	10%	86%	4%	22%	59%	19%	4%	85%	10%	31%	34%	35%
2040	10%	85%	5%	23%	57%	21%	5%	85%	11%	32%	33%	35%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	8.2%	7.5%	6.6%	7.2%	7.6%	7.0%	7.3%	7.7%
2020	8.2%	7.6%	7.1%	7.6%	7.7%	7.2%	7.6%	8.0%
2030	8.1%	7.8%	8.0%	8.3%	7.9%	7.6%	8.3%	8.5%
2040	8.0%	8.0%	9.0%	9.0%	8.0%	9.0%	9.0%	9.0%
D FACTOR								
2015	59.1%	45.2%	58.8%	43.1%	38.9%	57.3%	55.3%	42.6%
2020	58.7%	44.8%	59.1%	42.4%	39.3%	57.7%	55.5%	42.8%
2030	57.9%	43.9%	59.7%	41.0%	40.2%	58.3%	56.0%	43.1%
2040	57.0%	43.0%	60.3%	39.7%	41.0%	59.0%	56.5%	43.5%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Gateway Blvd. & I-95
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
24 HR EST. AADT	2015	218,000			29,000			235,000			49,000		
24 HR EST. AADT	2020	222,300			30,000			239,100			50,300		
24 HR EST. AADT	2030	231,100			32,200			247,600			53,000		
24 HR EST. AADT	2040	240,300			34,600			256,400			55,800		

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	2-WAY ADT	16%	75%	9%	43%	10%	47%	10%	74%	17%	49%	6%	45%
	2020	16%	75%	9%	43%	10%	47%	10%	73%	17%	49%	6%	45%
	2030	16%	74%	10%	43%	10%	47%	10%	73%	17%	48%	6%	45%
2040	2-WAY ADT	16%	74%	10%	43%	10%	46%	10%	73%	17%	48%	7%	45%
	2020	16%	74%	10%	43%	10%	46%	10%	73%	17%	48%	7%	45%
	2030	16%	74%	10%	43%	10%	46%	10%	73%	17%	48%	7%	45%

A.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	550	9,876	180	292	502	333	137	6,308	542	773	476	726
2020	EST. TURNS	587	9,926	207	327	534	393	191	6,391	607	862	505	760
2030	EST. TURNS	623	10,008	265	391	599	545	249	6,663	719	1,094	529	829
2040	EST. TURNS	645	10,080	303	451	696	705	328	6,925	842	1,315	601	885
2015	EST. TURNS	677	6,432	253	167	594	139	323	8,223	904	466	614	535
2020	EST. TURNS	714	6,494	299	193	610	162	410	8,524	1,012	519	638	567
2030	EST. TURNS	734	6,976	342	227	642	234	534	9,258	1,182	644	699	616
2040	EST. TURNS	766	7,351	396	260	696	295	690	10,028	1,373	762	788	666

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
DESIGN HOUR A.M.:	CONTROL LINK VOLUMES	10,605	7,325	17,930	1,127	793	1,920	6,988	10,982	17,970	1,975	1,595	3,570
	2015 TURN SUMMARY	10,607	7,325	17,932	1,127	793	1,920	6,986	10,982	17,968	1,975	1,595	3,570
	CONTROL LINK VOLUMES	10,677	7,513	18,190	1,257	873	2,130	7,254	11,196	18,450	2,132	1,708	3,840
DESIGN HOUR P.M.:	CONTROL LINK VOLUMES	10,719	7,478	18,197	1,254	903	2,157	7,189	11,181	18,370	2,127	1,728	3,855
	2020 TURN SUMMARY	10,817	7,883	18,700	1,546	1,044	2,590	7,813	11,647	19,460	2,469	1,941	4,410
	CONTROL LINK VOLUMES	10,896	7,883	18,779	1,535	1,044	2,579	7,631	11,647	19,278	2,453	1,941	4,394
DESIGN HOUR P.M.:	CONTROL LINK VOLUMES	10,958	8,262	19,220	1,878	1,232	3,110	8,410	12,100	20,510	2,837	2,183	5,020
	2030 TURN SUMMARY	11,029	8,262	19,291	1,852	1,232	3,084	8,095	12,100	20,195	2,801	2,183	4,984
	CONTROL LINK VOLUMES	7,365	8,925	16,290	900	1,190	2,090	9,453	7,037	16,490	1,615	2,175	3,790
DESIGN HOUR P.M.:	CONTROL LINK VOLUMES	7,362	8,925	16,287	900	1,190	2,090	9,450	7,037	16,487	1,614	2,175	3,789
	2020 TURN SUMMARY	7,542	9,308	16,850	962	1,308	2,270	9,945	7,305	17,250	1,719	2,301	4,020
	CONTROL LINK VOLUMES	7,508	9,283	16,791	965	1,348	2,313	9,946	7,175	17,121	1,724	2,336	4,060
DESIGN HOUR P.M.:	CONTROL LINK VOLUMES	7,899	10,101	18,000	1,095	1,575	2,670	10,986	7,854	18,840	1,942	2,558	4,500
	2030 TURN SUMMARY	8,052	10,101	18,153	1,104	1,575	2,679	10,973	7,854	18,827	1,959	2,558	4,517
	CONTROL LINK VOLUMES	8,266	10,954	19,220	1,236	1,874	3,110	12,102	8,408	20,510	2,185	2,835	5,020
2040 TURN SUMMARY	8,512	10,954	19,466	1,252	1,874	3,126	12,091	8,408	20,499	2,216	2,835	5,051	

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO.:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Gateway Blvd. & Seacrest Blvd.		

NOTES:

Historical AADTs:

YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
	AADT	AADT	AADT	AADT
Model Volume:				

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	0.71%	CGR	0.21%	CGR	1.35%	CGR	0.71%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
	2015		9,300		18,000		14,000		29,000	
NO. YEARS	5	2020	1.036	9,600	1.011	18,200	1.069	15,000	1.036	30,000
NO. YEARS	15	2030	1.112	10,300	1.032	18,600	1.223	17,100	1.112	32,200
NO. YEARS	25	2040	1.193	11,100	1.054	19,000	1.398	19,600	1.193	34,600

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.	2-Way Pk Hr Vol: 865			1,054			1,073			1,918			
10/5/2015	266	239	24	10	570	34	33	197	243	327	383	129	2,455
% TURNS:	50%	45%	5%	2%	93%	6%	7%	42%	51%	39%	46%	15%	
P.M.	2-Way Pk Hr Vol: 1,186			1,221			1,261			2,036			
10/5/2015	212	234	45	22	373	37	59	419	241	271	685	254	2,852
% TURNS:	43%	48%	9%	5%	86%	9%	8%	58%	34%	22%	57%	21%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	50%	45%	5%	2%	93%	6%	7%	42%	51%	39%	46%	15%
2020	50%	43%	7%	3%	89%	8%	9%	39%	51%	39%	45%	16%
2030	50%	43%	7%	4%	88%	8%	10%	39%	52%	39%	45%	16%
2040	50%	42%	8%	4%	86%	10%	11%	38%	52%	39%	44%	17%
P.M.												
2015	43%	48%	9%	5%	86%	9%	8%	58%	34%	22%	57%	21%
2020	44%	45%	11%	6%	83%	10%	11%	54%	35%	24%	55%	21%
2030	44%	45%	11%	7%	82%	11%	11%	53%	36%	24%	55%	21%
2040	44%	44%	12%	7%	81%	12%	12%	51%	37%	25%	54%	21%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	9.3%	12.8%	5.9%	6.8%	7.7%	9.0%	6.6%	7.0%
2020	9.2%	12.0%	6.5%	7.2%	7.9%	9.0%	7.1%	7.4%
2030	9.1%	10.5%	7.7%	8.1%	8.5%	9.0%	8.0%	8.2%
2040	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
D FACTOR								
2015	61.2%	41.4%	58.3%	35.4%	44.1%	57.0%	43.7%	59.4%
2020	60.1%	42.0%	58.7%	36.2%	44.1%	56.8%	42.9%	59.6%
2030	57.9%	43.1%	59.5%	38.0%	44.2%	56.3%	41.3%	60.0%
2040	55.8%	44.2%	60.3%	39.7%	44.2%	55.8%	39.7%	60.3%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Gateway Blvd.& Seacrest Blvd.
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
24 HR EST. AADT	2015	9,300			18,000			14,000			29,000		
24 HR EST. AADT	2020	9,600			18,200			15,000			30,000		
24 HR EST. AADT	2030	10,300			18,600			17,100			32,200		
24 HR EST. AADT	2040	11,100			19,000			19,600			34,600		

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	2-WAY ADT	9,300			18,000			14,000			29,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		29,000	14,000	18,000	9,300	29,000	14,000	18,000	9,300	29,000	14,000	18,000	9,300
		48%	23%	30%	18%	55%	27%	32%	17%	52%	34%	44%	23%
2020	2-WAY ADT	9,600			18,200			15,000			30,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		30,000	15,000	18,200	9,600	30,000	15,000	18,200	9,600	30,000	15,000	18,200	9,600
		47%	24%	29%	18%	55%	27%	31%	17%	52%	35%	43%	22%
2030	2-WAY ADT	10,300			18,600			17,100			32,200		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		32,200	17,100	18,600	10,300	32,200	17,100	18,600	10,300	32,200	17,100	18,600	10,300
		47%	25%	27%	17%	54%	29%	30%	17%	53%	37%	40%	22%
2040	2-WAY ADT	11,100			19,000			19,600			34,600		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		34,600	19,600	19,000	11,100	34,600	19,600	19,000	11,100	34,600	19,600	19,000	11,100
		47%	27%	26%	17%	53%	30%	29%	17%	53%	39%	38%	22%

A.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	268	237	24	10	571	34	32	199	242	326	380	132
2020	EST. TURNS	271	246	29	20	639	53	42	214	282	381	407	143
2030	EST. TURNS	294	252	33	24	818	75	63	226	393	492	485	156
2040	EST. TURNS	312	264	39	30	1,010	105	82	240	541	621	558	173
2015	EST. TURNS	214	233	45	22	374	37	59	420	242	271	685	257
2020	EST. TURNS	215	234	46	26	394	48	66	431	254	323	714	258
2030	EST. TURNS	217	236	48	33	454	56	79	443	295	420	797	263
2040	EST. TURNS	219	238	50	40	516	66	91	473	331	529	875	274

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
DESIGN HOUR A.M.:													
CONTROL LINK VOLUMES		529	341	870	614	436	1,050	473	597	1,070	839	1,081	1,920
2015	TURN SUMMARY	529	341	870	614	436	1,050	473	597	1,070	838	1,081	1,919
CONTROL LINK VOLUMES		533	357	890	692	488	1,180	525	665	1,190	913	1,217	2,130
2020	TURN SUMMARY	546	377	923	711	478	1,189	538	680	1,218	931	1,192	2,123
CONTROL LINK VOLUMES		544	396	940	857	583	1,440	639	811	1,450	1,070	1,520	2,590
2030	TURN SUMMARY	579	406	985	917	580	1,497	682	819	1,501	1,132	1,505	2,637
CONTROL LINK VOLUMES		557	443	1,000	1,031	679	1,710	780	980	1,760	1,236	1,874	3,110
2040	TURN SUMMARY	615	443	1,058	1,145	679	1,824	864	990	1,854	1,352	1,864	3,216
DESIGN HOUR P.M.:													
CONTROL LINK VOLUMES		491	699	1,190	432	788	1,220	719	541	1,260	1,210	830	2,040
2015	TURN SUMMARY	492	699	1,191	433	788	1,221	721	541	1,262	1,212	830	2,042
CONTROL LINK VOLUMES		483	667	1,150	477	843	1,320	767	583	1,350	1,326	894	2,220
2020	TURN SUMMARY	494	715	1,209	468	826	1,294	751	604	1,355	1,295	863	2,158
CONTROL LINK VOLUMES		466	614	1,080	573	937	1,510	867	673	1,540	1,585	1,055	2,640
2030	TURN SUMMARY	501	739	1,240	543	924	1,467	817	713	1,530	1,480	965	2,445
CONTROL LINK VOLUMES		442	558	1,000	679	1,031	1,710	984	776	1,760	1,878	1,232	3,110
2040	TURN SUMMARY	507	788	1,295	622	1,016	1,638	896	833	1,729	1,678	1,066	2,744

Note: Boxed number indicates manual adjustment.

I-95 AT HYPOLUXO ROAD INTERCHANGE

TMTOOL INPUT SHEET

Project Description:

SECTION NO.:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Hypoluxo Rd. & High Ridger Rd.		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
Model Volume:					

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	1.75%	CGR	0.42%	CGR	1.09%	CGR	0.47%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
	2015		3,200		45,000		8,300		41,000	
NO. YEARS	5	2020	1.091	3,500	1.021	46,000	1.056	8,800	1.024	42,000
NO. YEARS	15	2030	1.297	4,200	1.065	47,900	1.177	9,800	1.073	44,000
NO. YEARS	25	2040	1.543	4,900	1.110	50,000	1.311	10,900	1.124	46,100

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.	2-Way Pk Hr Vol: 137			2,791			388			2,682			
10/5/2015	22	38	33	13	686	119	100	14	35	82	1,840	17	2,999
% TURNS:	24%	41%	35%	2%	84%	15%	67%	9%	23%	4%	95%	1%	
P.M.	2-Way Pk Hr Vol: 257			3,561			537			3,485			
10/5/2015	40	51	25	38	2,018	138	129	54	102	63	1,213	49	3,920
% TURNS:	34%	44%	22%	2%	92%	6%	45%	19%	36%	5%	92%	4%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	24%	41%	35%	2%	84%	15%	67%	9%	23%	4%	95%	1%
2020	26%	38%	37%	2%	83%	15%	65%	9%	26%	5%	93%	1%
2030	26%	37%	37%	2%	83%	15%	65%	9%	26%	6%	93%	2%
2040	27%	36%	37%	3%	82%	15%	64%	9%	27%	6%	92%	2%
P.M.												
2015	34%	44%	22%	2%	92%	6%	45%	19%	36%	5%	92%	4%
2020	35%	40%	24%	2%	91%	7%	46%	17%	37%	6%	90%	4%
2030	36%	40%	25%	2%	90%	8%	46%	17%	37%	6%	90%	4%
2040	36%	38%	26%	3%	89%	8%	46%	17%	37%	7%	89%	4%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	4.3%	8.0%	6.2%	7.9%	4.7%	6.5%	6.5%	8.5%
2020	5.2%	8.2%	6.8%	8.1%	5.5%	7.0%	7.0%	8.6%
2030	7.1%	8.6%	7.9%	8.6%	7.3%	8.0%	8.0%	8.8%
2040	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
D FACTOR								
2015	67.9%	45.1%	29.3%	61.6%	38.4%	53.1%	72.3%	38.0%
2020	65.8%	44.6%	30.8%	62.0%	39.2%	54.0%	70.5%	37.7%
2030	61.7%	43.6%	33.7%	62.7%	40.9%	55.7%	67.0%	37.2%
2040	57.5%	42.5%	36.6%	63.4%	42.5%	57.5%	63.4%	36.6%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Hypoluxo Rd. & High Ridger Rd.
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	<u>YEAR</u>	<u>NORTH LEG</u>			<u>EAST LEG</u>			<u>SOUTH LEG</u>			<u>WEST LEG</u>		
24 HR EST. AADT	2015	3,200			45,000			8,300			41,000		
24 HR EST. AADT	2020	3,500			46,000			8,800			42,000		
24 HR EST. AADT	2030	4,200			47,900			9,800			44,000		
24 HR EST. AADT	2040	4,900			50,000			10,900			46,100		

Percent Turns Calculated From Base Year AADTs:

JKTURNS		<u>FROM NORTH LEG</u>			<u>FROM EAST LEG</u>			<u>FROM SOUTH LEG</u>			<u>FROM WEST LEG</u>		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
2015	2-WAY ADT	3,200			45,000			8,300			41,000		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
		41,000	8,300	45,000	3,200	41,000	8,300	45,000	8,300	3,200	41,000	8,300	45,000
		43%	9%	48%	6%	78%	16%	50%	4%	46%	15%	80%	6%
2020	2-WAY ADT	3,500			46,000			8,800			42,000		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
		42,000	8,800	46,000	3,500	42,000	8,800	46,000	8,800	3,500	42,000	8,800	46,000
		43%	9%	48%	6%	77%	16%	50%	4%	46%	15%	79%	6%
2030	2-WAY ADT	4,200			47,900			9,800			44,000		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
		44,000	9,800	47,900	4,200	44,000	9,800	47,900	9,800	4,200	44,000	9,800	47,900
		43%	10%	47%	7%	76%	17%	50%	4%	46%	16%	77%	7%
2040	2-WAY ADT	4,900			50,000			10,900			46,100		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
		46,100	10,900	50,000	4,900	46,100	10,900	50,000	4,900	46,100	10,900	50,000	4,900
		43%	10%	47%	8%	74%	18%	50%	5%	46%	17%	76%	7%

A.M. DESIGN HR. TURNS		<u>NORTH LEG</u>			<u>EAST LEG</u>			<u>SOUTH LEG</u>			<u>WEST LEG</u>		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
2015	EST. TURNS	22	38	33	14	684	120	99	15	35	83	1,840	18
2020	EST. TURNS	29	45	46	19	791	146	124	25	43	108	1,977	26
2030	EST. TURNS	46	72	70	38	1,049	207	193	31	73	141	2,235	47
2040	EST. TURNS	65	99	98	64	1,348	284	275	50	107	180	2,480	72
2015	EST. TURNS	40	51	25	39	2,023	139	128	55	102	64	1,213	50
2020	EST. TURNS	45	52	33	52	2,084	158	154	57	118	71	1,236	53
2030	EST. TURNS	52	62	41	67	2,232	200	205	76	147	83	1,283	58
2040	EST. TURNS	59	71	50	90	2,390	249	267	98	182	96	1,329	65

LINK VOLUME CHECK		<u>NORTH LEG</u>			<u>EAST LEG</u>			<u>SOUTH LEG</u>			<u>WEST LEG</u>		
		<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>
DESIGN HOUR A.M.:	CONTROL LINK VOLUMES	93	47	140	818	1,972	2,790	149	241	390	1,939	741	2,680
	2015 TURN SUMMARY	93	47	140	818	1,972	2,790	149	241	390	1,940	741	2,681
	CONTROL LINK VOLUMES	120	60	180	957	2,153	3,110	191	299	490	2,083	867	2,950
2020 TURN SUMMARY	121	70	191	956	2,147	3,103	193	299	492	2,110	863	2,973	
CONTROL LINK VOLUMES	184	116	300	1,272	2,498	3,770	291	419	710	2,362	1,168	3,530	
2030 TURN SUMMARY	188	116	304	1,293	2,498	3,791	298	419	717	2,422	1,168	3,590	
CONTROL LINK VOLUMES	254	186	440	1,647	2,853	4,500	417	563	980	2,630	1,520	4,150	
2040 TURN SUMMARY	263	186	449	1,695	2,853	4,548	432	563	995	2,732	1,520	4,252	
DESIGN HOUR P.M.:	CONTROL LINK VOLUMES	116	144	260	2,194	1,366	3,560	285	255	540	1,325	2,165	3,490
	2015 TURN SUMMARY	116	144	260	2,201	1,366	3,567	286	255	541	1,327	2,165	3,492
	CONTROL LINK VOLUMES	128	162	290	2,318	1,422	3,740	331	279	610	1,363	2,247	3,610
2020 TURN SUMMARY	130	162	292	2,294	1,422	3,716	329	282	611	1,360	2,247	3,607	
CONTROL LINK VOLUMES	158	202	360	2,572	1,528	4,100	436	344	780	1,439	2,431	3,870	
2030 TURN SUMMARY	155	202	357	2,499	1,528	4,027	428	344	772	1,424	2,431	3,855	
CONTROL LINK VOLUMES	187	253	440	2,853	1,647	4,500	564	416	980	1,519	2,631	4,150	
2040 TURN SUMMARY	181	253	434	2,728	1,647	4,375	548	416	964	1,490	2,631	4,121	

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO.:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Hypoluxo Rd& I-95		

NOTES:

Historical AADTs:

YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
	AA DT	AA DT	AA DT	AA DT
Model Volume:				

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	0.44%	CGR	0.40%	CGR	0.39%	CGR	0.42%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AA DT	FACTOR	AA DT	FACTOR	AA DT	FACTOR	AA DT	
	2015		221,000		35,000		218,000		44,000	
NO. YEARS	5	2020	1.022	225,900	1.020	35,700	1.020	222,300	1.021	44,900
NO. YEARS	15	2030	1.068	236,000	1.062	37,200	1.060	231,100	1.065	46,900
NO. YEARS	25	2040	1.116	246,600	1.105	38,700	1.102	240,300	1.110	48,900

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.	2-Way Pk Hr Vol: 18,496												
7/20/2014	342	9,536	248	440	319	374	187	6,959	182	695	354	971	20,607
% TURNS:	3%	94%	2%	39%	28%	33%	3%	95%	2%	34%	18%	48%	
P.M.	2-Way Pk Hr Vol: 16,836												
7/20/2014	819	6,787	451	505	693	248	403	7,784	739	330	584	490	19,833
% TURNS:	10%	84%	6%	35%	48%	17%	5%	87%	8%	24%	42%	35%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	3%	94%	2%	39%	28%	33%	3%	95%	2%	34%	18%	48%
2020	5%	92%	3%	40%	26%	34%	3%	93%	4%	36%	17%	48%
2030	5%	92%	4%	40%	26%	35%	4%	92%	4%	36%	16%	48%
2040	5%	91%	4%	40%	25%	35%	4%	91%	5%	36%	16%	48%
P.M.												
2015	10%	84%	6%	35%	48%	17%	5%	87%	8%	24%	42%	35%
2020	11%	83%	6%	36%	44%	20%	5%	86%	9%	26%	38%	36%
2030	11%	83%	6%	36%	43%	21%	5%	86%	9%	26%	37%	36%
2040	11%	82%	7%	37%	41%	22%	6%	85%	9%	27%	36%	37%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	8.4%	7.6%	5.5%	8.2%	8.2%	7.5%	6.5%	8.3%
2020	8.3%	7.7%	6.2%	8.4%	8.2%	7.6%	7.0%	8.4%
2030	8.1%	7.8%	7.6%	8.7%	8.1%	7.8%	8.0%	8.7%
2040	8.0%	8.0%	9.0%	9.0%	8.0%	8.0%	9.0%	9.0%
D FACTOR								
2015	54.7%	47.9%	58.9%	50.1%	40.9%	54.8%	70.6%	38.4%
2020	54.5%	47.6%	58.4%	48.9%	41.3%	55.2%	69.1%	38.1%
2030	54.0%	47.0%	57.2%	46.4%	42.1%	56.1%	66.3%	37.3%
2040	53.5%	46.5%	56.1%	43.9%	43.0%	57.0%	63.4%	36.6%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Hypoluxo Rd& I-95
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	<u>YEAR</u>	<u>NORTH LEG</u>	<u>EAST LEG</u>	<u>SOUTH LEG</u>	<u>WEST LEG</u>
24 HR EST. AADT	2015	221,000	35,000	218,000	44,000
24 HR EST. AADT	2020	225,900	35,700	222,300	44,900
24 HR EST. AADT	2030	236,000	37,200	231,100	46,900
24 HR EST. AADT	2040	246,600	38,700	240,300	48,900

Percent Turns Calculated From Base Year AADTs:

JKTURNS		<u>FROM NORTH LEG</u>			<u>FROM EAST LEG</u>			<u>FROM SOUTH LEG</u>			<u>FROM WEST LEG</u>		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
2015	2-WAY ADT	221,000			35,000			218,000			44,000		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
		44,000	218,000	35,000	221,000	44,000	218,000	35,000	222,300	44,900	218,000	35,000	221,000
		15%	73%	12%	46%	9%	45%	12%	74%	15%	46%	7%	47%
2020	2-WAY ADT	225,900			35,700			222,300			44,900		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
		44,900	222,300	35,700	225,900	44,900	222,300	35,700	225,900	44,900	222,300	35,700	225,900
		15%	73%	12%	46%	9%	45%	12%	74%	15%	46%	7%	47%
2030	2-WAY ADT	236,000			37,200			231,100			46,900		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
		46,900	231,100	37,200	236,000	46,900	231,100	37,200	236,000	46,900	231,100	37,200	236,000
		15%	73%	12%	46%	9%	45%	12%	74%	15%	46%	7%	47%
2040	2-WAY ADT	246,600			38,700			240,300			48,900		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
		48,900	240,300	38,700	246,600	48,900	240,300	38,700	246,600	48,900	240,300	38,700	246,600
		15%	73%	12%	46%	9%	45%	12%	74%	15%	46%	7%	47%

A.M. DESIGN HR. TURNS		<u>NORTH LEG</u>			<u>EAST LEG</u>			<u>SOUTH LEG</u>			<u>WEST LEG</u>		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
2015	EST. TURNS	341	9,534	248	441	318	374	186	6,961	181	694	353	972
2020	EST. TURNS	348	9,583	252	494	352	441	249	6,970	251	763	393	1,009
2030	EST. TURNS	375	9,661	271	615	427	559	337	7,106	330	880	454	1,126
2040	EST. TURNS	435	9,715	311	715	547	666	442	7,245	438	983	553	1,216

P.M. DESIGN HR. TURNS		<u>NORTH LEG</u>			<u>EAST LEG</u>			<u>SOUTH LEG</u>			<u>WEST LEG</u>		
		<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>	<u>RIGHT</u>	<u>THRU</u>	<u>LEFT</u>
2015	EST. TURNS	822	6,786	450	505	694	248	401	7,787	740	330	583	491
2020	EST. TURNS	883	6,878	512	515	703	250	477	8,043	821	350	591	505
2030	EST. TURNS	972	7,203	582	530	724	258	561	8,699	932	388	601	550
2040	EST. TURNS	1,071	7,519	670	543	738	267	667	9,392	1,060	421	614	596

LINK VOLUME CHECK		<u>NORTH LEG</u>			<u>EAST LEG</u>			<u>SOUTH LEG</u>			<u>WEST LEG</u>		
		<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>
DESIGN HOUR A.M.:	CONTROL LINK VOLUMES	10,126	8,374	18,500	1,133	787	1,920	7,328	10,602	17,930	2,020	840	2,860
	2015 TURN SUMMARY	10,122	8,374	18,496	1,133	787	1,920	7,328	10,602	17,930	2,020	840	2,860
	CONTROL LINK VOLUMES	10,212	8,528	18,740	1,291	919	2,210	7,509	10,681	18,190	2,174	976	3,150
2020	CONTROL LINK VOLUMES	10,183	8,473	18,656	1,286	894	2,180	7,470	10,786	18,256	2,165	951	3,116
	2020 TURN SUMMARY	10,383	8,847	19,230	1,618	1,212	2,830	7,880	10,820	18,700	2,487	1,263	3,750
	CONTROL LINK VOLUMES	10,307	8,847	19,154	1,601	1,062	2,663	7,773	11,100	18,873	2,460	1,133	3,593
2030	CONTROL LINK VOLUMES	10,554	9,176	19,730	1,954	1,526	3,480	8,266	10,954	19,220	2,790	1,610	4,400
	2030 TURN SUMMARY	10,460	9,176	19,636	1,929	1,306	3,235	8,125	11,364	19,489	2,753	1,420	4,173
	CONTROL LINK VOLUMES	10,460	9,176	19,636	1,929	1,306	3,235	8,125	11,364	19,489	2,753	1,420	4,173
2040	CONTROL LINK VOLUMES	10,554	9,176	19,730	1,954	1,526	3,480	8,266	10,954	19,220	2,790	1,610	4,400
	2040 TURN SUMMARY	10,460	9,176	19,636	1,929	1,306	3,235	8,125	11,364	19,489	2,753	1,420	4,173
	CONTROL LINK VOLUMES	10,460	9,176	19,636	1,929	1,306	3,235	8,125	11,364	19,489	2,753	1,420	4,173

DESIGN HOUR P.M.:		<u>FROM</u>			<u>TO</u>			<u>LINK</u>			<u>FROM</u>			<u>TO</u>			<u>LINK</u>								
		<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>	<u>FROM</u>	<u>TO</u>	<u>LINK</u>						
CONTROL LINK VOLUMES	CONTROL LINK VOLUMES	8,057	8,783	16,840	1,446	1,434	2,880	8,926	7,364	16,290	1,404	2,256	3,660	8,058	8,783	16,841	1,446	1,434	2,880	8,929	7,364	16,293	1,404	2,256	3,660
	2015 TURN SUMMARY	8,058	8,783	16,841	1,446	1,434	2,880	8,929	7,364	16,293	1,404	2,256	3,660	8,058	8,783	16,841	1,446	1,434	2,880	8,929	7,364	16,293	1,404	2,256	3,660
	CONTROL LINK VOLUMES	8,271	9,109	17,380	1,465	1,535	3,000	9,305	7,545	16,850	1,443	2,347	3,790	8,273	9,064	17,337	1,469	1,580	3,049	9,341	7,478	16,819	1,447	2,407	3,854
2020	CONTROL LINK VOLUMES	8,712	9,808	18,520	1,501	1,729	3,230	10,101	7,899	18,000	1,527	2,563	4,090	8,712	9,808	18,520	1,501	1,729	3,230	10,101	7,899	18,000	1,527	2,563	4,090
	2020 TURN SUMMARY	8,757	9,778	18,535	1,512	1,744	3,256	10,192	7,849	18,041	1,538	2,628	4,166	8,757	9,778	18,535	1,512	1,744	3,256	10,192	7,849	18,041	1,538	2,628	4,166
	CONTROL LINK VOLUMES	9,174	10,556	19,730	1,529	1,951	3,480	10,958	8,262	19,220	1,611	2,789	4,400	9,174	10,556	19,730	1,529	1,951	3,480	10,958	8,262	19,220	1,611	2,789	4,400
2030	CONTROL LINK VOLUMES	9,260	10,531	19,791	1,548	1,951	3,499	11,119	8,207	19,326	1,631	2,869	4,500	9,260	10,531	19,791	1,548	1,951	3,499	11,119	8,207	19,326	1,631	2,869	4,500
	2030 TURN SUMMARY	9,260	10,531	19,791	1,548	1,951	3,499	11,119	8,207	19,326	1,631	2,869	4,500	9,260	10,531	19,791	1,548	1,951	3,499	11,119	8,207	19,326	1,631	2,869	4,500
	CONTROL LINK VOLUMES	9,260	10,531	19,791	1,548	1,951	3,499	11,119	8,207	19,326	1,631	2,869	4,500	9,260	10,531	19,791	1,548	1,951	3,499	11,119	8,207	19,326	1,631	2,869	4,500

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO.:		PREPARED BY:	
FM NO.:		FILE:	Version 2
PROJECT LIMITS:		DATE:	10/5/2015
DESIGN YEAR:	2040		
INTERSECTION:	Hypoluxo Rd. & Seacrest Blvd.		

NOTES:

Historical AADTs:

YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
	AADT	AADT	AADT	AADT
Model Volume:				

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	0.19%	CGR	0.56%	CGR	1.50%	CGR	0.40%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

	YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
	2015		7,000		23,000		15,000		35,000	
NO. YEARS	5	2020	1.010	7,100	1.028	23,700	1.077	16,200	1.020	35,700
NO. YEARS	15	2030	1.029	7,200	1.087	25,000	1.250	18,800	1.062	37,200
NO. YEARS	25	2040	1.049	7,300	1.150	26,400	1.451	21,800	1.105	38,700

Percent Turns Calculated From Base Year TMCs:

TURN STUDY	FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			TOTAL
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
A.M.	2-Way Pk Hr Vol: 214 1,470 544 1,898												
10/5/2015	121	19	10	7	733	39	67	23	263	133	614	34	2,063
% TURNS:	81%	13%	7%	1%	94%	5%	19%	7%	75%	17%	79%	4%	
P.M.	2-Way Pk Hr Vol: 399 2,153 1,043 2,765												
10/5/2015	101	52	20	28	884	114	138	63	397	279	969	135	3,180
% TURNS:	58%	30%	12%	3%	86%	11%	23%	11%	66%	20%	70%	10%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	81%	13%	7%	1%	94%	5%	19%	7%	75%	17%	79%	4%
2020	77%	14%	9%	2%	91%	7%	21%	7%	72%	19%	76%	5%
2030	76%	14%	10%	2%	90%	8%	21%	7%	72%	20%	75%	6%
2040	75%	15%	11%	3%	88%	10%	22%	7%	71%	21%	73%	6%
P.M.												
2015	58%	30%	12%	3%	86%	11%	23%	11%	66%	20%	70%	10%
2020	57%	29%	14%	4%	84%	13%	24%	11%	65%	22%	68%	10%
2030	57%	29%	14%	4%	83%	13%	25%	11%	65%	22%	67%	10%
2040	56%	29%	15%	4%	81%	15%	25%	10%	64%	23%	66%	10%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	3.1%	5.7%	6.4%	9.4%	3.6%	7.0%	5.4%	7.9%
2020	4.2%	6.4%	6.9%	9.3%	4.7%	7.4%	6.1%	8.1%
2030	6.6%	7.7%	8.0%	9.1%	6.9%	8.2%	7.6%	8.6%
2040	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
D FACTOR								
2015	70.1%	43.4%	53.0%	47.7%	64.9%	57.3%	41.1%	50.0%
2020	67.2%	43.5%	53.6%	46.9%	60.8%	57.0%	41.7%	51.2%
2030	61.5%	43.9%	54.9%	45.4%	52.5%	56.4%	42.8%	53.7%
2040	55.8%	44.2%	56.1%	43.9%	44.2%	55.8%	43.9%	56.1%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
 FM NO.: 0
 PROJECT LIMITS: 0
 DESIGN YEAR: 2040
 INTERSECTION: Hypoluxo Rd. & Seacrest Blvd.
 PREPARED BY:
 FILE: Version 2

DATE: 10/5/2015
 NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG		EAST LEG			SOUTH LEG			WEST LEG		
24 HR EST. AADT	2015	7,000		23,000			15,000			35,000		
24 HR EST. AADT	2020	7,100		23,700			16,200			35,700		
24 HR EST. AADT	2030	7,200		25,000			18,800			37,200		
24 HR EST. AADT	2040	7,300		26,400			21,800			38,700		

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2015 2-WAY ADT	35,000	15,000	23,000	7,000	35,000	15,000	23,000	7,000	35,000	15,000	23,000	7,000
		48%	21%	32%	12%	61%	26%	35%	11%	54%	33%	51%	16%
	2020 2-WAY ADT	35,700	16,200	23,700	7,100	35,700	16,200	23,700	7,100	35,700	16,200	23,700	7,100
		47%	21%	31%	12%	61%	27%	36%	11%	54%	34%	50%	15%
	2030 2-WAY ADT	37,200	18,800	25,000	7,200	37,200	18,800	25,000	7,200	37,200	18,800	25,000	7,200
		46%	23%	31%	11%	59%	30%	36%	10%	54%	37%	49%	14%
	2040 2-WAY ADT	38,700	21,800	26,400	7,300	38,700	21,800	26,400	7,300	38,700	21,800	26,400	7,300
		45%	25%	30%	11%	57%	32%	36%	10%	53%	39%	48%	13%

A.M. DESIGN HR. TURNS		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2015 EST. TURNS	121	18	10	7	733	38	66	21	264	131	615	32
	2020 EST. TURNS	154	30	17	17	784	70	89	31	338	197	656	49
	2030 EST. TURNS	205	69	23	32	921	152	129	67	489	393	746	87
	2040 EST. TURNS	241	121	31	54	1,072	295	176	110	639	677	841	129
	2015 EST. TURNS	102	51	20	28	886	112	137	63	399	278	968	136
	2020 EST. TURNS	113	58	25	30	897	117	157	68	446	325	985	149
	2030 EST. TURNS	126	78	29	32	910	127	195	93	545	436	1,028	175
	2040 EST. TURNS	135	102	34	34	928	143	245	124	653	570	1,058	202

LINK VOLUME CHECK

DESIGN HOUR A.M.:	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES	150	60	210	779	691	1,470	353	187	540	781	1,119	1,900
2015 TURN SUMMARY	150	60	210	778	691	1,469	352	187	539	778	1,119	1,897
CONTROL LINK VOLUMES	203	97	300	878	762	1,640	463	297	760	914	1,276	2,190
2020 TURN SUMMARY	201	97	298	871	762	1,633	459	297	756	901	1,276	2,177
CONTROL LINK VOLUMES	293	187	480	1,091	899	1,990	676	614	1,290	1,205	1,615	2,820
2030 TURN SUMMARY	297	187	484	1,105	899	2,004	686	614	1,300	1,227	1,615	2,842
CONTROL LINK VOLUMES	367	293	660	1,333	1,047	2,380	867	1,093	1,960	1,529	1,951	3,480
2040 TURN SUMMARY	392	293	685	1,421	1,047	2,468	925	1,093	2,018	1,646	1,951	3,597

DESIGN HOUR P.M.:

CONTROL LINK VOLUMES	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
2015 TURN SUMMARY	173	227	400	1,026	1,124	2,150	598	442	1,040	1,383	1,387	2,770
CONTROL LINK VOLUMES	197	253	450	1,027	1,124	2,151	598	442	1,040	1,382	1,387	2,769
2020 TURN SUMMARY	197	253	450	1,033	1,167	2,200	680	510	1,190	1,485	1,415	2,900
CONTROL LINK VOLUMES	195	248	443	1,044	1,167	2,211	671	500	1,171	1,460	1,455	2,915
CONTROL LINK VOLUMES	243	307	550	1,038	1,252	2,290	868	672	1,540	1,709	1,471	3,180
2030 TURN SUMMARY	233	300	533	1,069	1,252	2,321	833	642	1,475	1,639	1,581	3,220
CONTROL LINK VOLUMES	290	370	660	1,043	1,337	2,380	1,095	865	1,960	1,954	1,526	3,480
2040 TURN SUMMARY	271	361	632	1,105	1,337	2,442	1,023	815	1,838	1,830	1,716	3,546

Note: Boxed number indicates manual adjustment.

Appendix E

Tier 1 Traffic Analysis Memorandum

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DuPont Center
Suite 400
Jacksonville
Florida 32207
Tel 904 721 2991
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TECHNICAL MEMORANDUM

To:
Thuc H. Le, PE
Consultant Project Management – D4 Office
Florida Department of Transportation
3400 W. Commercial Blvd
Fort Lauderdale, FL 33309-3421

Copies:
1

From:
Hank Deibel

Date:
March 11, 2016

ARCADIS Project No.:
WF900273

Subject:
PD&E Study
SR 9/I-95 at SR 804/Boynton Beach Boulevard Interchange
And Gateway Boulevard Interchange
Palm Beach County, Florida
ETDM: 14180 and 14181

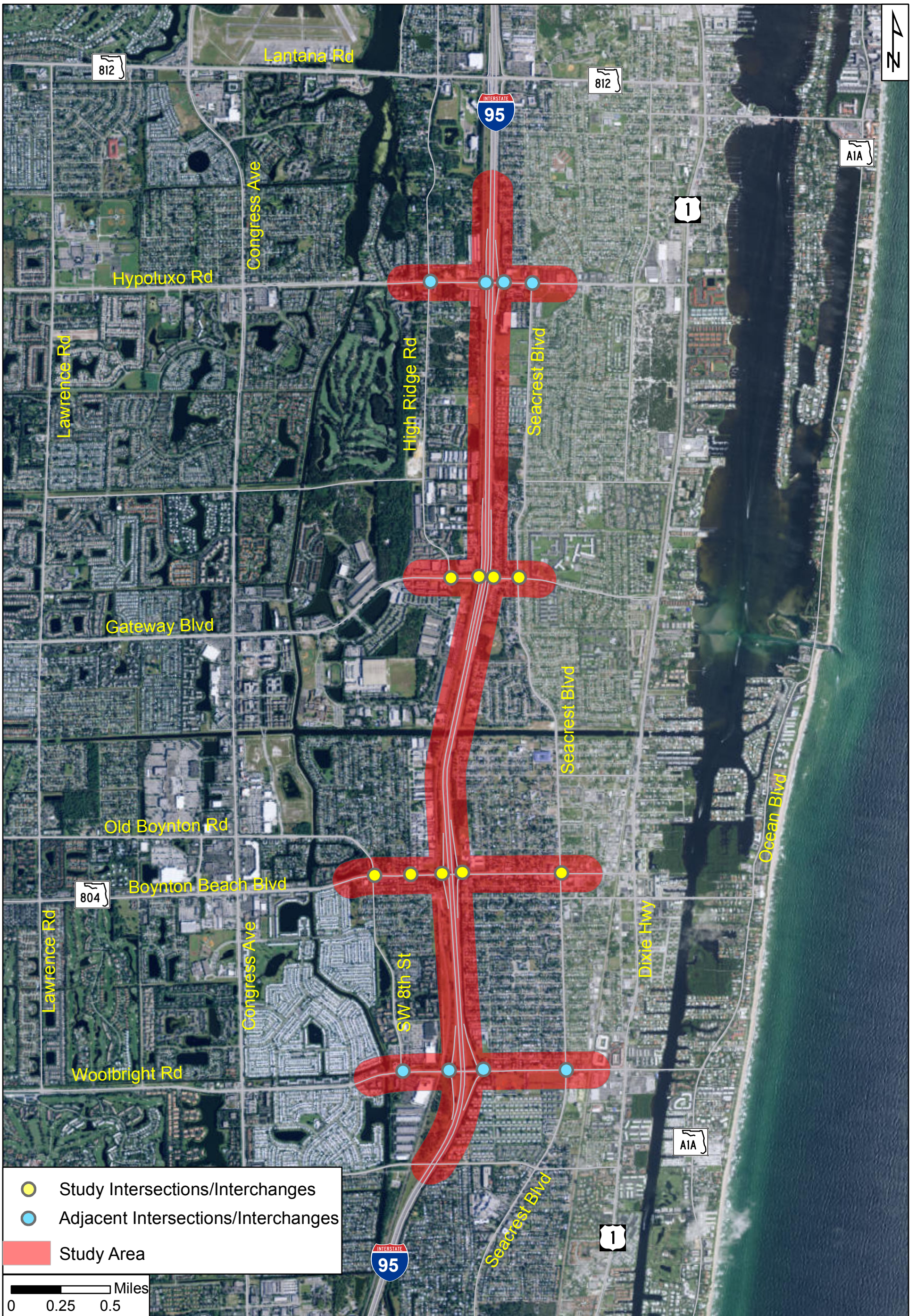
Florida License Numbers

Engineering
7917

The purpose of this Technical Memorandum is to provide a preliminary set of viable alternatives and a Tier I level evaluation matrix screening of these alternatives for the SR 9/I-95 at SR 804/Boynton Beach Blvd and Gateway Blvd interchanges for Florida Department of Transportation (FDOT) review and consideration.

The project study area (study area) is located in eastern Palm Beach County within the City of Boynton Beach between SR 9/I-95 Woolbright Road to the south and SR 9/I-95 at Hypoluxo Road to the north. The SR 9/I-95 at SR 804/Boynton Beach Blvd interchange is located on I-95 between the Gateway Blvd interchange (1.5 miles to the north) and the Woolbright Road interchange (1.0 mile to the south). The SR 9/I-95 at Gateway Blvd interchange is located on SR 9/I-95 between the Hypoluxo Road interchange (1.5 miles to the north) and the SR 804/Boynton Beach Blvd interchange (1.5 miles to the south). At Gateway Blvd, the project area extends from west of High Ridge Rd to east of Seacrest Blvd. At Boynton Beach Blvd, the project area extends from west of Industrial Ave to east of Seacrest Blvd. A project location map is provided in Figure A-1.

The primary purpose of the proposed action is to enhance overall traffic operations at the existing interchanges of SR-9/I-95 at SR-804/Boynton Beach Blvd and at Gateway Blvd by providing improvements to achieve acceptable levels of service (LOS) in the future condition (2040 Design Year) and support redevelopment efforts in the vicinity of the interchange, meeting the overall vision of the City of Boynton Beach. In addition, goals of the project include improving safety conditions and enhancing emergency evacuation and response times. The proposed designs are anticipated to improve traffic operations at the study interchanges through implementation of operational and capacity improvements that will maintain and improve mobility, enhance safety, and support existing and future development at the study interchanges.



- Study Intersections/Interchanges
- Adjacent Intersections/Interchanges
- Study Area

0 0.25 0.5 Miles

PD&E Study
 SR-9/I-95 at SR-804/Boynton Beach Blvd Interchange
 SR-9/I-95 at Gateway Blvd Interchange
 FM Nos. 435804-1-22-01; 231932-1-22-01
 ETDM Nos. 14180 and 14181



**PROJECT LOCATION AND
 AREA OF INFLUENCE**

**FIGURE A-1
 PAGE 2**

1. SR 804/BOYNTON BEACH BLVD ALTERNATIVES

1.1 NO-BUILD ALTERNATIVE

This alternative considers existing geometric and operational conditions with future traffic volumes. This alternative serves as the baseline for comparative analysis with the Build Alternatives.

The No-Build Alternative provides benefits related to economic and construction impacts. The long-term benefits amassed from serving existing and future traffic demands will not be realized with the No-Build Alternative.

1.2 TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS

Transportation System Management and Operations (TSM&O) Alternative includes implementation of non-capacity improvements to enhance traffic flow along the project study area. These improvements include, but are not limited to, ramp metering, auxiliary lane additions, intelligent traffic system deployment, and intersection signal optimization. All Build Alternatives developed for this project will incorporate some TSM&O improvements, including signal optimization and lengthening of acceleration and deceleration lanes along I-95 for the entry and exit ramps within the project limits, to meet current American Association of State Highway and Transportation Officials (AASHTO) design standards.

The TSM&O Alternative considered for this interchange will include existing geometric and operational conditions with optimized signal timing data under future traffic conditions.

1.3 ALTERNATE TRAVEL MODES

Multimodal facilities such as transit routes currently exist within the proposed project limits. The existing modes are incorporated into the Build Alternatives with current design standards. The Build Alternatives for this project will include sidewalks that will connect to existing facilities to the east and west of the project limits. The transit routes within the study area will not be affected by the Build Alternative.

1.4 BUILD ALTERNATIVES

Several interchange improvement alternatives were considered for improving traffic operations and safety near the SR 804/Boynton Beach Blvd interchange for this project:

- Conceptual Design Alternative (CDA) developed in the I-95 (SR 9) Interchange at Boynton Beach Blvd (SR 804) in Palm Beach County Interchange Concept Development Report – Alternative 1
- Revised version of the CDA – Alternative 2
- Diverging Diamond Interchange – Alternative 3
- Single-point Urban Interchange (SPUI) – Alternative 4
- Compact SPUI extending entry and exit ramps over I-95 – Alternative 5
- Echelon Interchange – Alternative 6
- I-95 Northbound Third Level Left-turns onto SR 804/Boynton Beach Blvd – Alternative 7
- SR 804/Boynton Beach Blvd Eastbound Third Level Left-turn onto the I-95 Northbound On-Ramp – Alternative 8
- Third Level Viaduct on SR 804/Boynton Beach Blvd for Through Traffic– Alternative 9

Each of the proposed Build Alternatives proposes the eastbound right-turn at Seacrest to be exclusive with a storage of approximately 250 feet. In addition to this, the westbound right-turn at Industrial Ave is proposed to be an exclusive right with approximately 250 feet in storage length with all the Build Alternatives.

1.4.1 ALTERNATIVE 1 - CDA

This Build Alternative was developed through the I-95 (SR 9) Interchange at Boynton Beach Blvd (SR 804) in Palm Beach County Interchange Concept Development Report. The development of this alternative considered practical design to optimize the benefit to cost (B/C) ratio without imperiling traffic operations and safety.

High traffic volumes mandate the necessity of an additional left-turn lane for westbound Boynton Beach Blvd travelers to southbound I-95 and for eastbound Boynton Beach Blvd travelers to northbound I-95. This alternative will implement an additional through lane for westbound Boynton Beach Blvd east of the I-95 northbound on-ramp. The three westbound through lanes will feed into five through lanes with a single channelized right-turn lane for I-95 northbound. The five through lanes will then lead into three westbound through lanes and dual left-turn lanes to southbound I-95 before returning back to three westbound through lanes west of I-95. The eastbound direction along Boynton Beach Blvd is similar. West of I-95, eastbound Boynton Beach Blvd's four through lanes feed into four through lanes and a channelized right-turn onto I-95 southbound. The four through lanes will then lead into two through lanes and dual left-turn lanes onto I-95 northbound.

The I-95 off-ramps onto Boynton Beach Blvd also have a high volume of traffic in Design Year (2040). This Build Alternative proposes triple left-turn lanes from the I-95 northbound off-ramp onto westbound Boynton Beach Blvd and triple right-turn lanes from southbound I-95 to westbound Boynton Beach Blvd.

Figure A-2 shows a conceptual line diagram of Build Alternative 1.

1.4.2 ALTERNATIVE 2 – REVISED VERSION OF CDA

This Build Alternative enhanced Build Alternative 1 to avoid the reconstruction of the Boynton Beach Blvd bridge over CSX/SFRC (Bridge Number 930289) and the Boynton Beach Blvd bridge over I-95 (Bridge Number 930285).

Build Alternative 2 proposes an additional through lane added to westbound Boynton Beach Blvd starting just east of I-95. These three through lanes will lead into five through lanes and a channelized right-turn lane to I-95 northbound. Westbound Boynton Beach Blvd will, then, have three through lanes and dual left-turn lanes onto I-95 southbound before returning to the existing three through lanes on Boynton Beach Blvd west of I-95. Similarly, eastbound Boynton Beach Blvd will keep the existing three through lanes west of I-95. These lanes will feed into four eastbound through lanes with a channelized right-turn lane onto southbound I-95. The four through lanes go to two eastbound through lanes and dual left-turn lanes for the I-95 northbound on-ramp. East of I-95, eastbound Boynton Beach Blvd returns to the existing two through lanes.

Build Alternative 2 proposes additions to the I-95 off-ramps. Triple lefts and dual rights are proposed for the I-95 northbound off-ramp to Boynton Beach Blvd. The I-95 southbound off-ramp is proposed to have a single exclusive left-turn lane, a shared left- and right-turn lane, and dual exclusive right-turn lanes.

Figure A-3 shows a conceptual line diagram of Build Alternative 2.





1.4.3 ALTERNATIVE 3 – DIVERGING DIAMOND INTERCHANGE

This Build Alternative proposes the construction of a new Diverging Diamond Interchange (DDI) near the Boynton Beach Blvd and I-95 interchange.

The high left- and right-turn volumes from Boynton Beach Blvd to and from I-95 are ideal traffic patterns that suit a DDI configuration. An additional westbound through lane is proposed to begin slightly east of the I-95 northbound ramps. The three westbound through lanes will lead into three through lanes and a channelized right-turn onto the I-95 northbound on-ramp. The three through lanes will then cross to the south side of Boynton Beach Blvd at a signalized intersection, become two exclusive through lanes, one exclusive left and a shared left and through leading to I-95 southbound. The three westbound through lanes then cross back to the north side of Boynton Beach Blvd near the I-95 southbound off-ramp and continue through along the existing three westbound through lanes. Eastbound Boynton Beach Blvd is proposed to mirror the conditions of westbound Boynton Beach Blvd.

The I-95 northbound off-ramp is proposed to have an additional left-turn lane onto westbound Boynton Beach Blvd and an additional right-turn lane onto eastbound Boynton Beach Blvd. The southbound I-95 off ramp proposes an additional right-turn lane.

Figure A-4 shows a conceptual line diagram of Build Alternative 3.

1.4.4 ALTERNATIVE 4 – SINGLE-POINT URBAN INTERCHANGE

This Build Alternative proposes the construction of a new Single-point Urban Interchange (SPUI) near the Boynton Beach Blvd and I-95 interchange.

The lane configuration proposed for Build Alternative 4 serves the I-95 ramp terminal intersections with a single signalized intersection. Westbound Boynton Beach Blvd is proposed to have an additional through lane added slightly east of the I-95 ramps. The three westbound through lanes lead into two westbound through lanes and a channelized right-turn lane onto northbound I-95 and dual left-turn lanes onto southbound I-95. The two westbound through lanes on Boynton Beach Blvd tie into the existing westbound through lanes and dual left-turn lanes onto southbound I-95. The eastbound direction mirrors the westbound movements on Boynton Beach Blvd.

In addition, the I-95 northbound off-ramp is proposed to have an additional left-turn lane and two additional right-turn lanes with this Build Alternative and the I-95 southbound off-ramp is proposed to have two additional right-turn lanes.

Figure A-5 shows a conceptual line diagram of Build Alternative 4.

1.4.5 ALTERNATIVE 5 – COMPACT SINGLE-POINT URBAN INTERCHANGE

This Build Alternative proposes the construction of a new, non-traditional Single-point Urban Interchange (SPUI) near the Boynton Beach Blvd and I-95 interchange.

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The lane configuration proposed through this Build Alternative serves the I-95 ramp terminal intersections with a single signalized intersection with the ramps extending inward over I-95 and reflects the conditions presented in Section 1.4.4.

Figure A-6 shows a conceptual line diagram of Build Alternative 5.

1.4.6 ALTERNATIVE 6 – ECHELON INTERCHANGE

This Build Alternative proposes the construction of an echelon configuration near the Boynton Beach Blvd and I-95 interchange.

The echelon configuration proposed in Build Alternative 6 will require a third level for specific movements. Typical echelon interchange configurations have one approach on both the arterial and intersecting streets structurally elevated while the other approach on both the arterial and intersecting cross streets intersect at-grade. Build Alternative 6 proposes the elevation of eastbound Boynton Beach Blvd and the I-95 northbound ramps to the third level while the westbound Boynton Beach Blvd and southbound I-95 ramps are proposed to stay at the existing second level elevation. This separation allows the intersections to be on a two-phase signal to reduce vehicle delays. Unique to this proposed Build Alternative, a second level left-turn from the I-95 northbound off-ramp to westbound Boynton Beach Blvd will be provided for the high traffic volumes that use Old Boynton/NW 8th St and Industrial Ave. The proposed lane configuration adds dual left-turns from either directions of Boynton Beach Blvd to both the I-95 on-ramps. The I-95 southbound off-ramp will be configured with dual right-turn lanes to westbound Boynton Beach Blvd.

Figure A-7 shows a conceptual line diagram of Build Alternative 6.

1.4.7 ALTERNATIVE 7 – I-95 NORTHBOUND THIRD LEVEL LEFT-TURN ONTO SR 804/BOYNTON BEACH BLVD

This Build Alternative proposes the construction of a third level I-95 northbound left-turn flyover ramp from the freeway.

Of all the turning movements, one with the highest traffic volumes was found to be the left-turn from the northbound I-95 off-ramp to westbound Boynton Beach Blvd. To accommodate this high volume movement, Build Alternative 7 proposes the construction of a third level flyover ramp to create a continuous free-flow left-turn movement that clears the I-95 northbound off-ramp eliminating ramp backups into I-95 mainline and reducing vehicle delays. In addition, this Build Alternative proposes dual left-turn lane configurations for both directions of Boynton Beach Blvd to the I-95 on-ramps. The I-95 northbound off-ramp will be configured with dual right-turn lanes to eastbound Boynton Beach Blvd and the I-95 southbound off-ramp with dual right-turn lanes to westbound Boynton Beach Blvd.

Figure A-8 shows a conceptual line diagram of Build Alternative 7.

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1.4.8 ALTERNATIVE 8 – SR 804/BOYNTON BEACH BLVD THIRD LEVEL LEFT-TURN ONTO THE I-95 NORTHBOUND ON-RAMP

This Build Alternative proposes the construction of a third level eastbound Boynton Beach Blvd left-turn flyover to I-95 northbound.

The left-turn from eastbound Boynton Beach Blvd to the northbound I-95 on-ramp has a high traffic volume. To accommodate this movement, Build Alternative 8 proposes the construction of a third level flyover ramp to create a continuous left-turn free-flow movement that reduces vehicular delays. This Build Alternative proposes dual left-turn lanes for westbound Boynton Beach Blvd travelers to access I-95 southbound on-ramp. The I-95 northbound off-ramp is suggested to have an additional left-turn and right-turn lane while the I-95 southbound off-ramp will add two additional right-turn lanes.

Figure A-9 shows a conceptual line diagram of Build Alternative 8.

1.4.9 ALTERNATIVE 9 – THIRD LEVEL VIADUCT ON SR 804/BOYNTON BEACH BLVD FOR THROUGH TRAFFIC

This Build Alternative proposes the construction of a third level viaduct along Boynton Beach Blvd to serve the through traffic that wants to bypass the ramp terminal intersections.

The viaduct in Build Alternative 9 is to accommodate travelers going through on Boynton Beach Blvd. It is proposed to create an additional through lane for eastbound and westbound traffic starting and ending past the I-95 ramps. Build Alternative 9 proposes dual left-turns from Boynton Beach Blvd onto both I-95 on-ramps. The I-95 northbound off-ramp is proposed with an additional left- and right-turn lane. The southbound I-95 off-ramp should have two additional right-turn lanes onto westbound Boynton Beach Blvd.

Figure A-10 shows a conceptual line diagram of Build Alternative 9.

1.5 BUILD ALTERNATIVES: TIER 1 EVALUATION

A summary of all the proposed Build Alternatives is provided in Table A-1.

A preliminary screening was completed to determine if the proposed alternatives meet the purpose and need for the project. Alternatives were also screened with respect to environmental and engineering factors and are summarized in table A-2.

Traffic operational analysis for each alternative were evaluated using Synchro 9 for the Design Year 2040 conditions. The Design Year traffic volume information from the Draft Traffic Forecasting Technical Memorandum submitted to FDOT for review on January 15, 2016 was used for this Tier 1 evaluation. The FDOT Generalized Peak Hour Directional Service Volumes were used for capacity evaluations. The summary of the findings are provided in Table A-3 and Table A-4.

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Table A-1. Build Alternative Description Summary

Alternative No.	Description
1	Conceptual Design Alternative (CDA) - I-95 northbound off-ramp – additional left-turn to westbound Boynton Beach Blvd I-95 southbound off-ramp – two additional right-turn lanes to westbound Boynton Beach Blvd Boynton Beach Blvd eastbound – additional left-turn to I-95 northbound Boynton Beach Blvd westbound – additional left-turn lane to I-95 southbound, additional through lane added west of I-95
2	Revised Version of the CDA - I-95 northbound off-ramp – additional right-turn to eastbound Boynton Beach Blvd I-95 southbound off-ramp – two additional right-turn lanes to westbound Boynton Beach Blvd. One of which is shared with the left-turn. Boynton Beach Blvd eastbound – additional left-turn to I-95 northbound, additional through lane added east of I-95 Boynton Beach Blvd westbound – additional left-turn to I-95 southbound, additional through lane added east of I-95
3	DDI - I-95 northbound off-ramp – additional left-turn to westbound Boynton Beach Blvd, additional right-turn lane Boynton Beach Blvd east/west – DDI configuration
4	SPUI - I-95 northbound off-ramp – additional left-turn lane, additional right-turn lane I-95 southbound off-ramp – two additional right-turn lanes to westbound Boynton Beach Blvd Boynton Beach Blvd eastbound – additional left-turn to northbound I-95 Boynton Beach Blvd westbound – additional left-turn to southbound I-95
5	Compact SPUI - I-95 northbound off-ramp – additional left-turn lane, additional right-turn lane I-95 southbound off-ramp – two additional right-turn lanes to westbound Boynton Beach Blvd I-95 ramps – widening inward, over I-95 Boynton Beach Blvd eastbound – additional left-turn lane to northbound I-95 Boynton Beach Blvd westbound – additional left-turn lane to southbound I-95
6	Echelon Interchange- I-95 northbound on- and off-ramp – put on third level, additional left-turn lane to off-ramp Boynton Beach Blvd eastbound – added third level, additional left-turn to northbound I-95, additional through lane Boynton Beach Blvd westbound – additional left-turn to southbound I-95, two additional through lanes
7	I-95 Northbound Third Level Left-turn onto Boynton Beach Blvd - I-95 northbound off-ramp – additional third level left-turn, additional right-turn Boynton Beach Blvd eastbound – additional left-turn to northbound I-95 Boynton Beach Blvd westbound – additional left-turn to southbound I-95
8	SR 804/Boynton Beach Blvd Third Level Left-turn onto I-95 Northbound On-Ramp - I-95 northbound off-ramp – additional left-turn lane, additional right-turn I-95 southbound off-ramp – two additional right-turn lanes Boynton Beach Blvd eastbound – left-turn to I-95 northbound on third level Boynton Beach Blvd westbound – additional left-turn to southbound I-95,
9	Third Level Viaduct on SR 804/Boynton Beach Blvd for Through Traffic - I-95 northbound off-ramp – additional left-turn to westbound Boynton (3 left-turn lanes total), additional right-turn I-95 southbound off-ramp – two additional right-turn lanes Boynton Beach Blvd east/west – third level viaduct adds one through lane, additional left-turns to I-95

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Table A-2. Tier 1 Evaluation Matrix for Boynton Beach Blvd

LEGEND		BUILD ALTERNATIVES SCREENED								
High Impact	No- Build	Alt 1 CDA	Alt 2 Streamlined CDA	Alt 3 DDI	Alt 4 SPUI	Alt 5 Compact SPUI	Alt 6 Echelon	Alt 7 3rd Level I-95 NB Left	Alt 8 3rd Level SR 804 EB Left	Alt 9 3rd Level Viaduct
Medium Impact										
Low Impact										
CRITERIA										
Improves Traffic Operations	High	Low	Low	Low	Low	Low	Low	Low	Low	Low
Improves Safety Conditions	High	Low	Low	Low	Low	Low	Low	Low	Low	Low
Constructability	Low	Medium	Medium	Medium	Medium	High	High	High	High	High
Right of Way Impacts	Low	Medium	Medium	Medium	Medium	Medium	High	High	High	High
Environmental Impacts	Low	Medium	Medium	Medium	Medium	Medium	High	High	High	High
Socio-economic Impacts	High	Low	Low	Low	Low	Low	Medium	Medium	Medium	Medium
General Public Perception	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Cost	Low	Medium	Medium	Medium	High	High	High	Medium	Medium	High

Table A-3. Synchro 9 Traffic Operational Analysis Average Delays for Boynton Beach Blvd

LOCATION	No-Build	BUILD ALTERNATIVES								
		Alt 1 CDA	Alt 2 Streamlined CDA	Alt 3 DDI	Alt 4 SPUI	Alt 5 Compact SPUI	Alt 6 Echelon	Alt 7 3rd Level I-95 NB Left	Alt 8 3rd Level SR 804 EB Left	Alt 9 3rd Level Viaduct
		AM PEAK HOUR AVERAGE DELAY (s) ⁽¹⁾								
Boynton Beach Blvd at NW 8th St	126.10	121.30	121.00	113.50	125.00	125.00	123.00	108.40	91.70	77.80
Boynton Beach Blvd at Industrial Ave	27.60	25.50	17.20	20.40	16.50	16.50	30.30	26.50	23.20	20.50
Boynton Beach Blvd at I-95 SB Ramps	249.30	38.00	36.00	21.50	32.00	32.00	20.40	40.10	39.10	46.50
Boynton Beach Blvd at I-95 NB Ramps	189.70	28.30	26.90	22.60			17.60	38.70	32.40	31.60
Boynton Beach Blvd at Seacrest Blvd ⁽²⁾	192.30	133.30	133.30	133.30	133.30	133.30	133.30	133.30	133.30	133.30
Total Delay	785.00	346.40	334.40	311.30	306.80	306.80	324.60	347.00	319.70	309.70

LEGEND
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F

LOCATION	No-Build	BUILD ALTERNATIVES								
		Alt 1 CDA	Alt 2 Streamlined CDA	Alt 3 DDI	Alt 4 SPUI	Alt 5 Compact SPUI	Alt 6 Echelon	Alt 7 3rd Level I-95 NB Left	Alt 8 3rd Level SR 804 EB Left	Alt 9 3rd Level Viaduct
		PM PEAK HOUR AVERAGE DELAY (s) ⁽¹⁾								
Boynton Beach Blvd at NW 8th St	80.00	76.20	70.40	69.60	68.70	68.70	78.30	74.60	73.60	71.80
Boynton Beach Blvd at Industrial Ave	52.80	26.60	23.40	26.00	21.70	21.70	33.10	22.60	30.20	29.40
Boynton Beach Blvd at I-95 SB Ramps	218.30	48.10	51.70	27.40	28.10	28.10	24.00	34.00	36.00	43.60
Boynton Beach Blvd at I-95 NB Ramps	197.20	59.10	40.20	20.80			45.80	40.70	48.80	38.90
Boynton Beach Blvd at Seacrest Blvd ⁽²⁾	213.30	181.30	181.30	181.30	181.30	181.30	181.30	181.30	181.30	181.30
Total Delay	761.60	391.30	367.00	325.10	299.80	299.80	362.50	353.20	369.90	365.00

(1) This delay is for signalized intersections as reported by HCM output reports from Synchro 9.

(2) All Build Alternatives propose roadway geometry and signal timing for Seacrest Blvd comparable to CDA; therefore, the delay values are assumed to be similar to CDA for this intersection for all Build Alternatives

Table A-4. Traffic Operational Analysis Summary for Boynton Beach Blvd

	No- Build	BUILD ALTERNATIVES								
		Alt 1 CDA	Alt 2 Streamlined CDA	Alt 3 DDI	Alt 4 SPUI	Alt 5 Compact SPUI	Alt 6 Echelon	Alt 7 3rd Level I-95 NB Left	Alt 8 3rd Level SR 804 EB Left	Alt 9 3rd Level Viaduct
Total Intersection Delay (AM Peak + PM Peak)(s)	1546.60	737.70	701.40	636.40	606.60	606.60	687.10	700.20	689.60	674.70
Percent Reduction of Delay from No-Build	-	52%	55%	59%	61%	61%	56%	55%	55%	56%

The Synchro 9 analysis indicates that all of the Build Alternatives evaluated for this study will result in a minimum of 50 percent reduction in the overall delay near this interchange when compared to the No-Build Alternative.

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2. GATEWAY BLVD ALTERNATIVES

2.1 NO-BUILD ALTERNATIVE

The No Build Alternative represents an evaluation of the current geometric and operational conditions within the study area. No improvements, beyond those already planned and funded, are considered. All lane geometries and signal timings remain unchanged for future year analyses. This alternative represents the base condition and does not have any impacts to cost or right-of-way.

2.2 TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS

TSM&O improvements include enhancements to the transportation network that improve safety, manage congestion, and maximize highway operations via improving mobility. Intelligent transportation systems (ITS), multi-modal applications, optimized signal re-timings, and higher land-use density strategies are TSM&O instruments used to maximize transportation infrastructure. Such improvements are often less costly and require little to no right-of-way compared to physical expansions to the transportation network.

The TSM&O Alternative considered for this interchange will include existing geometric and operation conditions with optimized signal timing data under future traffic conditions.

2.3 ALTERNATE TRAVEL MODES

Currently, transit exists along Gateway Blvd within the study area, as well as sidewalk facilities for pedestrians. Bicycle lanes, however, are not present on Gateway Blvd from east of Seacrest Blvd to west of High Ridge Rd. Multi-modal travel will be accommodated in the various Build Alternatives with sidewalks connecting land uses east and west of I-95. Current transit routes will not be impacted by the Build Alternatives within the study area.

2.4 BUILD ALTERNATIVES

The following alternatives were considered for improving traffic operations and safety, and reduce congestion within the influence area of this interchange:

- Conceptual Design Alternative (CDA) developed through the I-95 (SR-9) Interchange at Gateway Boulevard in Palm Beach County, Interchange Concept Development Report – Alternative 1
- Revised Version of the CDA - Alternative 2
- Diverging Diamond Interchange – Alternative 3
- Single-Point Urban Interchange (SPUI) – Alternative 4

All Build Alternatives propose making the same roadway geometry changes at High Ridge Rd and Seacrest Blvd. The proposed additions at High Ridge Rd include a second northbound left-turn lane, a third southbound left-turn lane, an exclusive southbound right-turn lane, a second westbound left-turn lane, and a second eastbound left-turn lane. The improvements proposed at the intersection of Gateway Blvd and Seacrest Blvd include the addition of a second eastbound left-turn, second northbound left-turn, and a southbound right-turn lane.

2.4.1 ALTERNATIVE 1 – CONCEPTUAL DESIGN ALTERNATIVE

The Interchange Development Report at I-95 and Gateway Boulevard included a Build Alternative to improve the operational and safety deficiencies through Year 2040. The Conceptual Design Alternative (CDA) addresses observed peak hour congestion on the I-95 northbound and southbound exit ramps, as well as on eastbound and westbound Gateway Blvd. With the presence of the Boynton Beach Tri-Rail Station in the northwest quadrant of the interchange, turn lane and through capacity improvements were identified along Gateway Blvd within the study area. The results of this analysis demonstrate the benefits of adding a through lane to eastbound and westbound Gateway Blvd, as well as turn lane improvements at the intersection with High Ridge Rd.

Given excessive queues and congestion on the I-95 southbound exit ramp, a second southbound left-turn lane is included in the CDA. Similarly, a third northbound left-turn lane is proposed at the I-95 northbound exit ramp termini intersection. Both improvements are intended to provide additional vehicular storage such that queues do not spillback onto the I-95 mainline as well as enhance overall level of service at the ramp termini intersections.

At Seacrest Blvd immediately east of I-95, intersection left- and right-turn lane improvements are proposed for the eastbound, westbound, and southbound approaches. Coupled with an additional east-west through lane on Gateway Blvd, the improvements will reduce vehicular delay and peak hour queues.

At the intersection of Quantum Village near the western terminus of the study area, a second southbound left-turn lane and a second westbound left-turn lane are proposed.

Figure A-11 depicts a conceptual design of the CDA Build Alternative.

5.3.2 ALTERNATIVE 2 – REVISED VERSION OF THE CDA

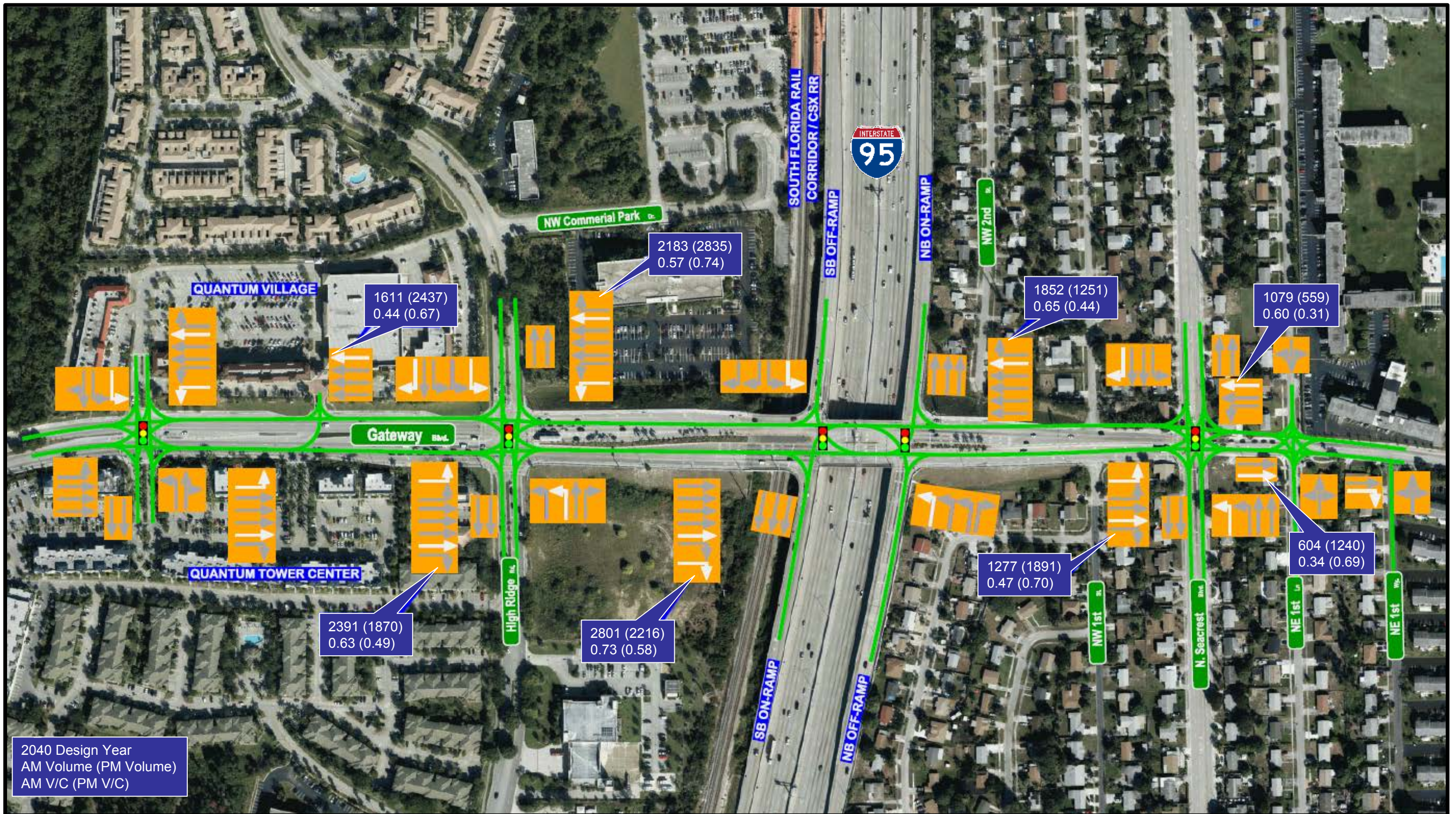
The Revised Version of the CDA incorporates several of the elements of the CDA, most notably on the eastern side of the study area. Improvements proposed under the Revised Version of the CDA alternative include an additional east-west through lane on Gateway Blvd from I-95 to NE 1st Way (the eastern terminus of the study area). I-95 northbound and southbound ramp termini turn lane improvements from Alternative 1 are included, as well as most of the intersection turn lane improvements at High Ridge Rd.

Additionally, a second westbound right-turn lane is proposed at the I-95 northbound on-ramp intersection, and a third lane will be added to the I-95 southbound on-ramp, which transitions to two lanes at an appropriate distance along the southbound on-ramp.

Figure A-12 depicts a conceptual design of the Streamlined CDA Build Alternative.

5.3.3 ALTERNATIVE 3 – DIVERGING DIAMOND INTERCHANGE

Alternative 3 consists of a DDI at the interchange of Gateway Blvd and I-95. The DDI configuration signalizes the eastbound-westbound crossover intersections to enable eastbound-westbound left-turns to operate with fewer conflicts. By “crossing over” traffic to the oncoming side, the left-turn phases associated with typical diamond interchanges are eliminated in favor of free-flowing left-turns. An additional eastbound and westbound through lane on Gateway Blvd is proposed within the study area.



2040 Design Year
 AM Volume (PM Volume)
 AM V/C (PM V/C)

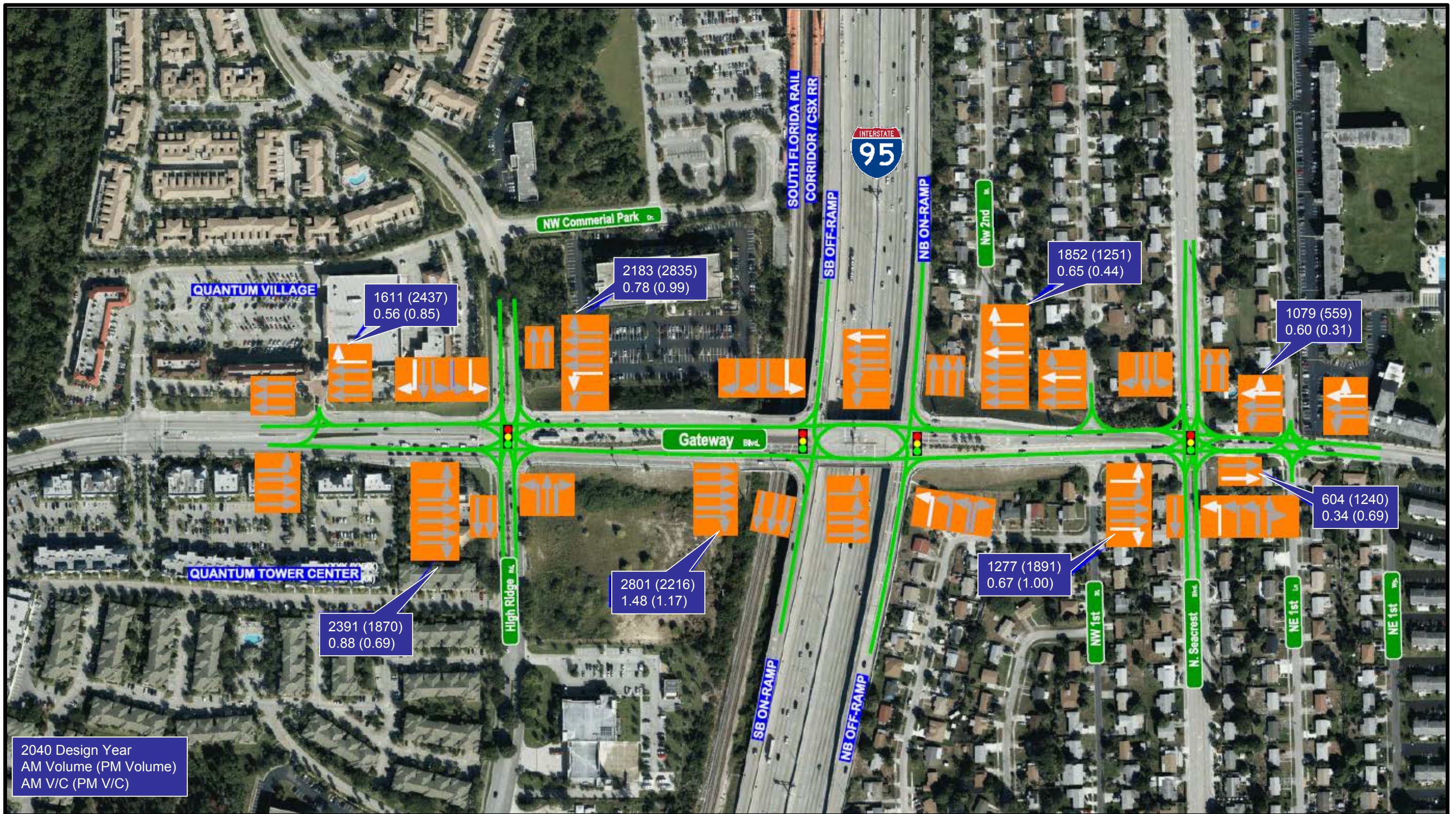


I-95 and Gateway Blvd Interchange

Alternative 1 - Conceptual Design Alternative (CDA)

Figure A-11

Page 23



Additional turn lane improvements are proposed at the I-95 northbound and southbound off-ramp termini intersections. These improvements include a second northbound right-turn lane as well as a second southbound left-turn lane at the respective off-ramp termini intersections. Turn lane improvements at the intersection with High Ridge Rd are also proposed consistent with Alternative 1.

At Seacrest Blvd immediately east of I-95, turn lane improvements are proposed for the southbound, northbound, and eastbound approach. Coupled with an additional east-west through lane on Gateway Blvd, the improvements will reduce vehicular delay and peak hour queues.

At the intersection of Quantum Village near the western terminus of the study area, a second southbound left-turn lane and a second westbound left-turn lane are proposed.

Figure A-13 depicts a conceptual design of the DDI Build Alternative.

5.3.4 ALTERNATIVE 4 – SINGLE POINT URBAN INTERCHANGE

Alternative 4 depicts a SPUI for the interchange of I-95 and Gateway Blvd. A SPUI configuration combines turning movements at the I-95 northbound and southbound exit ramps to operate under a single traffic control device, resulting in a high capacity interchange.

An additional eastbound and westbound through lane on Gateway Blvd is proposed throughout the study area. These additional through lanes are coupled with intersection turn lane improvements at the I-95 ramp termini intersections, including a third northbound left-turn lane and a second southbound left-turn lane. Additionally, a third lane is proposed for the I-95 northbound on-ramp which will gradually narrow to two lanes downstream from the ramp termini. A third and fourth lane is proposed for the I-95 southbound on-ramp to receive the eastbound and westbound volume from Gateway Boulevard. The southbound on-ramp will gradually narrow to three lanes and two lanes downstream from the ramp termini intersection.

Turn lane improvements at the intersection with High Ridge Road are proposed consistent with Alternative 1. At Seacrest Boulevard immediately east of I-95, turn lane improvements are proposed for the southbound, northbound, and eastbound approach. Coupled with an additional east-west through lane on Gateway Boulevard, the improvements will reduce vehicular delay and peak hour queues at both intersections.

As with the previous alternatives, the intersection of Quantum Village near the western terminus of the study area, a second southbound left-turn lane and a second westbound left-turn lane are proposed.

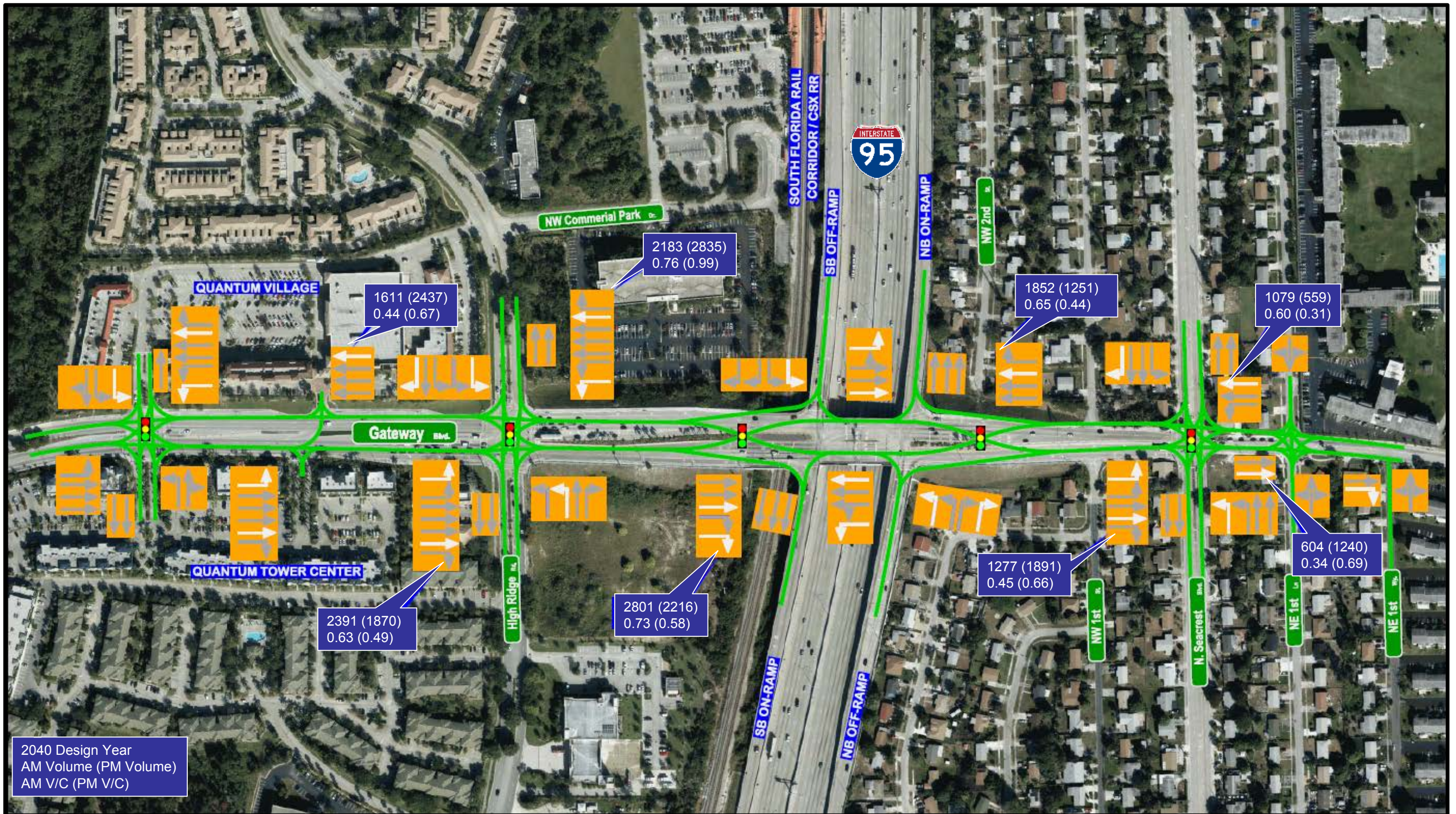
Figure A-14 depicts a conceptual design of the SPUI Build Alternative.

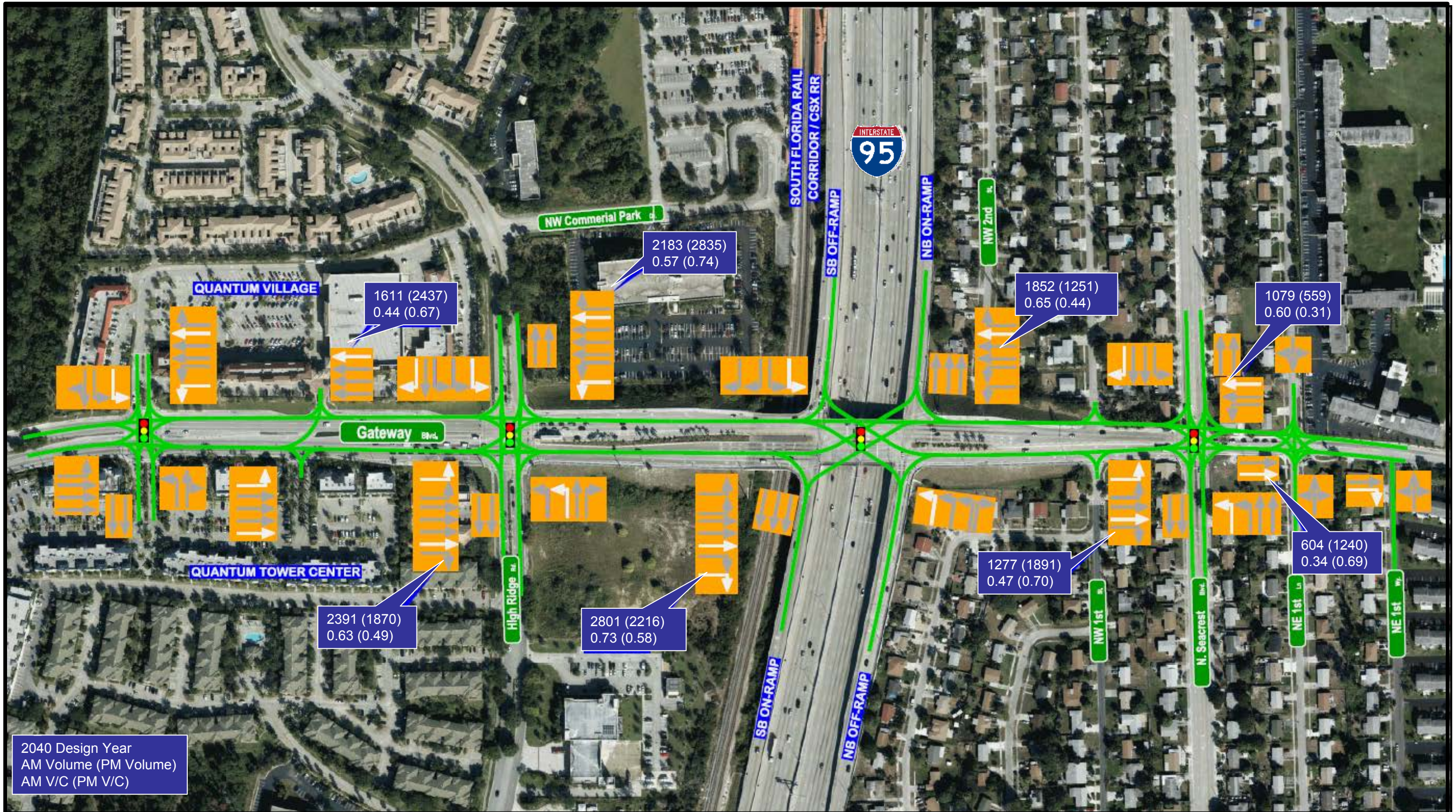
2.5 BUILD ALTERNATIVES: TIER 1 EVALUATION

A summary of the essential characteristics of the proposed Build Alternatives is provided in Table A-5.

A sketch-level planning screening was performed on the No Build and four Build Alternatives for the I-95 interchange at Gateway Blvd interchange. This screening evaluation is intended to determine if the

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alternative concepts satisfy the objectives of the project and are feasible considering operational, engineering, and environmental criteria.

A Tier I evaluation matrix is provided in Table A-6. This table includes a summary of the sketch level planning evaluation that includes a qualitative analysis of alternatives based on various criteria evaluated for this project at a Tier 1 level

Detailed traffic operational analysis using Synchro 9 software was not performed for this interchange. Since this interchange is in close proximity to the I-95 and SR 804/Boynton Beach Blvd interchange and similar travel patterns and driver characteristics were observed near these interchanges, the traffic operations were assumed to be consistent across similar Build Alternatives. The percentage reductions in delays observed between the No-Build and the various Build Alternatives at SR 804/Boynton Beach Blvd were applied to the No-Build Alternative AM and PM peak hour delays at Gateway Blvd. Table A-7 provides a summary of the estimated delay savings anticipated at the I-95 and Gateway Blvd interchange with these Build Alternatives.

Table A-5 Build Alternative Description Summary

Alternative No.	Description
1	Conceptual Design Alternative (CDA) I-95 northbound off-ramp – add 3rd NB left-turn lane I-95 northbound on-ramp – add 3rd lane to NB on-ramp I-95 southbound off-ramp – add 2nd SB left-turn lane I-95 southbound on-ramp – add 3rd lane to SB on-ramp, add 2nd EB right-turn lane Gateway Boulevard eastbound – add EB through lane from east of Quantum Village to NE 1st Way Gateway Boulevard westbound – add WB through lane from NE 1st Way to Quantum Village Quantum Town Center intersection – add 2nd WB left-turn lane, add 2nd SB left-turn lane
2	Revised Version of the CDA Gateway Boulevard eastbound – add EB through lane from Seacrest Boulevard to NE 1st Way Gateway Boulevard westbound – add WB through lane from NE 1st Way to I-95 SB off-ramp I-95 northbound off-ramp – add 3rd NB left-turn lane, add 2nd WB right-turn lane I-95 northbound on-ramp – add 2nd WB right-turn lane I-95 southbound off-ramp – add 2nd SB left-turn lane I-95 southbound on-ramp – add 3rd lane to SB on-ramp
3	Diverging Diamond Interchange (DDI) – Gateway Boulevard eastbound – add EB through lane from Quantum Village to NE 1st Way Gateway Boulevard westbound – add WB through lane from NE 1st Way to Quantum Village I-95 northbound off-ramp – add 2nd NB right-turn lane I-95 northbound on-ramp – add 3rd lane to NB on-ramp I-95 southbound off-ramp – add 2nd SB left-turn lane I-95 southbound on-ramp – add 3rd and 4th lanes to SB on-ramp, add 2nd EB right-turn lane Quantum Town Center intersection – add 2nd WB left-turn lane, add 2nd SB left-turn lane
4	Single-Point Urban Interchange (SPUI) – Gateway Boulevard eastbound – additional through lane from Quantum Village to NE 1st Way Gateway Boulevard westbound – add WB through lane from NE 1st Way to Quantum Village I-95 northbound off-ramp – add 3rd NB left-turn lane I-95 northbound on-ramp – add 3rd lane to NB on-ramp I-95 southbound off-ramp – add 2nd SB left-turn lane I-95 southbound on-ramp – add 3rd SB lane to SB on-ramp, add 2nd EB right-turn lane Quantum Town Center intersection – add 2nd WB left-turn lane, add 2nd SB left-turn lane

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Table A-6. Tier 1 Evaluation Matrix for Gateway Blvd

LEGEND	No-Build	BUILD ALTERNATIVES SCREENED			
		Alt 1 CDA	Alt 2 Streamlined CDA	Alt 3 DDI	Alt 4 SPUI
		High Impact			
Medium Impact					
Low Impact					
CRITERIA					
Improves Traffic Operations	High	Low	Low	Low	Low
Improves Safety Conditions	High	Low	Low	Low	Low
Constructability	Low	Medium	Medium	Medium	High
Right of Way Impacts	Low	High	High	High	High
Environmental Impacts	Low	Medium	Medium	Medium	Medium
Socio-economic Impacts	High	Medium	Medium	Medium	Medium
General Public Perception	High	Medium	Medium	Medium	Medium
Cost	Low	Medium	Medium	High	High

Table A-7. Traffic Operational Analysis Summary for Gateway Blvd

	No-Build	BUILD ALTERNATIVES			
		Alt 1 CDA	Alt 2 Streamlined CDA	Alt 3 DDI	Alt 4 SPUI
Total Intersection Delay (AM Peak + PM Peak) (s)⁽¹⁾	1561.00	816.43	427.01	223.33	116.81
Percent Reduction of Delay from No-Build	-	52%	55%	59%	61%

(1) Estimated delay based on percent reduction of delay from Boynton Beach Blvd Build Alternatives applied to Gateway Blvd No-Build delay

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Appendix F

Efficient Transportation Decision Making
Summary Reports

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Florida Department of Transportation

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JIM BOXOLD
SECRETARY

ETDM Summary Report

Project #14180 - SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange

Programming Screen - Published on 05/27/2015

Printed on: 7/01/2015

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Introduction to Programming Screen Summary Report

The Programming Screen Summary Report shown below is a read-only version of information contained in the Programming Screen Summary Report generated by the ETDM Coordinator for the selected project after completion of the ETAT Programming Screen review. The purpose of the Programming Screen Summary Report is to summarize the results of the ETAT Programming Screen review of the project; provide details concerning agency comments about potential effects to natural, cultural, and community resources; and provide additional documentation of activities related to the Programming Phase for the project. Available information for a Programming Screen Summary Report includes:

- Screening Summary Report chart
- Project Description information (including a summary description of the project, a summary of public comments on the project, and community-desired features identified during public involvement activities)
- Purpose and Need information (including the Purpose and Need Statement and the results of agency reviews of the project Purpose and Need)
- Alternative-specific information, consisting of descriptions of each alternative and associated road segments; an overview of ETAT Programming Screen reviews for each alternative; and agency comments concerning potential effects and degree of effect, by issue, to natural, cultural, and community resources.
- Project Scope information, consisting of general project commitments resulting from the ETAT Programming Screen review, permits, and technical studies required (if any)
- Class of Action determined for the project
- Dispute Resolution Activity Log (if any)

The legend for the Degree of Effect chart is provided in an appendix to the report.

For complete documentation of the project record, also see the GIS Analysis Results Report published on the same date as the Programming Screen Summary Report.



#14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange

District: District 4

Phase: Programming Screen

County: Palm Beach

From:

Planning Organization: FDOT District 4

To:

Plan ID: Not Available

Financial Management No.: 43580412201

Federal Involvement: Maintain Federal Eligibility Federal Action

Contact Information: Gaspar Jorge Padron (850) 777-4320 gaspar.padron@dot.state.fl.us

Snapshot Data From: Summary Report Re-Published 5/27/2015

Issues and Categories are reflective of what was in place at the time of the screening event.

	Social and Economic						Cultural			Natural				Physical							
	Land Use Changes	Social	Relocation Potential	Farmlands	Aesthetic Effects	Economic	Mobility	Section 4(f) Potential	Historic and Archaeological Sites	Recreation Areas	Wetlands	Water Quality and Quantity	Floodplains	Wildlife and Habitat	Coastal and Marine	Noise	Air Quality	Contamination	Infrastructure	Navigation	Special Designations
Alternative #1 From: To: <i>Re-Published: 05/27/2015 Reviewed from 07/10/2014 to 08/24/2014</i>	2	3	2	0	2	2	1	3	3	3	2	2	0	2	0	2	2	3	2	0	0

Purpose and Need

Purpose and Need

The purpose of the project is to enhance overall traffic operations at the existing interchange of SR-9/I-95 and SR-804/Boynton Beach Boulevard by providing improvements to achieve acceptable Levels of Service (LOS) at the interchange in the future condition (2040 Design Year). Conditions along Boynton Beach Boulevard are anticipated to deteriorate below acceptable LOS standards if no improvements occur by 2040; the interchange will have insufficient capacity to accommodate the projected travel demand. The need for the project is based on the following primary and secondary criteria:

PRIMARY CRITERIA

CAPACITY/TRANSPORTATION DEMAND: Improve Operational Capacity and Overall Traffic Operations (Level of Service)

The project is anticipated to improve traffic operations at the SR-9/I-95 and SR-804/Boynton Beach Boulevard interchange and study area roadways/intersections by implementing operational and capacity improvements to meet the future travel demand projected as a result of Palm Beach County population and employment growth.

Based upon the traffic operations analysis conducted for the SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange and adjacent signalized intersections [as documented in the *I-95 (SR-9) Interchange at Boynton Beach Boulevard (SR-804) in Palm Beach County Interchange Concept Development Report*], the existing and future AM and PM peak hour traffic conditions for the four study intersections along SR-804/Boynton Beach Boulevard are as follows:

-Existing AM Peak Hour Conditions [2012/2013]-

Boynton Beach Boulevard Intersection / Overall Intersection LOS (Delay in seconds per vehicle)

Industrial Avenue / B (12.5)

SR-9/I-95 Southbound Ramps / E (68.4)

SR-9/I-95 Northbound Ramps / C (31.9)

Seacrest Boulevard / D (45.0)

-Existing PM Peak Hour Conditions [2012/2013]-

Boynton Beach Boulevard Intersection / Overall Intersection LOS (Delay in seconds per vehicle)

Industrial Avenue / C (24.9)

SR-9/I-95 Southbound Ramps / B (19.5)

SR-9/I-95 Northbound Ramps / D (44.4)

Seacrest Boulevard / D (35.6)

-Future AM Peak Hour Conditions [2040 Design Year No-Build]-

Boynton Beach Boulevard Intersection / Overall Intersection LOS (Delay in seconds per vehicle)

Industrial Avenue / C (26.7)

SR-9/I-95 Southbound Ramps / F (138.2)

SR-9/I-95 Northbound Ramps / F (130.0)

Seacrest Boulevard / F (158.7)

-Future PM Peak Hour Conditions [2040 Design Year No-Build]-

Boynton Beach Boulevard Intersection / Overall Intersection LOS (Delay in seconds per vehicle)

Industrial Avenue / E (58.4)

SR-9/I-95 Southbound Ramps / D (43.1)

SR-9/I-95 Northbound Ramps / F (144.5)

Seacrest Boulevard / F (178.6)

Although the intersections operate at LOS E or better under the existing conditions scenarios, it should be noted that many of the individual through and turning movements at the intersections (which include approaches to SR-9/I-95) operate at LOS F during both the AM and PM peak periods. Without the proposed improvements, the intersections will continue to experience excessive delays and queuing and operate below acceptable LOS standards.

GROWTH MANAGEMENT: Accommodate Future Redevelopment and Growth

The area surrounding the SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange is urbanized containing a mixture of commercial, industrial, and residential land uses. According to the City of Boynton Beach Future Land Use Map, the SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange falls within the designated Community Redevelopment Area. The residential neighborhoods and business districts of this area are intended to be redeveloped by implementing compact, more intensive urban growth patterns that provide opportunities for more efficient use and development of infrastructure, land, and other resources and services.

While population within the vicinity of the interchange is anticipated to grow by approximately 10% from 2005 to 2035, employment is anticipated to grow by approximately 147% from 2005 to 2035 based on data derived from the enhanced Southeast Regional Planning Model (SERPM) version 6.5 Managed Lanes Model (upgraded to include specific subarea improvements for the I-95 Interchange Master Plan). Population growth is expected to occur primarily in the areas northeast and southwest of the interchange. Employment is predominantly anticipated to grow in the areas northeast, east, and southwest of the interchange.

As such, the interchange improvements will be critical in supporting redevelopment efforts in the vicinity of the interchange and the overall vision of the City of Boynton Beach.

SECONDARY CRITERIA

SAFETY: Improve Safety Conditions

The *I-95 (SR-9) Interchange at Boynton Beach Boulevard (SR-804) in Palm Beach County Interchange Concept Development Report* included a safety analysis of the project area. The following provides a summary of the crash data and analysis results for the three-year period from 2010 through 2012:

Year / Number of Crashes

2010 / 66

2011 / 64

2012 / 84

Total Crashes: 214

Predominant Crash Type:Rear-end (145 / 69% of total)

High crash locations along SR-804/Boynton Beach Boulevard are reported through FDOT's high crash location reports (for the period 2009 through 2011) indicating that each location has a higher crash rate as compared to crash rates for similar statewide roadways. The high crash locations along SR-804/Boynton Beach Boulevard include:

- SR-9/I-95 Northbound On-Ramp (2009 - 2011)
- SR-9/I-95 Northbound Off-Ramp (2010)
- SR-9/I-95 Southbound Off-Ramp (2010)

The interchange improvements are anticipated to provide free-flow movements and additional storage lengths which, in turn, will reduce conflict points and the potential occurrence of rear-end collisions.

EMERGENCY EVACUATION: Enhance Emergency Evacuation and Response Times

SR-9/I-95 and SR-804/Boynton Beach Boulevard serve as part of the emergency evacuation route network designated by the Florida Division of Emergency Management. Also designated by Palm Beach County as evacuation facilities, SR-9/I-95 and SR-804/Boynton Beach Boulevard are critical in facilitating traffic flows during emergency evacuation periods as they connect other major arterials and highways of the state evacuation route network. Specifically, SR-804/Boynton Beach Boulevard is a major east-west corridor in eastern Palm Beach County providing linkage between SR-9/I-95 and Florida's Turnpike. The project is anticipated to:

- Improve emergency evacuation capabilities by enhancing connectivity and accessibility to SR-9/I-95 and other major arterials designated on the state evacuation route network from the west and east, and
- Increase the operational capacity of traffic that can be evacuated during an emergency event.

Purpose and Need Reviews

FDOT District 4

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/21/2014	Gaspar Jorge Padron (gaspar.padron@dot.state.fl.us)	No Purpose and Need comments found.

FL Department of Agriculture and Consumer Services

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/14/2014	Steve Bohl (Steve.Bohl@freshfromflorida.com)	No Purpose and Need comments found.

FL Department of Economic Opportunity

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/11/2014	Matt Preston (matt.preston@deo.myflorida.com)	No Purpose and Need comments found.

FL Department of Environmental Protection

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/22/2014	Lauren Milligan (lauren.milligan@dep.state.fl.us)	No Purpose and Need comments found.

FL Department of State

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/07/2014	Ginny Jones (ginny.jones@dos.myflorida.com)	No Purpose and Need comments found.

FL Fish and Wildlife Conservation Commission

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/05/2014	Scott Sanders (scott.sanders@myfwc.com)	No Purpose and Need comments found.

Federal Highway Administration

Acknowledgement	Date Reviewed	Reviewer	Comments
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10/23/2014

Luis Lopez, P.E.
(luis.d.lopez@dot.gov)

It is stated that the PD&E for the project is programmed in the Palm Beach MPO's Transportation Improvement Program (2015-2020) but not in the current LRTP. All projects within an MPO boundary that are included in the MPO's TIP must come from the MPO's Cost Feasible LRTP.

When will the PD&E work begin on the project? The MPO is in the process of adopting their 2040 LRP Update. This project should be included in that updated Plan and as noted in the narrative, in the upcoming STIP.

Reference is made in several sections (Consistency with Transportation Plans and Objectives and the Planning Consistency Status sections) that the project will be included in the 2035 LRTP. Will it be the 2035 LRTP or the 2040 LRTP?

Since this project is in the programming screen vs the planning screen why are there not any public comments available in this ETAT Tool? This project, according to the narrative, is included in the MPO TIP for 2015.

The TIP required public involvement and MPO discussion. Please include any feedback and input from these processes regarding this project. How does the public view this project? Has there been any controversy or negative public input on the need for this project or for the project impacts?

Please include the estimated cost for the entire project. The narrative states that \$2 million is programmed for the PD&E study in the FDOT Work Program and the MPO's TIP. Will federal funding be sought for any phases in this project? Please clearly identify what the project costs and phases are anticipated to be for the entire project as well as any programmed funds and project phasing in such a manner that is very clear to the public. This disclosure of information is an important element the public uses during their consideration of the project.

Under the growth management section of the project description provided projected growth percentages for population and employment. But the years cited are 2005-2035. Please provide more updated information and data.

Socio Cultural Impacts:

What outreach efforts are planned or have been made to the minority and low income populations along this project? The 100-through 1320 foot buffer identifies substantial minority populations (greater than 40%) and other populations that are considered traditionally underserved (such as aging) that will require specific outreach strategies. Information also shows that there is a population within this buffer with Limited English Proficiency (LEP) accommodations will be required during the Project.

Mobility/Freight

Business and commercial - what mitigation coordination has taken place with the commercial businesses within the project area of impact for either continued access to their businesses or any taking/relocation of property for the project? What operational improvements are being considered as part of or independent of this project to assist with access to/from the existing businesses?

Truck traffic - is this a corridor used for freight? Please include truck and commercial vehicle traffic and data. What is the anticipated growth of the freight volume over the next 20 years especially considering the developments and economic centers planned along this corridor? Have any outreach efforts been made to the freight providers for their input for operational improvements?

Transit:

The narrative does not identify if there are any operating transit routes or stops within the study area, but the ETAT tool clearly identifies transit routes existing. Coordination with the transit providers will be required throughout the project to minimize impacts service. Are there any transit stops that will be directly impacted by this project?

Bicycle/Pedestrian Facilities:

The narrative states that there currently are no designated bicycle lanes in the project study area. It was not clear if bicycle facilities will be included in the project. Are the sidewalks currently used to access the businesses and residences within the project study area? If so, how will this access be maintained?

National Marine Fisheries Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/12/2014	Brandon Howard (Brandon.Howard@noaa.gov)	None

National Park Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	07/28/2014	Anita Barnett (anita_barnett@nps.gov)	No Purpose and Need comments found.

Natural Resources Conservation Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	07/14/2014	Rick Robbins (rick.a.robbins@fl.usda.gov)	No Purpose and Need comments found.

South Florida Water Management District

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/18/2014	Mindy Parrott (mparrott@sfwmd.gov)	No Purpose and Need comments found.

US Army Corps of Engineers

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/18/2014	Garett Lips (Garett.G.Lips@usace.army.mil)	No Purpose and Need comments found.

US Coast Guard

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	07/17/2014	Randall Overton (randall.d.overton@uscg.mil)	No Coast Guard involvement

US Environmental Protection Agency

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/24/2014	Maher Budeir (budeir.maher@epa.gov)	No Purpose and Need comments found.

US Fish and Wildlife Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	07/11/2014	John Wrublik (john_wrublik@fws.gov)	No Purpose and Need comments found.

Project Description Data

Project Description

This interchange improvement is one of seventeen being studied as part of the *I-95 Interchange Master Plan*. This plan will reexamine 1) the 2003 *I-95 Interchange Master Plan Study* and 2) the SR-9/I-95 mainline project, which added a High Occupancy Vehicle (HOV) lane and auxiliary lanes from south of Linton Boulevard to north of PGA Boulevard in Palm Beach County and included minor improvements to eight interchanges. Overall, the *I-95 Interchange Master Plan* will recommend new short-term and long-term improvements to interchanges based on changes in traffic volumes and updated design standards.

The SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange is located on I-95 between the Gateway Boulevard interchange (1.5 miles to the north) and the Woolbright Road interchange (1.0 mile to the south) within the City of Boynton Beach in eastern Palm Beach County. This interchange project proposes to enhance operational capacity, reduce congestion, and increase safety. Based upon the traffic operations analysis conducted for the SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange and adjacent signalized intersections [as documented in the *I-95 (SR-9) Interchange at Boynton Beach Boulevard (SR-804) in Palm Beach County Interchange Concept Development Report* attached in the EST], the following preliminary short-term and long-term improvements have been identified for this interchange:

2020 Opening Year (Short-Term) Recommended Improvements

- Add a second (dual) eastbound left-turn lane on SR-804/Boynton Beach Boulevard to the SR-9/I-95 northbound on-ramp and extend the auxiliary lane through the SR-9/I-95 southbound ramp intersection.
- Convert yield-controlled westbound right-turn movement to free-flow by adding two additional (triple) receiving lanes on the SR-9/I-95 northbound on-ramp.

2040 Design Year (Long-Term) Recommended Improvements

- Add a second (dual) westbound left-turn lane on SR-804/Boynton Beach Boulevard to the SR-9/I-95 southbound on-ramp and extend the auxiliary lane through the SR-9/I-95 northbound ramp intersection.
- Add a second (dual) eastbound left-turn lane on SR-804/Boynton Beach Boulevard to the SR-9/I-95 northbound on-ramp and extend the auxiliary lane through the SR-9/I-95 southbound ramp intersection.
- Add a westbound through lane between NW 4th Street and Old Boynton Road.
- Add two additional (triple) right-turn lanes to the SR-9/I-95 southbound off-ramp.
- Convert yield-controlled eastbound right-turn movement to free-flow by adding a second (dual) receiving lane on the SR-9/I-95 southbound on-ramp.
- Convert yield-controlled westbound right-turn movement to free-flow by adding two additional (triple) receiving lanes on the SR-9/I-95 northbound on-ramp.
- Add a third left-turn lane on SR-9/I-95 northbound off-ramp.
- Extend right-turn lane on SR-9/I-95 northbound off-ramp.
- Add a dedicated eastbound right-turn lane at the Seacrest Boulevard intersection.

SR-9/I-95 is currently a ten-lane divided interstate freeway from north of the Congress Avenue interchange (southern limit) to north of the PGA Boulevard interchange (northern limit) providing four general purpose lanes and one High Occupancy Vehicle (HOV) lane in each direction. Auxiliary lanes are also provided in both the northbound and southbound directions between Gateway Boulevard to the north and Woolbright Road to the south. One auxiliary lane is provided in each direction between SR-804/Boynton Beach Boulevard and Gateway Boulevard resulting in a twelve-lane section. Additionally, between SR-804/Boynton Beach Boulevard and Woolbright Road, two auxiliary lanes are provided in the southbound direction and one auxiliary lane is provided in the northbound direction resulting in a thirteen-lane section. The existing right-of-way varies as it approaches the interchange, but the typical right-of-way ranges from approximately 355 to 550 feet. As part of the Strategic Intermodal System (SIS) and one of two major expressways (Florida's Turnpike being the other) that connect the major employment centers and residential areas of Miami-Dade, Broward and Palm Beach Counties, SR-9/I-95 serves an important role in facilitating the north-south movement of traffic in Southeast Florida.

Under the jurisdiction of Palm Beach County, SR-804/Boynton Beach Boulevard is a six-lane divided urban principal arterial west of I-95 and a four-lane divided urban minor arterial east of SR-9/I-95. This east-west facility currently passes over the South Florida Rail Corridor (SFRC)/CSX Railroad (Bridge #930289) and over SR-9/I-95 (Bridge #930285). SR-804/Boynton Beach Boulevard at the SR-9/I-95 overpass has a dedicated left-turn lane in each direction to access the

SR-9/I-95 on-ramps. The existing right-of-way varies from approximately 170 to 195 feet west of SR-9/I-95 and 80 to 200 feet east of SR-9/I-95.

The interchange at SR-9/I-95 and SR-804/Boynton Beach Boulevard is a typical diamond configuration. Adjacent accessible signalized intersections relative to this interchange are located at Industrial Avenue (west) and Seacrest Boulevard (east). The ultimate interchange improvements (2040 Design Year Recommended Improvements) are likely to require minimal additional right-of-way; however, the specific right-of-way requirements are not known at this time and will be determined through further analysis. Based on the Florida Department of Transportation's preliminary Long Range Estimate (LRE), the construction cost estimate for the improvements is \$33,535,148. Detailed cost estimates and right-of-way requirements will be derived as part of the Project Development and Environment (PD&E) Study.

CONSISTENCY WITH TRANSPORTATION PLAN GOALS AND OBJECTIVES

Funding in the amount of \$1,005,000 is programmed for the PD&E Study under Fiscal Year 2015 in both the FY 2014 - 2019 FDOT Work Program (FM #435804-1) and the FY 2015 - 2019 Transportation Improvement Program (TIP) of the Palm Beach Metropolitan Planning Organization (MPO). The Strategic Intermodal System Cost Feasible Plan 2024 - 2040 additionally identifies this project. While the interchange improvements at SR-9/I-95 and SR-804/Boynton Beach Boulevard Interchange are not included in the Cost-Feasible component of the Palm Beach MPO 2035 Long Range Transportation Plan (LRTP), two highway projects in the vicinity of the interchange are provided in the LRTP Needs component: 1) implementation of Managed Lanes on I-95 from the Palm Beach County/Broward County Line to Indiantown Road and 2) the proposed four-lane to six-lane widening of SR-804/Boynton Beach Boulevard from the SR-9/I-95 northbound ramps to Seacrest Boulevard. The project is also not included in the current State Transportation Improvement Program (STIP). Coordination will occur with the Palm Beach MPO during the PD&E Study to identify and include funding for the project in the Palm Beach MPO 2035 LRTP Cost-Feasible component and the FDOT STIP prior to requesting Federal Highway Administration (FHWA) Location and Design Concept Acceptance.

Summary of Public Comments

Summary of Public Comments is not available at this time.

Justification

An extensive Public Involvement Plan (PIP) will be prepared and conducted during the PD&E phase of this project. The PIP will (1) outline how project team members will engage the community and other stakeholders in consensus-building/context sensitive solutions for any alternative under consideration, including the No-Build Alternative, and (2) incorporate environmental and community values into the development of the preferred alternative.

Planning Consistency Status

Planning Consistency Status

Are the limits consistent with the plans?

Yes

No

Currently Adopted CFP-LRTP?

Coordination will occur with the Palm Beach MPO during the PD&E Study to identify and include funding for the project in the Palm Beach MPO 2035 LRTP Cost-Feasible component and the FDOT STIP prior to requesting Federal Highway Administration (FHWA) Location and Design Concept Acceptance.

Attachments

TIP Pages - <https://etdmpub.flas-etat.org/est/servlet/blobViewer?blobID=17555>

Federal Consistency Determination

Date: 08/22/2014

Determination: CONSISTENT with Coastal Zone Management Program.

Lead Agency

Federal Highway Administration

Participating and Cooperating Agencies

No Cooperating Agencies have been identified.

No Participating Agencies have been identified.

Exempted Agencies

Agency Name	Justification	Date
Federal Transit Administration	FTA has requested to be exempt from reviewing any non-transit projects.	06/26/2014

Community Desired Features

No desired features have been entered into the database. This does not necessarily imply that none have been identified.

User Defined Communities Within 500 Feet

- Boynton Beach
- Boynton Beach CRA
- Boynton South
- Leisureville North Area

Census Places Within 500 Feet

- Boynton Beach

Alternative #1

Alternative Description

Name	From	To	Type	Status	Total Length	Cost	Modes	SIS
Alternative was not named.			Traffic Operation Enhancement	ETAT Review Complete	? mi.	\$33,535,148.00	Roadway	Y

Project Effects Overview for Alternative #1

Issue	Degree of Effect	Organization	Date Reviewed
Social and Economic			
Land Use Changes	0 None	FL Department of Economic Opportunity	08/11/2014
Land Use Changes	2 Minimal	Federal Highway Administration	10/23/2014
Land Use Changes	2 Minimal	FDOT District 4	08/21/2014
Social	3 Moderate	US Environmental Protection Agency	08/24/2014
Social	2 Minimal	FDOT District 4	08/21/2014
Social	2 Minimal	Federal Highway Administration	10/24/2014
Relocation Potential	2 Minimal	Federal Highway Administration	10/24/2014
Relocation Potential	2 Minimal	FDOT District 4	08/21/2014
Farmlands	0 None	Federal Highway Administration	10/23/2014
Farmlands	0 None	Natural Resources Conservation Service	07/14/2014
Aesthetic Effects	2 Minimal	FDOT District 4	08/21/2014
Aesthetic Effects	2 Minimal	Federal Highway Administration	10/23/2014
Economic	0 None	FL Department of Economic Opportunity	08/11/2014
Economic	2 Minimal	Federal Highway Administration	10/23/2014
Economic	2 Minimal	FDOT District 4	08/21/2014
Mobility	1 Enhanced	Federal Highway Administration	10/23/2014
Mobility	1 Enhanced	FDOT District 4	08/21/2014
Cultural			
Section 4(f) Potential	3 Moderate	Federal Highway Administration	10/24/2014
Section 4(f) Potential	N/A N/A / No Involvement	FL Department of Agriculture and Consumer Services	08/14/2014
Historic and Archaeological Sites	3 Moderate	Federal Highway Administration	10/23/2014
Historic and Archaeological Sites	3 Moderate	FL Department of State	08/07/2014
Recreation Areas	0 None	US Environmental Protection Agency	08/24/2014
Recreation Areas	3 Moderate	Federal Highway Administration	10/24/2014
Recreation Areas	0 None	FL Department of Environmental Protection	08/22/2014

Recreation Areas	0	None	South Florida Water Management District	08/18/2014
Recreation Areas	N/A	N/A / No Involvement	National Park Service	08/01/2014
Natural				
Wetlands	2	Minimal	National Marine Fisheries Service	08/12/2014
Wetlands	0	None	South Florida Water Management District	08/18/2014
Wetlands	0	None	Federal Highway Administration	10/24/2014
Wetlands	2	Minimal	US Fish and Wildlife Service	07/11/2014
Wetlands	0	None	FL Department of Environmental Protection	08/22/2014
Wetlands	0	None	US Environmental Protection Agency	08/24/2014
Wetlands	0	None	US Army Corps of Engineers	08/18/2014
Water Quality and Quantity	0	None	FL Department of Environmental Protection	08/22/2014
Water Quality and Quantity	2	Minimal	Federal Highway Administration	10/24/2014
Water Quality and Quantity	2	Minimal	South Florida Water Management District	08/18/2014
Water Quality and Quantity	0	None	US Environmental Protection Agency	08/24/2014
Floodplains	0	None	Federal Highway Administration	10/23/2014
Floodplains	0	None	South Florida Water Management District	08/18/2014
Floodplains	0	None	US Environmental Protection Agency	08/24/2014
Wildlife and Habitat	0	None	Federal Highway Administration	10/24/2014
Wildlife and Habitat	2	Minimal	FL Fish and Wildlife Conservation Commission	08/05/2014
Wildlife and Habitat	2	Minimal	US Fish and Wildlife Service	07/11/2014
Coastal and Marine	0	None	South Florida Water Management District	08/18/2014
Coastal and Marine	0	None	Federal Highway Administration	10/23/2014
Coastal and Marine	0	None	National Marine Fisheries Service	08/12/2014
Physical				
Noise	2	Minimal	Federal Highway Administration	10/23/2014
Air Quality	2	Minimal	Federal Highway Administration	10/23/2014
Air Quality	0	None	US Environmental Protection Agency	08/24/2014
Contamination	3	Moderate	US Environmental Protection Agency	08/24/2014
Contamination	3	Moderate	Federal Highway Administration	10/23/2014
Contamination	0	None	South Florida Water Management District	08/18/2014
Contamination	3	Moderate	FL Department of Environmental Protection	08/22/2014
Infrastructure	2	Minimal	Federal Highway Administration	10/23/2014

Navigation	0	None	US Army Corps of Engineers	08/18/2014
Navigation	N/A	N/A / No Involvement	US Coast Guard	07/17/2014
Navigation	0	None	Federal Highway Administration	10/23/2014
Special Designations				
Special Designations	0	None	US Environmental Protection Agency	08/24/2014
Special Designations	0	None	South Florida Water Management District	08/18/2014
Special Designations	0	None	Federal Highway Administration	10/24/2014

ETAT Reviews and Coordinator Summary: Social and Economic

Land Use Changes

Project Effects

Coordinator Summary Degree of Effect: 2 Minimal assigned 11/20/2014 by FDOT District 4

Comments:

FDEO reported that the project is compatible with the development goals of the City of Boynton Beach. FDEO noted that the project is not located in an Area of Critical State Concern or within the Coastal High Hazard Area and does not encroach on a military base; however, since the project is located near public parks, impacts to Section 4(f) resources should be analyzed. The project is included in the FY 2014 - 2019 FDOT Work Program, the Strategic Intermodal System Cost Feasible Plan 2024 - 2040, and the Palm Beach Metropolitan Planning Organization (MPO) FY 2015 - 2019 Transportation Improvement Program (TIP); it is not identified in the Palm Beach MPO Cost Feasible 2035 Long Range Transportation Plan (LRTP) or the State Transportation Improvement Program (STIP). Since the project is intended to enhance access to the City's established Community Redevelopment Area and accommodate future mobility needs of the growing residential and commercial/office activities within the area (through enhanced traffic operations), a Summary DOE of Minimal has been assigned to the Land Use Changes issue.

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach MPO and the City of Boynton Beach to obtain feedback from residents and businesses that may be impacted by the interchange improvement. FDOT District Four will also assess potential Section 4(f) impacts, as well as coordinate with the City of Boynton Beach and the Palm Beach MPO to ensure that 1) the project is included on the Future Transportation Map of the adopted City of Boynton Beach Comprehensive Plan and is consistent with the adopted Palm Beach MPO LRTP and 2) funding is identified for all future project phases in the TIP, LRTP, STIP, and FDOT SIS Cost Feasible Plan.

Degree of Effect: 0 None assigned 08/11/2014 by Matt Preston, FL Department of Economic Opportunity

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

City of Boynton Beach Comprehensive Plan, adopted in June, 2014.

Comments on Effects to Resources:

The proposed improvements are compatible with the *City of Boynton Beach Comprehensive Plan*, and the development goals of the City. Objective 2.10 and related policies ensure coordination with the Palm Beach MPO and the FDOT Work Plan.

The City's Comprehensive Plan does not include a *Future Transportation Map*. It is recommended that the City adopt a Future Transportation Map consistent with Section 163.3177(b)1, F.S.

The Future Land Use Map (FLUM) of the Comprehensive Plan shows several future land uses surrounding the project, including: Public & Private Governmental/Institutional, Recreation, Low Density Residential, Medium Density Residential, High Density Residential, Local Retail Commercial, Office Commercial, and Industrial.

The project is located within a quarter mile of Laurel Hills Park, a City of Boynton Beach Neighborhood Park. According to the City, the park is a small, basic neighborhood park consisting of open play space, a playground, and basketball courts. FDOT should analyze impacts to these 4(f) resources.

The project is not located in an Area of Critical State Concern, does not encroach on a military base, and is not located within the Coastal High Hazard Area.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Land use zones have been identified in the area.

Comments on Effects to Resources:

Acquiring new R/W doesn't anticipates any land changes.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 08/21/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

City of Boynton Beach Future Land Use Map

Palm Beach County Future Land Use Map

100-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH

- BOYNTON BEACH CRA

- BOYNTON SOUTH

- LEISUREVILLE NORTH AREA

2008 SFWMD FL Land Use and Land Cover / Acres / Percent

- 1210 FIXED SINGLE FAMILY UNITS / 9.8 / 15.59%

- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 0.1 / 0.22%

- 1400 COMMERCIAL AND SERVICES / 17.0 / 26.90%

- 1411 SHOPPING CENTERS / 3.5 / 5.57%

- 1710 EDUCATIONAL FACILITIES / 4.9 / 7.77%

- 8120 RAILROADS AND RAILYARDS / 3.3 / 5.21%

- 8140 ROADS AND HIGHWAYS / 24.4 / 38.75%

500-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH

- BOYNTON BEACH CRA

- BOYNTON SOUTH

- LEISUREVILLE NORTH AREA

Geocoded Parks (1)

- GALAXY PARK

2008 SFWMD FL Land Use and Land Cover / Acres / Percent

- 1210 FIXED SINGLE FAMILY UNITS / 81.8 / 40.62%

- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 3.9 / 1.94%

- 1400 COMMERCIAL AND SERVICES / 48.7 / 24.18%

- 1411 SHOPPING CENTERS / 8.0 / 3.99%

- 1710 EDUCATIONAL FACILITIES / 17.1 / 8.49%

- 4340 UPLAND MIXED CONIFEROUS - HARDWOOD / 3.2 / 1.61%
- 5300 RESERVOIRS / 0.1 / 0.05%
- 8120 RAILROADS AND RAILYARDS / 6.7 / 3.32%
- 8140 ROADS AND HIGHWAYS / 31.8 / 15.81%

1,320-Foot (Quarter-Mile) Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH
- BOYNTON BEACH CRA
- BOYNTON SOUTH
- LEISUREVILLE NORTH AREA

Geocoded Parks (4)

- BARTON MEMORIAL PARK
- GALAXY PARK
- HISBISCUS PARK
- LAUREL HILLS PARK

2008 SFWMD FL Land Use and Land Cover / Acres / Percent

- 1210 FIXED SINGLE FAMILY UNITS / 331.1 / 61.22%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 13.4 / 2.47%
- 1400 COMMERCIAL AND SERVICES / 99.3 / 18.36%
- 1411 SHOPPING CENTERS / 8.0 / 1.48%
- 1710 EDUCATIONAL FACILITIES / 17.7 / 3.28%
- 4340 UPLAND MIXED CONIFEROUS - HARDWOOD / 11.1 / 2.05%
- 5120 CHANNELIZED WATERWAYS - CANALS / 1.7 / 0.31%
- 5300 RESERVOIRS / 1.6 / 0.30%
- 8120 RAILROADS AND RAILYARDS / 9.3 / 1.72%
- 8140 ROADS AND HIGHWAYS / 47.6 / 8.8%

Comments on Effects to Resources:

The SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange occurs within the City of Boynton Beach, specifically within the City's established Community Redevelopment Area. The area surrounding the interchange is urbanized containing a mix of residential and commercial/office activities with pockets of industrial, institutional, and recreational land uses. According to the City of Boynton Beach Future Land Use Map, the area is to continue to primarily support residential and commercial/office activities as consistent with Community Redevelopment Area goals.

Effects on the area's character resulting from the interchange improvement are anticipated to be minimal as the limited additional right-of-way required for this proposed improvement is not expected to result in land changes.

Transportation Plan Consistency:

Funding for the project PD&E Study is programmed in the FY 2014 - 2019 FDOT Work Program (FM #435804-1) and the FY 2015 - 2019 Transportation Improvement Program (TIP) of the Palm Beach Metropolitan Planning Organization (MPO). The Strategic Intermodal System Cost Feasible Plan 2024 - 2040 additionally identifies this project. The SR-9/I-95 and SR-804/Boynton Beach Boulevard Interchange improvement is not included in the Cost-Feasible component of the Palm Beach MPO 2035 Long Range Transportation Plan (LRTP) or the State Transportation Improvement Program (STIP). Coordination will occur with the Palm Beach MPO during the PD&E Study to identify and include funding for the project in the Palm Beach MPO 2035 LRTP Cost-Feasible component and the FDOT STIP prior to requesting Federal Highway Administration (FHWA) Location and Design Concept Acceptance. The project is reflected on Map TE 14.1: Thoroughfare Right of Way Identification Map of the Palm Beach County Comprehensive Plan.

Additional Comments (optional):

CLC Commitments and Recommendations:

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach MPO and the City of Boynton Beach to obtain feedback from residents and businesses that may be impacted by the interchange improvement. FDOT District Four will also coordinate with the City of Boynton Beach and the Palm Beach MPO to ensure that 1) the project is included on the Future Transportation Map of the adopted City of Boynton Beach Comprehensive Plan and is consistent with the adopted Palm Beach MPO LRTP and 2) funding is identified for all future project phases in the TIP, LRTP, STIP, and FDOT SIS Cost Feasible Plan.

Social

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 11/20/2014 by FDOT District 4

Comments:

FDEO reported that the project is compatible with the development goals of the City of Boynton Beach. FDEO noted that the project is not located in an Area of Critical State Concern or within the Coastal High Hazard Area and does not encroach on a military base; however, since the project is located near public parks, impacts to Section 4(f) resources should be analyzed. The project is included in the FY 2014 - 2019 FDOT Work Program, the Strategic Intermodal System Cost Feasible Plan 2024 - 2040, and the Palm Beach Metropolitan Planning Organization (MPO) FY 2015 - 2019 Transportation Improvement Program (TIP); it is not identified in the Palm Beach MPO Cost Feasible 2035 Long Range Transportation Plan (LRTP) or the State Transportation Improvement Program (STIP). Since the project is intended to enhance access to the City's established Community Redevelopment Area and accommodate future mobility needs of the growing residential and commercial/office activities within the area (through enhanced traffic operations), a Summary DOE of Minimal has been assigned to the Land Use Changes issue.

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach MPO and the City of Boynton Beach to obtain feedback from residents and businesses that may be impacted by the interchange improvement. FDOT District Four will also assess potential Section 4(f) impacts, as well as coordinate with the City of Boynton Beach and the Palm Beach MPO to ensure that 1) the project is included on the Future Transportation Map of the adopted City of Boynton Beach Comprehensive Plan and is consistent with the adopted Palm Beach MPO LRTP and 2) funding is identified for all future project phases in the TIP, LRTP, STIP, and FDOT SIS Cost Feasible Plan.

Degree of Effect: 3 *Moderate* assigned 08/24/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Several social service facilities, group care facilities, and a health care facility within 200 foot of the project.

Comments on Effects to Resources:

In addition to impact to the above listed resources, the project is in an urban area with significant minority community. Social impacts are likely. The significance of the impact should be specifically assessed by a site specific Sociocultural Effect Evaluation. This assessment should also include short term impacts caused by construction during project implementation.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 08/21/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH

- BOYNTON BEACH CRA

- BOYNTON SOUTH

- LEISUREVILLE NORTH AREA

Geocoded Civic Centers (1)

- HOLIDAY INN EXPRESS HOTELS

Geocoded Government Buildings (1)

- U.S. POST OFFICE - DOWNTOWN BOYNTON BEACH

Geocoded Health Care Facilities (1)

- FOOT HEALTH CENTER/ADULT & PEDIATRICS

Geocoded Laser Facilities (1)

- SNYDER & HODES, DPM, PA

Geocoded Religious Centers (1)

- CALVARY CHAPEL OF BOYNTON BEACH

Geocoded Social Service Facilities (3)

- EBLING CHIROPRACTIC

- LIGHTHOUSE ACADEMY

- SCHOOL DISTRICT OF PALM BEACH COUNTY

Group Care Facilities (1)

- LIGHTHOUSE ACADEMY & CHILD DEVELOPMENT

Florida Site File Historic Standing Structures (2)

- INELIGIBLE FOR NRHP/NOT EVALUATED BY SHPO (2)

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (2)

- 930285

- 930289

Noise Barriers (1)

Bus Transit Routes (2)

- ROUTE 70 - LANTANA TO DELRAY BEACH

- ROUTE 73 - BOYNTON BCH CROSSTOWN VIA BB BLVD

Fixed-Guideway Transit and Ferry Network (1)

- TRI-COUNTY COMMUTER RAIL

Transportation Disadvantaged Service Provider Areas in Florida-2010 (2)

- PALM TRAN CONNECTION

- MV CONTRACT TRANSPORTATION, INC.

Facility Crossings (3)

- I-95/SR 9

- CSX RR

- SR 804/BOYNTON BEACH BOULEVARD

Railroads in the State of Florida

- MAINLINE: 475.6478 Linear Feet

500-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH

- BOYNTON BEACH CRA

- BOYNTON SOUTH

- LEISUREVILLE NORTH AREA

Geocoded Civic Centers (1)

- HOLIDAY INN EXPRESS HOTELS

Geocoded Community Centers (1)

- AMERICAN LEGION

Geocoded Government Buildings (2)

- CITY OF BOYNTON BEACH CITY HALL

- U.S. POST OFFICE - DOWNTOWN BOYNTON BEACH

Geocoded Health Care Facilities (1)

- FOOT HEALTH CENTER/ADULT & PEDIATRICS

Geocoded Laser Facilities (1)

- SNYDER & HODES, DPM, PA

Geocoded Law Enforcement (1)

- BOYNTON BEACH POLICE DEPARTMENT

Geocoded Parks (1)

- GALAXY PARK

Geocoded Religious Centers (5)

- CALVARY CHAPEL OF BOYNTON BEACH

- FIRST BAPTIST CHURCH BOYNTON

- FIRST PRESBYTERIAN CHURCH OF BOYNTON BEACH

- FIRST UNITED METHODIST CHURCH
- SEED FAITH MISSION

Geocoded Schools (2)

- GALAXY ELEMENTARY SCHOOL
- MORNINGSTAR SCHOOL

Geocoded Social Service Facilities (4)

- AMERICAN LEGION
- EBLING CHIROPRACTIC
- LIGHTHOUSE ACADEMY
- SCHOOL DISTRICT OF PALM BEACH COUNTY

Geocoded Veteran Facilities (1)

- AMERICAN LEGION

Group Care Facilities (1)

- LIGHTHOUSE ACADEMY & CHILD DEVELOPMENT

Florida Site File Historic Standing Structures (22)

- INELIGIBLE FOR NRHP/NOT EVALUATED BY SHPO (15)
- INSUFFICIENT INFORMATION/NOT EVALUATED BY SHPO (4)
- INSUFFICIENT INFORMATION/ELIGIBLE FOR NRHP (1)
- LIKELY NRHP ELIGIBLE/NOT EVALUATED BY SHPO (1)
- NOT EVALUATED BY RECORDER/NOT EVALUATED BY SHPO (1)

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (2)

- 930285
- 930289

Noise Barriers (1)

Bus Transit Routes (2)

- ROUTE 70 - LANTANA TO DELRAY BEACH
- ROUTE 73 - BOYNTON BCH CROSSTOWN VIA BB BLVD

Fixed-Guideway Transit and Ferry Network (1)

- TRI-COUNTY COMMUTER RAIL

Transportation Disadvantaged Service Provider Areas in Florida-2010 (2)

- PALM TRAN CONNECTION
- MV CONTRACT TRANSPORTATION, INC.

Facility Crossings (3)

- I-95/SR 9
- CSX RR
- SR 804/BOYNTON BEACH BOULEVARD

Railroads in the State of Florida

- MAINLINE: 2792.9215 Linear Feet

1,320-Foot (Quarter-Mile) Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH
- BOYNTON BEACH CRA
- BOYNTON SOUTH
- LEISUREVILLE NORTH AREA

Geocoded Civic Centers (1)

- HOLIDAY INN EXPRESS HOTELS

Geocoded Community Centers (1)

- AMERICAN LEGION

Geocoded Cultural Centers (2)

- BOYNTON BEACH CITY LIBRARY
- SCHOOLHOUSE CHILDREN'S MUSEUM & LEARNING CENTER

Geocoded Fire Stations (1)

- BOYNTON BEACH FIRE DEPARTMENT AND RESCUE STATION 1

Geocoded Government Buildings (2)

- CITY OF BOYNTON BEACH CITY HALL

- U.S. POST OFFICE - DOWNTOWN BOYNTON BEACH

Geocoded Health Care Facilities (1)

- FOOT HEALTH CENTER/ADULT & PEDIATRICS

Geocoded Homeowner and Condominium Associations (7)

- BOYNTON CENTER #1 CONDO

- BOYNTON CENTER #2 CONDO

- BOYNTON CENTER #3 CONDO

- CASABLANCA ISLES CONDO

- MILLICENT CONDO

- PARK LANE CONDO

- VIVIENNE CONDO

Geocoded Laser Facilities (1)

- SNYDER & HODES, DPM, PA

Geocoded Law Enforcement (1)

- BOYNTON BEACH POLICE DEPARTMENT

Geocoded Parks (4)

- BARTON MEMORIAL PARK

- GALAXY PARK

- HISBISCUS PARK

- LAUREL HILLS PARK

Geocoded Religious Centers (5)

- CALVARY CHAPEL OF BOYNTON BEACH

- FIRST BAPTIST CHURCH BOYNTON

- FIRST PRESBYTERIAN CHURCH OF BOYNTON BEACH

- FIRST UNITED METHODIST CHURCH

- SEED FAITH MISSION

Geocoded Schools (2)

- GALAXY ELEMENTARY SCHOOL

- MORNINGSTAR SCHOOL

Geocoded Social Service Facilities (8)

- AMERICAN LEGION

- BOYNTON BEACH CITY - RECREATION, MADSEN SENIOR CENTER

- BOYNTON BEACH CITY - RECREATION & PARKS, ADMINISTRATION, CIVIC CENTER

- EBLING CHIROPRACTIC

- GIRTMANS TREASURE CHEST EARLY LEARNING CENTER

- LIGHTHOUSE ACADEMY

- SCHOOL DISTRICT OF PALM BEACH COUNTY

- NURTURING CHILD CARE

Geocoded Veteran Facilities (1)

- AMERICAN LEGION

Group Care Facilities (8)

- DAVE SARDO

- LIGHTHOUSE ACADEMY & CHILD DEVELOPMENT

- FIRST ANGEL

- FIRST UNITED METHODIST CHURCH

- SANDRA MCHERSON FOSTER CARE

- T.C.B. TAKING CARE BABIES

- TINA'S BABY CENTER, INC.

- TREASURE CHEST EARLY LEARNING

Florida Site File Historic Standing Structures (69)

- ELIGIBLE FOR NRHP (1)

- INELIGIBLE FOR NRHP/NOT EVALUATED BY SHPO (55)

- INSUFFICIENT INFORMATION/NOT EVALUATED BY SHPO (10)

- INSUFFICIENT INFORMATION/ELIGIBLE FOR NRHP (1)

- LIKELY NRHP ELIGIBLE/NOT EVALUATED BY SHPO (1)

- NOT EVALUATED BY RECORDER/NOT EVALUATED BY SHPO (1)

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

National Register of Historic Places (1)

- BOYNTON SCHOOL [PB00171]

Cultural Field Survey Areas (6)**FDOT RCI Bridges (2)**

- 930285

- 930289

Noise Barriers (1)**Bus Transit Routes (2)**

- ROUTE 70 - LANTANA TO DELRAY BEACH

- ROUTE 73 - BOYNTON BCH CROSSTOWN VIA BB BLVD

Fixed-Guideway Transit and Ferry Network (1)

- TRI-COUNTY COMMUTER RAIL

Transportation Disadvantaged Service Provider Areas in Florida-2010 (2)

- PALM TRAN CONNECTION

- MV CONTRACT TRANSPORTATION, INC.

Facility Crossings (3)

- I-95/SR 9

- CSX RR

- SR 804/BOYNTON BEACH BOULEVARD

Railroads in the State of Florida

- MAINLINE: 4619.8459 Linear Feet

2008 SFWMD FL Land Use and Land Cover / Acres / Percent

- 1210 FIXED SINGLE FAMILY UNITS / 331.1 / 61.22%

- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 13.4 / 2.47%

- 1400 COMMERCIAL AND SERVICES / 99.3 / 18.36%

- 1411 SHOPPING CENTERS / 8.0 / 1.48%

- 1710 EDUCATIONAL FACILITIES / 17.7 / 3.28%

- 4340 UPLAND MIXED CONIFEROUS - HARDWOOD / 11.1 / 2.05%

- 5120 CHANNELIZED WATERWAYS - CANALS / 1.7 / 0.31%

- 5300 RESERVOIRS / 1.6 / 0.30%

- 8120 RAILROADS AND RAILYARDS / 9.3 / 1.72%

- 8140 ROADS AND HIGHWAYS / 47.6 / 8.8%

Comments on Effects to Resources:

By improving operational capacity and overall traffic operations, the proposed interchange improvement is anticipated to 1) accommodate the future travel demand projected as a result of Palm Beach County population and employment growth and 2) allow SR-9/I-95 to continue to serve as a critical arterial in facilitating the north-south movement of traffic in Southeast Florida as it connects major employment centers, residential areas, and other regional destinations between Miami-Dade, Broward and Palm Beach Counties.

The SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange occurs within the City of Boynton Beach, specifically within the City's established Community Redevelopment Area. The area surrounding the interchange is urbanized containing a mix of residential and commercial/office activities with pockets of industrial, institutional, and recreational land uses. According to the City of Boynton Beach Future Land Use Map, the area is to continue to primarily support residential and commercial/office activities as consistent with Community Redevelopment Area goals.

Community features that occur within the vicinity of the project include: one civic center, one community center, two cultural centers, one fire station, two government buildings (including the City of Boynton Beach City Hall), one health care facility, seven homeowner and condominium associations, one laser facility, one law enforcement facility, four parks, five religious centers, two schools, several social service and group care facilities, two bus transit routes, fixed-guideway transit service, two transportation disadvantaged services, railway, and cultural resources.

The table below presents the demographic data for both the 500-foot project buffer and Palm Beach County. According to the EST GIS analysis results, the demographic profile of the buffer area differs from the profile of Palm Beach County as a whole in that it contains a significantly higher African-American population percentage and a significantly lower White population percentage. The buffer area also contains a higher percentage of individuals under age 18 and a notably lower percentage of persons of age 65 or above compared to the county population. In addition, the buffer area has a higher percentage of housing units with no vehicle available and a lower median family income (\$24,067 less) compared to Palm Beach County.

Demographic / 500-Foot Buffer / Palm Beach County

White (Race)* / 43.7% / 73.5%

African-American (Race)* / 49.7% / 17.3%

"Other" *** (Race)* / 6.6% / 9.2%

Hispanic (Ethnic Group)* / 13.4% / 19.0%

Age 65+** / 11.0% / 21.6%

Under Age 18** / 23.1% / 20.4%

Housing Units with No Vehicle Available** / 7.5% / 6.2%

Averaged Median Family Income** / \$40,378 / \$64,445

* Source: US Census Bureau (2010 US Census)

** Source: US Census Bureau (2010 American Community Survey)

*** "Other" includes American Indian & Alaska Native, Asian, Native Hawaiian & Other Pacific Islander, & Other Race.

It should be noted that 34 census blocks within the 500-foot project buffer contain a minority population greater than 40%. A total of 3,237 individuals comprise the minority population of these census blocks. It should further be noted that 3,021 persons within the 500-foot project buffer (27.53% of the total buffer population) indicated a deficiency in English proficiency. Limited English Proficiency (LEP) accommodations will be required during the Project Development phase as the demographic data indicates that 5.0% or 1,000 persons or more in a project area speak a language other than English (per Part 1, Chapter 11, Section 11-1.2.4 of the FDOT PD&E Manual). Based on the notable presence of minority and low-income households within the buffer area, civil rights and environmental justice considerations will be accounted for in subsequent project phases.

The project is expected to support the vision of both Palm Beach County and the City of Boynton Beach as it will accommodate the expanding residential and commercial uses within the vicinity of the interchange, including goals of the established City of Boynton Beach Community Redevelopment Area. While access to residences and businesses could temporarily be affected and/or modified as a result of the interchange improvement, overall impacts of the project on the social environment and community cohesion are anticipated to be minimal.

Additional Comments (optional):

CLC Commitments and Recommendations:

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit input from the general public to ensure that both the social and transportation needs of the community are addressed through the project.

Degree of Effect: 2 *Minimal* assigned 10/24/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

The 100-through 1320 foot buffer identifies substantial minority populations (greater than 40%) and other populations that are considered traditionally underserved (such as aging) that will require specific outreach strategies.

Comments on Effects to Resources:

Access to residences and businesses could temporarily be affected and/or modified.

Additional Comments (optional):

CLC Commitments and Recommendations:

Relocation Potential

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

Minor right-of-way acquisition is proposed along SR-804/Boynton Beach Boulevard. No residences are expected to be impacted by the proposed right-of-way acquisition only businesses - specifically eleven commercial businesses located west of the interchange and eight businesses east of the interchange. While access to businesses could temporarily be affected and/or modified during project construction, no relocations are anticipated. For these reasons, a Summary DOE of Minimal has been assigned to the Relocation Potential issue.

Potential relocation effects will be assessed further during Project Development as more detailed and finalized project information regarding right-of-

way needs becomes available. The proposed interchange improvements will be adjusted so as to avoid or minimize impacts to identified features.

Degree of Effect: 2 *Minimal* assigned 10/24/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Relocations are not anticipated.

Comments on Effects to Resources:

A Conceptual Stage Relocation Plan will be prepared if relocations are determined to be necessary.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 08/21/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

100-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH
- BOYNTON BEACH CRA
- BOYNTON SOUTH
- LEISUREVILLE NORTH AREA

Florida Site File Historic Standing Structures (2)

- INELIGIBLE FOR NRHP/NOT EVALUATED BY SHPO (2)

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (2)

- 930285
- 930289

Facility Crossings (3)

- I-95/SR 9
- CSX RR
- SR 804/BOYNTON BEACH BOULEVARD

SFWMD Residential Areas 2008

- 1210 FIXED SINGLE FAMILY UNITS / 9.8 / 15.59%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 0.1 / 0.22%

500-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH
- BOYNTON BEACH CRA
- BOYNTON SOUTH
- LEISUREVILLE NORTH AREA

Geocoded Parks (1)

- GALAXY PARK

Florida Site File Historic Standing Structures (22)

- INELIGIBLE FOR NRHP/NOT EVALUATED BY SHPO (15)
- INSUFFICIENT INFORMATION/NOT EVALUATED BY SHPO (4)
- INSUFFICIENT INFORMATION/ELIGIBLE FOR NRHP (1)
- LIKELY NRHP ELIGIBLE/NOT EVALUATED BY SHPO (1)
- NOT EVALUATED BY RECORDER/NOT EVALUATED BY SHPO (1)

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (2)

- 930285
- 930289

Facility Crossings (3)

- I-95/SR 9
- CSX RR
- SR 804/BOYNTON BEACH BOULEVARD

SFWMD Residential Areas 2008

- 1210 FIXED SINGLE FAMILY UNITS / 81.8 / 40.62%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 3.9 / 1.94%

Comments on Effects to Resources:

The interchange at SR-9/I-95 and SR-804/Boynton Beach Boulevard is a typical diamond configuration. SR-9/I-95 is currently a ten-lane divided interstate freeway with eight general use and two High Occupancy Vehicle (HOV) lanes. The existing right-of-way varies as it approaches the interchange, but the typical right-of-way ranges from approximately 355 to 550 feet. SR-804/Boynton Beach Boulevard is a six-lane divided urban principal arterial west of SR-9/I-95 and a four-lane divided urban minor arterial east of SR-9/I-95. The existing right-of-way varies from approximately 170 to 195 feet west of SR-9/I-95 and 80 to 200 feet east of SR-9/I-95. The proposed project is anticipated to occur within the existing right-of-way, for the most part.

Minor right-of-way acquisition is proposed along the westbound lanes (northern side) of SR-804/Boynton Beach Boulevard east and west of the interchange and along the eastbound lanes (southern side) of SR-804/Boynton Beach Boulevard east of the interchange. No residences are anticipated to be impacted by the proposed right-of-way acquisition, only businesses (specifically eleven commercial businesses located west of the interchange and eight businesses east of the interchange). However, all of these proposed right-of-way acquisitions are of such a minor nature that no relocations are anticipated. While access to businesses could temporarily be affected and/or modified during project construction, minimal involvement regarding relocation potential is anticipated.

Additional Comments (optional):

CLC Commitments and Recommendations:

It is recommended that further assessment of relocation effects be conducted during the Project Development phase as more detailed and finalized project information regarding right-of-way needs becomes available. The proposed interchange improvements will be adjusted so as to avoid or minimize impacts to identified features.

Farmlands

Project Effects

Coordinator Summary Degree of Effect: 0 None assigned 11/20/2014 by FDOT District 4

Comments:

NRCS determined that there are no Prime, Unique or Locally Important Farmland soils within the 500-foot project buffer. In addition, the project is located within the Miami Urbanized Area. According to Part 2, Chapter 28, Section 28-2.1 of the FDOT PD&E Manual, transportation projects situated within urbanized areas with no adjacent present or future agricultural lands are excluded from Farmland Assessments. Since the project is located within a designated urban area anticipated to continue to support residential and commercial uses, a Summary DOE of None has been assigned to the Farmlands issue.

Degree of Effect: 0 None assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 07/14/2014 by Rick Allen Robbins, Natural Resources Conservation Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Conducting GIS analysis of Prime Farmland (using USDA-NRCS data) and Important (Prime, Unique, Local) Farmland Analysis (using existing SWFWMD land use data and 2010 SSURGO data) has resulted in the determination that there are no Prime, Unique, or Locally Important Farmland soils within the 100 to 500 footbuffer width within the Project Area. There are Farmland Soil of Unique Importance at the 5,280 foot buffer width but this project is not expected to impact these soils. Therefore, no degree of effect to agricultural resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Aesthetic Effects

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

The project is consistent with the area's future land use vision as it is expected to enhance access to the established Community Redevelopment Area of the City of Boynton Beach and support growing residential and commercial activities. Given the urban nature of the surrounding project area, impacts to aesthetics/the existing visual environment should be limited. Therefore, a Summary DOE of Minimal has been assigned to the Aesthetic Effects issue.

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit opinions and preferences from residents and businesses on potential project effects and general design concepts related to aesthetics.

Degree of Effect: 2 *Minimal* assigned 08/21/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

100-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH

- BOYNTON BEACH CRA

- BOYNTON SOUTH

- LEISUREVILLE NORTH AREA

Florida Site File Historic Standing Structures (2)

- INELIGIBLE FOR NRHP/NOT EVALUATED BY SHPO (2)

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (2)

- 930285

- 930289

Facility Crossings (3)

- I-95/SR 9
- CSX RR
- SR 804/BOYNTON BEACH BOULEVARD

SFWMD Residential Areas 2008

- 1210 FIXED SINGLE FAMILY UNITS / 9.8 / 15.59%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 0.1 / 0.22%

500-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH
- BOYNTON BEACH CRA
- BOYNTON SOUTH
- LEISUREVILLE NORTH AREA

Geocoded Parks (1)

- GALAXY PARK

Florida Site File Historic Standing Structures (22)

- INELIGIBLE FOR NRHP/NOT EVALUATED BY SHPO (15)
- INSUFFICIENT INFORMATION/NOT EVALUATED BY SHPO (4)
- INSUFFICIENT INFORMATION/ELIGIBLE FOR NRHP (1)
- LIKELY NRHP ELIGIBLE/NOT EVALUATED BY SHPO (1)
- NOT EVALUATED BY RECORDER/NOT EVALUATED BY SHPO (1)

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (2)

- 930285
- 930289

Facility Crossings (3)

- I-95/SR 9
- CSX RR
- SR 804/BOYNTON BEACH BOULEVARD

SFWMD Residential Areas 2008

- 1210 FIXED SINGLE FAMILY UNITS / 81.8 / 40.62%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 3.9 / 1.94%

Comments on Effects to Resources:

Notable community features associated with aesthetics within the 500-foot project buffer include: 85.7 acres of residential uses, one park, and cultural resources. Impacts to aesthetics/the existing visual environment as a result of the interchange improvement are anticipated to be minimal given the urbanized nature of the area and the fact that the project supports the area's land use vision.

Additional Comments (optional):

CLC Commitments and Recommendations:

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit opinions and preferences from residents and businesses on potential project effects and general design concepts related to aesthetics.

Degree of Effect: 2 *Minimal* assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Barton Memorial Park, Galaxy Park, Galaxy Elementary School, City of Boynton Beach City Hall, Downtown Boynton Beach US Post Office, First

Baptist Church of Boynton Beach, Fifth United Methodist Church, and the Southeastern Conference Association of Seventh-Day Adventists.

Comments on Effects to Resources:

Potential visual effects.

Additional Comments (optional):

CLC Commitments and Recommendations:

Economic

Project Effects

Coordinator Summary Degree of Effect: 2 Minimal assigned 11/20/2014 by FDOT District 4

Comments:

By improving operational capacity and overall traffic operations, the project is intended to accommodate future travel demand as a result of expanding commercial and residential uses within the vicinity of the interchange. In addition, the improvements will enhance access to SR-9/I-95 (from the east and west) and other major transportation facilities and employment centers (including freight facilities) of Southeast Florida. While no business relocations are anticipated, access to residences and businesses could temporarily be affected and/or modified during construction. Therefore, a Summary DOE of Minimal has been assigned to the Economic issue.

During Project Development, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit input from residents and businesses (located within the vicinity of the interchange) regarding potential economic enhancements/impacts (particularly access to businesses) as a result of the project.

Degree of Effect: 0 None assigned 08/11/2014 by Matt Preston, FL Department of Economic Opportunity

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

City of Boynton Beach Comprehensive Plan, adopted in June, 2014.

Comments on Effects to Resources:

The project is not located in a Rural Area of Critical Economic Concern (RACEC). Economic development as a result of the project would be related to improved traffic circulation to the City and the local businesses, and improved I-95 level of service.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Numerous businesses exist throughout the project corridor on the north and south side of Boynton Beach Boulevard, east and west of the existing interchange. Only temporary impacts are anticipated during construction.

Comments on Effects to Resources:

Temporary effects are anticipated during the construction.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 08/21/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

100-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH

- BOYNTON BEACH CRA

- BOYNTON SOUTH

- LEISUREVILLE NORTH AREA

Geocoded Government Buildings (1)

- U.S. POST OFFICE - DOWNTOWN BOYNTON BEACH

Railroads in the State of Florida

- MAINLINE: 475.6478 Linear Feet

500-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (4)

- BOYNTON BEACH

- BOYNTON BEACH CRA

- BOYNTON SOUTH

- LEISUREVILLE NORTH AREA

Geocoded Government Buildings (2)

- CITY OF BOYNTON BEACH CITY HALL

- U.S. POST OFFICE - DOWNTOWN BOYNTON BEACH

Geocoded Law Enforcement (1)

- BOYNTON BEACH POLICE DEPARTMENT

Railroads in the State of Florida

- MAINLINE: 2792.9215 Linear Feet

2008 SFWMD FL Land Use and Land Cover / Acres / Percent

- 1210 FIXED SINGLE FAMILY UNITS / 81.8 / 40.62%

- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 3.9 / 1.94%

- 1400 COMMERCIAL AND SERVICES / 48.7 / 24.18%

- 1411 SHOPPING CENTERS / 8.0 / 3.99%

- 1710 EDUCATIONAL FACILITIES / 17.1 / 8.49%

- 4340 UPLAND MIXED CONIFEROUS - HARDWOOD / 3.2 / 1.61%

- 5300 RESERVOIRS / 0.1 / 0.05%

- 8120 RAILROADS AND RAILYARDS / 6.7 / 3.32%

- 8140 ROADS AND HIGHWAYS / 31.8 / 15.81%

Comments on Effects to Resources:

The SR-9/I-95 at SR-804/Boynton Beach Boulevard interchange within the City of Boynton Beach, specifically within the City's established Community Redevelopment Area. The area surrounding the interchange is urbanized containing a mix of residential and commercial/office activities with pockets of industrial, institutional, and recreational land uses. According to the City of Boynton Beach Future Land Use Map, the area is to continue to primarily support residential and commercial/office activities as consistent with Community Redevelopment Area goals.

The project is expected to support the vision of both Palm Beach County and the City of Boynton Beach as it will accommodate the expanding residential and commercial uses within the vicinity of the interchange. By improving operational capacity and overall traffic operations, the proposed interchange improvement is anticipated to 1) accommodate the future travel demand projected as a result of Palm Beach County population and employment growth, 2) allow for more efficient access to SR-9/I-95 from the east and west along SR-804/Boynton Beach Boulevard, and 3) maintain viable access to the major transportation facilities and employment centers of Southeast Florida (including connectors to freight activity centers/local distribution facilities or between the regional freight corridors).

While economic enhancements are generally expected since the improvements are consistent with economic development efforts of the area, access to residences and businesses could temporarily be affected and/or modified during construction; however, no business relocations are anticipated. Overall,

economic effects as a result of the interchange improvement are anticipated to be minimal.

Additional Comments (optional):

CLC Commitments and Recommendations:

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit input from residents and businesses (located within the vicinity of the interchange) regarding potential economic enhancements/impacts (particularly access to businesses) as a result of the project.

Mobility

Project Effects

Coordinator Summary Degree of Effect: 1 *Enhanced* assigned 11/20/2014 by FDOT District 4

Comments:

Through improved operational capacity and overall traffic operations, the proposed interchange improvement is anticipated to 1) accommodate future travel demand (thus achieving acceptable Levels of Service at the interchange), 2) allow SR-9/I-95 to continue to facilitate the north-south movement of local and regional traffic, 3) enhance access to SR-9/I-95 and other major transportation facilities and employment centers in Southeast Florida, 4) improve freight mobility, 5) enhance emergency evacuation and response times, and 6) reduce conflict points and the potential occurrence of rear-end collisions. Therefore, a Summary DOE of Enhanced has been assigned to the Mobility issue.

During Project Development, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit community opinions and preferences, targeting input from the transportation disadvantaged population, regarding the project.

Degree of Effect: 1 *Enhanced* assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

I-95 at Boynton Beach Blvd. interchange.

Comments on Effects to Resources:

Enhancement on access/mobility and congestion at this interchange.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 1 *Enhanced* assigned 08/21/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

100-Foot Buffer:

FDOT RCI Bridges (2)

- 930285

- 930289

Bus Transit Routes (2)

- ROUTE 70 - LANTANA TO DELRAY BEACH

- ROUTE 73 - BOYNTON BCH CROSSTOWN VIA BB BLVD

Fixed-Guideway Transit and Ferry Network (1)

- TRI-COUNTY COMMUTER RAIL

Transportation Disadvantaged Service Provider Areas in Florida-2010 (2)

- PALM TRAN CONNECTION

- MV CONTRACT TRANSPORTATION, INC.

Facility Crossings (3)

- I-95/SR 9
- CSX RR
- SR 804/BOYNTON BEACH BOULEVARD

Railroads in the State of Florida

- MAINLINE: 475.6478 Linear Feet

500-Foot Buffer:**FDOT RCI Bridges (2)**

- 930285
- 930289

Bus Transit Routes (2)

- ROUTE 70 - LANTANA TO DELRAY BEACH
- ROUTE 73 - BOYNTON BCH CROSSTOWN VIA BB BLVD

Fixed-Guideway Transit and Ferry Network (1)

- TRI-COUNTY COMMUTER RAIL

Transportation Disadvantaged Service Provider Areas in Florida-2010 (2)

- PALM TRAN CONNECTION
- MV CONTRACT TRANSPORTATION, INC.

Facility Crossings (3)

- I-95/SR 9
- CSX RR
- SR 804/BOYNTON BEACH BOULEVARD

Railroads in the State of Florida

- MAINLINE: 2792.9215 Linear Feet

Number of Housing Units with No Vehicle Available: 322 (7.5%)

Comments on Effects to Resources:

By improving operational capacity and overall traffic operations, the proposed interchange improvement is anticipated to 1) achieve acceptable Levels of Service (LOS) at the interchange in the future condition by accommodating future travel demand projected as a result of Palm Beach County population and employment growth; 2) allow SR-9/I-95 to continue to serve as a critical arterial in facilitating the north-south movement of traffic in Southeast Florida as it connects major employment centers, residential areas, and other regional destinations between Miami-Dade, Broward and Palm Beach Counties; 3) allow for more efficient access to SR-9/I-95 and Florida's Turnpike from the east and west along SR-804/Boynton Beach Boulevard; and 4) enhance freight mobility by maintaining viable access to the major transportation facilities and businesses of the area (including connectors to freight activity centers/local distribution facilities or between the regional freight corridors).

Further, as both SR-9/I-95 and SR-804/Boynton Beach Boulevard serve as part of the emergency evacuation route network designated by the Florida Division of Emergency Management, the proposed project is anticipated to enhance emergency evacuation and response times by 1) improving connectivity and accessibility to SR-9/I-95 and other major arterials designated on the state evacuation route network and 2) increasing the number of residents that can be evacuated during an emergency event through expanded operational capacity.

The interchange improvement is also anticipated to provide free-flow movements and additional storage lengths which, in turn, will reduce conflict points and the potential occurrence of rear-end collisions.

While potential temporary impacts to residences and businesses may occur during project construction as a result of alterations to vehicular access, the proposed project is anticipated to enhance overall access/mobility options and ease traffic congestion at the interchange during peak traffic periods.

Additional Comments (optional):**CLC Commitments and Recommendations:**

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit community opinions and preferences, targeting input from the transportation disadvantaged population, regarding the project.

ETAT Reviews and Coordinator Summary: Cultural

Section 4(f) Potential

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 11/21/2014 by FDOT District 4

Comments:

Potentially protected Section 4(f) resources reported within the 200-foot project buffer include Barton Memorial Park and Galaxy Park. Access to these recreational features could be temporarily impeded and/or modified by project construction. In addition, unrecorded cultural resources (eligible or potentially eligible for listing in the National Register of Historic Places) may exist since a comprehensive survey has not been conducted for the project area. For these reasons, a Summary DOE of Minimal has been assigned to the Section 4(f) Potential issue.

During Project Development, a Section 4(f) Determination of Applicability (DOA) will be conducted in coordination with FHWA (in accordance with Part 2, Chapter 13 of the FDOT PD&E Manual) to determine the extent of Section 4(f) involvement and focus any required documents on the avoidance and/or minimization of impacts.

Degree of Effect: 3 *Moderate* assigned 10/24/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Barton Memorial Park and Galaxy Park have been identified within the buffer zone. Other surveys and studies will take place in order to identify any other resources and their level of importance.

Comments on Effects to Resources:

It has been identified the potential effect on the access to both Barton Memorial Park and Galaxy Park during the construction phase. Studies and surveys will provide more information regarding any effects on this or other resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: N/A *N/A / No Involvement* assigned 08/14/2014 by Steve Bohl, FL Department of Agriculture and Consumer Services

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Historic and Archaeological Sites

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 11/20/2014 by FDOT District 4

Comments:

FDOS commented that there is one known significant resource in the project area (the Seaboard Air Line Railway); other recorded structures of potential significance within the area have not been evaluated to date by the SHPO. FDOS also indicated that four neighborhoods within the immediate project vicinity may be historic districts; while portions of all four have been surveyed, none have been evaluated by the SHPO. For these reasons and due to the possible presence of unrecorded cultural resources [eligible or potentially eligible for listing in the National Register of Historic Places (NRHP)] within the project area, a Summary DOE of Moderate has been assigned to the Historic and Archaeological Sites issue.

During Project Development, a Cultural Resource Assessment Survey will be conducted (in accordance with Part 2, Chapter 12 of the FDOT PD&E Manual) to determine the presence of historic, cultural and archeological resources in the area and evaluate their eligibility for listing in the NRHP. Any potential impacts to such resources will be avoided and/or minimized during the process.

Degree of Effect: 3 *Moderate* assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

One State Historic Preservation Officer (SHPO) Resource Group (Seaboard Air Line Railroad (PB12917)), as well as 20 SHPO structures have been identified within 500 feet of the proposed interchange improvements.

Comments on Effects to Resources:

Need to be identified during the CRAS report to identify other resources and identify eligibility and possible effects.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: **3** *Moderate* assigned 08/07/2014 by Ginny Leigh Jones, FL Department of State

Coordination Document: PD&E Support Document As Per PD&E Manual

Coordination Document Comments:

As proposed in the PED, the project area should be comprehensively surveyed for cultural resources. All cultural resources, including potential historic districts, within the area of potential effect should be documented and assessed for NRHP eligibility. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46 Florida Administrative Code, FDOT PD&E Manual Part 2, Chapter 12 and will need to be forwarded to this agency (or the appropriate Federal Agency) for review and comment.

Direct Effects

Identified Resources and Level of Importance:

As reported in the Preliminary Environmental Discussion (PED) there are potential significant resources adjacent to the current project corridor. There are some recorded structures, but they have not been evaluated by the State Historic Preservation Officer (SHPO). These structures are associated with residential developments that are visible in the 1953 aerials.

The 1953 aerials demonstrate the typical development in Florida - settlement first began along the coast and transportation corridors and moved towards the center of the state. Following this pattern in the current project area, the neighborhoods east of the Seaboard Air Line Railway (PB12102) are more established than those west of PB12102. West of PB12102, Boynton Beach Drive is in its original location (now called Old Boynton Beach Drive). PB12102 is extant and there are a few industrial buildings constructed alongside it. The 4 neighborhoods at the intersection of I-95/PB12102 and Boynton Beach Drive have the potential to be historic districts. Portions of all four have been surveyed, but not officially evaluated by the SHPO.

The 1968 aerials show continued development of the project area and the presence of I-95 alongside PB12102.

There is one known significant resource in the project corridor - the Seaboard Air Line Railway (PB12102).

Comments on Effects to Resources:

Since the Seaboard Air Line Railway (PB12102) is directly within the proposed project, the impacts of the proposed project on the resource should be evaluated as part of the consultation during the PD&E Phase of the project.

The potential for direct impacts to adjacent resources depends on the amount of new Right-of-Way (ROW) needed for the proposed project. If other significant resources are identified in the project area of potential effect (APE) the impact of the proposed project on them should be evaluated as part of the PD&E process.

Additional Comments (optional):

As proposed in the PED, the project area should be comprehensively surveyed for cultural resources. All cultural resources, including potential historic districts, within the area of potential effect should be documented and assessed for NRHP eligibility. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46 Florida Administrative Code, FDOT PD&E Manual Part 2, Chapter 12 and will need to be forwarded to this agency (or the appropriate Federal Agency) for review and comment.

CLC Commitments and Recommendations:

Recreation Areas

Project Effects

Coordinator Summary Degree of Effect: **3** *Moderate* assigned 11/21/2014 by FDOT District 4

Comments:

While the two parks within the 200-foot buffer, Barton Memorial Park and Galaxy Park, are not anticipated to be directly impacted by the project, access to these features may be temporarily affected during project construction. For this reason, a Summary DOE of Minimal has been assigned to the Recreation Areas issue.

An assessment of potential impacts to recreational features/areas will be conducted during Project Development. Future environmental documentation will include an evaluation of the direct, indirect, and cumulative impacts of the proposed project and construction on any public lands and proposed acquisition sites. Impacts will be avoided and/or minimized during the process. FDOT District Four will coordinate with the appropriate agencies concerning the necessary studies, documentation and commitments needed to adequately address any identified resources in accordance with federal, state, and local laws and regulations.

Degree of Effect: 0 *None* assigned 08/24/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 3 *Moderate* assigned 10/24/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Barton Memorial Park and Galaxy Park has been identified within the 200-ft project buffer.

Comments on Effects to Resources:

Impacts during construction phase are expected in the access of the resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/22/2014 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

CLC Commitments and Recommendations:

Degree of Effect: N/A N/A / No Involvement assigned 08/01/2014 by Anita Barnett, National Park Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Natural

Wetlands

Project Effects

Coordinator Summary Degree of Effect: 2 Minimal assigned 11/20/2014 by FDOT District 4

Comments:

USACE stated that if work is to be performed within waters of the United States (includes existing ditches, canals, etc.) to improve the stormwater management system, a nationwide permit would likely be required. SFWMD also noted that an Environmental Resource Permit and Water Use Permit may be necessary. While a series of canals and one stormwater retention pond exist within the project area, 0.1 acre of palustrine wetlands is reported within the 500-foot project buffer. Due to the limited amount of wetlands within the vicinity of the project and the fact that no impacts to this resource or surface waters are anticipated, a Summary DOE of Minimal has been assigned to the Wetlands issue.

During Project Development, potential wetland impacts will be evaluated through a Wetlands Evaluation Technical Memorandum to be prepared in accordance with Part 2, Chapter 18 of the FDOT PD&E Manual. All necessary measures will be taken to avoid and/or minimize impacts to wetlands to the greatest extent practicable during project design. Should avoidance and/or minimization not be practicable, a Mitigation Plan will be prepared. In addition, existing compensatory mitigation sites within the area of influence will be identified and reviewed. Further, best management practices will be utilized during project construction and all applicable permits (including an Environmental Resource Permit) will be obtained in accordance with federal, state, and local laws and regulations.

Degree of Effect: 2 Minimal assigned 08/12/2014 by Brandon Howard, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

None

Comments on Effects to Resources:

None

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 None assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 10/24/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 07/11/2014 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Wetlands

Comments on Effects to Resources:

Wetlands provide important habitat for fish and wildlife. If wetlands are found within the project area, we recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to these wetlands are unavoidable, we recommend the FDOT provide mitigation that fully compensates for the loss of important resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/22/2014 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: Permit Required

Direct Effects

Identified Resources and Level of Importance:

The National Wetlands Inventory GIS report indicates that there are 0.1 acres of palustrine wetlands within the 500-ft. project buffer zone.

Comments on Effects to Resources:

If new impervious area is proposed, an environmental resource permit (ERP) would likely be required from the South Florida Water Management District for stormwater management at the site.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/24/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/18/2014 by Garrett Lips, US Army Corps of Engineers

Coordination Document: Permit Required

Coordination Document Comments:

If work within waters of the United States (includes existing ditches, canals, etc) is needed to improve the stormwater management system a nationwide permit would likely be required.

Direct Effects

Identified Resources and Level of Importance:

No wetlands or navigable waters are present. Low ecological quality waters may be present.

Comments on Effects to Resources:

Minor filling may be needed for stormwater management system improvements, but no ecological losses are anticipated.

Additional Comments (optional):

If work within waters of the United States (includes existing ditches, canals, etc) is needed to improve the stormwater management system a nationwide permit would likely be required.

CLC Commitments and Recommendations:

Water Quality and Quantity

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

No impaired waters are located within the project vicinity; however, the project may result in construction related disturbances as well as additional stormwater treatment and right-of-way for retention/detention ponds or swales to meet regulatory water quality criteria. SFWMD identified an existing Environmental Resource Permit (50-04473-P) that could potentially be modified to include the project improvements; the permit must meet the criteria of Applicant's Handbook Volume II. Based on the foregoing, a Summary DOE of Minimal has been assigned to the Water Quality and Quantity issue.

During Project Development, FDOT District Four will conduct a Water Quality Impact Evaluation (in accordance with Part 2, Chapter 20 of the FDOT PD&E Manual) and coordinate with all relevant agencies for the design of the proposed stormwater system and the requirements for stormwater treatment, evaluating existing stormwater treatment adequacy and details on the future stormwater treatment facilities. All necessary permits will be obtained in accordance with federal, state, and local laws and regulations.

Degree of Effect: 0 *None* assigned 08/22/2014 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: Permit Required

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 10/24/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Additional impervious area.

Comments on Effects to Resources:

Additional stormwater treatment, potential need for additional right-of-way to provide for the creation of retention/detention ponds or swales to meet regulatory stormwater treatment and water quality criteria, and potential impacts from construction related disturbances.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permit modification is necessary unless the project can demonstrate qualification for a general permit or an exemption. Permit 50-04473-P appears to include the project area for I-95.

Direct Effects

Identified Resources and Level of Importance:

Surface waters of the State and flood protection

Comments on Effects to Resources:

No adverse water quality or quantity impacts are anticipated. The project must meet the criteria to obtain an Environmental Resource Permit, including the water quality and quantity criteria in Applicant's Handbook Volume II.

Additional Comments (optional):

An Environmental Resource Permit modification is necessary unless the project can demonstrate qualification for a general permit or an exemption. Permit 50-04473-P appears to include the project area for I-95.

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/24/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Floodplains

Project Effects

Coordinator Summary Degree of Effect: 0 *None* assigned 11/20/2014 by FDOT District 4

Comments:

The proposed interchange improvements will not encroach into any special flood zone hazard areas (100-year floodplain). Therefore, a Summary DOE of None has been assigned to the Floodplains issue.

Degree of Effect: 0 *None* assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/24/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Wildlife and Habitat

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

The interchange is within the South Florida Ecosystem Management Area; FWS Consultation Areas for the Florida scrub-jay, West Indian Manatee, and Atlantic Coast Plants; and Core Foraging Areas of four active nesting Wood Stork colonies. FWC indicated that the only significant area of natural habitat along the alignment (adjacent to the I-95 right-of-way) is a strip of remnant xeric scrub that is north and west of the Galaxy Elementary School campus located in the northeast quadrant of the interchange. FWC stated that impacts could be minimized if construction takes place in previously disturbed sites and avoids the remaining xeric scrub area or other natural areas. For these reasons and given the urban nature of the area, a Summary DOE of Minimal has been assigned to the Wildlife and Habitat issue.

The final design of the project will avoid and/or minimize impacts to wetlands/wildlife and habitat to the greatest extent practicable (including confining new DRAs to previously disturbed sites), and best management practices will be utilized during project design and construction; appropriate mitigation will also be provided for unavoidable impacts. During Project Development, an Endangered Species Biological Assessment will be prepared in compliance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 USC 1531 et seq) and in accordance with Part 2, Chapter 27 of the FDOT PD&E Manual. FWC stated that 1) plant community mapping/wildlife surveys are to be performed along the right-of-way and within sites proposed for Drainage Retention Areas, 2) permits are to be obtained if gopher tortoises or nests of other listed species are present within any permanent or temporary construction areas, and 3) a compensatory mitigation plan is to be prepared including the replacement of any wetland, upland, or aquatic habitat lost as a result of the project. USFWS indicated that a functional assessment using the USFWS's Wood Stork Foraging Analysis Methodology is required on the foraging habitat to be impacted and the foraging habitat provided as mitigation for projects that impact 5 or more acres of wood stork foraging habitat.

Degree of Effect: 0 *None* assigned 10/24/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 08/05/2014 by Scott Sanders, FL Fish and Wildlife Conservation Commission

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Florida Fish and Wildlife Conservation Commission (FWC) staff has reviewed ETDM #14180, Palm Beach County, and provides the following comments related to potential effects to fish and wildlife resources of this Programming Phase project.

The Project Description Summary states that this project involves increasing the capacity and safety of the I-95 interchange at Boynton Beach Boulevard (SR 804) in the City of Boynton Beach through the addition of turn lanes and ramp lanes. The Project Description did not address the potential need for new Drainage Retention Areas (DRAs) to handle the additional stormwater runoff from the expanded roadway.

An assessment of the project area was performed on lands within 500 feet of the proposed alignment to determine potential impacts to habitat which supports listed species and other fish and wildlife resources. Our inventory included a review of aerial and ground-level photography, various wildlife observation and landcover data bases, along with coordination with FWC biologists and other State and Federal agencies. A GIS analysis was performed using the Florida Department of Transportation's (FDOT) Environmental Screening Tool to determine the potential quality and extent of upland and wetland habitat, and other wildlife and fisheries resource information. We have reviewed the Preliminary Environmental Discussion Comments Report provided by the FDOT, and offer the following comments and recommendations.

Our assessment reveals that the project area is predominantly residential, commercial, and institutional development, with 97.78% classified as High or Low Impact Urban. The only significant area of natural habitat along the alignment is a strip of remnant xeric scrub that is north and west of the Galaxy Elementary School campus located in the northeast quadrant of the interchange. This scrub remnant is adjacent to the I-95 Right-of-way (ROW), and was once part of a larger scrub system that included much of the ROW (before interstate construction) at this location.

Based on range and preferred habitat type, the following species listed by the Federal Endangered Species Act and the State of Florida as Federally Endangered (FE), Federally Threatened (FT), State-Threatened (ST), or State Species of Special Concern (SSC) have the potential to occur in the project area: gopher frog (SSC), Eastern indigo snake (FT), Florida pine snake (SSC), gopher tortoise (T), least tern (T), limpkin (SSC), snowy egret (SSC), little blue heron (SSC), tricolored heron (SSC), white ibis (SSC), wood stork (FE), burrowing owl (SSC), and Florida mouse (SSC). Florida scrub jays (FE) once occupied the xeric scrub around this interchange, but are no longer present because nearly all of their habitat has been developed. FWC wildlife biologists have documented a population of gopher tortoises in the remnant scrub near Galaxy Elementary School, and it is possible that they utilize the sandy soils along the edge of the ROW. Wading birds may utilize the drainage ditches and stormwater ponds in the project area. The project is within the 15-mile-radius core foraging area of three wood stork colonies, and is within the U.S. Fish and Wildlife Service Consultation Areas for Scrub Jay, Manatee, and Atlantic Coast Plants.

Primary wildlife issues associated with this project include: potential adverse effects to a moderate number of species listed by the Federal Endangered Species Act as Endangered or Threatened, or by the State of Florida as Threatened or Species of Special Concern; and potential water quality degradation as a result of additional stormwater runoff from the new roadway surface entering drainage canals and ultimately the Lake Worth Lagoon.

Comments on Effects to Resources:

Based on the project information provided, we believe that direct and indirect effects of this project could be minimal, provided that roadway construction avoids the remaining xeric scrub area, any new DRAs are not constructed within areas of natural habitat, and degradation of adjacent or downstream water quality is avoided via inclusion of Best Management Practices in the project design.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 07/11/2014 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Federally listed species and fish and wildlife resources

Comments on Effects to Resources:

Federally-listed species -

The Service has reviewed our Geographic Information Systems (GIS) database for recorded locations of Federally listed threatened and endangered

species on or adjacent to the project study area. The GIS database is a compilation of data received from several sources. Based on review of our GIS database, the Service notes that the following Federally listed species may occur in or near the project area.

Wood Stork

The project corridor is located in the Core Foraging Areas (CFA)(within 18.6 miles) of four active nesting colonies of the endangered wood stork (*Mycteria americana*). The Service believes that the loss of wetlands within a CFA due to an action could result in the loss of foraging habitat for the wood stork. To minimize adverse effects to the wood stork, we recommend that any lost foraging habitat resulting from the project be replaced within the CFA of the affected nesting colony. Moreover, wetlands provided as mitigation should adequately replace the wetland functions lost as a result of the action. The Service does not consider the preservation of wetlands, by itself, as adequate compensation for impacts to wood stork foraging habitat, because the habitat lost is not replaced. Accordingly, any wetland mitigation plan proposed should include a restoration, enhancement, or creation component. In some cases, the Service accepts wetlands compensation located outside the CFA of the affected wood stork nesting colony. Specifically, wetland credits purchased from a "Service Approved" mitigation bank located outside of the CFA would be acceptable to the Service, provided that the impacted wetlands occur within the permitted service area of the bank.

For projects that impact 5 or more acres of wood stork foraging habitat, the Service requires a functional assessment be conducted using our "Wood Stork Foraging Analysis Methodology" (Methodology) on the foraging habitat to be impacted and the foraging habitat provided as mitigation. The Methodology can be found at: <http://www.fws.gov/verobeach/ListedSpeciesBirds.html> .

The Service believes that the following federally listed species have the potential to occur in or near the project site: eastern indigo snake (*Drymarchon couperi* = *Drymarchon corais couperi*), West Indian manatee (*Trichechus manatus*), and wood stork. Accordingly, the Service recommends that the Florida Department of Transportation (FDOT) prepare a Biological Assessment for the project (as required by 50 CFR 402.12) during the FDOT's Project Development and Environment process.

Fish and Wildlife Resources -

Wetlands provide important habitat for fish and wildlife. If wetlands are found within the project area, we recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to these wetlands are unavoidable, we recommend the FDOT provide mitigation that fully compensates for the loss of important resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Coastal and Marine

Project Effects

Coordinator Summary Degree of Effect: 0 None assigned 11/20/2014 by FDOT District 4

Comments:

As the project is located approximately three miles west of the Atlantic Ocean and Intracoastal Waterway, it is not within an area considered to have coastal or marine resources. The NMFS indicated that the proposed work would not directly impact areas that support essential fish habitat (EFH), NOAA trust fishery resources, or wetland areas that support NOAA trust fishery resources. As such, this project will not require an Essential Fish Habitat Assessment, nor is further consultation with the NMFS necessary unless future modifications to the project could result in adverse impacts to EFH. For these reasons, a Summary DOE of None has been assigned to the Coastal and Marine issue.

Degree of Effect: 0 None assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/12/2014 by Brandon Howard, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

None

Comments on Effects to Resources:

None

Additional Comments (optional):

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Physical

Noise

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

Noise sensitive receptors identified within a quarter-mile buffer of the interchange improvements include: one hotel, one funeral home, one health care facility, one laser facility, group care facilities, schools, churches, parks, cultural resources, and single family homes. Currently, there are no sound barriers along the interchange. Although increased noise levels during construction could have potential short-term impacts on nearby residences and businesses, overall noise and vibration related impacts as a result of the project are anticipated to be minor. Therefore, a Summary DOE of Minimal has been assigned to the Noise issue.

During Project Development, a Noise Study Report will be prepared in accordance with Part 2, Chapter 17 of the FDOT PD&E Manual.

Degree of Effect: 2 *Minimal* assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Noise sensitive receptors were identified within 1,000 ft of the interchange improvements.

Comments on Effects to Resources:

Effects during the construction could have short-term effects on receptors. A study report will be prepared to determine potential noise effects.

Additional Comments (optional):

CLC Commitments and Recommendations:

Air Quality

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

The project is not located within a USEPA-designated Air Quality Maintenance or Non-Attainment Area for any of the four pollutants (nitrogen oxides, ozone, carbon monoxide, and small particulate matter) specified by the USEPA in National Ambient Air Quality Standards. Therefore, the Clean Air Act conformity requirements do not apply to this project at this time. While temporary impacts to air quality could occur during project construction as a result of fugitive dust and exhaust emissions, no permanent effects to air quality are anticipated. Overall, minor air quality improvement could result due to reduced emissions from idling traffic with the expansion of operational capacity. Based on the foregoing, a Summary DOE of Minimal has been assigned to the Air Quality issue.

During Project Development, an Air Quality Technical Memorandum will be prepared in accordance with Part 2, Chapter 16 of the FDOT PD&E Manual.

Degree of Effect: 2 *Minimal* assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Air quality

Comments on Effects to Resources:

Temporary impacts could occur during construction phase. No permanent effect are anticipated.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/24/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Contamination

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 11/20/2014 by FDOT District 4

Comments:

FDEP and USEPA reported several potential contamination sites within the 500-foot project buffer including: three hazardous waste facilities, eight petroleum contamination monitoring sites, thirteen storage tank contamination monitoring sites, four Super Act risk sources, and five USEPA RCRA-regulated facilities. Due to the presence and proximity of these facilities (including potential previous contamination from these sites) and potential presence of hazardous substances associated with the existing bridge over the South Florida Rail Corridor/CSX Railroad line, a Summary DOE of Moderate has been assigned to the Contamination issue.

Contamination (including any required permits) will be evaluated during Project Development in accordance with federal, state and local laws and regulations. A Contamination Screening Evaluation Report (similar to Phase I and Phase II Audits) will be prepared in accordance with Part 2, Chapter 22 of the FDOT PD&E Manual, including site specific surveys to assess existing known subsurface contamination and proximity to construction activities, as well as historical contamination release. Contingency Plans/"Special Provisions for Unidentified Areas of Contamination" shall be included in the project's construction contract documents. These provisions will specify procedures to follow in the event any hazardous material or suspected contamination is encountered during construction or should there be any construction-related spills.

Degree of Effect: 3 *Moderate* assigned 08/24/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Groundwater aquifer and soils

Comments on Effects to Resources:

several potential subsurface contamination sites exist within the 500 foot buffer including 3 RCRA regulated sites, and many petroleum storage tank monitoring sites. EPA recommends a site specific assessment to assess specific contamination that may exist. Construction in areas of subsurface contamination may mobilize contaminants. Therefore, remediation and contingency plans to address and manage hazardous substances, contamination and contaminated media must be in place.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 3 *Moderate* assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Potential contamination monitoring sites including an existing bridge need to be evaluated.

Comments on Effects to Resources:

Effects need to be evaluated and addressed.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

CLC Commitments and Recommendations:

Degree of Effect: 3 *Moderate* assigned 08/22/2014 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

GIS data indicates that there are 3 hazardous waste facilities, 8 petroleum contamination monitoring sites, 13 storage tank contamination monitoring sites and 5 RCRA regulated facilities within the 500-ft. project buffer zone.

Comments on Effects to Resources:

A Contamination Screening Evaluation (similar to Phase I and Phase II Audits) will need to be conducted along the project right-of-way in considering the proximity to known petroleum and hazardous material handling facilities. The Contamination Screening Evaluation should outline specific procedures that would be followed by the applicant in the event drums, wastes, tanks or potentially contaminated soils are encountered during construction. Special attention should be made in the screening evaluation to historical land uses (such as solid waste disposal) that may have an effect on the proposed project, including any stormwater retention and treatment areas.

Additional Comments (optional):

CLC Commitments and Recommendations:

Infrastructure

Project Effects

Coordinator Summary Degree of Effect: 2 Minimal assigned 11/20/2014 by FDOT District 4

Comments:

Infrastructure-related features identified within the 500-foot project buffer include five compliance and enforcement tracking facilities, five onsite sewage facilities, and the South Florida Rail Corridor/CSX Railroad (located immediately west of the existing interchange). Although the bridge over the existing railroad tracks will be widened, it should have no impact on the existing rail corridor. Given the few features identified and the limited amount of right-of-way acquisition proposed for this project, a Summary DOE of Minimal has been assigned to the Infrastructure issue.

During Project Development, FDOT District Four will coordinate with all appropriate agencies to adequately address potential project effects on infrastructure and acquire all necessary permits.

Degree of Effect: 2 Minimal assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

South Florida Rail Corridor/CSX Railroad. Minimal effects or disruption is expected to occur to the railroad.

Comments on Effects to Resources:

Minimal effects or disruption is expected to occur to the railroad.

Additional Comments (optional):

CLC Commitments and Recommendations:

Navigation

Project Effects

Coordinator Summary Degree of Effect: 0 None assigned 11/20/2014 by FDOT District 4

Comments:

USACE stated that if work is to be performed within waters of the United States (includes existing ditches, canals, etc.) to improve the stormwater management system, a nationwide permit would likely be required. The proposed project is not anticipated to impact the navigation of any canal or surface water within the area. Therefore, a Summary DOE of None has been assigned to the Navigation issue.

Degree of Effect: 0 None assigned 08/18/2014 by Garrett Lips, US Army Corps of Engineers

Coordination Document: Permit Required

Coordination Document Comments:

If work within waters of the United States (includes existing ditches, canals, etc.) is needed to improve the stormwater management system a nationwide permit would likely be required.

Direct Effects

Identified Resources and Level of Importance:

No wetlands or navigable waters are present. Low ecological quality waters may be present.

Comments on Effects to Resources:

Minor filling may be needed for stormwater management system improvements, but no ecological losses are anticipated.

Additional Comments (optional):

If work within waters of the United States (includes existing ditches, canals, etc.) is needed to improve the stormwater management system a nationwide permit would likely be required.

CLC Commitments and Recommendations:

Degree of Effect: N/A N/A / No Involvement assigned 07/17/2014 by Randall D Overton, US Coast Guard

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

No Coast Guard involvement

Comments on Effects to Resources:

No Coast Guard involvement

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 None assigned 10/23/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Special Designations

Special Designations

Project Effects

Coordinator Summary Degree of Effect: 0 None assigned 11/20/2014 by FDOT District 4

Comments:

There are no Outstanding Florida Waters, aquatic preserves, scenic highways/byways, or wild or scenic rivers reported within the project vicinity. Therefore, no impacts to these resources are anticipated and a Summary DOE of None has been assigned to the Special Designations issue.

Degree of Effect: 0 None assigned 08/24/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 None assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

Environmental Resource Permit and Water Use Permit (for construction dewatering if the project does not qualify for the permit by rule).

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 10/24/2014 by Luis D Lopez, P.E., Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Eliminated Alternatives

There are no eliminated alternatives for this project.

Project Scope

General Project Commitments

Date	Description
11/21/2014	<p>FDOT commits to the following technical studies: 1. Air Quality Technical Memorandum, 2. Contamination Screening Evaluation Report, 3. Cultural Resource Assessment Survey, 4. Endangered Species Biological Assessment, 5. Noise Study Report, 6. Public Hearing Transcript, 7. Public Involvement Plan, 8. Section 4(f) Determination of Applicability, 9. Sociocultural Effects Evaluation, 10. Water Quality Impact Evaluation, and 11. Wetland Evaluation Technical Memorandum.</p> <p>FDOT commits to the following permits: SFWMD Environmental Resource Permit, SFWMD Water Use Permit, and USACE Nationwide Permit.</p> <p>During Project Development, FDOT District Four will coordinate with the City of Boynton Beach and the Palm Beach Metropolitan Planning Organization (MPO) to ensure that 1) the project is included on the Future Transportation Map of the adopted City of Boynton Beach Comprehensive Plan and is consistent with the adopted Palm Beach MPO Long Range Transportation Plan (LRTP) and 2) funding is identified for all future project phases in the Transportation Improvement Program (TIP), LRTP, State Transportation Improvement Program (STIP), and FDOT Strategic Intermodal System (SIS) Cost Feasible Plan.</p> <p>During Project Development, public outreach will require Limited English Proficiency (LEP) accommodations.</p>

Anticipated Permits

Permit	Type	Conditions	Review Org	Review Date
Department of the Army Corps of Engineers Nationwide Permit	USACE		FDOT District 4	11/21/14
SFWMD Environmental Resource Permit	Water		FDOT District 4	11/21/14
SFWMD Water Use Permit	Water		FDOT District 4	11/21/14

Anticipated Technical Studies

Technical Study Name	Type	Conditions	Review Org	Review Date
Noise Study Report	ENVIRONMENTAL		FDOT District 4	11/21/2014
Contamination Screening Evaluation Report	ENVIRONMENTAL		FDOT District 4	11/21/2014
Endangered Species Biological Assessment	ENVIRONMENTAL		FDOT District 4	11/21/2014
Wetlands Evaluation Technical Memorandum	Other		FDOT District 4	11/21/2014
Sociocultural Effects Evaluation	Other		FDOT District 4	11/21/2014
Air Quality Technical Memorandum	ENVIRONMENTAL		FDOT District 4	11/21/2014
Water Quality Impact Evaluation (WQIE)	ENVIRONMENTAL		FDOT District 4	11/21/2014
Cultural Resource Assessment Survey	ENVIRONMENTAL		FDOT District 4	11/21/2014
Public Involvement Plan	Other		FDOT District 4	11/21/2014
Public Hearing Transcript	Other		FDOT District 4	11/21/2014
Section 4(f) Determination of Applicability	ENVIRONMENTAL		FDOT District 4	11/21/2014

Class of Action

Class of Action Determination

Class of Action	Other Actions	Lead Agency	Cooperating Agencies	Participating Agencies
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Type 2 Categorical Exclusion	Section 4(f) Evaluation Endangered Species Assessment USACE Department of the Army Corps of Engineers Nationwide Permit	Federal Highway Administration	No Cooperating Agencies have been identified.	No Participating Agencies have been identified.
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Class of Action Signatures

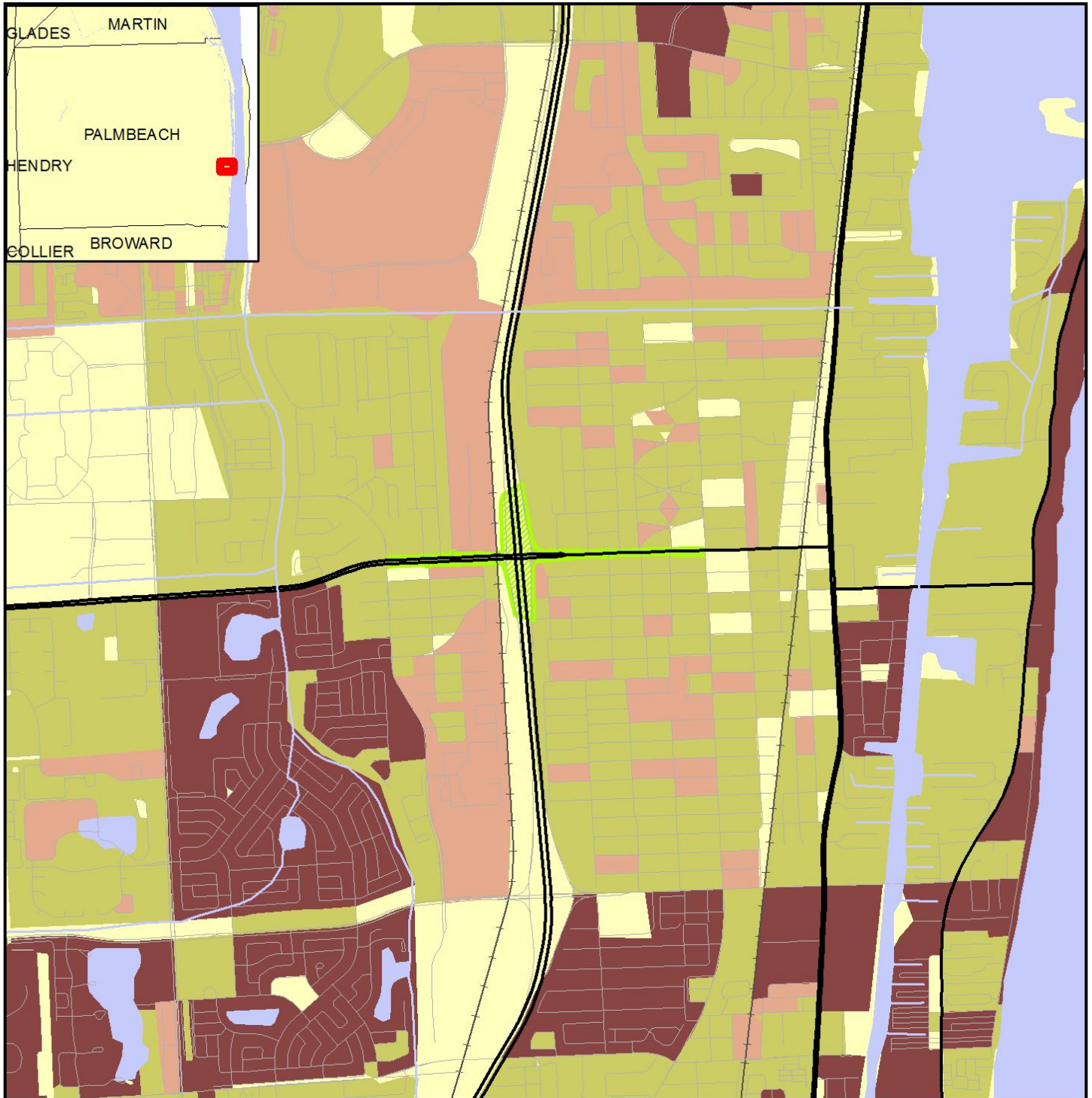
Name	Agency	Review Status	Date	ETDM Role
Richard Young	FDOT District 4	ACCEPTED	04/02/2015	FDOT ETDM Coordinator
Luis D Lopez, P.E.	Federal Highway Administration	ACCEPTED	05/20/2015	Lead Agency ETAT Member

Dispute Resolution Activity Log

There are no dispute actions identified for this project in the EST.

Hardcopy Maps: Alternative #1

14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



0 1 Miles

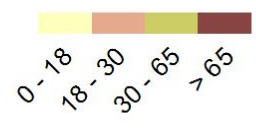
Population Age Distribution Map



Data Sources:
 US Geological Survey
 FL Department of Transportation
 NAVTEQ
 US Census Bureau (2010)

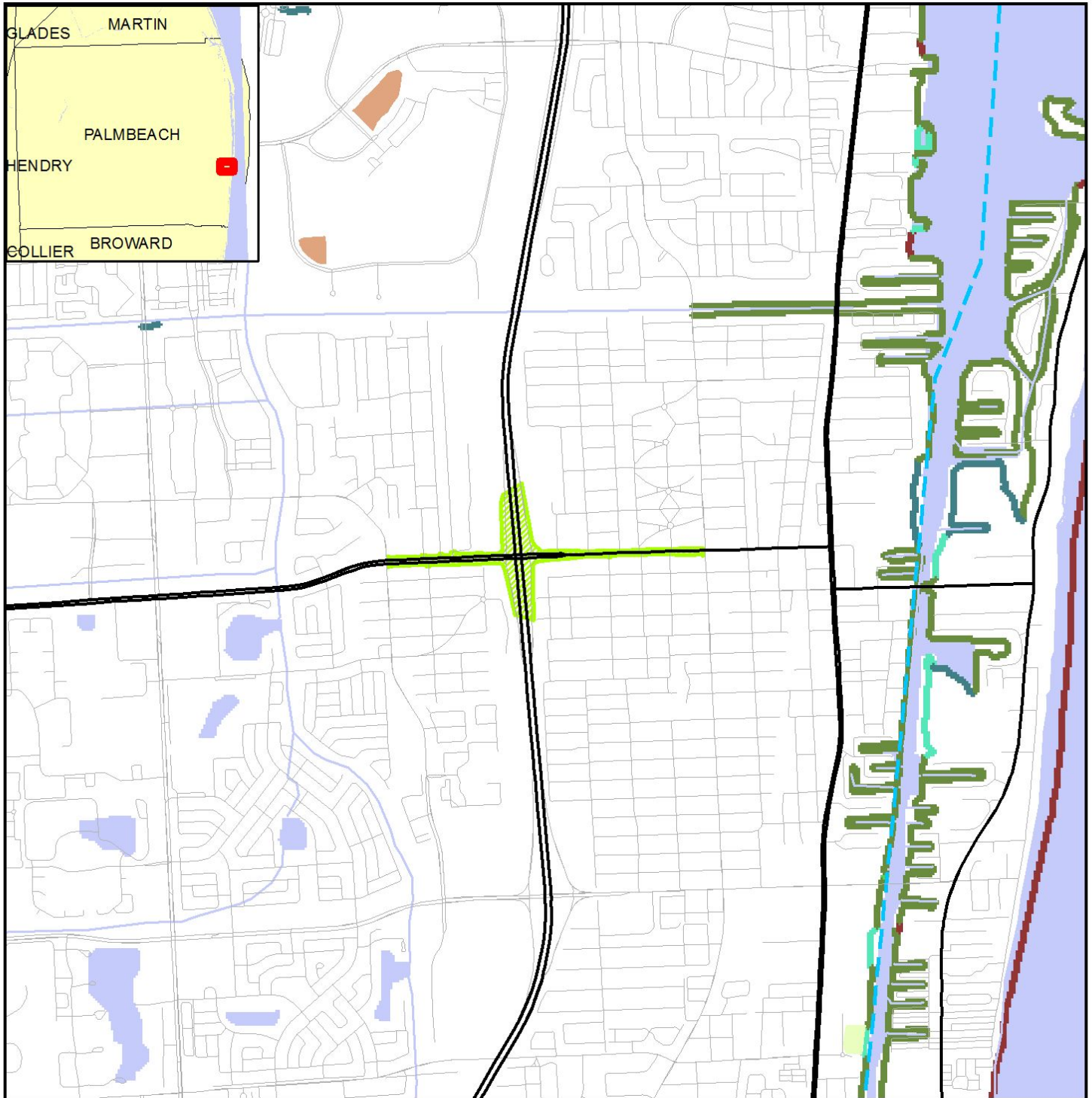
- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body

Median Age



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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



0 0.5 Miles



- ### Coastal and Marine Resource Map
- | | | | |
|---------------------------|------------------------|-------------------------------|--------------------------------------|
| ETDM Alternative Point | Major Road | Continuous Seagrass | Gravel Beach/Riprap |
| ETDM Alternative Terminus | Local Road or Trail | Discontinuous Seagrass | Exposed Tidal Flat |
| ETDM Alternative Segment | River, Stream or Canal | Coastal Barrier Resource Area | Sheltered Tidal Flat |
| ETDM Alternative Polygon | Water Body | Swamp or Marsh | Mixed Sand And Gravel Beach |
| | Aquatic Preserve | Exposed Rocky Platform | Sheltered Rock/Seawall/Vegetated |
| | Navigable Water Way | Sand Beach | Exposed Vertical Rocky Shore/Seawall |

Data Sources: NAVTEQ; US Geological Survey; Florida Marine Research Institute; Florida Department of Transportation; Florida Department of Environmental Protection; National Oceanic and Atmospheric Association; Florida Water Management Districts

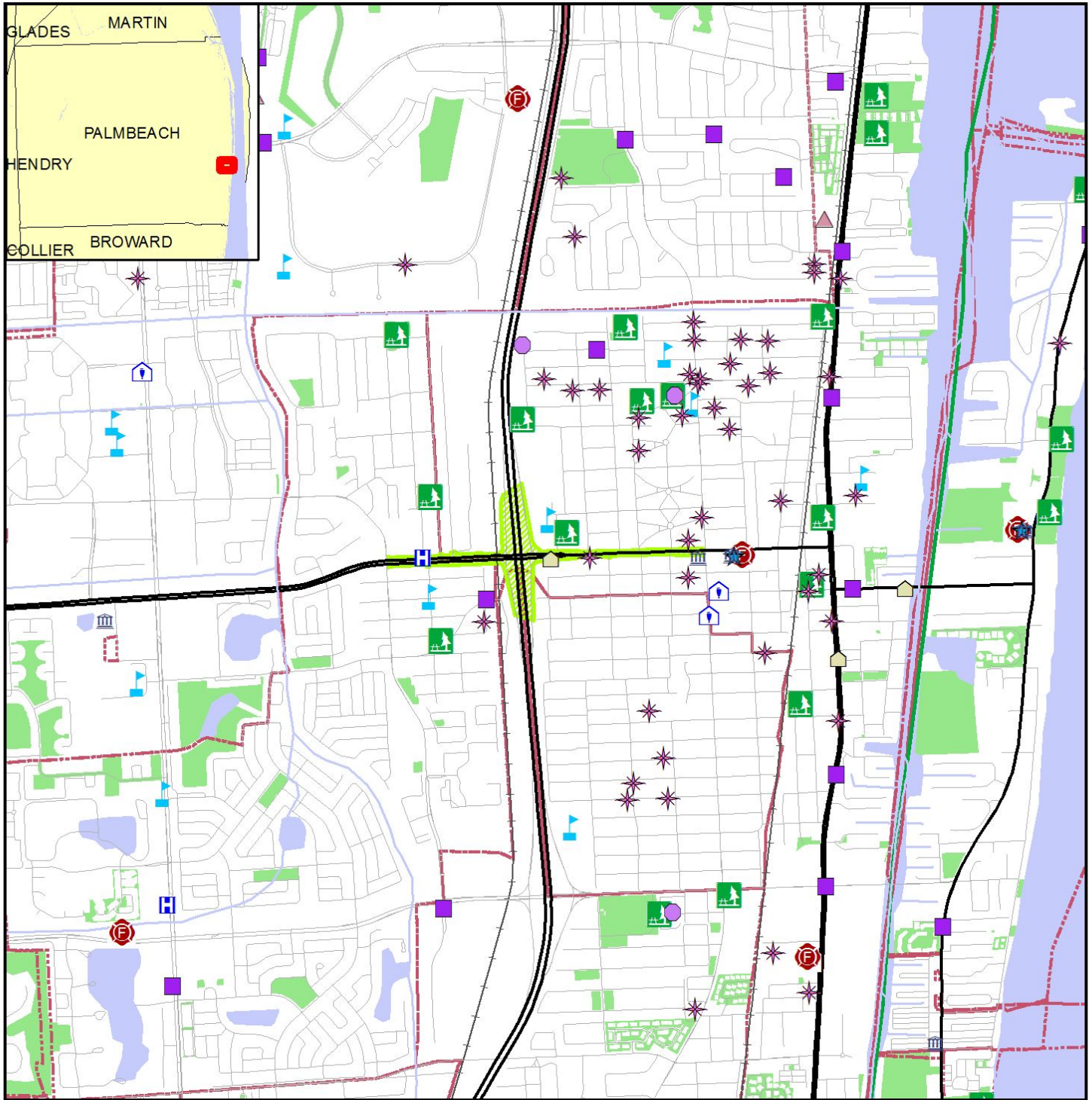
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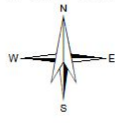
Map Generated on: 7/2/2014



14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



0 0.08 Miles



- | | | | |
|---------------------------|------------------|-----------------|---------------------------------|
| ETDM Alternative Point | Government | Cultural Center | River, Stream or Canal |
| ETDM Alternative Terminus | Civic Center | Fire Station | Recreational Trail |
| ETDM Alternative Segment | Cemetery | Health Care | Railroad |
| ETDM Alternative Polygon | Social Service | Health Care | Community Boundary |
| Major Road | Community Center | School | Water Body |
| Local Road or Trail | Law Enforcement | Park | Conservation or Recreation Area |
| | Place of Worship | | |

Community Facilities and Services Map

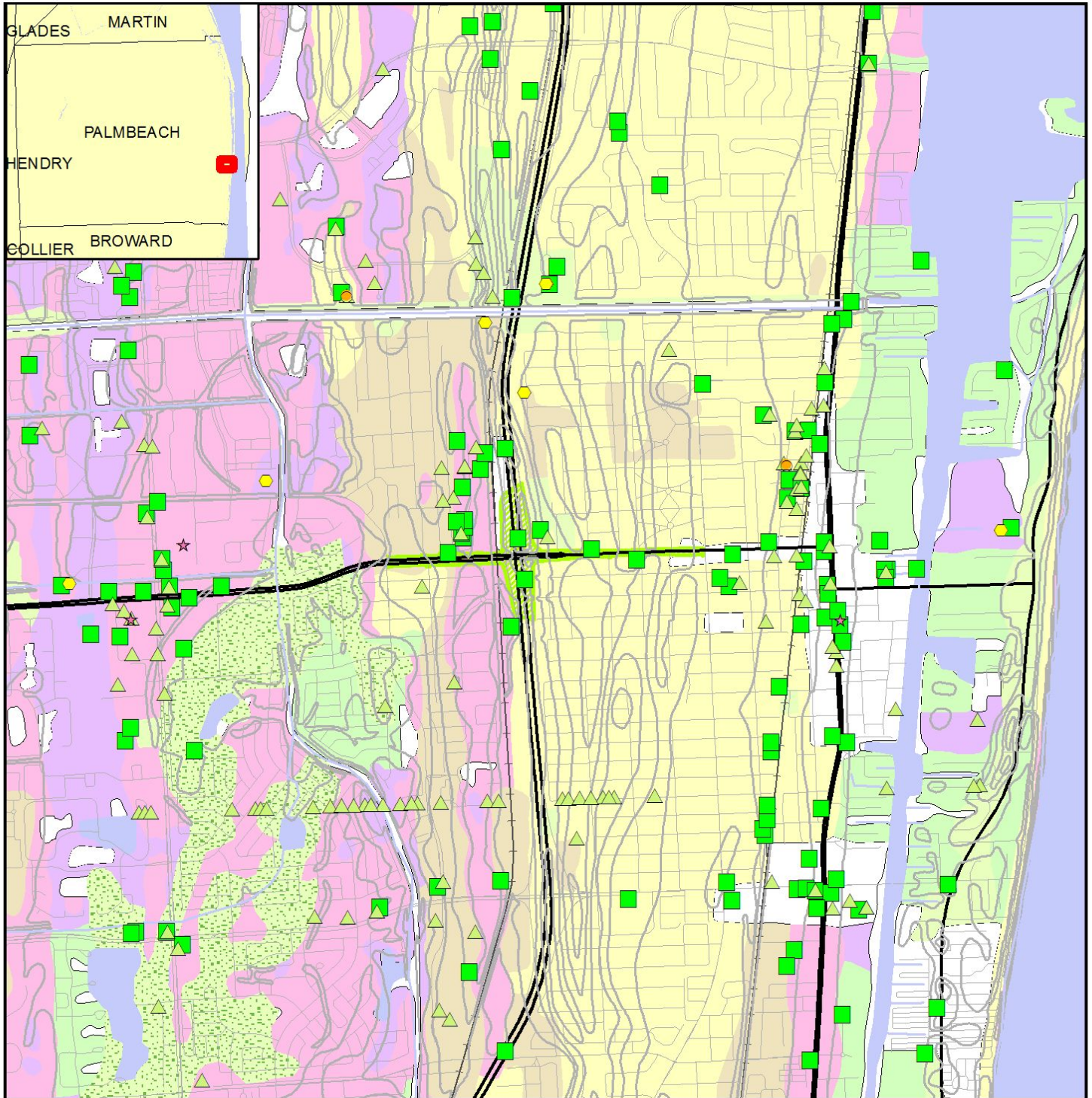
Data Sources:
 US Geological Survey; FL Department of Transportation; NAVTEQ; FL Property Appraisers; FL Natural Areas Inventory



Map Generated on: 7/2/2014



14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



Potential Contamination Assessment Map

- | | | |
|--------------------|--|---|
| <p>0 0.5 Miles</p> | <ul style="list-style-type: none"> ■ ETDM Alternative Point ● ETDM Alternative Terminus — ETDM Alternative Segment ETDM Alternative Polygon — Major Road — Local Road or Trail — Railroad — River, Stream or Canal ● Toxic Release Inventory ★ Dry Cleaning Facility ● Solid Waste Facility NPL Remediation Site ▲ Hazardous Material Site ■ Power Plant ● Superfund Site ■ Nuclear Site ■ FDEP Tanks Brownfield Area — 5 FT Contour ■ Water Body Swamp/Marsh | <ul style="list-style-type: none"> ■ Excessively Drained ■ Somewhat Excessively Drained ■ Moderately Well Drained ■ Well Drained ■ Somewhat Poorly Drained ■ Poorly Drained ■ Very Poorly Drained Unclassified |
|--------------------|--|---|

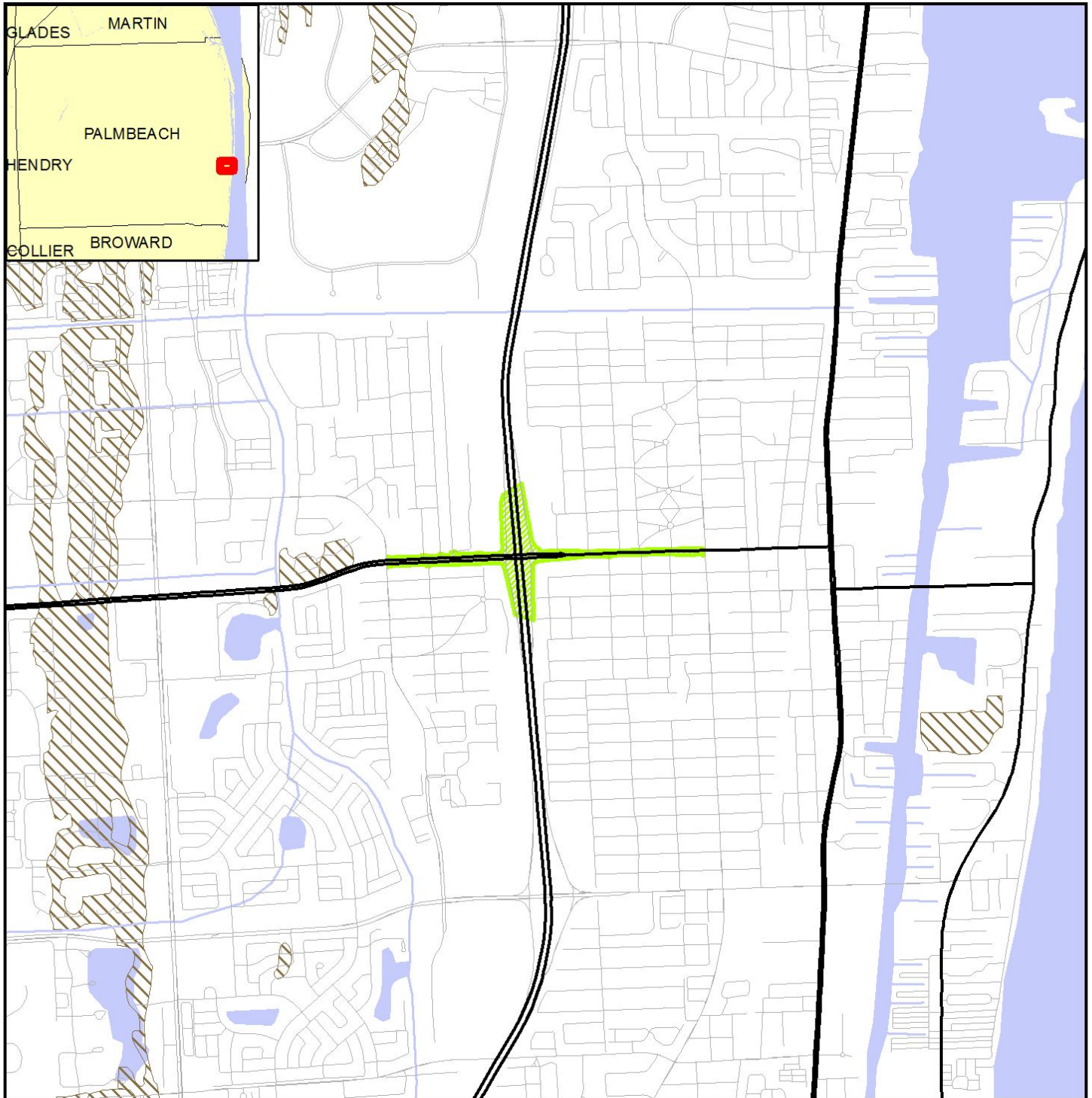
Data Sources:
 NAVTEQ; US Geological Survey; FL Department of Transportation; FL Department of Environmental Protection;
 FL Water Management Districts; US Environmental Protection Agency; Natural Resource Conservation Service
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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



Farmlands Resource Map

- 0 0.7 Miles
- ETDM Alternative Point
 - ETDM Alternative Terminus
 - ETDM Alternative Segment
 - ETDM Alternative Polygon
 - Major Road
 - Local Road or Trail
 - River, Stream or Canal
 - Water Body
 - Nurseries/Vineyards
 - Specialty Farms
 - Tree Crops
 - Cropland/Pastureland
 - Rural Open Lands
 - Prime Farmland Soils



Data Sources: NAVTEQ, Florida Water Management Districts, US Geological Survey, Natural Resources Conservation Services

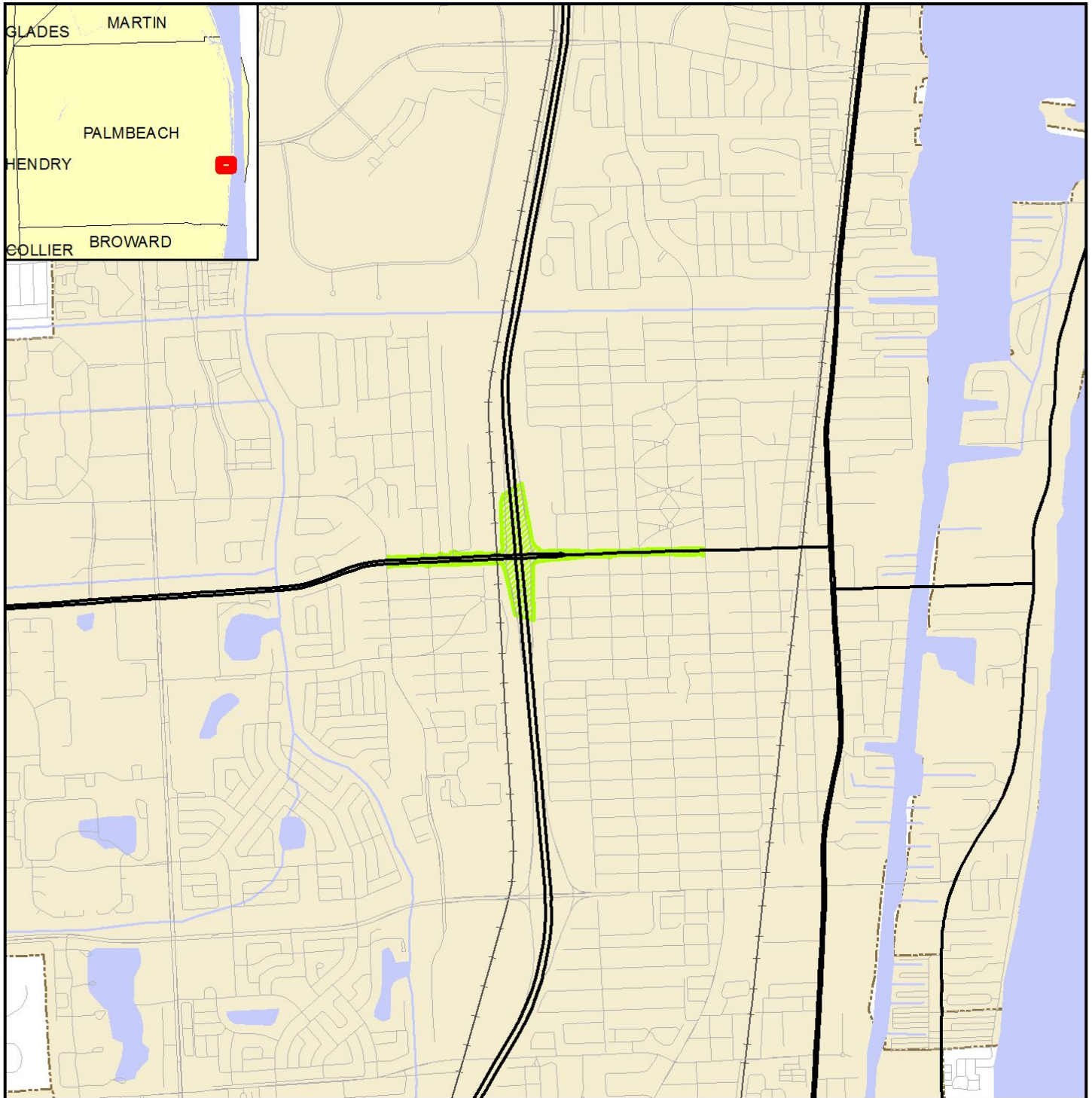
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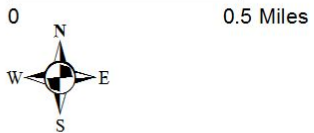
Map Generated on: 7/2/2014



14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



Floodplain Resource Map

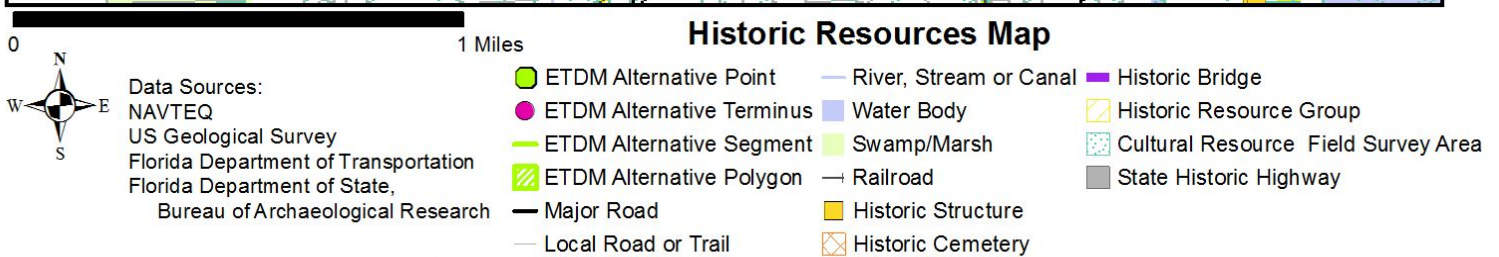
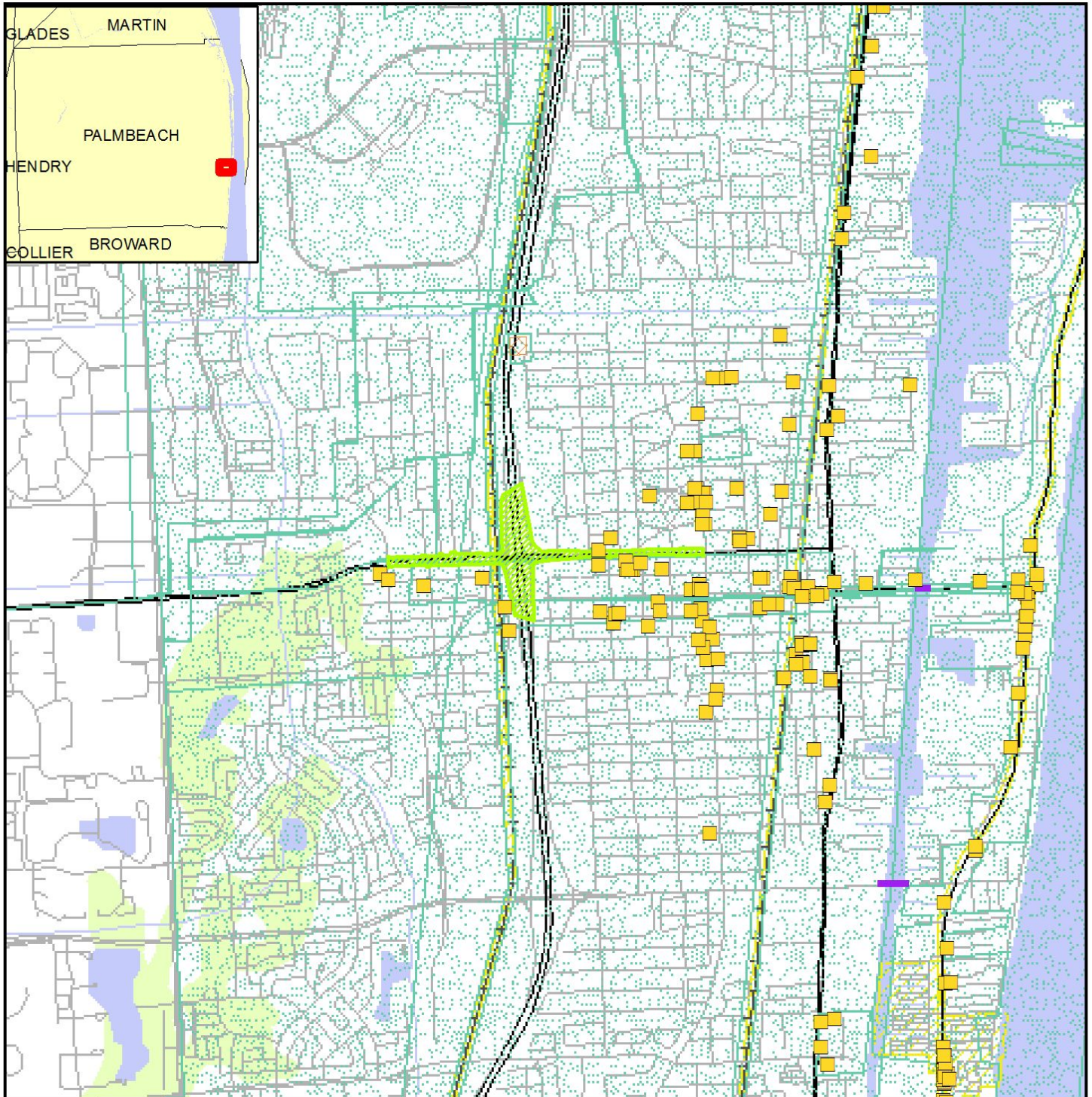


Data Sources:
 NAVTEQ
 US Geological Survey
 Federal Emergency Management Agency

- █ ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ▨ ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- █ Water Body
- City Limits
- County Boundaries
- Special Flood Hazard Area

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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1

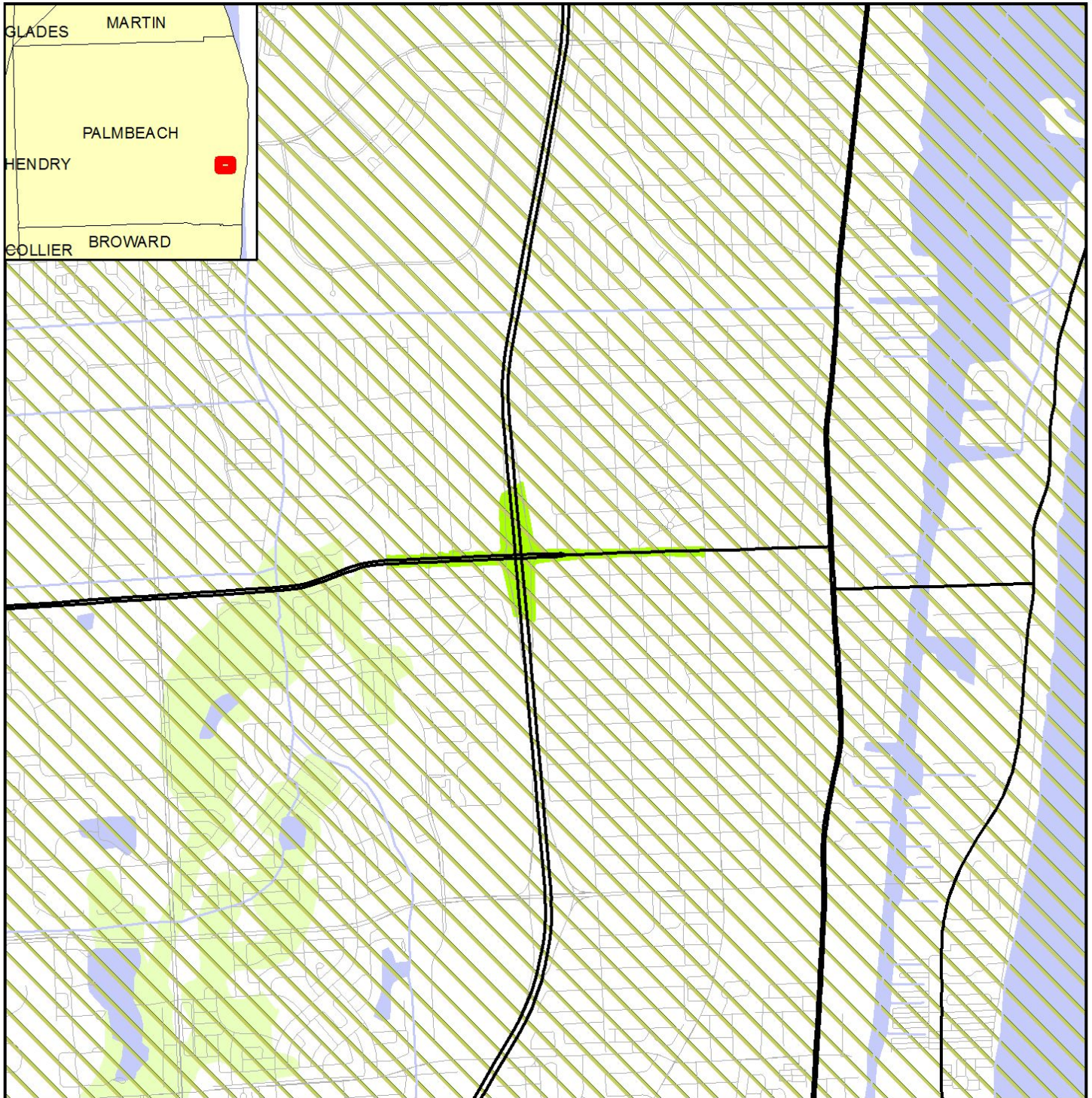


Note: Historic properties depicted on this map represent resources listed in the Florida Master Site File excluding archeological site locations, which, pursuant to Chapter 267.135, Florida Statutes, may be exempt from public record (Chapter 119.07, Florida Statutes). Absence of features on the map does not necessarily indicate an absence of resources in the project vicinity.

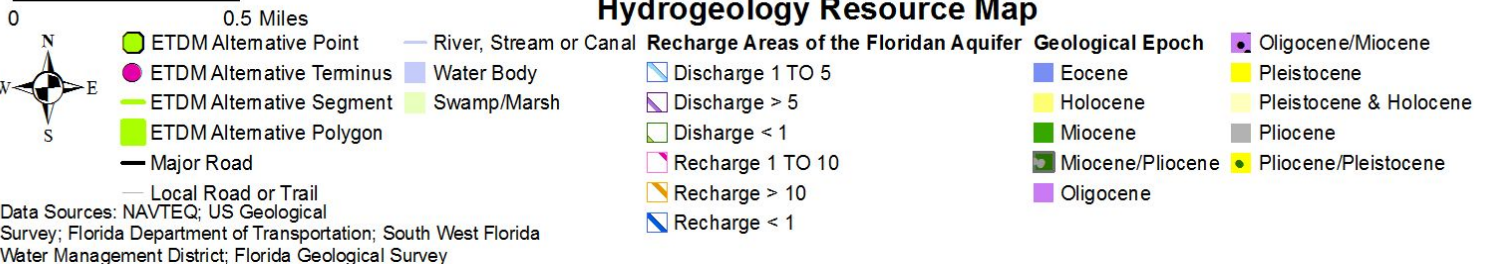


Map Generated on: 7/2/2014

14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1

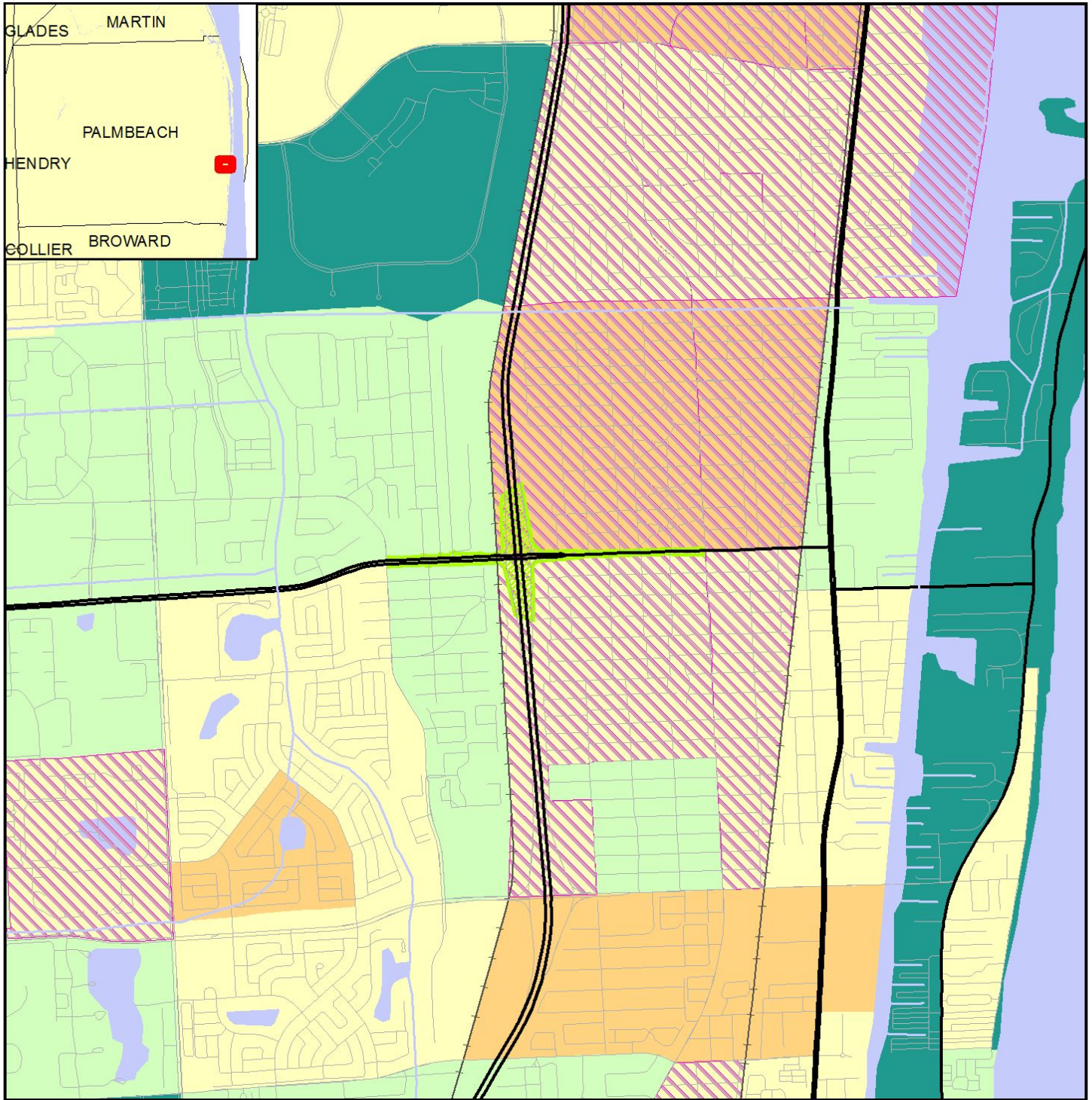


Hydrogeology Resource Map



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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



0 0.7 Miles



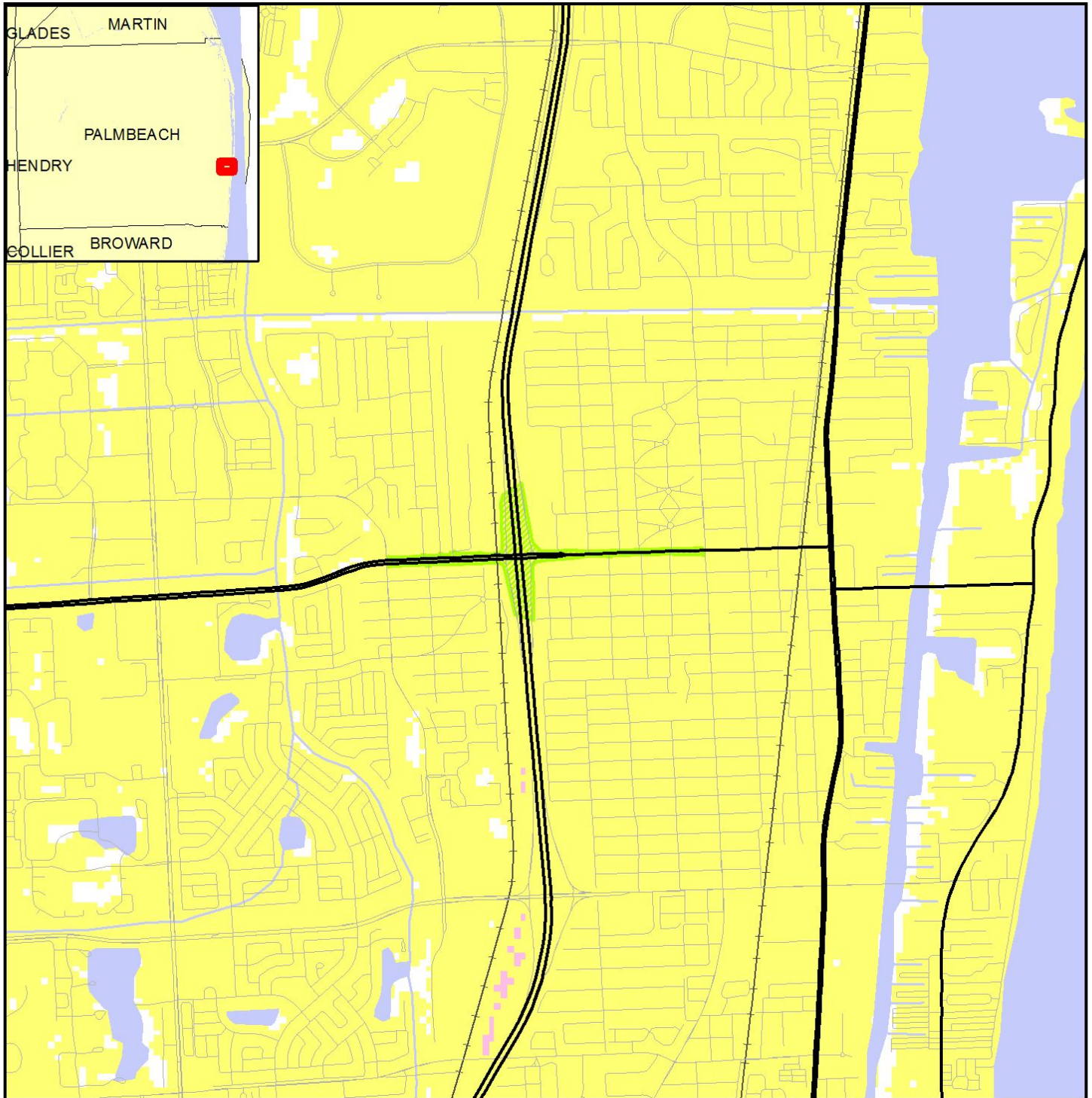
Data Sources:
 US Geological Survey
 FL Department of Transportation
 NAVTEQ
 US Census Bureau (2010)

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body
- > 20% Below Poverty



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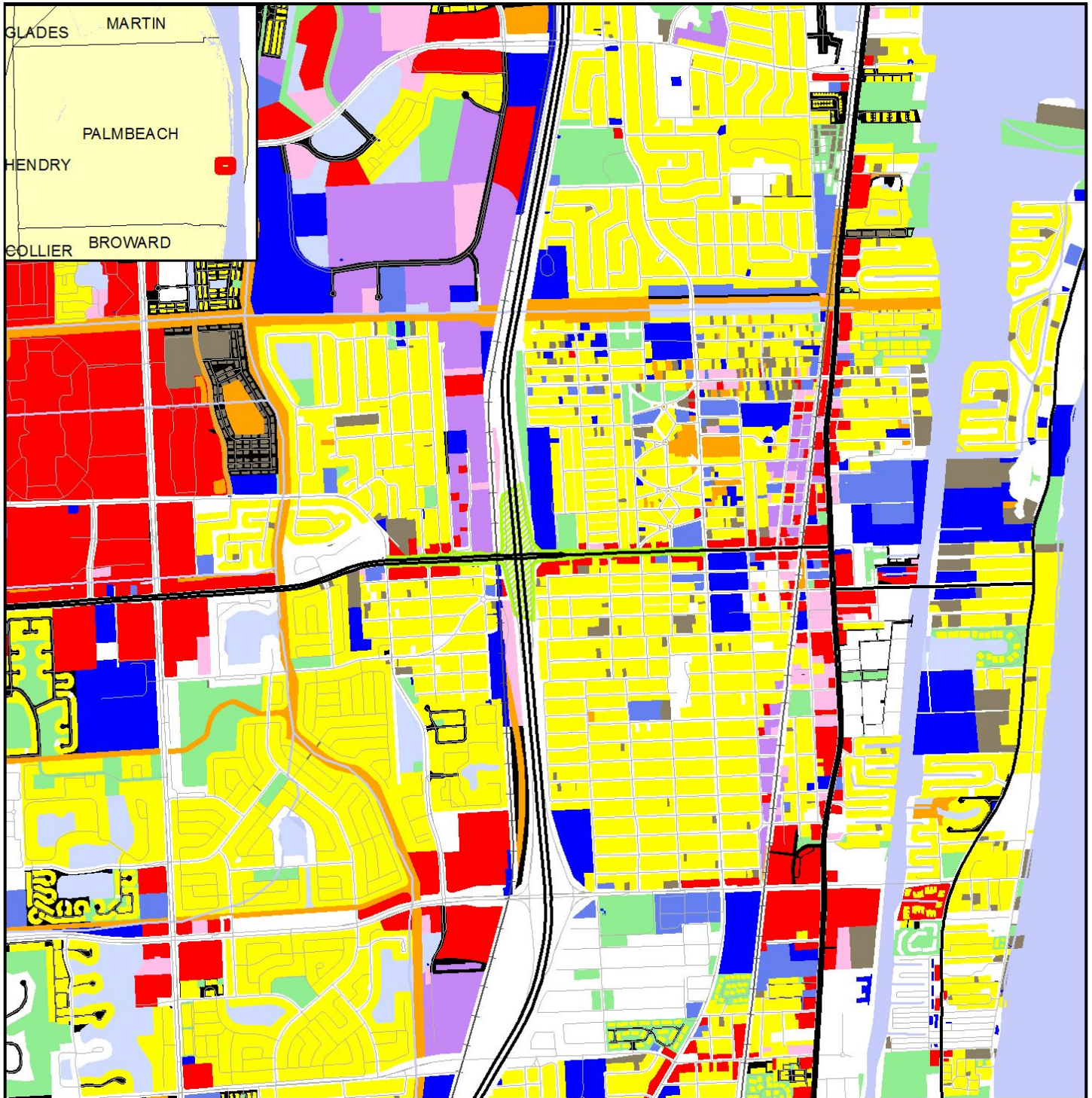
Integrated Wildlife Habitat Ranking System Map

- | | | |
|---------------------------|------------------------|------------------------|
| ETDM Alternative Point | Railroad | Low Habitat Quality |
| ETDM Alternative Terminus | River, Stream or Canal | Medium Habitat Quality |
| ETDM Alternative Segment | Water Body | High Habitat Quality |
| ETDM Alternative Polygon | Major Road | |
| Local Road or Trail | | |

Data Sources:
 NAVTEQ
 US Geological Survey
 Florida Department of Transportation
 Florida Fish & Wildlife Conservation Commission

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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



0 0.25 Miles



Data Sources:
 NAVTEQ
 US Geological Survey
 Florida Department of Revenue
 Florida Department of Transportation
 Florida County Property Appraiser Offices

Land Use Map

- | | | | |
|---------------------------|------------------------|-------------------------|-------------------------|
| ETDM Alternative Point | Railroad | Open (Not Agricultural) | Retail/Office |
| ETDM Alternative Terminus | River, Stream or Canal | Other | Vacant (Residential) |
| ETDM Alternative Segment | Agricultural | Public | Vacant (Nonresidential) |
| ETDM Alternative Polygon | Industrial | Right-of-Way | Water |
| Major Road | Institutional | Recreational | No Data |
| Local Road or Trail | Mining | Residential | |

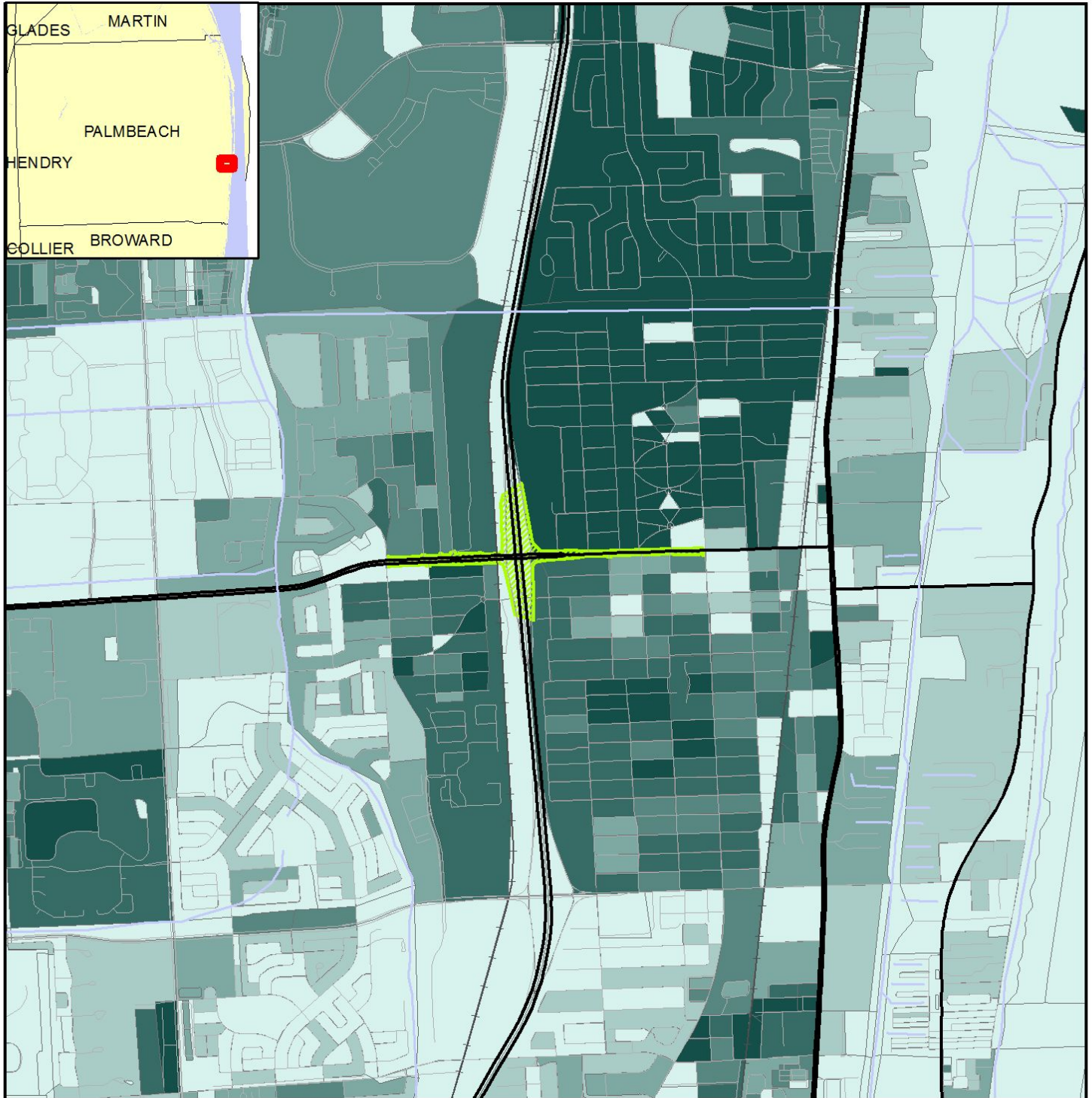
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Map Generated on: 7/2/2014



14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



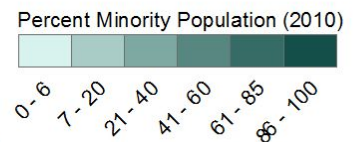
Minority Population Distribution Map

0 0.09 Miles



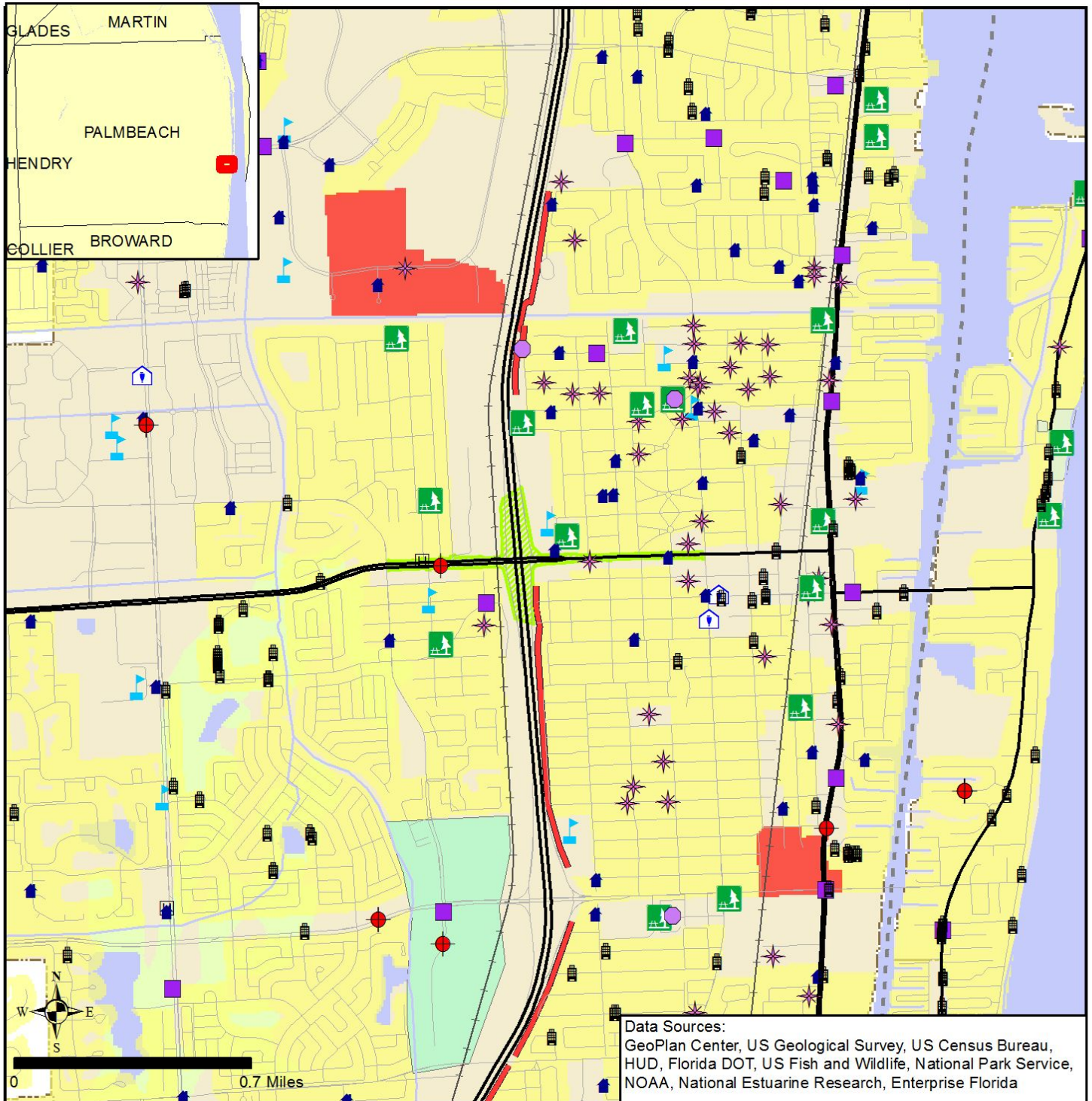
Data Sources:
 US Geological Survey
 FL Department of Transportation
 NAVTEQ
 US Census Bureau (2010)

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body



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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1

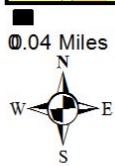
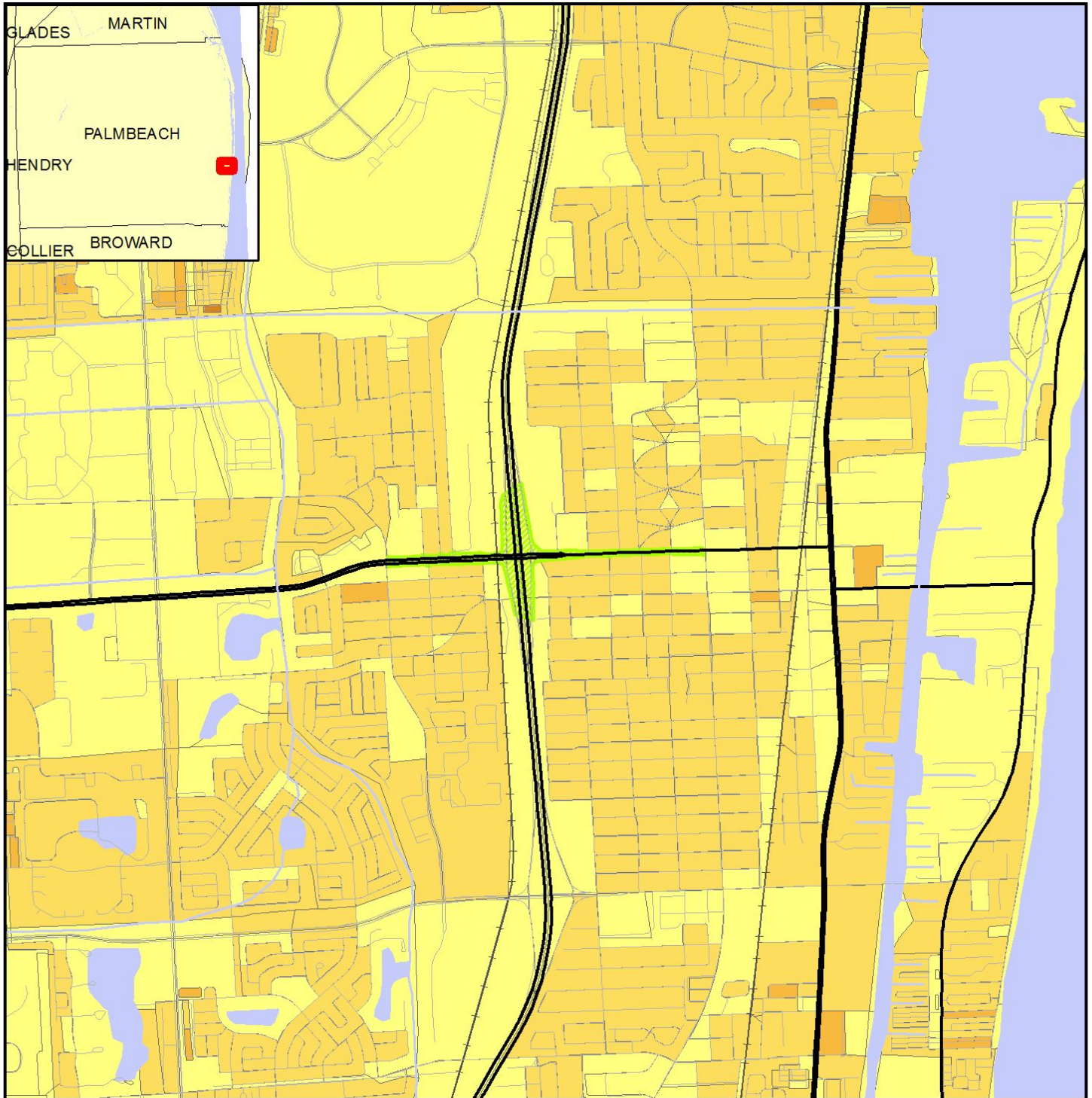


Noise Map

- | | | | | |
|---------------------------|---------------------------|-----------------------|---------------------------|--------------------------|
| ETDM Alternative Point | Existing Trails | Laser On-site | Place of Worship | Military Installations |
| ETDM Alternative Segment | Railroad | Group Care Facilities | School | Industrial |
| ETDM Alternative Polygon | River, Stream or Canal | Cemetery | Historic Cemetery | Residential |
| ETDM Alternative Terminus | Water Body | Community Center | Planned Unit Developments | HUD Renewal |
| County Boundaries | Swamp/Marsh | Cultural Center | Wildlife Refuges | Nat'l Estuarine Reserves |
| City Limits | Airport | Health Care | National Parks | Enterprise Zones |
| Major Road | Condo Owners Associations | Park | National Park Projects | DRI |
| Local Road or Trail | Hospitals | | | |
| Noise Barriers | | | | |

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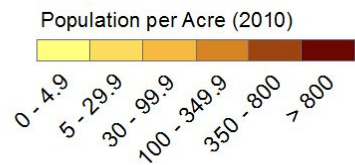
14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



Data Sources:
 US Geological Survey
 FL Department of Transportation
 NAVTEQ
 US Census Bureau (2010)

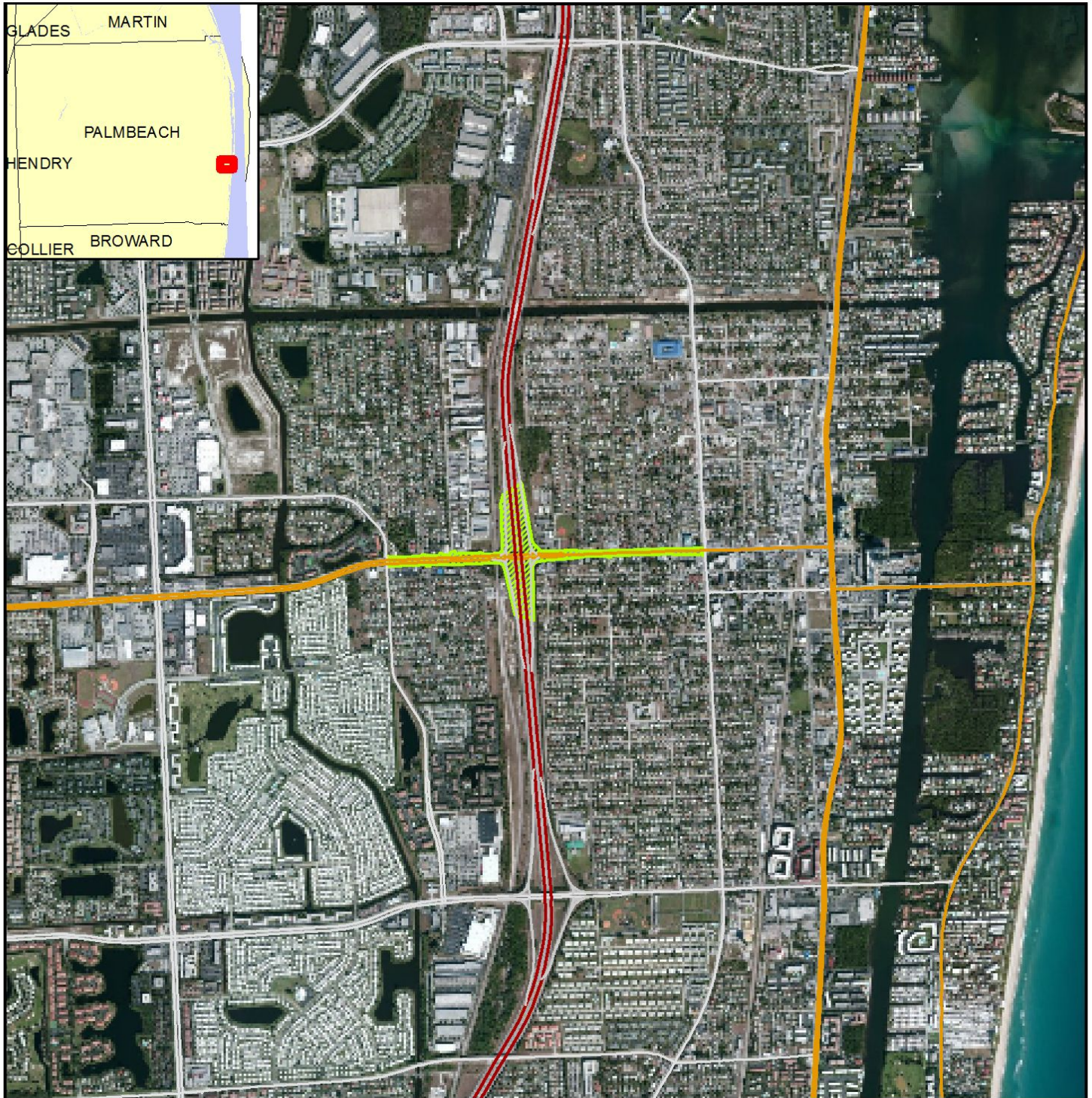
- █ ETDM Alternative Point
- ETDM Alternative Terminus
- ▨ ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body

Population Density Map



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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



Project Aerial Map

0 0.75 Miles

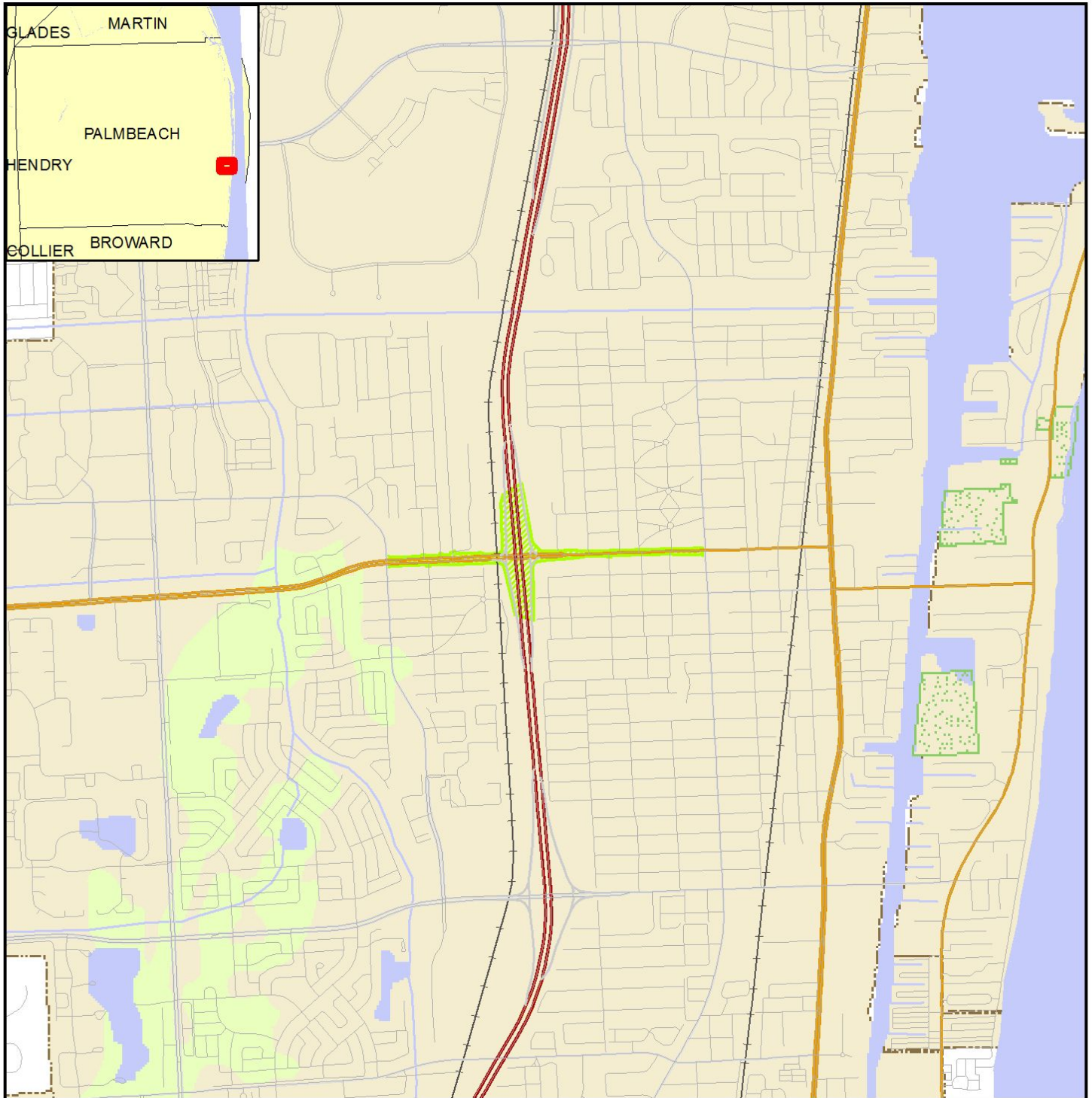


- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Primary and Limited Access Highway
- Secondary, Unlimited Access Highway
- Other Highway Feature
- Local Road

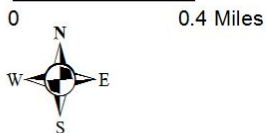
Data Sources:
 Highways - NAVTEQ
 Digital Orthophotograph - US Geological Survey

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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



Project Location Map

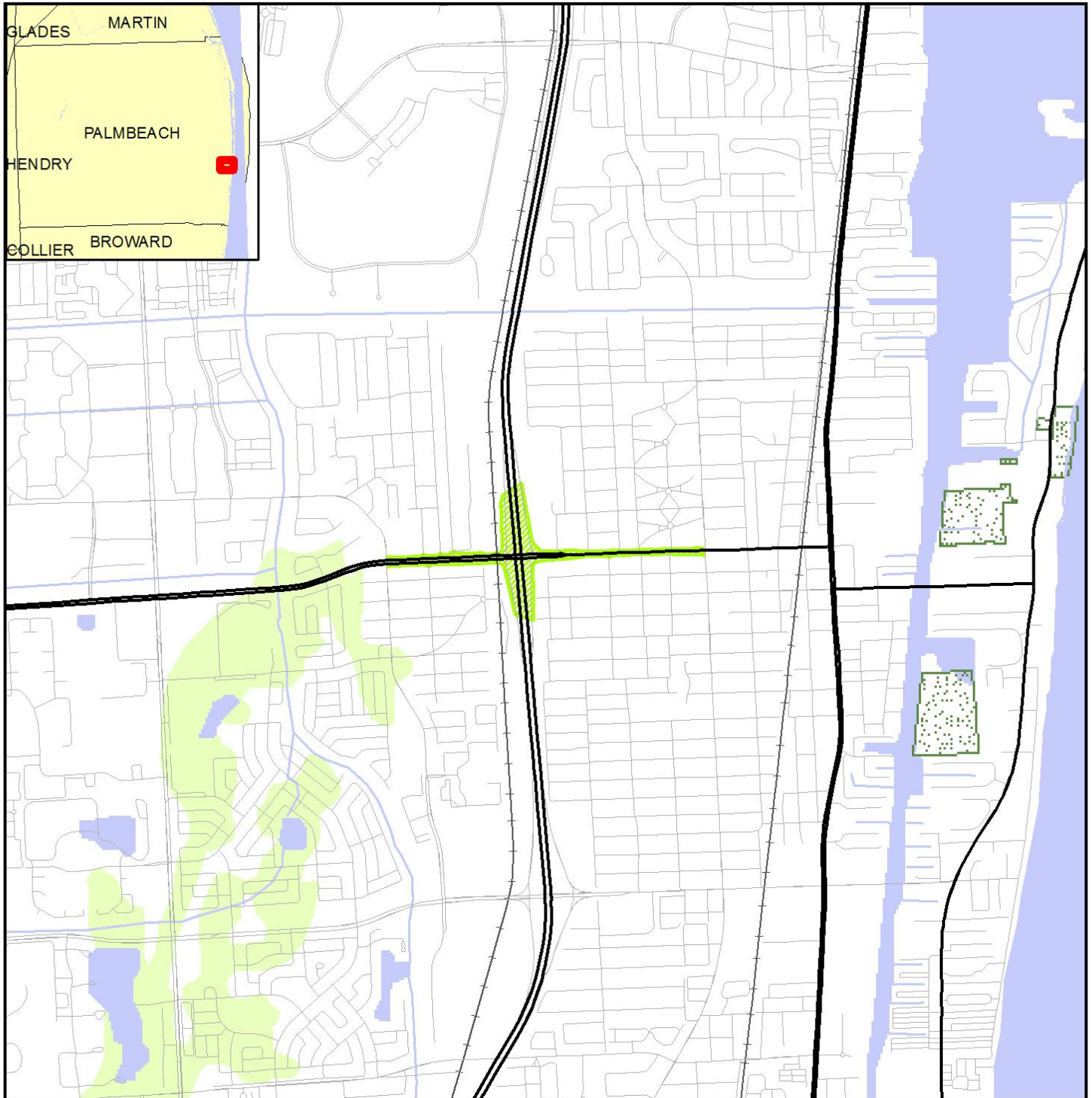


- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ▨ ETDM Alternative Polygon
- River, Stream or Canal
- Water Body
- Swamp/Marsh
- ▨ Managed Conservation Lands
- Toll Road
- Railroad
- Airport
- City Limits
- County Boundaries

Data Sources:
 NAVTEQ
 US Geological Survey
 US Census Bureau
 County Property Appraisers
 Florida Natural Areas Inventory

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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



Conservation and Recreation Area Map

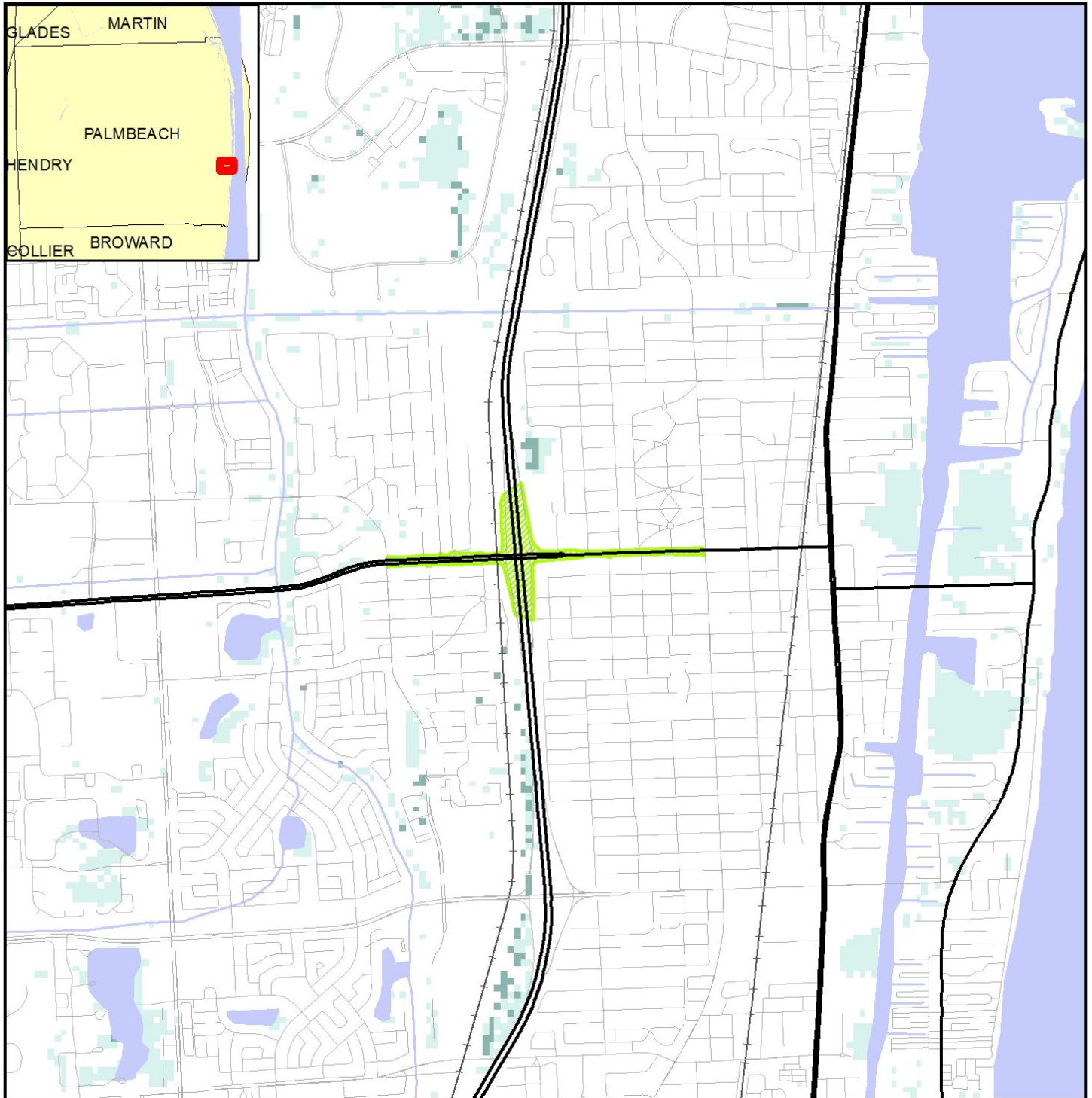


Data Sources:
 NAVTEQ
 US Geological Survey
 Florida Natural Areas Inventory

- ETDM Alternative Point
- ETDM Alternative Segment
- ETDM Alternative Polygon
- ETDM Alternative Terminus
- River, Stream or Canal
- Water Body
- Swamp/Marsh
- Conservation or Recreation Area
- Railroad
- County Boundary
- Major Road
- Local Road or Trail

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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



Species Potential Habitat Model Map

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> ● ETDM Alternative Point ● ETDM Alternative Terminus ETDM Alternative Segment ETDM Alternative Polygon Major Road Local Road or Trail | <ul style="list-style-type: none"> Railroad River, Stream or Canal Water Body | <h3 style="margin: 0;">Potential Habitat Richness</h3> <ul style="list-style-type: none"> 1 - 2 Species 3 - 5 Species 6 - 8 Species 9 - 10 Species 11 - 13 Species |
|---|--|---|

Data Sources:
 NAVTEQ
 US Geological Survey
 Florida Department of Transportation
 Florida Fish & Wildlife Conservation Commission

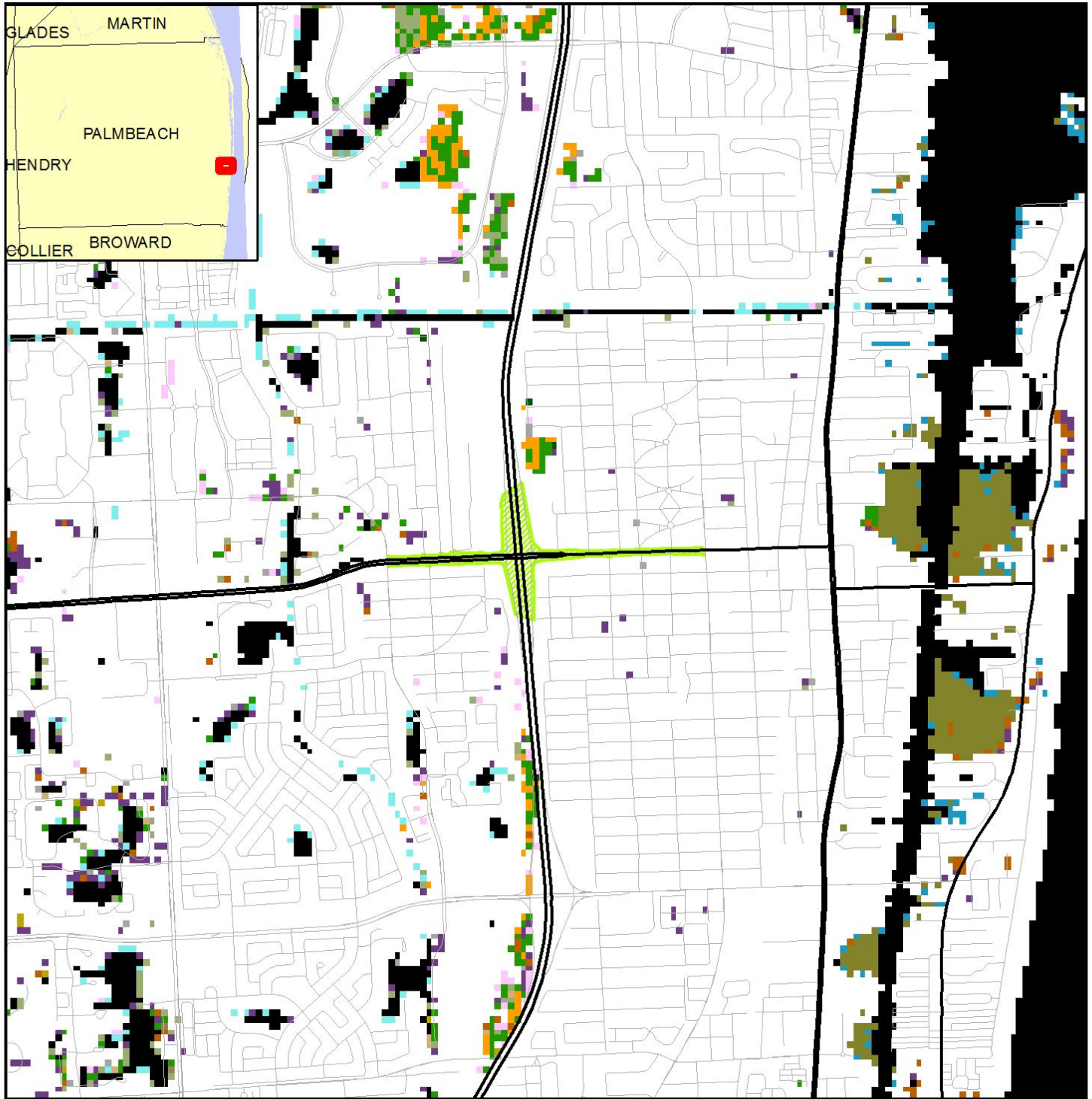
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Map Generated on: 7/2/2014



14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



Vegetation and Land Cover Map

- | | | | | | | |
|---------------------------|----------------------------|----------------------------------|----------------------------|---------------------|---------------------|-------------------|
| ETDM Alternative Polygon | Not Classified | Hardwood Hammocks and Forests | Bay Swamp | Mangrove Swamp | Unimproved Pasture | Brazilian Pepper |
| ETDM Alternative Segment | Coastal Strand | Pinelands | Cypress Swamp | Scrub Mangrove | Sugarcane | High Impact Urban |
| ETDM Alternative Terminus | Sand/Beach | Cabbage Palm-live Oak Hammock | Cypress/Pine/Cabbage Palm | Tidal Flats | Citrus | Low Impact Urban |
| ETDM Alternative Point | Xeric Oak Scrub | Tropical Hardwood Hammock | Mixed Wetland Forest | Open Water | Row and Field Crops | Extractive |
| Major Road | Sand Pine Scrub | Freshwater Marsh and Wet Prairie | Hardwood Swamp | Shrub and Brushland | Other Agriculture | |
| Local Road or Trail | Sandhill | Sawgrass Marsh | Hydric Hammock | Grassland | Exotic Plants | |
| | Dry Prairie | Cattail Marsh | Bottomland Hardwood Forest | Bare Soil/Clearcut | Australian Pine | |
| | Mixed Hardwood-pine Forest | Shrub Swamp | Salt Marsh | Improved Pasture | Melaleuca | |

Data Sources: NAVTEQ; Florida Department of Transportation; Florida Fish and Wildlife Conservation Commission

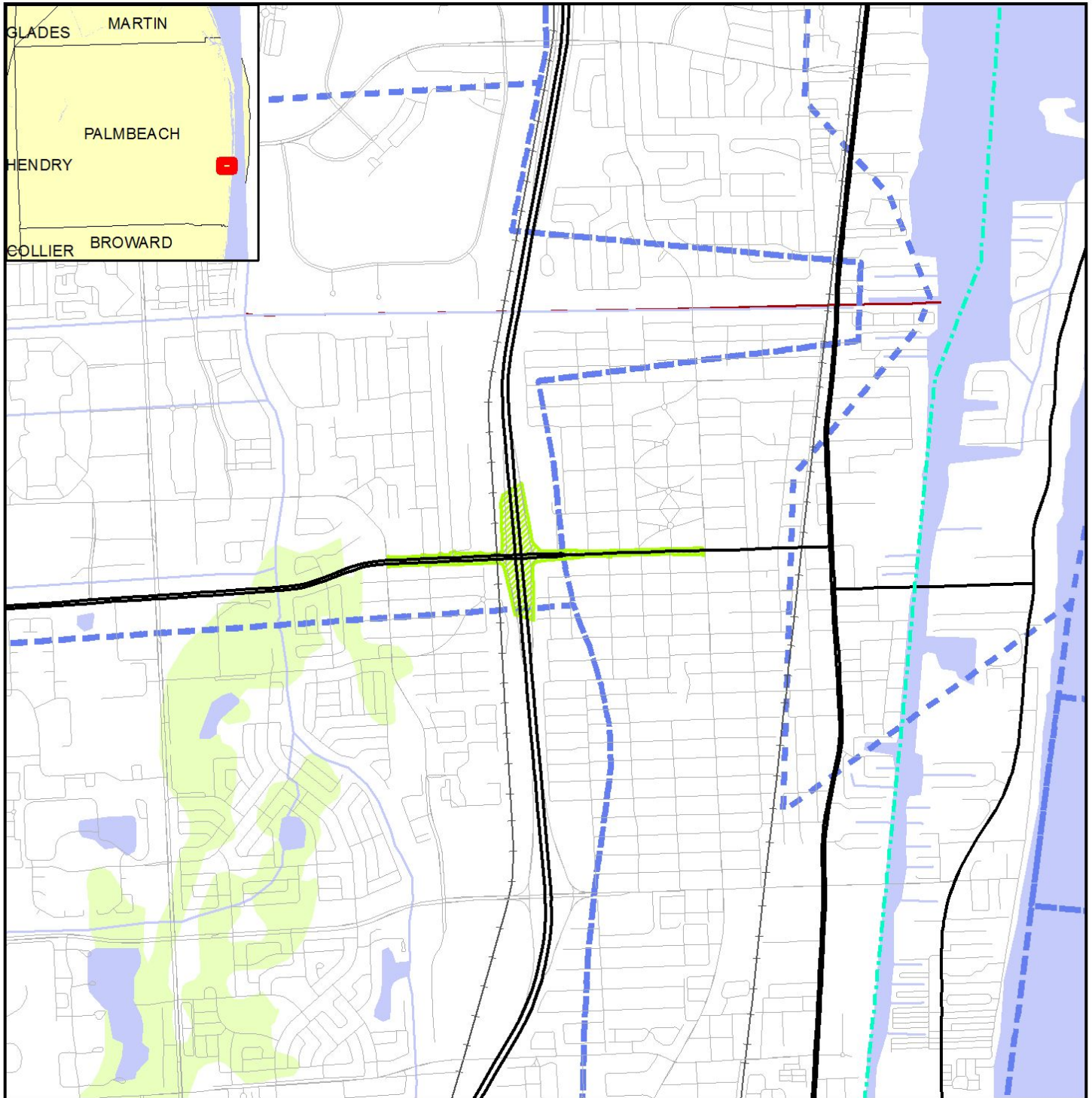
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Map Generated on: 7/2/2014



14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



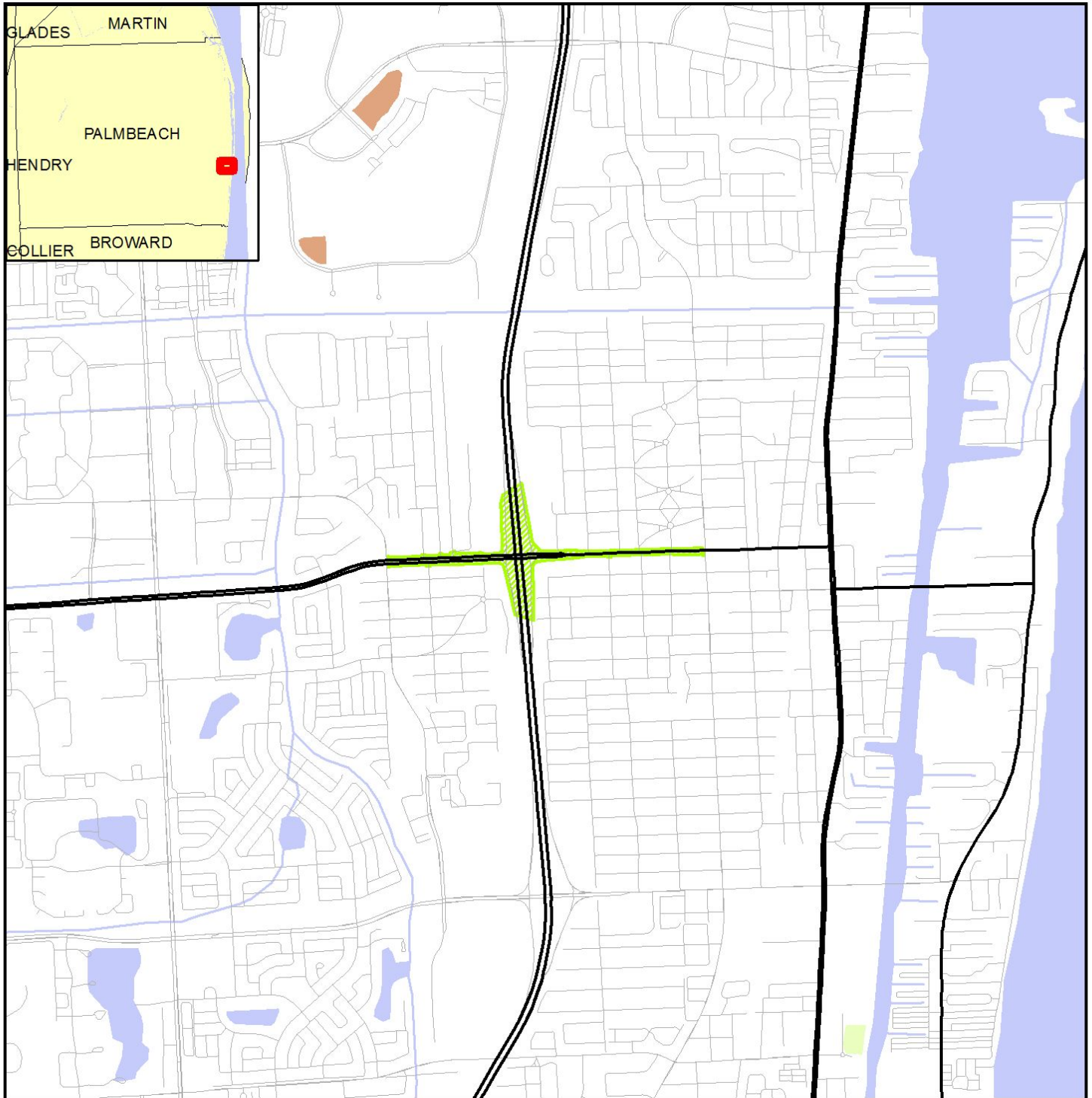
Water Resources Map

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> ■ ETDM Alternative Point — ETDM Alternative Segment ETDM Alternative Polygon | <ul style="list-style-type: none"> — Railroad ▲ 1st Magnitude Spring — River, Stream or Canal — Local Road or Trail | <ul style="list-style-type: none"> — SFWMD Canals — Drainage Basin ▨ Outstanding Florida Water — Navigable Water Way |
| <ul style="list-style-type: none"> Surface Water Class I Surface Water Class II Water Body Swamp/Marsh | | |

Data Sources: NAVTEQ, US Geological Survey, Florida Department of Transportation, Florida Department of Environmental Protection, Florida Geological Survey, US Bureau of Transportation Statistics

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14180 SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, Alternative #1



Wetland Resource Map

0 0.3 Miles



- | | | |
|---------------------------|------------------------|--------------------------------|
| ETDM Alternative Polygon | Major Road | Non-vegetated Wetland |
| ETDM Alternative Segment | Local Road or Trail | Vegetated Non-forested Wetland |
| ETDM Alternative Terminus | River, Stream or Canal | Wetland Forested Mixed |
| ETDM Alternative Point | Water Body | Wetland Coniferous Forest |
| | | Wetland Hardwood Forest |

Data Sources: NAVTEQ; Florida Water Management Districts; US Geological Survey

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Appendices

PED Comments

Advance Notification Comments

Federal Highway Administration Comment --

- It is stated that the PD&E for the project is programmed in the Palm Beach MPO's Transportation Improvement Program (2015-2020) but not in the current LRTP. All projects within an MPO boundary that are included in the MPO's TIP must come from the MPO's Cost Feasible LRTP.
- When will the PD&E work begin on the project? The MPO is in the process of adopting their 2040 LRP Update. This project should be included in that updated Plan and as noted in the narrative, in the upcoming STIP.
- Reference is made in several sections (Consistency with Transportation Plans and Objectives and the Planning Consistency Status sections) that the project will be included in the 2035 LRTP. Will it be the 2035 LRTP or the 2040 LRTP?
- Since this project is in the programming screen vs the planning screen why are there not any public comments available in this ETAT Tool? This project, according to the narrative, is included in the MPO TIP for 2015. The TIP required public involvement and MPO discussion. Please include any feedback and input from these processes regarding this project. How does the public view this project? Has there been any controversy or negative public input on the need for this project or for the project impacts?
- Please include the estimated cost for the entire project. The narrative states that \$2 million is programmed for the PD&E study in the FDOT Work Program and the MPO's TIP. Will federal funding be sought for any phases in this project? Please clearly identify what the project costs and phases are anticipated to be for the entire project as well as any programmed funds and project phasing in such a manner that is very clear to the public. This disclosure of information is an important element the public uses during their consideration of the project.
- Under the growth management section of the project description provided projected growth percentages for population and employment. But the years cited are 2005-2035. Please provide more updated information and data.

Socio Cultural Impacts:

- What outreach efforts are planned or have been made to the minority and low income populations along this project? The 100-through 1320 foot buffer identifies substantial minority populations (greater than 40%) and other populations that are considered traditionally underserved (such as aging) that will require specific outreach strategies. Information also shows that there is a population within this buffer with Limited English Proficiency (LEP) accommodations will be required during the Project.

Mobility/Freight

- Business and commercial - what mitigation coordination has taken place with the commercial businesses within the project area of impact for either continued access to their businesses or any taking/relocation of property for the project? What operational improvements are being considered as part of or independent of this project to assist with access to/from the existing businesses?
- Truck traffic - is this a corridor used for freight? Please include truck and commercial vehicle traffic and data. What is the anticipated growth of the freight volume over the next 20 years especially considering the developments and economic centers planned along this corridor? Have any outreach efforts been made to the freight providers for their input for operational improvements?

Transit:

- The narrative does not identify if there are any operating transit routes or stops within the study area, but the ETAT tool clearly identifies transit routes existing. Coordination with the transit providers will be required throughout the project to minimize impacts service. Are there any transit stops that will be directly impacted by this project?

Bicycle/Pedestrian Facilities:

- The narrative states that there currently are no designated bicycle lanes in the project study area. It was not clear if bicycle facilities will be included in the project. Are the sidewalks currently used to access the businesses and residences within the project study area? If so, how will this access be maintained?

It is mentioned that the bridge over the Florida Rail Corridor/CSX Railroad would be widened as part of the proposed project. Please indicate what type of coordination will be needed with the railroad.

--Luis D Lopez, P.E., 10/23/2014

Response --

--, \$tools.date.format("M/d/yyyy"),\$comment.responseTimestamp)

GIS Analyses

Since there are so many GIS Analyses available for Project #14180 - SR-9/I-95 at SR-804/Boynton Beach Boulevard Interchange, they have not been included in this ETDM Summary Report. GIS Analyses, however, are always available for this project on the Public ETDM Website. Please click on the link below (or copy this link into your Web Browser) in order to view detailed GIS tabular information for this project:

<http://etdmpub.fl.a-etat.org/est/index.jsp?tpID=14180&startPageName=GIS%20Analysis%20Results>

Special Note: Please be sure that when the GIS Analysis Results page loads, the **Summary Report Re-Published 5/27/2015 Milestone** is selected. GIS Analyses snapshots have been taken for Project #14180 at various points throughout the project's life-cycle, so it is important that you view the correct snapshot.

Project Attachments

Note: Attachments are not included in this Summary Report, but can be accessed by clicking on the links below:

Date	Type	Size	Link / Description
02/01/2014	Ancillary Project Documentation	5.2 MB	http://etdmpub.fl.a-etat.org/est/servlet/blobViewer?blobID=17556 Concept Plan Sheet
07/09/2014	Ancillary Project Documentation	280 KB	http://etdmpub.fl.a-etat.org/est/servlet/blobViewer?blobID=17555 TIP Pages
02/01/2014	Ancillary Project Documentation	1.52 MB	http://etdmpub.fl.a-etat.org/est/servlet/blobViewer?blobID=17554 Project Concept Report
07/09/2014	Form SF-424: Application for Federal Assistance	981 KB	http://etdmpub.fl.a-etat.org/est/servlet/blobViewer?blobID=17553 Form SF-424: Application for Federal Assistance

Degree of Effect Legend

Color Code	Meaning	ETAT	Public Involvement
N/A	Not Applicable / No Involvement	There is no presence of the issue in relationship to the project, or the issue is irrelevant in relationship to the proposed transportation action.	
0	None (after 12/5/2005)	The issue is present, but the project will have no impact on the issue; project has no adverse effect on ETAT resources; permit issuance or consultation involves routine interaction with the agency. The <i>None</i> degree of effect is new as of 12/5/2005.	No community opposition to the planned project. No adverse effect on the community.
1	Enhanced	Project has positive effect on the ETAT resource or can reverse a previous adverse effect leading to environmental improvement.	Affected community supports the proposed project. Project has positive effect.
2	Minimal	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
2	Minimal to None (assigned prior to 12/5/2005)	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
3	Moderate	Agency resources are affected by the proposed project, but avoidance and minimization options are available and can be addressed during development with a moderated amount of agency involvement and moderate cost impact.	Project has adverse effect on elements of the affected community. Public Involvement is needed to seek alternatives more acceptable to the community. Moderate community interaction will be required during project development.
4	Substantial	The project has substantial adverse effects but ETAT understands the project need and will be able to seek avoidance and minimization or mitigation options during project development. Substantial interaction will be required during project development and permitting.	Project has substantial adverse effects on the community and faces substantial community opposition. Intensive community interaction with focused Public Involvement will be required during project development to address community concerns.
5	Potential Dispute (Planning Screen)	Project may not conform to agency statutory requirements and may not be permitted. Project modification or evaluation of alternatives is required before advancing to the LRTP Programming Screen.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
5	Dispute Resolution (Programming Screen)	Project does not conform to agency statutory requirements and will not be permitted. Dispute resolution is required before the project proceeds to programming.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
	No ETAT Consensus	ETAT members from different agencies assigned a different degree of effect to this project, and the ETDM coordinator has not assigned a summary degree of effect.	
	No ETAT Reviews	No ETAT members have reviewed the corresponding issue for this project, and the ETDM coordinator has not assigned a summary degree of effect.	



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JIM BOXOLD
SECRETARY

ETDM Summary Report

Project #14181 - SR-9/I-95 at Gateway Boulevard Interchange

Programming Screen - Published on 11/24/2014

Printed on: 7/02/2015

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Introduction to Programming Screen Summary Report

The Programming Screen Summary Report shown below is a read-only version of information contained in the Programming Screen Summary Report generated by the ETDM Coordinator for the selected project after completion of the ETAT Programming Screen review. The purpose of the Programming Screen Summary Report is to summarize the results of the ETAT Programming Screen review of the project; provide details concerning agency comments about potential effects to natural, cultural, and community resources; and provide additional documentation of activities related to the Programming Phase for the project. Available information for a Programming Screen Summary Report includes:

- Screening Summary Report chart
- Project Description information (including a summary description of the project, a summary of public comments on the project, and community-desired features identified during public involvement activities)
- Purpose and Need information (including the Purpose and Need Statement and the results of agency reviews of the project Purpose and Need)
- Alternative-specific information, consisting of descriptions of each alternative and associated road segments; an overview of ETAT Programming Screen reviews for each alternative; and agency comments concerning potential effects and degree of effect, by issue, to natural, cultural, and community resources.
- Project Scope information, consisting of general project commitments resulting from the ETAT Programming Screen review, permits, and technical studies required (if any)
- Class of Action determined for the project
- Dispute Resolution Activity Log (if any)

The legend for the Degree of Effect chart is provided in an appendix to the report.

For complete documentation of the project record, also see the GIS Analysis Results Report published on the same date as the Programming Screen Summary Report.

#14181 SR-9/I-95 at Gateway Boulevard Interchange

District: District 4

County: Palm Beach

Planning Organization: FDOT District 4

Plan ID: Not Available

Federal Involvement: Maintain Federal Eligibility Federal Action

Phase: Programming Screen

From:

To:

Financial Management No.: 23193212201

Contact Information: Gaspar Jorge Padron (850) 777-4320 gaspar.padron@dot.state.fl.us

Snapshot Data From: Project Published 11/24/2014

Issues and Categories are reflective of what was in place at the time of the screening event.

	Social and Economic						Cultural			Natural				Physical							
	Land Use Changes	Social	Relocation Potential	Farmlands	Aesthetic Effects	Economic	Mobility	Section 4(f) Potential	Historic and Archaeological Sites	Recreation Areas	Wetlands	Water Quality and Quantity	Floodplains	Wildlife and Habitat	Coastal and Marine	Noise	Air Quality	Contamination	Infrastructure	Navigation	Special Designations
Alternative #1 From: To: <i>Published: 11/24/2014 Reviewed from 07/23/2014 to 09/06/2014</i>	3	2	4	0	2	2	1	2	3	0	2	2	0	2	0	2	2	2	2	N/A	0

Purpose and Need

Purpose and Need

The purpose of the project is to enhance overall traffic operations at the existing interchange of SR-9/I-95 and Gateway Boulevard by providing improvements to achieve acceptable Levels of Service (LOS) at the interchange in the future condition (2040 Design Year). Conditions along Gateway Boulevard are anticipated to deteriorate below acceptable LOS standards if no improvements occur by 2040; the interchange will have insufficient capacity to accommodate the projected travel demand. The need for the project is based on the following primary and secondary criteria:

PRIMARY CRITERIA

CAPACITY/TRANSPORTATION DEMAND: Improve Operational Capacity and Overall Traffic Operations (Level of Service)

The project is anticipated to improve traffic operations at the SR-9/I-95 and Gateway Boulevard interchange and study area roadways/intersections by implementing operational and capacity improvements to meet the future travel demand projected as a result of Palm Beach County population and employment growth.

Based upon the traffic operations analysis conducted for the SR-9/I-95 at Gateway Boulevard interchange and adjacent signalized intersections [as documented in the *I-95 (SR-9) Interchange at Gateway Boulevard in Palm Beach County Interchange Concept Development Report*], the existing and future AM and PM peak hour traffic conditions for the five study intersections along Gateway Boulevard are as follows:

-Existing AM Peak Hour Conditions [2012/2013]-

Gateway Boulevard Intersection / Overall Intersection LOS (Delay in seconds per vehicle)

Quantum Lane / B (12.3)

High Ridge Road / F (111.4)

SR-9/I-95 Southbound Ramps / F (255.7)

SR-9/I-95 Northbound Ramps / D (37.5)

Seacrest Boulevard / D (43.6)

-Existing PM Peak Hour Conditions [2012/2013]-

Gateway Boulevard Intersection / Overall Intersection LOS (Delay in seconds per vehicle)

Quantum Lane / B (16.6)

High Ridge Road / D (40.9)

SR-9/I-95 Southbound Ramps / F (158.0)

SR-9/I-95 Northbound Ramps / E (60.4)

Seacrest Boulevard / D (38.4)

-Future AM Peak Hour Conditions [2040 Design Year No-Build]-

Gateway Boulevard Intersection / Overall Intersection LOS (Delay in seconds per vehicle)

Quantum Lane / C (32.9)

High Ridge Road / F (275.2)

SR-9/I-95 Southbound Ramps / F (146.8)

SR-9/I-95 Northbound Ramps / F (102.2)

Seacrest Boulevard / F (195.2)

-Future PM Peak Hour Conditions [2040 Design Year No-Build]-

Gateway Boulevard Intersection / Overall Intersection LOS (Delay in seconds per vehicle)

Quantum Lane / C (32.2)

High Ridge Road / F (84.7)

SR-9/I-95 Southbound Ramps / F (251.1)

SR-9/I-95 Northbound Ramps / F (166.9)

Seacrest Boulevard / F (204.9)

Under the existing conditions scenarios, all of the intersections operate at LOS E or better with the exception of the High Ridge Road and SR-9/I-95 southbound ramp intersections at Gateway Boulevard. If no improvements are made by 2040, all of the Gateway Boulevard intersections (except the Quantum Lane intersection) will continue to experience excessive delays and queuing and operate below acceptable LOS standards (LOS F) during both the AM and PM peak periods.

GROWTH MANAGEMENT: Accommodate Future Growth and Development

The area surrounding the SR-9/I-95 at Gateway Boulevard interchange is urbanized containing a mixture of residential and recreational land uses to the east and commercial, office, industrial, and residential activities to the west as part of the Quantum Park Development of Regional Impact (DRI). According to the City of Boynton Beach Future Land Use Map, the area will continue to support the noted land uses.

Population within the vicinity of the interchange is anticipated to increase by approximately 46% from 2005 to 2035 with the majority of the growth occurring east of Seacrest Boulevard and within the Quantum Park DRI. Employment is expected to increase by approximately 173% from 2005 to 2035 primarily in the areas west and southeast of the interchange. These projections are based on data derived from the enhanced Southeast Regional Planning Model (SERPM) version 6.5 Managed Lanes Model (upgraded to include specific subarea improvements for the I-95 Interchange Master Plan).

As such, the proposed improvements will be critical in supporting growth within the vicinity of the interchange and the overall vision of the City of Boynton Beach.

SECONDARY CRITERIA

SAFETY: Improve Safety Conditions

The *I-95 (SR-9) Interchange at Gateway Boulevard in Palm Beach County Interchange Concept Development Report* included a safety analysis of the project area. The following provides a summary of the crash data and analysis results for the three-year period from 2010 through 2012:

Year / Number of Crashes

2010 / 42

2011 / 37

2012 / 38

Total Crashes: 117

Predominant Crash Type:Rear-end (56 / 48% of total)

No high crash locations are reported along Gateway Boulevard in the area of the SR-9/I-95 interchange through FDOT's high crash location reports (for the period 2009 through 2011). However, SR-9/I-95 in the vicinity of Gateway Boulevard is

identified as a high crash segment indicating that it has a higher crash rate as compared to crash rates for similar statewide roadways (for the period 2010 through 2012).

The proposed improvements are anticipated to provide additional through and turn lanes, as well as lane assignment signs, to help reduce conflict points and the potential occurrence of collisions at the SR-9/I-95 at Gateway Boulevard interchange.

EMERGENCY EVACUATION: Enhance Emergency Evacuation and Response Times

SR-9/I-95 serves as part of the emergency evacuation route network designated by the Florida Division of Emergency Management. Also designated by Palm Beach County as an evacuation facility, SR-9/I-95 is critical in facilitating traffic flows during emergency evacuation periods as it connects to other major arterials and highways of the state evacuation route network. The project is anticipated to:

- Improve emergency evacuation capabilities by enhancing connectivity and accessibility to SR-9/I-95 and other major arterials designated on the state evacuation route network from the west and east, and
- Increase the operational capacity of traffic that can be evacuated during an emergency event.

Purpose and Need Reviews

FDOT District 4

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	09/03/2014	Gaspar Jorge Padron (gaspar.padron@dot.state.fl.us)	No Purpose and Need comments found.

FL Department of Economic Opportunity

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/14/2014	Matt Preston (matt.preston@deo.myflorida.com)	No Purpose and Need comments found.

FL Department of Environmental Protection

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	09/04/2014	Lauren Milligan (lauren.milligan@dep.state.fl.us)	No Purpose and Need comments found.

FL Department of State

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/14/2014	Ginny Jones (ginny.jones@dos.myflorida.com)	No Purpose and Need comments found.

FL Fish and Wildlife Conservation Commission

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/14/2014	Scott Sanders (scott.sanders@myfwc.com)	No Purpose and Need comments found.

Federal Highway Administration

Acknowledgement	Date Reviewed	Reviewer	Comments
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Accepted	09/05/2014	Luis Lopez, P.E. (luis.d.lopez@dot.gov)	<p>Safety - it is stated that there are currently no sidewalks along the Gateway Blvd. Is there any accident data for pedestrians available? It is stated that the project is programmed in the Palm Beach MPO's Transportation Improvement Program (2015-2020) but not in the current L RTP. All projects within an MPO boundary that are included in the MPO's TIP a must come from the MPO's L RTP.</p> <p>When will the PD&E work begin on the project? The MPO is in the process of adopting their 2040 LRP Update. This project should be included in that updated Plan and as noted in the narrative, in the upcoming STIP.</p> <p>Reference is made in several sections (Consistency with Transportation Plans and Objectives and the Planning Consistency Status sections) that the project will be included in the 2035 LRTP. Will it be the 2035 LRTP or the 2040 LRTP?</p> <p>Since this project is in the programming screen vs the planning screen why are there not any public comments available in this ETAT Tool? This project, according to the narrative, is included in the MPO TIP for 2015. The TIP required public involvement and MPO discussion. Please include any feedback and input from these processes regarding this project. How does the public view this project? Has there been any controversy or negative public input on the need for this project or for the project impacts?</p> <p>Please include the estimate cost of this project. The narrative states that \$1million is programmed for the PD&E study in the FDOT Work Program and the MPO's TIP. It also states that the FDOT Work program has \$6 million programmed for Preliminary Engineering and \$2 million for environmental. Please clearly identify what the project costs and phases are anticipated to be for the entire project as well as any programmed funds and project phasing in such a manner that is very clear to the public. This disclosure of information is an important element the public uses during their consideration of the project.</p>
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National Marine Fisheries Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/12/2014	Brandon Howard (Brandon.Howard@noaa.gov)	None

National Park Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/01/2014	Anita Barnett (anita_barnett@nps.gov)	No Purpose and Need comments found.

Natural Resources Conservation Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	07/31/2014	Rick Robbins (rick.a.robbins@fl.usda.gov)	No Purpose and Need comments found.

South Florida Water Management District

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/18/2014	Mindy Parrott (mparrott@sfwmd.gov)	No Purpose and Need comments found.

US Army Corps of Engineers

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	08/18/2014	Garett Lips (Garett.G.Lips@usace.army.mil)	No Purpose and Need comments found.

US Coast Guard

Acknowledgement	Date Reviewed	Reviewer	Comments
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Understood	07/24/2014	Darayl Tompkins (Darayl.Tompkins@uscg.mil)	No Coast Guard involvement.
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US Environmental Protection Agency

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	09/06/2014	Maher Budeir (budeir.maher@epa.gov)	No Purpose and Need comments found.

US Fish and Wildlife Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	07/28/2014	John Wrublik (john_wrublik@fws.gov)	No Purpose and Need comments found.

Project Description Data

Project Description

This interchange improvement is one of seventeen being studied as part of the *I-95 Interchange Master Plan*. This plan will reexamine 1) the 2003 *I-95 Interchange Master Plan Study* and 2) the SR-9/I-95 mainline project, which added a High Occupancy Vehicle (HOV) lane and auxiliary lanes from south of Linton Boulevard to north of PGA Boulevard in Palm Beach County and included minor improvements to eight interchanges. Overall, the *I-95 Interchange Master Plan* will recommend new short-term and long-term improvements to interchanges based on changes in traffic volumes and updated design standards.

The SR-9/I-95 at Gateway Boulevard interchange is located on SR-9/I-95 between the Hypoluxo Road interchange (1.5 miles to the north) and the Boynton Beach Boulevard interchange (1.5 miles to the south) within the City of Boynton Beach in eastern Palm Beach County. This interchange project proposes to enhance operational capacity to address traffic spillback onto SR-9/I-95, reduce congestion, and increase safety through the 2040 Design Year. Based upon the traffic operations analysis conducted for the SR-9/I-95 at Gateway Boulevard interchange and adjacent signalized intersections [as documented in the *I-95 (SR-9) Interchange at Gateway Boulevard in Palm Beach County Interchange Concept Development Report* attached in the EST], the 2020 Opening Year (short-term) recommended improvements should be constructed at the same time as the 2040 Design Year (long-term) recommended improvements for efficiency as they require right-of-way along Gateway Boulevard and are also needed for the proposed 2040 improvements. The recommended 2040 Design Year improvements are listed below; optional non-critical arterial improvements are additionally provided.

2040 Design Year (Long-Term) Recommended Improvements

- Add an additional through lane on eastbound Gateway Boulevard from Quantum Lane to east of Seacrest Boulevard.
- Add an additional through lane on westbound Gateway Boulevard from east of Seacrest Boulevard to Quantum Lane.
- Add a second westbound left-turn lane at Quantum Lane.
- Add a second eastbound left-turn lane at High Ridge Road.
- Add a third receiving lane on SR-9/I-95 southbound on-ramp.
- Add a third northbound left-turn lane at SR-9/I-95 northbound ramps.
- Add a third receiving lane on SR-9/I-95 northbound on-ramp.
- Add a second eastbound left-turn lane at Seacrest Boulevard.

2040 Optional Non-critical Arterial Improvements

These projects are not vital to the operations of the interchange but allow adjacent intersections to meet Level of Service thresholds or benefit other modes of travel in the area.

- Add a second southbound left-turn lane at Quantum Lane.
- Add a third southbound left-turn lane at High Ridge Road.
- Add a dedicated southbound right-turn lane at High Ridge Road.
- Add a dedicated northbound right-turn lane at High Ridge Road.
- Add a dedicated southbound right-turn lane at Seacrest Boulevard.
- Add a second northbound left-turn lane at Seacrest Boulevard.

SR-9/I-95 is currently a ten-lane divided interstate freeway from north of the Congress Avenue interchange (southern limit) to north of the PGA Boulevard interchange (northern limit) providing four general purpose lanes and one High Occupancy Vehicle (HOV) lane in each direction. Auxiliary lanes are also provided in both the northbound and southbound directions between Gateway Boulevard and Boynton Beach Boulevard to the south, resulting in a twelve-lane section. The existing right-of-way at the interchange is approximately 300 feet. As part of the Strategic Intermodal System (SIS) and one of two major expressways (Florida's Turnpike being the other) that connect the major employment centers and residential areas of Miami-Dade, Broward and Palm Beach Counties, SR-9/I-95 serves an important role in facilitating the north-south movement of traffic in Southeast Florida.

Under the jurisdiction of the City of Boynton Beach, Gateway Boulevard is a six-lane divided urban minor arterial with a raised landscape median from the SR-9/I-95 southbound ramps west to Quantum Lane. Gateway Boulevard at the SR-9/I-95 overpass is divided (raised median) with two dedicated left-turn lanes in each direction to access the SR-9/I-95 on-ramps and two through lanes in each direction. A right-turn lane is provided both eastbound and westbound along Gateway Boulevard serving the SR-9/I-95 on-ramps. Gateway Boulevard transitions to a four-lane divided urban major collector with a raised landscape median from the SR-9/I-95 southbound ramps east to Seacrest Boulevard. East of Seacrest Boulevard, Gateway Boulevard is a three-lane minor collector. Sidewalks are provided along both sides of Gateway Boulevard, but no designated bicycle lanes are present. The existing right-of-way varies from 110 to 320 feet west of SR-9/I-95 and 50 to 290 feet east of SR-9/I-95.

The interchange at SR-9/I-95 and Gateway Boulevard is a typical diamond configuration. Adjacent accessible signalized intersections relative to this interchange are located at Quantum Lane and High Ridge Road to the west and Seacrest Boulevard to the east. There are also three existing bridges within this interchange: Gateway Boulevard over SR-9/I-95 (Bridge #930434), Gateway Boulevard over the South Florida Rail Corridor (SFRC)/CSX Railroad (Bridge #930433), and the SR-9/I-95 northbound off-ramp bridge (Bridge #930435). The ultimate interchange improvements (2040 Design Year Recommended Improvements) are likely to require additional right-of-way; however, the specific right-of-way requirements are not known at this time and will be determined through further analysis. Based on the Florida Department of Transportation's preliminary Long Range Estimate (LRE), the construction cost estimate for the improvements is \$22.2 million. Detailed cost estimates and right-of-way requirements will be derived as part of the Project Development and Environment (PD&E) Study.

CONSISTENCY WITH TRANSPORTATION PLAN GOALS AND OBJECTIVES

Funding in the amount of \$1,005,000 is programmed for the PD&E Study under Fiscal Year (FY) 2015 in both the FY 2015 - 2020 FDOT Work Program (FM #231932-1) and the FY 2015 - 2019 Transportation Improvement Program (TIP) of the Palm Beach Metropolitan Planning Organization (MPO). The FY 2015 - 2020 FDOT Work Program also identifies \$6,000,000 for Preliminary Engineering and \$20,000 for Environmental under FY 2020. The Strategic Intermodal System Cost-Feasible Plan 2024 - 2040 additionally identifies this project. While the interchange improvements at SR-9/I-95 and Gateway Boulevard Interchange are not included in the Cost-Feasible component of the Palm Beach MPO 2035 Long

Range Transportation Plan (LRTP), two highway projects in the vicinity of the interchange are provided in the LRTP Needs component: 1) implementation of Managed Lanes on I-95 from the Palm Beach County/Broward County Line to Indiantown Road and 2) the proposed six-lane to eight-lane widening of Gateway Boulevard from Renaissance Commons Boulevard to SR-9/I-95. The project is also not included in the current State Transportation Improvement Program (STIP). Coordination will occur with the Palm Beach MPO during the PD&E Study to identify and include funding for the project in the Palm Beach MPO 2035 LRTP Cost-Feasible component and the FDOT STIP prior to requesting Federal Highway Administration (FHWA) Location and Design Concept Acceptance.

Summary of Public Comments

Summary of Public Comments is not available at this time.

Justification

An extensive Public Involvement Plan (PIP) will be prepared and conducted during the PD&E phase of this project. The PIP will (1) outline how project team members will engage the community and other stakeholders in consensus-building/context sensitive solutions for any alternative under consideration, including the No-Build Alternative, and (2) incorporate environmental and community values into the development of the preferred alternative.

Planning Consistency Status

Planning Consistency Status

Are the limits consistent with the plans?

Yes

No

Currently Adopted CFP-LRTP?

Coordination will occur with the Palm Beach MPO during the PD&E Study to identify and include funding for the project in the Palm Beach MPO 2035 LRTP Cost-Feasible component and the FDOT STIP prior to requesting Federal Highway Administration (FHWA) Location and Design Concept Acceptance.

Attachments

TIP Pages - <https://etdmpub.flas-etat.org/est/servlet/blobViewer?blobID=17619>

Federal Consistency Determination

Date: 09/04/2014

Determination: CONSISTENT with Coastal Zone Management Program.

Potential Lead Agencies

- Federal Highway Administration

Exempted Agencies

Agency Name	Justification	Date
Federal Transit Administration	FTA has requested to be exempt from reviewing any non-transit projects.	06/26/2014

Community Desired Features

No desired features have been entered into the database. This does not necessarily imply that none have been identified.

User Defined Communities Within 500 Feet

- Boynton Beach
- Boynton North

Census Places Within 500 Feet

- Boynton Beach

Alternative #1

Alternative Description

Name	From	To	Type	Status	Total Length	Cost	Modes	SIS
Alternative was not named.			Traffic Operation Enhancement	ETAT Review Complete	? mi.	\$22,200,000.00	Roadway	Y

Project Effects Overview for Alternative #1

Issue	Degree of Effect	Organization	Date Reviewed
Social and Economic			
Land Use Changes	1 Enhanced	FL Department of Economic Opportunity	08/14/2014
Land Use Changes	3 Moderate	FDOT District 4	09/03/2014
Social	2 Minimal	FDOT District 4	09/03/2014
Social	2 Minimal	US Environmental Protection Agency	09/06/2014
Relocation Potential	4 Substantial	FDOT District 4	09/03/2014
Farmlands	0 None	Natural Resources Conservation Service	07/31/2014
Aesthetic Effects	2 Minimal	FDOT District 4	09/03/2014
Economic	0 None	FL Department of Economic Opportunity	08/14/2014
Economic	2 Minimal	FDOT District 4	09/03/2014
Mobility	1 Enhanced	FDOT District 4	09/03/2014
Cultural			
Historic and Archaeological Sites	3 Moderate	FL Department of State	08/14/2014
Recreation Areas	N/A N/A / No Involvement	National Park Service	08/01/2014
Recreation Areas	0 None	US Environmental Protection Agency	09/06/2014
Recreation Areas	0 None	FL Department of Environmental Protection	09/04/2014
Recreation Areas	0 None	South Florida Water Management District	08/18/2014
Natural			
Wetlands	0 None	US Environmental Protection Agency	09/06/2014
Wetlands	0 None	National Marine Fisheries Service	08/12/2014
Wetlands	0 None	US Army Corps of Engineers	08/18/2014
Wetlands	0 None	South Florida Water Management District	08/18/2014
Wetlands	2 Minimal	US Fish and Wildlife Service	07/28/2014
Wetlands	0 None	FL Department of Environmental Protection	09/04/2014
Water Quality and Quantity	0 None	US Environmental Protection Agency	09/06/2014
Water Quality and Quantity	0 None	FL Department of Environmental Protection	09/04/2014

Water Quality and Quantity	2	Minimal	South Florida Water Management District	08/18/2014
Floodplains	0	None	US Environmental Protection Agency	09/06/2014
Floodplains	0	None	South Florida Water Management District	08/18/2014
Wildlife and Habitat	2	Minimal	US Fish and Wildlife Service	07/28/2014
Wildlife and Habitat	2	Minimal	FL Fish and Wildlife Conservation Commission	08/14/2014
Coastal and Marine	0	None	South Florida Water Management District	08/18/2014
Coastal and Marine	0	None	National Marine Fisheries Service	08/12/2014
Physical				
Air Quality	2	Minimal	US Environmental Protection Agency	09/06/2014
Contamination	0	None	South Florida Water Management District	08/18/2014
Contamination	2	Minimal	FL Department of Environmental Protection	09/04/2014
Contamination	2	Minimal	US Environmental Protection Agency	09/06/2014
Navigation	N/A	N/A / No Involvement	US Coast Guard	07/24/2014
Navigation	N/A	N/A / No Involvement	US Army Corps of Engineers	08/18/2014
Special Designations				
Special Designations	0	None	US Environmental Protection Agency	09/06/2014
Special Designations	0	None	South Florida Water Management District	08/18/2014

ETAT Reviews and Coordinator Summary: Social and Economic

Land Use Changes

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 11/20/2014 by FDOT District 4

Comments:

FDEO reported that the project is compatible with the development goals of the City of Boynton Beach. FDEO noted that the project is not located in an Area of Critical State Concern or within the Coastal High Hazard Area and does not encroach on a military base; however, since the project is located near public recreational features, impacts to Section 4(f) resources should be analyzed. The project is included in the FY 2014 - 2019 FDOT Work Program, the Strategic Intermodal System Cost Feasible Plan 2024 - 2040, the Palm Beach Metropolitan Planning Organization (MPO) FY 2015 - 2019 Transportation Improvement Program (TIP), and the Palm Beach County Comprehensive Plan (reflected on Map TE 14.1). It is not identified in the Palm Beach MPO Cost Feasible 2035 Long Range Transportation Plan (LRTP) or the State Transportation Improvement Program (STIP). While the project is expected to accommodate expanding residential and industrial activities within the area, potential impacts to residential uses are anticipated as a result of additional right-of-way required for the improvements. Therefore, a Summary DOE of Moderate has been assigned to the Land Use Changes issue.

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach MPO and the City of Boynton Beach to obtain feedback from residents and businesses that may be impacted by the interchange improvement. FDOT District Four will also coordinate with the City of Boynton Beach and the Palm Beach MPO to ensure that 1) the project is included on the Future Transportation Map of the adopted City of Boynton Beach Comprehensive Plan and is consistent with the adopted Palm Beach MPO LRTP and 2) funding is identified for all future project phases in the TIP, LRTP, STIP, and FDOT SIS Cost Feasible Plan.

Degree of Effect: 1 *Enhanced* assigned 08/14/2014 by Matt Preston, FL Department of Economic Opportunity

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

The proposed improvements are compatible with the *City of Boynton Beach Comprehensive Plan*, and the development goals of the City. Objective 2.10 and related policies ensure coordination with the Palm Beach MPO and the FDOT Work Plan.

The City's Comprehensive Plan does not include a *Future Transportation Map*. It is recommended that the City adopt a Future Transportation Map consistent with Section 163.3177(b)1, F.S.

The Future Land Use Map (FLUM) of the Comprehensive Plan shows several future land uses surrounding the project, including: Moderate Density Residential, Conservation, Conservation Overlay (overlying Industrial and Recreation), Office Commercial, DRI, and Industrial.

The project is located within a quarter mile of Ezell Hester Jr. Community Park and Community Center, a City of Boynton Beach Park. According to the City, this 23.7-acre park includes the following amenities: baseball/softball field, basketball courts, benches, bike rack, concession building, cricket pitch, drinking fountain, fitness trail, football field, gazebo, open play area, rental pavilions, playground, racquetball court, restrooms, tennis courts, picnic shelters, a nature preserve, and a recreation center (with gymnasium, locker room, computer lab, game room, meeting room, and offices). FDOT should analyze potential impacts to these 4(f) resources.

The Quantum DRI, a mixed use DRI that includes industrial, residential, commercial, and office uses, is located within the western portion of the project area.

The project is not located in an Area of Critical State Concern, does not encroach on a military base, and is not located within the Coastal High Hazard Area.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 3 *Moderate* assigned 09/03/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

City of Boynton Beach Future Land Use Map
Palm Beach County Future Land Use Map

100-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH
- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

2008 SFWMD FL Land Use and Land Cover / Acres / Percent

- 1210 FIXED SINGLE FAMILY UNITS / 24.2 / 31.97%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 4.3 / 5.71%
- 1340 MULTIPLE DWELLING UNITS - HIGH RISE / 1.5 / 1.92%
- 1390 HIGH DENSITY UNDER CONSTRUCTION / 9.0 / 11.90%
- 1400 COMMERCIAL AND SERVICES / 17.6 / 23.21%
- 4240 MELALEUCA / 0.6 / 0.80%
- 8140 ROADS AND HIGHWAYS / 18.5 / 24.48%

500-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH
- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Geocoded Community Centers (1)

- CITY OF BOYNTON BEACH HESTER COMMUNITY CENTER & PARK

2008 SFWMD FL Land Use and Land Cover / Acres / Percent

- 1210 FIXED SINGLE FAMILY UNITS / 71.9 / 31.34%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 33.5 / 14.58%
- 1340 MULTIPLE DWELLING UNITS - HIGH RISE / 11.1 / 4.82%
- 1390 HIGH DENSITY UNDER CONSTRUCTION / 18.8 / 8.21%
- 1400 COMMERCIAL AND SERVICES / 51.9 / 22.59%
- 1550 OTHER LIGHT INDUSTRY / 2.0 / 0.87%
- 1850 PARKS AND ZOOS / 7.7 / 3.34%
- 4110 PINE FLATWOODS / 0.2 / 0.08%
- 4240 MELALEUCA / 7.5 / 3.28%
- 6440 EMERGENT AQUATIC VEGETATION / 0.2 / 0.07%
- 8140 ROADS AND HIGHWAYS / 24.9 / 10.84%

1,320-Foot (Quarter-Mile) Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH
- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Geocoded Community Centers (1)

- CITY OF BOYNTON BEACH HESTER COMMUNITY CENTER & PARK

2008 SFWMD FL Land Use and Land Cover / Acres / Percent

- 1210 FIXED SINGLE FAMILY UNITS / 153.8 / 29.37%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 60.7 / 11.60%
- 1340 MULTIPLE DWELLING UNITS - HIGH RISE / 38.9 / 7.43%
- 1390 HIGH DENSITY UNDER CONSTRUCTION / 20.0 / 3.82%
- 1400 COMMERCIAL AND SERVICES / 99.0 / 18.92%
- 1550 OTHER LIGHT INDUSTRY / 38.2 / 7.29%
- 1710 EDUCATIONAL FACILITIES / 1.8 / 0.34%
- 1850 PARKS AND ZOOS / 26.5 / 5.07%
- 1900 OPEN LAND / 2.9 / 0.54%
- 3300 MIXED RANGELAND / 5.0 / 0.95%
- 4110 PINE FLATWOODS / 12.6 / 2.40%
- 4240 MELALEUCA / 17.3 / 3.31%
- 5300 RESERVOIRS / 2.3 / 0.44%
- 6440 EMERGENT AQUATIC VEGETATION / 7.0 / 1.34%
- 8140 ROADS AND HIGHWAYS / 37.6 / 7.19%

Comments on Effects to Resources:

The SR-9/I-95 at Gateway Boulevard interchange occurs within the City of Boynton Beach. The area surrounding the interchange is urbanized containing residential uses to the east and a mix of commercial, office, industrial, and residential activities to the west as part of the Quantum Park at Boynton Beach Development of Regional Impact. The project is expected to support the vision of both Palm Beach County and the City of Boynton Beach (based on Future Land Use Maps) as it will continue to accommodate the expanding residential and industrial uses within the vicinity of the interchange. Effects on the area's character resulting from the interchange improvement are anticipated to be moderate as additional right-of-way required is expected to potentially impact residential areas.

Transportation Plan Consistency:

Funding for the project PD&E Study is programmed in the FY 2015 - 2020 FDOT Work Program (FM #231932-1) and the FY 2015 - 2019 Transportation Improvement Program (TIP) of the Palm Beach Metropolitan Planning Organization (MPO). The Strategic Intermodal System Cost Feasible Plan 2024 - 2040 additionally identifies this project. The SR-9/I-95 and Gateway Boulevard Interchange improvement is not included in the Cost-Feasible component of the Palm Beach MPO 2035 Long Range Transportation Plan (LRTP) or the State Transportation Improvement Program (STIP). Coordination will occur with the Palm Beach MPO during the PD&E Study to identify and include funding for the project in the Palm Beach MPO 2035 LRTP Cost-Feasible component and the FDOT STIP prior to requesting Federal Highway Administration (FHWA) Location and Design Concept Acceptance. The project is reflected on Map TE 14.1: Thoroughfare Right of Way Identification Map of the Palm Beach County Comprehensive Plan.

Additional Comments (optional):

CLC Commitments and Recommendations:

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach MPO and the City of Boynton Beach to obtain feedback from residents and businesses that may be impacted by the interchange improvement. FDOT District Four will also coordinate with the City of Boynton Beach and the Palm Beach MPO to ensure that 1) the project is included on the Future Transportation Map of the adopted City of Boynton Beach Comprehensive Plan and is consistent with the adopted Palm Beach MPO LRTP and 2) funding is identified for all future project phases in the TIP, LRTP, STIP, and FDOT SIS Cost Feasible Plan.

Social

Project Effects

Coordinator Summary Degree of Effect: 2 Minimal assigned 11/20/2014 by FDOT District 4

Comments:

While access to residences and businesses could temporarily be affected and/or modified as a result of the interchange improvement, overall impacts on the social environment and community cohesion are anticipated to be limited as the project will accommodate the expanding residential and industrial uses within the vicinity of the interchange (supporting goals of both Palm Beach County and the City of Boynton Beach). However, given the fact that the project is in an area with minority and low-income households and a population deficient in English proficiency, a Summary DOE of Minimal has been assigned to the Social issue.

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit input from the general public to ensure that both the social and transportation needs of the community are addressed through the project. To avoid and/or minimize potential impacts to the greatest extent practicable, FDOT District Four will also prepare an Air Quality Technical Memorandum (see Air Quality issue), Noise Study Report (see Noise issue), and Sociocultural Effects Evaluation (in accordance with Part 2, Chapter 9 of the FDOT PD&E Manual) with particular focus on civil rights and environmental justice considerations. It should additionally be noted that Limited English Proficiency (LEP) accommodations will be required during public outreach.

Degree of Effect: 2 Minimal assigned 09/03/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

100-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH

- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Geocoded Social Service Facilities (1)

- BOYNTON BEACH FAITH BASED CDC

Group Care Facilities (1)

- WILLIE MAE CAVE

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (3)

- 930433
- 930434
- 930435

Bus Transit Routes (2)

- ROUTE 70 - LANTANA TO DELRAY BEACH
- ROUTE 71 - BOYNTON BEACH CROSSTOWN VIA LAWRENCE

Fixed-Guideway Transit and Ferry Network (1)

- TRI-COUNTY COMMUTER RAIL

Transportation Disadvantaged Service Provider Areas in Florida-2010 (2)

- PALM TRAN CONNECTION
- MV CONTRACT TRANSPORTATION, INC.

Facility Crossings (1)

- GATEWAY BOULEVARD/22ND AVENUE

Railroads in the State of Florida

- MAINLINE: 2231.0352 Linear Feet

500-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH
- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Geocoded Community Centers (1)

- CITY OF BOYNTON BEACH HESTER COMMUNITY CENTER & PARK

Geocoded Fire Stations (1)

- BOYNTON BEACH FIRE DEPARTMENT AND RESCUE STATION 5

Geocoded Homeowner and Condominium Associations (6)

- VILLAGE ROYALE EMERALD GREEN
- VILLAGE ROYALE GREENBRIAR
- VILLAGE ROYALE GREENHILL
- VILLAGE ROYALE GREENRIDGE
- VILLAGE ROYALE GREENSIDE
- VILLAGE ROYALE ON THE GREEN

Geocoded Social Service Facilities (2)

- CITY OF BOYNTON BEACH HESTER COMMUNITY CENTER
- BOYNTON BEACH FAITH BASED CDC

Group Care Facilities (2)

- COLLIE & GLORIA ANDERSON FOSTE
- WILLIE MAE CAVE

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (3)

- 930433
- 930434
- 930435

Noise Barriers (1)

Bus Transit Routes (2)

- ROUTE 70 - LANTANA TO DELRAY BEACH
- ROUTE 71 - BOYNTON BEACH CROSSTOWN VIA LAWRENCE

Fixed-Guideway Transit and Ferry Network (2)

- TRI-COUNTY COMMUTER RAIL (2)

Fixed-Guideway Transit Network Stations (1)

- BOYNTON BEACH - TRI-COUNTY COMMUTER

Transportation Disadvantaged Service Provider Areas in Florida-2010 (2)

- PALM TRAN CONNECTION
- MV CONTRACT TRANSPORTATION, INC.

Facility Crossings (1)

- GATEWAY BOULEVARD/22ND AVENUE

Railroads in the State of Florida

- MAINLINE: 3059.2494 Linear Feet

1,320-Foot (Quarter-Mile) Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH
- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Geocoded Community Centers (1)

- CITY OF BOYNTON BEACH HESTER COMMUNITY CENTER & PARK

Geocoded Fire Stations (1)

- BOYNTON BEACH FIRE DEPARTMENT AND RESCUE STATION 5

Geocoded Homeowner and Condominium Associations (13)

Geocoded Religious Centers (3)

- FIRST CONGREGATIONAL CHRISTIAN CHURCH
- INTERNATIONAL PENTACOSTAL CITY MISSION
- SEACREST BOULEVARD PRESBYTERIAN CHURCH

Geocoded Social Service Facilities (3)

- A & D GROUP HOME
- CITY OF BOYNTON BEACH HESTER COMMUNITY CENTER
- BOYNTON BEACH FAITH BASED CDC

Group Care Facilities (3)

- A & D GROUP HOME
- COLLIE & GLORIA ANDERSON FOSTE
- WILLIE MAE CAVE

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (3)

- 930433
- 930434
- 930435

Noise Barriers (2)

Bus Transit Routes (2)

- ROUTE 70 - LANTANA TO DELRAY BEACH
- ROUTE 71 - BOYNTON BEACH CROSSTOWN VIA LAWRENCE

Fixed-Guideway Transit and Ferry Network (2)

- TRI-COUNTY COMMUTER RAIL (2)

Fixed-Guideway Transit Network Stations (1)

- BOYNTON BEACH - TRI-COUNTY COMMUTER

Transportation Disadvantaged Service Provider Areas in Florida-2010 (2)

- PALM TRAN CONNECTION
- MV CONTRACT TRANSPORTATION, INC.

Facility Crossings (1)

- GATEWAY BOULEVARD/22ND AVENUE

Railroads in the State of Florida

- MAINLINE: 4702.4676 Linear Feet

2008 SFWMD FL Land Use and Land Cover / Acres / Percent

- 1210 FIXED SINGLE FAMILY UNITS / 153.8 / 29.37%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 60.7 / 11.60%

- 1340 MULTIPLE DWELLING UNITS - HIGH RISE / 38.9 / 7.43%
- 1390 HIGH DENSITY UNDER CONSTRUCTION / 20.0 / 3.82%
- 1400 COMMERCIAL AND SERVICES / 99.0 / 18.92%
- 1550 OTHER LIGHT INDUSTRY / 38.2 / 7.29%
- 1710 EDUCATIONAL FACILITIES / 1.8 / 0.34%
- 1850 PARKS AND ZOOS / 26.5 / 5.07%
- 1900 OPEN LAND / 2.9 / 0.54%
- 3300 MIXED RANGELAND / 5.0 / 0.95%
- 4110 PINE FLATWOODS / 12.6 / 2.40%
- 4240 MELALEUCA / 17.3 / 3.31%
- 5300 RESERVOIRS / 2.3 / 0.44%
- 6440 EMERGENT AQUATIC VEGETATION / 7.0 / 1.34%
- 8140 ROADS AND HIGHWAYS / 37.6 / 7.19%

Comments on Effects to Resources:

By improving operational capacity and overall traffic operations, the proposed interchange improvement is anticipated to 1) accommodate the future travel demand projected as a result of Palm Beach County population and employment growth and 2) allow SR-9/I-95 to continue to serve as a critical arterial in facilitating the north-south movement of traffic in Southeast Florida as it connects major employment centers, residential areas, and other regional destinations between Miami-Dade, Broward and Palm Beach Counties.

The SR-9/I-95 at Gateway Boulevard interchange occurs within the City of Boynton Beach. The area surrounding the interchange is urbanized containing residential uses to the east and a mix of commercial, office, industrial, and residential activities to the west as part of the Quantum Park at Boynton Beach Development of Regional Impact. According to the City of Boynton Beach Future Land Use Map, the area is to continue to primarily support residential and industrial uses.

Community features that occur within the vicinity of the project include: one community center and park, one fire station, thirteen homeowner and condominium associations, three religious centers, social service and group care facilities, two bus transit routes, fixed-guideway transit service (along with a station), two transportation disadvantaged services, railway, and cultural resources.

The table below presents the demographic data for both the 500-foot project buffer and Palm Beach County. According to the EST GIS analysis results, the demographic profile of the buffer area differs from the profile of Palm Beach County as a whole in that it contains a significantly higher African-American population percentage and a significantly lower White population percentage. The buffer area also contains a higher percentage of individuals under age 18 and a notably lower percentage of persons of age 65 or above compared to the county population. In addition, the buffer area has a higher percentage of housing units with no vehicle available and a lower median family income (\$13,314 less) compared to Palm Beach County.

Demographic / 500-Foot Buffer / Palm Beach County

- White (Race)* / 48.6% / 73.5%
- African-American (Race)* / 43.1% / 17.3%
- "Other" *** (Race)* / 8.3% / 9.2%
- Hispanic (Ethnic Group)* / 14.1% / 19.0%
- Age 65+** / 15.4% / 21.6%
- Under Age 18** / 21.4% / 20.4%
- Housing Units with No Vehicle Available** / 8.2% / 6.2%
- Averaged Median Family Income** / \$51,131 / \$64,445

* Source: US Census Bureau (2010 US Census)

** Source: US Census Bureau (2010 American Community Survey)

*** "Other" includes American Indian & Alaska Native, Asian, Native Hawaiian & Other Pacific Islander, & Other Race.

It should be noted that 20 census blocks within the 500-foot project buffer contain a minority population greater than 40%. A total of 3,150 individuals comprise the minority population of these census blocks. It should further be noted that 2,640 persons within the 500-foot project buffer (23.79% of the total buffer population) indicated a deficiency in English proficiency. Limited English Proficiency (LEP) accommodations will be required during the Project Development phase as the demographic data indicates that 5.0% or 1,000 persons or more in a project area speak a language other than English (per Part 1, Chapter 11, Section 11-1.2.4 of the FDOT PD&E Manual). Based on the notable presence of minority and low-income households within the buffer area, civil rights and environmental justice considerations will be accounted for in subsequent project phases.

The project is expected to support the vision of both Palm Beach County and the City of Boynton Beach as it will accommodate the expanding residential and industrial activities within the vicinity of the interchange, including uses of the established Development of Regional Impact (Quantum Park at Boynton Beach). While access to residences and businesses could temporarily be affected and/or modified as a result of the interchange improvement, overall impacts of the project on the social environment and community cohesion are anticipated to be minimal.

Additional Comments (optional):

CLC Commitments and Recommendations:

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit input from the general public to ensure that both the social and transportation needs of the community are addressed through the project.

Degree of Effect: 2 *Minimal* assigned 09/06/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

NEighboring residential communitied within 500 feet of the project.

Comments on Effects to Resources:

The impact on the community in the project vicinity needs to be assessed. The area consists of mostly low-income households. Since the project is about improvements of existing roads, impacts are not likely to be significant. However, long term and short term impact on community character and cohesion should be assessed.

Additional Comments (optional):

CLC Commitments and Recommendations:

Relocation Potential

Project Effects

Coordinator Summary Degree of Effect: 4 *Substantial* assigned 11/20/2014 by FDOT District 4

Comments:

The proposed project is anticipated to require additional right-of-way along the northern and southern portions of Gateway Boulevard, both east and west of the interchange. The acquisition of new right-of-way has the potential to impact approximately eleven commercial businesses located within 1,000 feet to the west of the interchange (no relocations are anticipated) and twenty-seven residential units located within 1,000 feet to the east of the interchange (this may result in the relocation of up to twenty-four units). Further, access to businesses and residences could temporarily be affected and/or modified during project construction. For these reasons, a Summary DOE of Substantial has been assigned to the Relocation Potential issue.

A Conceptual Stage Relocation Plan will be prepared during the Project Development stage if relocations are determined to be necessary. Potential relocation effects should be assessed further during Project Development as more detailed and finalized project information regarding right-of-way needs becomes available. The proposed interchange improvements will be adjusted so as to avoid or minimize impacts to identified features.

Degree of Effect: 4 *Substantial* assigned 09/03/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

100-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH

- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (3)

- 930433
- 930434
- 930435

Facility Crossings (1)

- GATEWAY BOULEVARD/22ND AVENUE

SFWMD Residential Areas 2008

- 1210 FIXED SINGLE FAMILY UNITS / 24.2 / 31.97%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 4.3 / 5.71%
- 1340 MULTIPLE DWELLING UNITS - HIGH RISE / 1.5 / 1.92%
- 1390 HIGH DENSITY UNDER CONSTRUCTION / 9.0 / 11.90%

500-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH
- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Geocoded Community Centers (1)

- CITY OF BOYNTON BEACH HESTER COMMUNITY CENTER & PARK

Geocoded Homeowner and Condominium Associations (6)

- VILLAGE ROYALE EMERALD GREEN
- VILLAGE ROYALE GREENBRIAR
- VILLAGE ROYALE GREENHILL
- VILLAGE ROYALE GREENRIDGE
- VILLAGE ROYALE GREENSIDE
- VILLAGE ROYALE ON THE GREEN

Group Care Facilities (2)

- COLLIE & GLORIA ANDERSON FOSTE
- WILLIE MAE CAVE

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (3)

- 930433
- 930434
- 930435

Facility Crossings (1)

- GATEWAY BOULEVARD/22ND AVENUE

SFWMD Residential Areas 2008

- 1210 FIXED SINGLE FAMILY UNITS / 71.9 / 31.34%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 33.5 / 14.58%
- 1340 MULTIPLE DWELLING UNITS - HIGH RISE / 11.1 / 4.82%
- 1390 HIGH DENSITY UNDER CONSTRUCTION / 18.8 / 8.21%

Comments on Effects to Resources:

The interchange at SR-9/I-95 and Gateway Boulevard is a typical diamond configuration. SR-9/I-95 is currently a ten-lane divided interstate freeway with eight general use and two High Occupancy Vehicle (HOV) lanes. The existing right-of-way at the interchange is approximately 300 feet. Gateway Boulevard is a six-lane divided urban minor arterial west of SR-9/I-95 and a four-lane divided urban major collector east of SR-9/I-95. The existing right-of-way varies from approximately 110 to 320 feet west of SR-9/I-95 and 50 to 290 feet east of SR-9/I-95.

The proposed project is anticipated to require additional right-of-way along the northern and southern portions of Gateway Boulevard, both east and

west of the interchange. Gateway Boulevard is to be widened to accommodate both eastbound and westbound through lanes, turn lanes, bike lanes, sidewalks, and curb and gutter. These improvements, as well as the addition of a dedicated right-turn lane on High Ridge Road west of the interchange, a new right turn lane on southbound Seacrest Boulevard north of Gateway Boulevard, and widening of all on- and off-ramps to SR-9/I-95 will result in acquisition of new right-of-way that has the potential to impact approximately eleven commercial businesses located within 1,000 feet to the west of the interchange and twenty-seven residential units located within 1,000 feet to the east of the interchange. The proposed right-of-way acquisitions affecting commercial businesses to the west are of such a minor nature that no relocations are anticipated. However, the right-of-way acquisitions affecting residential units to the east may require the relocation of up to twenty-four units. Further, access to businesses and residences could temporarily be affected and/or modified during project construction. For these reasons, substantial involvement regarding relocation potential is anticipated.

Additional Comments (optional):

CLC Commitments and Recommendations:

It is recommended that further assessment of relocation effects be conducted during the Project Development phase as more detailed and finalized project information regarding right-of-way needs becomes available. The proposed interchange improvements will be adjusted so as to avoid or minimize impacts to identified features. A Conceptual Stage Relocation Plan will be prepared if relocations are determined to be necessary.

Farmlands

Project Effects

Coordinator Summary Degree of Effect: 0 *None* assigned 11/20/2014 by FDOT District 4

Comments:

NRCS determined that there are no Prime, Unique or Locally Important Farmland soils within any of the project buffers. In addition, the project is located within the Miami Urbanized Area. According to Part 2, Chapter 28, Section 28-2.1 of the FDOT PD&E Manual, transportation projects situated within urbanized areas with no adjacent present or future agricultural lands are excluded from Farmland Assessments. Since the project is located within a designated urban area anticipated to continue to support residential and industrial uses, a Summary DOE of None has been assigned to the Farmlands issue.

Degree of Effect: 0 *None* assigned 07/31/2014 by Rick Allen Robbins, Natural Resources Conservation Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

The USDA-NRCS considers soil map units with important soil properties for agricultural uses to be Prime Farmland. In addition, the USDA-NRCS considers any soils with important soil properties and have significant acreages that are used in the production of commodity crops (such as, cotton, citrus, row crops, specialty crops, nuts, etc.) to be considered as Farmlands of Unique Importance or Farmlands of Local Importance. Nationally, there has been a reduction in the overall amount of Prime and Unique Farmlands through conversion to non-farm uses. This trend has the possibility of impacting the nation's food supply and exporting capabilities.

Comments on Effects to Resources:

Conducting GIS analysis of Prime Farmland (using USDA-NRCS data) and Important (Prime, Unique, Local) Farmland Analysis (using existing SFWMD land use data and 2010 SSURGO data) has resulted in the determination that there are no Prime, Unique, or Locally Important Farmland soils within any buffer width within the Project Area. Therefore, no degree of effect to agricultural resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Aesthetic Effects

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

The project is consistent with the area's future land use vision as it is expected to enhance access to the Quantum Park at Boynton Beach Development of Regional Impact and support growing residential and industrial activities. Given the urban nature of the surrounding project area, impacts to aesthetics/the existing visual environment should be limited. Therefore, a Summary DOE of Minimal has been assigned to the Aesthetic

Effects issue.

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit opinions and preferences from residents and businesses on potential project effects and general design concepts related to aesthetics.

Degree of Effect: 2 Minimal assigned 09/03/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

100-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH

- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Group Care Facilities (1)

- WILLIE MAE CAVE

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (3)

- 930433

- 930434

- 930435

Facility Crossings (1)

- GATEWAY BOULEVARD/22ND AVENUE

SFWMD Residential Areas 2008

- 1210 FIXED SINGLE FAMILY UNITS / 24.2 / 31.97%

- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 4.3 / 5.71%

- 1340 MULTIPLE DWELLING UNITS - HIGH RISE / 1.5 / 1.92%

- 1390 HIGH DENSITY UNDER CONSTRUCTION / 9.0 / 11.90%

500-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH

- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Geocoded Community Centers (1)

- CITY OF BOYNTON BEACH HESTER COMMUNITY CENTER & PARK

Geocoded Homeowner and Condominium Associations (6)

- VILLAGE ROYALE EMERALD GREEN

- VILLAGE ROYALE GREENBRIAR

- VILLAGE ROYALE GREENHILL

- VILLAGE ROYALE GREENRIDGE

- VILLAGE ROYALE GREENSIDE

- VILLAGE ROYALE ON THE GREEN

Group Care Facilities (2)

- COLLIE & GLORIA ANDERSON FOSTE

- WILLIE MAE CAVE

Florida Site File Resource Groups (1)

- SEABOARD AIR LINE RAILROAD [PB12917]

Cultural Field Survey Areas (5)

FDOT RCI Bridges (3)

- 930433

- 930434

- 930435

Facility Crossings (1)

- GATEWAY BOULEVARD/22ND AVENUE

SFWMR Residential Areas 2008

- 1210 FIXED SINGLE FAMILY UNITS / 71.9 / 31.34%

- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 33.5 / 14.58%

- 1340 MULTIPLE DWELLING UNITS - HIGH RISE / 11.1 / 4.82%

- 1390 HIGH DENSITY UNDER CONSTRUCTION / 18.8 / 8.21%

Comments on Effects to Resources:

Notable community features associated with aesthetics within the 500-foot project buffer include: 135.3 acres of residential uses (including six homeowner and condominium associations as well as a Development of Regional Impact), one park, two group care facilities, and cultural resources. Impacts to aesthetics/the existing visual environment as a result of the interchange improvement are anticipated to be minimal given the urbanized nature of the area and the fact that the project supports the area's land use vision.

Additional Comments (optional):

CLC Commitments and Recommendations:

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit opinions and preferences from residents and businesses on potential project effects and general design concepts related to aesthetics.

Economic

Project Effects

Coordinator Summary Degree of Effect: 2 Minimal assigned 11/20/2014 by FDOT District 4

Comments:

By improving operational capacity and overall traffic operations, the project is intended to accommodate future travel demand as a result of expanding industrial and residential uses within the vicinity of the interchange. In addition, the improvements will enhance access to SR-9/I-95 (from the east and west) and other major transportation facilities and employment centers (including freight facilities) of Southeast Florida. While no business relocations are anticipated, access to residences and businesses could temporarily be affected and/or modified during construction. Therefore, a Summary DOE of Minimal has been assigned to the Economic issue.

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit input from residents and businesses (located within the vicinity of the interchange) regarding potential economic enhancements/impacts (particularly access to businesses) as a result of the project.

Degree of Effect: 0 None assigned 08/14/2014 by Matt Preston, FL Department of Economic Opportunity

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

City of Boynton Beach Comprehensive Plan, adopted in June, 2014.

Comments on Effects to Resources:

The project is not located in a Rural Area of Critical Economic Concern (RACEC). Economic development as a result of the project would be related to improved traffic circulation to the City and the local businesses, and improved I-95 level of service.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 09/03/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

100-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH

- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Railroads in the State of Florida

- MAINLINE: 2231.0352 Linear Feet

500-Foot Buffer:

2010 Census Designated Places (1)

- BOYNTON BEACH

Community Boundaries (2)

- BOYNTON BEACH

- BOYNTON NORTH

Developments of Regional Impact (1)

- QUANTUM PARK AT BOYNTON BEACH [ADA NO: 1984-048]

Railroads in the State of Florida

- MAINLINE: 3059.2494 Linear Feet

2008 SFWMD FL Land Use and Land Cover / Acres / Percent

- 1210 FIXED SINGLE FAMILY UNITS / 71.9 / 31.34%
- 1330 MULTIPLE DWELLING UNITS - LOW RISE / 33.5 / 14.58%
- 1340 MULTIPLE DWELLING UNITS - HIGH RISE / 11.1 / 4.82%
- 1390 HIGH DENSITY UNDER CONSTRUCTION / 18.8 / 8.21%
- 1400 COMMERCIAL AND SERVICES / 51.9 / 22.59%
- 1550 OTHER LIGHT INDUSTRY / 2.0 / 0.87%
- 1850 PARKS AND ZOOS / 7.7 / 3.34%
- 4110 PINE FLATWOODS / 0.2 / 0.08%
- 4240 MELALEUCA / 7.5 / 3.28%
- 6440 EMERGENT AQUATIC VEGETATION / 0.2 / 0.07%
- 8140 ROADS AND HIGHWAYS / 24.9 / 10.84%

Comments on Effects to Resources:

The SR-9/I-95 at Gateway Boulevard interchange occurs within the City of Boynton Beach. The area surrounding the interchange is urbanized containing residential uses to the east and a mix of commercial, office, industrial, and residential activities to the west as part of the Quantum Park at Boynton Beach Development of Regional Impact. The project is expected to support the vision of both Palm Beach County and the City of Boynton Beach (based on Future Land Use Maps) as it will continue to accommodate the expanding residential and industrial uses within the vicinity of the interchange.

By improving operational capacity and overall traffic operations, the proposed interchange improvement is anticipated to 1) accommodate the future travel demand projected as a result of Palm Beach County population and employment growth, 2) allow for more efficient access to SR-9/I-95 from the east and west along Gateway Boulevard, and 3) maintain viable access to the major transportation facilities and employment centers of Southeast Florida (including connectors to freight activity centers/local distribution facilities or between the regional freight corridors).

While economic enhancements are generally expected since the improvements are consistent with economic development efforts of the area, access to

residences and businesses could temporarily be affected and/or modified during construction; however, no business relocations are anticipated. Overall, economic effects as a result of the interchange improvement are anticipated to be minimal.

Additional Comments (optional):

CLC Commitments and Recommendations:

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit input from residents and businesses (located within the vicinity of the interchange) regarding potential economic enhancements/impacts (particularly access to businesses) as a result of the project.

Mobility

Project Effects

Coordinator Summary Degree of Effect: 1 *Enhanced* assigned 11/20/2014 by FDOT District 4

Comments:

Through improved operational capacity and overall traffic operations, the proposed interchange improvement is anticipated to 1) accommodate future travel demand (thus achieving acceptable Levels of Service at the interchange), 2) allow SR-9/I-95 to continue to facilitate the north-south movement of local and regional traffic, 3) enhance access to SR-9/I-95 and other major transportation facilities and employment centers in Southeast Florida, 4) improve freight mobility, 5) enhance emergency evacuation and response times, and 6) reduce conflict points and the potential occurrence of collisions. Therefore, a Summary DOE of Enhanced has been assigned to the Mobility issue.

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit community opinions and preferences, targeting input from the transportation disadvantaged population, regarding the project.

Degree of Effect: 1 *Enhanced* assigned 09/03/2014 by Gaspar Jorge Padron, FDOT District 4

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

100-Foot Buffer:

FDOT RCI Bridges (3)

- 930433
- 930434
- 930435

Bus Transit Routes (2)

- ROUTE 70 - LANTANA TO DELRAY BEACH
- ROUTE 71 - BOYNTON BEACH CROSSTOWN VIA LAWRENCE

Fixed-Guideway Transit and Ferry Network (1)

- TRI-COUNTY COMMUTER RAIL

Transportation Disadvantaged Service Provider Areas in Florida-2010 (2)

- PALM TRAN CONNECTION
- MV CONTRACT TRANSPORTATION, INC.

Facility Crossings (1)

- GATEWAY BOULEVARD/22ND AVENUE

Railroads in the State of Florida

- MAINLINE: 2231.0352 Linear Feet

500-Foot Buffer:

FDOT RCI Bridges (3)

- 930433
- 930434
- 930435

Bus Transit Routes (2)

- ROUTE 70 - LANTANA TO DELRAY BEACH
- ROUTE 71 - BOYNTON BEACH CROSSTOWN VIA LAWRENCE

Fixed-Guideway Transit and Ferry Network (2)

- TRI-COUNTY COMMUTER RAIL (2)

Fixed-Guideway Transit Network Stations (1)

- BOYNTON BEACH - TRI-COUNTY COMMUTER

Transportation Disadvantaged Service Provider Areas in Florida-2010 (2)

- PALM TRAN CONNECTION
- MV CONTRACT TRANSPORTATION, INC.

Facility Crossings (1)

- GATEWAY BOULEVARD/22ND AVENUE

Railroads in the State of Florida

- MAINLINE: 3059.2494 Linear Feet

Number of Housing Units with No Vehicle Available: 385 (8.2%)

Comments on Effects to Resources:

By improving operational capacity and overall traffic operations, the proposed interchange improvement is anticipated to 1) achieve acceptable Levels of Service (LOS) at the interchange in the future condition by accommodating future travel demand projected as a result of Palm Beach County population and employment growth; 2) allow SR-9/I-95 to continue to serve as a critical arterial in facilitating the north-south movement of traffic in Southeast Florida as it connects major employment centers, residential areas, and other regional destinations between Miami-Dade, Broward and Palm Beach Counties; 3) allow for more efficient access to SR-9/I-95 from the east and west along Gateway Boulevard; and 4) enhance freight mobility by maintaining viable access to the major transportation facilities and businesses of the area (including connectors to freight activity centers/local distribution facilities or between the regional freight corridors).

Further, as SR-9/I-95 serves as part of the emergency evacuation route network designated by the Florida Division of Emergency Management, the proposed project is anticipated to enhance emergency evacuation and response times by 1) improving connectivity and accessibility to SR-9/I-95 and other major arterials designated on the state evacuation route network and 2) increasing the number of residents that can be evacuated during an emergency event through expanded operational capacity.

The interchange improvement is also anticipated to provide additional through and turn lanes, as well as lane assignment signs, to help reduce conflict points and the potential occurrence of collisions at the interchange.

While potential temporary impacts to residences and businesses may occur during project construction as a result of intermittent road closures, the proposed project is anticipated to enhance overall access/mobility options and ease traffic congestion at the interchange during peak traffic periods.

Additional Comments (optional):

CLC Commitments and Recommendations:

During the Project Development phase, public outreach will be conducted by FDOT District Four in coordination with the Palm Beach Metropolitan Planning Organization and the City of Boynton Beach to solicit community opinions and preferences, targeting input from the transportation disadvantaged population, regarding the project.

ETAT Reviews and Coordinator Summary: Cultural

Section 4(f) Potential

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

Potentially protected Section 4(f) resources within proximity to the interchange include a native preservation area associated with the Palm Beach County Children's Services Council building [although not considered a public park, a Section 4(f) Determination of Applicability (DOA) should be prepared and coordinated with FHWA] and the Ezell Hester, Jr. Community Center and Park. Access to these features could be temporarily affected

during project construction. In addition, unrecorded cultural resources (eligible or potentially eligible for listing in the National Register of Historic Places) may exist since a comprehensive survey has not been conducted for the project area. For these reasons, a Summary DOE of Minimal has been assigned to the Section 4(f) Potential issue.

During Project Development, a Section 4(f) Determination of Applicability (DOA) will be conducted in coordination with FHWA (in accordance with Part 2, Chapter 13 of the FDOT PD&E Manual) to determine the extent of Section 4(f) involvement and focus any required documents on the avoidance and/or minimization of impacts.

None found

Historic and Archaeological Sites

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 11/20/2014 by FDOT District 4

Comments:

FDOS commented that there is one known significant resource in the project area (the Seaboard Air Line Railway); it has not been evaluated by the SHPO. FDOS also noted that since the project area has not been comprehensively surveyed, other resources of potential significance may be present. Due to the possible presence of cultural resources eligible or potentially eligible for listing in the National Register of Historic Places (NRHP) within the project area, a Summary DOE of Moderate has been assigned to the Historic and Archaeological Sites issue.

During Project Development, a Cultural Resource Assessment Survey will be conducted (in accordance with Part 2, Chapter 12 of the FDOT PD&E Manual) to determine the presence of historic, cultural and archeological resources in the area and evaluate their eligibility for listing in the NRHP. Any potential impacts to such resources will be avoided and/or minimized during the process.

Degree of Effect: 3 *Moderate* assigned 08/14/2014 by Ginny Leigh Jones, FL Department of State

Coordination Document: PD&E Support Document As Per PD&E Manual

Coordination Document Comments:

As proposed in the PED, the project area should be comprehensively surveyed for cultural resources. All cultural resources, including potential historic districts, within the area of potential effect should be documented and assessed for NRHP eligibility. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46 Florida Administrative Code, FDOT PD&E Manual Part 2, Chapter 12 and will need to be forwarded to this agency (or the appropriate Federal Agency) for review and comment.

Direct Effects

Identified Resources and Level of Importance:

As reported in the Preliminary Environmental Discussion (PED) there is a recorded significant resource (Seaboard Air Line Railroad - 8PB12917) adjacent to the current project corridor. There are no other recorded resources in the project vicinity (within 1,320 ft).

According to historic aerials, the neighborhood located immediately east of I-95 on either side of Gateway Boulevard developed between 1953 and 1968. Therefore, there is a possibility that the structures in this neighborhood have reached 50 years of age. There is no other development shown in the historic aerials.

Comments on Effects to Resources:

Since the Seaboard Air Line Railway (PB12917) is directly within the proposed project, the impacts of the proposed project on the resource should be evaluated as part of the consultation during the PD&E Phase of the project.

Since there is a possibility that additional/new ROW will be needed for this project and there may be unrecorded historic structures adjacent to the project corridor there is a potential for direct impacts to adjacent resources. If other significant resources are identified in the project area of potential effect (APE) the impact of the proposed project on them should be evaluated as part of the PD&E process.

Additional Comments (optional):

As proposed in the PED, the project area should be comprehensively surveyed for cultural resources. All cultural resources, including potential historic districts, within the area of potential effect should be documented and assessed for NRHP eligibility. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46 Florida Administrative Code, FDOT PD&E Manual Part 2, Chapter 12 and will need to be forwarded to this agency (or the appropriate Federal Agency) for review and comment.

CLC Commitments and Recommendations:

Recreation Areas

Project Effects

Coordinator Summary Degree of Effect: 0 None assigned 11/20/2014 by FDOT District 4

Comments:

While a native preservation area associated with the Palm Beach County Children's Services Council building (although not considered a public park, but has the potential to be a Section 4(f) resource) and the Ezell Hester, Jr. Community Center and Park are located within proximity to the interchange, no recreation areas/features are present within the 200-foot project buffer. No direct impacts to these resources are anticipated. For this reason, a Summary DOE of None has been assigned to the Recreation Areas issue.

An assessment of potential impacts to recreational features/areas will be conducted during Project Development. Future environmental documentation will include an evaluation of the direct, indirect, and cumulative impacts of the proposed project and construction on any public lands and proposed acquisition sites. Impacts will be avoided and/or minimized during the process. FDOT District Four will coordinate with the appropriate agencies concerning the necessary studies, documentation and commitments needed to adequately address any identified resources in accordance with federal, state, and local laws and regulations.

Degree of Effect: N/A N/A / No Involvement assigned 08/01/2014 by Anita Barnett, National Park Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 None assigned 09/06/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 None assigned 09/04/2014 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 None assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Natural

Wetlands

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

USACE stated that if work is to be performed within waters of the United States (includes existing ditches, canals, etc.) to improve the stormwater management system, a nationwide permit would likely be required. SFWMD also noted that multiple existing Environmental Resource Permits cover portions of the project area; these permits will likely need to be modified. Due to the limited amount of wetlands within the vicinity of the project and the fact that no impacts this resource or surface waters are anticipated, a Summary DOE of Minimal has been assigned to the Wetlands issue.

During Project Development, potential wetland impacts will be evaluated through a Wetlands Evaluation Technical Memorandum to be prepared in accordance with Part 2, Chapter 18 of the FDOT PD&E Manual. All necessary measures will be taken to avoid and/or minimize impacts to wetlands to the greatest extent practicable during project design. Should avoidance and/or minimization not be practicable, a Mitigation Plan will be prepared. In addition, existing compensatory mitigation sites within the area of influence will be identified and reviewed. Further, best management practices will be utilized during project construction and all applicable permits (including an Environmental Resource Permit) will be obtained in accordance with federal, state, and local laws and regulations.

Degree of Effect: 0 *None* assigned 09/06/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/12/2014 by Brandon Howard, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

None

Comments on Effects to Resources:

None

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/18/2014 by Garrett Lips, US Army Corps of Engineers

Coordination Document: Permit Required

Coordination Document Comments:

Likely a nationwide permit would be needed for minor work in waters of the United States including existing stormwater treatment areas, ditches or canals.

Direct Effects

Identified Resources and Level of Importance:

Low ecologically functioning canals and ditches may be present. No wetlands appear to be present, but a wetland assessment should be done to verify.

Comments on Effects to Resources:

No ecological functional losses are anticipated if the work is limited to stormwater management system improvements.

Additional Comments (optional):

Likely a nationwide permit would be needed for minor work in waters of the United States including existing stormwater treatment areas, ditches or canals.

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 07/28/2014 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Wetlands

Comments on Effects to Resources:

Wetlands provide important habitat for fish and wildlife. If wetlands are found within the project area, we recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to these wetlands are unavoidable, we recommend the FDOT provide mitigation that fully compensates for the loss of important resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 09/04/2014 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: Permit Required

Direct Effects

Identified Resources and Level of Importance:

The National Wetlands Inventory GIS report indicates that there are 0.2 acres of palustrine wetlands within the 500-ft. project buffer zone.

Comments on Effects to Resources:

If new impervious area is proposed, an environmental resource permit (ERP) would likely be required from the South Florida Water Management District for stormwater management at the site.

Additional Comments (optional):

CLC Commitments and Recommendations:

Water Quality and Quantity

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

No impaired waters are located within the project vicinity; however, the project may result in construction related disturbances as well as additional stormwater treatment and right-of-way for retention/detention ponds or swales to meet regulatory water quality criteria. SFWMD identified multiple existing Environmental Resource Permits within the project area that will likely need to be modified; the project permit must meet the criteria of Applicant's Handbook Volume II. Based on the foregoing, a Summary DOE of Minimal has been assigned to the Water Quality and Quantity issue.

During Project Development, FDOT District Four will conduct a Water Quality Impact Evaluation (in accordance with Part 2, Chapter 20 of the FDOT PD&E Manual) and coordinate with all relevant agencies for the design of the proposed stormwater system and the requirements for stormwater treatment, evaluating existing stormwater treatment adequacy and details on the future stormwater treatment facilities. All necessary permits will be obtained in accordance with federal, state, and local laws and regulations.

Degree of Effect: 0 *None* assigned 09/06/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 09/04/2014 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: Permit Required

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permit and/or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

Direct Effects

Identified Resources and Level of Importance:

Surface waters and flood protection

Comments on Effects to Resources:

No adverse water quality or quantity impacts are anticipated. The project must meet the criteria to obtain an Environmental Resource Permit, including the water quality and quantity criteria in Applicant's Handbook Volume II.

Additional Comments (optional):

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

CLC Commitments and Recommendations:

Floodplains

Project Effects

Coordinator Summary Degree of Effect: 0 *None* assigned 11/20/2014 by FDOT District 4

Comments:

The proposed interchange improvements will not encroach into any special flood zone hazard areas (100-year floodplain). Therefore, a Summary DOE of None has been assigned to the Floodplains issue.

Degree of Effect: 0 *None* assigned 09/06/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

CLC Commitments and Recommendations:

Wildlife and Habitat

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

The interchange is within the South Florida Ecosystem Management Area; FWS Consultation Areas for the Florida scrub-jay, West Indian Manatee, and Atlantic Coast Plants; and Core Foraging Areas of four active nesting Wood Stork colonies. FWC indicated that the only remaining natural habitat along the alignment is north of Gateway Boulevard at the west end of the project area, where a strip of remnant sand pine scrub on the west side of the Quantum Village commercial area grades into a shrub swamp; there is also a hardwood/pine forested "native preservation area" of approximately one acre located between the Children's Services Council facility and High Ridge Road. FWC stated that impacts could be minimized if construction takes place in previously disturbed sites and avoids the remaining xeric scrub area or other natural areas. For these reasons and given the urban nature of the area, a Summary DOE of Minimal has been assigned to the Wildlife and Habitat issue.

The final design of the project will avoid and/or minimize impacts to wetlands/wildlife and habitat to the greatest extent practicable (including confining new DRAs to previously disturbed sites), and best management practices will be utilized during project design and construction; appropriate mitigation will also be provided for unavoidable impacts. During Project Development, an Endangered Species Biological Assessment will be prepared in compliance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 USC 1531 et seq) and in accordance with Part 2, Chapter 27 of the FDOT PD&E Manual. FWC stated that 1) plant community mapping/wildlife surveys are to be performed along the right-of-way and within sites proposed for Drainage Retention Areas, 2) permits are to be obtained if gopher tortoises or nests of other listed species are present within any permanent or temporary construction areas, and 3) a compensatory mitigation plan is to be prepared including the replacement of any wetland, upland, or aquatic habitat lost as a result of the project. USFWS indicated that a functional assessment using the USFWS's Wood Stork Foraging Analysis Methodology is required on the foraging habitat to be impacted and the foraging habitat provided as mitigation for projects that impact 5 or more acres of wood stork foraging habitat.

Degree of Effect: 2 Minimal assigned 07/28/2014 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Federally listed species and fish and wildlife resources

Comments on Effects to Resources:

Federally-listed species -

The Service has reviewed our Geographic Information Systems (GIS) database for recorded locations of Federally listed threatened and endangered species on or adjacent to the project study area. The GIS database is a compilation of data received from several sources. Based on review of our GIS database, the Service notes that the following Federally listed species may occur in or near the project area.

Wood Stork

The project corridor is located in the Core Foraging Areas (CFA)(within 18.6 miles) of two active nesting colonies of the endangered wood stork (*Mycteria americana*). The Service believes that the loss of wetlands within a CFA due to an action could result in the loss of foraging habitat for the wood stork. To minimize adverse effects to the wood stork, we recommend that any lost foraging habitat resulting from the project be replaced within the CFA of the affected nesting colony. Moreover, wetlands provided as mitigation should adequately replace the wetland functions lost as a result of the action. The Service does not consider the preservation of wetlands, by itself, as adequate compensation for impacts to wood stork foraging habitat, because the habitat lost is not replaced. Accordingly, any wetland mitigation plan proposed should include a restoration, enhancement, or creation component. In some cases, the Service accepts wetlands compensation located outside the CFA of the affected wood stork nesting colony. Specifically, wetland credits purchased from a "Service Approved" mitigation bank located outside of the CFA would be acceptable to the Service, provided that the impacted wetlands occur within the permitted service area of the bank.

For projects that impact 5 or more acres of wood stork foraging habitat, the Service requires a functional assessment be conducted using our "Wood Stork Foraging Analysis Methodology" (Methodology) on the foraging habitat to be impacted and the foraging habitat provided as mitigation. The Methodology can be found at: <http://www.fws.gov/verobeach/ListedSpeciesBirds.html> .

The Service believes that the following federally listed species have the potential to occur in or near the project site: eastern indigo snake (*Drymarchon couperi* = *Drymarchon corais couperi*), West Indian manatee (*Trichechus manatus*), and wood stork. Accordingly, the Service recommends that the Florida Department of Transportation (FDOT) prepare a Biological Assessment for the project (as required by 50 CFR 402.12) during the FDOT's Project Development and Environment process.

Fish and Wildlife Resources -

Wetlands provide important habitat for fish and wildlife. If wetlands are found within the project area, we recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to these wetlands are unavoidable, we recommend the FDOT provide mitigation that fully compensates for the loss of important resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 2 Minimal assigned 08/14/2014 by Scott Sanders, FL Fish and Wildlife Conservation Commission

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Florida Fish and Wildlife Conservation Commission (FWC) staff has reviewed ETDM #14180, Palm Beach County, and provides the following comments related to potential effects to fish and wildlife resources of this Programming Phase project.

The Project Description Summary states that this project involves increasing the capacity and safety of the I-95 interchange at Gateway Boulevard in the City of Boynton Beach through the addition of turn lanes and ramp lanes, including additional lanes on High Ridge Road, Quantum Lane, and Seacrest Boulevard. The Project Description did not address the potential need for new Drainage Retention Areas (DRAs) to handle the additional stormwater runoff from the expanded roadway.

An assessment of the project area was performed on lands within 500 feet of the proposed alignment to determine potential impacts to habitat which supports listed species and other fish and wildlife resources. Our inventory included a review of aerial and ground-level photography, various wildlife observation and landcover data bases, along with coordination with FWC biologists and other State and Federal agencies. A GIS analysis was performed using the Florida Department of Transportation's (FDOT) Environmental Screening Tool to determine the potential quality and extent of upland and wetland habitat, and other wildlife and fisheries resource information. We have reviewed the Preliminary Environmental Discussion Comments Report provided by the FDOT, and offer the following comments and recommendations.

Our assessment reveals that the project area is predominantly residential and commercial development, with over 90% classified as High or Low Intensity Urban or Transportation. The only remaining natural habitat along the alignment is north of Gateway Boulevard at the west end of the project area, where a strip of remnant sand pine scrub on the west side of the Quantum Village commercial area grades into a shrub swamp. This scrub remnant was once part of a larger scrub system that included much of the I-95 Right-of-way (ROW) before interstate construction. There is also a hardwood/pine forested "native preservation area" of approximately one acre, located between the Children's Services Council facility and High Ridge Road.

Based on range and preferred habitat type, the following species listed by the Federal Endangered Species Act and the State of Florida as Federally Endangered (FE), Federally Threatened (FT), State-Threatened (ST), or State Species of Special Concern (SSC) have the potential to occur in the project area: gopher frog (SSC), Eastern indigo snake (FT), Florida pine snake (SSC), gopher tortoise (T), least tern (T), limpkin (SSC), snowy egret (SSC), little blue heron (SSC), tricolored heron (SSC), white ibis (SSC), wood stork (FE), burrowing owl (SSC), and Florida mouse (SSC). Florida scrub jays (FE) once occupied the xeric scrub around this interchange, but are no longer present because nearly all of their habitat has been developed. Gopher tortoises and their commensals may occur in the sandy soils of the open field immediately southeast of the interchange, as well as in the remnant scrub or "native preservation area". Wading birds may utilize the shrub swamp or the stormwater pond southwest of the project area. The project is within the 15-mile-radius core foraging area of three wood stork colonies, and is within the U.S. Fish and Wildlife Service Consultation Areas for Scrub Jay, Manatee, and Atlantic Coast Plants.

Primary wildlife issues associated with this project include: potential adverse effects to a moderate number of species listed by the Federal Endangered Species Act as Endangered or Threatened, or by the State of Florida as Threatened or Species of Special Concern; and potential water quality degradation as a result of additional stormwater runoff from the new roadway surface entering drainage canals and ultimately the Lake Worth Lagoon.

Comments on Effects to Resources:

Based on the project information provided, we believe that direct and indirect effects of this project could be minimal, provided that roadway construction avoids the remaining xeric scrub area, any new DRAs are not constructed within areas of natural habitat, and degradation of adjacent or downstream water quality is avoided via inclusion of Best Management Practices in the project design.

Additional Comments (optional):

CLC Commitments and Recommendations:

Coastal and Marine

Project Effects

Coordinator Summary Degree of Effect:

0 None assigned 11/20/2014 by FDOT District 4

Comments:

As the project is located approximately two miles west of the Atlantic Ocean and Intracoastal Waterway, it is not within an area considered to have coastal or marine resources. The NMFS indicated that the proposed work would not directly impact areas that support essential fish habitat (EFH), NOAA trust fishery resources, or wetland areas that support NOAA trust fishery resources. As such, this project will not require an Essential Fish Habitat Assessment, nor is further consultation with the NMFS necessary unless future modifications to the project could result in adverse impacts to

EFH. For these reasons, a Summary DOE of None has been assigned to the Coastal and Marine issue.

Degree of Effect: 0 *None* assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

CLC Commitments and Recommendations:

Degree of Effect: 0 *None* assigned 08/12/2014 by Brandon Howard, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

None

Comments on Effects to Resources:

None

Additional Comments (optional):

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Physical

Noise

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

Single family homes are located at the northeast and southeast corners of the interchange. Currently, there are sound barriers adjacent to these houses. For this reason, a Summary DOE of Minimal has been assigned to the Noise issue.

During Project Development, a Noise Study Report will be prepared in accordance with Part 2, Chapter 17 of the FDOT PD&E Manual.

None found

Air Quality

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

The project is not located within a USEPA-designated Air Quality Maintenance or Non-Attainment Area for any of the four pollutants (nitrogen oxides, ozone, carbon monoxide, and small particulate matter) specified by the USEPA in National Ambient Air Quality Standards. Therefore, the Clean Air Act conformity requirements do not apply to this project at this time. While temporary impacts to air quality could occur during project construction as a result of fugitive dust and exhaust emissions, no permanent effects to air quality are anticipated. Overall, minor air quality improvement could result due to reduced emissions from idling traffic with the expansion of operational capacity. Based on the foregoing, a Summary DOE of Minimal has been assigned to the Air Quality issue.

During Project Development, an Air Quality Technical Memorandum will be prepared in accordance with Part 2, Chapter 16 of the FDOT PD&E Manual.

Degree of Effect: 2 *Minimal* assigned 09/06/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Air Quality

Comments on Effects to Resources:

Short term impact on air quality could occur during construction. Measures should be taken to minimize short term air quality impacts.

Additional Comments (optional):

CLC Commitments and Recommendations:

Contamination

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

FDEP and USEPA reported the following potential contamination sites within the 500-foot project buffer: one hazardous waste facility, three petroleum contamination monitoring sites, seven storage tank contamination monitoring sites, one Super Act risk source, and two USEPA RCRA-regulated facilities. Due to the presence and proximity of these facilities (including potential previous contamination from these sites) and potential presence of hazardous substances associated with the existing bridge over the South Florida Rail Corridor/CSX Railroad line, a Summary DOE of Minimal has been assigned to the Contamination issue.

Contamination (including any required permits) will be evaluated during Project Development in accordance with federal, state and local laws and regulations. A Contamination Screening Evaluation Report (similar to Phase I and Phase II Audits) will be prepared in accordance with Part 2, Chapter 22 of the FDOT PD&E Manual, including site specific surveys to assess existing known subsurface contamination and proximity to construction activities, as well as historical contamination release. Contingency Plans/"Special Provisions for Unidentified Areas of Contamination" shall be included in the project's construction contract documents. These provisions will specify procedures to follow in the event any hazardous material or suspected contamination is encountered during construction or should there be any construction-related spills.

Degree of Effect: 0 *None* assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

CLC Commitments and Recommendations:

Degree of Effect: 2 *Minimal* assigned 09/04/2014 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

GIS data indicates that there is 1 hazardous waste facility, 3 petroleum contamination monitoring sites, 7 storage tank contamination monitoring sites and 2 RCRA regulated facilities within the 500-ft. project buffer zone.

Comments on Effects to Resources:

A Contamination Screening Evaluation (similar to Phase I and Phase II Audits) will need to be conducted along the project right-of-way in considering the proximity to known petroleum and hazardous material handling facilities. The Contamination Screening Evaluation should outline specific procedures that would be followed by the applicant in the event drums, wastes, tanks or potentially contaminated soils are encountered during construction. Special attention should be made in the screening evaluation to historical land uses (such as solid waste disposal) that may have an affect on the proposed project, including any stormwater retention and treatment areas.

Additional Comments (optional):**CLC Commitments and Recommendations:**

Degree of Effect: 2 *Minimal* assigned 09/06/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects**Identified Resources and Level of Importance:**

Groundwater aquifer and surfce water bodies: Cananl E-4 and Boynton Canal

Comments on Effects to Resources:

Several potential contamination sources exist within 500 feet of the propsoed project including two RCRA regulated sites and some petroleum contamination monitoring sites. A site specific survey will be necessary to further identify any historic releases that may have caused subsurface cintamination. Contingencies should be in place to identify and properly manage contaminated media or hazardous waste or materials.

Additional Comments (optional):**CLC Commitments and Recommendations:****Infrastructure****Project Effects**

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 11/20/2014 by FDOT District 4

Comments:

Infrastructure-related features identified within the 500-foot project buffer include three compliance and enforcement tracking facilities, one onsite sewage facility, one wireless antenna structure location, one USEPA water quality data monitoring station, and the South Florida Rail Corridor/CSX Railroad (located immediately west of the existing interchange). Although the bridge over the existing railroad tracks will be widened, it should have no impact on the existing rail corridor. Given the few features identified and the limited amount of right-of-way acquisition proposed for this project, a Summary DOE of Minimal has been assigned to the Infrastructure issue.

During Project Development, FDOT District Four will coordinate with all appropriate agencies to adequately address potential project effects on infrastructure and acquire all necessary permits.

None found

Navigation**Project Effects**

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 11/20/2014 by FDOT District 4

Comments:

No navigable waterways are present within the project area. Therefore, a Summary DOE of N/A / No Involvement has been assigned to the Navigation issue.

Degree of Effect: N/A *N/A / No Involvement* assigned 07/24/2014 by Darayl Tompkins, US Coast Guard

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

No Coast Guard involvement.

Comments on Effects to Resources:

No Coast Guard involvement

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: N/A N/A / No Involvement assigned 08/18/2014 by Garrett Lips, US Army Corps of Engineers

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

No navigable waterways are present

Comments on Effects to Resources:

No adverse effect on navigation is anticipated.

Additional Comments (optional):

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Special Designations

Special Designations

Project Effects

Coordinator Summary Degree of Effect: 0 None assigned 11/20/2014 by FDOT District 4

Comments:

There are no Outstanding Florida Waters, aquatic preserves, scenic highways/byways, or wild or scenic rivers reported within the project vicinity. Therefore, no impacts to these resources are anticipated and a Summary DOE of None has been assigned to the Special Designations issue.

Degree of Effect: 0 None assigned 09/06/2014 by Maher Budeir, US Environmental Protection Agency

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 0 None assigned 08/18/2014 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

An Environmental Resource Permit and/ or modification will be necessary. Multiple existing permits cover portions of the project area. These permits may need to be modified. Please consult www.flwaterpermits.com and/or www.sfwmd.gov/ePermitting for more information.

CLC Commitments and Recommendations:

Eliminated Alternatives

There are no eliminated alternatives for this project.

Project Scope

General Project Commitments

Date	Description
11/21/2014	<p>FDOT commits to the following technical studies: 1. Air Quality Technical Memorandum, 2. Conceptual Stage Relocation Plan, 3. Contamination Screening Evaluation Report, 4. Cultural Resource Assessment Survey, 5. Endangered Species Biological Assessment, 6. Noise Study Report, 7. Public Hearing Transcript, 8. Public Involvement Plan, 9. Section 4(f) Determination of Applicability, 10. Sociocultural Effects Evaluation, 11. Water Quality Impact Evaluation, and 12. Wetland Evaluation Technical Memorandum.</p> <p>FDOT commits to the following permits: SFWMD Environmental Resource Permit and USACE Nationwide Permit.</p> <p>During Project Development, FDOT District Four will coordinate with the City of Boynton Beach and the Palm Beach Metropolitan Planning Organization (MPO) to ensure that 1) the project is included on the Future Transportation Map of the adopted City of Boynton Beach Comprehensive Plan and is consistent with the adopted Palm Beach MPO Long Range Transportation Plan (LRTP) and 2) funding is identified for all future project phases in the Transportation Improvement Program (TIP), LRTP, State Transportation Improvement Program (STIP), and FDOT Strategic Intermodal System (SIS) Cost Feasible Plan.</p> <p>During Project Development, public outreach will require Limited English Proficiency (LEP) accommodations.</p>

Anticipated Permits

Permit	Type	Conditions	Review Org	Review Date
Department of the Army Corps of Engineers Nationwide Permit	USACE		FDOT District 4	11/20/14
SFWMD Environmental Resource Permit	Water		FDOT District 4	11/21/14

Anticipated Technical Studies

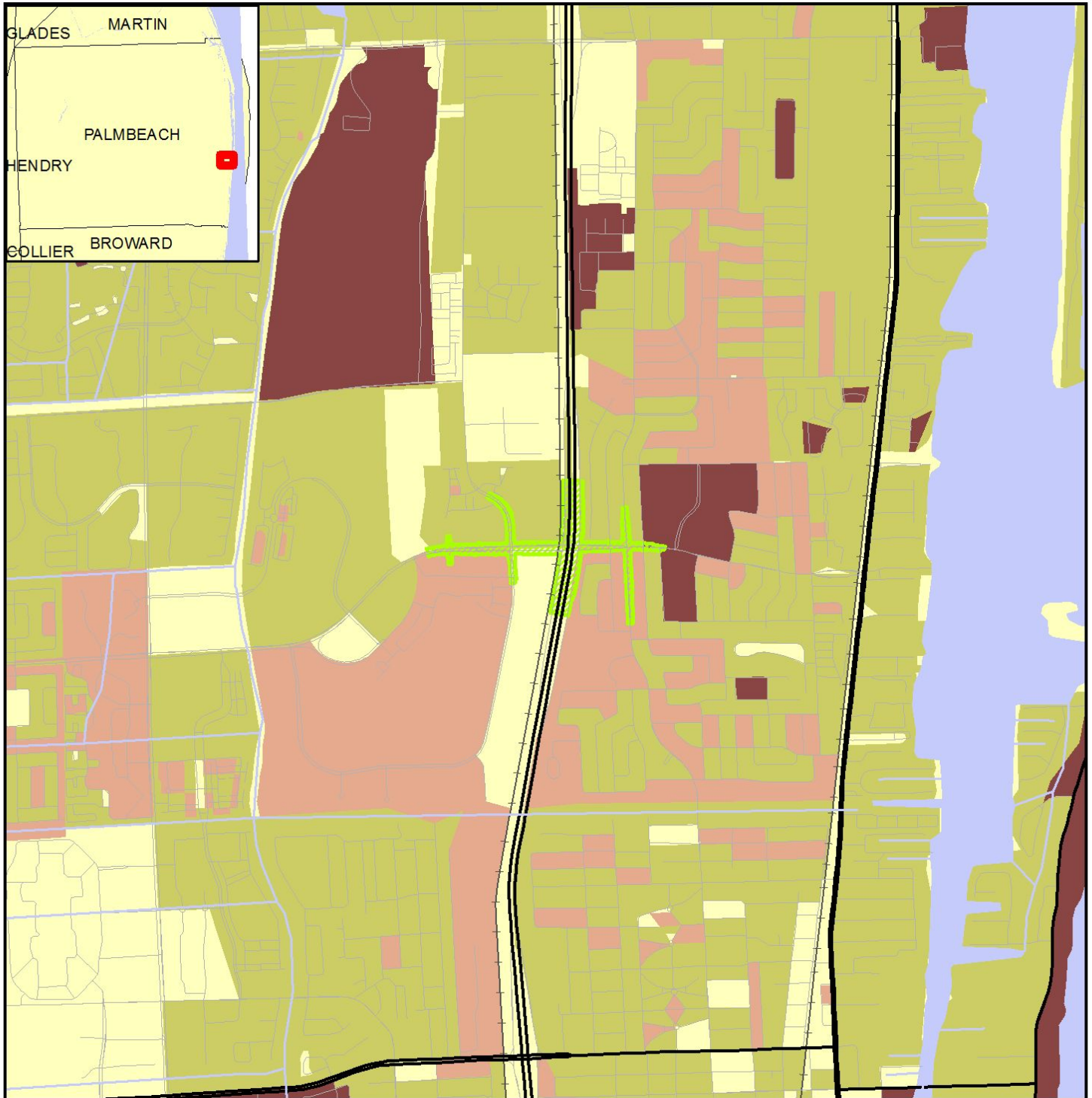
Technical Study Name	Type	Conditions	Review Org	Review Date
Noise Study Report	ENVIRONMENTAL		FDOT District 4	11/21/2014
Contamination Screening Evaluation Report	ENVIRONMENTAL		FDOT District 4	11/21/2014
Conceptual Stage Relocation Plan	ENVIRONMENTAL		FDOT District 4	11/21/2014
Endangered Species Biological Assessment	ENVIRONMENTAL		FDOT District 4	11/21/2014
Wetlands Evaluation Technical Memorandum	Other		FDOT District 4	11/21/2014
Sociocultural Effects Evaluation	Other		FDOT District 4	11/21/2014
Air Quality Technical Memorandum	ENVIRONMENTAL		FDOT District 4	11/21/2014
Water Quality Impact Evaluation (WQIE)	ENVIRONMENTAL		FDOT District 4	11/21/2014
Cultural Resource Assessment Survey	ENVIRONMENTAL		FDOT District 4	11/21/2014
Public Involvement Plan	Other		FDOT District 4	11/21/2014
Public Hearing Transcript	Other		FDOT District 4	11/21/2014
Section 4(f) Determination of Applicability	ENVIRONMENTAL		FDOT District 4	11/21/2014

Dispute Resolution Activity Log

There are no dispute actions identified for this project in the EST.

Hardcopy Maps: Alternative #1

14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



Population Age Distribution Map

0 1 Miles

Data Sources:
 US Geological Survey
 FL Department of Transportation
 NAVTEQ
 US Census Bureau (2010)

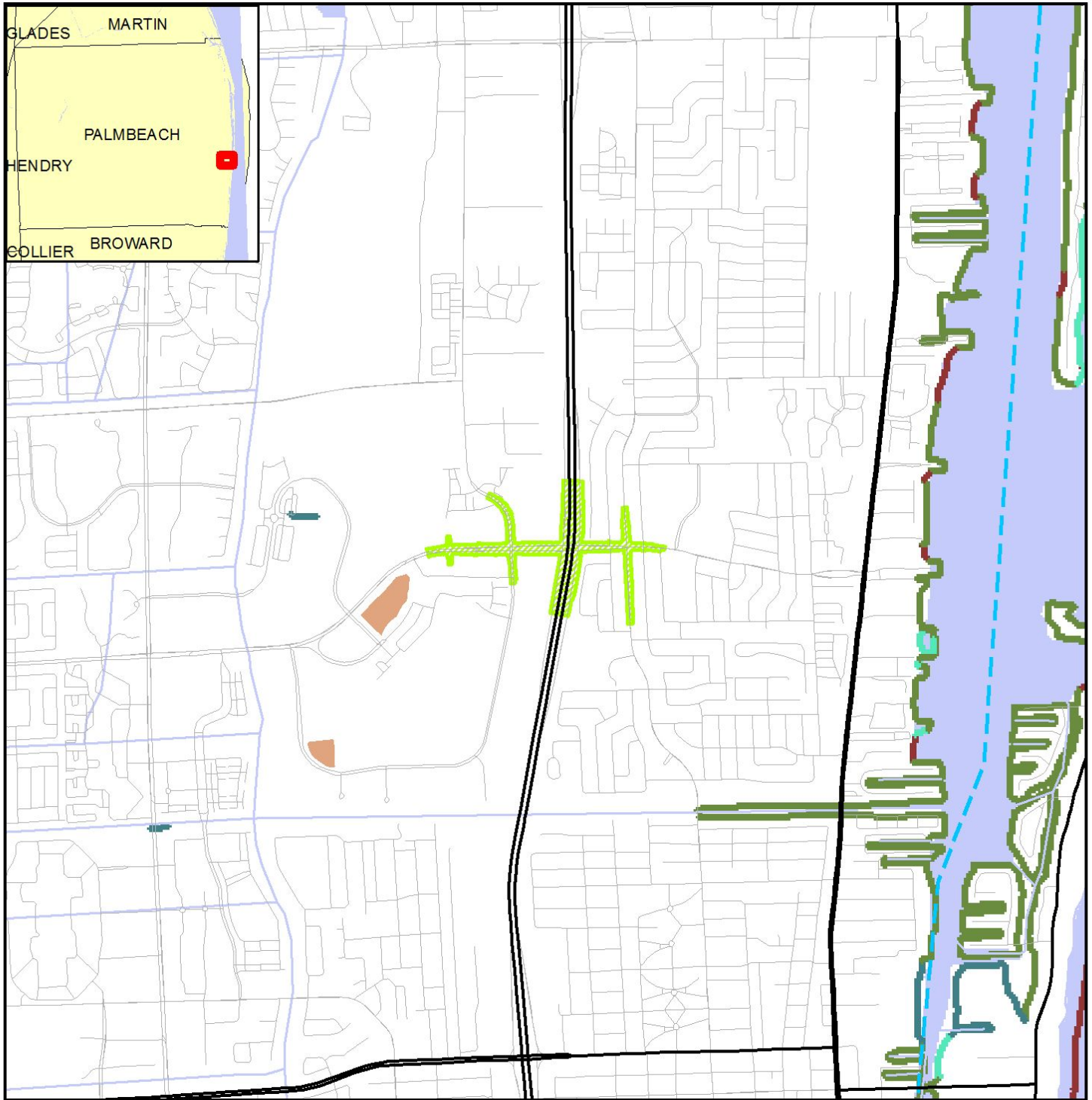
● ETDM Alternative Point	— Major Road
● ETDM Alternative Terminus	— Local Road or Trail
— ETDM Alternative Segment	— Railroad
 ETDM Alternative Polygon	— River, Stream or Canal
	■ Water Body

Median Age

0 - 18	18 - 30	30 - 65	> 65

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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



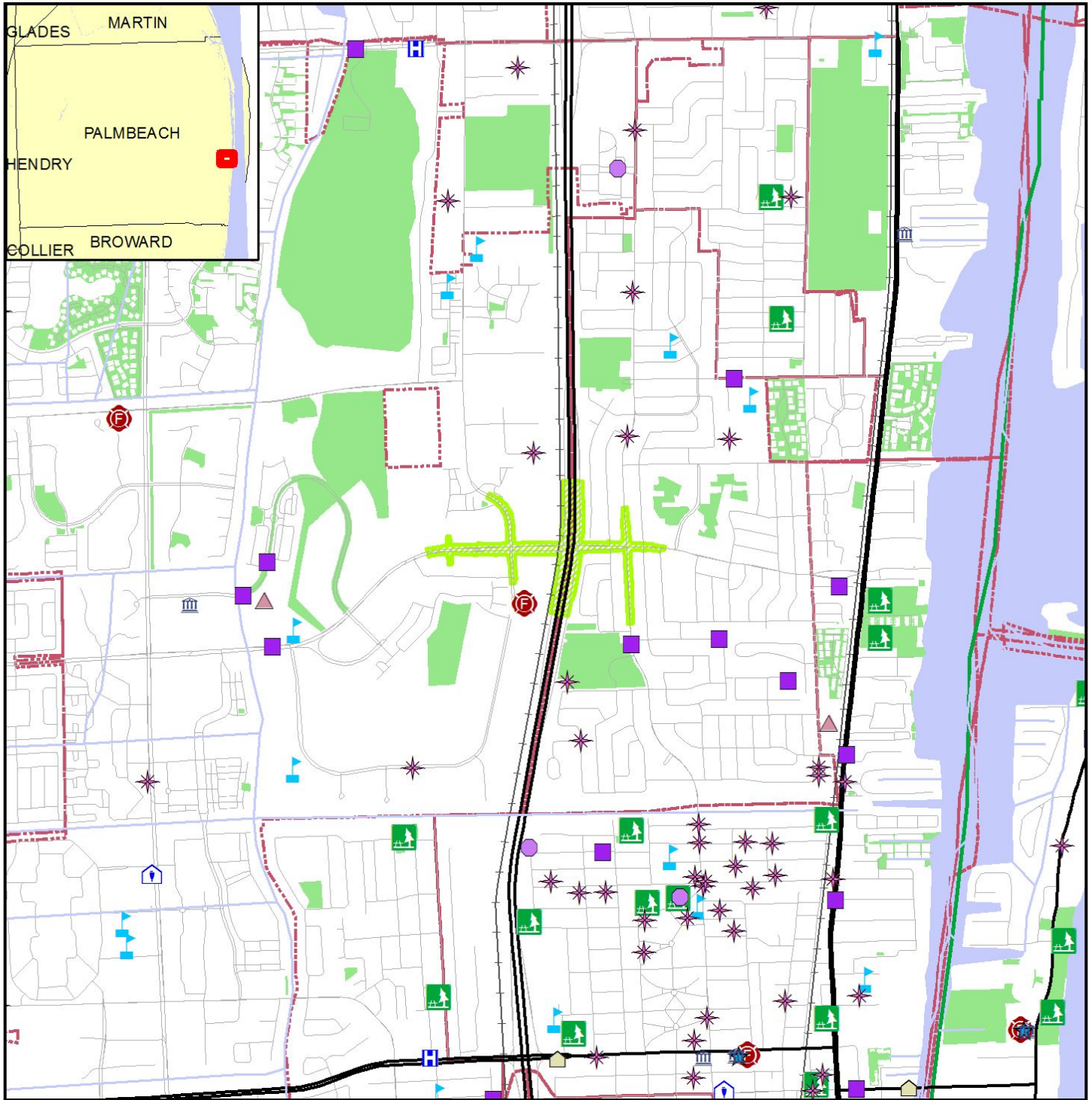
Coastal and Marine Resource Map



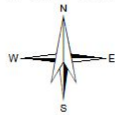
Data Sources: NAVTEQ; US Geological Survey; Florida Marine Research Institute; Florida Department of Transportation; Florida Department of Environmental Protection; National Oceanic and Atmospheric Association; Florida Water Management Districts

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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



0 0.08 Miles



- | | | | |
|---------------------------|------------------|-----------------|---------------------------------|
| ETDM Alternative Point | Government | Cultural Center | River, Stream or Canal |
| ETDM Alternative Terminus | Civic Center | Fire Station | Recreational Trail |
| ETDM Alternative Segment | Cemetery | Health Care | Railroad |
| ETDM Alternative Polygon | Social Service | Health Care | Community Boundary |
| Major Road | Community Center | School | Water Body |
| Local Road or Trail | Law Enforcement | Park | Conservation or Recreation Area |
| | Place of Worship | | |

Community Facilities and Services Map

Data Sources:

US Geological Survey; FL Department of Transportation; NAVTEQ; FL Property Appraisers; FL Natural Areas Inventory

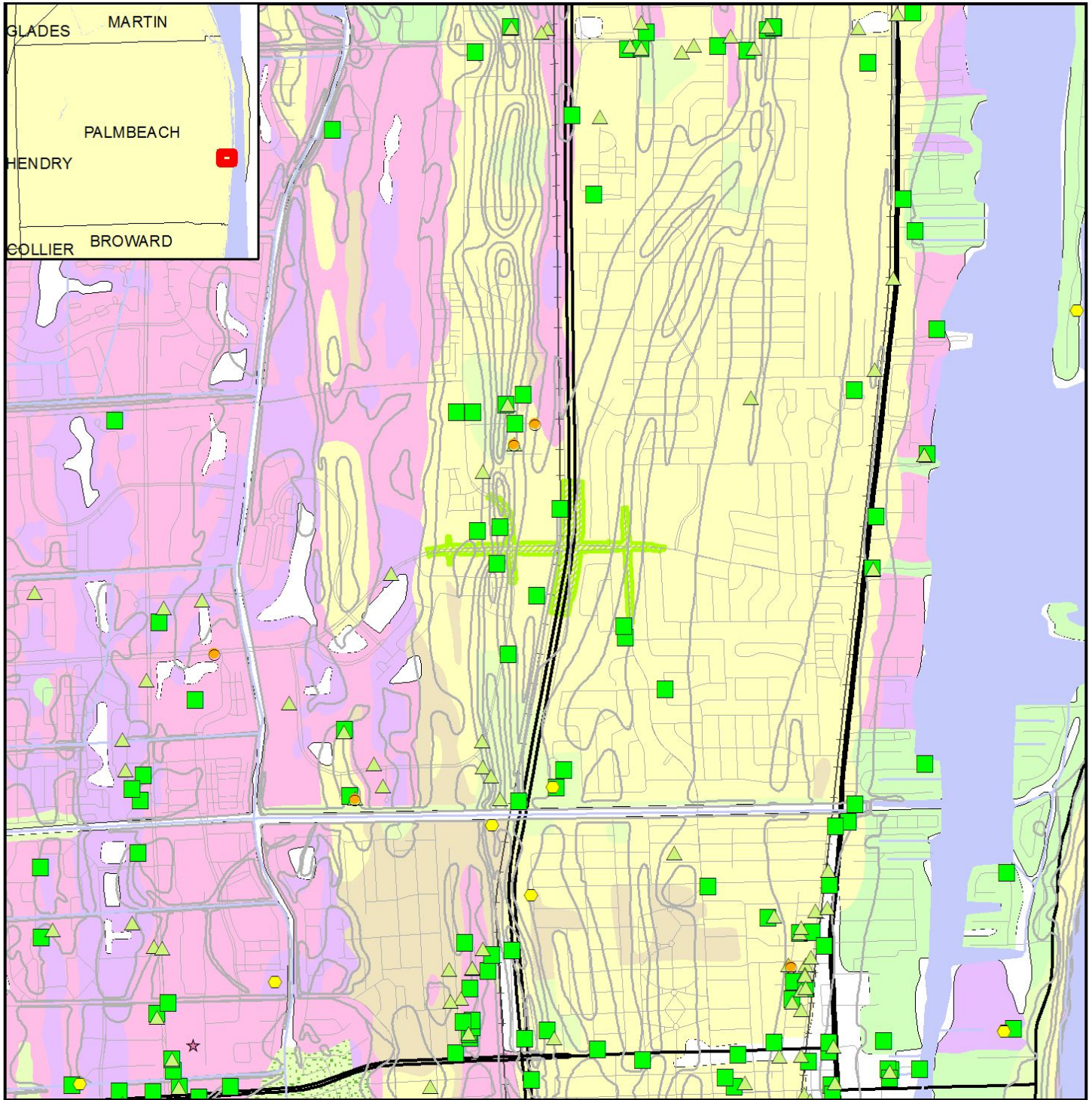
etdm
Efficient Transportation Decision Making

est
Environmental Screening Tool

Map Generated on: 7/17/2014



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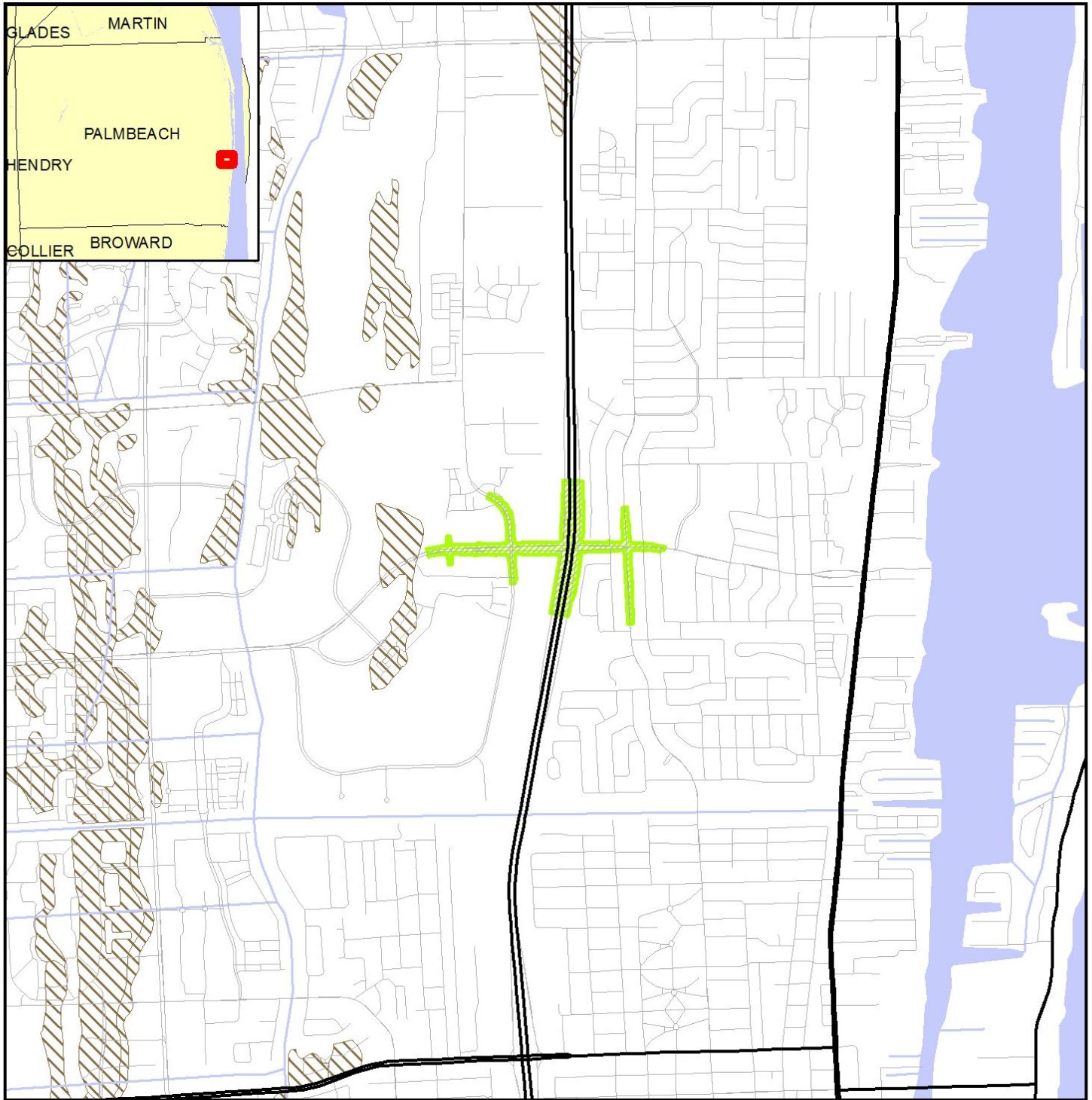


Potential Contamination Assessment Map

- | | |
|--|--|
| <p>0 0.5 Miles</p> <p>N
W E
S</p> <ul style="list-style-type: none"> ● ETDM Alternative Point ● ETDM Alternative Terminus — ETDM Alternative Segment ■ ETDM Alternative Polygon — Major Road — Local Road or Trail — Railroad — River, Stream or Canal ● Toxic Release Inventory ★ Dry Cleaning Facility ● Solid Waste Facility ■ NPL Remediation Site ▲ Hazardous Material Site ■ Power Plant ● Superfund Site ■ Nuclear Site ■ FDEP Tanks ■ Brownfield Area — 5 FT Contour ■ Water Body ■ Swamp/Marsh | <p>Soil Drainage</p> <ul style="list-style-type: none"> ■ Excessively Drained ■ Somewhat Excessively Drained ■ Moderately Well Drained ■ Well Drained ■ Somewhat Poorly Drained ■ Poorly Drained ■ Very Poorly Drained Unclassified |
|--|--|

Data Sources:
 NAVTEQ; US Geological Survey; FL Department of Transportation; FL Department of Environmental Protection;
 FL Water Management Districts; US Environmental Protection Agency; Natural Resource Conservation Service
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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



Farmlands Resource Map

- | | | | | |
|---|-----------|---------------------------|------------------------|---------------------|
| 0 | 0.7 Miles | ETDM Alternative Point | River, Stream or Canal | Nurseries/Vineyards |
| | | ETDM Alternative Terminus | Water Body | Specialty Farms |
| | | ETDM Alternative Segment | Prime Farmland Soils | Tree Crops |
| | | ETDM Alternative Polygon | Cropland/Pastureland | Rural Open Lands |
| | | Major Road | | |
| | | Local Road or Trail | | |



Data Sources: NAVTEQ, Florida Water Management Districts, US Geological Survey, Natural Resources Conservation Services

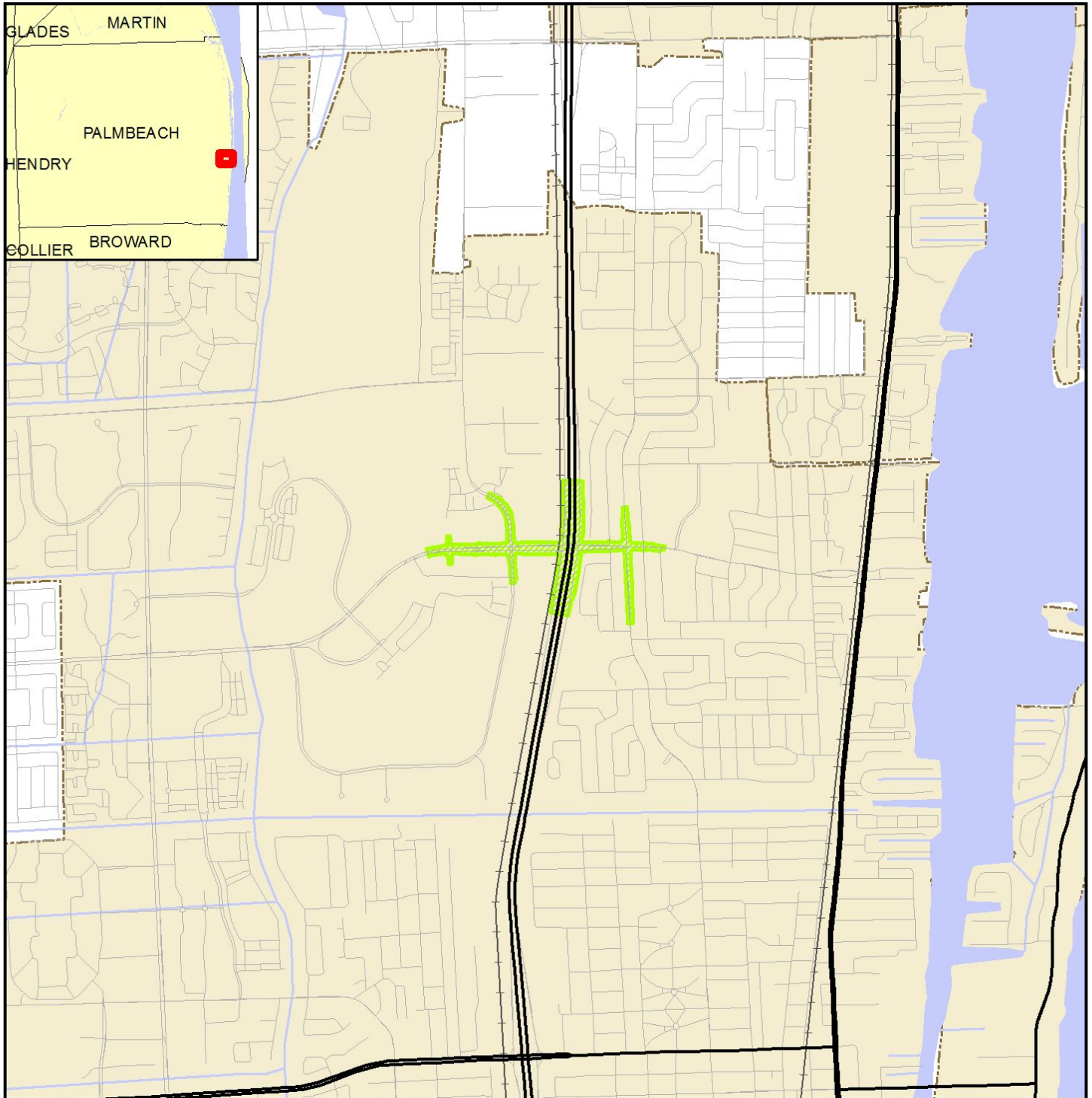
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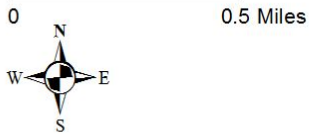
Map Generated on: 7/17/2014



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Floodplain Resource Map

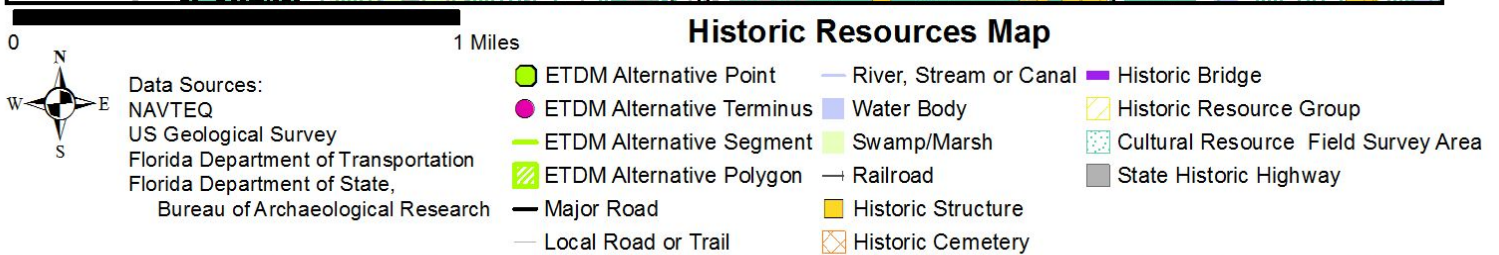
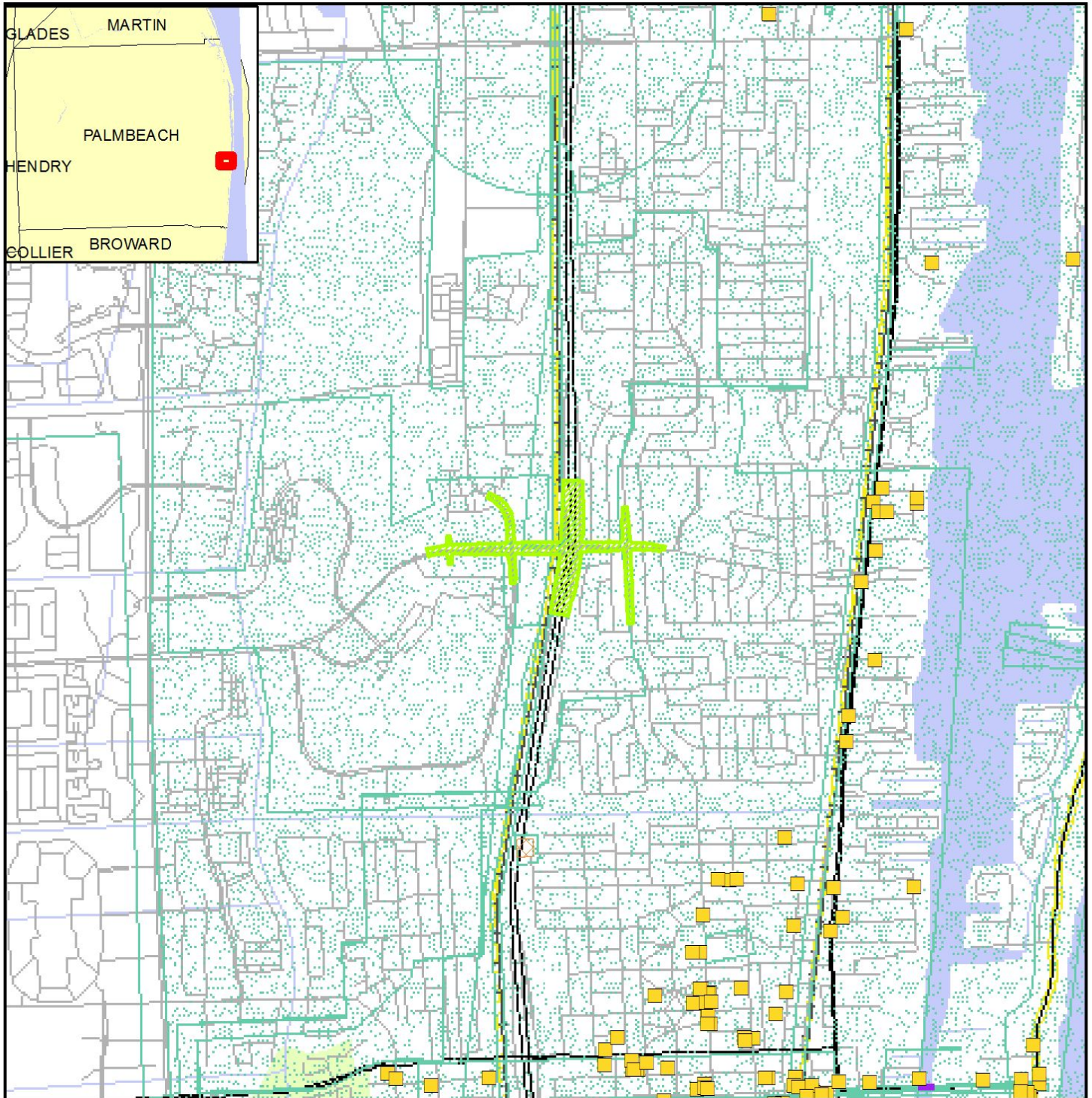


Data Sources:
 NAVTEQ
 US Geological Survey
 Federal Emergency Management Agency

- | | |
|---------------------------|---------------------------|
| ETDM Alternative Point | Railroad |
| ETDM Alternative Terminus | River, Stream or Canal |
| ETDM Alternative Segment | Water Body |
| ETDM Alternative Polygon | City Limits |
| Major Road | County Boundaries |
| Local Road or Trail | Special Flood Hazard Area |

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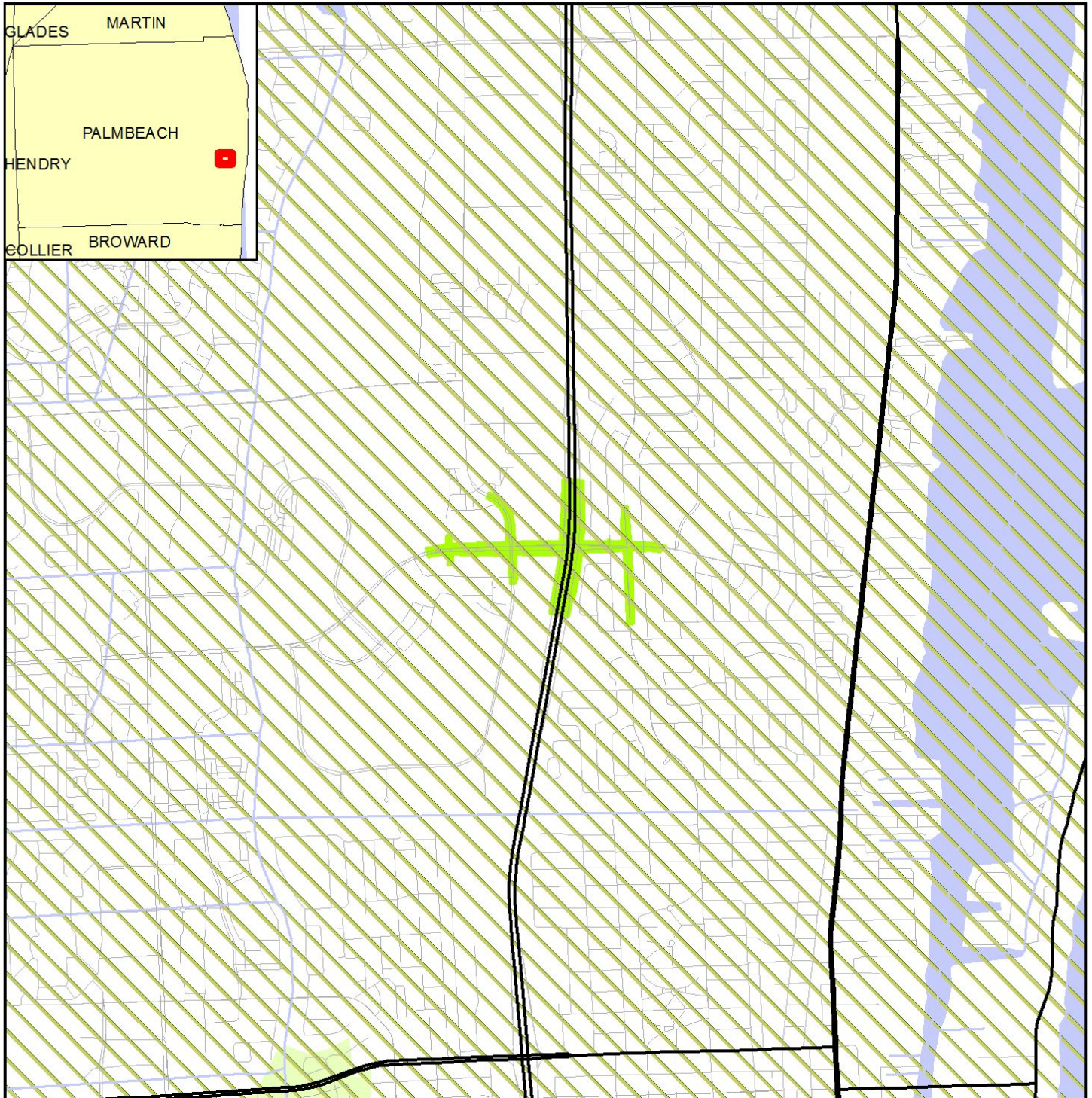


Note: Historic properties depicted on this map represent resources listed in the Florida Master Site File excluding archeological site locations, which, pursuant to Chapter 267.135, Florida Statutes, may be exempt from public record (Chapter 119.07, Florida Statutes). Absence of features on the map does not necessarily indicate an absence of resources in the project vicinity.

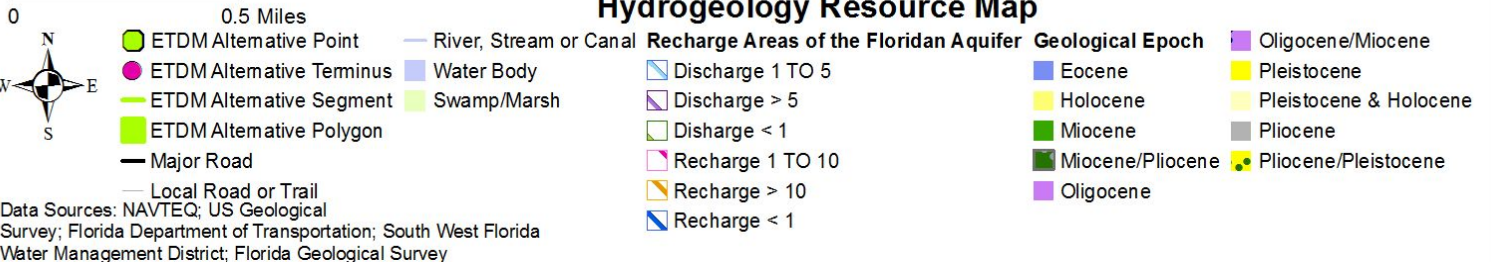


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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1

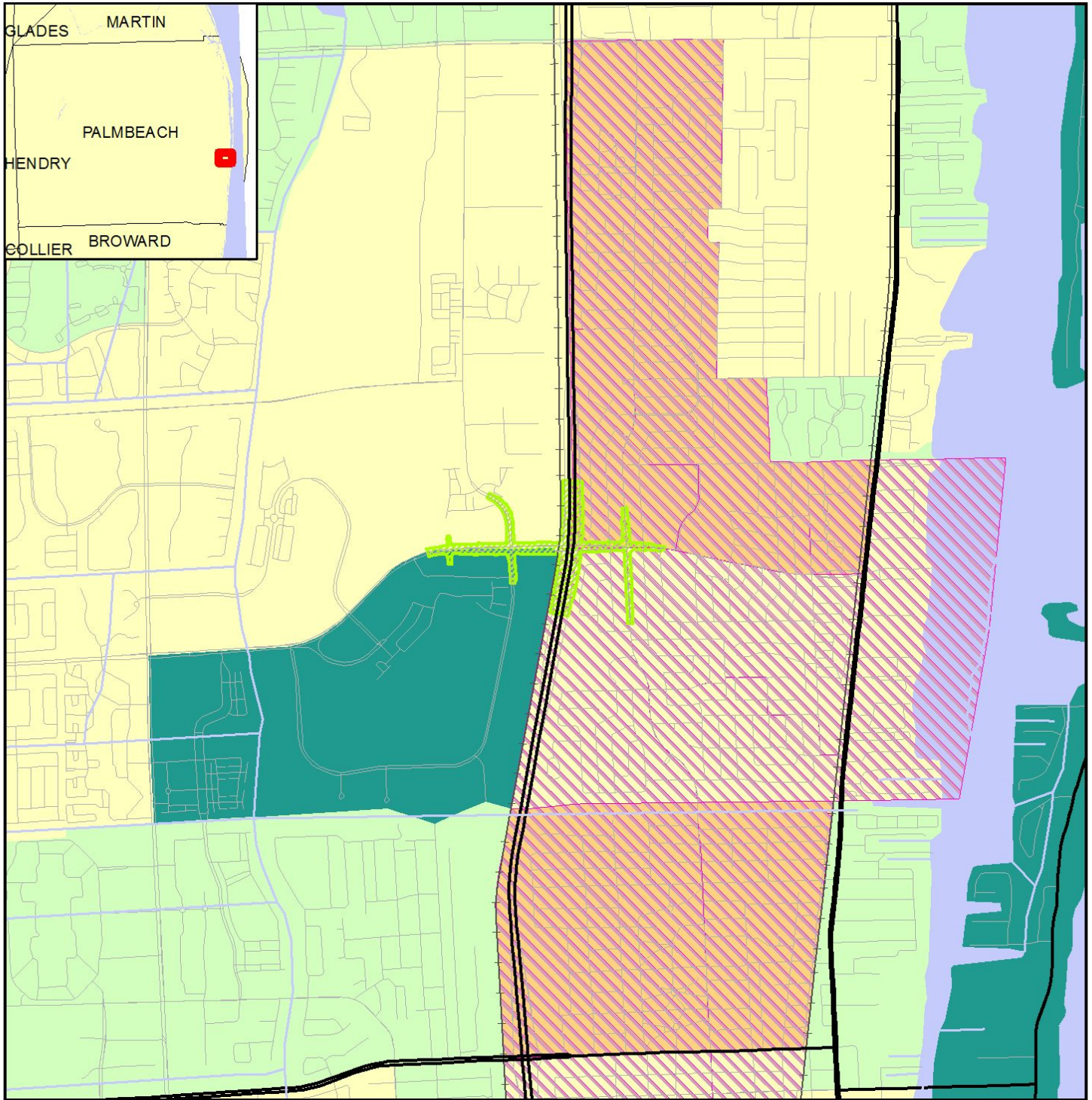


Hydrogeology Resource Map



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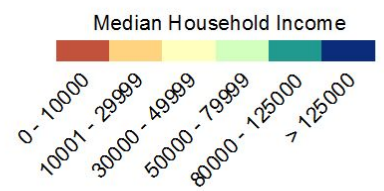


0 0.7 Miles



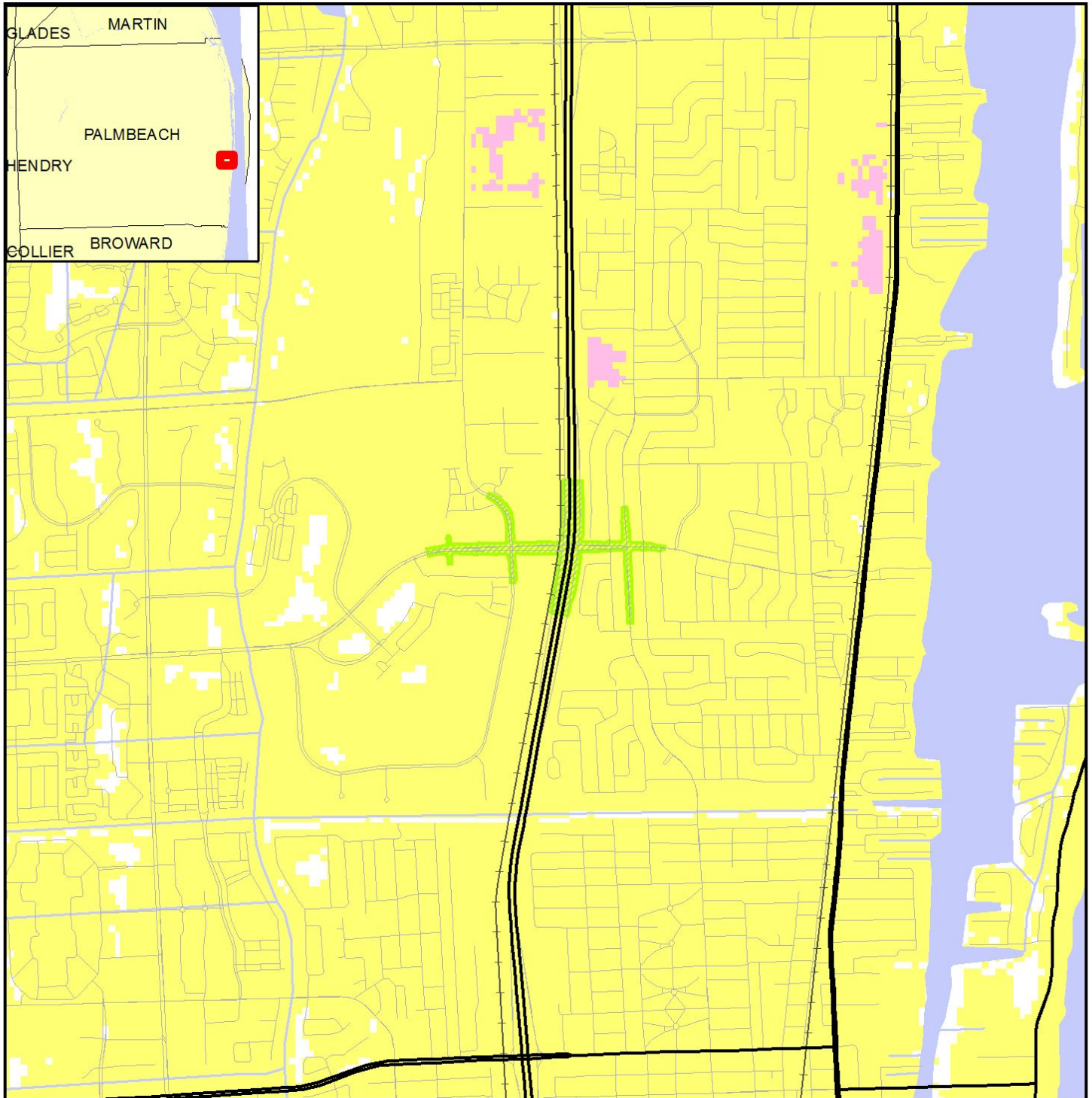
Data Sources:
 US Geological Survey
 FL Department of Transportation
 NAVTEQ
 US Census Bureau (2010)

- ETDM Alternative Point — Railroad
- ETDM Alternative Terminus — River, Stream or Canal
- ETDM Alternative Segment > 20% Below Poverty
- ETDM Alternative Polygon Water Body
- Major Road
- Local Road or Trail



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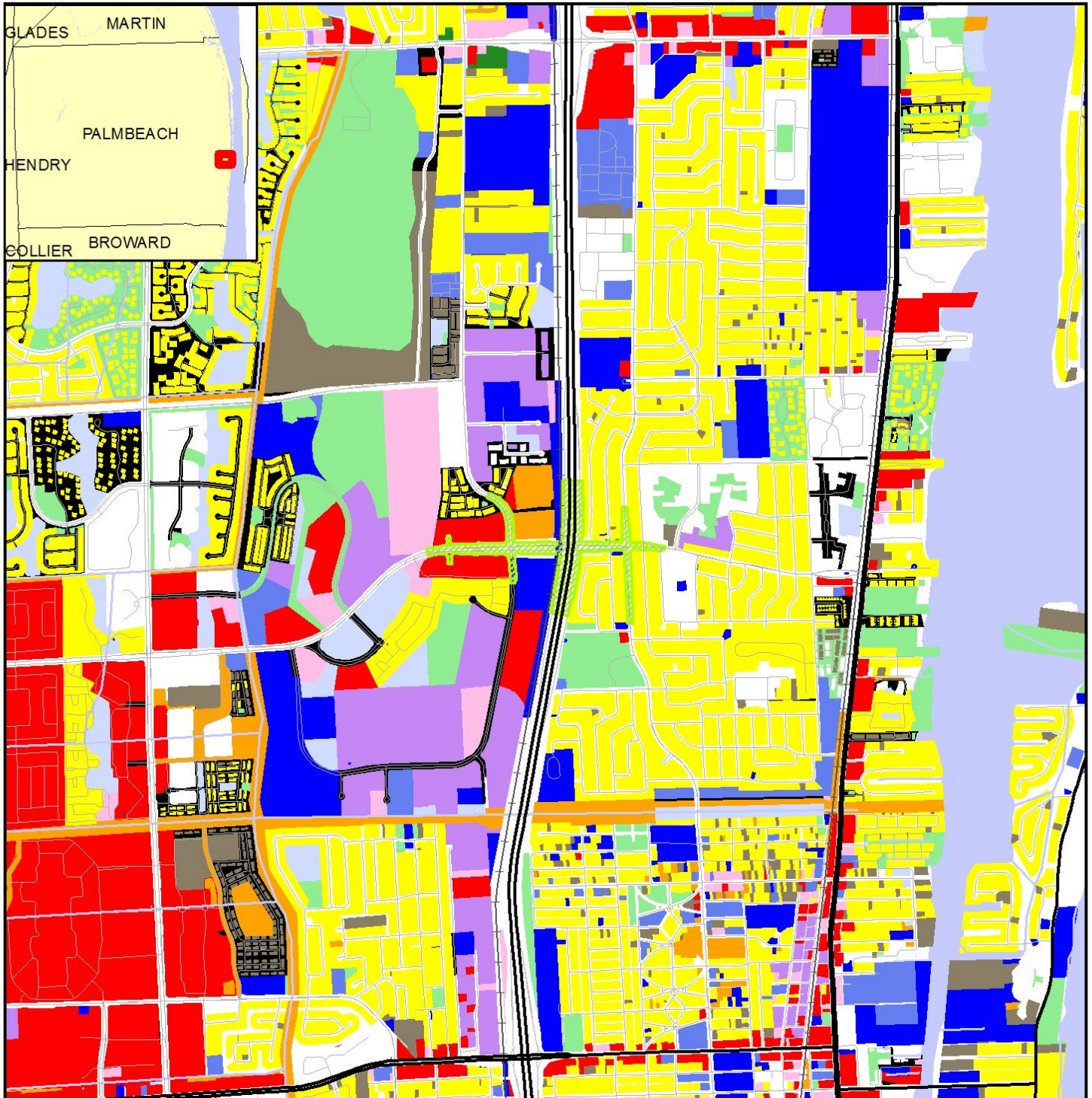
Integrated Wildlife Habitat Ranking System Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body
- Low Habitat Quality
- Medium Habitat Quality
- High Habitat Quality

Data Sources:
 NAVTEQ
 US Geological Survey
 Florida Department of Transportation
 Florida Fish & Wildlife Conservation Commission

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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



0 0.25 Miles



Data Sources:
 NAVTEQ
 US Geological Survey
 Florida Department of Revenue
 Florida Department of Transportation
 Florida County Property Appraiser Offices

Land Use Map

- | | | | |
|---------------------------|------------------------|-------------------------|-------------------------|
| ETDM Alternative Point | Railroad | Open (Not Agricultural) | Retail/Office |
| ETDM Alternative Terminus | River, Stream or Canal | Other | Vacant (Residential) |
| ETDM Alternative Segment | Agricultural | Public | Vacant (Nonresidential) |
| ETDM Alternative Polygon | Industrial | Right-of-Way | Water |
| Major Road | Institutional | Recreational | No Data |
| Local Road or Trail | Mining | Residential | |

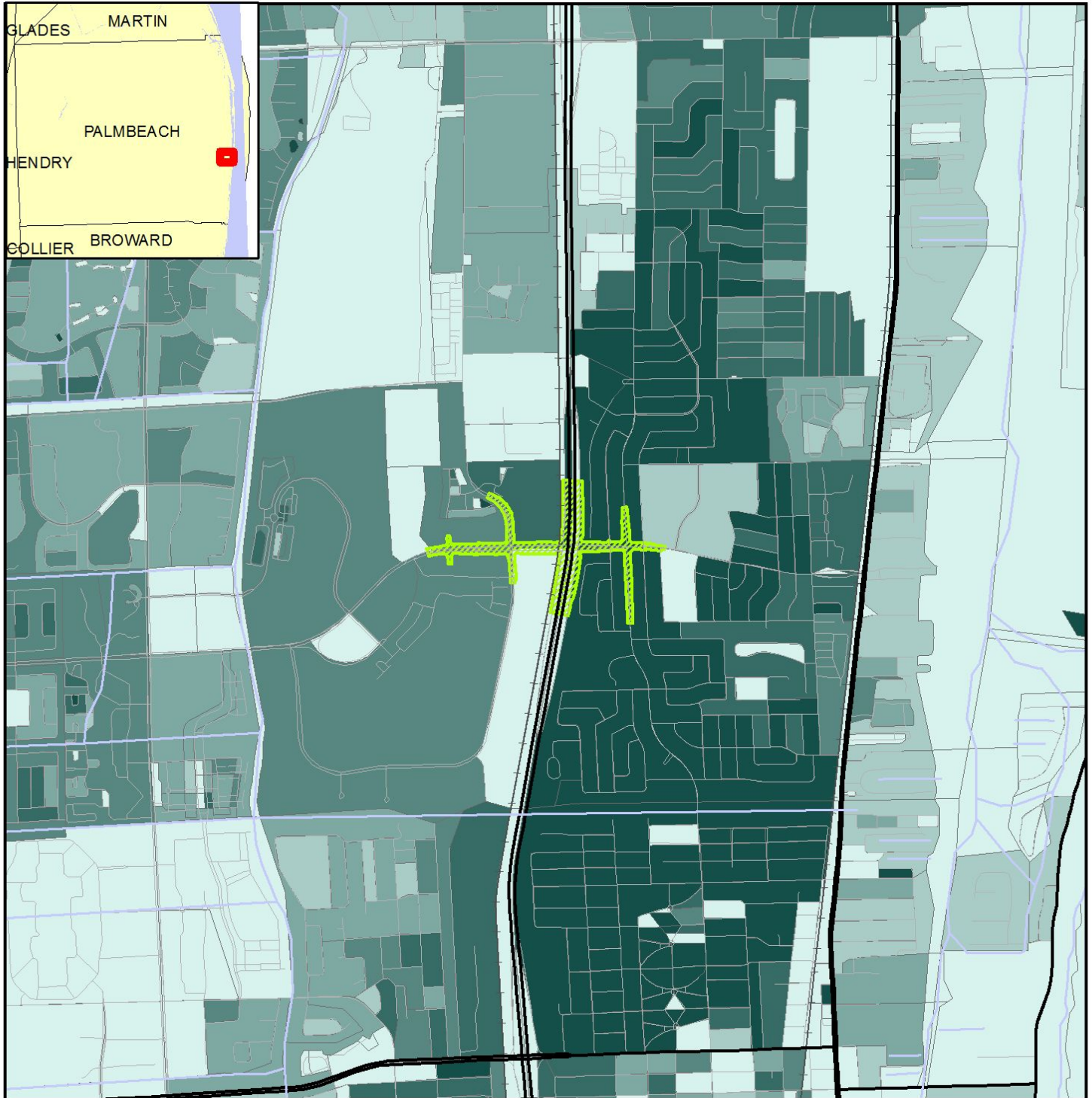
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Map Generated on: 7/17/2014



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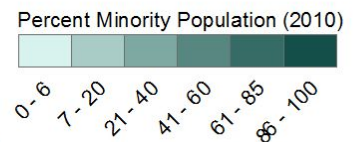
Minority Population Distribution Map

0 0.08 Miles



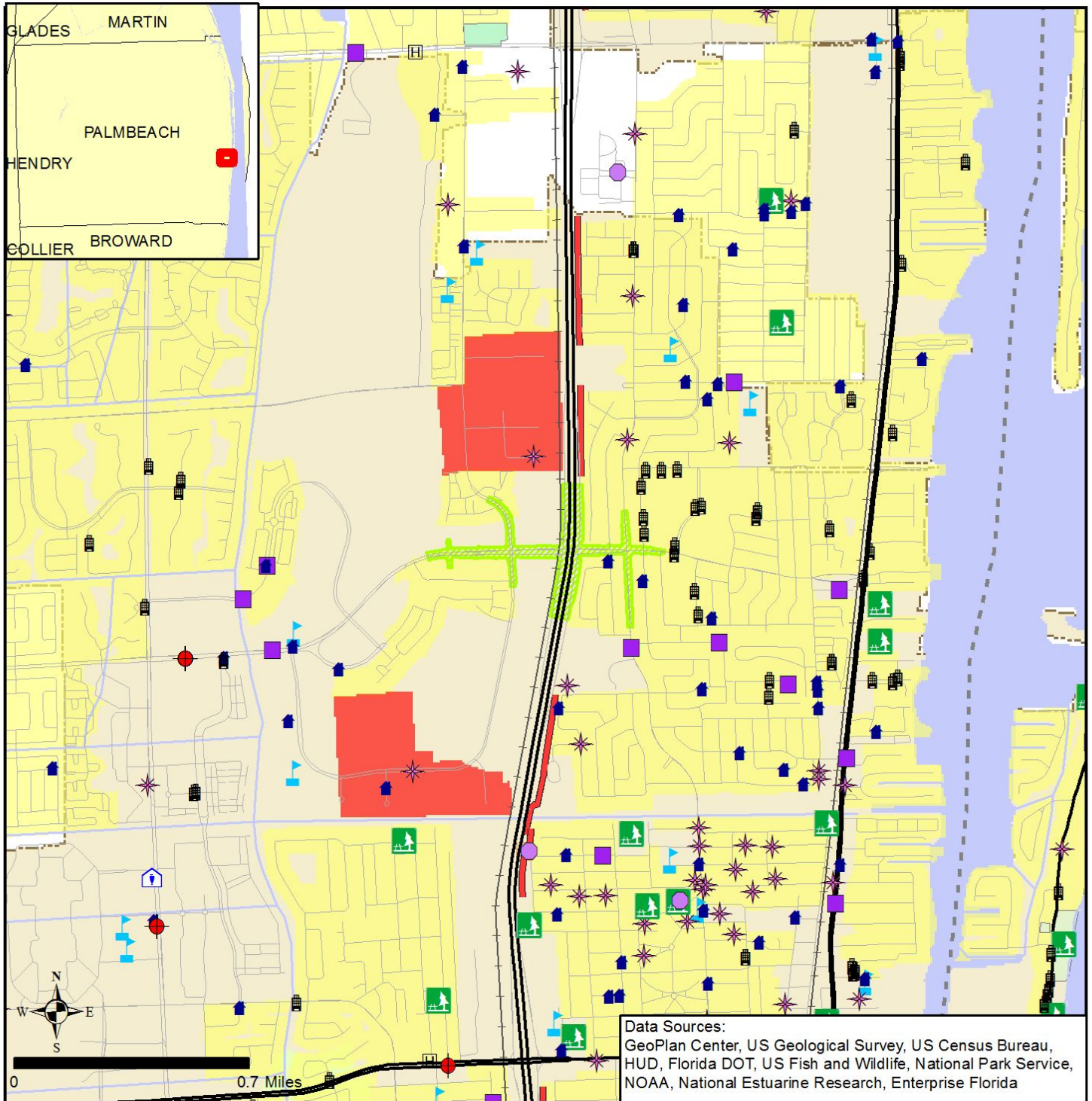
Data Sources:
 US Geological Survey
 FL Department of Transportation
 NAVTEQ
 US Census Bureau (2010)

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body



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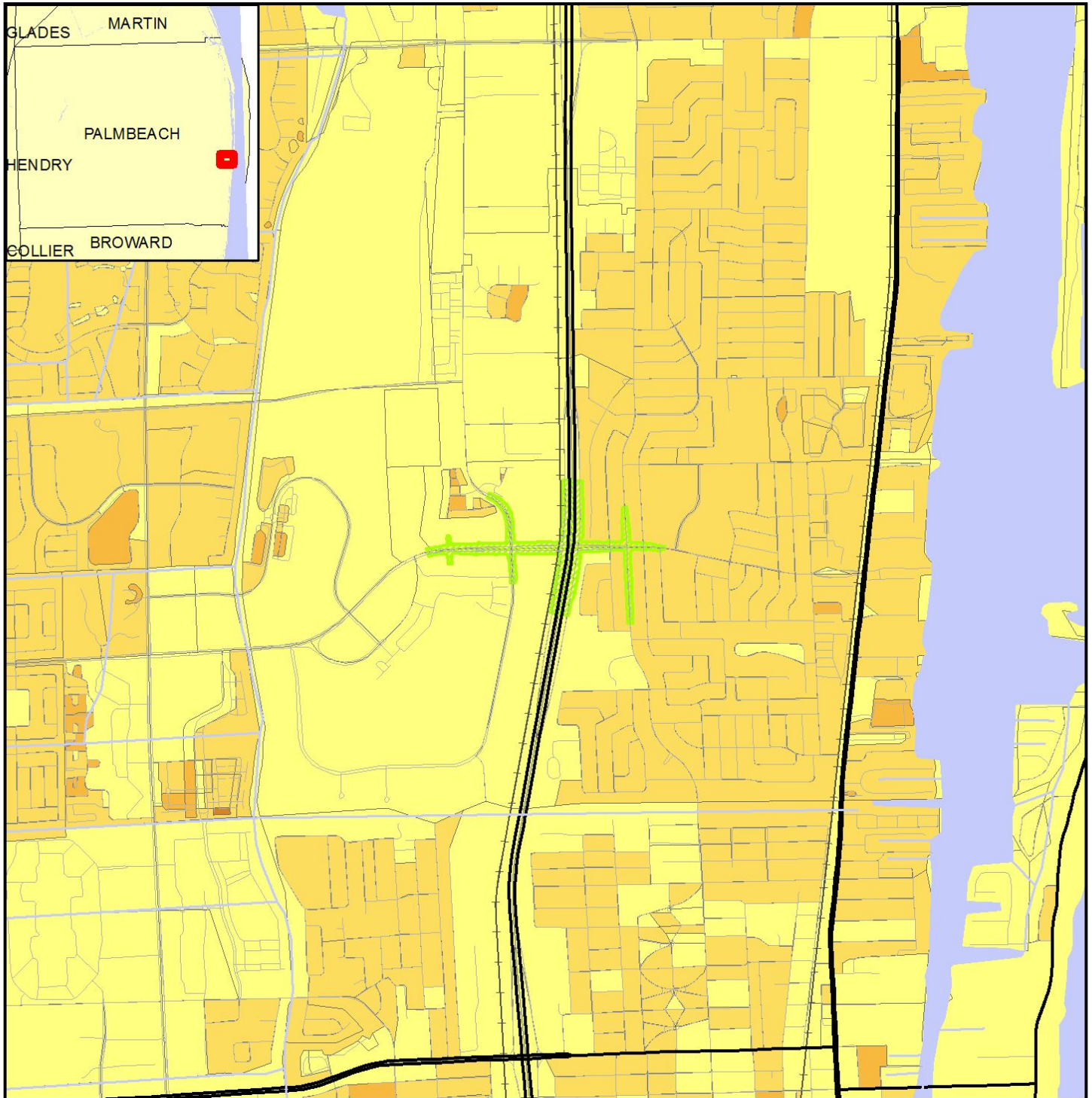


Noise Map

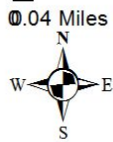
- | | | | | |
|---------------------------|---------------------------|-----------------------|---------------------------|--------------------------|
| ETDM Alternative Point | Existing Trails | Laser On-site | Place of Worship | Military Installations |
| ETDM Alternative Segment | Railroad | Group Care Facilities | School | Industrial |
| ETDM Alternative Polygon | River, Stream or Canal | Cemetery | Historic Cemetery | Residential |
| ETDM Alternative Terminus | Water Body | Community Center | Planned Unit Developments | HUD Renewal |
| County Boundaries | Swamp/Marsh | Cultural Center | Wildlife Refuges | Nat'l Estuarine Reserves |
| City Limits | Airport | Health Care | National Parks | Enterprise Zones |
| Major Road | Condo Owners Associations | Park | National Park Projects | DRI |
| Local Road or Trail | Hospitals | | Marine Sanctuaries | |
| Noise Barriers | | | | |

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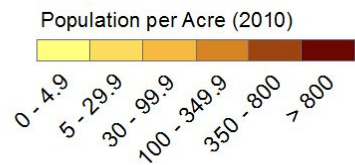


Population Density Map



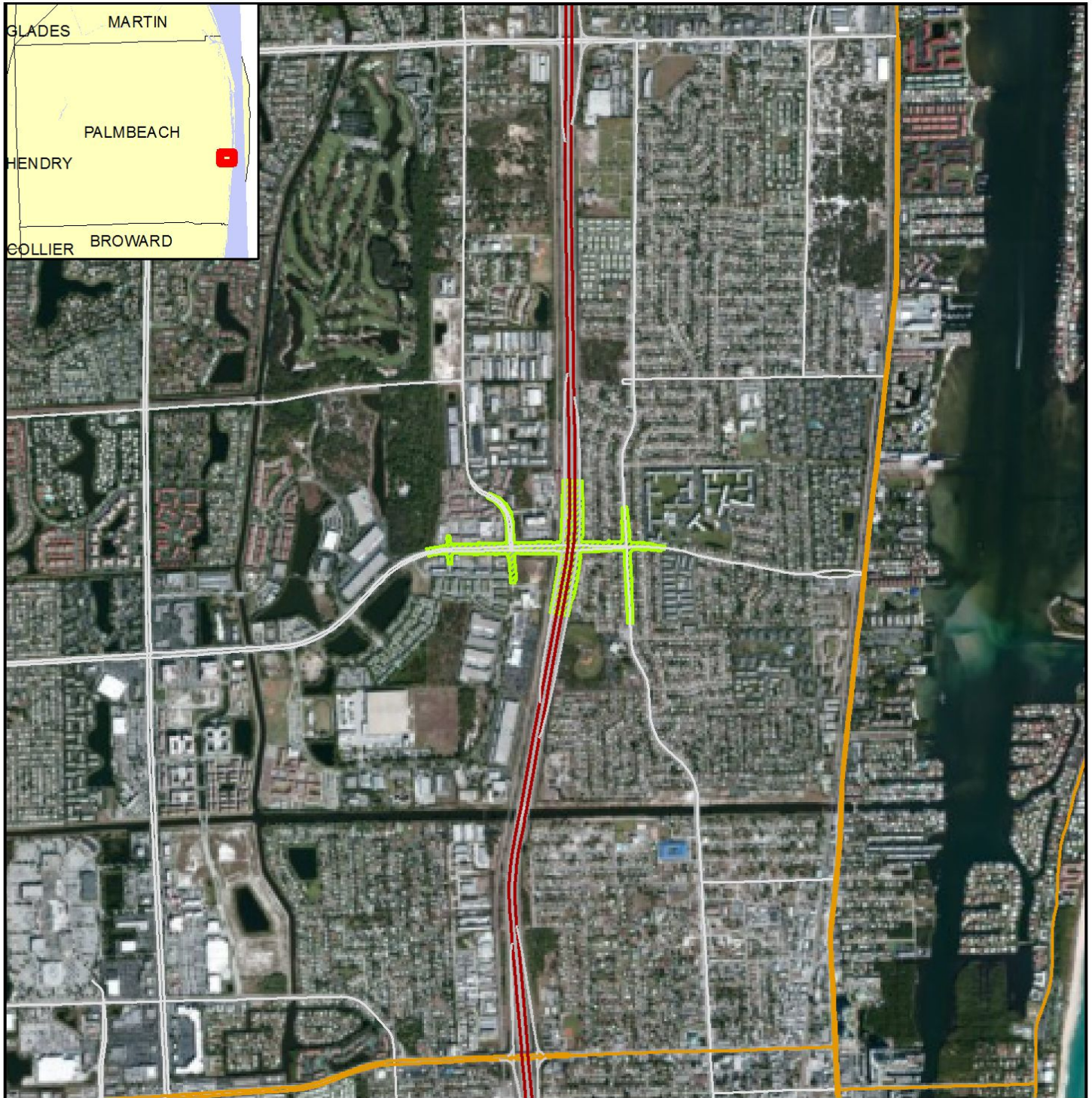
Data Sources:
 US Geological Survey
 FL Department of Transportation
 NAVTEQ
 US Census Bureau (2010)

- ETDM Alternative Point Railroad
- ETDM Alternative Terminus River, Stream or Canal
- ETDM Alternative Segment Water Body
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail



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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



Project Aerial Map

0 0.75 Miles

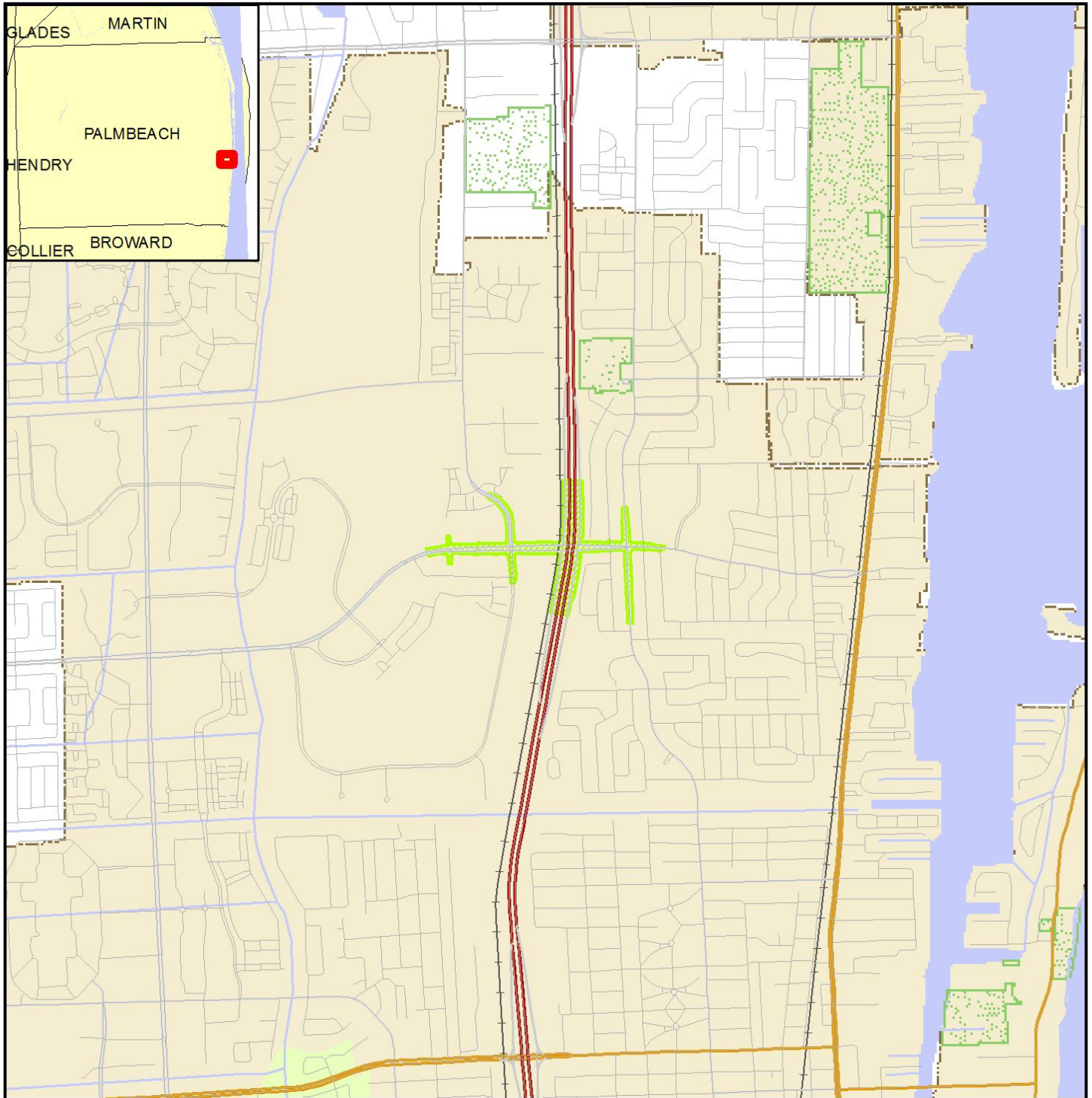


Data Sources:
 Highways - NAVTEQ
 Digital Orthophotograph - US Geological Survey

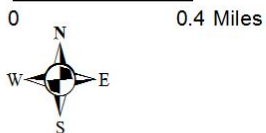
- ETDM Alternative Point — Primary and Limited Access Highway
- ETDM Alternative Terminus — Secondary, Unlimited Access Highway
- ETDM Alternative Segment — Other Highway Feature
- ETDM Alternative Polygon — Local Road

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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



Project Location Map

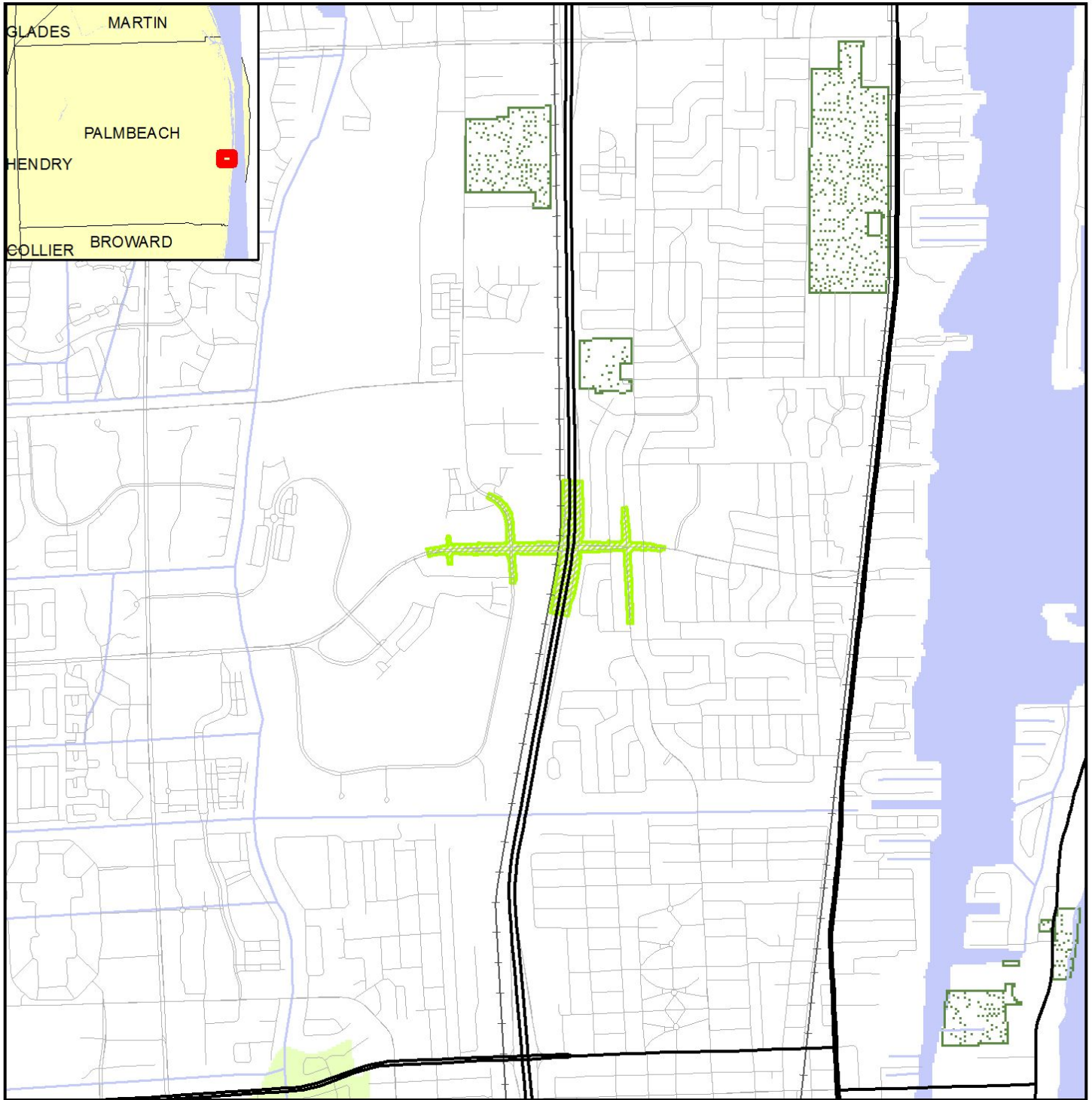


- | | | |
|---------------------------|----------------------------|-------------|
| ETDM Alternative Point | River, Stream or Canal | Toll Road |
| ETDM Alternative Terminus | Water Body | Railroad |
| ETDM Alternative Segment | Swamp/Marsh | Airport |
| ETDM Alternative Polygon | Managed Conservation Lands | City Limits |
| | County Boundaries | |

Data Sources:
 NAVTEQ
 US Geological Survey
 US Census Bureau
 County Property Appraisers
 Florida Natural Areas Inventory

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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



Conservation and Recreation Area Map

0 0.7 Miles

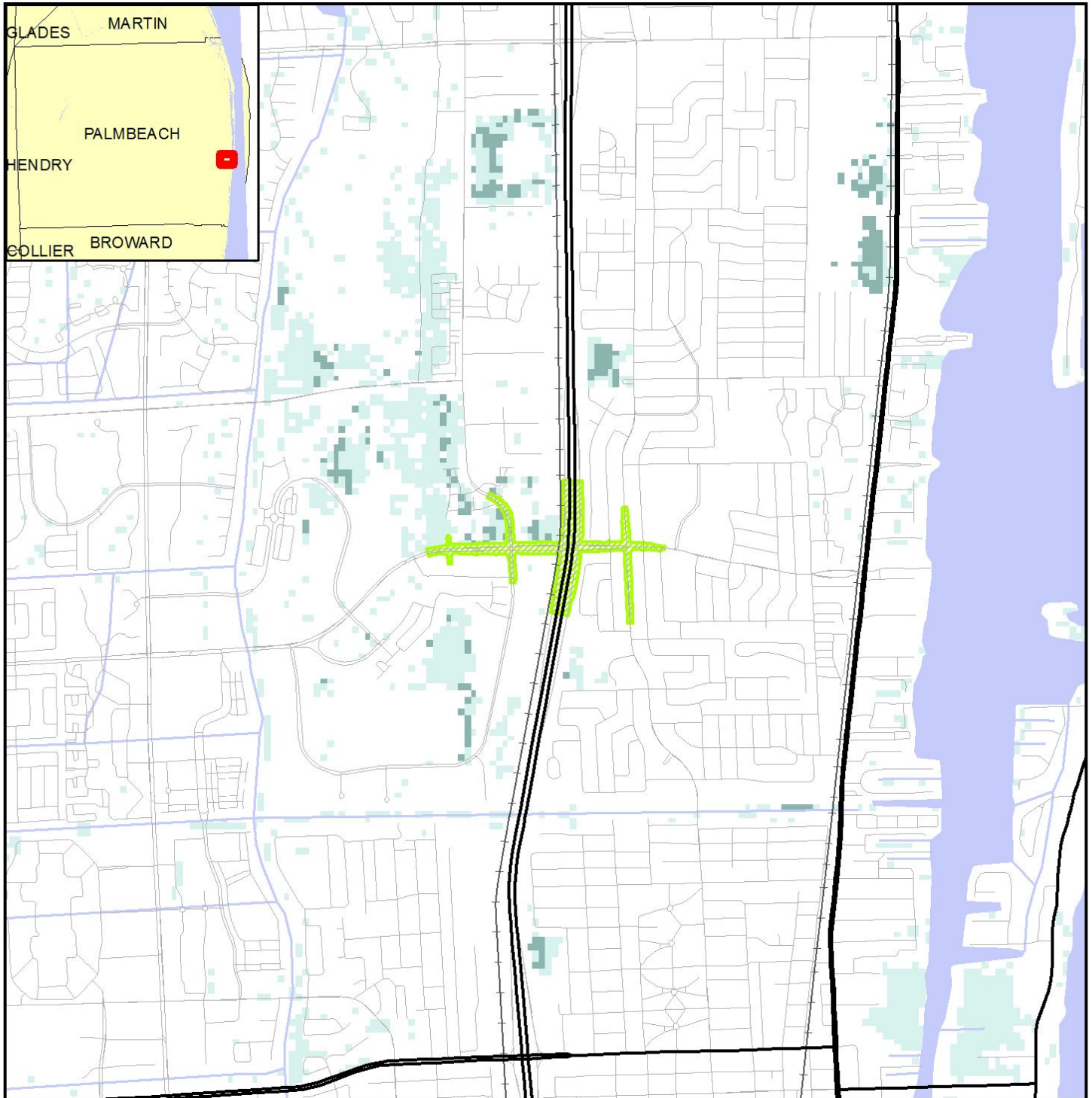


Data Sources:
 NAVTEQ
 US Geological Survey
 Florida Natural Areas Inventory

- | | | |
|---------------------------|------------------------|---------------------------------|
| ETDM Alternative Point | River, Stream or Canal | Conservation or Recreation Area |
| ETDM Alternative Segment | Water Body | Railroad |
| ETDM Alternative Polygon | Swamp/Marsh | County Boundary |
| ETDM Alternative Terminus | Major Road | Local Road or Trail |

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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



Species Potential Habitat Model Map



- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body

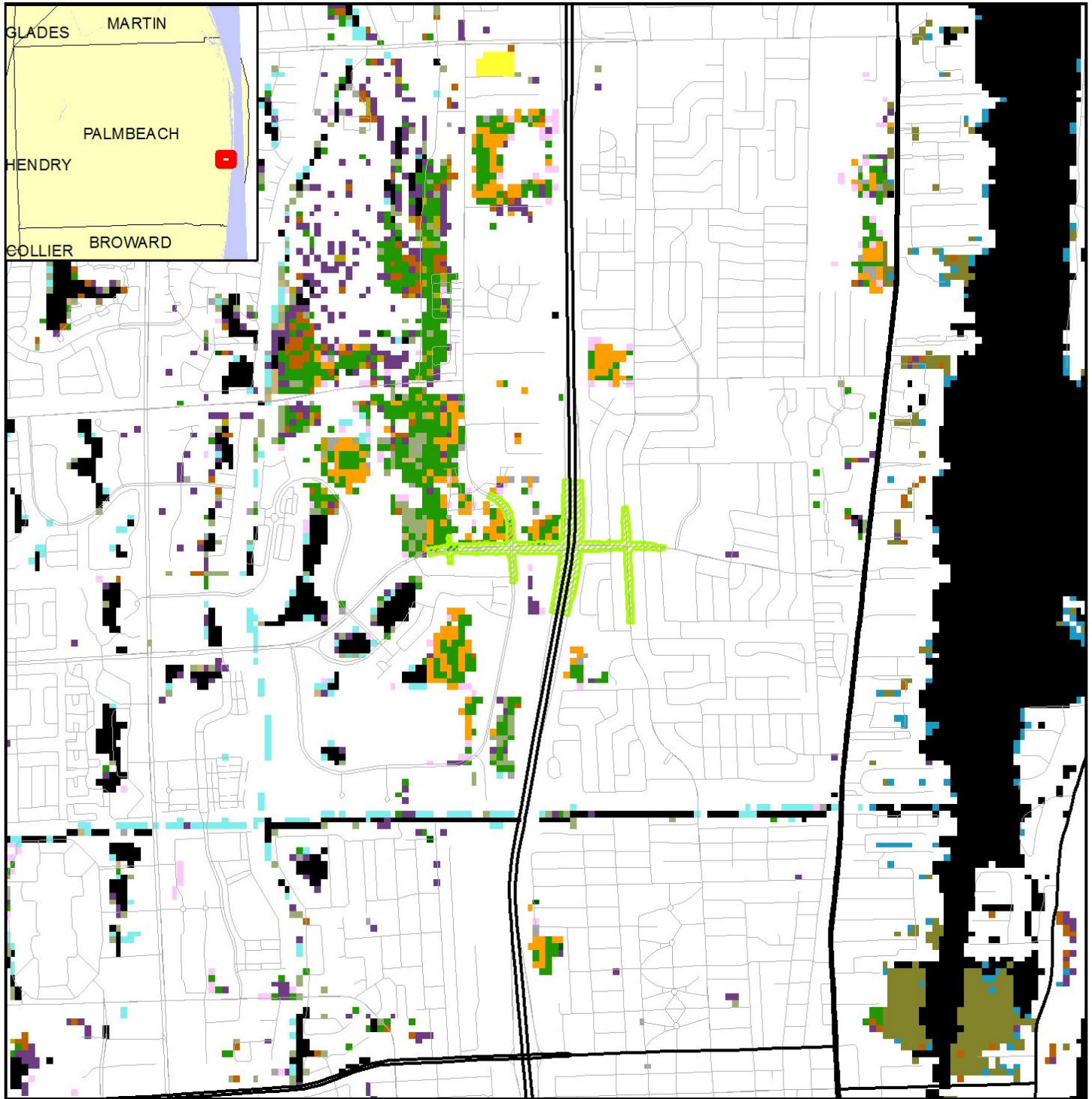
Potential Habitat Richness

- 1 - 2 Species
- 3 - 5 Species
- 6 - 8 Species
- 9 - 10 Species
- 11 - 13 Species

Data Sources:
 NAVTEQ
 US Geological Survey
 Florida Department of Transportation
 Florida Fish & Wildlife Conservation Commission

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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



Vegetation and Land Cover Map

0 0.7 Miles

- | | | | | | | |
|---------------------------|----------------------------|----------------------------------|----------------------------|---------------------|---------------------|-------------------|
| ETDM Alternative Polygon | Not Classified | Hardwood Hammocks and Forests | Bay Swamp | Mangrove Swamp | Unimproved Pasture | Brazilian Pepper |
| ETDM Alternative Segment | Coastal Strand | Pinelands | Cypress Swamp | Scrub Mangrove | Sugarcane | High Impact Urban |
| ETDM Alternative Terminus | Sand/Beach | Cabbage Palm-live Oak Hammock | Cypress/Pine/Cabbage Palm | Tidal Flats | Citrus | Low Impact Urban |
| ETDM Alternative Point | Xeric Oak Scrub | Tropical Hardwood Hammock | Mixed Wetland Forest | Open Water | Row and Field Crops | Extractive |
| Major Road | Sand Pine Scrub | Freshwater Marsh and Wet Prairie | Hardwood Swamp | Shrub and Brushland | Other Agriculture | |
| Local Road or Trail | Sandhill | Sawgrass Marsh | Hydric Hammock | Grassland | Exotic Plants | |
| | Dry Prairie | Cattail Marsh | Bottomland Hardwood Forest | Bare Soil/Clearcut | Australian Pine | |
| | Mixed Hardwood-pine Forest | Shrub Swamp | Salt Marsh | Improved Pasture | Melaleuca | |

Data Sources:

NAVTEQ; Florida Department of Transportation; Florida Fish and Wildlife Conservation Commission

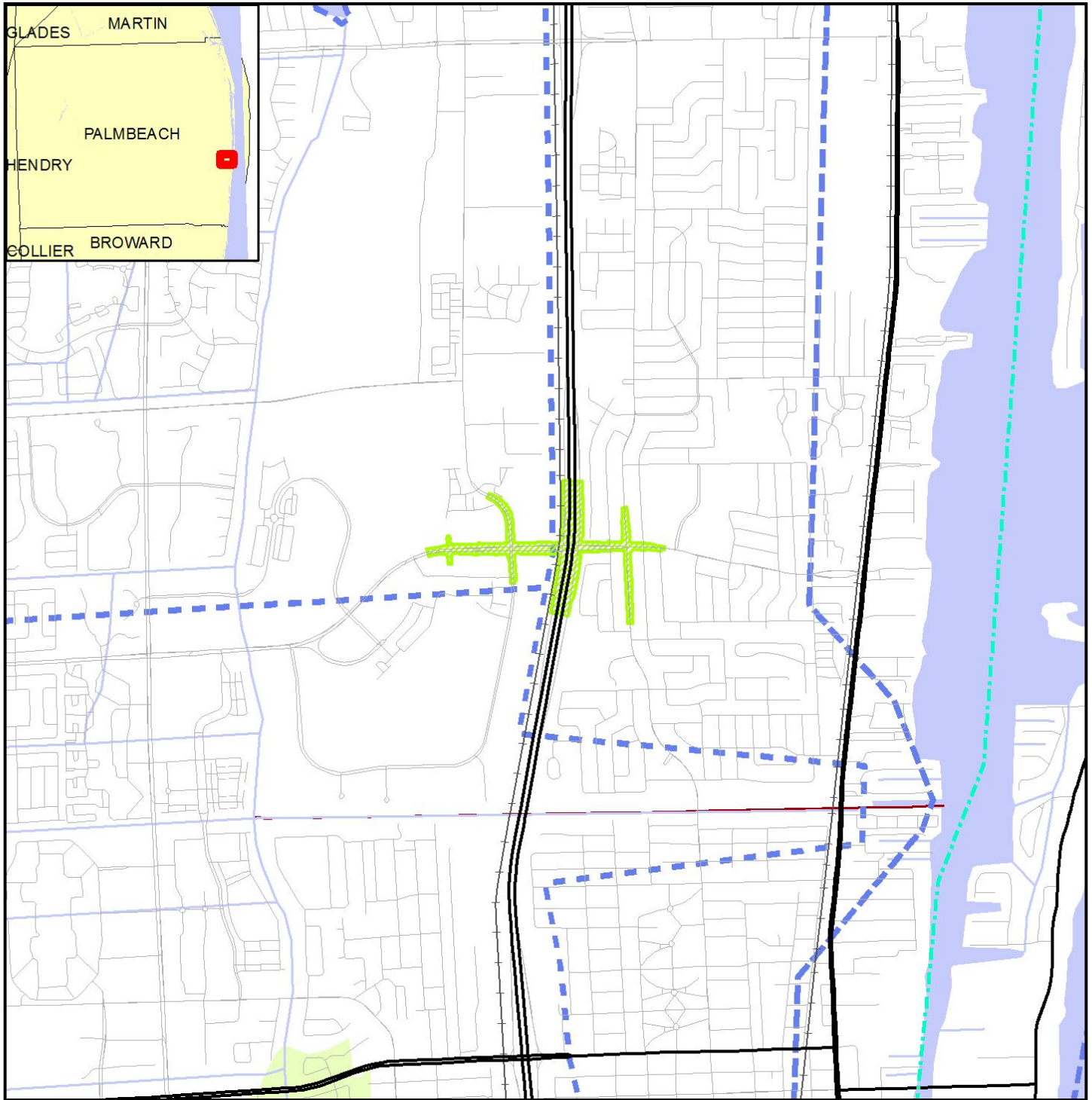
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Map Generated on: 7/17/2014



14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



Water Resources Map

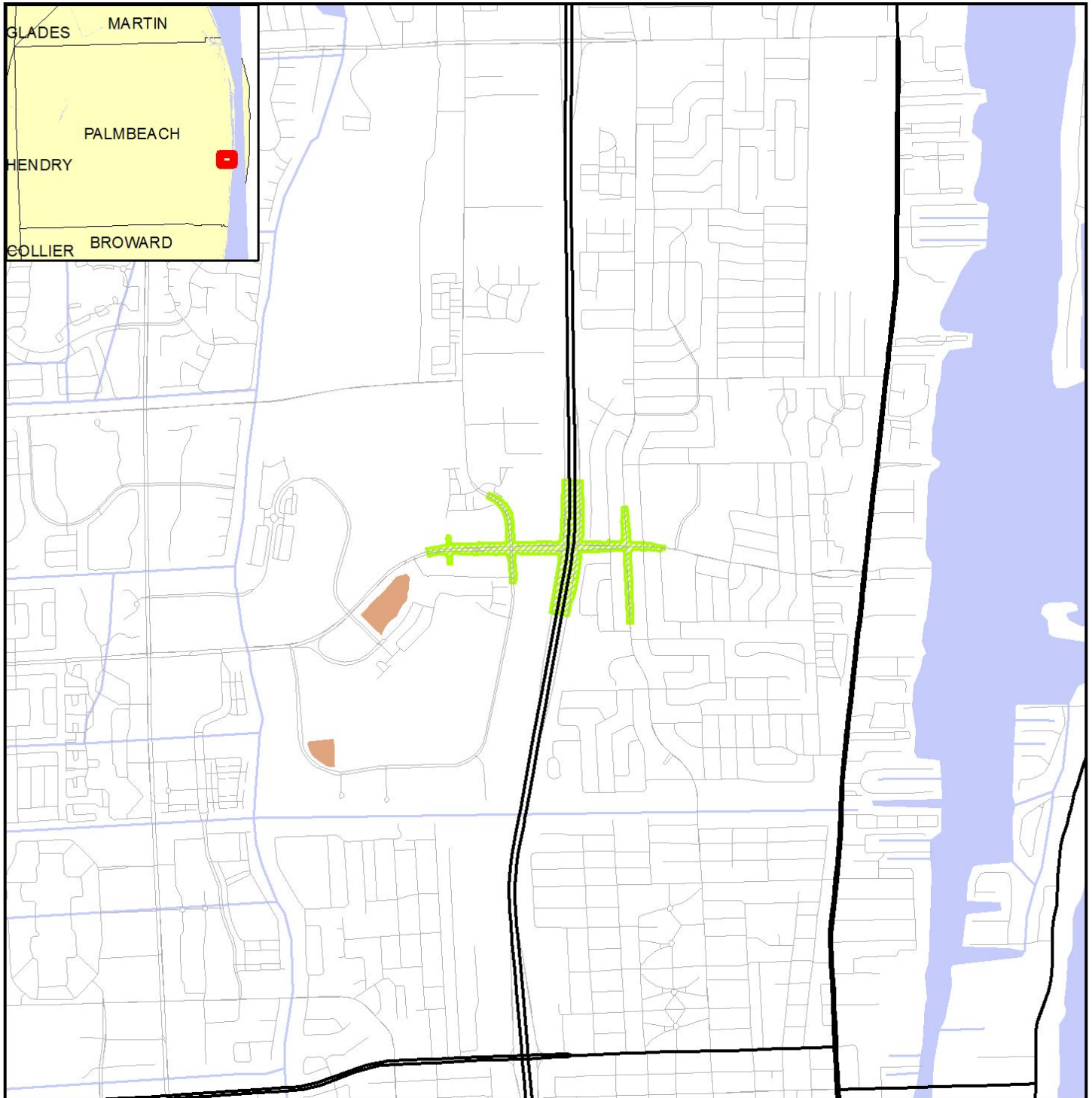
- | | | | | | |
|---|-----------|---------------------------|------------------------|---------------------------|------------------------|
| 0 | 0.7 Miles | ETDM Alternative Point | Railroad | SFWMD Canals | Surface Water Class I |
| | | ETDM Alternative Terminus | 1st Magnitude Spring | Drainage Basin | Surface Water Class II |
| | | ETDM Alternative Segment | River, Stream or Canal | Outstanding Florida Water | Water Body |
| | | ETDM Alternative Polygon | Navigable Water Way | Swamp/Marsh | |

Data Sources:

- NAVTEQ
- US Geological Survey
- Florida Department of Transportation
- Florida Department of Environmental Protection
- Florida Geological Survey
- US Bureau of Transportation Statistics

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14181 SR-9/I-95 at Gateway Boulevard Interchange, Alternative #1



Wetland Resource Map

0 0.3 Miles



- | | | |
|---------------------------|------------------------|--------------------------------|
| ETDM Alternative Polygon | Major Road | Non-vegetated Wetland |
| ETDM Alternative Segment | Local Road or Trail | Vegetated Non-forested Wetland |
| ETDM Alternative Terminus | River, Stream or Canal | Wetland Forested Mixed |
| ETDM Alternative Point | Water Body | Wetland Coniferous Forest |
| | | Wetland Hardwood Forest |

Data Sources: NAVTEQ; Florida Water Management Districts; US Geological Survey

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Appendices

PED Comments

Advance Notification Comments

Federal Highway Administration Comment --

Purpose and Need:

- Safety - it is stated that there are currently no sidewalks along the Gateway Blvd. Is there any accident data for pedestrians available?
- It is stated that the project is programmed in the Palm Beach MPO's Transportation Improvement Program (2015-2020) but not in the current LRTP. All projects within an MPO boundary that are included in the MPO's TIP a must come from the MPO's LRTP.
- When will the PD&E work begin on the project? The MPO is in the process of adopting their 2040 LRP Update. This project should be included in that updated Plan and as noted in the narrative, in the upcoming STIP.
- Reference is made in several sections (Consistency with Transportation Plans and Objectives and the Planning Consistency Status sections) that the project will be included in the 2035 LRTP. Will it be the 2035 LRTP or the 2040 LRTP?
- Since this project is in the programming screen vs the planning screen why are there not any public comments available in this ETAT Tool? This project, according to the narrative, is included in the MPO TIP for 2015. The TIP required public involvement and MPO discussion. Please include any feedback and input from these processes regarding this project. How does the public view this project? Has there been any controversy or negative public input on the need for this project or for the project impacts?
- Please include the estimate cost of this project. The narrative states that \$1million is programmed for the PD&E study in the FDOT Work Program and the MPO's TIP. It also states that the FDOT Work program has \$6 million programmed for Preliminary Engineering and \$2 million for environmental. Please clearly identify what the project costs and phases are anticipated to be for the entire project as well as any programmed funds and project phasing in such a manner that is very clear to the public. This disclosure of information is an important element the public uses during their consideration of the project.

Socio Cultural Impacts:

- There are medium density (fixed single family) dwelling units within 1320 feet of the project. How will access to these home sites be maintained? Will there be a need to take any of the property for this project?
- What outreach efforts are planned or have been made to the minority and low income populations along this project? There appears to be at least one residential area that has been identified in the ETDM tool as having a 100% minority population. Additionally, the ETDM tool identifies a small percentage of the population that does not speak English well and will require special outreach efforts.

Mobility/Freight

- Business and commercial - what mitigation coordination has taken place with the commercial businesses within the project area of impact for either continued access to their businesses or any taking/relocation of property for the project? What operational improvements are being considered as part of or independent of this project to assist with access to/from the existing businesses?
- Bicycle/Pedestrian facilities - The narrative states that there currently are no designated bicycle lanes in the project study area. It was not clear if bicycle facilities will be included in the project. Are the sidewalks currently used to access the businesses and residences within the project study area? If so, how will this access be maintained?
- Truck traffic - is this a corridor used for freight? Please include truck and commercial vehicle traffic and data. What is the anticipated growth of the freight volume over the next 20 years especially considering the developments and economic centers planned along this corridor? Have any outreach efforts been made to the freight providers for their input for operational improvements?

Transit -

- The narrative does not identify if there are any operating transit routes or stops within the study area. Are these services part of the planned/proposed improvement to this facility in this location?

--Luis D Lopez, P.E., 9/5/2014

Response --

--, \$tools.date.format("M/d/yyyy"),\$comment.responseTimestamp)

GIS Analyses

Since there are so many GIS Analyses available for Project #14181 - SR-9/I-95 at Gateway Boulevard Interchange, they have not been included in this ETDM Summary Report. GIS Analyses, however, are always available for this project on the Public ETDM Website. Please click on the link below (or copy this link into your Web Browser) in order to view detailed GIS tabular information for this project:

<http://etdmpub.fl.a-etat.org/est/index.jsp?tpID=14181&startPageName=GIS%20Analysis%20Results>

Special Note: Please be sure that when the GIS Analysis Results page loads, the **Project Published 11/24/2014 Milestone** is selected. GIS Analyses snapshots have been taken for Project #14181 at various points throughout the project's life-cycle, so it is important that you view the correct snapshot.

Project Attachments

Note: Attachments are not included in this Summary Report, but can be accessed by clicking on the links below:

Date	Type	Size	Link / Description
07/22/2014	Form SF-424: Application for Federal Assistance	988 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=17635 Form SF-424: Application for Federal Assistance
06/01/2014	Ancillary Project Documentation	4.31 MB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=17621 Concept Plan Sheet
06/01/2014	Ancillary Project Documentation	1.92 MB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=17620 Project Concept Report
07/21/2014	Ancillary Project Documentation	229 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=17619 TIP Pages

Degree of Effect Legend

Color Code	Meaning	ETAT	Public Involvement
N/A	Not Applicable / No Involvement	There is no presence of the issue in relationship to the project, or the issue is irrelevant in relationship to the proposed transportation action.	
0	None (after 12/5/2005)	The issue is present, but the project will have no impact on the issue; project has no adverse effect on ETAT resources; permit issuance or consultation involves routine interaction with the agency. The <i>None</i> degree of effect is new as of 12/5/2005.	No community opposition to the planned project. No adverse effect on the community.
1	Enhanced	Project has positive effect on the ETAT resource or can reverse a previous adverse effect leading to environmental improvement.	Affected community supports the proposed project. Project has positive effect.
2	Minimal	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
2	Minimal to None (assigned prior to 12/5/2005)	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
3	Moderate	Agency resources are affected by the proposed project, but avoidance and minimization options are available and can be addressed during development with a moderated amount of agency involvement and moderate cost impact.	Project has adverse effect on elements of the affected community. Public Involvement is needed to seek alternatives more acceptable to the community. Moderate community interaction will be required during project development.
4	Substantial	The project has substantial adverse effects but ETAT understands the project need and will be able to seek avoidance and minimization or mitigation options during project development. Substantial interaction will be required during project development and permitting.	Project has substantial adverse effects on the community and faces substantial community opposition. Intensive community interaction with focused Public Involvement will be required during project development to address community concerns.
5	Potential Dispute (Planning Screen)	Project may not conform to agency statutory requirements and may not be permitted. Project modification or evaluation of alternatives is required before advancing to the LRTP Programming Screen.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
5	Dispute Resolution (Programming Screen)	Project does not conform to agency statutory requirements and will not be permitted. Dispute resolution is required before the project proceeds to programming.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
	No ETAT Consensus	ETAT members from different agencies assigned a different degree of effect to this project, and the ETDM coordinator has not assigned a summary degree of effect.	
	No ETAT Reviews	No ETAT members have reviewed the corresponding issue for this project, and the ETDM coordinator has not assigned a summary degree of effect.	

Appendix G

State Historic Preservation Office
Concurrence Letter

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Florida Department of Transportation

**RICK SCOTT
GOVERNOR**

3400 West Commercial Boulevard
Fort Lauderdale, Florida 33309

**MIKE DEW
SECRETARY**

July 14, 2017

Timothy A. Parsons, Ph.D.,
Director and State Historic Preservation Officer
Florida Division of Historical Resources
Florida Department of State
R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

Attn: Ms. Ginny Jones, Transportation Compliance Review Program

RE: Cultural Resource Assessment Survey
Project Development and Environment (PD&E) Study
Boynton Beach Boulevard and Gateway Boulevard Interchanges along State Road (SR)
9/Interstate 95 (I-95)
Effects Finding for 8PB00177 and 8PB12917
Palm Beach County, Florida
Financial Management Nos.: 435804-1 and 231932-1

Dear Ms. Jones,

In March 2017, the Florida Department of Transportation (FDOT), District 4, submitted a report entitled *Cultural Resource Assessment Survey (CRAS) in Support of the Boynton Beach Boulevard (from West of Industrial Avenue to East of Seacrest Boulevard) and Gateway Boulevard (from West of High Ridge Road to East of Seacrest Boulevard) Interchange Improvements, Palm Beach County, Florida*. This survey was carried out by SEARCH on behalf of Arcadis, Inc. and the District. During the investigation, the project architectural historians documented 79 previously and newly recorded resources within the Area of Potential Effect (APE). Of the 79 recorded resources, two historic resources were recommended to remain eligible in the National Register of Historic Places (NRHP): the Robert E. & Margaret Stogdill House (8PB00177), located at 206 NW 6th Street, and a segment of the Seaboard Air Line Railroad (8PB12917). Resource 8PB00177 was previously recommended significant at the local level in 1996 by Research Atlantica, Inc.; however, the building was not evaluated by the Florida State Historic Preservation Officer (SHPO). The Seaboard Air Line Railroad (8PB12917) linear resource has previously been determined eligible for listing in the NRHP by the Florida SHPO.

*Section 106 Determination of Effects
Boynton Beach Blvd/Gateway Blvd @ I-95 PD&E
FM 435804.1/231932.1*

Based on the results of previous and the current surveys, this survey recommended Resource 8PB00177 and the portion of Resource 8PB12917 within the Boynton Beach Boulevard and Gateway Boulevard Interchanges APE as NRHP-eligible. As such, the report recommended the avoidance of Resources 8PB00177 and 8PB12917.

Upon reviewing the CRAS, the Division of Historical Resources (DHR) concurred with the eligibility determinations. However, the DHR requested that additional documentation be provided to consider and address any effects the project may have to Resources 8PB00177 and 8PB12917. This letter is intended to provide the requested information.

As illustrated in the attached roadway design exhibit for the Interstate 95 (I-95) and Boynton Beach Boulevard Interchange (**Figure 1**), improvements proposed in the vicinity of Resources 8PB00177 and 8PB12917 are limited to the expansion of existing turning lanes and ramps and the expansion of existing median areas. These improvements pose no significant alterations to the surrounding landscape or setting, as they consist of features that are similar in regards to design, materials, and function as those that currently exist. In addition, because the proposed improvements are confined to the existing right-of-way, the project will not encroach upon Resources 8PB00177 and 8PB12917 and will not compromise or diminish those features and characteristics that qualify Resources 8PB00177 and 8PB12917 as eligible for inclusion in the NRHP. Based on these observations, it is the opinion of the District that the project will have no adverse effect on Resources 8PB00177 and 8PB12917.

As illustrated in the attached roadway design exhibit for the I-95 and Gateway Beach Boulevard Interchange (**Figure 2**), improvements proposed in the vicinity of Resource 8PB12917 are limited to expansion of existing turning lanes, ramps, roadway, and bridges, and the expansion of existing median areas. These improvements pose no significant alterations to the surrounding landscape or setting, as they consist of features that are similar in regards to design, materials, and function as those that currently exist. In addition, because the project undertakings in the vicinity are confined to the existing right-of-way, the project will not encroach upon Resource 8PB12917, nor will it impede upon existing railway traffic and will not compromise or diminish those features and characteristics that qualify Resource 8PB12917 as eligible for inclusion in the NRHP. Based on these observations, it is the opinion of the District that the project will have no adverse effect on 8PB12917.

Section 106 Determination of Effects
Boynton Beach Blvd/Gateway Blvd @ I-95 PD&E
FM 435804.1/231932.1

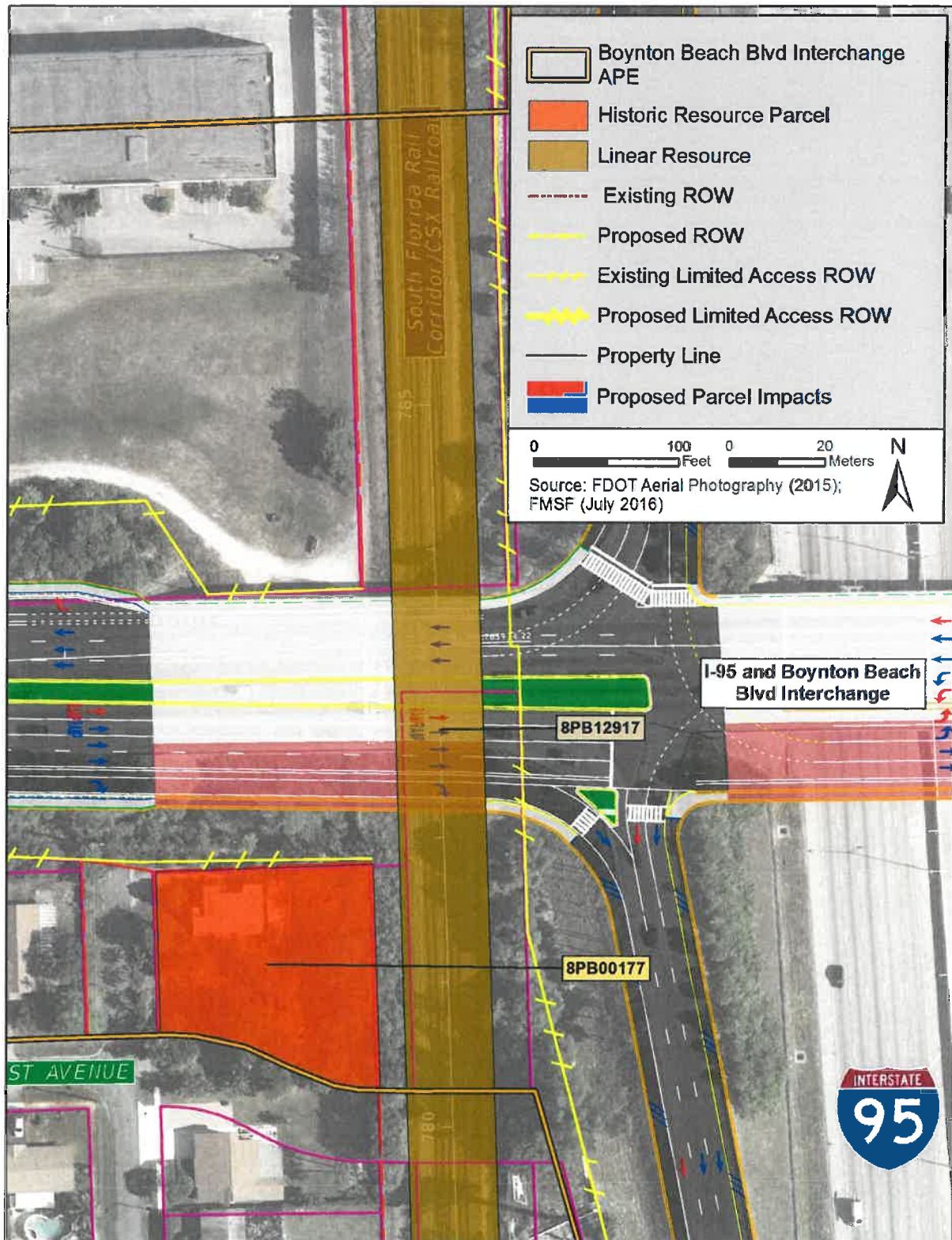


Figure 1. Proposed improvements in the vicinity of 8PB00177 and 8PB12917.

Section 106 Determination of Effects
 Boynton Beach Blvd/Gateway Blvd @ I-95 PD&E
 FM 435804.1/231932.1

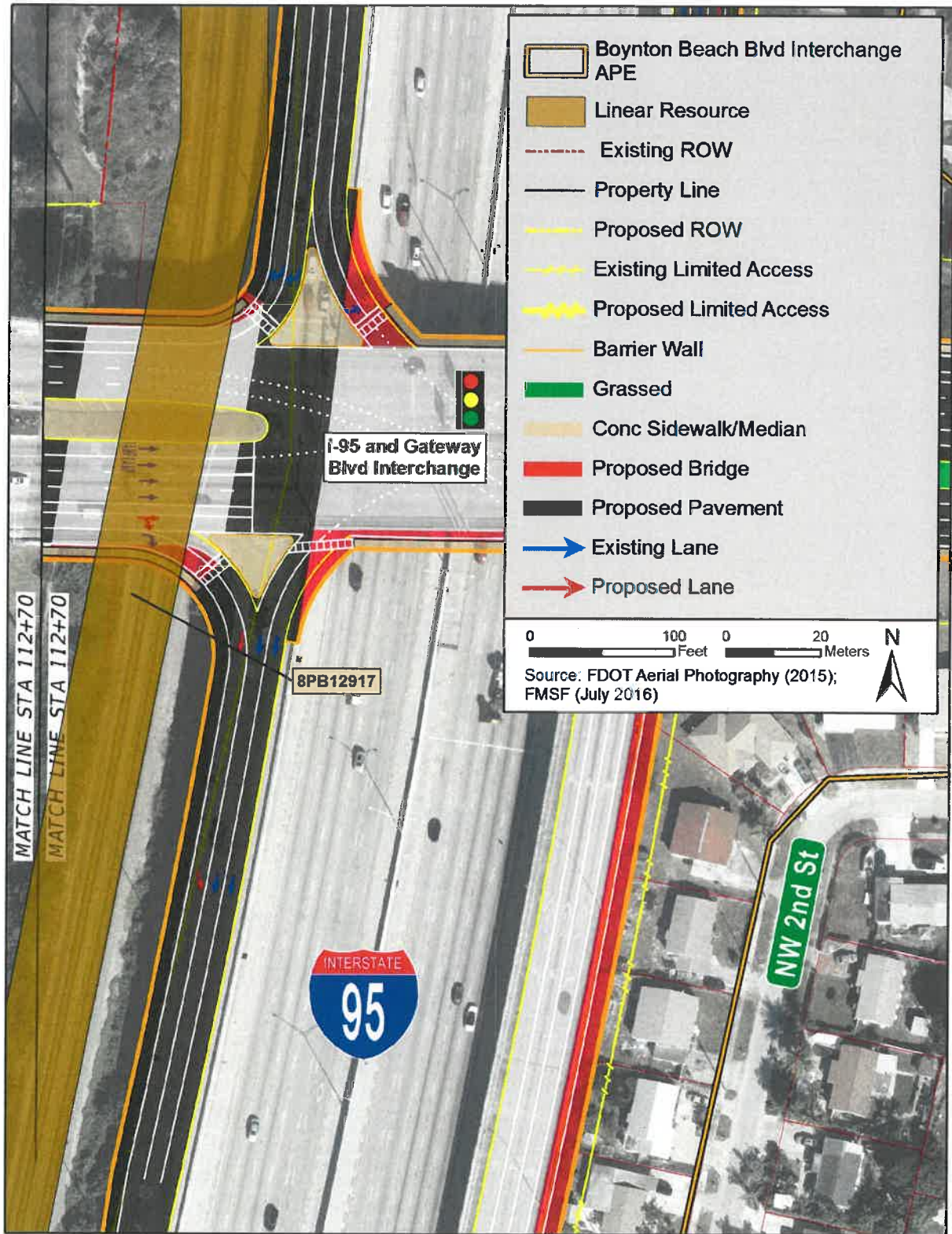


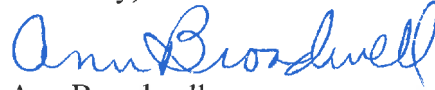
Figure 2. Proposed improvements in the vicinity of 8PB12917.

*Section 106 Determination of Effects
Boynton Beach Blvd/Gateway Blvd @ I-95 PD&E
FM 435804.1/231932.1*

I respectfully request your concurrence with the finding of no adverse effect.

If you have any questions or need further assistance, please contact Lynn Kelley, District Cultural Resources Coordinator, at 954-777-4334.

Sincerely,



Ann Broadwell
District Environmental Administrator

cc: file

The Florida State Historic Preservation Officer:

___ has reviewed the provided information and ___ concurs/ ___ does not concur with the findings and recommendations contained in this cover letter.

___ requires additional information in order to provide an opinion on the potential effects of the proposed project on historic resources.

/s/

For: Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
& State Historic Preservation Officer

Date

DHR No.

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Florida Department of Transportation

RICK SCOTT
GOVERNOR

3400 West Commercial Boulevard
Fort Lauderdale, FL 33309

RACHEL D. CONE
INTERIM SECRETARY

February 23, 2017

2017 FEB 24 10 12 59

Dr. Timothy Parsons, Director and
State Historic Preservation Officer
Division of Historical Resources
500 South Bronough Street
Tallahassee, Florida 32301

Subject: **Request for Review**
Cultural Resource Assessment Survey
Project Development and Environment (PD&E) Study
Boynton Beach Boulevard and Gateway Boulevard Interchanges along State Road (SR)
9/Interstate 95 (I-95)
Palm Beach County, Florida
Financial Management Nos.: 435804-1 and 231932-1

Attention: Ginny Jones

Dear Ms. Jones;

Enclosed please find one copy of the report titled *Cultural Resource Assessment Survey in Support of The Boynton Beach Boulevard (From West of Industrial Avenue to East of Seacrest Boulevard) and Gateway Boulevard (From West of High Ridge Road to East of Seacrest Boulevard) Interchange Improvements, Palm Beach County, Florida*. This report presents the findings of a CRAS conducted in support of the proposed improvements to the Boynton Beach Boulevard and Gateway Boulevard Interchanges along State Road (SR) 9/Interstate 95 (I-95) in Palm Beach County, Florida. The Florida Department of Transportation (FDOT), District 4, is proposing improvements to these two interchanges in order to improve the operational capacity and overall traffic operations. In accordance with the Section 106 Programmatic Agreement which was executed on March 15, 2016, this report is not being reviewed by FHWA.

The project Area of Potential Effect (APE) was defined to include the existing and proposed Boynton Beach Boulevard, Gateway Boulevard, and SR 9 right-of-way and was extended to the back or side property lines of parcels adjacent to the right-of-way for a distance of no more than 100 meters (330 feet) from the maximum right-of-way.

This CRAS was conducted in accordance with the requirements set forth in the National Historic Preservation Act of 1966, as amended, and Chapter 267, Florida Statutes (F.S.). The investigations were carried out in conformity with Part 2, Chapter 12 (Archaeological and Historical Resources) of FDOT's Project Development and Environment (PD&E) Manual, FDOT's Cultural Resources Manual, and the standards contained in the Florida Division of Historical Resources (FDHR) Cultural Resource Management Standards and Operations Manual (FDHR 2003). In addition, this survey meets the specifications set forth in Chapter 1A-46, Florida Administrative Code.

The archaeological reconnaissance survey included pedestrian survey within the project right-of-way to determine if the excavation of subsurface tests would be possible. Due to extensive urban development and the presence of buried electrical utilities within the Boynton Beach Boulevard and Gateway Boulevard Interchanges, no shovel testing was possible within the existing right-of-way. It is the opinion of the District that, based on the heavily disturbed nature of the soils, there is no potential for intact archaeological sites to be located within the right-of-way. No archaeological sites or occurrences have been identified and no further archaeological survey is recommended.

The architectural survey resulted in the identification and evaluation of 79 previously and newly recorded resources within the Boynton Beach Boulevard and Gateway Boulevard Interchanges APE. The Seaboard Air Line Railroad (8PB12917) linear resource group has previously been determined eligible for listing in the National Register of Historic Places (NRHP) by the Florida State Historic Preservation Officer (SHPO). The portion of the railroad within the Boynton Beach Boulevard and Gateway Boulevard Interchanges APE is recommended eligible as a contributing segment to the linear resource group. Resource 8PB00177 was previously recommended significant at the local level in 1996 by Research Atlantica, Inc.; however, the building was not evaluated by the SHPO. Based on the results of previous and the current survey, the District recommends Resource 8PB00177 as NRHP-eligible. One previously recorded resource, 8PB00493, is recommended ineligible by the District. The newly recorded resources include one resource group (8PB16399) and 75 buildings. No existing or potential historic districts were identified.

The District recommends avoidance of Resources 8PB00177 and 8PB12917, if possible. If avoidance is not possible, an effects evaluation will be prepared to assess project-related effects, if any, to these two NRHP-eligible resources.

* see SHPO note on page 3.

If there are any questions, please feel free to contact me at (954) 777-4324 or Lynn Kelley at (954) 777-4334.

Sincerely,



Ann Broadwell
Environmental Administrator
FDOT - District 4

Enclosures
cc. file

The Florida State Historic Preservation Officer finds the attached Cultural Resources Assessment Report complete and sufficient and concurs with the recommendations and findings provided in this cover letter for SHPO/DHR Project File Number 2015-2320.

SHPO Comments:

For *Timothy A. Parsons* Deputy SHPO
Timothy A. Parsons
State Historic Preservation Officer
Florida Division of Historical Resources

3/31/2017
Date

* SHPO/DHR wishes to postpone an effects finding until a case study can be completed.
SHPO/DHR concurs with the eligibility determinations in this letter & document.