Florida Department of Transportation District Four

INTERCHANGE OPERATIONAL ANALYSIS REPORT (IOAR)

INTERSTATE 95 AT INDIANTOWN ROAD Palm Beach County, Florida

Interchange Operational Analysis Report (IOAR)

I-95 at SR 706 (Indiantown Road)

Palm Beach County, FL

Florida Department of Transportation

Determination of Engineering and Operational Acceptability

Acceptance of this document indicates successful completion of the review and determination of engineering and operational acceptability of the Interchange Access Request. Approval of the access request is contingent upon compliance with applicable Federal requirements, specifically the National Environmental Policy Act (NEPA) or Department's Project Development and Environment (PD&E) Procedures. Completion of the NEPA/PD&E process is considered approval of the project location design concept described in the environmental document.

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1. Project Overview

1.1 Introduction

This Interchange Operational Analysis Report (IOAR) has been prepared to evaluate the impacts of signalizing the I-95 northbound off ramp to eastbound SR 706 (Indiantown Road), as well as determining when Level of Service "F" operations occur along eastbound SR 706, and when widening SR 706 from three lanes to four lanes is required. The Florida Department of Transportation (FDOT), District 4 is the Applicant seeking approval of this IOAR that presents the necessary documentation for such improvements.

The IOAR proposes signalization of the I-95 northbound off ramp at SR 706. The proposed improvement is intended to address queues backing up to the I-95 mainline that occur in the AM and PM peak periods on the I-95 northbound off ramp and I-95 southbound off ramp at SR 706.

In 2003 the state of Florida established the Strategic Intermodal System (SIS), which consists of high priority transportation facilities and services of statewide and interregional significance. These SIS facilities are critical to the movement of people and goods in Florida, and their function is considered to be vital to Florida's economic competitiveness.

I-95, which is a designated SIS facility, is a north-south roadway that links northern and southern limits of Florida. It is vital thorough fare that links multi-modal hubs to facilitate the safe and efficient movement of goods and people. The interchange of I-95 at SR 706 (Indiantown Road) is a heavily traveled location.

As new developments continue to be constructed along SR 706 corridor in Palm Beach County, and traffic volumes in the area continue to increase, the I-95 and SR 706 interchange requires operational improvements to allow it to operate as efficiently as possible in the near term, and to maximize the capacity of the existing interchange configuration. FDOT District 4 evaluated traffic operations at the I-95 interchange at SR 706 and assessed short-term alternatives for improving traffic operations.

Field reviews were conducted in September 2015 to observe traffic operations at the interchange and the intersections immediately east and west of the site. Extensive eastbound queues were observed during both the AM and PM peak hour from the adjacent intersection east of the interchange at Island Way backing up to the northbound exit ramp. These queues spillback into the I-95 interchange and impede the northbound-to-eastbound exit ramp maneuver, particularly during the AM peak hour.

In addition, excessive vehicular delay was noticed for the eastbound through movements along the SR 706 corridor between I-95 and Island Way, and including further eastward to Central

Boulevard. This was coupled with a heavy eastbound left-turn volume where drivers are destined towards I-95 via the northbound entrance ramp.

The purpose of this IOAR is to document the need for and feasibility of short term improvements. Preliminary engineering plans were developed to address operational deficiencies within existing right-of-way to minimize impacts and costs. Conceptual design plans for the improvements are provided in this report for the project, along with a cost estimate and documentation of the benefits of the project. The following short-term improvements were identified.

1) ***Signalize the I-95 NB Off-Ramp to EB SR 706 (Indiantown Road)***. By urbanizing and signalizing the I-95 northbound off-ramp termini at SR 706, the discharge of eastbound traffic volume towards Island Way will be metered. This would mitigate the simultaneous release of eastbound traffic volume into Island Way by creating a platooning effect through the ramp termini's signal control.

   Signalizing the I-95 northbound off-ramp termini intersection also requires improvements to eastbound SR 706 through the interchange to accommodate a more urban flow of traffic (i.e. require the need for a continuous third eastbound through lane between the Turnpike and the I-95 northbound off-ramp termini intersection.) It may also produce eastbound queues at the I-95 northbound off-ramp termini intersection that may affect traffic flow at the upstream I-95 southbound off-ramp/loop ramp. Signalizing any intersection increases delay at that location for the major street. However, signalization improvements coupled with improvements to eastbound Indiantown Road between I-95 and Island Way will reduce eastbound queues formed at the Island Way intersection. Eastbound queues will be managed during peak hours such that they will not affect traffic operations at the I-95 interchange or the I-95 mainline.

2) ***Convert the EB right-turn lane from west of Island Way to Central Boulevard to a shared through-right lane.*** As a means of increasing eastbound throughput on SR 706, converting the eastbound right-turn lane at Island Way to a shared through-right lane and extending it to Central Boulevard would reduce eastbound queues on SR 706 at Island Way. Such an improvement could connect to the 2-lane I-95 northbound off-ramp to eliminate the merge maneuver now necessary. Since receiving pavement exists on eastbound SR 706 downstream of Island Way almost to Central Boulevard, only a minimal amount of new construction would be required.

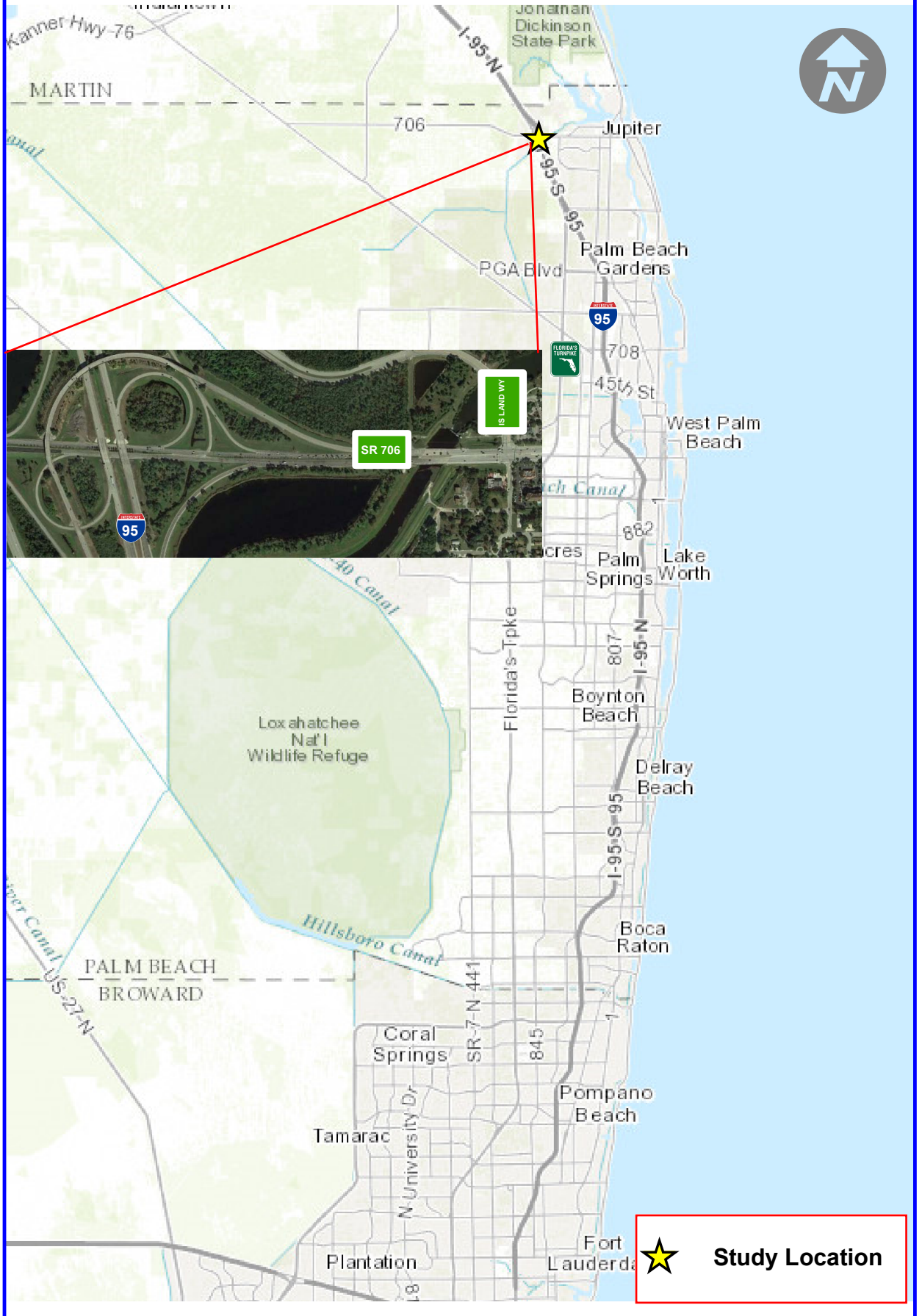
   Since traffic volume indicate that the eastbound through volume beyond Central Boulevard is less than the eastbound through volume approaching Central Boulevard, the logical intersection to drop the proposed shared through-right lane is at Central Boulevard (according to a traffic operations viewpoint).

This lane conversion would eliminate the continuous right-turn lane serving the driveways on the south side of SR 706. The improvement also does not address the root cause of the eastbound queues arriving at Island Way, and would only serve as a temporary solution. If more development and additional traffic are realized in this area, the benefit associated with the lane conversion would inevitably be negated by the additional traffic volume until the queues and delays are equal to or worse than what is present today.

1.2 Project Location

I-95, which is a designated SIS facility, is a north-south roadway that links northern and southern limits of Florida, and is a critical link in the state's transportation network. SR 706 is an east-west principal arterial though Palm Beach County. Immediately east of the interchange along SR 706 is a signalized four way intersection at Island way which provides access to residential communities on the north and south side of SR 706. West of I-95 is the Florida Turnpike that has a four way intersection on SR 706.

Palm Beach County has zoned the land north and south of SR 706 west of the Island way Intersection as light industrial. At the Island Way intersection continuing east to the Central Boulevard intersection the land north and south of SR 706 is zoned as high density residential and general commercial. **Figure 1** shows the location and study area map for the project.



FDOT	I-95 and SR 706 Palm Beach County, Florida	Project Location and Area of Influence Map	Figure 1

2 Methodology

2.1 Area of Influence

Depicted in Figure 1, the IOAR study limits include SR 706 from west of I-95 to Central Boulevard. This roadway segment consists of the intersection at I-95 southbound off ramp terminal, I-95 northbound off ramp terminal, Island Way intersection and Central Boulevard intersection with SR 706.

2.2 Analysis Years

The Analysis years for the project are:

- Existing Year – 2015
- Opening Year – 2020
- Design Year – 2030

2.3 Travel Demand Forecasting

Traffic volumes used to evaluate alternatives in this IOAR have been developed using the annual growth rate determined by the I-95 PD&E study from South of SR 706 to South of SW High Meadow Avenue (April 11, 2014). Section 6.1 of this IOAR goes into further detail on how the growth rates and traffic volumes were developed.

2.4 Operational Analysis Procedures

Traffic operational analyses were performed for existing conditions and future No Build and Build alternatives. Level of Service (LOS) assessments were based on the Highway Capacity Manual (HCM), 2000 Edition. Analyses were performed using Synchro Version 9.0 for study signalized intersections and interchange ramp terminal intersections. The Synchro operational analyses were performed for the following conditions:

1. Existing year 2015 conditions, AM and PM
2. Opening Year 2020 conditions for No Build and Build Alternative, AM and PM
3. Design Year 2030 conditions for No Build and Build Alternative, AM and PM

2.5 LOS Standards

FDOT Topic No. 525-000-006 provides LOS standards for the State Highway System (SHS). The following LOS criteria were considered for this IOAR analysis since the study area is considered to be an Urbanized Area over 500,000 population.

- SIS Facilities – LOS D
- Other State Roads – LOS D

Analyses of the elements within the area of influence, were based on guidance, criteria and policies detailed in the latest FDOT Interchange User's Guide 2015 Edition.

Delay and LOS were reported for the study intersections. The 95th percentile queue was utilized to determine the required storage length for the interchange northbound to eastbound right-turn lanes.

3. Roadway and Intersection Characteristics

3.1 Geometry

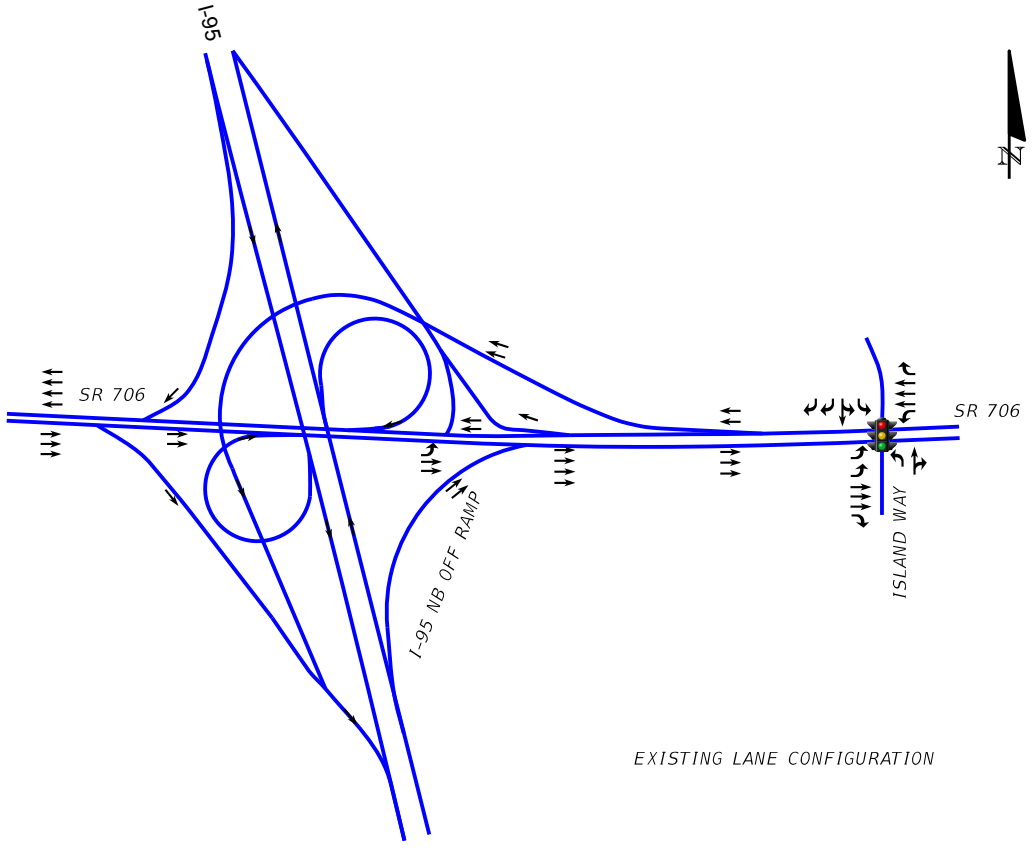
The ramp terminals have the following lane configuration:

- NB off-Ramp to EB SR 706: two channelized free flow right turn lane.
- NB off-Ramp to WB SR 706: one channelized free flow right turn lane.
- SB off-Ramp to EB SR 706: one channelized free flow right turn lane.
- SB off-Ramp to WB SR 706: one channelized free flow right turn lane.

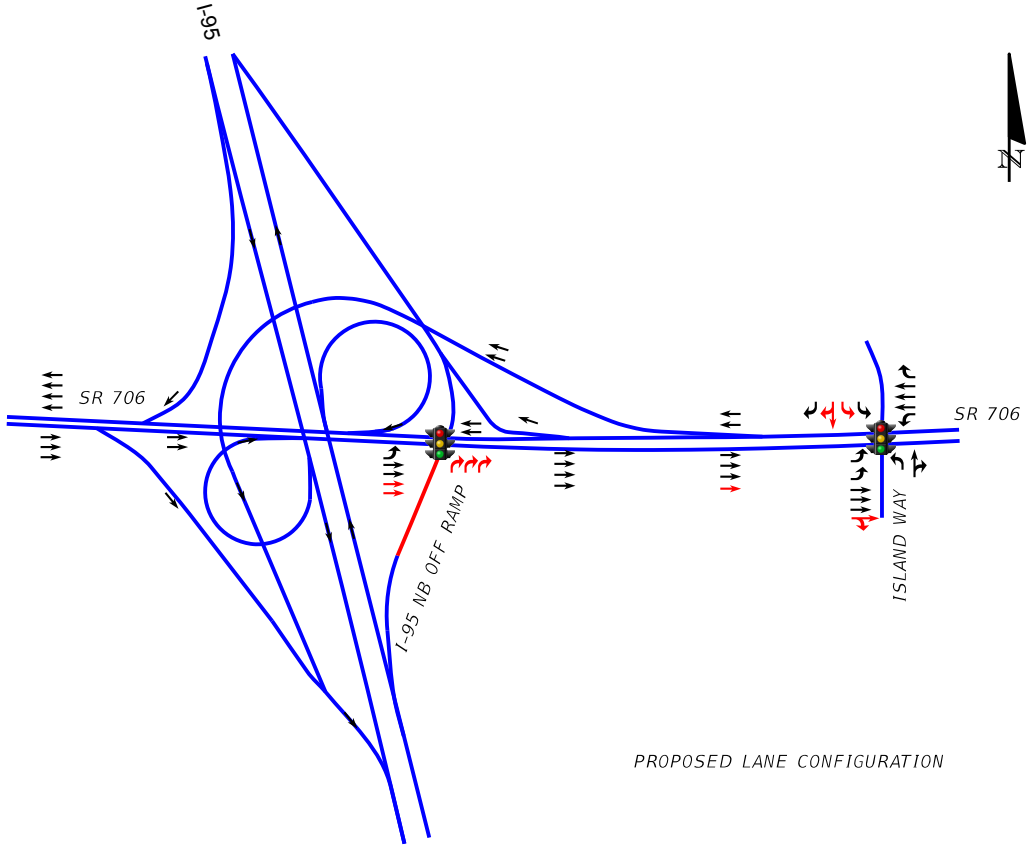
The SR 706 and Island Way intersection is a four-legged, actuated coordinated signalized intersection. The SR 706 and Island Way intersection is located approximately 2,000 feet east of the I-95 northbound off ramp to eastbound SR 706. The intersection has the following lane configuration:

- NB Direction: one left turn lane and one shared through-right turn lane.
- SB Direction: one left turn lane, one shared left turn and through lane, and two right turn lanes.
- EB Direction: two left turn lanes, three through lanes, one bike lane and one right turn lane.
- WB Direction: one left turn lane, three through lanes, one bike lane and one right turn lane.

Figure 2 shows the existing layout design of the study corridor including the I-95 northbound ramp terminal and Island Way intersection with SR 706.



EXISTING LANE CONFIGURATION



PROPOSED LANE CONFIGURATION

FDOT	I-95 and SR 706 Palm Beach County, Florida	Lane Configuration	Figure 2

3.2 Functional Classifications

The Palm Beach County MPO's Highway Functional Classifications Map shows I-95 within the project limits as a six-lane Urban Principal Arterial Interstate. SR 706 is classified as a four-lane divided State Principal Arterial Other east of the turnpike until I-95, SR 706 is classified as a six-lane divided State Principal Arterial Other east of I-95 until US-1, Island way is classified as a four-lane divided Major Collector road north of SR 706.

3.3 Design Speed & Posted Speed Limits

SR 706 east and west of Island Way has a posted speed limit of 45 miles per hour. I-95 has a design and posted speed limit of 70 miles per hour north and south of SR 706. The design speed for SR 706 from I-95 to Island Way intersection is 50 miles per hour. The design speed for SR 706 from Island Way to Central Boulevard is 45 miles per hour. The design speed for I-95 is 70 miles per hour.

3.4 Typical Sections

The I-95 typical section at SR 706 consists of a six-lane divided section providing three general purpose lanes with inside and outside shoulders.

The Florida Turnpike runs parallel to the west side of the I-95 interchange at a distance of 800 feet. SR 706 crossed the Florida Turnpike above grade. The SR706 typical section within the limits of the limited access right-of-way is a four-lane urban divided roadway with a raised, landscaped median. Underneath the I-95 overpass, the EB and WB lanes are separated by a median containing a raised concrete barrier wall as well as support piers for the I-95 overpass. In the EB direction, a left-turn lane is provided for the I-95 NB on-ramp, an auxiliary lane is provided for the transition between the I-95 off-ramp merge lane and the third through lane on SR 706 EB direction. In the WB direction, an auxiliary lane is provided for the transition between the I-95 off-ramp merge lane and the SR 706 through lane.

3.5 Lighting

The I-95 Lighting system consist of high mast lighting along the I-95 on and off-ramps. The lighting on SR 706 are the same High Mast light poles that run along the I-95 on and off-ramps.

3.6 Interchange Ramp Design

The study interchange is a partial cloverleaf interchange with two loop ramps. The NB off-ramp from I-95 to WB SR 706 and the SB off-ramp from I-95 to EB SR 706 are single loop ramps that.

The NB off-ramp to EB SR 706 is a double lane ramp, which becomes a free-flow right-turn lane into SR 706 and then merges into the through lanes. The NB on-ramp from WB SR 706 is a single lane ramp and merges with the general purpose lanes. The NB on-ramp from EB SR 706 is a single lane ramp and merges with the NB on-ramp from WB SR 706. The SB off-ramp to EB SR 706 is a single lane ramp, which becomes a free-flow right-turn lane into SR 706 and then

merges into the through lanes. The SB on-ramp from SR 706 provides a single lane and merges with the general purpose lanes. An aerial photograph of the existing interchange layout is shown in **Figure 1**.

4 Traffic Operations

Field reviews were conducted in September 2015 to observe traffic operations at the interchange and the intersections immediately east and west of the site. Those observations identified several key issues, particularly during the morning peak period.***AM Peak Hour.***

EB SR 706 **-** SR 706 from I-95 to Island Way experienced heavy congestion for a 30-minute period during the morning peak hour, beginning at approximately 7:15 am. During this peak period, eastbound queues formed at the signalized intersection with Island Way that extended upstream to the I-95 overpass, a distance of about 3,200 feet. Cycle failures for the eastbound flow at Island Way were evident. Although the queues extended beyond the free flow NB I-95 exit ramp gore, because the free flow ramp transitions into a through lane on SR 706, no queues were observed approaching the I-95 mainline.

Based on traffic counts collected by Palm Beach County, the eastbound through volume (2,600 vehicles per hour) is nearly 10 times that of the EB left turn volume (278 vehicles per hour). This characteristic was confirmed via the field review, revealing that a large majority of eastbound traffic is traveling through the intersection to destinations further east. Eastbound through movement queues block entrance into the left and right-turn lanes.

Eastbound traffic flow is coordinated on SR 706 between Island Way and Central Boulevard. Drivers were observed traveling east along the corridor during the corridor's signal bandwidth (albeit slowly) without stopping at 67th Road North.

During the AM period, minimal right-turn activity was noticed at the driveways on eastbound SR 706 between Island Way and Central Boulevard.

Emergency Evacuation Route **-** The I-95 corridor serves as part of the designated emergency evacuation route in Palm Beach County. SR 706 is designated an emergency evacuation route from SR-710 to SR-A1A. The proposed improvements do not have any tangible impacts on emergency evacuation.

5 Existing Conditions

5.1 Existing Traffic Volumes

Existing (2014) Average Annual Daily Traffic (AADT) link volumes collected and published by the Palm Beach County and FDOT were used for this report, with the exception of Island Way and the west approach of SR 706 at Island Way. The most recent daily volume published for the north approach of Island Way is 2014, while for the south approach it was 2012. Daily volume for the west approach of the intersection with Island Way was last collected in 2014. The existing year AADT for I-95 was determined via a 3-year average of AADTs from 2012 to 2014.

The existing daily volume on SR 706 immediately east of I-95 is 59,700 vehicles per day, while volumes west of I-95 are currently 49,200 vehicles per day. East of Island Way, the existing daily volume on SR 706 is approximately 60,300 vehicles per day.

AM and PM peak hour turning movement counts at the intersections within the study area were collected by Palm Beach County. Data was collected for the Island Way intersection on February 4, 2015, while turning movement data for the I-95 interchange were collected on January 13, 2014. FDOT data was gathered from the Florida Transportation Information (FTI) DVD. Northbound and southbound I-95 through volumes were derived from traffic data collected at Stations 93-2209 and 93-0217.

The following traffic factors were used during the analysis of this interchange.

- K Factor – 9.0
- D Factor – based on field data
- T Factor (peak hour) – 2.0
- Peak Hour Factor – 0.95

The daily volume data and the peak hour intersection turning movement volumes are included in Appendix A, and they are graphically depicted in Figures 3, 4 and 5.

5.2 Existing Traffic Operational Analysis

5.2.1 Intersection Analysis

Based on the AM and PM peak hour data collected, the interchange of SR 706 and I-95, and the intersection of SR 706 and Island Way were analyzed using Synchro 9 and reported based on Highway Capacity Manual 2000 methodology. This analysis was performed to evaluate current traffic operational conditions. It is noted that, the I-95 off-ramp terminal intersections with SR 706 presently operate without any control. As a result, all traffic from I-95 that exits to SR 706

does so under a free flow condition. A summary of the analysis of the intersections' various critical movements are included in Table 1.

Results of the existing operational analysis reveal that the intersection of SR 706 and Island Way currently functions at Level of Service (LOS) D during the AM peak hour with overall vehicular delays of 54 seconds per vehicle. However, during the PM peak hour, the signalized intersection operates at LOS E with more than 61 seconds of delay.

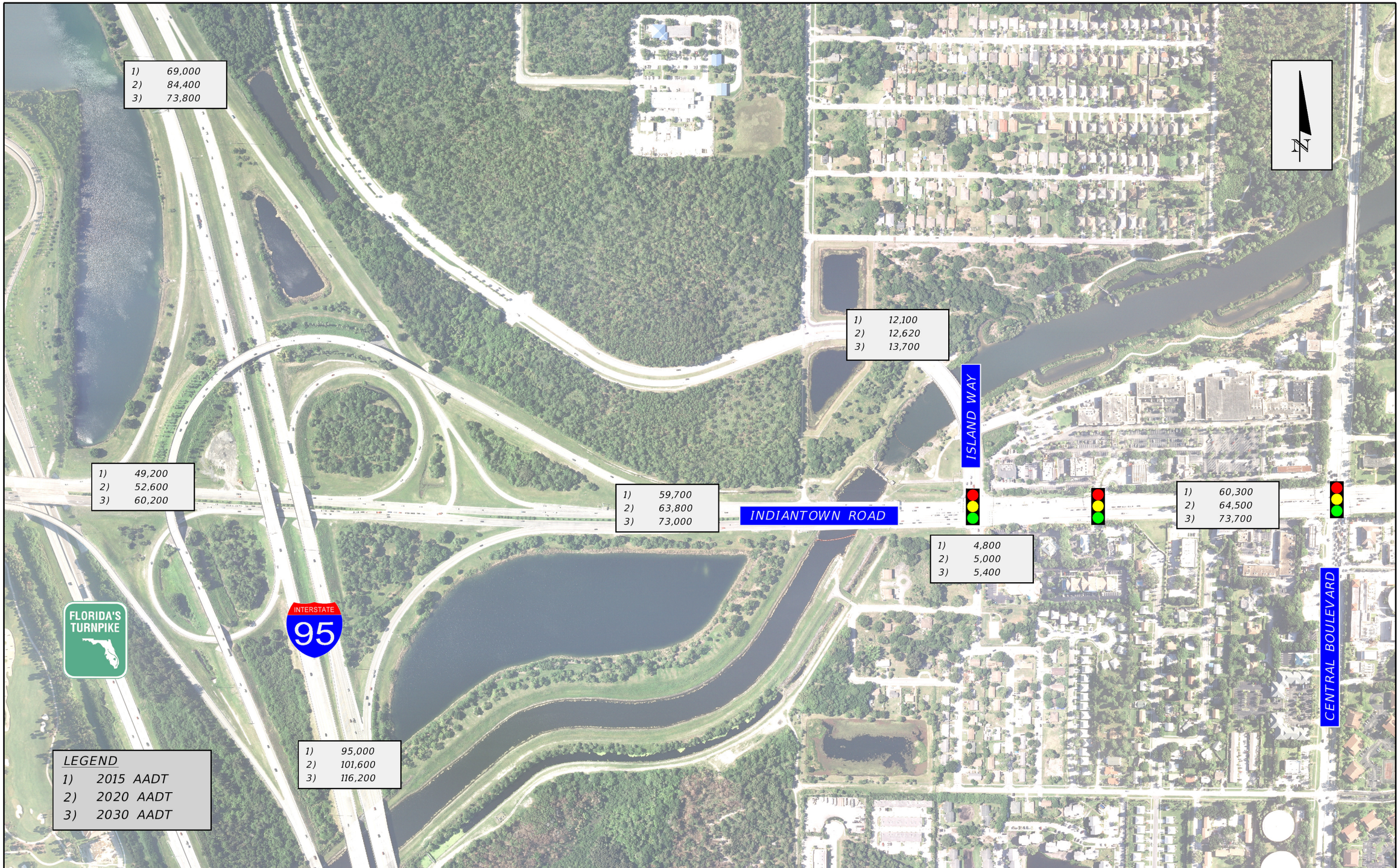
The eastbound through movement operates with delays of nearly 45 seconds of delay during the AM peak hour, with queues extending nearly 1,800 feet. This queue length extends upstream to I-95, and has been observed to impact interchange ramp operations. Such a long queue for the eastbound movement blocks access to the eastbound left-turn lane and the eastbound right-turn lane to Island Way, affecting their operations. A summary of the queuing analysis of existing conditions is included in Table 2.

With the current signal timing plan at SR 706 and Island Way incorporating split-phasing for the north-south approaches and a cycle length of 170 seconds during the peak hours, extensive queues occur on the eastbound and westbound approaches. In addition to the queues for the eastbound through movement, the westbound through movement at Island Way also experience substantial queues. Results indicate that the queues during the AM peak hour are nearly, 1,400 feet, while during the PM peak hour the westbound queue is almost 1,500 feet. The westbound through movement currently operates at LOS E during the AM peak hour with delays of about 60 seconds per vehicle. During the PM peak hour, the westbound through movement operates at LOS F with delays in excess of 90 seconds per vehicle.

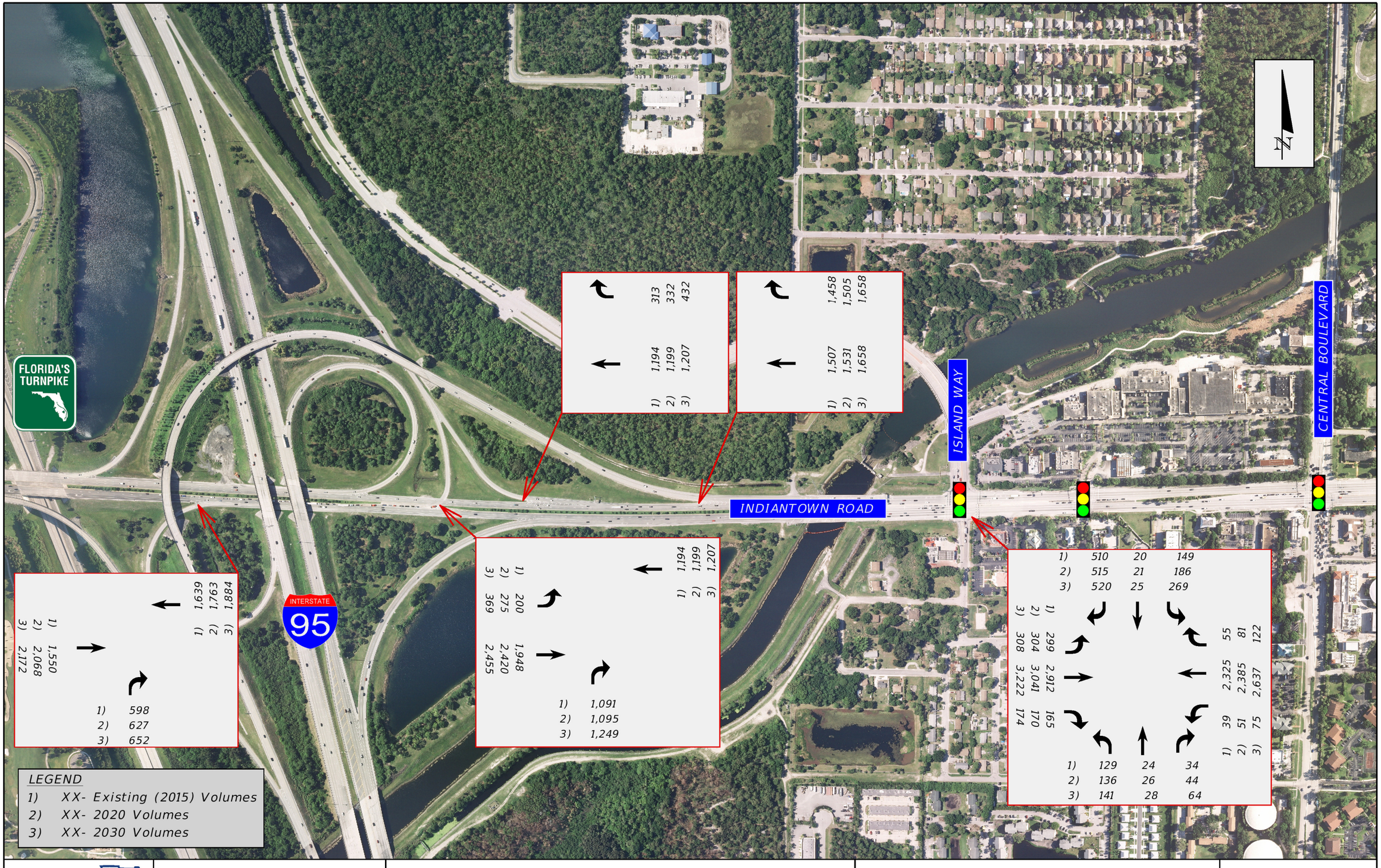
Minor street delay on Island Way occurs as a result of the long cycle length, and split phasing timing plan. The southbound approach, which accommodates the most minor street volume, operates at LOS F. Delays for the southbound left-turn and through movement exceed 80 seconds per vehicle. However, peak hour queue lengths are approximately 200 feet and accommodated within the current 225-foot turn lane storage area.

The northbound left-turn movement operates at LOS F during the existing AM and PM peak hours, with delays of approximately 101 seconds per vehicle. Given the minimal volumes present on the northbound approach, existing queues are estimated to be about 200 feet. This queue does not affect the operation of the northbound approach or upstream intersections during the peak hour.

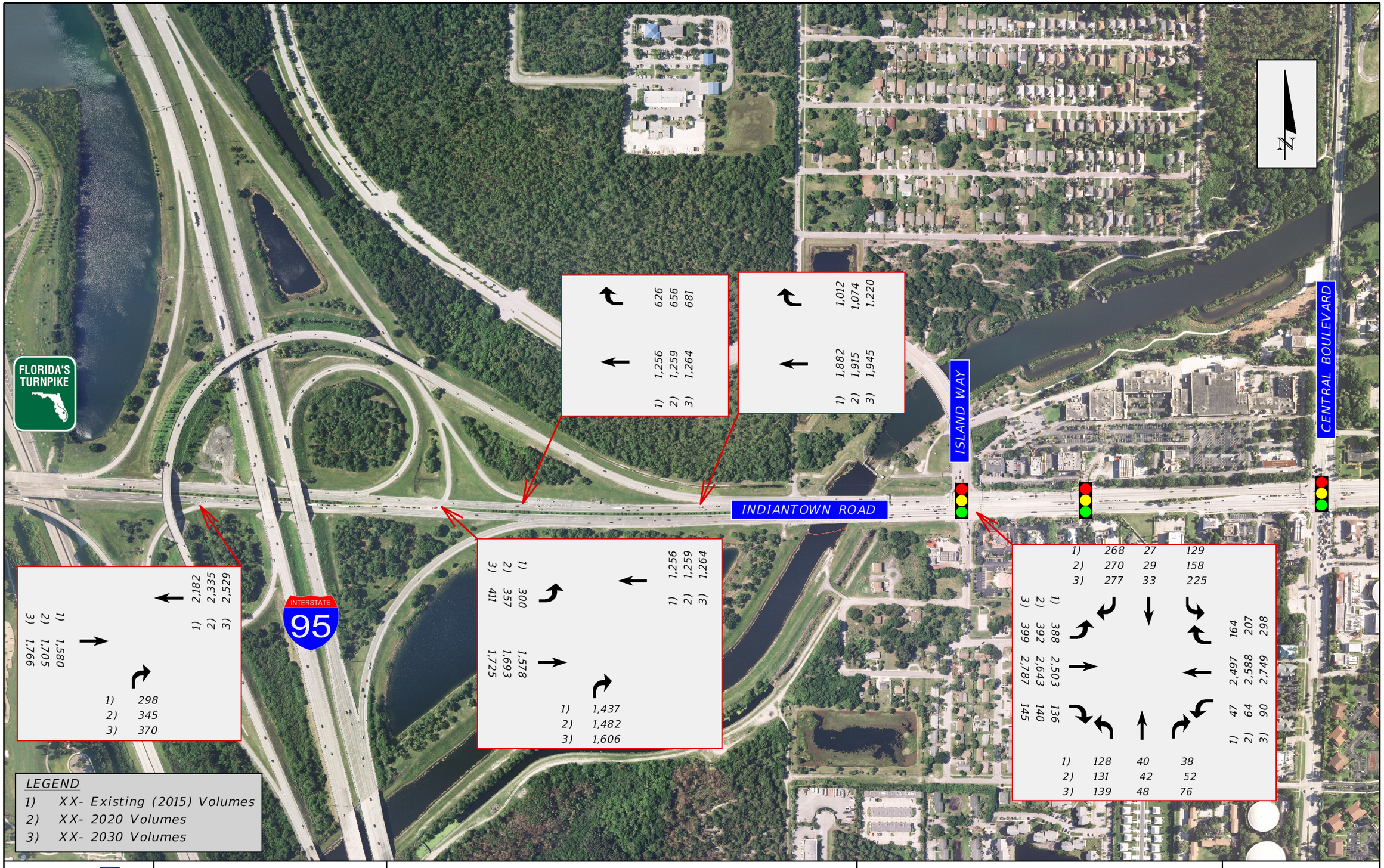
The HCM 2000 capacity worksheets and Synchro 9 queuing analysis of the existing traffic operational analyses results for the study area are provided in Appendix B.



FDOT	RS&H 3125 W. COMMERCIAL BLVD. SUITE 130 FORT LAUDERDALE, FL 33309	Indiantown Road at I-95	Daily Volume Travel Demand Forecast For No Build & Build Conditions
			Figure 3



FDOT	RS&H 3125 W. COMMERCIAL BLVD. SUITE 130 FORT LAUDERDALE, FL 33309	Indiantown Road at I-95	AM Peak Hour Travel Demand Forecast Figure 4



FDOT	RS&H 3125 W. COMMERCIAL BLVD. SUITE 130 FORT LAUDERDALE, FL 33309	Indiantown Road at I-95	PM Peak Hour Travel Demand Forecast

Figure 5

Table 1

Delay and Level of Service Summary

I-95 at Indiantown Road Concept Development

Intersection	Appr.	Mvmt.	Existing (2015)			
			Approach		Overall Intersection	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
AM PEAK HOUR						
Indiantown Rd at Island Way	EB	LT	76.5	E	54.4	D
		TH	44.7	D		
		RT	17.7	B		
	WB	LT	87.6	F		
		TH	59.5	E		
		RT	13.8	B		
	NB	LT	101.5	F		
		TH	75.7	E		
		RT	75.7	E		
	SB	LT	83.4	F		
		TH	84.1	F		
		RT	51.6	D		
Indiantown Rd at NB I-95 to EB Off Ramp	EB	LT	n/a		n/a	
		TH	0.0	A		
	WB	TH	0.0	A		
	NB	RT	0.0	A		
PM PEAK HOUR						
Indiantown Rd at Island Way	EB	LT	70.3	E	61.6	E
		TH	32.6	C		
		RT	15.1	B		
	WB	LT	85.0	F		
		TH	91.6	F		
		RT	18.3	B		
	NB	LT	101.4	F		
		TH	78.1	E		
		RT	78.1	E		
	SB	LT	81.9	F		
		TH	82.6	F		
		RT	48.5	D		
Indiantown Rd at NB I-95 to EB Off Ramp	EB	LT	n/a		n/a	
		TH	0.0	A		
	WB	TH	0.0	A		
	NB	RT	0.0	A		

Notes:

1) Level of Service and delay results based on Synchro 8 and Highway Capacity Manual 2000 (HCM 2000) methodology.

Table 2
Queuing Analysis for Weekday Conditions
I-95 at Indiantown Road Concept Development

Intersection	Movement	Storage (ft)	95th Percentile Queue Length (ft)	
			AM	PM
			Existing (2015)	Existing (2015)
Indiantown Rd at Island Way	EBL	370	217	282
	EBT		#1439	#1257
	EBR	300	75	54
	WBL	160	118	104
	WBT		#1387	#1487
	WBR	185	18	56
	NBL	150	216	218
	NBT/R		105	123
	SBL	215	221	156
	SBT		225	160
	SBR		50	36
Indiantown Rd at NB I-95 to EB Off Ramp	EBL	225	n/a	n/a
	EBT		0	0
	WBT		0	0
	NBR		0	0

Notes:

1) 95th percentile queue length based on Synchro 9 methodology

- 95th percentile volume exceeds capacity; queue may be longer.

Queue reported is maximum after two cycles.

6 Future Conditions

6.1 Future Traffic Volumes

To evaluate the future traffic operations of the I-95 at SR 706 interchange, weekday travel demand forecasts are needed for the peak hour turning movements at each intersection within the study area. Future year analyses are provided for the Opening Year (2020) and Design Year (2030), which is consistent with the analysis years for the traffic operational analyses contained herein.

In 2014, a review of the travel demand forecast prepared for the I-95 Project Development and Environment (PD&E) Study from south of SR 706 to south of SW High Meadows Avenue was performed. Upon review of the projected future year daily volumes from the I-95 PD&E Study technical memorandum, dated April 11, 2014, it was determined that these projected volumes were less than existing 2015 traffic volumes along SR 706 and at Island Way. As a result, District staff determined that the forecasted growth rate from the I-95 PD&E Study should be applied to the newer traffic counts to prepare updated forecasts for this report.

Daily volume traffic projections were based on previously approved compound growth rates prepared for the I-95 PD&E Study from south of SR 706 to south of SW High Meadows Avenue. The growth rate applied to movements occurring at the I-95 interchange with SR 706 was 1.35%, while the growth rate applied to the intersection of Island Way was 0.85%. These approved growth rates were presented in a technical memorandum dated April 11, 2014, which is included in Appendix C.

Based on the PD&E Study, it was determined that traffic volume growth at I-95 and SR 706 will continue to increase through 2030. The existing daily volume on SR 706 immediately east of I-95 is 59,700 vehicles per day, while volumes west of I-95 are currently 49,200 vehicles per day. East of Island Way, the existing daily volume on SR 706 is approximately 60,300 vehicles per day.

Intersection Turning Movement Forecasts - Future year peak hour turning movement forecasts at the intersections within the study area were developed using TMTool. The movements present for the interchange of I-95 and SR 706 were forecasted as a single intersection, and then assigned to the various interchange ramps.

A Standard K factor of 9.0% was applied to the forecasted design year AADTs to estimate the AM and PM peak hour future year forecasts for I-95 and SR 706. Peak-to-daily factors based on field data were utilized to estimate current conditions, and the interim year factors were calculated via linear interpolation.

Peak-to-daily factors based on field data were employed for Island Way for the current and future year conditions. Island Way is a local street with modest volumes and is not a facility that resembles or operates like an arterial.

Field data-derived D factors were retained throughout the study area, unless the factor failed to adhere to the range of acceptable values, as noted in the FDOT Project Traffic Handbook. In such cases, the D factor was manually adjusted to be within the acceptable range. Once the acceptability of the field data-based D factors was established, the corridor D factors were smoothed and balanced between adjacent intersections where traffic breaks are not forecasted.

The resultant 2020, 2030, and 2040 AM and PM peak hour turning movement forecasts at each intersection were then smoothed and balanced along the corridor. The future year traffic projections are included in Appendix C, and depicted in Figures 3, 4, and 5.

6.2 Future Traffic Operational Analysis

6.2.1 Intersection Analysis

Traffic operations analysis was conducted for the opening year (2020) and interim year (2030) for both the No Build and Build scenarios using Highway Capacity Manual 2000 methodology. Future year analyses of the No Build scenario included an optimization of the intersection's signal timing splits, while maintaining current phasing and cycle lengths employed during the AM and PM peak hour. For analysis of the Build scenario, lane configuration improvements at Island Way permit the replacement of split-phasing with a signal timing plan that prioritizes east-west movements on SR 706. Current cycle lengths, however, are maintained. Summaries of the future year traffic operational analysis results for both the No Build and Build conditions are included in Tables 1 and 2.

No Build Condition

This development scenario assumes that no improvements are made to the I-95 interchange or at the intersection of SR 706 and Island Way. Analytical Measures of Effectiveness (MOEs) reported include delay, Level of Service, and queue length. A summary of the MOEs is provided in Tables 1 and 2. The HCM 2000 intersection analysis worksheets of the future No Build conditions traffic operational analyses are provided in Appendix B. This includes analysis of 2020 and 2030 conditions, the results of which are summarized in tabular format and also included in Appendix B.

2020 AM Peak Hour – Under 2020 AM peak hour No Build conditions, the intersection of SR 706 and Island Way will operate at an overall LOS E with about 72 seconds of delay per vehicle. The eastbound through, westbound left turn, northbound left-turn, southbound left turn, and southbound through movements will individually operate at LOS F. The movements with excessive 2020 AM peak hour queue lengths in the No Build scenario include the eastbound through (1,786 feet) and the westbound through (1,390 feet).

2030 AM Peak Hour - During the 2030 AM peak hour, if no improvements are made to the interchange and adjacent intersection at Island Way, the overall intersection will further degrade and operate at LOS F with vehicular delays of about 140 seconds. Individually, eastbound through, westbound left turn, westbound through, northbound left-turn, southbound left turn, and southbound through movements will operate at LOS F. Specifically, the eastbound through movement will operate at LOS F and experience approximately 182 seconds of vehicular delay. Similarly, the westbound through movement will operate at LOS F with more than 143 seconds of delay.

The eastbound through movement queue in 2030 will be approximately 2,072 feet if no improvements are constructed, and will extend upstream to I-95. Such a queue will significantly impact I-95 ramp operations, and inhibit traffic flow along eastbound SR 706 within the study area. This would create significant delay and potential safety concerns for drivers on SR 706 and I-95.

The westbound through movement queue is estimated to be approximately 1,700 feet by 2030. If realized, this queue will restrict westbound traffic flow and cause congestion as motorists approach the Island Way intersection.

2020 PM Peak Hour - Under 2020 PM peak hour No Build conditions, the intersection of SR 706 and Island Way will operate at an overall LOS F with 82 seconds of delay per vehicle. The westbound left turn, westbound through, northbound left turn, southbound left turn, and southbound through movements will individually operate at LOS F. The movements with excessive 2020 PM peak hour queue lengths in the No Build scenario include the eastbound through (nearly 1,445 feet) and westbound through (1,590 feet).

2030 PM Peak Hour - Results indicate that without capacity improvements at the intersection of SR 706 and Island Way, 2030 PM peak hour operations would degrade as compared to current conditions. Analysis of the No Build scenario (2030) indicates that the overall intersection will operate at LOS F with 136 seconds of delay per vehicle.

The eastbound through movement will operate at LOS F during the 2030 PM peak hour with delays of approximately 107 seconds per vehicle. Westbound through and westbound left turns will also operate at LOS F and experience 215 and 82 seconds of delay per vehicle, respectively.

Queue lengths for the eastbound through movement will exceed 1,700 feet during the 2030 PM peak period, which approaches I-95 and the I-95 northbound off/on ramp. The westbound through movement is also projected to have a 2030 PM peak hour queue of more than 1,825 feet.

Build Condition

The Build scenario includes proposed improvements to signalize the I-95 northbound off-ramp to eastbound SR 706, as well as add an eastbound travel lane to SR 706 from I-95 to Central Boulevard. Finally, at the intersection of SR 706 and Island Way, the southbound approach is proposed to be restriped to provide two exclusive left-turn lanes, one shared through-right lane, and one exclusive right-turn lane. This restriping will allow the signal phasing at the Island Way intersection to be modified from the current split-phasing plan. These short-term improvements are intended to alleviate the excessive queues formed at the eastbound approach of the Island Way intersection, which currently extend to I-95, and improve eastbound mobility on SR 706 from I-95 to Central Boulevard.

The proposed short-term improvements are intended to address imminent operational failures and excessive congestion that threaten the operational integrity of the I-95 at Indiantown Road interchange. While some specific turning movements are expected to operate at LOS F by 2030, operations along the eastbound Indiantown Road corridor will be improved. Eastbound queues will be reduced and managed such that traffic flow within the interchange and the northbound-to-eastbound off-ramp are not compromised. Summaries of the future year traffic operations analyses are provided in Tables 3 and 4.

2020 AM Peak Hour - The newly proposed signalized intersection of SR 706 and the I-95 northbound off-ramp to eastbound SR 706 is expected to operate at LOS D with overall intersection delays of approximately 41 seconds per vehicle. The northbound right-turn movement is expected to operate at LOS D with 35 seconds of delay. All eastbound queues at the proposed signalized intersection can be accommodated by their respective turn lane storage, as well as the northbound right-turn movement.

Given the proposed improvements, the overall operation of the SR 706 at Island Way intersection during 2020 AM peak hour conditions will operate at LOS F with an overall intersection delay of approximately 82 seconds per vehicle. This result includes optimized signal timings to promote eastbound throughput as a tool to alleviate eastbound queues.

Results indicate that the eastbound through movement will operate at LOS E with delays of approximately 68 seconds per vehicle. The westbound through movement is projected to operate at LOS F with delays of 89 seconds per vehicle. Other movements that will operate at LOS F include the eastbound left turn, westbound left turn, and most of the minor street movements.

As a result of the proposed Build improvements, queues along SR 706 are projected decrease such that they will not affect traffic operations at the I-95 interchange. The eastbound through movement queue is expected to be approximately 1,200 feet, which represents a 32% decrease when compared to No Build conditions. The westbound through movement queue is projected to be 1,210 feet with the proposed improvements, which is a 13% reduction from the No Build scenario. Finally, the queue formed at the proposed signalized I-95 northbound off-ramp to eastbound SR 706 intersection is less than 500 feet. This is substantially less than the 1,200 feet

provided for the I-95 northbound off-ramp as measured from the gore point of the I-95 northbound mainline to Indiantown Road.

2020 PM Peak Hour - Traffic operations results indicate that with the recommended improvements the traffic operations at the intersection of SR 706 and Island Way would improve eastbound flow and reduce queues in 2020. Overall, if the recommended improvements are constructed, the intersection will operate at LOS E with overall intersections delays of approximately 63 seconds. Delay for the eastbound through movement will be about 34 seconds per vehicle during the 2020 PM peak hour, while the westbound through movement delay will be reduced to approximately 78 seconds. To facilitate eastbound flow, other movements that will operate at LOS F include the eastbound left turn, westbound left turn, northbound left, southbound left, and southbound through movements.

As a result of the recommended improvements, the queue for the eastbound through movement will be reduced to 825 feet during the 2020 PM peak hour, which is a 43% reduction as compared to the No Build scenario. The westbound through movement queue will be reduced to 1,285 feet, which is a 195 improvement upon No Build conditions. With the operational improvements and reduced queue lengths for the critical SR 706 movements, the expected 2020 PM peak hour Build scenario queues will not impact I-95 interchange operations.

During the 2020 PM peak hour, the newly proposed signalized intersection of SR 706 and the I-95 northbound off-ramp to eastbound SR 706 is expected to operate at LOS D with overall intersection delays of approximately 43 seconds per vehicle. The northbound right-turn movement is expected to operate at LOS E with 74 seconds of delay. All eastbound queues at the proposed signalized intersection, as well as the northbound right-turn movement, can be accommodated by their respective turn lane storage during the 2020 PM peak hour.

2030 AM Peak Hour - The overall intersection of SR 706 and Island Way is projected to operate with reduced delay and traffic operational benefits if the proposed intersection improvements are constructed. Results indicate the overall intersection would operate at LOS F with delays of about 112 seconds per vehicle. The eastbound through movement will operate at LOS F with delays of approximately 86 seconds, which is about 50% less than the delay expected without improvements. The westbound through movement is expected to function at LOS F with delays of approximately 129 seconds per vehicle. To facilitate eastbound flow on SR 706, other movements that will operate at LOS F include the westbound left turn, northbound left, southbound left, and southbound through movements.

Queue lengths for the eastbound through movement will be reduced to about 1,350 feet during the 2030 AM peak hour. This represents a 35% decrease in queue length as compared to the No Build scenario. The projected queue can be accommodated by the available eastbound laneage under the Build scenario, and will not affect operations at the I-95 interchange. Similarly, the westbound through movement will experience a reduction in queue length during the 2030 AM peak hour under the Build scenario. Eastbound through queues will be reduced to 1,415 feet, which is a 17% improvement compared to the No Build scenario.

The newly proposed signalized intersection of SR 706 and the I-95 northbound off-ramp to eastbound SR 706 is expected to operate at LOS D with overall intersection delays of approximately 52 seconds per vehicle. The northbound right-turn movement is expected to operate at LOS E with 61 seconds of delay. All eastbound queues, as well as the northbound right-turn movement, at the proposed signalized intersection can be accommodated by their respective turn lane storage.

2030 PM Peak Hour - Traffic operations results indicate that with the recommended improvements, the intersection of SR 706 and Island Way would operate at LOS E in 2030 during the PM peak hour. The overall intersection delay in 2030 will be reduced by nearly half, to about 74 seconds per vehicle.

In addition, the delay for the eastbound through movement will be reduced to 37 seconds per vehicle during the 2030 PM peak hour, while the westbound through movement delay is expected to improve to about 98 seconds per vehicle. To facilitate eastbound flow, the prioritization upon SR 706 causes the performance of some other movements to continue to operate at LOS F. These include other movements include the eastbound left turn, westbound left turn, northbound left, southbound left, and southbound through movements. The concept reduces the EB queue during peak hours, but it is still very long, and will block entry into the left turn lanes, unless they are increased to 1,400 feet long left turn lanes.

Queue lengths for the eastbound through movement during the 2030 PM peak hour under the Build scenario will be reduced to 895 feet. This equates to an improvement of 47% when compared to the No Build scenario. Such a queue can be accommodated by the available eastbound laneage under the Build scenario, and will not affect operations at the I-95 interchange. Similarly, the queue length for the westbound through movement would be reduced to 1,410 feet, which is a 23% reduction as compared to the No Build condition during the 2030 PM peak hour.

The newly proposed signalized intersection of SR 706 and the I-95 northbound off-ramp to eastbound SR 706 is expected to operate at LOS E with overall intersection delays of approximately 62 seconds per vehicle. The northbound right-turn movement is expected to operate at LOS F with 110 seconds of delay, but with a queue length of approximately 590 feet. All eastbound queues, as well as the northbound right-turn movement, at the proposed signalized intersection can be accommodated by their respective turn lane storage. The noted queue formed at the proposed signalized I-95 northbound off-ramp to eastbound SR 706 intersection is substantially less than the 1,200 feet of vehicular storage provided for the I-95 northbound off-ramp.

The queue reductions identified under the Build scenario ensure that traffic flow along Indiantown Road will not spill back into the I-95 interchange and affect the I-95 mainline.

Table 3

Delay and Level of Service Summary (No Build and Build Lane Geometry)

I-95 at Indiantown Road Concept Development -- Weekday Conditions

Intersection	Appr.	Mvmt.	No Build (2020)				Build (2020)				No Build (2030)				Build (2030)			
			Approach		Overall Intersection		Approach		Overall Intersection		Approach		Overall Intersection		Approach		Overall Intersection	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
AM PEAK HOUR																		
Indiantown Rd at Island Way	EB	LT	75.3	E	72.1	E	145.9	F	81.7	F	75.1	E	140.9	F	213.3	F	112.6	F
		TH	86.3	F			68.1	E			181.8	F			96.7	F		
		RT	17.2	B			68.1	E			22.5	C			96.7	F		
	WB	LT	86.1	F			151.9	F			82.2	F			286.7	F		
		TH	60.5	E			89.0	F			143.3	F			129.0	F		
		RT	14.7	B			25.7	C			16.1	B			25.7	C		
	NB	LT	101.1	F			100.9	F			92.7	F			102.6	F		
		TH	71.8	E			57.0	E			70.5	E			60.1	E		
		RT	71.8	E			57.0	E			70.5	E			60.1	E		
	SB	LT	83.2	F			80.3	F			82.8	F			81.9	F		
		TH	83.5	F			126.0	F			83.2	F			123.9	F		
		RT	53.6	D			64.6	E			50.0	D			69.2	E		
Indiantown Rd at NB I-95 to EB Off Ramp	EB	LT	n/a		n/a		30.0	C	21.8	C	n/a		n/a		74.7	E	31.9	C
		TH	0.0	A			22.1	C			0.0	A			22.6	C		
	WB	TH	0.0	A			6.9	A			0.0	A			7.4	A		
	NB	RT	0.0	A			35.4	D			0.0	A			61.4	E		
PM PEAK HOUR																		
Indiantown Rd at Island Way	EB	LT	70.1	E	82.5	F	144.0	F	62.9	E	68.8	E	136.1	F	173.2	F	74.0	E
		TH	49.5	D			33.9	C			106.9	F			37.0	D		
		RT	17.9	B			33.9	C			22.1	C			37.0	D		
	WB	LT	81.5	F			84.8	F			82.6	F			108.1	F		
		TH	130.0	F			77.9	E			215.1	F			98.1	F		
		RT	19.8	B			23.7	C			22.1	C			25.2	C		
	NB	LT	93.4	F			98.1	F			93.1	F			102.7	F		
		TH	75.7	E			70.6	E			78.8	E			79.2	E		
		RT	75.7	E			70.6	E			78.8	E			79.2	E		
	SB	LT	82.5	F			79.7	E			80.4	F			82.5	F		
		TH	81.9	F			114.0	F			80.2	F			127.4	F		
		RT	47.2	D			68.0	E			43.2	D			69.3	E		
Indiantown Rd at NB I-95 to EB Off Ramp	EB	LT	n/a		n/a		133.0	F	41.6	D	n/a		n/a		206.0	F	60.8	E
		TH	0.0	A			24.5	C			0.0	A			20.3	C		
	WB	TH	0.0	A			20.1	C			0.0	A			6.1	A		
	NB	RT	0.0	A			74.1	E			0.0	A			110.2	F		

Notes:

1) Build improvements include signalizing the NB-to-EB Off Ramp; adding a 3rd EB through lane west of the off ramp; and adding a 4th EB through lane to Central Blvd

2) Level of Service and delay results based on Synchro 8 and Highway Capacity Manual 2000 (HCM 2000) methodology.

3) Future year traffic operational results are based on revised signal timing splits to eliminate the N-S split phase at Island Way. The existing cycle length remains at 170 seconds.

Table 4
Queuing Analysis for Weekday Conditions
I-95 at Indiantown Road Concept Development

Intersection	Movement	Proposed Storage (ft)	95th Percentile Queue Length (ft)											
			AM						PM					
			No Build (2020)	Build (2020)	% Change for 2020	No Build (2030)	Build (2030)	% Change for 2030	No Build (2020)	Build (2020)	% Change for 2020	No Build (2030)	Build (2030)	% Change for 2030
Indiantown Rd at Island Way	EBL	370	227	#307	*35%*	229	#336	*47%*	283	#378	*34%*	287	#400	*39%*
	EBT		#1786	#1212	*-32%*	#2072	#1,352	*-35%*	#1442	825	*-43%*	#1704	895	*-47%*
	EBR		92	#1212	*121739%*	108	#1352	*1152%*	64	825	*1189%*	78	895	*1047%*
	WBL	160	109	#156	*43%*	144	#230	*60%*	127	130	*2%*	167	#207	*24%*
	WBT		#1390	#1211	*-13%*	#1700	#1416	*-17%*	#1590	#1284	*-19%*	#1827	#1410	*-23%*
	WBR	185	18	0	*n/a*	33	48	*45%*	72	115	*60%*	108	199	*84%*
	NBL	150	230	#271	*18%*	235	#282	*20%*	222	#254	*14%*	232	#275	*19%*
	NBT/R		79	78	*-1%*	91	95	*4%*	128	140	*9%*	162	181	*12%*
	SBL	215	191	154	*-19%*	250	211	*-16%*	177	134	*-24%*	226	184	*-19%*
	SBT		193	#566	*193%*	254	#574	*126%*	178	#355	*99%*	228	#376	*65%*
	SBR		90	251	*179%*	93	314	*238%*	36	85	*136%*	34	107	*215%*
Indiantown Rd at NB I-95 to EB Off Ramp	EBL	600	n/a	#213	n/a	n/a	#342	n/a	n/a	#364	n/a	n/a	#438	n/a
	EBT		0	386	n/a	0	395	n/a	0	254	n/a	0	260	n/a
	WBT		0	213	n/a	0	216	n/a	0	200	n/a	0	202	n/a
	NBR	1,200	0	#359	n/a	0	#442	n/a	0	#525	n/a	0	#590	n/a

Notes:

1) 95th percentile queue length based on Synchro 9 methodology

2) Build improvements include signalizing the NB-to-EB Off Ramp; adding a 3rd EB through lane west of the off ramp; and adding a 4th EB through lane to Central Blvd

3) Future year traffic operational results are based on revised signal timing splits to eliminate the N-S split phase at Island Way. The existing cycle length remains at 170 seconds.

- 95th percentile volume exceeds capacity; queue may be longer. Queue reported is maximum after two cycles.

7. Proposed Project Concept

7.1 Conceptual Improvement Plan

The Future Build alternative incorporates all the improvements described in Section 1.1 for the Build Alternative plus the following improvements.

i. Reconstruct and signalize the I-95 NB off-ramp to EB SR 706.
ii. Signalize and lengthen EB SR 706 Left-turn storage lane to I-95 NB on-ramp.
iii. Add auxiliary lane on SR 706 from the I-95 NB exit ramp to Island Way.
iv. Re-stripe existing right-turn only lane to a shared thru and right-turn lane from Island Way to Central Boulevard.

These improvements will alleviate congestion and increase storage capacity on SR 706 so that the queues on the I-95 NB exit ramp don't affect I-95 mainline. Depictions of the proposed conceptual improvements are contained in the Appendix E.

7.2 Typical Sections

The existing and conceptual design typical sections for SR 706 eastbound and I-95 northbound exit ramp are provided in the Appendix D.

7.3 Roadway

Plans preparation Manual Chapter 2.1 state that auxiliary lanes for turning, storage and other purposes supplementary to through traffic movement should be the same width as the through lanes. Table 2.1.1 allows 11-foot lanes for facilities with design speeds less than or equal to 45 miles per hour. The conceptual improvements recommend to provide a fourth eastbound 11-foot shared through and right turn lane from east of the SR 706 and Island Way intersection to the SR 706 and Central Blvd intersection. This recommendation will require additional pavement and reduce the existing green area within the FDOT right-of-way. Widening the outside lane on eastbound SR 706 by 12 feet is necessary to add the auxiliary lane from the I-95 northbound off-ramp to the Island Way intersection. The bridge structure that traverses the Loxahatchee River C-18 canal would need to be widened 10 feet to accommodate the auxiliary lane from the I-95 northbound off-ramp intersection to Island Way.

7.4 Vertical & Horizontal Clearances

Horizontal clearance restrictions were identified during the design process of adding a fourth auxiliary lane from the off ramp to the Central Boulevard intersection. These included the width of the existing bridge, existing sidewalk east of the Fairfield Inn and Suites intersection, existing light pole and mast arm.

The SR 706 Bridge over canal C-18 (bridge #930391) will need to be widened and the sidewalk, light pole and mast arm will need to be set back about 10 feet to accommodate the new auxiliary lane.

The concept design included in Appendix E accommodates the bridge widening and sidewalk, light pole, and mast arm relocation.

7.5 Structures

New signal mast arms are necessary to provide signal control for the recommended signalization of the northbound off ramp. The recommended auxiliary lane from the I-95 NB off-ramp to Island Way will require pavement and bridge widening over the C-18 Loxahatchee River canal.

Because of the proposed eastbound intersection improvements at Fairfield inn and Suites, the existing signal mast arm and light pole on the southeast corner are assumed to be replaced/relocated. This is to accommodate additional through lane. The pedestrian signal heads will require relocation to the new mast arms signals.

7.6 Utilities

The recommended improvements will not impact above ground utilities. Impacts to underground utilities, if any, will need to be identified and addressed during the design phase.

7.7 FDOT Standards

The proposed conceptual design follows the current FDOT Design Standards and Plans Preparation Manual (PPM) and the Florida Intersection Design Guide 2015. No variations or exceptions are anticipated for this project.

7.8 Local Plans and Projects

The Scripps Florida - Phase II/Briger Tract Development of Regional Impact (DRI) is a proposed multi-use development on approximately 682 acres in the City of Palm Beach Gardens, Florida. The project site is located immediately east of the Florida's Turnpike, south of Donald Ross Road, and north of Hood Road. It is separated by I-95. The development plan includes a total of 2,600,000 square feet of biotech research and development, 1,200,000 square feet of office, 500,000 square feet of retail, 2,700 residential dwelling units, and a 300-room hotel. Development is proposed to occur in phases with buildout in 2028.

Pursuant to the DRI Assessment Report prepared for the Scripps Florida – Phase II/Briger Tract project in September 2009, it was agreed that the project's owners would financially contribute their proportionate share to signalize and lengthen the eastbound Indiantown Road left-turn lane to northbound I-95. The proportionate share was determined to be $1,000,000.

According to the DRI Assessment Report, the contribution was scheduled to occur at the end of the project's Phase 2, which equates to 2018.

7.9 Project Cost Estimates

Cost estimates were made based on an engineer's probable opinion of cost using current (2016) LRE base costs. The recommended improvements associated with this IOAR are estimated to cost $3,017,893.28. The cost estimate is included in Appendix F. The major cost components are roadway widening, drainage, signing, and signalization.

Table 5: Project Cost Estimate

New alignment for I-95 NB 3 lane off-ramp onto Indiantown Rd. Signalize NB off-ramp.	$569,260.34
Mill and resurface 2-lane Indiantown Rd EB. Widen from 2 lanes to 4 lanes from I-95 bridge to existing I-95 NB off-ramp.	$273,368.02
Mill and resurface 3-lane Indiantown Rd EB. Widen from 3 lanes to 4 lanes from existing I-95 NB off-ramp to beginning of bridge, and from the end of bridge to beginning of the right-turn lane at 168th St.	$261,453.13
Indiantown Rd EB – lengthen the existing left-turn lane 380 feet to I-95 NB on-ramp.	$102,497.29
Mill and resurface 3-lane Indiantown Rd EB. Widen from 3 lanes to 4 lanes from Fairfield Inn and Suites entrance to the beginning of the right-turn lane at Central Blvd intersection.	$364,890.65
Mill and resurface Indiantown Rd EB from beginning of right-turn lane at 168th Street to Fairfield Inn and Suites entrance.	$138,292.91
Mill and resurface Indiantown Rd EB from beginning of the right-turn lane at Central Blvd to Central Blvd intersection.	$81,974.20
Widen bridge 10 feet to the south of Indiantown Rd EB.	$701,439.62
MOT & Mobilization	$468,717.12
Partnering	$6,000.00
Initial Contingency Amount	$50,000.00
Construction Cost	**$3,017,893.28**

7.10 Environmental Impact Review/ETDM Desktop Review

A desktop review of possible environmental impacts was performed by Department on May 13, 2016. The findings from the environmental review indicate that the proposed improvements will not impact land use, air quality, wetlands, water quality, floodplains, endangered or threatened species, wildlife or habitat. Additionally, no project impacts are anticipated to be generated upon coastal barrier resources, and no historical or archaeological sites are located within the project corridor.

During the environmental screening, it was determined that 16 sites exist have been identified as potential sources of contamination and/or designated hazardous waste facilities. The environmental review memorandum is included in Appendix G.

7.11 Coordination

This concept was presented to the FDOT D4 District Interchange Review Coordination team (DIRC) on October 22, 2015, and again on February 25, 2016, with consensus to advance the proposed improvements. The resultant IOAR was submitted for a multi-disciplinary review via the Electronic Review Comments (ERC) system on May 18, 2016. This IOAR, concept design, and Long Range Estimate cost was provided to internal FDOT offices including PLEMO, Design, Structures, Traffic Operations, and Office of Modal Development, as well as Palm Beach County Engineering, for review.

8 Benefit Cost Analysis

Cost analysis was based on current FDOT Long Range Estimate (LRE) base costs. The construction cost for the improvements are projected to be approximately $3.0 million. The LRE is included in the Appendix H.

To estimate potential operational benefits of the proposed improvements as described in section 7.1, the following approach was established.

- Improvements were considered in the operational Benefit-Cost analyses and Net Present Value (NPV) analyses if those improvements were deemed to have a reduction in delay and queue lengths compared to the NoBuild condition. If there was no direct reduction between the proposed improvement and the NoBuild condition, a benefit-cost analyses was not performed.

A quantitative benefit-cost analysis was performed to assess the value of reducing delay and congestion at the intersection of SR 706 and Island Way. The cost of AM and PM peak hour delay calculated for the intersection under the 2030 No Build Condition and the Build Condition was compared. Results indicate that the travel time savings of the recommended Build Condition would save $69.8 million by 2030. This is based on a linear estimate of the monetized travel time value (TTV) ranging from $15.98 in 2020 (opening year) to $18.79 in 2030 (design year) per person per vehicle-hour for South Florida commuters as determined by the Southeast Florida Road and Transit User Cost Study (SEFRTUC). The total construction cost leading up to year 2030 was determined by using an inflation rate of 4% compounding over the course of 10 years from opening year (2020) to design year (2030) resulting in a cost of nearly $4.1 million. Given that the estimated cost of the project is $4.1 million, which includes construction, maintenance of traffic, mobilization, and contingency, the monetary benefits of the Build Condition exceed the cost of the improvements.

Overall, the recommended improvements will facilitate the efficient flow of vehicles through the SR 706 intersections from I-95 to Central Boulevard, and improve operations within the study area for the short-term future.

A summary of the benefit-cost analyses is included in the Appendix G. The estimated benefit-cost ratio is 17.05 and NPV is approximately $69.8 Million.

9 Conclusions and Recommendations

Extensive eastbound queues were observed at the northbound exit ramp termini intersection. In addition, heavy traffic volumes during peak hours were noticed at the SR 706 intersections from the I-95 northbound-to-eastbound exit ramp to Central Boulevard.

This IOAR documents proposed improvements that can fit within existing right-of-way and can be quickly implemented. The recommended improvements were developed to improve mobility at the I-95 northbound exit ramp by reducing congestion, queues, and excessive delays. A long range cost estimate and documentation of the project's benefits are included. The three recommended improvements at the SR 706 intersections at I-95 and Island Way are:

i. Reconstruct and signalize the I-95 NB off ramp at SR 706 to provide three exclusive right-turn lanes. These three right-turn lanes would be signalized at the ramp termini intersection, and would improve vehicular storage on the exit ramps while decreasing delay for vehicles traveling through the intersection.

ii. Signalize the EB SR 706 to I-95 NB Left-Turn on ramp movement and lengthen the left-turn lane to 600 feet. This would improve vehicular storage on turn lane while decreasing delay for vehicles traveling through the intersection. Scripps Florida Phase II/Briger Tract DRI has this improvement as a condition of approval where the development contributed their financial proportionate share towards the construction of the improvement.

iii. Add auxiliary lane on SR 706 from the I-95 NB-to EB exit ramp to Island Way. This would improve vehicular storage on eastbound through while decreasing delay for vehicles traveling through the intersection.

iv. Re stripe existing right turn only lane to a shared thru and right turn lane from Island Way to Central Boulevard. This would improve vehicular storage on eastbound through movement while decreasing delay for vehicles traveling through the intersection.

v. Consider adding signs along the I-95 northbound-to-eastbound off-ramp to inform drivers of the proper lane position for their destination as they approach Island Way. Such signs will minimize lane changes on eastbound Indiantown Road approaching Island Way and improve traffic flow. This may be addressed during the design phase of the project.

Overall, the recommended improvements will reduce vehicular delay and queue lengths on the I-95 northbound exit ramp termini intersection, as well as on SR 706. Motorists will be safely stored in the respective right-turn storage areas and their central impact upon I-95 and SR 706 mainline operations will be minimized. The improvement also does not address the root cause of the EB queues arriving at Island Way, and would only serve as a temporary solution.

Table 6: Recommended Turn Storage Lane – 2030 AM Build

Intersection	Approach	Movement	AM Peak Hour			
			Existing storage per lane (feet)	95th percentile Queue Per Lane (feet)	Queue in Excess of Storage Per Lane (feet)	Recommended storage per lane (feet)
SR 706 & Island way	EB	Left	370	336	-	400
		Through	-	1352	-	-
		Right	300	1352	-	-
	WB	Left	160	230	70	-
		Through	-	1416	-	-
		Right	185	48	-	-
	NB	Left	150	282	132	-
		Through	-	95	-	-
	SB	Left	215	211	-	-
		Through	-	574	-	-
		Right	-	314	-	-
SR 706 at NB I-95 to EB off Ramp	EB	Left	225	342	117	600
		Through	-	667	-	-
	WB	Through	-	216	-	-
	NB	Right	-	442	-	600

Table 7: Recommended Turn Storage Lane – 2030 PM Build

Intersection	Approach	Movement	PM Peak Hour			
			Existing storage per lane (feet)	95th percentile Queue Per Lane (feet)	Queue in Excess of Storage Per Lane (feet)	Recommended storage per lane (feet)
SR 706 & Island way	EB	Left	370	400	30	400
		Through	-	895	-	-
		Right	300	895	-	-
	WB	Left	160	207	47	-
		Through	-	1410	-	-
		Right	185	199	14	-
	NB	Left	150	275	125	-
		Through	-	181	-	-
	SB	Left	215	184	-	-
		Through	-	376	-	-
		Right	-	107	-	-
SR 706 at NB I-95 to EB off Ramp	EB	Left	225	438	213	600
		Through	-	374	-	-
	WB	Through	-	202	-	-
	NB	Right	-	590	-	600

9.1 Schedule

This concept is proposed to be funded in the Work Program for the next phases of design as early as Fiscal Year 2017 and construction as early as Fiscal Year 2018 or 2019.

9.2 Funding

Funding for the concepts proposed herein for design and construction may qualify for SIS funds, as well as other sources including local. In addition, proportionate share money for turn lane improvements at Indiantown Road and I-95 was identified in the Development Order for the Scripps Florida Phase II/Briger Tract DRI.

10 Assessment of FHWA's Policy on Access to Interstate System

The FHWA's Policy on Access to the Interstate System provides the requirements for the justification and documentation necessary to substantiate any proposed changes in access to the Interstate System. The policy is published under the Federal Register, Volume 74, Number 165, dated August 27, 2009. The responses provided herein for each of the eight policy statements demonstrate compliance with these requirements and justification for the proposed interchange improvements at I-95 and SR 706 in Jupiter, Florida.

Policy:

It is in the national interest to preserve and enhance the Interstate System to meet the needs of the 21st Century by assuring that it provides the highest level of service in terms of safety and mobility. Full control of access along the Interstate mainline and ramps, along with control of access on the crossroad at interchanges, is critical to providing such service. Therefore, FHWA's decision to approve new or revised access points to the Interstate System must be supported by substantiated information justifying and documenting that decision. The FHWA's decision to approve a request is dependent on the proposal satisfying and documenting the following requirements.

Considerations and Requirements:

1. ***The need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control, modifying ramp terminals and intersections, adding turn bays or lengthening storage) to satisfactorily accommodate the design-year traffic demands (23 CFR 625.2(a)).***

   The IOAR was developed to support the design-year traffic demands at the I-95 at SR 706 interchange. Eastbound queues on Indiantown Road at Island Way are projected to extend upstream into the I-95 interchange during the design year. These queues impact the I-95

northbound off-ramp to eastbound Indiantown Road since they spillback beyond the present day merge and block traffic flow from the off-ramp. The IOAR is the culmination of a traffic analysis process that examined numerous design concepts for improvements at the interchange and within the interchange influence area to meet the future traffic forecast and the noted operational deficiencies. The recommended interchange improvements contained in the report would enhance access and regional mobility. This need cannot be adequately satisfied by other network improvements.

The IOAR performed an operations analysis of the No Build Alternative. The analysis demonstrated that the No Build Alternative will not provide acceptable traffic operations to adequately serve the future transportation demand. In the future year (2030) analysis, the No Build Alternative would produce operational failures at intersections within the interchange influence area that would impact I-95 northbound on- and off-ramp movements. At the immediately downstream intersection of SR 706 and Island Way, eastbound traffic will operate at Level of Service F with vehicular delays of approximately 107 seconds. Eastbound queues on SR 706 would form that exceed 2,000 feet, and would effectively block motorists from safely exiting from I-95 to eastbound SR 706.

By signalizing the I-95 northbound off-ramp to eastbound Indiantown Road and providing improvements to eastbound Indiantown Road between I-95 and Central Boulevard, the IOAR demonstrated that the Build Alternative will produce considerably better traffic operations and mobility within the study area. Under the Build Alternative, eastbound queues at the Island Way intersection do not extend upstream to the I-95 interchange. The proposed signalized I-95 northbound-to-eastbound SR 706 off-ramp would be improved to store the future demand while maintaining acceptable levels of service for the intersection.

2. ***The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (such as ramp metering, mass transit, and HOV facilities), geometric design, and alternative improvements to the Interstate without the proposed change(s) in access (23 CFR 625.2(a)).***

Transportation system management techniques are inadequate to address the traffic operational deficiencies within the interchange influence area. Since the traffic volume discharged from the I-95 at SR 706 interchange is free flow, the downstream intersection of SR 706 and Island Way serves as a bottleneck for eastbound flow. The insufficient intersection capacity at this intersection is causing severe congestion and queues that impact the discharged free flow volume from the interchange.

The current transit system is limited. Since land uses within the area lack concentrated employment centers, there are no defined termini or corridor trip destinations worthy of consideration for transit improvements. Further, there is no foreseeable demand for these types of services.

Overall, traffic management and alternative mode strategies would not be effective in fully addressing the mobility needs at the I-95 and SR 706 interchange and its influence area.

3. ***An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).***

   The operational analysis conducted for the IOAR confirmed that the proposed new interchange improvements and improvements to SR 706 and Island Way are not expected to have any adverse impacts on safety and operations on the interstate facility (I-95). On the contrary, the improvements are expected to alleviate congestion and queues to improve operations and safety within the interchange influence area. Traffic operations for the Build Alternative for the proposed signalized I-95 northbound off-ramp to eastbound SR 706 indicate the overall intersection will operate at acceptable levels of service during all time periods. While the proposed signalized eastbound-to-northbound left-turn movement will operate at Level of Service X, the storage lane will be lengthened to accommodate design year queues.

   The intersection of SR 706 and Island Way will operate at Level of Service F with delays of 112.6 seconds per vehicle, which is about 20% less than what is expected under the No Build condition. In the Build Alternative, queues are significantly reduced, such that the discharge of traffic from I-95 to SR 706 is not impeded during the peak hours. Eastbound queues on SR 706 will be reduced 35% to approximately 1,350 feet if the improvements are constructed. These operational benefits are balanced against the additional delay accrued on the minor side street of Island Way. At the intersection, delay on Island Way is allowed to increase so the primary, critical movements along Indiantown Road will function with reduced delay. This reduces congestion and queues along Indiantown Road and protects the operational integrity of the interchange.

   The IOAR demonstrated that the Build Alternative will produce considerably better traffic operations and mobility within the study area. Under the Build Alternative, eastbound queues within the interchange influence area do not extend upstream to the I-95 interchange. The proposed signalized I-95 northbound-to-eastbound SR 706 off-ramp would be improved to store the future demand while maintaining acceptable levels of service for the intersection.

In addition, the proposed interchange improvements will enhance regional mobility by metering the discharge of traffic onto eastbound SR 706. An orderly progression of traffic flow from I-95 to eastbound SR 706 would proceed along the arterial corridor, which in turn ensures safe interchange operations by reducing queues that block I-95 interchange ramps.

The preliminary design plans indicate that the Build Alternative can be designed and implemented in accordance with all applicable safety standards, as dictated by FDOT and FHWA Highway Design Standards. The proposed project will not introduce any adverse safety conditions along I-95.

4. ***The proposed access connects to a public road only and will provide for all traffic movements. Less than ``full interchanges'' may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)).***

   The IOAR at I-95 and SR 706 will continue to provide and maintain all connections to/from both the interstate travel lanes. The proposed improvements only involve the traffic control mechanism, and will serve all movements between the two facilities. The improvements will be designed using the latest design criteria and safety techniques which will meet or exceed current FDOT standards and FHWA Design Standards for Interstate Systems. All existing and proposed connections involve public roads only.

5. ***The proposal considers and is consistent with local and regional land use and transportation plans. Prior to receiving final approval, all requests for new or revised access must be included in an adopted Metropolitan Transportation Plan, in the adopted Statewide or Metropolitan Transportation Improvement Program (STIP or TIP), and the Congestion Management Process within transportation management areas, as appropriate, and as specified in 23 CFR part 450, and the transportation conformity requirements of 40 CFR parts 51 and 93.***

   The proposed interchange improvements are consistent with the development plans that have been adopted by the Palm Beach County Metropolitan Planning Organization (MPO) and is contained in 2040 Palm Beach County MPO Long Range Transportation Plan (LRTP). The proposed improvements are also consistent with the TIP/STIP, and have been included in the Statewide Long Range Transportation Plan.

   The proposed improvements to SR 706 are consistent with congestion management objectives as outlined in the Palm Beach County MPO's 2040 LRTP, where reducing congestion and improving signalized intersection operations along the SR 706 corridor were identified.

6. ***In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with recommendations that address all of the proposed and desired access changes within the context of a longer-range system or network plan (23 U.S.C. 109(d), 23 CFR 625.2(a), 655.603(d), and 771.111).***

   The IOAR addresses the existing and future interchange needs along I-95 within the study area. The proposed interchange improvements at I-95 and SR 706 were developed, in part, based upon a comprehensive I-95 corridor master plan study and I-95 Project Development and Environment (PD&E) study. These were prepared consistent with the long-term vision for the corridor.

   There are no additional planned interstate access points within the study area. Further, the interchange improvement plans at I-95 and SR 706 will not affect potential improvements to adjacent interchanges.

7. ***When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements (23 CFR 625.2(a) and 655.603(d)). The request must describe the commitments agreed upon to assure adequate collection and dispersion of the traffic resulting from the development with the adjoining local street network and Interstate access point (23 CFR 625.2(a) and 655.603(d)).***

   The I-95 at SR 706 interchange improvements are proposed to primarily serve regional mobility needs, and is not being driven by a proposed development or land use change. Regional mobility needs have steadily increased due to population and employment growth in the area and the resulting congestion on other regional roadways. No agreements regarding the completion of connecting facilities or other funding provisions affect the implementation of this project.

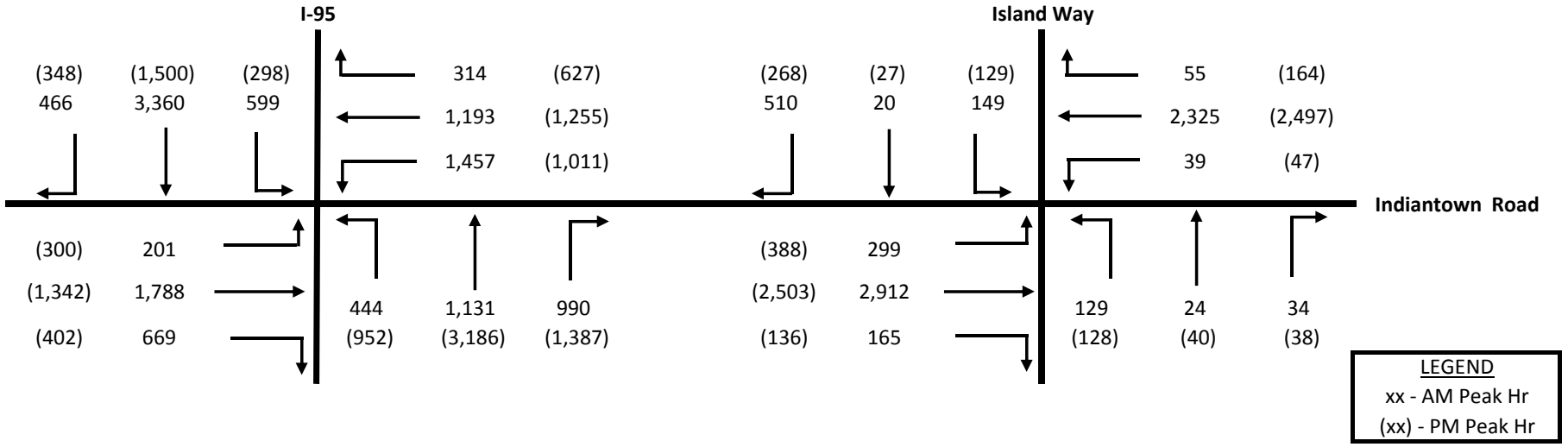
8. ***The proposal can be expected to be included as an alternative in the required environmental evaluation, review and processing. The proposal should include supporting information and current status of the environmental processing (23 CFR 771.111).***

   The proposed interchange improvements at I-95 and SR 706 were developed, in part, based upon a comprehensive I-95 corridor master plan study and I-95 Project Development and Environment (PD&E) study from south of SR 706 to SW High Meadows Avenue. To date, no significant and adverse environmental impacts have been identified from a planning and environmental perspective concerning the I-95 at SR 706 interchange.

Appendix A
Existing Data

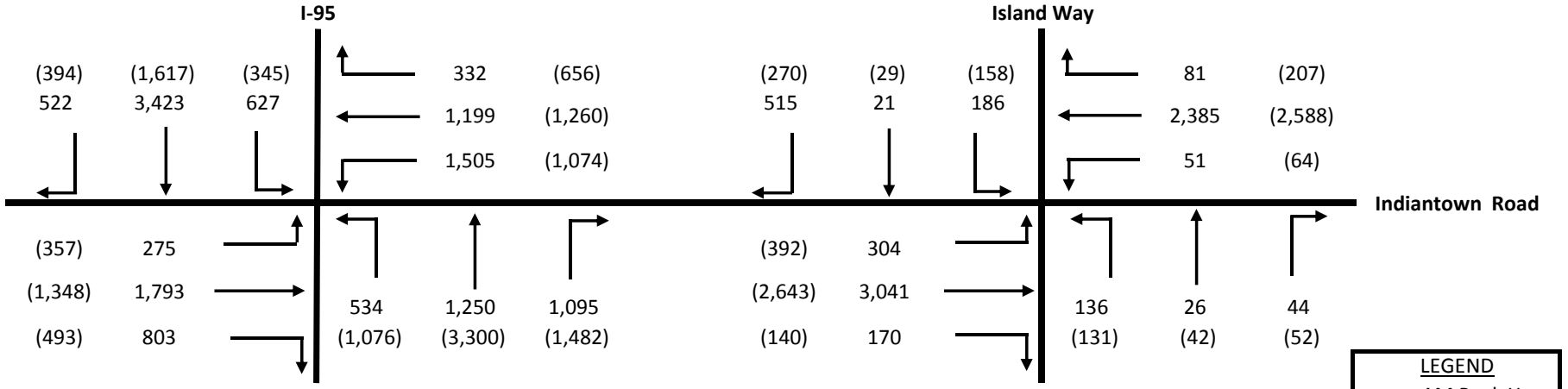
INDIANTOWN ROAD AT I-95
CONCEPT DEVELOPMENT- TRAVEL DEMAND FORECAST - Pg 1

2015



LEGEND
xx - AM Peak Hr
(xx) - PM Peak Hr

2020



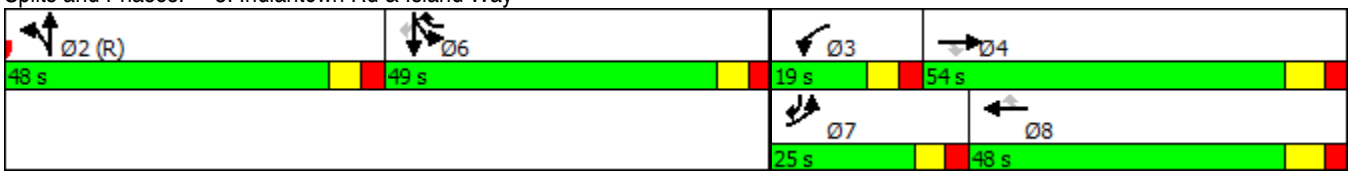
LEGEND
xx - AM Peak Hr
(xx) - PM Peak Hr

Appendix B
Traffic Operational Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	290	2600	149	57	2370	84	126	33	223	26	468
Future Volume (vph)	290	2600	149	57	2370	84	126	33	223	26	468
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA	Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2	6	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	6	2	2	6	6	7
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	6.0	6.0	6.0	6.0	6.0	4.0
Minimum Split (s)	11.0	31.0	31.0	11.0	41.0	45.0	43.0	43.0	45.0	45.0	11.0
Total Split (s)	25.0	54.0	54.0	19.0	48.0	49.0	48.0	48.0	49.0	49.0	25.0
Total Split (%)	14.7%	31.8%	31.8%	11.2%	28.2%	28.8%	28.2%	28.2%	28.8%	28.8%	14.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes
Recall Mode	None	Max	Max	None	Max	None	C-Min	C-Min	None	None	None
Act Effct Green (s)	21.4	95.6	95.6	11.1	82.6	102.5	18.2	18.2	18.9	18.9	47.2
Actuated g/C Ratio	0.13	0.56	0.56	0.07	0.49	0.60	0.11	0.11	0.11	0.11	0.28
v/c Ratio	0.71	0.96	0.17	0.52	1.01	0.09	0.70	0.40	0.69	0.70	0.44
Control Delay	80.2	45.2	7.8	92.0	62.6	2.8	92.4	42.4	91.1	91.8	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.2	45.2	7.8	92.0	62.6	2.8	92.4	42.4	91.1	91.8	5.0
LOS	F	D	A	F	E	A	F	D	F	F	A
Approach Delay		46.7			61.2			72.5		35.0	
Approach LOS		D			E			E		C	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 18 (11%), Referenced to phase 2:NBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 51.9	Intersection LOS: D
Intersection Capacity Utilization 87.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Indiantown Rd & Island Way

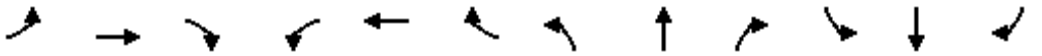


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	305	2737	157	60	2495	88	133	88	129	133	493
v/c Ratio	0.71	0.96	0.17	0.52	1.01	0.09	0.70	0.40	0.69	0.70	0.44
Control Delay	80.2	45.2	7.8	92.0	62.6	2.8	92.4	42.4	91.1	91.8	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.2	45.2	7.8	92.0	62.6	2.8	92.4	42.4	91.1	91.8	5.0
Queue Length 50th (ft)	170	1071	21	66	~1066	4	146	48	148	153	6
Queue Length 95th (ft)	217	#1439	75	118	#1387	18	216	105	221	225	50
Internal Link Dist (ft)		636			2400			510		766	
Turn Bay Length (ft)	350		300	160		185	175		220		300
Base Capacity (vph)	440	2860	941	133	2470	1187	426	440	415	420	1125
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.96	0.17	0.45	1.01	0.07	0.31	0.20	0.31	0.32	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	2600	149	57	2370	84	126	33	50	223	26	468
Future Volume (vph)	290	2600	149	57	2370	84	126	33	50	223	26	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00		0.95	0.95	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	1770	1694		1681	1702	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	1770	1694		1681	1702	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	305	2737	157	60	2495	88	133	35	53	235	27	493
RTOR Reduction (vph)	0	0	51	0	0	28	0	38	0	0	0	365
Lane Group Flow (vph)	305	2737	106	60	2495	60	133	50	0	129	133	128
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA		Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2		6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	21.4	95.6	95.6	9.7	83.9	102.8	16.8	16.8		18.9	18.9	40.3
Effective Green, g (s)	21.4	95.6	95.6	9.7	83.9	102.8	16.8	16.8		18.9	18.9	40.3
Actuated g/C Ratio	0.13	0.56	0.56	0.06	0.49	0.60	0.10	0.10		0.11	0.11	0.24
Clearance Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	432	2859	890	100	2509	957	174	167		186	189	775
v/s Ratio Prot	c0.09	c0.54		0.03	c0.49	0.01	c0.08	0.03		0.08	c0.08	0.02
v/s Ratio Perm			0.07			0.03						0.03
v/c Ratio	0.71	0.96	0.12	0.60	0.99	0.06	0.76	0.30		0.69	0.70	0.17
Uniform Delay, d1	71.3	35.3	17.5	78.3	42.8	13.8	74.7	71.1		72.8	72.9	51.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.2	9.5	0.3	9.3	16.7	0.0	26.8	4.6		10.7	11.3	0.1
Delay (s)	76.5	44.7	17.7	87.6	59.5	13.8	101.5	75.7		83.4	84.1	51.6
Level of Service	E	D	B	F	E	B	F	E		F	F	D
Approach Delay (s)		46.4			58.6			91.2			62.8	
Approach LOS		D			E			F			E	

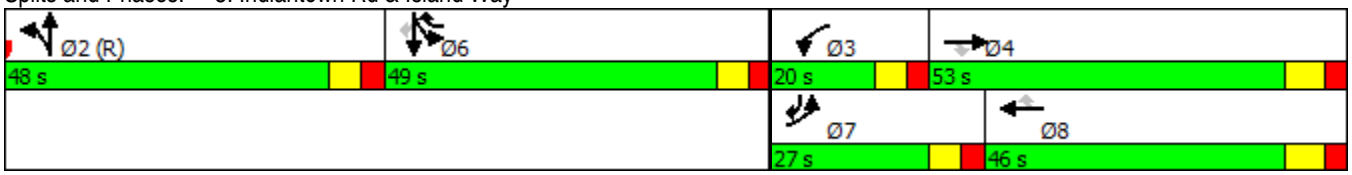
Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	29.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	390	2493	132	48	2502	170	127	44	134	27	265
Future Volume (vph)	390	2493	132	48	2502	170	127	44	134	27	265
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA	Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2	6	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	6	2	2	6	6	7
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	6.0	6.0	6.0	6.0	6.0	4.0
Minimum Split (s)	11.0	31.0	31.0	11.0	41.0	45.0	43.0	43.0	45.0	45.0	11.0
Total Split (s)	27.0	53.0	53.0	20.0	46.0	49.0	48.0	48.0	49.0	49.0	27.0
Total Split (%)	15.9%	31.2%	31.2%	11.8%	27.1%	28.8%	28.2%	28.2%	28.8%	28.8%	15.9%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes
Recall Mode	None	Max	Max	None	Max	None	C-Min	C-Min	None	None	None
Act Effct Green (s)	29.0	101.0	101.0	10.3	79.7	94.8	18.3	18.3	14.1	14.1	50.1
Actuated g/C Ratio	0.17	0.59	0.59	0.06	0.47	0.56	0.11	0.11	0.08	0.08	0.29
v/c Ratio	0.70	0.87	0.14	0.48	1.11	0.20	0.71	0.42	0.60	0.61	0.27
Control Delay	73.5	34.8	5.4	91.1	95.5	6.6	92.4	55.5	91.7	92.3	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.5	34.8	5.4	91.1	95.5	6.6	92.4	55.5	91.7	92.3	4.5
LOS	E	C	A	F	F	A	F	E	F	F	A
Approach Delay		38.5			89.9			77.8		37.5	
Approach LOS		D			F			E		D	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 18 (11%), Referenced to phase 2:NBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 61.7	Intersection LOS: E
Intersection Capacity Utilization 91.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Indiantown Rd & Island Way

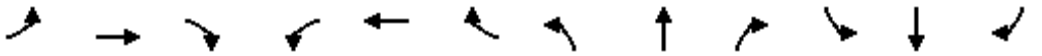


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	411	2624	139	51	2634	179	134	88	83	86	279
v/c Ratio	0.70	0.87	0.14	0.48	1.11	0.20	0.71	0.42	0.60	0.61	0.27
Control Delay	73.5	34.8	5.4	91.1	95.5	6.6	92.4	55.5	91.7	92.3	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.5	34.8	5.4	91.1	95.5	6.6	92.4	55.5	91.7	92.3	4.5
Queue Length 50th (ft)	226	904	11	56	~1208	29	147	66	95	98	0
Queue Length 95th (ft)	282	#1257	54	104	#1487	56	218	123	156	160	36
Internal Link Dist (ft)		636			2400			510		766	
Turn Bay Length (ft)	350		300	160		185	175		220		300
Base Capacity (vph)	584	3021	987	137	2383	1162	426	435	415	422	1017
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.87	0.14	0.37	1.11	0.15	0.31	0.20	0.20	0.20	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

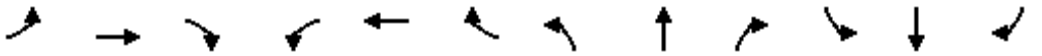
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	2493	132	48	2502	170	127	44	40	134	27	265
Future Volume (vph)	390	2493	132	48	2502	170	127	44	40	134	27	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00		0.95	0.95	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	1770	1729		1681	1712	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	1770	1729		1681	1712	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	411	2624	139	51	2634	179	134	46	42	141	28	279
RTOR Reduction (vph)	0	0	47	0	0	31	0	23	0	0	0	208
Lane Group Flow (vph)	411	2624	92	51	2634	148	134	65	0	83	86	71
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA		Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2		6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	29.0	101.0	101.0	9.0	81.0	95.1	16.9	16.9		14.1	14.1	43.1
Effective Green, g (s)	29.0	101.0	101.0	9.0	81.0	95.1	16.9	16.9		14.1	14.1	43.1
Actuated g/C Ratio	0.17	0.59	0.59	0.05	0.48	0.56	0.10	0.10		0.08	0.08	0.25
Clearance Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	585	3021	940	93	2422	885	175	171		139	141	821
v/s Ratio Prot	c0.12	c0.52		0.03	c0.52	0.01	c0.08	0.04		0.05	c0.05	0.01
v/s Ratio Perm			0.06			0.08						0.01
v/c Ratio	0.70	0.87	0.10	0.55	1.09	0.17	0.77	0.38		0.60	0.61	0.09
Uniform Delay, d1	66.4	28.9	14.9	78.5	44.5	18.2	74.6	71.7		75.2	75.3	48.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.8	3.7	0.2	6.5	47.1	0.1	26.8	6.4		6.7	7.3	0.0
Delay (s)	70.3	32.6	15.1	85.0	91.6	18.3	101.4	78.1		81.9	82.6	48.5
Level of Service	E	C	B	F	F	B	F	E		F	F	D
Approach Delay (s)		36.7			86.9			92.2			61.2	
Approach LOS		D			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	61.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	29.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	304	3041	170	51	2385	81	136	26	44	186	21	515
Future Volume (vph)	304	3041	170	51	2385	81	136	26	44	186	21	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00		0.95	0.95	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	1770	1687		1681	1702	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	1770	1687		1681	1702	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	320	3201	179	54	2511	85	143	27	46	196	22	542
RTOR Reduction (vph)	0	0	49	0	0	29	0	41	0	0	0	349
Lane Group Flow (vph)	320	3201	130	54	2511	56	143	32	0	108	110	193
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA		Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2		6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	22.6	97.5	97.5	9.2	84.1	100.7	17.7	17.7		16.6	16.6	39.2
Effective Green, g (s)	22.6	97.5	97.5	9.2	84.1	100.7	17.7	17.7		16.6	16.6	39.2
Actuated g/C Ratio	0.13	0.57	0.57	0.05	0.49	0.59	0.10	0.10		0.10	0.10	0.23
Clearance Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	456	2916	907	95	2515	937	184	175		164	166	757
v/s Ratio Prot	c0.09	c0.63		0.03	0.49	0.01	c0.08	0.02		0.06	c0.06	0.03
v/s Ratio Perm			0.08			0.03						0.04
v/c Ratio	0.70	1.10	0.14	0.57	1.00	0.06	0.78	0.18		0.66	0.66	0.26
Uniform Delay, d1	70.5	36.2	16.8	78.5	42.9	14.6	74.2	69.5		74.0	74.0	53.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.8	50.1	0.3	7.6	17.6	0.0	26.9	2.3		9.2	9.5	0.2
Delay (s)	75.3	86.3	17.2	86.1	60.5	14.7	101.1	71.8		83.2	83.5	53.6
Level of Service	E	F	B	F	E	B	F	E		F	F	D
Approach Delay (s)		82.0			59.5			91.2			62.2	
Approach LOS		F			E			F			E	

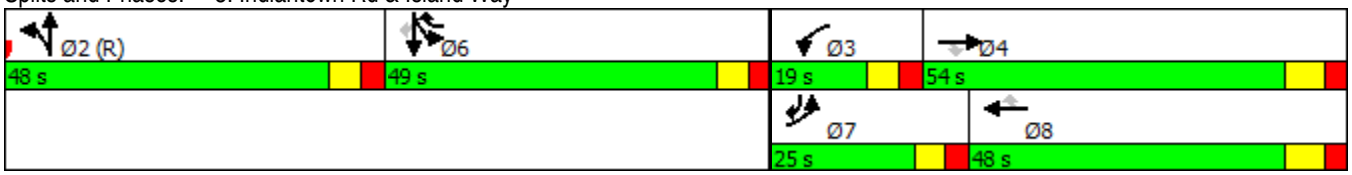
Intersection Summary			
HCM 2000 Control Delay	72.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	29.0
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	304	3041	170	51	2385	81	136	26	186	21	515
Future Volume (vph)	304	3041	170	51	2385	81	136	26	186	21	515
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA	Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2	6	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	6	2	2	6	6	7
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	6.0	6.0	6.0	6.0	6.0	4.0
Minimum Split (s)	11.0	31.0	31.0	11.0	41.0	45.0	43.0	43.0	45.0	45.0	11.0
Total Split (s)	25.0	54.0	54.0	19.0	48.0	49.0	48.0	48.0	49.0	49.0	25.0
Total Split (%)	14.7%	31.8%	31.8%	11.2%	28.2%	28.8%	28.2%	28.2%	28.8%	28.8%	14.7%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes
Recall Mode	None	Max	Max	None	Max	None	C-Min	C-Min	None	None	None
Act Effct Green (s)	22.6	97.5	97.5	10.5	82.7	100.3	19.1	19.1	16.6	16.6	46.2
Actuated g/C Ratio	0.13	0.57	0.57	0.06	0.49	0.59	0.11	0.11	0.10	0.10	0.27
v/c Ratio	0.70	1.10	0.19	0.50	1.02	0.09	0.72	0.32	0.66	0.66	0.50
Control Delay	78.7	84.3	8.8	91.5	63.8	2.8	92.2	32.0	92.1	92.1	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.7	84.3	8.8	91.5	63.8	2.8	92.2	32.0	92.1	92.1	9.6
LOS	E	F	A	F	E	A	F	C	F	F	A
Approach Delay		80.2			62.4			71.9		33.2	
Approach LOS		F			E			E		C	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 18 (11%), Referenced to phase 2:NBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 68.7	Intersection LOS: E
Intersection Capacity Utilization 94.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Indiantown Rd & Island Way

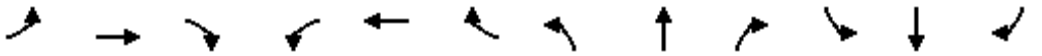


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	320	3201	179	54	2511	85	143	73	108	110	542
v/c Ratio	0.70	1.10	0.19	0.50	1.02	0.09	0.72	0.32	0.66	0.66	0.50
Control Delay	78.7	84.3	8.8	91.5	63.8	2.8	92.2	32.0	92.1	92.1	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.7	84.3	8.8	91.5	63.8	2.8	92.2	32.0	92.1	92.1	9.6
Queue Length 50th (ft)	178	~1504	31	59	~1077	3	157	28	124	127	42
Queue Length 95th (ft)	227	#1786	92	109	#1390	18	230	79	191	193	90
Internal Link Dist (ft)		636			2400			510		766	
Turn Bay Length (ft)	350		300	160		185	175		220		300
Base Capacity (vph)	461	2916	957	130	2473	1187	426	441	415	420	1090
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	1.10	0.19	0.42	1.02	0.07	0.34	0.17	0.26	0.26	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	392	2643	140	64	2588	207	131	42	52	158	29	270
Future Volume (vph)	392	2643	140	64	2588	207	131	42	52	158	29	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00		0.95	0.95	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	1770	1708		1681	1711	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	1770	1708		1681	1711	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	413	2782	147	67	2724	218	138	44	55	166	31	284
RTOR Reduction (vph)	0	0	51	0	0	33	0	31	0	0	0	209
Lane Group Flow (vph)	413	2782	96	67	2724	185	138	68	0	98	99	75
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA		Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2		6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	29.2	94.9	94.9	11.8	77.5	93.2	18.6	18.6		15.7	15.7	44.9
Effective Green, g (s)	29.2	94.9	94.9	11.8	77.5	93.2	18.6	18.6		15.7	15.7	44.9
Actuated g/C Ratio	0.17	0.56	0.56	0.07	0.46	0.55	0.11	0.11		0.09	0.09	0.26
Clearance Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	589	2838	883	122	2318	867	193	186		155	158	850
v/s Ratio Prot	c0.12	c0.55		0.04	c0.54	0.02	c0.08	0.04		c0.06	0.06	0.02
v/s Ratio Perm			0.06			0.10						0.01
v/c Ratio	0.70	0.98	0.11	0.55	1.18	0.21	0.72	0.36		0.63	0.63	0.09
Uniform Delay, d1	66.3	36.6	17.7	76.5	46.2	19.6	73.1	70.2		74.4	74.3	47.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.8	12.9	0.2	5.0	83.7	0.1	20.2	5.5		8.1	7.5	0.0
Delay (s)	70.1	49.5	17.9	81.5	130.0	19.8	93.4	75.7		82.5	81.9	47.2
Level of Service	E	D	B	F	F	B	F	E		F	F	D
Approach Delay (s)		50.7			120.9			86.0			61.5	
Approach LOS		D			F			F			E	

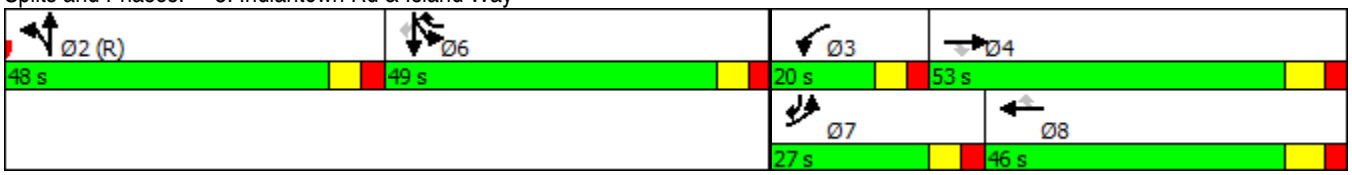
Intersection Summary			
HCM 2000 Control Delay	82.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	29.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	392	2643	140	64	2588	207	131	42	158	29	270
Future Volume (vph)	392	2643	140	64	2588	207	131	42	158	29	270
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA	Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2	6	6	7
Permitted Phases			4			8					6
Detector Phase	7	4	4	3	8	6	2	2	6	6	7
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	6.0	6.0	6.0	6.0	6.0	4.0
Minimum Split (s)	11.0	31.0	31.0	11.0	41.0	45.0	43.0	43.0	45.0	45.0	11.0
Total Split (s)	27.0	53.0	53.0	20.0	46.0	49.0	48.0	48.0	49.0	49.0	27.0
Total Split (%)	15.9%	31.2%	31.2%	11.8%	27.1%	28.8%	28.2%	28.2%	28.8%	28.8%	15.9%
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes
Recall Mode	None	Max	Max	None	Max	None	C-Min	C-Min	None	None	None
Act Effct Green (s)	29.2	94.9	94.9	11.8	77.5	94.2	18.6	18.6	15.7	15.7	51.9
Actuated g/C Ratio	0.17	0.56	0.56	0.07	0.46	0.55	0.11	0.11	0.09	0.09	0.31
v/c Ratio	0.70	0.98	0.16	0.55	1.18	0.24	0.72	0.45	0.64	0.63	0.27
Control Delay	73.1	48.9	6.6	92.3	124.1	7.5	92.4	51.0	91.7	91.1	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.1	48.9	6.6	92.3	124.1	7.5	92.4	51.0	91.7	91.1	4.3
LOS	E	D	A	F	F	A	F	D	F	F	A
Approach Delay		50.0			114.9			75.1		40.0	
Approach LOS		D			F			E		D	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 18 (11%), Referenced to phase 2:NBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 77.8	Intersection LOS: E
Intersection Capacity Utilization 93.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Indiantown Rd & Island Way

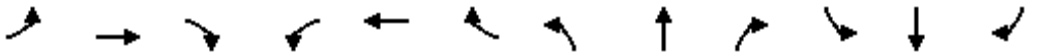


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	413	2782	147	67	2724	218	138	99	98	99	284
v/c Ratio	0.70	0.98	0.16	0.55	1.18	0.24	0.72	0.45	0.64	0.63	0.27
Control Delay	73.1	48.9	6.6	92.3	124.1	7.5	92.4	51.0	91.7	91.1	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.1	48.9	6.6	92.3	124.1	7.5	92.4	51.0	91.7	91.1	4.3
Queue Length 50th (ft)	227	1073	15	74	~1308	40	151	67	112	114	0
Queue Length 95th (ft)	283	#1442	64	127	#1590	72	222	128	177	178	36
Internal Link Dist (ft)		636			2400			510		766	
Turn Bay Length (ft)	350		300	160		185	175		220		300
Base Capacity (vph)	590	2839	935	143	2318	1143	426	438	415	422	1047
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.98	0.16	0.47	1.18	0.19	0.32	0.23	0.24	0.23	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

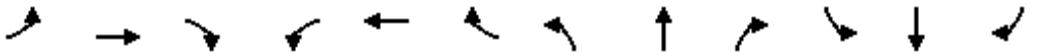
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	3222	174	75	2637	122	141	28	64	269	25	520
Future Volume (vph)	308	3222	174	75	2637	122	141	28	64	269	25	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00		0.95	0.95	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	1770	1668		1681	1699	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	1770	1668		1681	1699	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	324	3392	183	79	2776	128	148	29	67	283	26	547
RTOR Reduction (vph)	0	0	57	0	0	30	0	57	0	0	0	326
Lane Group Flow (vph)	324	3392	126	79	2776	98	148	39	0	153	156	221
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA		Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2		6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	22.9	86.9	86.9	13.0	77.0	98.5	19.6	19.6		21.5	21.5	44.4
Effective Green, g (s)	22.9	86.9	86.9	13.0	77.0	98.5	19.6	19.6		21.5	21.5	44.4
Actuated g/C Ratio	0.13	0.51	0.51	0.08	0.45	0.58	0.12	0.12		0.13	0.13	0.26
Clearance Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	462	2599	809	135	2303	917	204	192		212	214	842
v/s Ratio Prot	c0.09	c0.67		0.04	0.55	0.01	c0.08	0.02		0.09	c0.09	0.04
v/s Ratio Perm			0.08			0.05						0.04
v/c Ratio	0.70	1.31	0.16	0.59	1.21	0.11	0.73	0.21		0.72	0.73	0.26
Uniform Delay, d1	70.3	41.5	22.1	75.9	46.5	16.0	72.6	68.1		71.4	71.4	49.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.8	140.2	0.4	6.3	96.8	0.1	20.1	2.4		11.5	11.7	0.2
Delay (s)	75.1	181.8	22.5	82.2	143.3	16.1	92.7	70.5		82.8	83.2	50.0
Level of Service	E	F	C	F	F	B	F	E		F	F	D
Approach Delay (s)		165.4			136.2			84.0			61.9	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	140.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	29.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



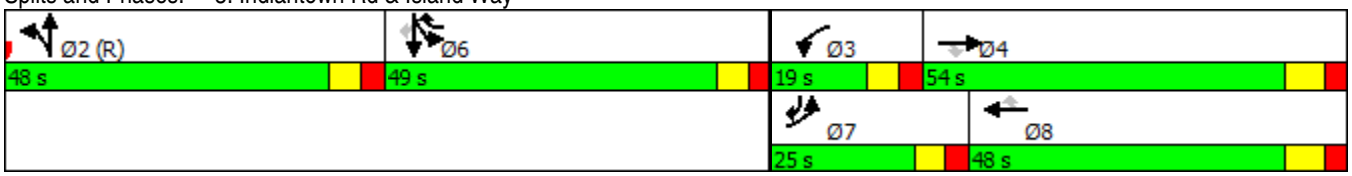
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	3222	174	75	2637	122	141	28	64	269	25	520
Future Volume (vph)	308	3222	174	75	2637	122	141	28	64	269	25	520
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.88
Frt			0.850			0.850		0.895				0.850
Flt Protected	0.950			0.950			0.950			0.950	0.960	
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	1770	1667	0	1681	1699	2787
Flt Permitted	0.950			0.950			0.950			0.950	0.960	
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	1770	1667	0	1681	1699	2787
Satd. Flow (RTOR)			116			71		64				441
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	324	3392	183	79	2776	128	148	29	67	283	26	547
Shared Lane Traffic (%)										46%		
Lane Group Flow (vph)	324	3392	183	79	2776	128	148	96	0	153	156	547
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA		Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2		6	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	6	2	2		6	6	7
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	6.0	6.0	6.0		6.0	6.0	4.0
Minimum Split (s)	11.0	31.0	31.0	11.0	41.0	45.0	43.0	43.0		45.0	45.0	11.0
Total Split (s)	25.0	54.0	54.0	19.0	48.0	49.0	48.0	48.0		49.0	49.0	25.0
Total Split (%)	14.7%	31.8%	31.8%	11.2%	28.2%	28.8%	28.2%	28.2%		28.8%	28.8%	14.7%
Maximum Green (s)	18.0	46.0	46.0	12.0	40.0	42.0	41.0	41.0		42.0	42.0	18.0
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	None	C-Min	C-Min		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	22.9	86.8	86.8	13.0	77.0	99.5	19.6	19.6		21.5	21.5	51.4
Actuated g/C Ratio	0.13	0.51	0.51	0.08	0.45	0.59	0.12	0.12		0.13	0.13	0.30
v/c Ratio	0.70	1.31	0.21	0.59	1.21	0.13	0.73	0.39		0.72	0.73	0.48
Control Delay	78.5	175.0	11.2	92.2	136.2	4.5	92.0	30.0		89.4	89.8	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	78.5	175.0	11.2	92.2	136.2	4.5	92.0	30.0		89.4	89.8	9.6
LOS	E	F	B	F	F	A	F	C		F	F	A
Approach Delay		159.3			129.4			67.6			38.4	
Approach LOS		F			F			E			D	
90th %ile Green (s)	27.9	66.6	66.6	17.8	56.5	30.1	26.5	26.5		30.1	30.1	27.9
90th %ile Term Code	Gap	MaxR	MaxR	Gap	MaxR	Gap	Coord	Coord		Gap	Gap	Gap
70th %ile Green (s)	24.9	78.7	78.7	15.0	68.8	24.9	22.4	22.4		24.9	24.9	24.9
70th %ile Term Code	Gap	MaxR	MaxR	Gap	MaxR	Gap	Coord	Coord		Gap	Gap	Gap
50th %ile Green (s)	23.2	87.3	87.3	13.1	77.2	21.0	19.6	19.6		21.0	21.0	23.2

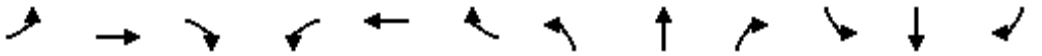
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
50th %ile Term Code	Gap	MaxR	MaxR	Gap	MaxR	Gap	Coord	Coord		Gap	Gap	Gap
30th %ile Green (s)	21.2	95.1	95.1	11.1	85.0	18.0	16.8	16.8		18.0	18.0	21.2
30th %ile Term Code	Gap	MaxR	MaxR	Gap	MaxR	Gap	Coord	Coord		Gap	Gap	Gap
10th %ile Green (s)	17.2	106.5	106.5	8.2	97.5	13.6	12.7	12.7		13.6	13.6	17.2
10th %ile Term Code	Gap	MaxR	MaxR	Gap	MaxR	Gap	Coord	Coord		Gap	Gap	Gap
Queue Length 50th (ft)	180	~1762	37	87	~1369	13	162	33		175	180	48
Queue Length 95th (ft)	229	#2072	108	144	#1700	33	235	91		250	254	93
Internal Link Dist (ft)		636			2400			510			766	
Turn Bay Length (ft)	350		300	160		185	175			220		300
Base Capacity (vph)	465	2597	865	145	2303	1138	426	450		415	419	1152
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.70	1.31	0.21	0.54	1.21	0.11	0.35	0.21		0.37	0.37	0.47

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 18 (11%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.31
Intersection Signal Delay: 132.3 Intersection LOS: F
Intersection Capacity Utilization 99.5% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Indiantown Rd & Island Way

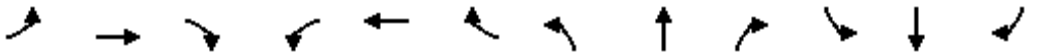




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	399	2787	145	90	2749	298	139	48	76	225	33	277
Future Volume (vph)	399	2787	145	90	2749	298	139	48	76	225	33	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00		0.95	0.95	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	1770	1692		1681	1706	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	1770	1692		1681	1706	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	420	2934	153	95	2894	314	146	51	80	237	35	292
RTOR Reduction (vph)	0	0	57	0	0	47	0	39	0	0	0	205
Lane Group Flow (vph)	420	2934	96	95	2894	267	146	92	0	135	137	87
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA		Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2		6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	30.2	86.6	86.6	14.7	71.1	91.4	19.4	19.4		20.3	20.3	50.5
Effective Green, g (s)	30.2	86.6	86.6	14.7	71.1	91.4	19.4	19.4		20.3	20.3	50.5
Actuated g/C Ratio	0.18	0.51	0.51	0.09	0.42	0.54	0.11	0.11		0.12	0.12	0.30
Clearance Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	609	2590	806	153	2126	851	201	193		200	203	942
v/s Ratio Prot	c0.12	c0.58		0.05	c0.57	0.04	c0.08	0.05		c0.08	0.08	0.02
v/s Ratio Perm			0.06			0.13						0.01
v/c Ratio	0.69	1.13	0.12	0.62	1.36	0.31	0.73	0.48		0.68	0.67	0.09
Uniform Delay, d1	65.5	41.7	21.8	75.0	49.5	21.9	72.7	70.5		71.7	71.7	43.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.3	65.2	0.3	7.6	165.7	0.2	20.4	8.2		8.7	8.6	0.0
Delay (s)	68.8	106.9	22.1	82.6	215.1	22.1	93.1	78.8		80.4	80.2	43.2
Level of Service	E	F	C	F	F	C	F	E		F	F	D
Approach Delay (s)		98.6			193.0			86.3			61.1	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	136.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	29.0
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



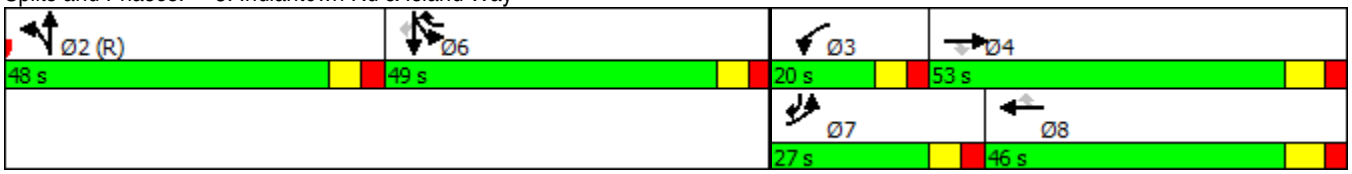
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	399	2787	145	90	2749	298	139	48	76	225	33	277
Future Volume (vph)	399	2787	145	90	2749	298	139	48	76	225	33	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		300	160		185	175		0	220		300
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.88
Frt			0.850			0.850		0.908				0.850
Flt Protected	0.950			0.950			0.950			0.950	0.964	
Satd. Flow (prot)	3433	5085	1583	1770	5085	1583	1770	1691	0	1681	1706	2787
Flt Permitted	0.950			0.950			0.950			0.950	0.964	
Satd. Flow (perm)	3433	5085	1583	1770	5085	1583	1770	1691	0	1681	1706	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			116			101		44				292
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		716			2480			590			846	
Travel Time (s)		10.8			37.6			13.4			19.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	420	2934	153	95	2894	314	146	51	80	237	35	292
Shared Lane Traffic (%)										43%		
Lane Group Flow (vph)	420	2934	153	95	2894	314	146	131	0	135	137	292
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Split	NA		Split	NA	pm+ov
Protected Phases	7	4		3	8	6	2	2		6	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	6	2	2		6	6	7
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	6.0	6.0	6.0		6.0	6.0	4.0
Minimum Split (s)	11.0	31.0	31.0	11.0	41.0	45.0	43.0	43.0		45.0	45.0	11.0
Total Split (s)	27.0	53.0	53.0	20.0	46.0	49.0	48.0	48.0		49.0	49.0	27.0
Total Split (%)	15.9%	31.2%	31.2%	11.8%	27.1%	28.8%	28.2%	28.2%		28.8%	28.8%	15.9%
Maximum Green (s)	20.0	45.0	45.0	13.0	38.0	42.0	41.0	41.0		42.0	42.0	20.0
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	8.0	8.0	7.0	8.0	7.0	7.0	7.0		7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	None	C-Min	C-Min		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	30.2	86.5	86.5	14.7	71.1	92.4	19.4	19.4		20.3	20.3	57.5
Actuated g/C Ratio	0.18	0.51	0.51	0.09	0.42	0.54	0.11	0.11		0.12	0.12	0.34
v/c Ratio	0.69	1.13	0.18	0.62	1.36	0.35	0.73	0.57		0.67	0.67	0.26
Control Delay	72.0	103.3	8.8	91.6	203.4	8.8	92.2	55.6		87.1	86.9	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	72.0	103.3	8.8	91.6	203.4	8.8	92.2	55.6		87.1	86.9	3.8

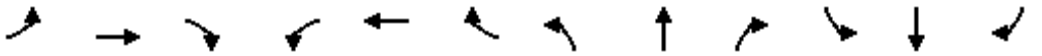
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	F	A	F	F	A	F	E		F	F	A
Approach Delay		95.4			181.7			74.9			43.9	
Approach LOS		F			F			E			D	
Queue Length 50th (ft)	229	~1382	20	104	~1538	65	160	93		154	156	0
Queue Length 95th (ft)	287	#1704	78	167	#1827	108	232	162		226	228	34
Internal Link Dist (ft)		636			2400			510			766	
Turn Bay Length (ft)	350		300	160		185	175			220		300
Base Capacity (vph)	608	2588	862	162	2126	1095	426	441		415	421	1135
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.69	1.13	0.18	0.59	1.36	0.29	0.34	0.30		0.33	0.33	0.26

Intersection Summary

Area Type: Other
Cycle Length: 170
Actuated Cycle Length: 170
Offset: 18 (11%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.36
Intersection Signal Delay: 128.1 Intersection LOS: F
Intersection Capacity Utilization 103.5% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Indiantown Rd & Island Way





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	304	3041	170	51	2385	81	136	26	44	186	21	515
Future Volume (vph)	304	3041	170	51	2385	81	136	26	44	186	21	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0		7.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.97	0.86		1.00	0.91	1.00	1.00	1.00		0.97	0.95	0.95
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.91		1.00	0.86	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	6357		1770	5085	1583	1770	1687		3433	1525	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	6357		1770	5085	1583	1770	1687		3433	1525	1504
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	320	3201	179	54	2511	85	143	27	46	196	22	542
RTOR Reduction (vph)	0	5	0	0	0	46	0	35	0	0	0	136
Lane Group Flow (vph)	320	3375	0	54	2511	39	143	38	0	196	282	146
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	15.0	87.0		6.0	78.0	78.0	16.8	33.2		14.8	31.2	31.2
Effective Green, g (s)	15.0	87.0		6.0	78.0	78.0	16.8	33.2		14.8	31.2	31.2
Actuated g/C Ratio	0.09	0.51		0.04	0.46	0.46	0.10	0.20		0.09	0.18	0.18
Clearance Time (s)	7.0	8.0		7.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	302	3253		62	2333	726	174	329		298	279	276
v/s Ratio Prot	c0.09	c0.53		0.03	c0.49		c0.08	0.02		0.06	c0.18	
v/s Ratio Perm						0.02						0.10
v/c Ratio	1.06	1.04		0.87	1.08	0.05	0.82	0.11		0.66	1.01	0.53
Uniform Delay, d1	77.5	41.5		81.6	46.0	25.5	75.1	56.3		75.1	69.4	62.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	68.4	26.6		70.2	43.0	0.1	25.7	0.7		5.2	56.6	1.8
Delay (s)	145.9	68.1		151.9	89.0	25.7	100.9	57.0		80.3	126.0	64.6
Level of Service	F	E		F	F	C	F	E		F	F	E
Approach Delay (s)		74.8			88.3			86.0			91.4	
Approach LOS		E			F			F			F	

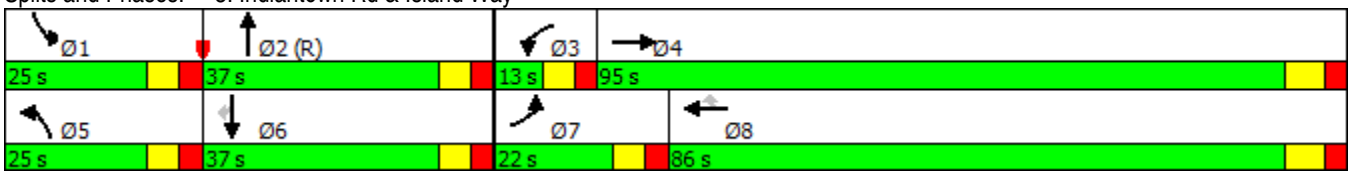
Intersection Summary			
HCM 2000 Control Delay	81.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	29.0
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		

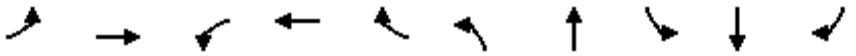
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	304	3041	51	2385	81	136	26	186	21	515
Future Volume (vph)	304	3041	51	2385	81	136	26	186	21	515
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8					6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	20.0	20.0	4.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	41.0	11.0	41.0	41.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	22.0	95.0	13.0	86.0	86.0	25.0	37.0	25.0	37.0	37.0
Total Split (%)	12.9%	55.9%	7.6%	50.6%	50.6%	14.7%	21.8%	14.7%	21.8%	21.8%
Yellow Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	8.0	7.0	8.0	8.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	Min	C-Min	Min	Min	Min
Act Effct Green (s)	15.0	87.0	6.0	78.0	78.0	16.8	33.2	14.8	31.2	31.2
Actuated g/C Ratio	0.09	0.51	0.04	0.46	0.46	0.10	0.20	0.09	0.18	0.18
v/c Ratio	1.06	1.04	0.87	1.08	0.10	0.82	0.20	0.66	1.01	0.68
Control Delay	139.0	66.8	159.5	86.5	0.3	108.0	28.0	85.6	122.4	35.5
Queue Delay	0.0	26.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.0	93.3	159.5	86.5	0.3	108.0	28.0	85.6	122.4	35.5
LOS	F	F	F	F	A	F	C	F	F	D
Approach Delay		97.2		85.2			80.9		80.6	
Approach LOS		F		F			F		F	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 90.7	Intersection LOS: F
Intersection Capacity Utilization 98.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Indiantown Rd & Island Way



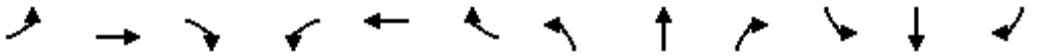


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	320	3380	54	2511	85	143	73	196	282	282
v/c Ratio	1.06	1.04	0.87	1.08	0.10	0.82	0.20	0.66	1.01	0.68
Control Delay	139.0	66.8	159.5	86.5	0.3	108.0	28.0	85.6	122.4	35.5
Queue Delay	0.0	26.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.0	93.3	159.5	86.5	0.3	108.0	28.0	85.6	122.4	35.5
Queue Length 50th (ft)	~200	~1173	61	~1135	0	158	27	110	~357	129
Queue Length 95th (ft)	#307	#1212	#156	#1211	0	#271	78	154	#566	251
Internal Link Dist (ft)		636		2400			510		766	
Turn Bay Length (ft)	350		160		185	175		220		300
Base Capacity (vph)	302	3258	62	2333	812	187	364	363	280	412
Starvation Cap Reductn	0	511	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	1.23	0.87	1.08	0.10	0.76	0.20	0.54	1.01	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	392	2643	140	64	2588	207	131	42	52	158	29	270
Future Volume (vph)	392	2643	140	64	2588	207	131	42	52	158	29	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0		7.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.97	0.86		1.00	0.91	1.00	1.00	1.00		0.97	0.95	0.95
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.92		1.00	0.88	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	6360		1770	5085	1583	1770	1708		3433	1556	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	6360		1770	5085	1583	1770	1708		3433	1556	1504
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	413	2782	147	67	2724	218	138	44	55	166	31	284
RTOR Reduction (vph)	0	4	0	0	0	57	0	26	0	0	0	135
Lane Group Flow (vph)	413	2925	0	67	2724	161	138	73	0	166	159	21
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	19.0	94.0		11.0	86.0	86.0	16.6	22.5		13.5	19.4	19.4
Effective Green, g (s)	19.0	94.0		11.0	86.0	86.0	16.6	22.5		13.5	19.4	19.4
Actuated g/C Ratio	0.11	0.55		0.06	0.51	0.51	0.10	0.13		0.08	0.11	0.11
Clearance Time (s)	7.0	8.0		7.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	383	3516		114	2572	800	172	226		272	177	171
v/s Ratio Prot	c0.12	c0.46		0.04	c0.54		c0.08	c0.04		0.05	c0.10	
v/s Ratio Perm						0.10						0.01
v/c Ratio	1.08	0.83		0.59	1.06	0.20	0.80	0.32		0.61	0.90	0.12
Uniform Delay, d1	75.5	31.5		77.3	42.0	23.1	75.1	66.8		75.7	74.3	67.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	68.5	2.5		7.5	35.9	0.6	23.0	3.8		4.0	39.7	0.3
Delay (s)	144.0	33.9		84.8	77.9	23.7	98.1	70.6		79.7	114.0	68.0
Level of Service	F	C		F	E	C	F	E		E	F	E
Approach Delay (s)		47.5			74.1			86.6			87.2	
Approach LOS		D			E			F			F	

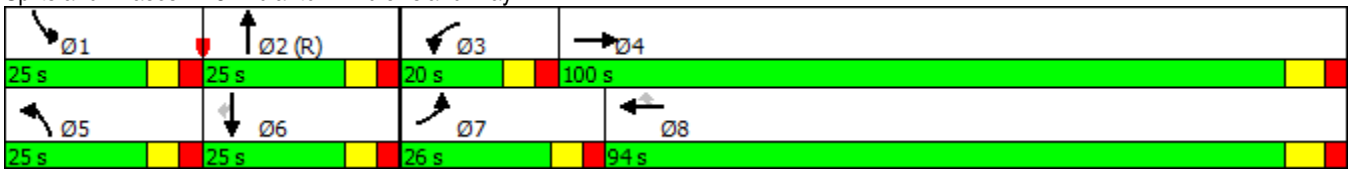
Intersection Summary			
HCM 2000 Control Delay	62.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	29.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

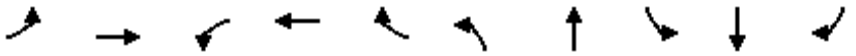
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	392	2643	64	2588	207	131	42	158	29	270
Future Volume (vph)	392	2643	64	2588	207	131	42	158	29	270
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8					6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	20.0	20.0	4.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	41.0	11.0	41.0	41.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	26.0	100.0	20.0	94.0	94.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	15.3%	58.8%	11.8%	55.3%	55.3%	14.7%	14.7%	14.7%	14.7%	14.7%
Yellow Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	8.0	7.0	8.0	8.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	Min	C-Min	Min	Min	Min
Act Effct Green (s)	19.0	94.0	11.0	86.0	86.0	16.6	22.5	13.5	19.4	19.4
Actuated g/C Ratio	0.11	0.55	0.06	0.51	0.51	0.10	0.13	0.08	0.11	0.11
v/c Ratio	1.08	0.83	0.59	1.06	0.25	0.80	0.39	0.61	0.90	0.51
Control Delay	136.3	34.3	97.4	76.3	11.4	105.9	52.8	85.1	117.4	16.5
Queue Delay	0.0	21.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	136.3	56.2	97.4	76.3	11.4	105.9	52.8	85.1	117.4	16.5
LOS	F	E	F	E	B	F	D	F	F	B
Approach Delay		66.1		72.0			83.7		73.6	
Approach LOS		E		E			F		E	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 69.7	Intersection LOS: E
Intersection Capacity Utilization 93.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Indiantown Rd & Island Way





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	413	2929	67	2724	218	138	99	166	159	156
v/c Ratio	1.08	0.83	0.59	1.06	0.25	0.80	0.39	0.61	0.90	0.51
Control Delay	136.3	34.3	97.4	76.3	11.4	105.9	52.8	85.1	117.4	16.5
Queue Delay	0.0	21.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	136.3	56.2	97.4	76.3	11.4	105.9	52.8	85.1	117.4	16.5
Queue Length 50th (ft)	~262	773	74	~1214	59	152	71	93	189	4
Queue Length 95th (ft)	#378	825	130	#1284	115	#254	140	134	#355	85
Internal Link Dist (ft)		636		2400			510		766	
Turn Bay Length (ft)	350		160		185	175		220		300
Base Capacity (vph)	383	3520	135	2572	858	187	252	363	177	306
Starvation Cap Reductn	0	708	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.08	1.04	0.50	1.06	0.25	0.74	0.39	0.46	0.90	0.51

Intersection Summary

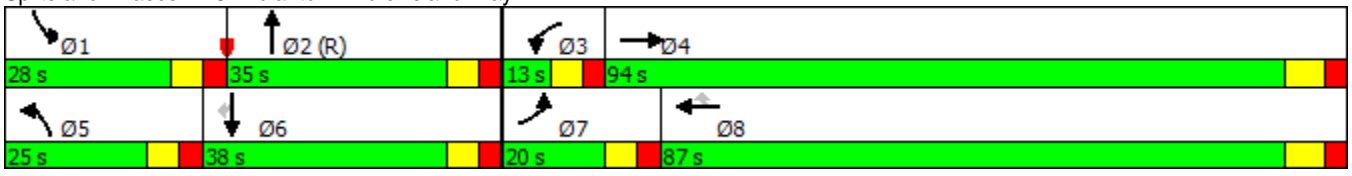
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

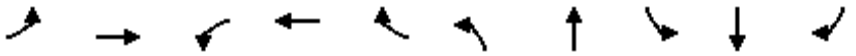
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	308	3222	75	2637	122	141	28	269	25	520
Future Volume (vph)	308	3222	75	2637	122	141	28	269	25	520
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8					6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	20.0	20.0	4.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	41.0	11.0	41.0	41.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	20.0	94.0	13.0	87.0	87.0	25.0	35.0	28.0	38.0	38.0
Total Split (%)	11.8%	55.3%	7.6%	51.2%	51.2%	14.7%	20.6%	16.5%	22.4%	22.4%
Yellow Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	8.0	7.0	8.0	8.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	Min	C-Min	Min	Min	Min
Act Effct Green (s)	13.0	86.0	6.0	79.0	79.0	17.0	30.4	18.6	32.0	32.0
Actuated g/C Ratio	0.08	0.51	0.04	0.46	0.46	0.10	0.18	0.11	0.19	0.19
v/c Ratio	1.24	1.11	1.27	1.17	0.16	0.84	0.28	0.75	1.01	0.74
Control Delay	194.9	94.0	263.5	124.0	5.6	109.9	28.4	86.5	121.2	49.6
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	194.9	94.3	263.5	124.0	5.6	109.9	28.4	86.5	121.2	49.6
LOS	F	F	F	F	A	F	C	F	F	D
Approach Delay		102.7		122.6			77.8		86.0	
Approach LOS		F		F			E		F	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 107.6	Intersection LOS: F
Intersection Capacity Utilization 103.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Indiantown Rd & Island Way



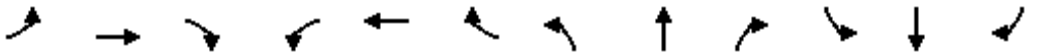


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	324	3575	79	2776	128	148	96	283	289	284
v/c Ratio	1.24	1.11	1.27	1.17	0.16	0.84	0.28	0.75	1.01	0.74
Control Delay	194.9	94.0	263.5	124.0	5.6	109.9	28.4	86.5	121.2	49.6
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	194.9	94.3	263.5	124.0	5.6	109.9	28.4	86.5	121.2	49.6
Queue Length 50th (ft)	~229	~1318	~110	~1346	7	164	35	159	~363	187
Queue Length 95th (ft)	#336	#1352	#230	#1416	48	#282	95	211	#574	314
Internal Link Dist (ft)		636		2400			510		766	
Turn Bay Length (ft)	350		160		185	175		220		300
Base Capacity (vph)	262	3220	62	2363	797	187	346	424	287	382
Starvation Cap Reductn	0	460	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.24	1.30	1.27	1.17	0.16	0.79	0.28	0.67	1.01	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	3222	174	75	2637	122	141	28	64	269	25	520
Future Volume (vph)	308	3222	174	75	2637	122	141	28	64	269	25	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0		7.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.97	0.86		1.00	0.91	1.00	1.00	1.00		0.97	0.95	0.95
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	0.86	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	6359		1770	5085	1583	1770	1668		3433	1528	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	6359		1770	5085	1583	1770	1668		3433	1528	1504
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	324	3392	183	79	2776	128	148	29	67	283	26	547
RTOR Reduction (vph)	0	4	0	0	0	62	0	48	0	0	0	99
Lane Group Flow (vph)	324	3571	0	79	2776	66	148	48	0	283	289	185
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	13.0	86.0		6.0	79.0	79.0	17.0	30.4		18.6	32.0	32.0
Effective Green, g (s)	13.0	86.0		6.0	79.0	79.0	17.0	30.4		18.6	32.0	32.0
Actuated g/C Ratio	0.08	0.51		0.04	0.46	0.46	0.10	0.18		0.11	0.19	0.19
Clearance Time (s)	7.0	8.0		7.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	262	3216		62	2363	735	177	298		375	287	283
v/s Ratio Prot	c0.09	c0.56		0.04	c0.55		c0.08	0.03		0.08	c0.19	
v/s Ratio Perm						0.04						0.12
v/c Ratio	1.24	1.11		1.27	1.17	0.09	0.84	0.16		0.75	1.01	0.65
Uniform Delay, d1	78.5	42.0		82.0	45.5	25.4	75.1	59.0		73.5	69.0	63.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	134.8	54.7		204.7	83.5	0.2	27.5	1.1		8.4	54.9	5.3
Delay (s)	213.3	96.7		286.7	129.0	25.7	102.6	60.1		81.9	123.9	69.2
Level of Service	F	F		F	F	C	F	E		F	F	E
Approach Delay (s)		106.4			128.7			85.9			91.9	
Approach LOS		F			F			F			F	

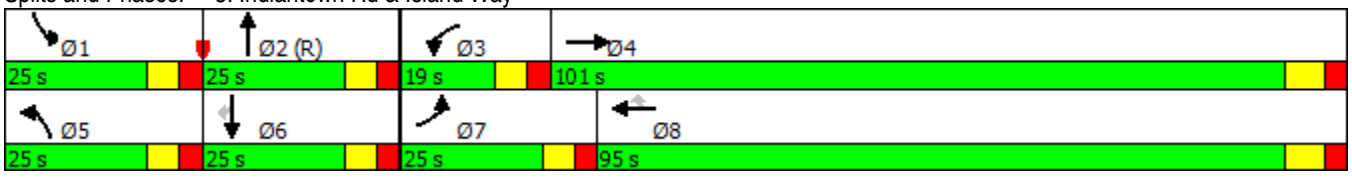
Intersection Summary			
HCM 2000 Control Delay	112.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	29.0
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		

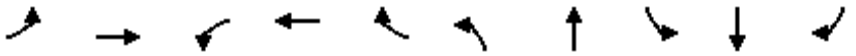
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	399	2787	90	2749	298	139	48	225	33	277
Future Volume (vph)	399	2787	90	2749	298	139	48	225	33	277
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8					6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	20.0	20.0	4.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	41.0	11.0	41.0	41.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	25.0	101.0	19.0	95.0	95.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	14.7%	59.4%	11.2%	55.9%	55.9%	14.7%	14.7%	14.7%	14.7%	14.7%
Yellow Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	8.0	7.0	8.0	8.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	Min	C-Min	Min	Min	Min
Act Effct Green (s)	18.0	93.5	11.5	87.0	87.0	16.9	19.8	16.2	19.1	19.1
Actuated g/C Ratio	0.11	0.55	0.07	0.51	0.51	0.10	0.12	0.10	0.11	0.11
v/c Ratio	1.16	0.88	0.80	1.11	0.36	0.83	0.57	0.73	0.95	0.55
Control Delay	160.4	37.3	117.9	95.5	16.3	109.0	61.8	87.9	128.3	22.3
Queue Delay	0.0	42.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	160.4	80.0	117.9	95.5	16.3	109.0	61.8	87.9	128.3	22.3
LOS	F	F	F	F	B	F	E	F	F	C
Approach Delay		89.7		88.7			86.7		81.1	
Approach LOS		F		F			F		F	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 88.5	Intersection LOS: F
Intersection Capacity Utilization 103.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Indiantown Rd & Island Way



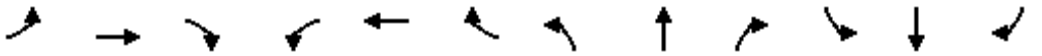


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	420	3087	95	2894	314	146	131	237	166	161
v/c Ratio	1.16	0.88	0.80	1.11	0.36	0.83	0.57	0.73	0.95	0.55
Control Delay	160.4	37.3	117.9	95.5	16.3	109.0	61.8	87.9	128.3	22.3
Queue Delay	0.0	42.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	160.4	80.0	117.9	95.5	16.3	109.0	61.8	87.9	128.3	22.3
Queue Length 50th (ft)	~282	856	106	~1345	126	161	101	134	~198	23
Queue Length 95th (ft)	#400	895	#207	#1410	199	#275	181	184	#376	107
Internal Link Dist (ft)		636		2400			510		766	
Turn Bay Length (ft)	350		160		185	175		220		300
Base Capacity (vph)	363	3502	124	2602	866	187	230	363	175	293
Starvation Cap Reductn	0	677	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	1.09	0.77	1.11	0.36	0.78	0.57	0.65	0.95	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	399	2787	145	90	2749	298	139	48	76	225	33	277
Future Volume (vph)	399	2787	145	90	2749	298	139	48	76	225	33	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0		7.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.97	0.86		1.00	0.91	1.00	1.00	1.00		0.97	0.95	0.95
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.91		1.00	0.88	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	6360		1770	5085	1583	1770	1692		3433	1560	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	6360		1770	5085	1583	1770	1692		3433	1560	1504
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	420	2934	153	95	2894	314	146	51	80	237	35	292
RTOR Reduction (vph)	0	5	0	0	0	57	0	33	0	0	0	124
Lane Group Flow (vph)	420	3083	0	95	2894	257	146	98	0	237	166	37
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	18.0	93.5		11.5	87.0	87.0	16.9	19.8		16.2	19.1	19.1
Effective Green, g (s)	18.0	93.5		11.5	87.0	87.0	16.9	19.8		16.2	19.1	19.1
Actuated g/C Ratio	0.11	0.55		0.07	0.51	0.51	0.10	0.12		0.10	0.11	0.11
Clearance Time (s)	7.0	8.0		7.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	363	3498		119	2602	810	175	197		327	175	168
v/s Ratio Prot	c0.12	c0.48		0.05	c0.57		c0.08	0.06		0.07	c0.11	
v/s Ratio Perm						0.16						0.02
v/c Ratio	1.16	0.88		0.80	1.11	0.32	0.83	0.50		0.72	0.95	0.22
Uniform Delay, d1	76.0	33.4		78.1	41.5	24.2	75.2	70.4		74.7	75.0	68.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	97.2	3.6		30.0	56.6	1.0	27.5	8.8		7.7	52.5	0.7
Delay (s)	173.2	37.0		108.1	98.1	25.2	102.7	79.2		82.5	127.4	69.3
Level of Service	F	D		F	F	C	F	E		F	F	E
Approach Delay (s)		53.3			91.5			91.6			92.0	
Approach LOS		D			F			F			F	

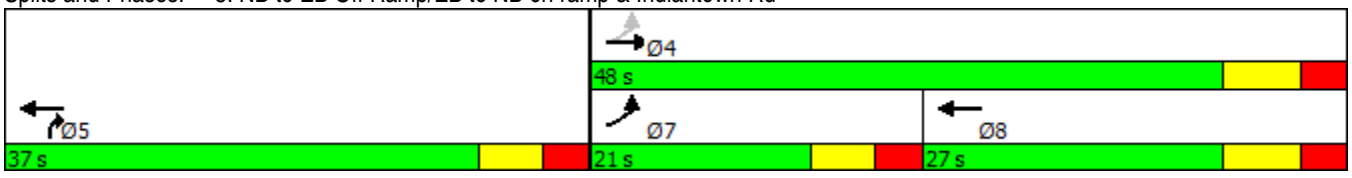
Intersection Summary			
HCM 2000 Control Delay	74.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	29.0
Intersection Capacity Utilization	103.8%	ICU Level of Service	G
Analysis Period (min)	15		

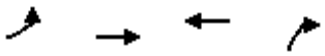
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBR	Ø8
Lane Configurations					
Traffic Volume (vph)	275	2420	1199	1095	
Future Volume (vph)	275	2420	1199	1095	
Turn Type	pm+pt	NA	NA	Prot	
Protected Phases	7	4	8 5	5	8
Permitted Phases	4				
Detector Phase	7	4	8 5	5	
Switch Phase					
Minimum Initial (s)	5.0	5.0		5.0	5.0
Minimum Split (s)	12.0	26.0		12.0	26.0
Total Split (s)	21.0	48.0		37.0	27.0
Total Split (%)	24.7%	56.5%		43.5%	32%
Yellow Time (s)	4.0	5.0		4.0	5.0
All-Red Time (s)	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	
Total Lost Time (s)	7.0	8.0		7.0	
Lead/Lag	Lead				Lag
Lead-Lag Optimize?	Yes				Yes
Recall Mode	None	None		None	None
Act Effct Green (s)	41.0	40.0	57.0	30.0	
Actuated g/C Ratio	0.48	0.47	0.67	0.35	
v/c Ratio	0.80	0.84	0.53	0.91	
Control Delay	35.2	23.1	8.3	37.8	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	35.2	23.1	8.3	37.8	
LOS	D	C	A	D	
Approach Delay		24.4	8.3		
Approach LOS		C	A		

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2: and 6:, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 73.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: NB to EB Off Ramp/EB to NB on ramp & Indiantown Rd

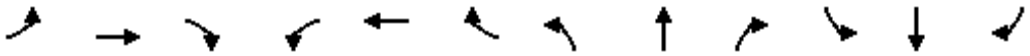




Lane Group	EBL	EBT	WBT	NBR
Lane Group Flow (vph)	289	2547	1262	1153
v/c Ratio	0.80	0.84	0.53	0.91
Control Delay	35.2	23.1	8.3	37.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	35.2	23.1	8.3	37.8
Queue Length 50th (ft)	94	332	164	253
Queue Length 95th (ft)	#213	386	213	#359
Internal Link Dist (ft)		404	320	
Turn Bay Length (ft)	220			500
Base Capacity (vph)	379	3015	2374	1274
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.76	0.84	0.53	0.91

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	2420	0	0	1199	0	0	0	1095	0	0	0
Future Volume (vph)	275	2420	0	0	1199	0	0	0	1095	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0			8.0				7.0			
Lane Util. Factor	1.00	0.86			0.95				0.76			
Frt	1.00	1.00			1.00				0.85			
Flt Protected	0.95	1.00			1.00				1.00			
Satd. Flow (prot)	1770	6408			3539				3610			
Flt Permitted	0.15	1.00			1.00				1.00			
Satd. Flow (perm)	276	6408			3539				3610			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	289	2547	0	0	1262	0	0	0	1153	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	289	2547	0	0	1262	0	0	0	1153	0	0	0
Turn Type	pm+pt	NA			NA				Prot			
Protected Phases	7	4			8 5				5			
Permitted Phases	4											
Actuated Green, G (s)	40.0	40.0			58.0				30.0			
Effective Green, g (s)	40.0	40.0			58.0				30.0			
Actuated g/C Ratio	0.47	0.47			0.68				0.35			
Clearance Time (s)	7.0	8.0							7.0			
Vehicle Extension (s)	3.0	3.0							3.0			
Lane Grp Cap (vph)	358	3015			2414				1274			
v/s Ratio Prot	0.12	c0.40			0.36				c0.32			
v/s Ratio Perm	0.26											
v/c Ratio	0.81	0.84			0.52				0.91			
Uniform Delay, d1	17.4	19.8			6.7				26.1			
Progression Factor	1.00	1.00			1.00				1.00			
Incremental Delay, d2	12.5	2.3			0.2				9.3			
Delay (s)	30.0	22.1			6.9				35.4			
Level of Service	C	C			A				D			
Approach Delay (s)		22.9			6.9			35.4			0.0	
Approach LOS		C			A			D			A	

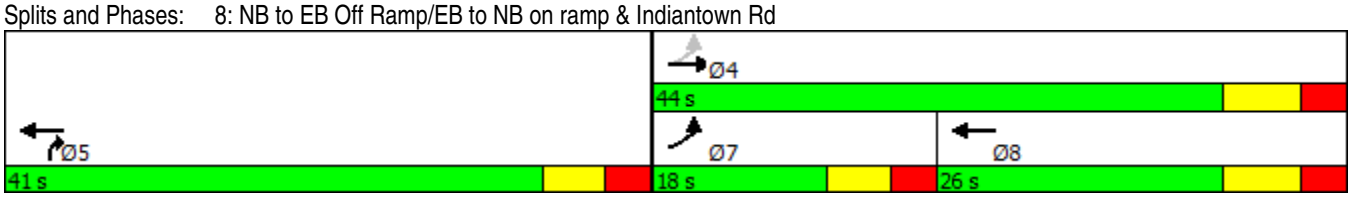
Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

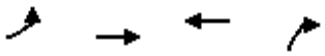
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBR	Ø8
Lane Configurations					
Traffic Volume (vph)	357	1693	1259	1482	
Future Volume (vph)	357	1693	1259	1482	
Turn Type	pm+pt	NA	NA	Prot	
Protected Phases	7	4	8 5	5	8
Permitted Phases	4				
Detector Phase	7	4	8 5	5	
Switch Phase					
Minimum Initial (s)	5.0	5.0		5.0	5.0
Minimum Split (s)	12.0	26.0		12.0	26.0
Total Split (s)	18.0	44.0		41.0	26.0
Total Split (%)	21.2%	51.8%		48.2%	31%
Yellow Time (s)	4.0	5.0		4.0	5.0
All-Red Time (s)	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	
Total Lost Time (s)	7.0	8.0		7.0	
Lead/Lag	Lead				Lag
Lead-Lag Optimize?	Yes				Yes
Recall Mode	None	None		None	None
Act Effct Green (s)	37.0	36.0	59.0	34.0	
Actuated g/C Ratio	0.44	0.42	0.69	0.40	
v/c Ratio	1.18	0.66	0.54	1.08	
Control Delay	129.1	21.0	7.4	75.2	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	129.1	21.0	7.4	75.2	
LOS	F	C	A	E	
Approach Delay		39.8	7.4		
Approach LOS		D	A		

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2: and 6:, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 42.2	Intersection LOS: D
Intersection Capacity Utilization 108.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 8: NB to EB Off Ramp/EB to NB on ramp & Indiantown Rd



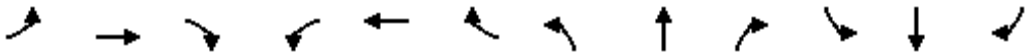


Lane Group	EBL	EBT	WBT	NBR
Lane Group Flow (vph)	376	1782	1325	1560
v/c Ratio	1.18	0.66	0.54	1.08
Control Delay	129.1	21.0	7.4	75.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	129.1	21.0	7.4	75.2
Queue Length 50th (ft)	~191	214	154	~413
Queue Length 95th (ft)	#364	254	200	#525
Internal Link Dist (ft)		404	320	
Turn Bay Length (ft)	220			500
Base Capacity (vph)	320	2713	2456	1444
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.18	0.66	0.54	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	357	1693	0	0	1259	0	0	0	1482	0	0	0
Future Volume (vph)	357	1693	0	0	1259	0	0	0	1482	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0			8.0				7.0			
Lane Util. Factor	1.00	0.86			0.95				0.76			
Frt	1.00	1.00			1.00				0.85			
Flt Protected	0.95	1.00			1.00				1.00			
Satd. Flow (prot)	1770	6408			3539				3610			
Flt Permitted	0.16	1.00			1.00				1.00			
Satd. Flow (perm)	298	6408			3539				3610			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	376	1782	0	0	1325	0	0	0	1560	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	376	1782	0	0	1325	0	0	0	1560	0	0	0
Turn Type	pm+pt	NA			NA				Prot			
Protected Phases	7	4			8 5				5			
Permitted Phases	4											
Actuated Green, G (s)	36.0	36.0			60.0				34.0			
Effective Green, g (s)	36.0	36.0			60.0				34.0			
Actuated g/C Ratio	0.42	0.42			0.71				0.40			
Clearance Time (s)	7.0	8.0							7.0			
Vehicle Extension (s)	3.0	3.0							3.0			
Lane Grp Cap (vph)	316	2713			2498				1444			
v/s Ratio Prot	c0.15	0.28			0.37				c0.43			
v/s Ratio Perm	c0.35											
v/c Ratio	1.19	0.66			0.53				1.08			
Uniform Delay, d1	20.5	19.6			5.9				25.5			
Progression Factor	1.00	1.00			1.00				1.00			
Incremental Delay, d2	112.5	0.6			0.2				48.6			
Delay (s)	133.0	20.1			6.1				74.1			
Level of Service	F	C			A				E			
Approach Delay (s)		39.8			6.1			74.1			0.0	
Approach LOS		D			A			E			A	

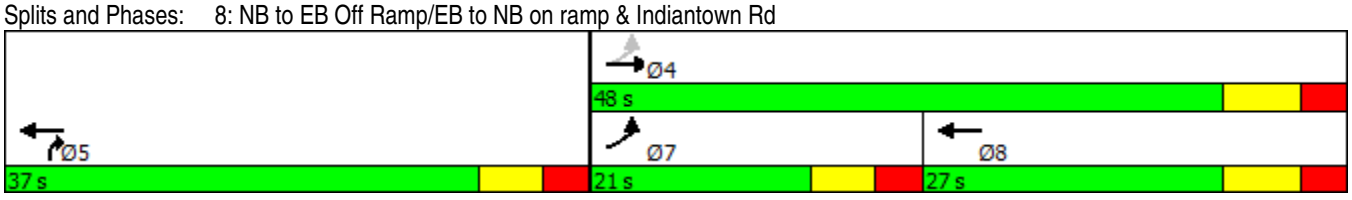
Intersection Summary			
HCM 2000 Control Delay	41.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	108.1%	ICU Level of Service	G
Analysis Period (min)	15		

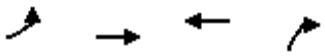
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBR	Ø8
Lane Configurations					
Traffic Volume (vph)	369	2455	1207	1249	
Future Volume (vph)	369	2455	1207	1249	
Turn Type	pm+pt	NA	NA	Prot	
Protected Phases	7	4	8 5	5	8
Permitted Phases	4				
Detector Phase	7	4	8 5	5	
Switch Phase					
Minimum Initial (s)	5.0	5.0		5.0	5.0
Minimum Split (s)	12.0	26.0		12.0	26.0
Total Split (s)	21.0	48.0		37.0	27.0
Total Split (%)	24.7%	56.5%		43.5%	32%
Yellow Time (s)	4.0	5.0		4.0	5.0
All-Red Time (s)	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	
Total Lost Time (s)	7.0	8.0		7.0	
Lead/Lag	Lead				Lag
Lead-Lag Optimize?	Yes				Yes
Recall Mode	None	None		None	None
Act Effct Green (s)	41.0	40.0	56.0	30.0	
Actuated g/C Ratio	0.48	0.47	0.66	0.35	
v/c Ratio	1.02	0.86	0.55	1.03	
Control Delay	73.4	23.6	8.8	62.5	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	73.4	23.6	8.8	62.5	
LOS	E	C	A	E	
Approach Delay		30.1	8.8		
Approach LOS		C	A		

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2: and 6:, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 32.9	Intersection LOS: C
Intersection Capacity Utilization 82.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: NB to EB Off Ramp/EB to NB on ramp & Indiantown Rd



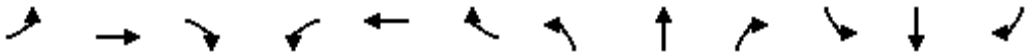


Lane Group	EBL	EBT	WBT	NBR
Lane Group Flow (vph)	388	2584	1271	1315
v/c Ratio	1.02	0.86	0.55	1.03
Control Delay	73.4	23.6	8.8	62.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	73.4	23.6	8.8	62.5
Queue Length 50th (ft)	~160	341	166	~334
Queue Length 95th (ft)	#342	395	216	#442
Internal Link Dist (ft)		404	320	
Turn Bay Length (ft)	220			500
Base Capacity (vph)	382	3015	2331	1274
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.02	0.86	0.55	1.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	369	2455	0	0	1207	0	0	0	1249	0	0	0
Future Volume (vph)	369	2455	0	0	1207	0	0	0	1249	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0			8.0				7.0			
Lane Util. Factor	1.00	0.86			0.95				0.76			
Frt	1.00	1.00			1.00				0.85			
Flt Protected	0.95	1.00			1.00				1.00			
Satd. Flow (prot)	1770	6408			3539				3610			
Flt Permitted	0.15	1.00			1.00				1.00			
Satd. Flow (perm)	287	6408			3539				3610			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	388	2584	0	0	1271	0	0	0	1315	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	388	2584	0	0	1271	0	0	0	1315	0	0	0
Turn Type	pm+pt	NA			NA				Prot			
Protected Phases	7	4			8 5				5			
Permitted Phases	4											
Actuated Green, G (s)	40.0	40.0			57.0				30.0			
Effective Green, g (s)	40.0	40.0			57.0				30.0			
Actuated g/C Ratio	0.47	0.47			0.67				0.35			
Clearance Time (s)	7.0	8.0							7.0			
Vehicle Extension (s)	3.0	3.0							3.0			
Lane Grp Cap (vph)	379	3015			2373				1274			
v/s Ratio Prot	0.17	c0.40			0.36				c0.36			
v/s Ratio Perm	c0.31											
v/c Ratio	1.02	0.86			0.54				1.03			
Uniform Delay, d1	22.3	20.0			7.2				27.5			
Progression Factor	1.00	1.00			1.00				1.00			
Incremental Delay, d2	52.4	2.6			0.2				33.9			
Delay (s)	74.7	22.6			7.4				61.4			
Level of Service	E	C			A				E			
Approach Delay (s)		29.4			7.4			61.4			0.0	
Approach LOS		C			A			E			A	

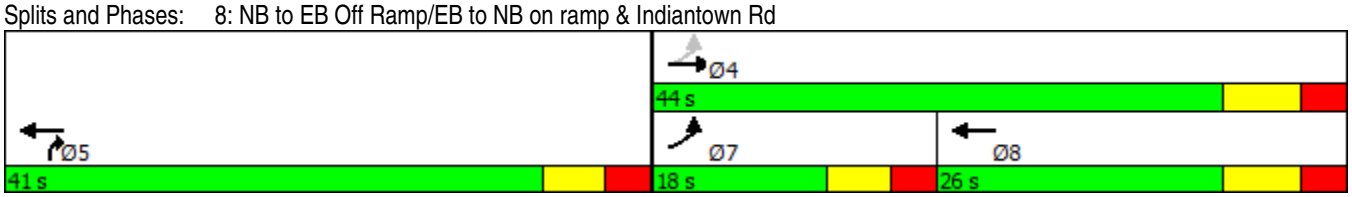
Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

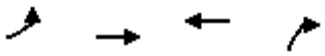
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBR	Ø8
Lane Configurations					
Traffic Volume (vph)	411	1725	1264	1606	
Future Volume (vph)	411	1725	1264	1606	
Turn Type	pm+pt	NA	NA	Prot	
Protected Phases	7	4	8 5	5	8
Permitted Phases	4				
Detector Phase	7	4	8 5	5	
Switch Phase					
Minimum Initial (s)	5.0	5.0		5.0	5.0
Minimum Split (s)	12.0	26.0		12.0	26.0
Total Split (s)	18.0	44.0		41.0	26.0
Total Split (%)	21.2%	51.8%		48.2%	31%
Yellow Time (s)	4.0	5.0		4.0	5.0
All-Red Time (s)	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	
Total Lost Time (s)	7.0	8.0		7.0	
Lead/Lag	Lead				Lag
Lead-Lag Optimize?	Yes				Yes
Recall Mode	None	None		None	None
Act Effct Green (s)	37.0	36.0	59.0	34.0	
Actuated g/C Ratio	0.44	0.42	0.69	0.40	
v/c Ratio	1.35	0.67	0.54	1.17	
Control Delay	200.2	21.2	7.4	111.0	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	200.2	21.2	7.4	111.0	
LOS	F	C	A	F	
Approach Delay		55.7	7.4		
Approach LOS		E	A		

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2: and 6:, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 61.2	Intersection LOS: E
Intersection Capacity Utilization 119.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 8: NB to EB Off Ramp/EB to NB on ramp & Indiantown Rd



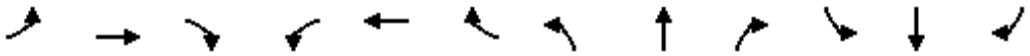


Lane Group	EBL	EBT	WBT	NBR
Lane Group Flow (vph)	433	1816	1331	1691
v/c Ratio	1.35	0.67	0.54	1.17
Control Delay	200.2	21.2	7.4	111.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	200.2	21.2	7.4	111.0
Queue Length 50th (ft)	~256	220	155	~478
Queue Length 95th (ft)	#438	260	202	#590
Internal Link Dist (ft)		404	320	
Turn Bay Length (ft)	220			500
Base Capacity (vph)	320	2713	2456	1444
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.35	0.67	0.54	1.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	411	1725	0	0	1264	0	0	0	1606	0	0	0
Future Volume (vph)	411	1725	0	0	1264	0	0	0	1606	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	8.0			8.0				7.0			
Lane Util. Factor	1.00	0.86			0.95				0.76			
Frt	1.00	1.00			1.00				0.85			
Flt Protected	0.95	1.00			1.00				1.00			
Satd. Flow (prot)	1770	6408			3539				3610			
Flt Permitted	0.16	1.00			1.00				1.00			
Satd. Flow (perm)	298	6408			3539				3610			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	433	1816	0	0	1331	0	0	0	1691	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	433	1816	0	0	1331	0	0	0	1691	0	0	0
Turn Type	pm+pt	NA			NA				Prot			
Protected Phases	7	4			8 5				5			
Permitted Phases	4											
Actuated Green, G (s)	36.0	36.0			60.0				34.0			
Effective Green, g (s)	36.0	36.0			60.0				34.0			
Actuated g/C Ratio	0.42	0.42			0.71				0.40			
Clearance Time (s)	7.0	8.0							7.0			
Vehicle Extension (s)	3.0	3.0							3.0			
Lane Grp Cap (vph)	316	2713			2498				1444			
v/s Ratio Prot	c0.18	0.28			0.38				c0.47			
v/s Ratio Perm	c0.40											
v/c Ratio	1.37	0.67			0.53				1.17			
Uniform Delay, d1	20.5	19.7			5.9				25.5			
Progression Factor	1.00	1.00			1.00				1.00			
Incremental Delay, d2	185.5	0.6			0.2				84.7			
Delay (s)	206.0	20.3			6.1				110.2			
Level of Service	F	C			A				F			
Approach Delay (s)		56.1			6.1			110.2			0.0	
Approach LOS		E			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	60.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	119.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Appendix C
Growth Rates

PROJECT MANAGER "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
FM NO.: 0
PROJECT LIMITS: I-95 at Indiantown Road CD
DESIGN YEAR: 2040
INTERSECTION: I-95 at Indiantown Road
PREPARED BY: ESP
FILE: /TMTool/Forced KD

DATE: 10/16/2015

NOTES: The growth rate for Indiantown Road east and west of I-95 (1.35%) is based on growth rates reported in the I-95 PD&E Study, dated April 11, 2014. The growth rate for I-95 in the same vicinity is 1.35%, and is also based on the same I-95 PD&E study. For Indiantown Rd and I-95, the Design Year Standard K factor of 9.0% was applied, and interim year K factors were interpolated. The ratio between AM and PM peak hour K factors was maintained. Existing year AADT for I-95 is 3-year average of AADTs from 2012-2014. NB and SB I-95 through volumes are estimated from counts at Stations 93-2209 and 93-0217.

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

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2015	69,000	59,700	95,000	49,200
24 HR EST. AADT	2020	73,780	63,800	101,600	52,600
24 HR EST. AADT	2030	84,400	73,000	116,200	60,200
24 HR EST. AADT	2040	96,500	83,500	132,800	68,800

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2015	APPROACH K FACTOR	8.8%	9.1%	11.0%	10.0%	8.6%	8.9%	9.9%	9.4%
2020	Approach K30 factor	8.8%	9.1%	10.6%	9.8%	8.7%	9.0%	9.7%	9.3%
2030	Approach K30 factor	8.9%	9.0%	9.8%	9.4%	8.8%	9.0%	9.4%	9.1%
2040	Approach K30 factor	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2015	APPROACH D FACTOR	72.9%	34.3%	45.3%	48.5%	32.7%	65.7%	56.7%	44.4%
2020	Approach D30 Factor	70.6%	35.2%	45.3%	48.5%	33.9%	64.8%	56.7%	44.4%
2030	Approach D30 Factor	65.9%	37.0%	45.3%	48.5%	36.4%	63.0%	56.7%	44.4%
2040	Approach D30 Factor	61.2%	38.8%	45.3%	48.5%	38.8%	61.2%	56.7%	44.4%

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	466	3,360	599	314	1,193	1,457	990	1,131	444	669	1,788	201
2020	EST. TURNS	524	3,454	628	333	1,195	1,509	1,099	1,265	536	807	1,789	276
2030	EST. TURNS	577	3,843	654	435	1,193	1,674	1,264	1,749	688	998	1,786	373
2040	EST. TURNS	629	4,237	657	528	1,256	1,838	1,532	2,351	879	1,238	1,874	496
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	348	1,500	298	627	1,255	1,011	1,387	3,186	952	402	1,342	300
2020	EST. TURNS	395	1,607	353	672	1,290	1,089	1,505	3,283	1,071	489	1,375	358
2030	EST. TURNS	468	1,971	403	737	1,371	1,277	1,698	3,652	1,251	613	1,458	413
2040	EST. TURNS	559	2,392	509	838	1,487	1,533	1,880	4,038	1,463	770	1,604	483

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		4424	1646	6070	2964	3576	6540	2664	5486	8150	2757	2103	4860
2015	TURN SUMMARY	4424	1646	6070	2964	3376	6340	2565	5486	8051	2658	2103	4761
CONTROL LINK VOLUMES		4600	1920	6520	3055	3685	6740	2985	5815	8800	2895	2205	5100
2020	TURN SUMMARY	4605	1875	6480	3037	3515	6552	2900	5770	8670	2872	2255	5127
CONTROL LINK VOLUMES		4959	2571	7530	3236	3904	7140	3731	6529	10260	3193	2437	5630
2030	TURN SUMMARY	5074	2557	7631	3301	3704	7005	3701	6515	10216	3157	2457	5614
CONTROL LINK VOLUMES		5315	3375	8690	3406	4114	7520	4637	7313	11950	3512	2678	6190
2040	TURN SUMMARY	5523	3375	8898	3621	4062	7683	4761	7313	12074	3609	2764	6373
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		2147	4113	6260	2894	3076	5970	5577	2913	8490	2045	2555	4600
2015	TURN SUMMARY	2146	4113	6259	2893	3027	5920	5525	2913	8438	2044	2555	4599
CONTROL LINK VOLUMES		2352	4328	6680	3031	3219	6250	5891	3199	9090	2170	2710	4880
2020	TURN SUMMARY	2355	4313	6668	3050	3233	6283	5859	3184	9043	2222	2756	4978
CONTROL LINK VOLUMES		2819	4801	7620	3326	3534	6860	6570	3860	10430	2445	3055	5500
2030	TURN SUMMARY	2842	4801	7643	3384	3559	6943	6600	3860	10460	2484	3090	5574
CONTROL LINK VOLUMES		3370	5320	8690	3642	3878	7520	7315	4635	11950	2751	3439	6190
2040	TURN SUMMARY	3460	5359	8819	3858	3993	7851	7381	4695	12076	2856	3509	6365

Note: Boxed number indicates manual adjustment.

PROJECT MANAGER "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 0
FM NO.: 0
PROJECT LIMITS: I-95 at Indiantown Road CD
DESIGN YEAR: 2040
INTERSECTION: Island Way at Indiantown Road
PREPARED BY: ESP
FILE: /TMTool/Forced KD

DATE: 10/16/2015
NOTES: The growth rate for Indiantown Road east and west of I-95 (1.35%) is based on growth rates reported in the I-95 PD&E Study, dated April 11, 2014. The growth rate for Island Way north and south of Indiantown Rd was 0.85%, and is also based on the same I-95 PD&E study. For Indiantown Rd, the Design Year Standard K factor of 9.0% was applied, and interim year K factors were interpolated. The ratio between AM and PM peak hour K factors was maintained. For Island Way, the field data K and D factors were used since Island Way is not a state road, and the traffic characteristics are indicative of the field data-based K & D factors.

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

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2015	12,100	60,300	4,800	59,700
24 HR EST. AADT	2020	12,620	64,500	5,000	63,800
24 HR EST. AADT	2030	13,700	73,700	5,400	73,000
24 HR EST. AADT	2040	15,000	84,300	5,900	83,500

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2015	APPROACH K FACTOR	9.3%	8.5%	8.9%	8.9%	9.2%	8.7%	11.0%	10.0%
2020	Approach K30 factor	9.3%	8.5%	8.9%	8.9%	9.2%	8.7%	10.6%	9.6%
2030	Approach K30 factor	9.3%	8.5%	9.0%	9.0%	9.2%	8.7%	9.8%	8.8%
2040	Approach K30 factor	9.3%	8.5%	9.0%	9.0%	9.2%	8.7%	9.0%	8.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2015	APPROACH D FACTOR	63.8%	41.4%	46.6%	50.5%	47.4%	50.5%	54.7%	51.5%
2020	Approach D30 Factor	63.8%	41.4%	46.6%	50.6%	47.4%	50.5%	54.7%	51.5%
2030	Approach D30 Factor	63.8%	41.4%	46.6%	50.7%	47.4%	50.5%	54.7%	51.5%
2040	Approach D30 Factor	63.8%	41.4%	46.6%	50.8%	47.4%	50.5%	54.7%	51.5%

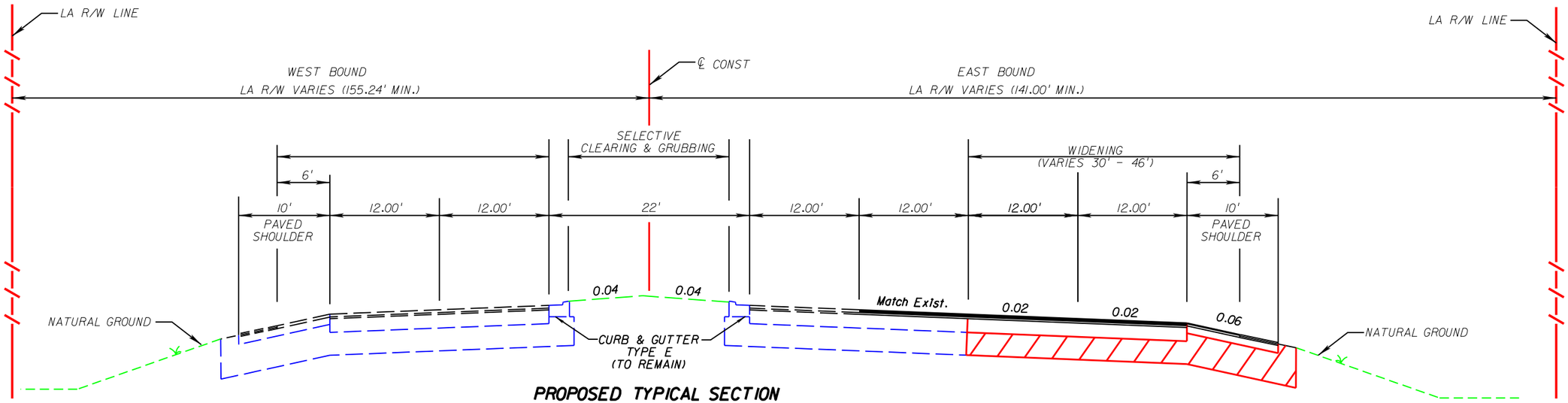
		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	510	20	149	55	2,325	39	34	24	129	165	2,912	299
2020	EST. TURNS	515	21	186	81	2,385	51	44	26	136	170	3,041	304
2030	EST. TURNS	520	25	269	122	2,637	75	64	28	141	174	3,222	308
2040	EST. TURNS	525	29	389	184	2,944	107	94	32	148	177	3,570	315
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	268	27	129	164	2,497	47	38	40	128	136	2,503	388
2020	EST. TURNS	270	29	158	207	2,588	64	52	42	131	140	2,643	392
2030	EST. TURNS	277	33	225	298	2,749	90	76	48	139	145	2,787	399
2040	EST. TURNS	283	36	320	416	3,015	127	114	50	142	151	3,001	407

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		717	403	1120	2511	2869	5380	209	231	440	3592	2978	6570
2015	TURN SUMMARY	678	378	1056	2419	3095	5514	187	223	410	3376	2964	6340
CONTROL LINK VOLUMES		748	422	1170	2690	3080	5770	218	242	460	3699	3061	6760
2020	TURN SUMMARY	722	411	1133	2517	3271	5788	206	242	448	3515	3036	6551
CONTROL LINK VOLUMES		812	458	1270	3084	3526	6610	235	265	500	3913	3237	7150
2030	TURN SUMMARY	814	458	1272	2834	3554	6388	233	275	508	3704	3298	7002
CONTROL LINK VOLUMES		889	501	1390	3538	4052	7590	257	283	540	4111	3409	7520
2040	TURN SUMMARY	942	531	1473	3235	4052	7287	274	313	587	4062	3617	7679
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		426	604	1030	2720	2670	5390	211	209	420	3075	2895	5970
2015	TURN SUMMARY	423	591	1014	2707	2670	5377	207	209	416	3027	2893	5920
CONTROL LINK VOLUMES		444	626	1070	2917	2853	5770	220	220	440	3154	2966	6120
2020	TURN SUMMARY	456	641	1097	2859	2853	5712	225	233	458	3175	2989	6164
CONTROL LINK VOLUMES		482	688	1170	3351	3259	6610	237	233	470	3308	3112	6420
2030	TURN SUMMARY	536	744	1280	3136	3088	6224	262	268	530	3331	3165	6496
CONTROL LINK VOLUMES		528	752	1280	3854	3736	7590	259	251	510	3440	3240	6680
2040	TURN SUMMARY	639	872	1511	3557	3435	6992	306	314	620	3558	3440	6998

Note: Boxed number indicates manual adjustment.

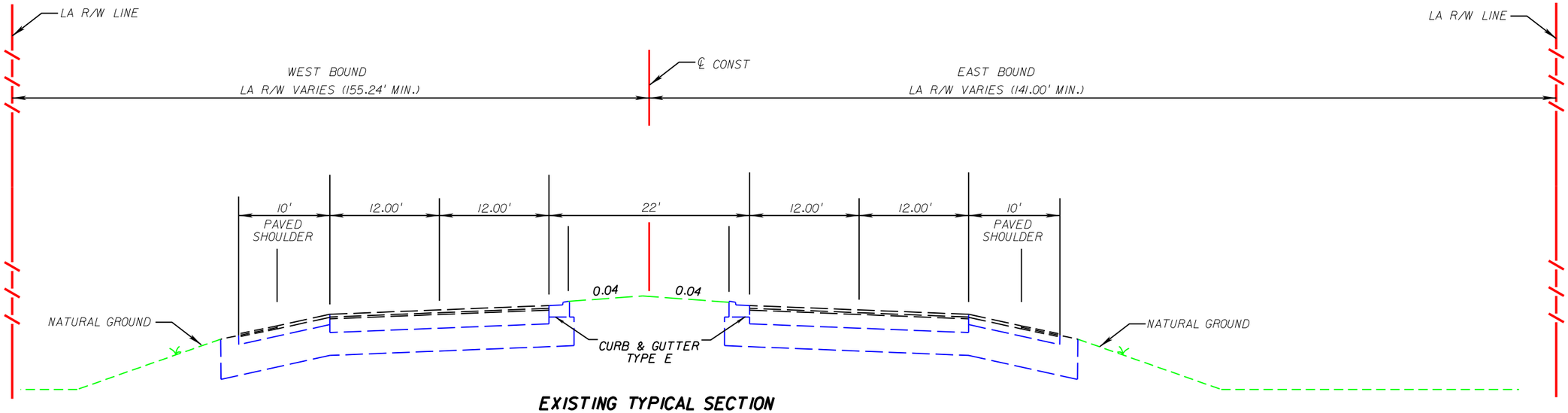
Appendix D
Typical Sections



PROPOSED TYPICAL SECTION

SR 706

STA. 164+20.00 TO STA. 185+52.09

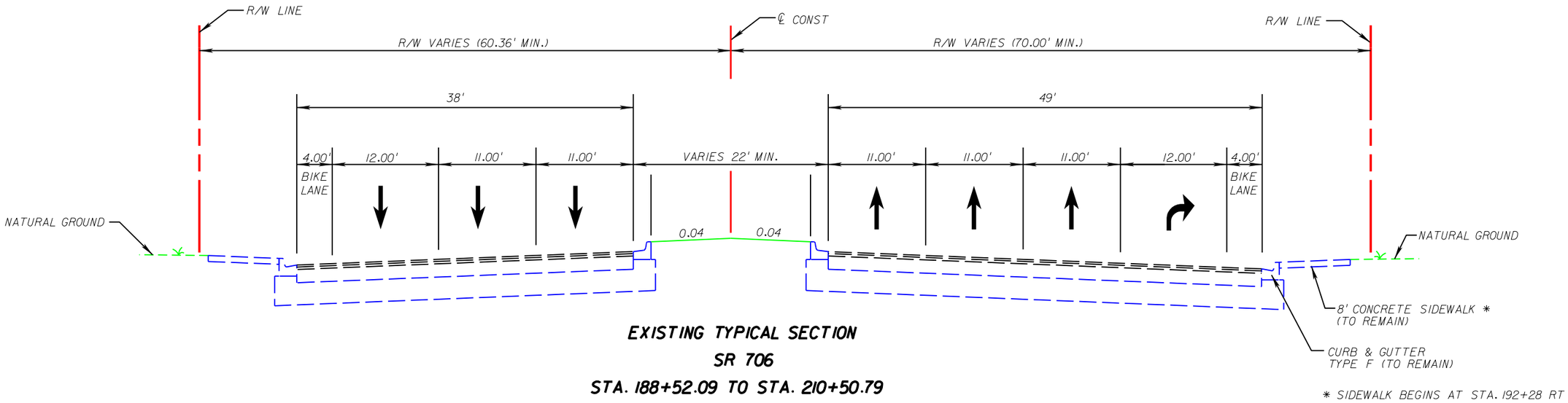


EXISTING TYPICAL SECTION

SR 706

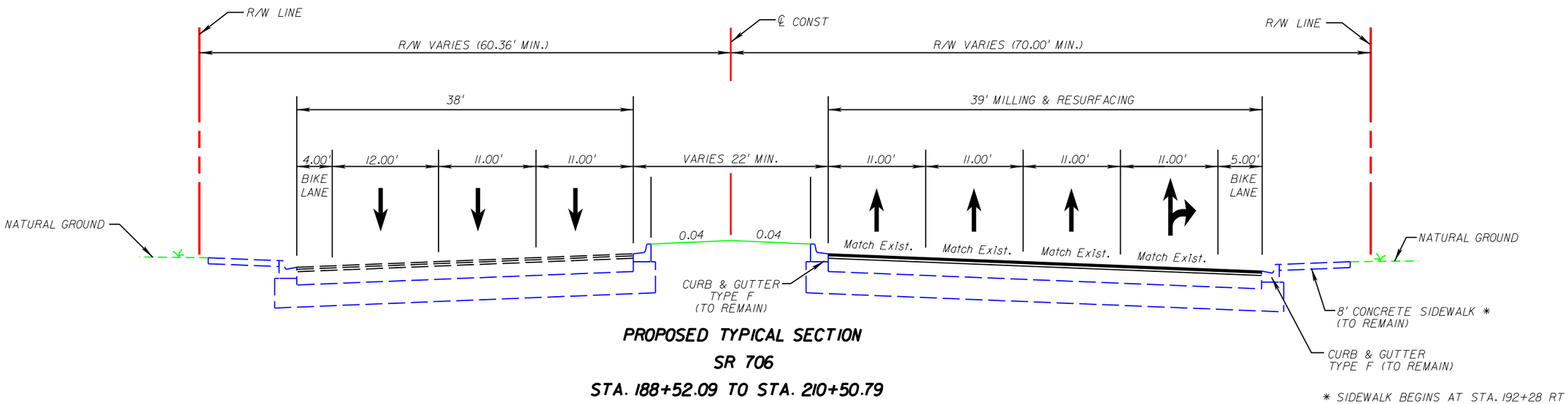
STA. 164+20.00 TO STA. 185+52.09

			STATE OF FLORIDA **DEPARTMENT OF TRANSPORTATION**		SHEET NO.
			ROAD NO. 706	COUNTY PALM BEACH	**TYPICAL SECTIONS** 1



EXISTING TYPICAL SECTION
SR 706
STA. 188+52.09 TO STA. 210+50.79

* SIDEWALK BEGINS AT STA. 192+28 RT



PROPOSED TYPICAL SECTION
SR 706
STA. 188+52.09 TO STA. 210+50.79

* SIDEWALK BEGINS AT STA. 192+28 RT

	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	TYPICAL SECTIONS	SHEET NO.
	ROAD NO. 706 / COUNTY PALM BEACH		2

Appendix E
Concept Plan Sheets

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
706	PALM BEACH	

CONCEPT DESIGN PLAN

SHEET NO. 1

CubaM 6/18/2016 11:25:22 AM \\MIAfile01\TRANSPORTATION\p\111311500_D4 SIS 2013\TWO 11_On-site Support\Indiant

I-95 NB ON RAMP

SIGNAL MAST ARM

I-95 NB ON RAM

INDIANTOWN RD WB

165 166 167 168 169 170 171

12' 12' 12' 12' 12' 12' 12' 10'

INDIANTOWN RD EB

SIGNAL MAST ARM

ONLY ONLY ONLY

8' 12' 12' 12' 10'

ONLY ONLY ONLY

MATCH LINE A MATCH LINE A

0 10 50

Feet

LEGEND:

- MILLING RESUFACING/OVERBUILD
- WIDENING
- NEW CONSTRUCTION
- NEW SIDEWALK
- CLEARING & GRUBBING
- BRIDGE WIDENING

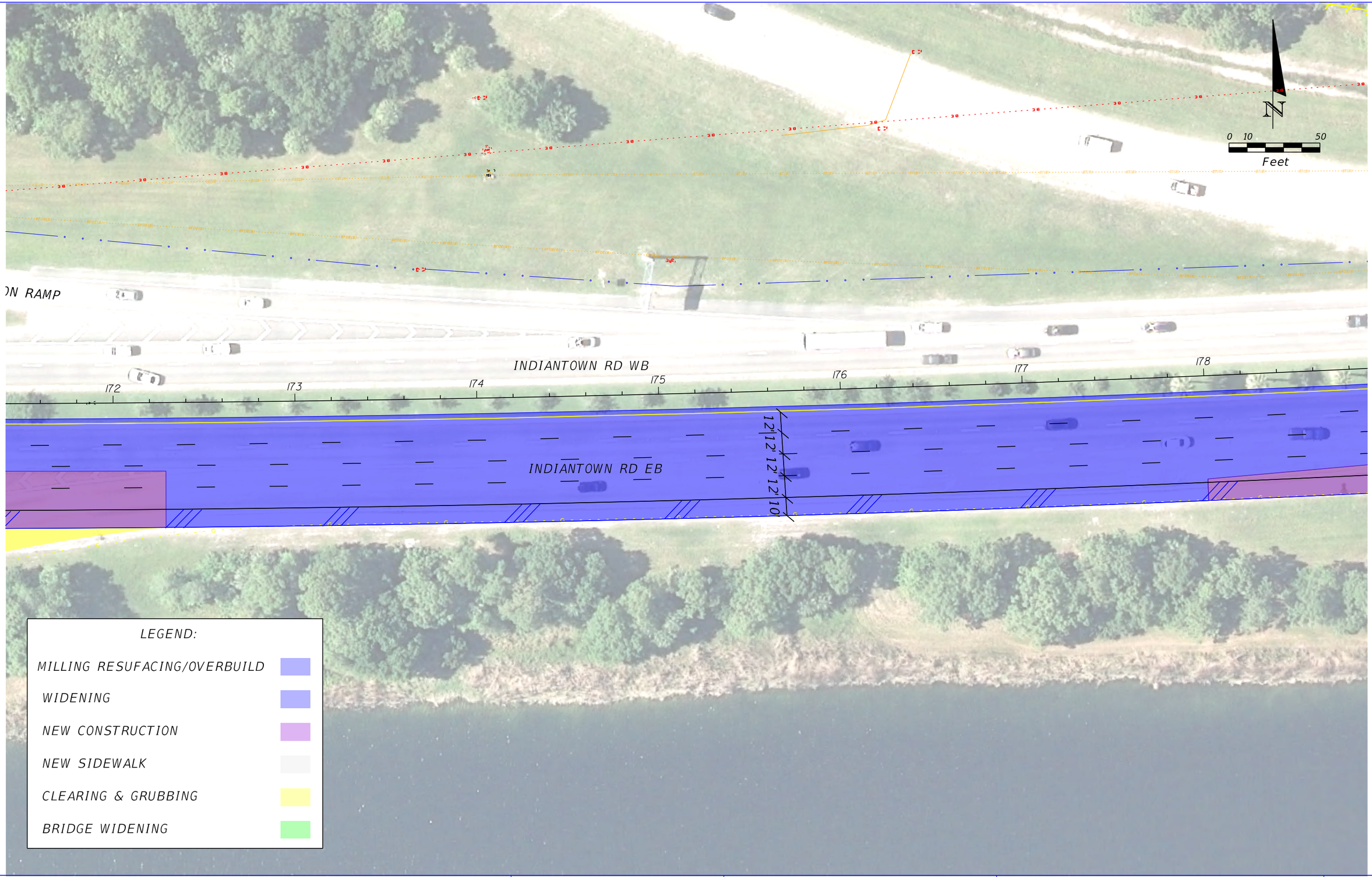
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
706	PALM BEACH	

CONCEPT DESIGN PLAN

SHEET NO. 2



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

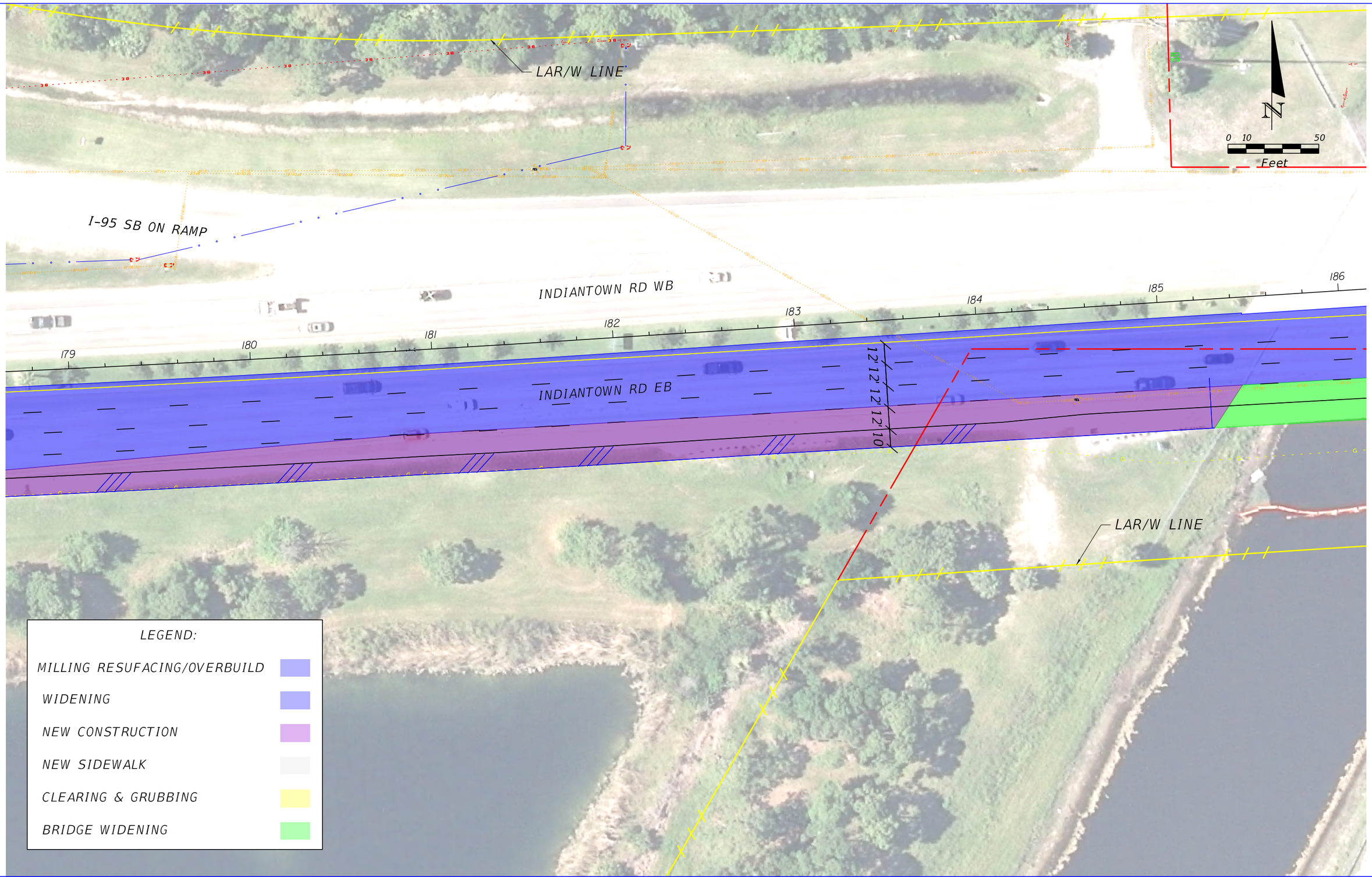
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
706	PALM BEACH	

CONCEPT DESIGN PLAN

SHEET NO. 4

CubaM 6/18/2016 11:26:01 AM \\MIAfile01\TRANSPORTATION\p\111311500_D4 SIS 2013\TWO 11_On-site Support\Indiant



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
706	PALM BEACH	

CONCEPT DESIGN PLAN

SHEET NO. 5

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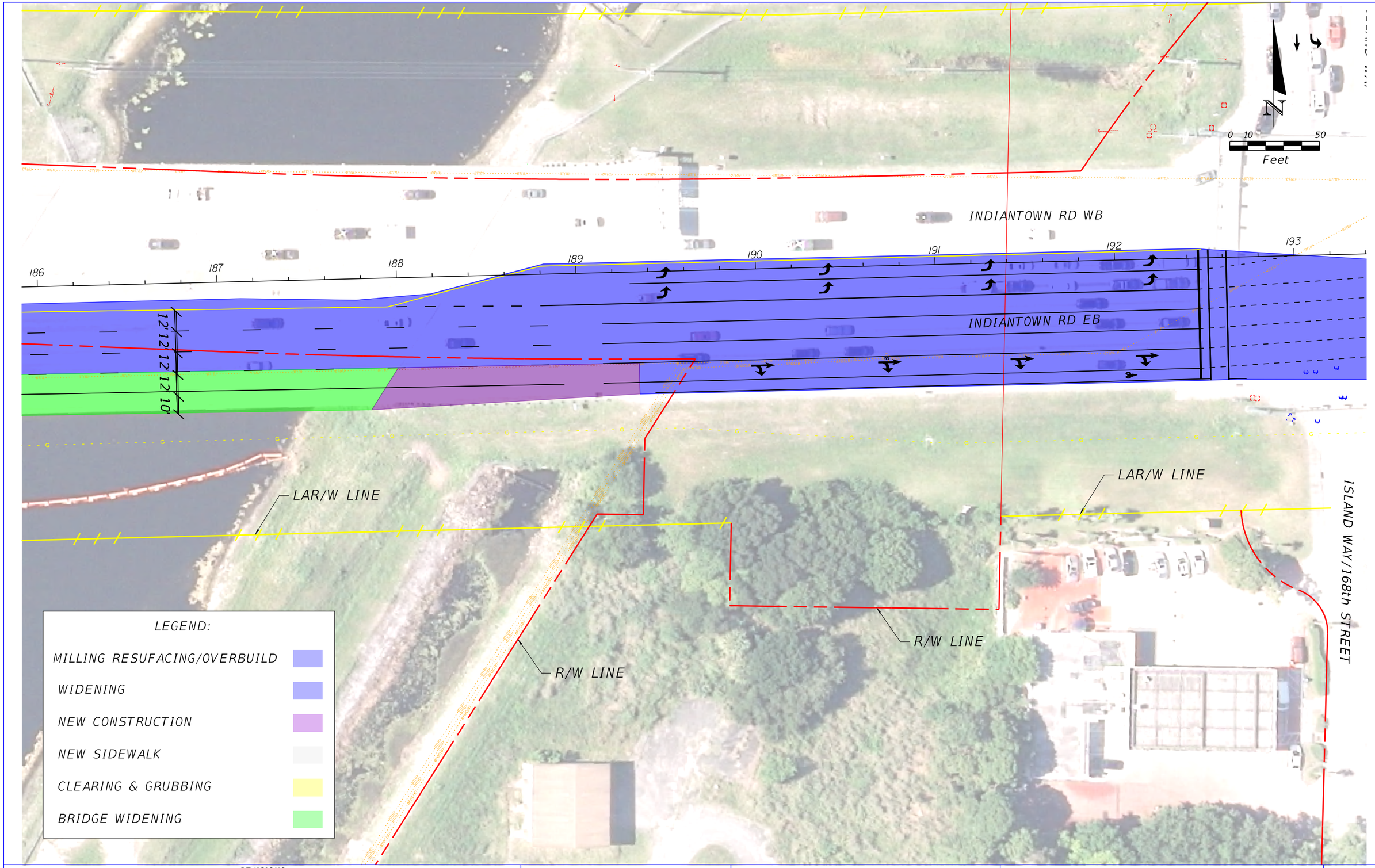


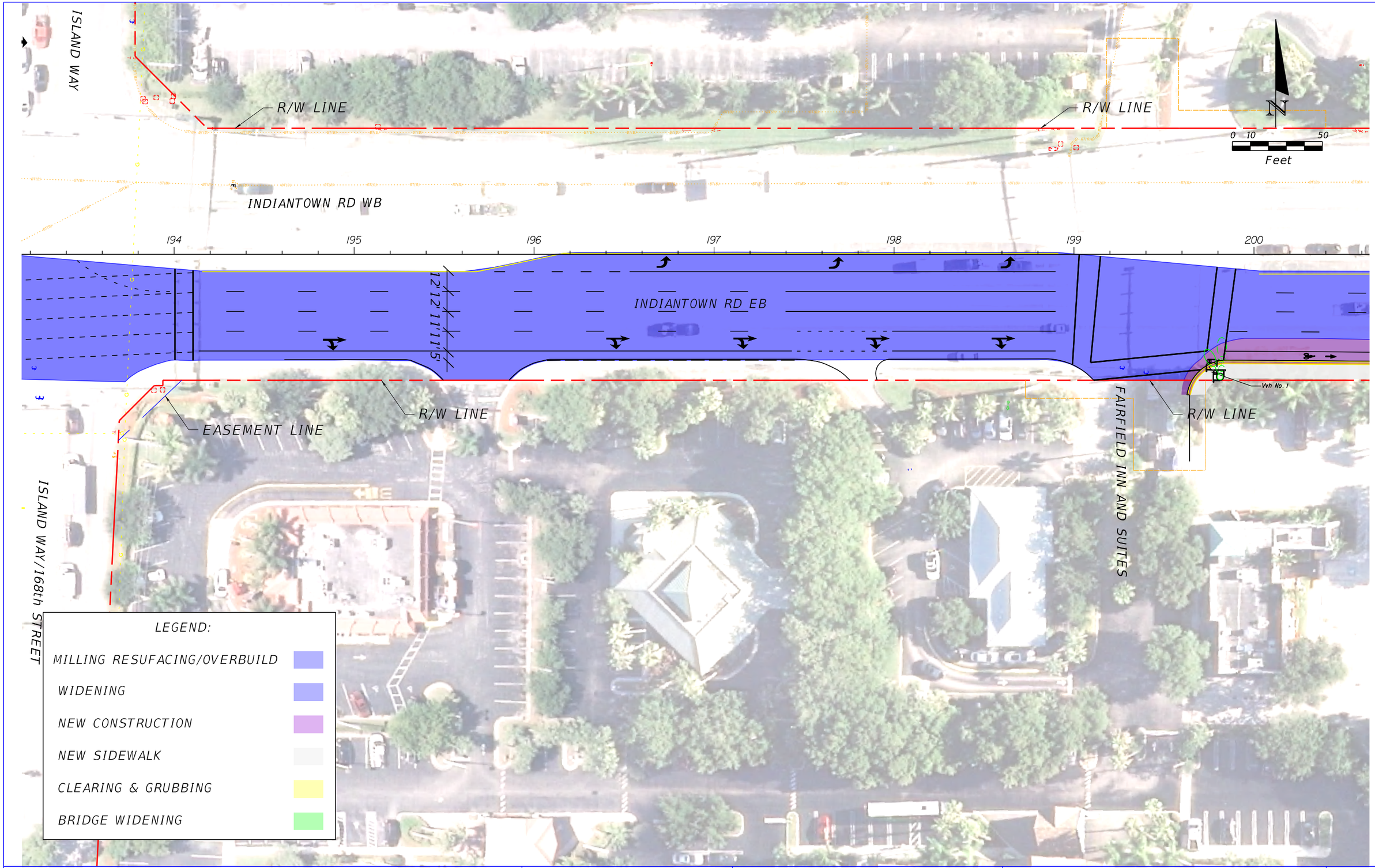
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
706	PALM BEACH	

CONCEPT DESIGN PLAN

SHEET NO. 6



LEGEND:

- MILLING RESUFACING/OVERBUILD
- WIDENING
- NEW CONSTRUCTION
- NEW SIDEWALK
- CLEARING & GRUBBING
- BRIDGE WIDENING

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
706	PALM BEACH	

CONCEPT DESIGN PLAN

SHEET NO. 7

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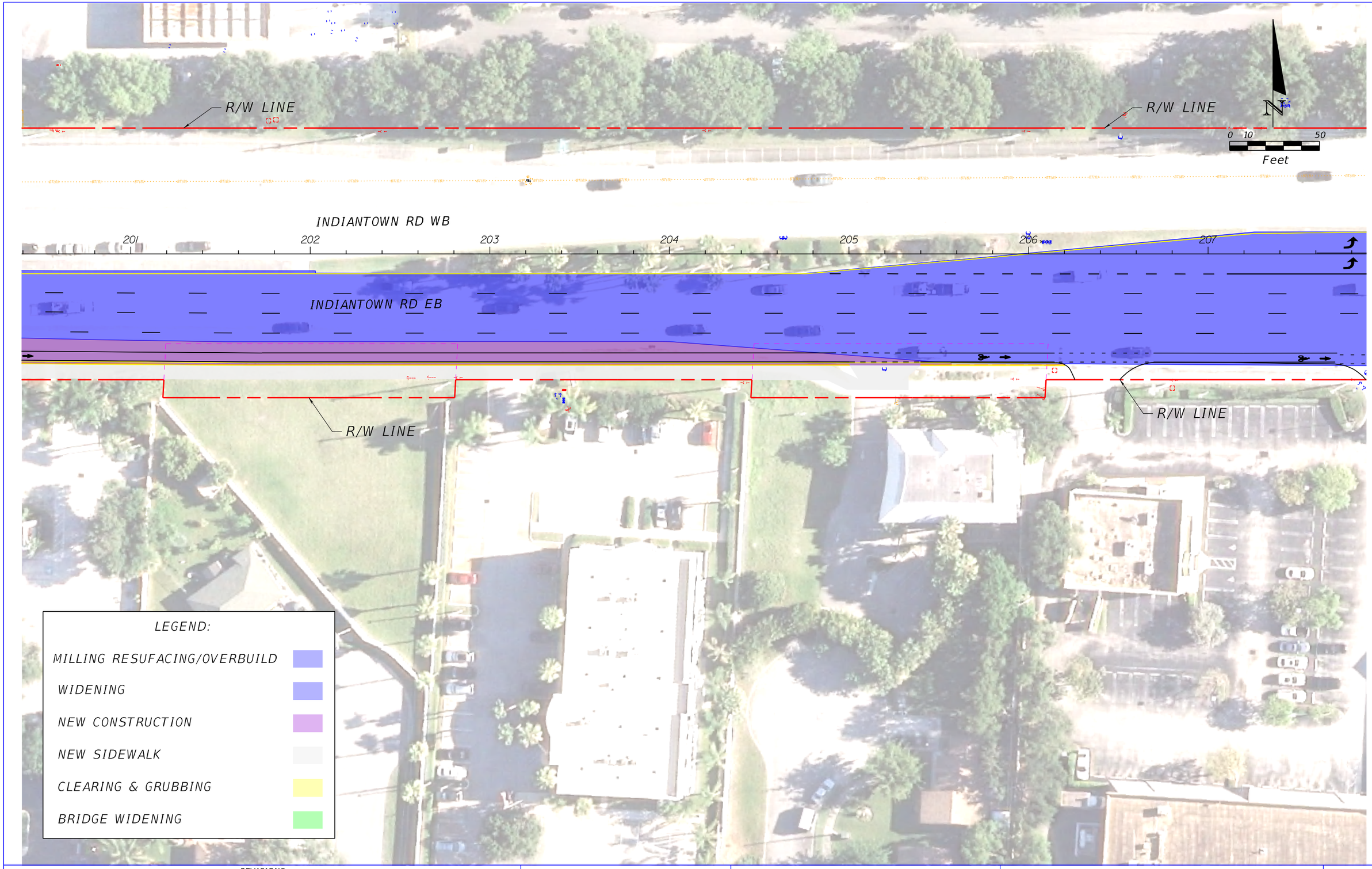
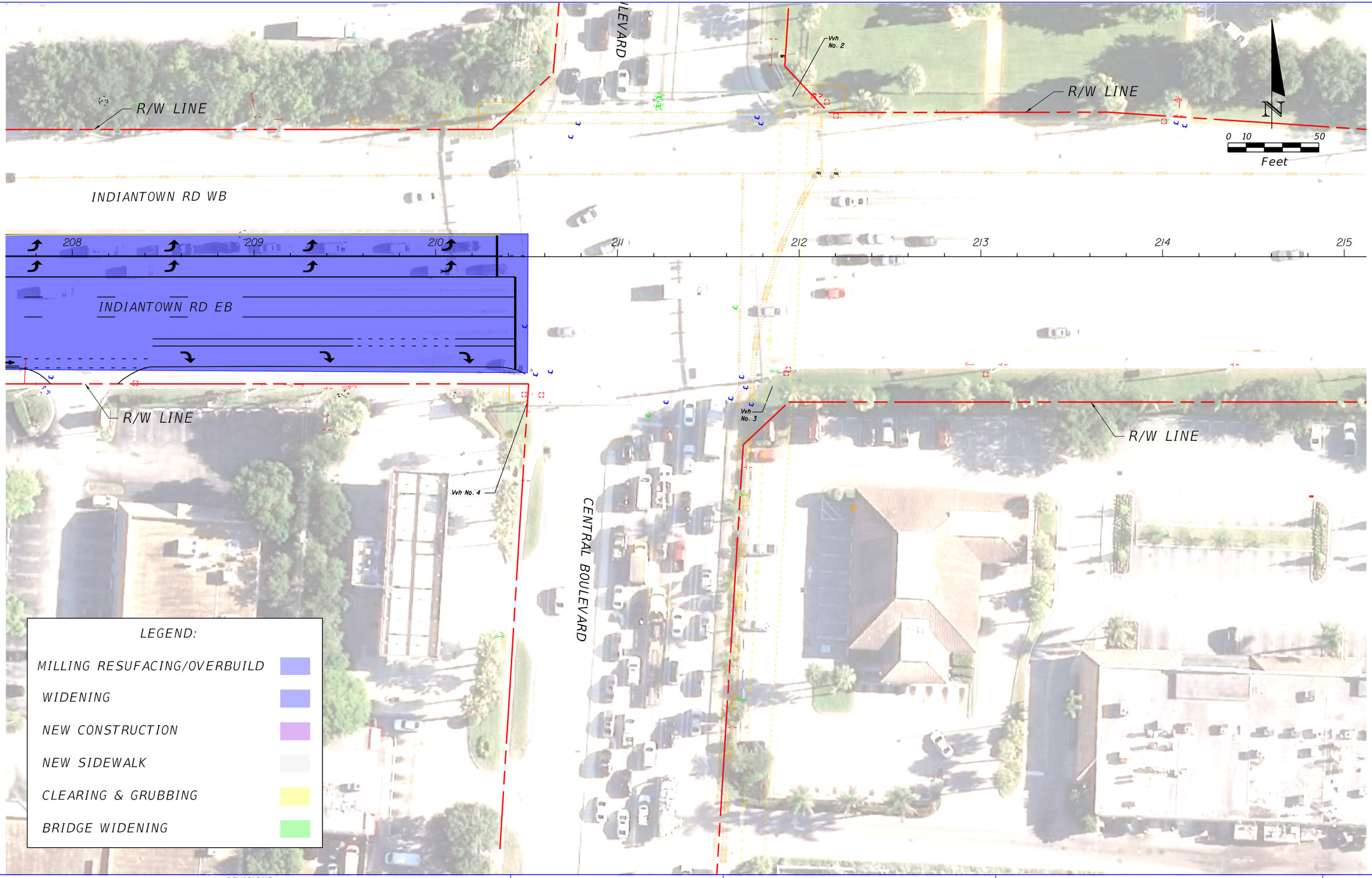


REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION				SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	CONCEPT DESIGN PLAN	8
				706	PALM BEACH			



LEGEND:

- MILLING RESUFACING/OVERBUILD
- WIDENING
- NEW CONSTRUCTION
- NEW SIDEWALK
- CLEARING & GRUBBING
- BRIDGE WIDENING

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
706	PALM BEACH	

CONCEPT DESIGN PLAN

SHEET NO. 9

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
706	PALM BEACH	

CONCEPT DESIGN PLAN

SHEET NO. 3

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Appendix F
Long Range Estimate (LRE)

Date: 6/17/2016 1:03:43 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 009001-1-52-01 **Letting Date:** 01/2099

Description: urbanizing/signalizing I-95 NB off ramp

District: 04 **County:** 93 PALM BEACH **Market Area:** 12 **Units:** English
Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.216 MI

Project Manager: Benjamin Restrepo

Version 4 Project Grand Total **$3,017,893.28**
Description: I-95 NB exit ramp to SR 706/Indiantown Rd Urbanizing and Signalizing ramp. Converting intermitent right turn lanes to 3 through EB lanes on Indiantown Rd.

Sequence: 1 NUR - New Construction, Undivided, Rural **Net Length:** 0.125 MI
660 LF

Description: New alignment for I-95 NB 3-lanes off ramp on to Indiantown Rd. Signalizing NB off ramp.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.115
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.52	AC	$25,627.42	$38,953.68
120-6	EMBANKMENT	7,162.26	CY	$11.00	$78,784.86
	Earthwork Component Total				$117,738.54

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	18.00 / 18.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	4,400.00	SY	$4.75	$20,900.00
285-709	OPTIONAL BASE,BASE GROUP 09	2,688.40	SY	$21.00	$56,456.40
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	435.60	TN	$110.00	$47,916.00
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA	105.60	TN	$155.00	$16,368.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	121.10	TN	$110.00	$13,321.00
	Comment: 5% contingency for I-95 NB off ramp and Indiantown Rd EB (whole project).				
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA	5.57	TN	$155.00	$863.35
	Comment: 5% contingency for I-95 NB off ramp to Indiantown Rd friction course.				
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	71.60	TN	$151.16	$10,823.06
	Comment: 5% contingency for Indiantown Rd EB friction course (whole project).				

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	68.00	EA	$4.30	$292.40
711-15-111	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.12	NM	$4,239.09	$508.69
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.25	GM	$1,357.51	$339.38
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.12	GM	$6,700.00	$804.00
	Roadway Component Total				$168,592.28

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	12.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	2.00 / 2.00
Paved Outside Shoulder Width L/R	10.00 / 10.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O

Rumble Strips No. of Sides 0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	1,515.07	SY	$11.00	$16,665.77
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	121.00	TN	$110.00	$13,310.00
337-7-22	ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA	3.87	TN	$155.00	$599.85
570-1-1	PERFORMANCE TURF	293.33	SY	$2.50	$733.32

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,716.00	LF	$1.40	$2,402.40
104-11	FLOATING TURBIDITY BARRIER	31.25	LF	$16.00	$500.00
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	31.25	LF	$6.30	$196.88
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,500.00	$2,500.00
104-18	INLET PROTECTION SYSTEM	3.00	EA	$100.00	$300.00
107-1	LITTER REMOVAL	1.52	AC	$49.72	$75.57
107-2	MOWING	1.52	AC	$102.10	$155.19

Shoulder Component Total $37,438.99

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.25	CY	$1,450.00	$3,262.50
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	104.00	LF	$147.06	$15,294.24
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	24.00	LF	$137.93	$3,310.32
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	5.00	EA	$2,351.18	$11,755.90
570-1-1	PERFORMANCE TURF	88.00	SY	$2.50	$220.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-543	INLETS, DT BOT,TYPE D, J BOT, <10'	1.00	EA	$7,677.61	$7,677.61
425-1-701	INLETS, GUTTER, TYPE S, <10'	2.00	EA	$4,032.51	$8,065.02

Drainage Component Total $49,585.59

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$419.51	$419.51

700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	3.00 AS	$1,113.43	$3,340.29
700-2-13	MULTI- POST SIGN, F&I GM, 21-30 SF	2.00 AS	$4,037.86	$8,075.72
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	2.00 AS	$4,546.86	$9,093.72
	Signing Component Total			$20,929.24

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	6 Lane Mast Arm
Multiplier	1
Description	I-95 NB exit ramp at Indiantown Rd

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	700.00	LF	$7.65	$5,355.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	300.00	LF	$21.76	$6,528.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$5,926.83	$5,926.83
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	14.00	EA	$560.95	$7,853.30
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$8,840.54	$8,840.54
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$3.43	$205.80
641-2-11	PREST CNC POLE,F&I,TYP P-II,PEDESTAL	1.00	EA	$1,129.70	$1,129.70
650-1-14	TRAFFIC SIGNAL,F&I ALUMINUM, 3 S 1 W	9.00	AS	$962.32	$8,660.88
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	10.00	EA	$242.98	$2,429.80
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	10.00	AS	$971.69	$9,716.90
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00	AS	$25,256.39	$25,256.39
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00	EA	$379.58	$1,518.32

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
649-31-103	M/ARM,F&I, WS-150,SING ARM,W/0 LUM-60	1.00	EA	$37,139.82	$37,139.82
649-31-115	M/ARM,F&I, WS-150,DBL ARM,W/0 LU 46-60	1.00	EA	$52,711.22	$52,711.22
650-1-16	TRAFFIC SIGNAL,F&I ALUMINUM, 4 S 1 W	1.00	AS	$1,703.20	$1,703.20
	Signalizations Component Total				$174,975.70

Sequence 1 Total $569,260.34

Sequence: 2 WDR - Widen/Resurface, Divided, Rural **Net Length:** 0.159 MI
840 LF

Description: Milling and resurfacing 2-lane Indiantown Rd EB. Widening from 2-lane to 4-lanes. From I-95 bridge to existing I-95 NB off ramp.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 56.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.159
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.08	AC	$25,627.42	$27,677.61
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	302.23	CY	$36.26	$10,958.86
	Earthwork Component Total				$38,636.47

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Existing Roadway Pavement Width L/R	0.00 / 24.00
Structural Spread Rate	110
Friction Course Spread Rate	110
Widened Outside Pavement Width L/R	0.00 / 24.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	110

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	3,422.73	SY	$4.75	$16,257.97
285-709	OPTIONAL BASE,BASE GROUP 09	2,270.93	SY	$21.00	$47,689.53
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	2,240.13	SY	$3.36	$7,526.84
334-1-13	SUPERPAVE ASPHALTIC CONC,	123.21	TN	$110.00	$13,553.10

	TRAFFIC C			
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	308.02 TN	$110.00	$33,882.20
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	123.21 TN	$151.16	$18,624.42
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	123.21 TN	$151.16	$18,624.42

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	1
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	3

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	86.00	EA	$4.30	$369.80
711-15-111	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.16	NM	$4,239.09	$678.25
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.48	GM	$1,357.51	$651.60
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.16	GM	$6,700.00	$1,072.00
	Roadway Component Total				$158,930.13

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	0.00 / 10.00
New Total Outside Shoulder Width L/R	0.00 / 12.67
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 2.67
Existing Paved Outside Shoulder Width L/R	0.00 / 10.00
New Paved Outside Shoulder Width L/R	0.00 / 10.00
Structural Spread Rate	110
Friction Course Spread Rate	110
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	964.19	SY	$11.00	$10,606.09
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	51.34	TN	$110.00	$5,647.40
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	51.34	TN	$151.16	$7,760.55
570-1-1	PERFORMANCE TURF	249.21	SY	$2.50	$623.02

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,932.11	LF	$1.40	$2,704.95
104-11	FLOATING TURBIDITY BARRIER	15.91	LF	$16.00	$254.56
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	15.91	LF	$6.30	$100.23
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,500.00	$2,500.00
107-1	LITTER REMOVAL	1.16	AC	$49.72	$57.68
107-2	MOWING	1.16	AC	$102.10	$118.44
	Shoulder Component Total				$30,372.93

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34
New Total Median Shoulder Width L/R	0.00 / 0.00
New Paved Median Shoulder Width L/R	0.00 / 0.00
Existing Total Median Shoulder Width L/R	0.00 / 0.00
Existing Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	0
Friction Course Spread Rate	0
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	498.43	SY	$2.50	$1,246.08
	Median Component Total				$1,246.08

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.86	CY	$1,450.00	$4,147.00
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	128.00	LF	$147.06	$18,823.68
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	$137.93	$2,206.88
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	7.00	EA	$2,351.18	$16,458.26
570-1-1	PERFORMANCE TURF	112.01	SY	$2.50	$280.03
	Drainage Component Total				$41,915.85

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-12	SINGLE POST SIGN, F&I GM, 12-20	2.00	AS	$1,113.43	$2,226.86

	SF			
700-1-60	SINGLE POST SIGN, REMOVE	2.00 AS	$19.85	$39.70
	Signing Component Total			$2,266.56
Sequence 2 Total				$273,368.02

Sequence: 3 WDR - Widen/Resurface, Divided, Rural **Net Length:** 0.166 MI
878 LF

Description: Milling and resurfacing 3-lane Indiantown Rd EB. Widening from 3-lane to 4-lane. From existing I-95 NB off ramp to begin bridge and from end bridge to begin right turn lane at 168th street.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 44.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.166
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.89	AC	$25,627.42	$22,808.40
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	232.10	CY	$36.26	$8,415.95
	Earthwork Component Total				$31,224.35

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Existing Roadway Pavement Width L/R	0.00 / 36.00
Structural Spread Rate	110
Friction Course Spread Rate	110
Widened Outside Pavement Width L/R	0.00 / 12.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	110

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	2,406.87	SY	$4.75	$11,432.63
285-709	OPTIONAL BASE,BASE GROUP 09	1,202.95	SY	$21.00	$25,261.95
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	3,512.26	SY	$3.36	$11,801.19
334-1-13	SUPERPAVE ASPHALTIC CONC,	193.17	TN	$110.00	$21,248.70

	TRAFFIC C			
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	160.98 TN	$110.00	$17,707.80
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	193.17 TN	$151.16	$29,199.58
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	64.39 TN	$151.16	$9,733.19

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	1
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	3

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	90.00	EA	$4.30	$387.00
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.17	GM	$6,700.00	$1,139.00
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.50	GM	$1,357.51	$678.76
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.17	GM	$6,700.00	$1,139.00
	Roadway Component Total				$129,728.80

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	10.00 / 10.00
New Total Outside Shoulder Width L/R	0.00 / 12.67
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 2.67
Existing Paved Outside Shoulder Width L/R	10.00 / 10.00
New Paved Outside Shoulder Width L/R	0.00 / 10.00
Structural Spread Rate	110
Friction Course Spread Rate	110
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	1,007.82	SY	$11.00	$11,086.02
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	53.66	TN	$110.00	$5,902.60
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	3.54	TN	$151.16	$535.11
570-1-1	PERFORMANCE TURF	260.49	SY	$2.50	$651.22

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

536-1-1	GUARDRAIL- ROADWAY, GEN TL-3	385.00 LF	$19.03	$7,326.55
536-8	GUARDRAIL- BRIDGE ANCHORAGE ASSEM, F&I	2.00 EA	$3,241.25	$6,482.50
536-73	GUARDRAIL REMOVAL	280.00 LF	$2.75	$770.00
536-85-22	GUARDRAIL END ANCHORAGE ASSEMBLY- FLARED	1.00 EA	$2,582.04	$2,582.04

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,019.55	LF	$1.40	$2,827.37
104-11	FLOATING TURBIDITY BARRIER	16.63	LF	$16.00	$266.08
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	16.63	LF	$6.30	$104.77
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,500.00	$2,500.00
107-1	LITTER REMOVAL	1.21	AC	$49.72	$60.16
107-2	MOWING	1.21	AC	$102.10	$123.54
	Shoulder Component Total				$41,217.97

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34
New Total Median Shoulder Width L/R	0.00 / 0.00
New Paved Median Shoulder Width L/R	0.00 / 0.00
Existing Total Median Shoulder Width L/R	0.00 / 0.00
Existing Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	110
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	520.98	SY	$2.50	$1,302.45
	Median Component Total				$1,302.45

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.99	CY	$1,450.00	$4,335.50
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	136.00	LF	$147.06	$20,000.16
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	$137.93	$2,206.88
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	7.00	EA	$2,351.18	$16,458.26

570-1-1	PERFORMANCE TURF	117.08 SY	$2.50	$292.70

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-701	INLETS, GUTTER, TYPE S, <10'	2.00 EA	$4,032.51	$8,065.02
	Drainage Component Total			$51,358.52

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00 AS	$419.51	$419.51
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00 AS	$1,113.43	$1,113.43
700-1-60	SINGLE POST SIGN, REMOVE	2.00 AS	$19.85	$39.70
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00 AS	$4,546.86	$4,546.86
700-2-60	MULTI- POST SIGN, REMOVE	1.00 AS	$501.54	$501.54
	Signing Component Total			$6,621.04

Sequence 3 Total $261,453.13

Sequence: 4 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.073 MI
383 LF

Description: Indiantown EB Lengthen Existing Left Turn Lane 380 feet to I-95 NB on ramp

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	20.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.072
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.17	AC	$25,627.42	$4,356.66
120-1	REGULAR EXCAVATION	536.73	CY	$11.00	$5,904.03
	Earthwork Component Total				$10,260.69

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Existing Roadway Pavement Width L/R	0.00 / 11.00
Structural Spread Rate	110
Friction Course Spread Rate	110
Widened Outside Pavement Width L/R	0.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 11.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	110

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	577.60	SY	$4.75	$2,743.60
285-709	OPTIONAL BASE,BASE GROUP 09	481.90	SY	$21.00	$10,119.90
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	467.87	SY	$3.36	$1,572.04
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	25.73	TN	$110.00	$2,830.30
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	64.33	TN	$110.00	$7,076.30
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG	25.73	TN	$151.16	$3,889.35

	76-22, ARB			
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	25.73 TN	$151.16	$3,889.35

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	10.00	EA	$4.30	$43.00
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.07	GM	$6,700.00	$469.00
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.07	GM	$6,700.00	$469.00
	Roadway Component Total				$33,101.84

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	0.00 / 0.00
New Total Outside Shoulder Width L/R	4.25 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	2.00 / 0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	382.80	LF	$24.94	$9,547.03

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
107-1	LITTER REMOVAL	0.63	AC	$49.72	$31.32
107-2	MOWING	0.63	AC	$102.10	$64.32
	Shoulder Component Total				$9,642.67

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-5-16	TRAF SEP CONC-TYPE I, 8.5' WIDE	450.00	LF	$72.92	$32,814.00

Median Component Total $32,814.00

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	1.30	CY	$1,450.00	$1,885.00
425-1-451	INLETS, CURB, TYPE J-5, <10'	1.00	EA	$8,491.75	$8,491.75
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	48.00	LF	$75.00	$3,600.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	$137.93	$2,206.88
570-1-1	PERFORMANCE TURF	22.04	SY	$2.50	$55.10

Drainage Component Total $16,238.73

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$419.51	$419.51
700-1-60	SINGLE POST SIGN, REMOVE	1.00	AS	$19.85	$19.85

Signing Component Total $439.36

Sequence 4 Total $102,497.29

Sequence: 5 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.108 MI
568 LF

Description: Milling and resurfacing 3-lanes Indiantown Rd EB. Widening from 3-lanes to 4-lanes. From Fairfield Inn and suites entrance to begin right turn lane at Central Blvd. intersection.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 25.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.108
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.33	AC	$25,627.42	$8,457.05
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	1,038.68	CY	$36.26	$37,662.54
	Earthwork Component Total				$46,119.59

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Existing Roadway Pavement Width L/R	0.00 / 39.00
Structural Spread Rate	110
Friction Course Spread Rate	110
Widened Outside Pavement Width L/R	0.00 / 12.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	110

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	920.37	SY	$4.75	$4,371.76
285-709	OPTIONAL BASE,BASE GROUP 09	778.34	SY	$21.00	$16,345.14
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	2,461.89	SY	$3.36	$8,271.95
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	135.40	TN	$110.00	$14,894.00
334-1-13	SUPERPAVE ASPHALTIC CONC,	104.16	TN	$110.00	$11,457.60

	TRAFFIC C			
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	135.40 TN	$151.16	$20,467.06
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	41.66 TN	$151.16	$6,297.33

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	1
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	3

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	58.00	EA	$4.30	$249.40
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.11	GM	$6,700.00	$737.00
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.32	GM	$1,357.51	$434.40
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.11	GM	$6,700.00	$737.00
	Roadway Component Total				$84,262.64

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	0.00 / 3.00
New Total Outside Shoulder Width L/R	0.00 / 10.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	0.00 / 8.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	568.13	LF	$24.94	$14,169.16
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	505.00	SY	$38.77	$19,578.85

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,136.26	LF	$1.40	$1,590.76
104-11	FLOATING TURBIDITY BARRIER	10.76	LF	$16.00	$172.16
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	10.76	LF	$6.30	$67.79
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,500.00	$2,500.00
104-18	INLET PROTECTION SYSTEM	5.00	EA	$100.00	$500.00

107-1	LITTER REMOVAL	0.94 AC	$49.72	$46.74
107-2	MOWING	0.94 AC	$102.10	$95.97
	Shoulder Component Total			$38,721.43

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	1.94	CY	$1,450.00	$2,813.00
425-1-351	INLETS, CURB, TYPE P-5, <10'	4.00	EA	$5,266.12	$21,064.48
425-1-451	INLETS, CURB, TYPE J-5, <10'	2.00	EA	$8,491.75	$16,983.50
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	64.00	LF	$75.00	$4,800.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	24.00	LF	$137.93	$3,310.32
570-1-1	PERFORMANCE TURF	32.71	SY	$2.50	$81.78
	Drainage Component Total				$49,053.08

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	3.00	AS	$419.51	$1,258.53
700-1-60	SINGLE POST SIGN, REMOVE	3.00	AS	$19.85	$59.55
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00	AS	$4,546.86	$4,546.86
700-2-60	MULTI- POST SIGN, REMOVE	1.00	AS	$501.54	$501.54
	Signing Component Total				$6,366.48

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Mast Arm
Multiplier	1
Description	Fairfield Inn and Suites entrance

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	750.00	LF	$7.65	$5,737.50
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	250.00	LF	$21.76	$5,440.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$5,926.83	$5,926.83
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	8.00	EA	$560.95	$4,487.60
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$8,840.54	$8,840.54
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$3.43	$205.80
641-2-11	PREST CNC POLE,F&I,TYP P-	1.00	EA	$1,129.70	$1,129.70

	II,PEDESTAL			
650-1-14	TRAFFIC SIGNAL,F&I ALUMINUM, 3 S 1 W	7.00 AS	$962.32	$6,736.24
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	7.00 EA	$242.98	$1,700.86
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	7.00 AS	$971.69	$6,801.83
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	2.00 EA	$140.22	$280.44
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	$25,256.39	$25,256.39
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00 EA	$379.58	$1,518.32

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
649-31-113	M/ARM,F&I, WS-150,DBL ARM,W/0 LU 36-70.5	1.00	EA	$57,382.00	$57,382.00

Signalizations Component Total $131,444.05

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	30.00	LF	$7.65	$229.50
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	1.00	EA	$560.95	$560.95
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	330.00	LF	$2.13	$702.90
715-4-111	LIGHT POLE COMP, F&I, WS150, 40'	1.00	EA	$4,487.79	$4,487.79
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	1.00	EA	$555.24	$555.24
	Subcomponent Total				$6,536.38

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-14	CONDUIT, F& I, ABOVEGROUND	110.00	LF	$21.70	$2,387.00

Lighting Component Total $8,923.38

Sequence 5 Total $364,890.65

Sequence: 6 RSD - Resurfacing, Divided **Net Length:** 0.196 MI
1,037 LF

Description: Mill and Resurface Indiantown Rd EB from begin right turn lane at 168th street to Fairfield Inn and Suite entrance.

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Roadway Pavement Width L/R	0.00 / 64.00
Structural Spread Rate	110
Friction Course Spread Rate	110

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	7,374.17	SY	$3.36	$24,777.21
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	405.58	TN	$110.00	$44,613.80
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	405.58	TN	$151.16	$61,307.47

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
711-11-170	THERMOPLASTIC, STD, WHITE, ARROW	20.00	EA	$69.44	$1,388.80

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	1
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	3

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	106.00	EA	$4.30	$455.80
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.20	GM	$6,700.00	$1,340.00
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.59	GM	$1,357.51	$800.93
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.20	GM	$6,700.00	$1,340.00
	Roadway Component Total				$136,024.01

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	110
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,037.00	LF	$1.40	$1,451.80
104-18	INLET PROTECTION SYSTEM	6.00	EA	$100.00	$600.00
107-1	LITTER REMOVAL	1.43	AC	$49.72	$71.10
107-2	MOWING	1.43	AC	$102.10	$146.00
	Shoulder Component Total				$2,268.90

Sequence 6 Total $138,292.91

Sequence: 7 RSD - Resurfacing, Divided **Net Length:** 0.100 MI
530 LF

Description: Mill and Resurface Indiantown Rd EB from begin right turn lane at Central Boulevard to Central Boulevard intersection.

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Roadway Pavement Width L/R	0.00 / 74.00
Structural Spread Rate	110
Friction Course Spread Rate	110

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	4,358.70	SY	$3.36	$14,645.23
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	239.73	TN	$110.00	$26,370.30
337-7-73	ASPH CONC FC,TRAF C,FC-9.5,PG 76-22, ARB	239.73	TN	$151.16	$36,237.59

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
711-11-170	THERMOPLASTIC, STD, WHITE, ARROW	20.00	EA	$69.44	$1,388.80

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	1
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	3

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	54.00	EA	$4.30	$232.20
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.10	GM	$6,700.00	$670.00
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.30	GM	$1,357.51	$407.25
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.10	GM	$6,700.00	$670.00
	Roadway Component Total				$80,621.37

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	110
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	530.00	LF	$1.40	$742.00
104-18	INLET PROTECTION SYSTEM	5.00	EA	$100.00	$500.00
107-1	LITTER REMOVAL	0.73	AC	$49.72	$36.30
107-2	MOWING	0.73	AC	$102.10	$74.53
	Shoulder Component Total				$1,352.83

Sequence 7 Total $81,974.20

Sequence: 8 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.049 MI
258 LF

Description: Widen Bridge 10 feet to the south of Indiantown Rd EB.

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Existing Roadway Pavement Width L/R	0.00 / 0.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	0.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	80

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	1
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	33.00	EA	$4.30	$141.90
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.05	GM	$6,700.00	$335.00
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.20	GM	$1,357.51	$271.50
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.05	GM	$6,700.00	$335.00
	Roadway Component Total				$1,083.40

SHOULDER COMPONENT

User Input Data

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

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	516.38	LF	$1.40	$722.93
104-11	FLOATING TURBIDITY BARRIER	4.89	LF	$16.00	$78.24

104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	4.89 LF	$6.30	$30.81
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$2,500.00	$2,500.00
107-1	LITTER REMOVAL	0.43 AC	$49.72	$21.38
107-2	MOWING	0.43 AC	$102.10	$43.90
	Shoulder Component Total			$3,397.26

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	0.88	CY	$1,450.00	$1,276.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	32.00	LF	$75.00	$2,400.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	8.00	LF	$137.93	$1,103.44
	Drainage Component Total				$4,779.44

BRIDGES COMPONENT

Bridge VALUE

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	257.00
Width (LF)	10.00
Type	High Level, Widen
Cost Factor	2.70
Structure No.	
Removal of Existing Structures area	2,570.00
Default Cost per SF	$75.00
Factored Cost per SF	$202.50
Final Cost per SF	**$208.51**
Basic Bridge Cost	**$520,425.00**
Description	

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-3	REMOVAL OF EXISTING STRUCTURES/BRIDGES	2,570.00	SF	$60.82	$156,307.40
400-2-10	CONC CLASS II, APPROACH SLABS	22.22	CY	$523.69	$11,636.39
415-1-9	REINF STEEL- APPROACH SLABS	3,888.50	LB	$0.98	$3,810.73
	Bridge VALUE Total				$692,179.52
	Bridges Component Total				$692,179.52

Sequence 8 Total	$701,439.62

Date: 6/17/2016 1:03:45 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 009001-1-52-01 **Letting Date:** 01/2099

Description: urbanizing/signalizing I-95 NB off ramp

District: 04 **County:** 93 PALM BEACH **Market Area:** 12 **Units:** English

Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.216 MI

Project Manager: Benjamin Restrepo

Version 4 Project Grand Total **$3,017,893.28**

Description: I-95 NB exit ramp to SR 706/Indiantown Rd Urbanizing and Signalizing ramp. Converting intermitent right turn lanes to 3 through EB lanes on Indiantown Rd.

Project Sequences Subtotal			**$2,493,176.16**
102-1	Maintenance of Traffic	10.00 %	$249,317.62
101-1	Mobilization	8.00 %	$219,399.50
Project Sequences Total			**$2,961,893.28**
Project Unknowns		0.00 %	$0.00
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-16	PARTNERING (DO NOT BID)	2.00	LS	$3,000.00	$6,000.00
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$50,000.00	$50,000.00
Project Non-Bid Subtotal					**$56,000.00**
Version 4 Project Grand Total					**$3,017,893.28**

Appendix G
Environmental Screening Memorandum

Florida Department of Transportation

RICK SCOTT
GOVERNOR

3400 West Commercial Blvd.
Fort Lauderdale, FL 33309

JIM BOXOLD
SECRETARY

M E M O R A N D U M

Date: 13 May 2016

To: Ann Broadwell, Environmental Administrator

From: Scott Clark, Environmental Specialist

Subject: **Interchange Operation Analysis Report (IOAR) EST Screening**
SR-706 and I95
Financial Project ID Number: N/A
Federal Aid Project Number: N/A
Bridge Number: N/A
County: Palm Beach
Description: Intersection Improvements

This Interchange Operational Analysis Report (IOAR) has been prepared to evaluate the impacts of signalizing the I-95 North Bound (NB) off ramp at SR 706 (Indiantown Road) to the Interstate 95 (I-95) interchange off ramps with SR 706, determine the year of Level of Service "F" along eastbound Indiantown Road and determine the year in which widening Indiantown Road from three lanes to four lanes is required.

An Environmental Screening Tool (EST) evaluation was conducted for the above-referenced project. The purpose of this evaluation is to identify environmental features of potential concern prior

Please note that the database/GIS information within the EST is only applicable to date, due to continual updates of these databases. From this evaluation, the following environmental features were identified that should be considered during preparation of the future project plans.

Local Traffic Patterns

Local traffic patterns are not anticipated to be affected.

Property Access and Right of Way Acquisition

All proposed project activities are expected to occur within the existing FDOT ROW. Additional ROW is not expected to be necessary for this project.

Planned Community Growth/Land Use Patterns

This project is not expected to have any adverse impacts to planned community growth or planned land use patterns.

Community Cohesiveness

The project will not bisect or isolate any communities. This project is expected to have only temporary disruptions during construction and no adverse effects are anticipated.

Air Quality

The project is located within the Southeast FL Airshed, Air Quality Maintenance Area for all of the National Ambient Air Quality Standards under the criteria provided in the Clean Air Act.

Wetlands

Based on a review of the National Wetlands Inventory (NWI) Wetlands Mapper, wetlands have been identified within or adjacent to Indian Town Road and within the project limits. The NWI identifies areas as Riverine and fresh water shrub/forested. The C18 canal also cuts through the project corridor. Attached is a map with wetland locations from the NWI. EST has identified the area as a part of the Comprehensive Everglades Restoration Plan-Loxahatchee River Watershed.

Based on the scope of the proposed project and because all project activities will occur within the existing FDOT ROW, no impacts to wetlands are anticipated from the proposed project. A map titled "NWI Wetland Locations" is attached.

Water Quality

The local area has a few issues with water quality. Jupiter farms has a Verified Impaired Florida Water body, and there are a couple FDOH Super Act Risk Sources spread out the project corridor. Based on the proposed scope, no impacts to Outstanding Florida Waters are anticipated from the proposed project.

Floodplain Encroachment

Areas in the vicinity of the I95/Turnpike interchange project corridor are located within the 100-year floodplain (Zone X500). This project will not: 1) affect flood heights or base floodplain limits, 2) increase flood risks or damage, or 3) significantly change the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, this project will not encroach upon the base floodplain, as defined in Part 2, Chapter 24 of the Project Development and Environment (PD&E) Manual.

Endangered or Threatened Species, Wildlife, and Critical Habitats

The project corridor is located in the Palm Beach County USFWS Consultation Species area, a Snail Kite Consultation Area, Scrub Jay Consultation Area, Scrub Jay Service Area, Red Cockaded Woodpecker Consultation Area, Caracara Consultation Area, Wood Stork Area and the Upper Loxahatchee River houses rare and imperiled fish.

Essential Fish Habitat

The Loxahatchee River Lake Worth Creek Aquatic Preserve is directly located to the north of Indiantown Road, east of I95.

Coastal Barrier Resources

The project is not located within a Coastal Barrier Resource Area (CBRA).

Community Services

There are several community services located within the project vicinity, including:

- Jupiter Country Club, 300 Marsala Ct, Jupiter, FL 33478
- C-18 Indiantown Road Access Boat Ramp (FWC R-140), 174th Street North, Jupiter, FL 33458
- Kennedy Estates Park, 6811 Booker T Blvd, Jupiter, FL 33458
- Atlantic Theatre, 6743 W Indiantown Rd, Jupiter, FL 33458
- Children's Physicians Healthcare, 270 S Central Boulevard, Jupiter, FL 33458
- Calvary Chapel of Jupiter, 6671 W Indiantown Rd, Jupiter, FL 33458
- Palm Beach County Health Department-Jupiter Auxiliary Health Center, 6405 Indiantown Rd, Jupiter, FL 33458

Based on the current scope of work, no impacts are anticipated to any community services. A map titled IOAR Recreation Sites is attached to this document.

Section 106 of the National Historic Preservation Act

According to a review of the ETDM EST, There is no SHPO Survey present, and there are no historic or archeological sites in the project corridor.

State Historic Highway

Indiantown Road is not listed as a State Historic Highway, as designated by Florida state law.

Contamination

Based on review of the ETDM EST and other sources the following sites are identified as potential sources of contamination and/or designated hazardous waste facilities.

FAC_ID/ SITE_ID	SITE_TYPE	NAME	ADDRESS1	FAC_STAT
9812795	EMERGENCY RESPONSE SPILL SITE	FDOT BER 10-2I-43076	I-95 SB @ INDIAN TOWN RD	CLOSED
9803705	EMERGENCY RESPONSE SPILL SITE	W W TRUCKING SPILL	I-95 SOUTH & INDIANTOWN RD	CLOSED
142547		WALGREENS #4279	1800 W INDIANTOWN RD	
8944183	RETAIL STATION	ISLAND WAY SHELL MACMILLAN	6812 W INDIANTOWN RD	OPEN
8943947	RETAIL STATION	CHEVRON #53338	6724 W INDIANTOWN RD	CLOSED
1260789		JUPITER FAMILY DENTISTRY	6779 W INDIANTOWN ROAD 17	
9401994	FUEL USER/NON-RETAIL	RECREAHONAL DEPOT	6779 INDIANTOWN RD	OPEN
9046175	RETAIL STATION	SHELL FOOD MART MACMILLAN	6751 W INDIANTOWN RD	OPEN
9501470	DRYCLEANER	WESTSIDE CLEANERS	6743 W INDIANTOWN RD	OPEN
216837		WINN-DIXIE #0238	6707 W INDIANTOWN RD	
	BIOMEDICAL WASTE	ANKLE & FOOT CARE CENTER	6671 W INDIANTOWN ROAD 55	

176330	DRYCLEANER	ONE PRICE DRYCLEANING OF JUPITER	2562 W INDIANTOWN RD	CLOSED
9801078	TANKS-PETROLEUM CONTAMINATION	PALM BEACH CNTY FIRE RESCUE #19	322 N CENTRAL BLVD	CLOSED
9046955	RETAIL STATION	JUPITER WEST MOBIL	6661 INDIANTOWN RD	OPEN
8944868	RETAIL STATION	JUPITER CITGO MACMILLAN	2508 W INDIANTOWN RD	OPEN
2078		TOWN OF JUPITER DRINKING WATER PLANT	17403 CENTRAL BLVD	

Please refer to the attachment titled ”IOAR Contamination Sites” for an aerial overview.

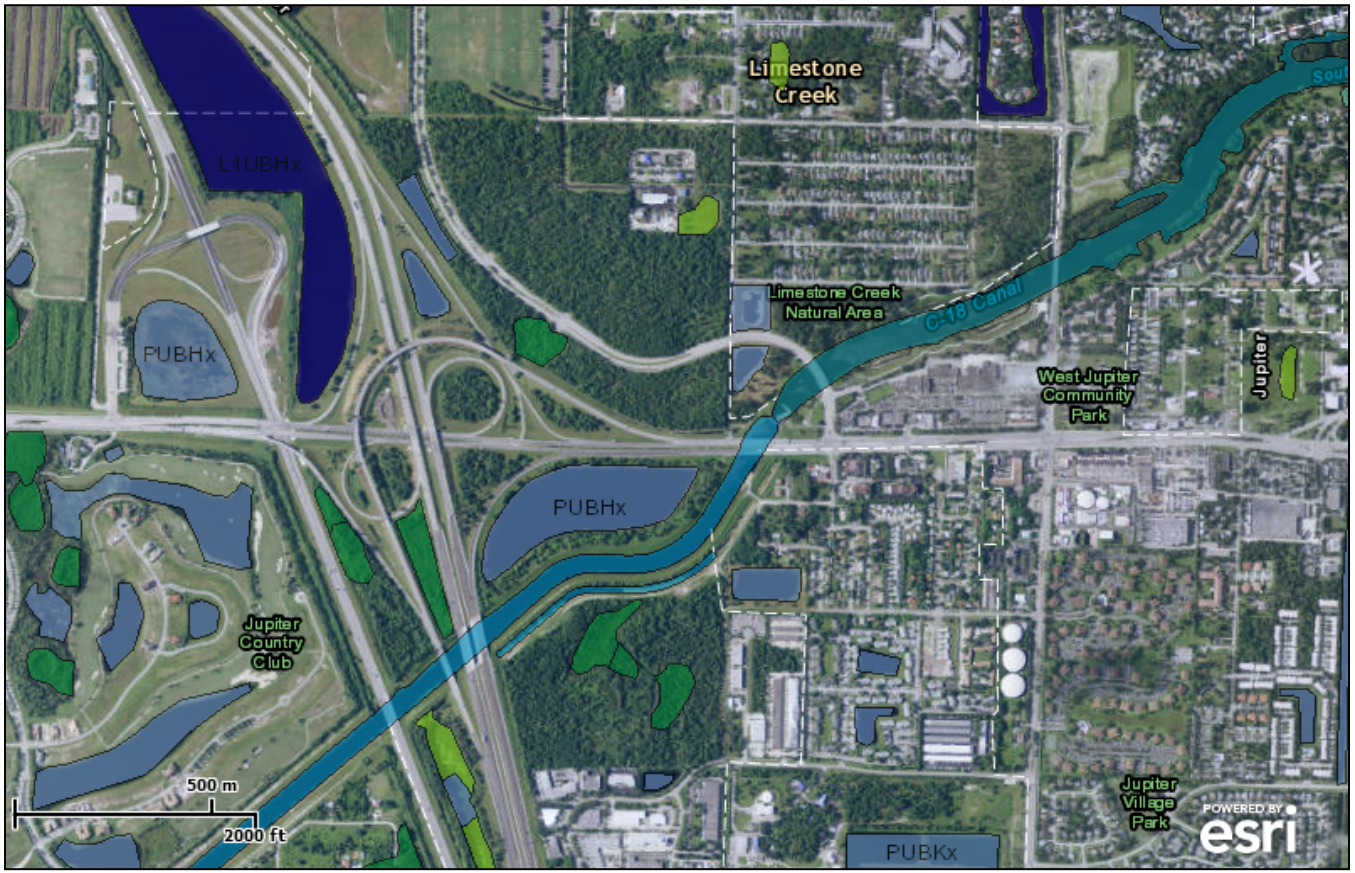
If you have any comments or questions concerning any issues discussed in this memorandum, please feel free to contact Scott Clark (Scott.Clark@dot.state.fl.us) to discuss further.

U.S. Fish and Wildlife Service

National Wetlands Inventory

NWI Wetland Locations

May 13, 2016

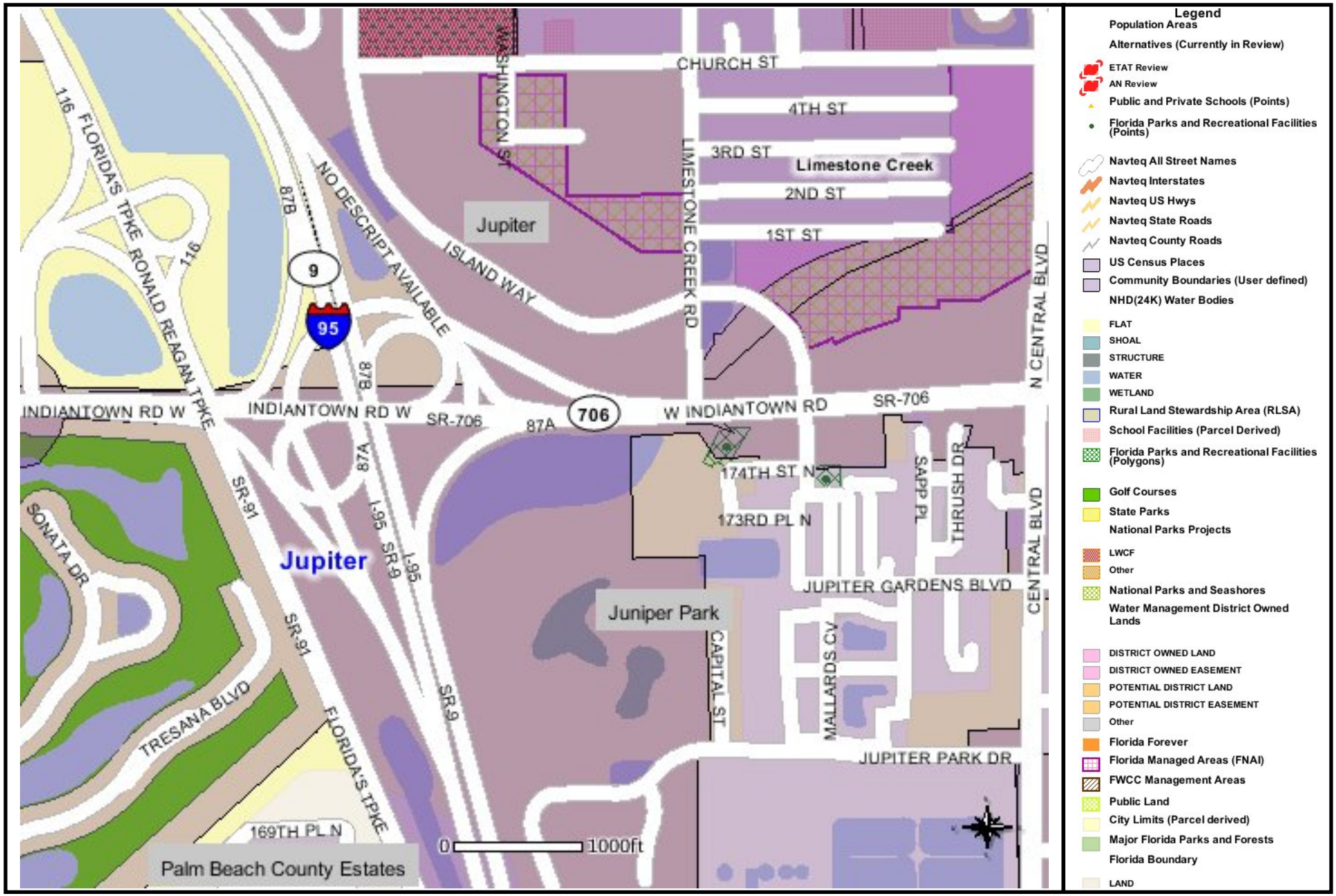


Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

User Remarks:

IOAR Recreation Sites

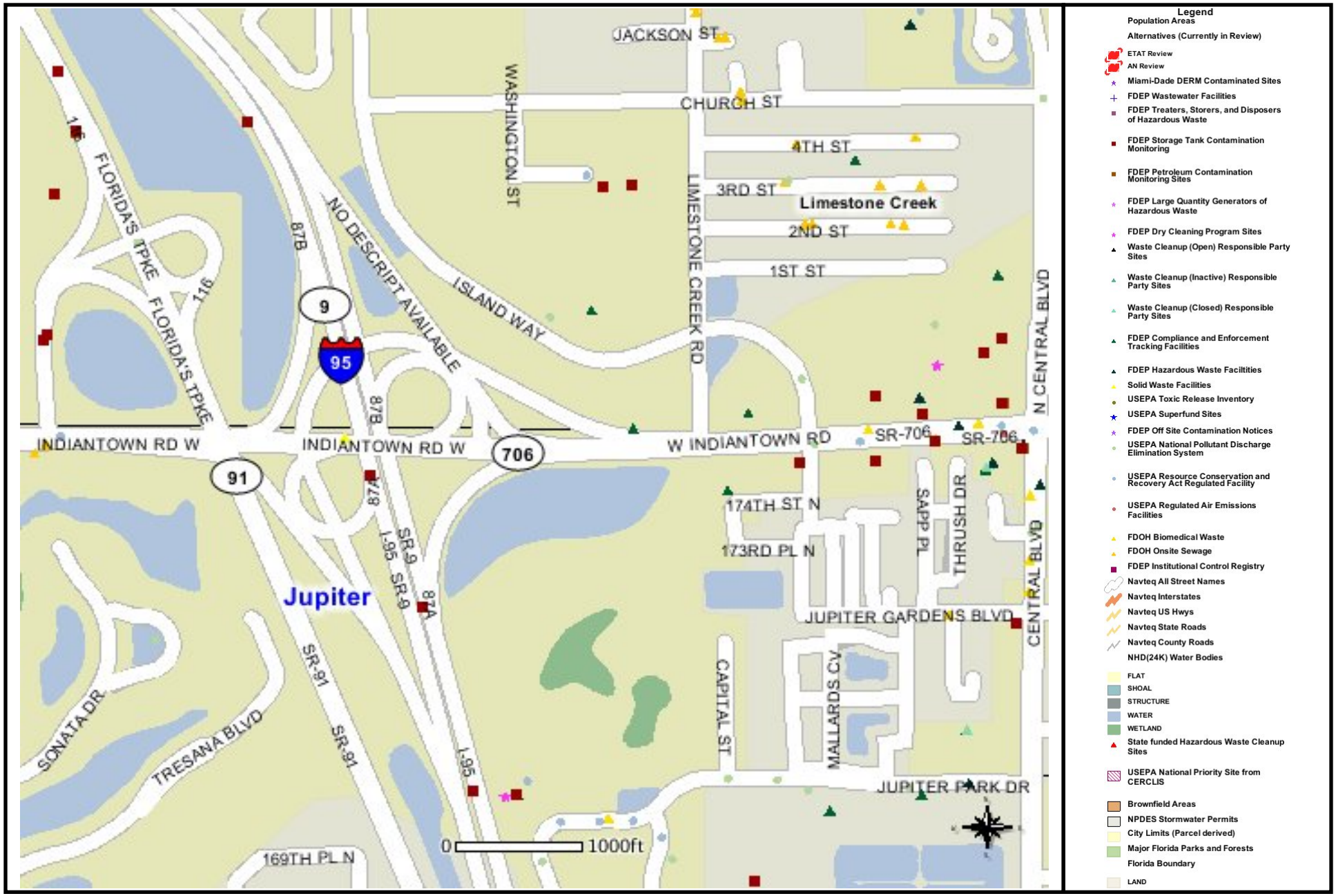


etdm Efficient Transportation Decision Making

est Environmental Screening Tool

FDOT

IOAR Contamination Sites



etdm Efficient Transportation Decision Making

est Environmental Screening Tool

FDOT

Appendix H
Benefit Cost Analysis

BC Ratio EB Indiantown Rd	
Conctruction Cost	$3,017,893.28

year 20XX	Delay: Value/person/ hour	Volume (VPH) AM	Volume (VPH) PM	No Build Control Delay (s/veh) AM	No Build Control Delay (s/veh) PM	No Build Control Delay (hours)	No Build Control Delay (veh-hr)	Build Control Delay (s/veh) AM	Build Control Delay (s/veh) PM	Build Control Delay (hours)	Build Control Delay (veh-hr)	Daily delay cost NoBuild = D2	Daily delay cost Build = D1	Proposed Improvement daily Benefit = D2-D1	Proposed Improvement Yearly Benefit = (D2-D1)*260	Construction cost value per year
20	$15.98	6960.00	6716.00	68.62	82.50	286.58	3199.47	79.55	62.01	269.49	3008.62	$61,360.65	$57,700.57	$3,660.09	$951,622.28	$372,078.91
21	$16.26	7022.50	6771.00	75.85	87.87	313.22	3496.91	82.67	63.11	279.97	3125.67	$68,241.87	$60,997.04	$7,244.84	$1,883,657.48	$372,078.91
22	$16.54	7085.00	6826.00	83.08	93.23	340.28	3799.00	85.79	64.21	290.60	3244.30	$75,415.22	$64,403.73	$11,011.49	$2,862,986.70	$372,078.91
23	$16.82	7147.50	6881.00	90.31	98.60	367.76	4105.71	88.91	65.31	301.37	3364.51	$82,885.37	$67,922.25	$14,963.11	$3,890,409.75	$372,078.91
24	$17.10	7210.00	6936.00	97.53	103.96	395.64	4417.05	92.03	66.42	312.28	3486.31	$90,657.00	$71,554.20	$19,102.79	$4,966,726.47	$372,078.91
25	$17.38	7272.50	6991.00	104.76	109.33	423.95	4733.03	95.15	67.52	323.33	3609.70	$98,734.78	$75,301.17	$23,433.60	$6,092,736.65	$372,078.91
26	$17.66	7335.00	7046.00	111.99	114.70	452.66	5053.64	98.27	68.62	334.52	3734.67	$107,123.39	$79,164.77	$27,958.62	$7,269,240.14	$372,078.91
27	$17.94	7397.50	7101.00	119.22	120.06	481.80	5378.88	101.39	69.72	345.86	3861.22	$115,827.50	$83,146.59	$32,680.91	$8,497,036.74	$372,078.91
28	$18.23	7460.00	7156.00	126.44	125.43	511.34	5708.75	104.51	70.82	357.33	3989.36	$124,851.80	$87,248.24	$37,603.56	$9,776,926.28	$372,078.91
29	$18.51	7522.50	7211.00	133.67	130.79	541.31	6043.26	107.63	71.92	368.95	4119.08	$134,200.96	$91,471.31	$42,729.65	$11,109,708.58	$372,078.91
30	$18.79	7585.00	7266.00	140.90	136.16	571.68	6382.40	110.75	73.02	380.72	4250.39	$143,879.65	$95,817.41	$48,062.24	$12,496,183.45	$372,078.91
Total:												$1,103,178.19	$834,727.29	$268,450.90	$69,797,234.52	$4,092,868.04

Project Operational Benefit:	Sum of Daily	Sum of Yearly Benefit Total
Proposed Impr D2-D1 Total	$268,450.90	$69,797,234.52
Total Construction Cost	$4,092,868.04	
BC ratio = **17.05**		

Location:	I-95 & Indiantown Rd
Date:	6/23/2016

monetized travel time value (TTV) for South Florida commuters as determined by the Southeast Florida Road and Transit User Cost Study (SEFRTUC).