I-75 REST AREAS PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY SARASOTA AND CHARLOTTE COUNTIES

DRAFT LOCATION HYDRAULICS REPORT

FINANCIAL PROJECT NO.: 436602-1-22-01

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Prepared for: Florida Department of Transportation District One 801 North Broadway Bartow, Florida 33830

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1 Executive Summary

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) study to identify sites for the placement of one northbound (NB) and one southbound (SB) rest area facility along I-75. In April of 2015, the FDOT closed the Jones Loop Rest Area at exit 161 in Charlotte County. This facility was an "off-system" rest area that serviced vehicles in both directions of I-75. The proposed rest areas will serve as a replacement for this recently closed rest area thus reducing the distances between rest area facilities. The study limits extend from the Charlotte/Lee County line north to the interchange of SR 681 and I-75. The total study corridor length is approximately 51 miles (22 miles in Charlotte County and 29 miles in Sarasota County). A preliminary investigation was conducted to determine potential rest area sites. The results of this preliminary investigation are detailed in the site selection report that was prepared in March of 2016.

This project will identify two sites for new rest areas along I-75, one each in the northbound and southbound direction. After the preliminary analysis, five rest area sites were identified for farther evaluation. Three of these sites are located off of NB I-75 (NB-2, NB-2B & NB-WIM) and the other two sites are located off of SB I-75 (SB-2 & SB-WIM).

The proposed sites will have both longitudinal impacts and transverse floodplain impacts. The longitudinal impacts will occur where fill from the rest area sites and the ramps that provide access to these facilities is placed below the base flood elevation. The transverse impacts will occur where the cross drains either need to be extended or new cross drains will need to be installed under the ramps that provide access to the rest areas. SWFWMD will require that no adverse impacts occur as a result of the required modifications. Floodplain impacts and compensation were calculated utilizing "cup for cup" methodology. One floodplain compensation site has been identified for each rest area alternative.

This analysis assumed that the rest area sites would be implemented as a pair that had to be within relatively close proximity of each other. As such, the WIM sites were included as one pair with the SB-2 site included with both the NB-2 site and the NB-2B site to form an additional two pairs.

NB-WIM and SB-WIM are the northbound/southbound alternative pair that required the smallest footprint for compensatory floodplain volume. This is mainly due to the fact that the SB-WIM site does not encroach into the floodplain and that the NB-WIM site is located in Zone A which has a very shallow floodplain depth relative to the existing ground. The alternative that required the largest compensatory floodplain volume was the NB-2 and SB-2 northbound/southbound alternative pair because the largest elevation difference between the existing ground and the 100-year floodplain occurred in this location.

Based solely on the floodplain compensation requirements, the WIM sites are the best alternative because the additional R/W required for floodplain compensation is the smallest of any of the northbound/southbound alternatives.

2 Introduction

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) study to identify sites for the placement of one northbound (NB) and one southbound (SB) rest area facility along I-75. In April of 2015, the FDOT closed the Jones Loop Rest Area at exit 161 in Charlotte County. This facility was an "off-system" rest area that serviced vehicles in both directions of I-75. The proposed rest area will serve as a replacement for this recently closed rest area thus reducing the distances between rest area facilities.

2.1 Report Purpose

This Location Hydraulics Report (LHR) was prepared as part of the I-75 Rest Areas PD&E Study. A summary of the drainage requirements have been compiled as part of this study to ensure that the preferred alternative takes all aspects of the project into account. One floodplain compensation site has been identified for each alternative.

2.2 Project Description

The study limits extend from the Charlotte/Lee County line north to the interchange of SR 681 and I-75, see **Figure 2-1**. The total study corridor length is approximately 51 miles (22 miles in Charlotte County and 29 miles in Sarasota County). Note that there is a very small portion (approximately 0.214 miles) of I-75 located in DeSoto County between Charlotte County and Sarasota County. For this study, this portion is included with the Sarasota County section of the project. The project will identify two sites for new rest areas along I-75, one each in the northbound and southbound direction. After the preliminary analysis, five rest area sites were identified for farther evaluation. Three of these sites are located off of NB I-75 (NB-2, NB-2B & NB-WIM) and the other two sites are located off of SB I-75 (SB-2 & SB-WIM). These sites have been shown on **Figure 2-1**.

Figure 2-1: Project Location Map



2.3 Future Land Use

Future land uses for this project are taken from the following data sources: City of North Port, 2015; Sarasota County GIS, 2015; and Charlotte County GIS, 2015. **Table 2-1** summarizes the future land uses for each of the alternatives.

Table 2-1: Future Land Use

Rest Area Alternative	Future Land Uses
SB-2	High Density Residential/ Commercial
SB-WIM	Low Density Residential
NB-2	Industrial
NB-2B	Industrial
NB-WIM	High Density Residential

3 Data Collection

Data was obtained from a variety of sources in order to complete the analysis. A list of the data collected and the source of the data is provided in **Table 3-1**.

FEATURE DATASET	SOURCE		
GIS Base Layers	Florida Geographic Data Library, 2015		
Existing Land Use	Charlotte County Property Appraiser, 2015; Southwest Florida Water		
	Management District, 2011; Aerial Imagery, 2014		
Future Land Use	City of North Port, 2015; Sarasota County GIS, 2015; Charlotte County GIS,		
	2015		
Section 4(f)	Florida Natural Areas Inventory, 2014		
Resources			
Wetlands	Southwest Florida Water Management District, 2011		
	Federal Emergency Management Agency (FEMA) Statewide National Flood		
Flood Zones	Hazard Layer (NFHL), 2015; FEMA Sarasota County Preliminary NFHL, 2014		

Table 3-1: Data Collected

4 Regulatory Agency Coordination

This project will require coordination with the Florida Department of Environmental Protection (FDEP), Southwest Florida Water Management District (SWFWMD) and the U.S. Army Corps of Engineers (USACE). RS&H did not coordinate with the water management district for this specific project, however, RS&H has coordinated with the water management district on a current I-75 widening project (FPID No. 413042-4 52-01) that overlaps three of the five rest area alternatives. The other two rest area sites are located approximately one mile south of the southern end of the I-75 widening project.

5 Existing Conditions

5.1 Site Locations

I-75 (SR 93) is one of two major north-south limited access interstates that connect south Florida with the state of Georgia. As noted previously, in April of 2015 the FDOT closed the Jones Loop Rest Area at exit 161 in Charlotte County. This facility was an "off-system" rest area that serviced vehicles in both directions of I-75. The next closest rest area is the Lee County Rest Area, located at exit 131 on Daniel's Parkway. However, this site is planned for closure as it is also an "off-system" site. With the planned closure of the Lee County Rest Area, the nearest adjacent rest areas on I-75 are the Hillsborough County Rest Area, located at mile marker 238, and the Collier County Rest Area, located at mile marker 63. The distance between these two rest area facilities is approximately 175 miles. The American Association of State Highway and Transportation Officials (AASHTO) guidelines recommend rest areas should be spaced approximately 70 miles between appropriate stopping opportunities. At interstate speeds, this equates to approximately 70 miles between stopping opportunities. It is important to note that one set of rest areas will not meet the recommended spacing of 70 miles between the stopping opportunities. One of the considerations for the placement of the new rest area facilities will be that they are as equidistant to the existing rest area sites as possible.

A preliminary investigation was conducted to determine potential rest area sites. These sites were chosen from the segments identified in the Site Selection Report prepared in March of 2016. Five alternatives were selected for a more detailed analysis; SB-2, SB-WIM, NB-2, NB-2B and NB-WIM. Each of these five alternatives are described in greater detail below.

<u>SB-2</u>

Alternative SB-2 is located approximately 1500 feet south of Airport Road. The existing land use is pasture and the future land use has been defined as commercial on the north end of the rest area and residential on the south end of the rest area. There are no wetlands located at this site. The majority of this rest area is located within FEMA Flood Zone AE (Elev. 12.0-feet) with the southern end of the site located within FEMA Flood Zone X which is defined as an area of minimal flooding with no established base flood elevation. SB-2 is located in the Broad Creek Basin and WBID No. 2062 which is not impaired for either total phosphorus or total nitrogen

<u>NB-2</u>

Alternative NB-2 is located approximately 2000 feet north of Airport Road. The existing land use is industrial and the future land use has also been defined as industrial. There are no wetlands located at NB-2. There is a permitted floodplain compensation facility (SWFWMD Permit No. 43000164.038) located on this site and NB-2 is located within FEMA Flood Zone AE (Elev. 10.5-feet). As such, impacts for fill material placed below the base flood elevation will need to be accounted for. NB-2 is located in the Broad Creek Basin and WBID No. 2062 which is not impaired for total phosphorus or total nitrogen.

<u>NB-2B</u>

Alternative NB-2B is located approximately 700 feet south of Airport Road. The existing land use is industrial and the future land use has also been defined as industrial. There are no wetlands located at this site. The majority of this rest area is located within FEMA Flood Zone AE (Elev. 12.0-feet) with the southern end of the site located within FEMA Flood Zone X which is defined as an area of minimal flooding and no established base flood elevation. NB-2B is located in the Broad Creek Basin and WBID No. 2062 which is not impaired for total phosphorus or total nitrogen.

<u>SB-WIM</u>

Alternative SB-WIM is located approximately 2500 feet south of South Jones Loop Road directly west of the existing SB weigh in motion station. The existing land use is pasture and the future land use has been defined as residential. There are no wetlands located at this site. SB-WIM is located within FEMA Flood Zone X which is defined as an area of minimal flooding and with as no established base flood elevation. SB-WIM is located in the Alligator Creek Basin and WBID No. 2074 which is currently impaired for dissolved solids, but not total phosphorus or total nitrogen.

<u>NB-WIM</u>

Alternative NB-WIM is located approximately 2500 feet south of South Jones Loop Road directly east of the existing NB weigh in motion station. The existing land use is pasture and the future land use has been defined as residential. There are no wetlands located at this site. The majority of the NB-WIM site is located within FEMA Flood Zone A. There is no established base flood elevation, but for the purposes of this report it has been estimated at elevation 20.7-feet based on an approximate elevation at the limits of the floodplain map obtained from GIS LiDAR topographic information. The on and off ramps to the rest area are located within FEMA Flood Zone X which is defined as an area of minimal flooding. NB-WIM is located in the Alligator Creek Basin and WBID No. 2074 which is currently impaired for dissolved solids.

5.2 Cross Drains

There are several existing cross drains that are located within the limits of the rest area sites and the ramps needed to access the rest areas. Locations of these cross drains were taken from existing plans for FPID No. 413042-3-52-01 and FPID No. 413042-4-52-01. **Table 5-1** identifies each cross drain location and size as they were presented in the two previously mentioned plan sets.

REST AREA SITE ASSOCIATED WITH IMPACT	SIZE OF CROSS DRAIN	LOCATION OF CROSS DRAIN	
NB-2	30"	1000' north of Airport Rd	
NB-2	10'X6'	1800' north of Airport Rd	
NB-2	24"	600' south of Henry St	
NB-2B, SB-2	30"	4900' north of Jones Loop Rd	
NB-2B, SB-2	30"	5500' north of Jones Loop Rd	
NB-WIM	18"	4600' north of Tuckers Grade	
NB-WIM, SB-WIM	18"	5600' north of Tuckers Grade	
NB-WIM, SB-WIM	48"	5600' south of S Jones Loop Rd	
NB-WIM, SB-WIM	30"	3900' south of S Jones Loop Rd	
NB-WIM, SB-WIM	10'X5'	900' south of S Jones Loop Rd	
SB-WIM	30"	1600' north of N Jones Loop Rd	

Table 5-1: Cross Drain Locations

6 Proposed Condition

6.1 Floodplain Encroachment and Compensation

Floodplain impacts and compensation were calculated utilizing "cup for cup" methodology. Topography and the seasonal high water elevation were factored into the location of each floodplain compensation site. It was assume that all floodplain compensation sites would have a 15 foot maintenance berm and 1:4 side slopes for the interior of the storage area. Unless noted differently, all elevations are taken from the NGVD 29 Datum. Supporting calculations for the sizing of the floodplain compensation sites are provided in **Appendix B**. Each individual rest area site is discussed below.

<u>SB-2</u>

Alternative SB-2 is located approximately 1500 feet south of Airport Road. This site would be constructed on an existing pasture adjacent to the I-75 right of way. The seasonal high water table elevation was estimated at elevation 7.9-feet. This value is approximately 1.5-feet below existing ground and is comparable to the seasonal high water elevations established for the I-75 widening project currently under design (FPID – 413042-4-52-01). The existing ground elevation at SB-2 is approximately 9.4. Since the base flood elevation is 12.0 at SB-2, compensation will be required for all fill placed within the floodplain. Two floodplain compensation sites have been identified between I-75 and Piper Road directly north of Airport Road. The site closest to Piper Road was sized to accommodate the needs for SB-2, however, the size of the site closest to I-75 could also be adjusted in order to meet all of the floodplain

Figure 6-1: NB-2B & SB-2 Rest Area Sites



I-75 Rest Areas PD&E Study – Sarasota and Charlotte Counties, Florida Draft Stormwater Management Facility Report



Figure 6-3: NB & SB WIM Rest Area Sites



compensation requirements for SB-2. Both of these sites would require the purchase of additional right of way. The location of these two floodplain compensation sites are shown on **Figure 6-1**. Floodplain impacts and compensation requirements are summarized in **Table 6-1**.

<u>NB-2</u>

Alternative NB-2 is located approximately 2000 feet north of Airport Road. The majority of this rest area would be constructed on an existing permitted floodplain compensation site (SWFWMD Permit No. 43000164.038). Compensation for impacts to this facility will need to be provided. Excerpts from this permit are included in **Appendix C.** This land is currently owned by the Charlotte County Airport Authority. Per SWFWMD Permit No. 43000164.038, the seasonal high water elevation at NB-2 is at elevation 6.50 which is 2 feet below the existing ground. This value is comparable to the seasonal high water elevations that were established near this location for the I-75 mainline widening design (FPID – 413042-4-52-01). It should be noted that NB-2 would have to be configured so as to accommodate Broad Creek which is located between I-75 and the borrow pit. This may require the construction of several hundred feet of box culvert extension to carry Broad Creek beneath, or adjacent to, the rest area.

The existing ground elevation at NB-2 is approximately 8.5. Since the base flood elevation is 10.5 at NB-2, compensation will be required for all fill placed within the floodplain and all impacts to the existing floodplain compensation site. Two proposed floodplain compensation sites have been identified between I-75 and Piper Road directly north of Airport Road. The site closest to I-75 was sized to accommodate the needs for NB-2, however, the size of the site closest to Piper Road, which was sized for SB-2, could also be adjusted in order to meet all of the floodplain compensation requirements for NB-2. Both of these sites would require the purchase of additional right of way. The location of these two floodplain compensation sites are shown on **Figure 6-2**. Floodplain impacts and compensation requirements are summarized in **Table 6-1**.

<u>NB-2B</u>

Alternative NB-2B is located approximately 700 feet south of Airport Road. This site would be constructed on an existing pasture adjacent to the I-75 right of way. The seasonal high water table elevation was estimated at elevation 9.4-feet. This value is approximately 1.5-feet below existing ground and is comparable to the seasonal high water elevations established for the I-75 widening project currently under design (FPID – 413042-4-52-01).

The majority of this rest area is located within FEMA Flood Zone AE with the southern end of the site located within FEMA Flood Zone X which is defined as an area of minimal flooding. Two proposed floodplain compensation sites have been identified between I-75 and Piper Road directly north of Airport Road. The site closest to I-75 was sized to accommodate the needs for NB-2B, however, the floodplain compensation requirements could also be met at the site closest to Piper Road. Both of these sites would require the purchase of additional right of way. The location of these two floodplain compensation sites are shown on **Figure 6-1**. Floodplain impacts and compensation requirements are summarized in **Table 6-1**.

<u>SB-WIM</u>

Alternative SB-WIM is located approximately 2500 feet south of South Jones Loop Road directly west of the existing SB weigh in motion station. This site would be constructed on an existing pasture adjacent to the I-75 SB weigh in motion station. The seasonal high water table was estimated at elevation 19.5-feet which is approximately the same elevation used for the existing WIM stations (SWFWMD Permit No. 409592). The location of rest area SB-WIM is shown on **Figure 6-3**. SB-WIM is located within FEMA Flood Zone X which is defined as an area of minimal flooding with no base flood elevations established. Since the existing ground elevation at the SB WIM site is approximately the same as the floodplain elevation at the NB WIM site, minimal or no impacts to the floodplain are anticipated at the SB-WIM site.

NB-WIM

Alternative NB-WIM is located approximately 2500 feet south of South Jones Loop Road directly east of the existing NB weigh in motion station. This site would be constructed on an existing pasture adjacent to the I-75 NB weigh in motion station. The seasonal high water table elevation was set at 19.5-feet which is approximately the same elevation used for the existing WIM stations. The existing ground elevation at the NB-WIM rest area site varies from approximately 18.0 to 23.0. The majority of the NB-WIM site is located within FEMA Flood Zone A which has no established base flood elevation. However, for the purposes of this evaluation, the base flood elevation has been set at 20.7-feet based on an approximate elevation near the edge of the floodplain shape based on GIS LiDAR topographical data. Therefore, compensation will be required for all fill placed within the floodplain. The on and off ramps to the rest area are located within FEMA Flood Zone X which is defined as an area of minimal flooding. The floodplain compensation site for NB-WIM is located between the I-75 on ramp and an existing borrow pit lake at the southern end of the rest area site in what has been classified as existing pasture land. The location of the floodplain compensation site is shown on **Figure 6-3**. Floodplain impacts and compensation requirements are summarized in **Table 6-1**.

REST AREA SITE	VOLUME IMPACTED (ACRE-FT)	AREA REQUIRED TO ACCOMMODATE IMPACTED VOLUME (ACRES)
SB-2	17.52	6.09
NB-2	28.99	8.54
NB-2B	10.29	3.46
SB-WIM	N/A	N/A
NB-WIM	4.88	4.12

There is potential for transverse impacts resulting from the extension or replacement of culverts. However, based on a preliminary inspection of cross drain locations, no adverse impacts will result at these crossings. FDOT and SWFWMD design criteria do not allow for any significant increase in flood stage upstream of cross drains. A more detailed analysis of these impacts is needed during the design phase of this project to ensure that that this criteria is met.

6.2 Project Classification

In accordance with the requirements set forth in 23 CFR 650A, the project corridor was evaluated to determine the effects of the proposed improvements on the hydrology and hydraulics of the surrounding area. This project is located in a low density minimally developed area. The FDOT's and SWFWMD's design standards, which do not allow for any significant impacts, will be adhered to for the design of this project.

Replacement drainage structures for this project are limited to hydraulically equivalent structures. The limitations to the hydraulic equivalency being proposed are basically due to restrictions imposed by the geometrics of design, cost feasibility, or practicability. Since flooding conditions in the project area are inherent in the topography or are a result of other outside contributing sources, and there is no practical alternative to totally eradicate flood impacts or even reduce them in any significant amount, existing flooding will continue, but not be increased. The proposed structure will be hydraulically equivalent to or greater than the existing structure, and backwater surface elevations are not expected to increase. As a result, the project will not affect existing flood heights or floodplain limits. This project will not result in any new or increased adverse environmental impacts. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

7 Conclusion

The proposed project involves siting and preliminary design for new rest areas on I-75 between the Charlotte/Lee County line and SR 681 in Sarasota County. As part of this analysis stormwater management volumes were tabulated and factored into the decision matrix. Floodplain impact volumes were all utilized to preliminarily locate floodplain compensation sites. This analysis assumed that the rest area sites would be implemented as a pair that had to be within relatively close proximity of each other. As such, the WIM sites were included as one pair while the SB-2 site was included with both the NB-2 site and the NB-2B site to form an additional two pairs.

NB-WIM and SB-WIM are the northbound/southbound alternative pair that required the smallest footprint for compensatory floodplain volume. This is mainly due to the fact that the SB-WIM site does not encroach into the floodplain and that the NB-WIM site is located in Zone A which has a very shallow floodplain depth relative to the existing ground. The alternative that required the largest compensatory floodplain volume was the NB-2 and SB-2 northbound/southbound alternative pair because the largest elevation difference between the existing ground and the 100-year floodplain occurred at this location.

Based solely on the floodplain compensation requirements, the WIM sites are the best alternative because the additional R/W required for floodplain compensation is the smallest of any of the northbound/southbound alternatives.

It should be noted that significant engineering judgement was required to arrive at the recommended alternative. Estimates were made as to the average elevation of the existing ground, the seasonal high water table and proposed profile gradeline. As much as possible these estimates are supported by existing permitted infrastructure and GIS data. However, the floodplain compensation sites, may ultimately become smaller during final design once additional engineering information has been obtained.

8 References

- Federal Emergency Management Agency, *Flood Insurance Rate Map for Charlotte County, Florida, Panels 242 & 263*, May 5, 2003.
- Florida Department of Transportation, Drainage Manual, 2016.
- Florida Department of Transportation, Stormwater Management Facilities Handbook, 2004.
- Florida Department of Transportation, *PD&E Manual*, Part 2, Chapter 24-Floodplains, August 17, 2016.
- Florida Department of Transportation, *Culvert Handbook*, 2004.
- Southwest Florida Water Management District, *Environmental Resource Permit Applicant's* Handbook Volume II, October 1, 2013.
- United States Department of Agriculture, *Soil Survey Geographic Database for Charlotte County, Florida*, November 19, 2015.

APPENDIX A FEMA FIRM Maps & Soils Maps











Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Charlotte County, Florida (FL015)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
6	Hallandale fine sand, wet, 0 to 2 percent slopes	B/D	1,745.1	1.9%
7	Matlacha-Urban land complex	В	1,066.9	1.2%
8	Hallandale fine sand, tidal	B/D	275.6	0.3%
9	EauGallie sand, 0 to 2 percent slopes	A/D	862.8	0.9%
10	Pompano fine sand, 0 to 2 percent slopes	A/D	377.1	0.4%
11	Myakka fine sand, 0 to 2 percent slopes	A/D	1,877.4	2.0%
12	Felda fine sand, 0 to 2 percent slopes	A/D	4,322.6	4.7%
13	Boca fine sand, 0 to 2 percent slopes	A/D	4,447.3	4.9%
14	Valkaria fine sand, 0 to 2 percent slopes	A/D	696.9	0.8%
16	Peckish mucky fine sand	A/D	115.8	0.1%
17	Daytona sand	A	379.0	0.4%
18	Matlacha gravelly fine sand, limestone substratum	В	301.2	0.3%
19	Gator muck, frequently ponded, 0 to 1 percent slopes	C/D	54.0	0.1%
23	Wulfert muck	A/D	1,196.5	1.3%
24	Kesson fine sand	A/D	408.9	0.4%
26	Pineda fine sand, 0 to 2 percent slopes	A/D	5,286.7	5.8%
27	Pompano fine sand, depressional	A/D	68.2	0.1%
28	Immokalee sand, 0 to 2 percent slopes	B/D	7,834.6	8.6%
33	Oldsmar sand, 0 to 2 percent slopes	A/D	7,823.2	8.5%
34	Malabar fine sand, 0 to 2 percent slopes	A/D	1,906.5	2.1%
35	Wabasso sand, 0 to 2 percent slopes	C/D	7,488.5	8.2%

Hydrologic Soil Group— Summary by Map Unit — Charlotte County, Florida (FL015)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
36	Immokalee-Urban land complex	B/D	76.8	0.1%
37	Satellite fine sand, 0 to 2 percent slopes	A/D	1.0	0.0%
38	Isles fine sand, slough	B/D	10.8	0.0%
39	Isles fine sand, depressional	B/D	294.2	0.3%
40	Anclote sand, depressional, 0 to 1 percent slopes	A/D	66.4	0.1%
42	Wabasso sand, limestone substratum, 0 to 2 percent slopes	C/D	2,630.6	2.9%
43	Smyrna fine sand, 0 to 2 percent slopes	A/D	2,126.5	2.3%
44	Malabar fine sand, depressional, 0 to 1 percent slopes	A/D	77.9	0.1%
45	Copeland sandy loam, depressional	D	82.9	0.1%
49	Felda fine sand, depressional	A/D	3,515.0	3.8%
51	Floridana sand, depressional	C/D	345.6	0.4%
53	Myakka fine sand, depressional	A/D	193.6	0.2%
55	Cocoa fine sand	A	10.8	0.0%
56	Isles muck	B/D	2,705.5	3.0%
57	Boca fine sand, tidal	A/D	853.6	0.9%
59	Urban land		483.1	0.5%
61	Orsino fine sand	A	351.1	0.4%
62	Winder sand, depressional	C/D	2,257.6	2.5%
63	Malabar fine sand, high, 0 to 2 percent slopes	A/D	1,378.1	1.5%
67	Smyrna-Urban land complex	A/D	619.9	0.7%
69	Matlacha gravelly fine sand	В	2,650.0	2.9%
70	Heights fine sand	B/D	4,786.6	5.2%
73	Pineda fine sand, depressional, 0 to 1 percent slopes	A/D	1,364.2	1.5%
74	Boca fine sand, slough	A/D	18.3	0.0%
77	Pineda fine sand, limestone substratum	C/D	368.3	0.4%



APPENDIX B Floodplain Impacts and Compensation Site Sizing



Project Name: I-75 Rest Areas PD&E Project Number: 104-0007-000 Task Description: Floodplain Comp

Prepared by:	FAM
Checked by:	RMG
Date:	11/17/2016

SB-2 Rest Area			
	Area (ac.)	Depth (ft)	Volume (ac-ft)
Impact	6.74	2.6	17.52

SB-2 EXISTING GROUND/S	SHWT ELEVATIONS
Floodplain Impa	ct Area
Floodplain Elev.	12.00'
Existing Ground Elev.	9.40'

SB-2	TOTAL COMP.	REQ. =	17.52 ac.ft.



Project Name:	I-75 Rest Areas PD&E
Project Number:	104-0007-000
ask Description:	Estimation of ROW Re uirement

Prepared by:	FAM	
Checked by:	RMG	
Date:	11/17/2016	

Floodplain ROW REQUIREMENTS - Alternate SB 2

	FEMA Floodplain Elevation at Comp Site Existing Ground at Comp Site Elev SHW =	 11.00 NGVD (Zone AE From FEMA Map) 14.40 NGVD (Estimated From GIS Topographic Inform 6.50 NGVD based on SWFWMD Permit No. 4300016 	iation) 34.038
Floodplain Impact		17.52 AC-FT.	
FPC Site Bottom Area at SHWT		4.00 AC	
Storage Depth		4.50 FT.	
Unit Length Based on L/W = 2		590 FT.	
Unit Width Based on L/W = 2		295 FT.	
Horizontal Distance Based on a 1:4 Slope and Storage Depth		36 FT.	
Total Pond Length (including grade adjustments)		626 FT.	
Total Pond Width (including grade adjustments)		331 FT.	
Top Area (including grade adjustments but no berms and no grading to existing grnd.)		4.76 AC.	
Compensation Provided		19.71 ac.ft.	
Maintenance Berm Width of 15-ft		30 FT.	
Grading to Existing Ground		27.20 FT.	
Total Pond Length (including maintenance berm)		683.52 FT	
Total Pond Width (including maintenance berm)		388.36 FT	
Preliminary Property Size Required		6.09 AC.	
MINIMUM PROPERTY SIZE FOR FLOODPLAIN	COMPENSATION	6.09 AC.	

Note: The floodplain compensation site for this alternative is located north of Airport Road



Project Name: I-75 Rest Areas PD&E Project Number: 104-0007-000 Task Description: Floodplain Comp

Prepared by:	FAM
Checked by:	RMG
Date:	11/17/2016

NB-2 Rest Area (Impact from Proposed Footprint)			
	Area (ac.)	Depth (ft)	Volume (ac-ft)
Impact	11.41	2.00	22.82

NB-2 Rest Area (Impact from Existing Floodplain Comp.)			
	Area (ac.)	Depth (ft)	Volume (ac-ft)
Impact	4.11	1.50	6.17

NB-2 EXISTING GROUND	SHWT ELEVATIONS		
Floodplain Impact Area			
Floodplain Elev.	10.50'		
Existing Ground Elev. 8.50'			

NB-2 TOTAL COMP. REQ. =

28.99 ac.ft.

Note: The impact to the existing permitted floodplain compensation site is based on a SHWT Elev. of 6.5 and an existing ground elevation of 8.5. These variables were taken from the existing permitted plansheets.



Project Name: <u>I-75 Rest Areas PD&E</u> Project Number: <u>104-0007-000</u> Task Description: Estimation of ROW Re uirement

Prepared by:	FAM	
Checked by:	RMG	
Date:	11/17/2016	

FLOODPLAIN ROW REQUIREMENTS - Alternate NB 2

	FEMA Floodplain Elevation Existing Ground at Comp Site Elev SHW =	10.50 NGVD (E 10.50 NGVD (E 6.50 NGVD ba	stimated From FEMA Map) stimated From GIS Topographic Information) ased on SWFWMD Permit No. 43000164.038
Floodplain Impact		28.99 AC-FT.	
FPC Site Bottom Area at SHWT		6.81 AC	
Storage Depth		4.00 FT.	
Unit Length Based on L/W = 2		770 FT.	
Unit Width Based on L/W = 2		385 FT.	
Horizontal Distance Based on a 1:4 Slope and St	orage Depth	32 FT.	
Total Pond Length (including grade adjustments)		802 FT.	
Total Pond Width (including grade adjustments)		417 FT.	
Total Area (including grade adjustments but no be	erms)	7.68 AC.	
Compensation Provided		28.99 AC.FT.	
Maintenance Berm Width of 15-ft		30 FT.	
Total Pond Length (including maintenance berm)		832.31 FT.	
Total Pond Width (including maintenance berm)		447.15 FT.	
Preliminary Property Size Required		8.54 AC.	
MINIMUM PROPERTY SIZE FOR FLOODPLAIN	COMPENSATION	8.54 AC.	



Project Name:I-75 Rest Areas PD&EProject Number:104-0007-000Task Description:Floodplain Comp

Prepared by:	FAM
Checked by:	RMG
Date:	11/17/2016

NB-2B Rest Area			
	Area (ac.)	Depth (ft)	Volume (ac-ft)
Impact	9.35	1.1	10.29

NB-2B EXISTING GROUND	SHWT ELEVATIONS	
Floodplain Impact Area		
Floodplain Elev.	12.00'	
Existing Ground Elev.	10.90'	

NB-2B TOTAL COMP. REQ. = 10.29 ac.f	t.
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Note: The floodplain compensation site for this alternative is located north of Airport Road



Project Name: 1-75 Rest Areas PD&E Project Number: 104-0007-000 Task Description: Estimation of ROW Re uirement

Prepared by:	FAM
Checked by:	RMG
Date:	11/17/2016

FLOODPLAIN ROW REQUIREMENTS - Alternate NB 2B

	FEMA Floodplain Elevation	11.00 NGVD (Zone AE From FEMA Map)	
	Existing Ground at Comp Site Elev SHW =	10.50 NGVD (Estimated From G 6.50 NGVD based on SWFWM	IS Topographic Information) D Permit No. 43000164.038
Floodplain Impact		10.29 AC-FT.	
FPC Site Bottom Area at SHWT		2.40 AC	
Storage Depth		4.00 FT.	
Unit Length Based on L/W = 2		457 FT.	
Unit Width Based on L/W = 2		229 FT.	
Horizontal Distance Based on a 1:4 Slope and Stora	ge Depth	32 FT.	
Total Pond Length (including grade adjustments)		489 FT.	
Total Pond Width (including grade adjustments)		261 FT.	
Top Area (including grade adjustments but no berms	;)	2.93 AC.	
Compensation Provided		10.65 AC.FT.	
Maintenance Berm Width of 15-ft		30 FT.	
Total Pond Length (including maintenance berm)		519.26	
Total Pond Width (including maintenance berm)		290.63	
Preliminary Property Size Required		3.46 AC.	
MINIMUM PROPERTY SIZE FOR FLOODPLAIN C	OMPENSATION	3.46 AC.	



Project Name:I-75 Rest Areas PD&EProject Number:104-0007-000Task Description:Floodplain Comp

Prepared by:	FAM
Checked by:	RMG
Date:	11/17/2016

NB WIM Rest Area			
	Area (ac.)	Depth (ft)	Volume (ac-ft)
Impact	6.97	0.70	4.88

NB-WIM EXISTING GROUND/SHWT ELEVATIONS		
Floodplain Impact Area		
Floodplain Elev.	20.70'	
Existing Ground Elev.	20.00'	

NB-WIM TOTAL COMP. REQ. =	4.88 ac.ft.


Project Name: <u>1-75 Rest Areas PD&E</u> Project Number: <u>104-0007-000</u> Task Description: Estimation of ROW Re uirement
 Prepared by:
 FAM

 Checked by:
 RMG

 Date:
 11/17/2016

FLOODPLAIN ROW REQUIREMENTS - Alternate NB WIM

	FEMA Floodplain Elevation Existing Ground at Comp Site Elev SHW =	20.70 NGVD (Zone A Esti 21.00 NGVD (Estimated F 19.50 NGVD, NGVD (Esti	mated From FEMA Map) From GIS Topographic Information) mated From NRCS Soil Survey)
Floodplain Impact		4.88 AC-FT.	
FPC Site Bottom Area at SHWT		3.30 AC	
Storage Depth		1.50 FT.	
Unit Length Based on L/W = 2		536 FT.	
Unit Width Based on L/W = 2		268 FT.	
Horizontal Distance Based on a 1:4 Slope and Storag	e Depth	12 FT.	
Total Pond Length (including grade adjustments)		548 FT.	
Total Pond Width (including grade adjustments)		280 FT.	
Top Area (including grade adjustments but no berms)		3.52 AC.	
Compensation Provided		5.12 ac.ft.	
Maintenance Berm Width of 15-ft		30 FT.	
Total Pond Length (including maintenance berm)		578.19	
Total Pond Width (including maintenance berm)		310.09	
Preliminary Property Size Required		4.12 AC.	
MINIMUM PROPERTY SIZE FOR FLOODPLAIN CO	MPENSATION	4.12 AC.	

Note: Compensation site at higher elevation than location where impacts occur



APPENDIX C Excerpts from Existing Permits



THIS CONTRACT PLAN SET INCLUDES SUMMARY OF PAY ITEMS (SHEETS) ROADWAY PLANS SIGNING AND PAVEMENT MARKING PLANS SIGNALIZATION PLANS WEIGH IN MOTION PLANS ROADWAY LIGHTING PLANS BUILDING RENOVATIONS LIGHTNING PROTECTION PLANS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH GROUP OF PLANS.

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	DRAINAGE MAP
3-5	TYPICAL SECTIONS
_	SUMMARY OF QUANTITIES
_	SUMMARY OF DRAINAGE STRUCTURES
6-15	PLAN AND PROFILES
16-17	SPECIAL PROFILES
18-19	SUPERELEVATION PROFILES
20-25	DRAINAGE STRUCTURES
26-29	JOINT DETAILS
30	DRAINAGE DETAILS.
_	ROADWAY DETAILS
-	SOIL SURVEY
31-59	CROSS SECTIONS
-	TRAFFIC CONTROL PLANS
	UTILITY ADJUSTMENTS

ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY, 1990)

INDEX NO.

	001	300
	002	302
	102	305
	104	400
	105	415
	200	451
	201	500
	205	505
	211	510
	231	511
æ	232	513
	272	517
	273	525
	280	600
	281	610
	286	611
	290	613
		630

M.P. =

PLANS OF PROPOSED

CHARLOTTE COUNTY





						DR-MAP.DP	NAME	DATE		NAME	DATE	
	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DESIGNED	L.CLEGG	9-91	DRAWN	S.WEBSTER	9-91	-
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-						SUPERVISE	D BY WILLI	AM F. BIG	SS, P.E.			V

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	OF SURVEY "A"	OR "B" <u>12' EXIST</u> <u>12' EXIST</u> <u>SHOULDER</u> <u>10' PAVED</u> SHOULDER <u>.06</u>	VAR]	IES VAF	& MULCH
	OF SURVEY "A"	OR "B"	VAR]	IES VAF	8 MULCH
	OF SURVEY "A"	OR "B" <u>12' EXIST</u> <u>12' EXIST</u> <u>SHOULDER</u> <u>10' PAVED</u> <u>SHOULDER</u> <u>.06</u>	VAR]	SEED SEED	& MULCH
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	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DESIGNED	L.CLEGG	9-91	DRAWN	S.WEBSTER	9-91	7
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						SUPERVISE	D BY WILLI	AM F. BIG	GS, P.E.			6

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						SUPERVISE	D BY WILLI	AM F. BIG	GS, P.E.		

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					SUPERVISE	D BY WILLI	AM F. BIG	GS, P.E.			1

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LE>TASK>M.BIGGS>WEIGH>PUNTA>S.SB3 SPOOLED BY COE ON 26 NOV 1991 AT 10: 48: 2

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C>M.BIGGS>WEIGH>PUNTA>S.NB3 SPOOLED BY COE ON 23 SEP 1991 AT 13: 51: 13

E>TASK>M BIGGS>WEIGH>PUNTA>S.NB4 SPOOLED BY COE ON 04 DEC 1991 AT 10: 31

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E>TASK>M.BIGGS>WEIGH>PUNTA>s.xs-a3 SPOOLED BY CLEGG ON 19 NOV 1991 AT 17:33.

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GH>PUNTA									
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<>M.BIGGS>WEIGH>PUNTA>S.XS-A9 SPOOLED BY COE ON 05 SEP 1991 AT 11:55: 3

BY DESCRIPT	TION	DATE BY		DESCRIPTION		XS-A9 DESIGNED BY CHECKED BY SUPERVISED BY	NAME P.CLEGG F.BIGGS WILL	DATE 7-91 7-91 IAM F. BIGGS,	DRAWN BY S.W. HECKED BY L.P. P.E.	AME /A.C. CLEGG	DATE 7-91 7-91	
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K>M.BIGGS>WEIGH>PUNTA>S.XS-a10 SPOOLED BY CLEGG ON 16 SEP 1991 AT 17:36:

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TACK-W BIRGS-WEIGHSPUNTA>S XS-B5 SPOOLED BY BICKER ON 10 SEP 1991 AT 12: 31:56



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*TASK>M.BIGGS>WEIGH>PUNTA>S.XS-B7 SPOOLED BY COE ON 16 SEP 1991 AT 16: 13: 09

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TASK>M.BIGGS>WEIGH>PUNTA>S.XS-b10 SPOOLED BY CLEGG ON 23 SEP 1991 AT 15:51:1

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I F>TASK>M RIGGS>WFIGH>PUNTA>S × 8-613 SPOOLED BY CLEGG ON 03 DEC 1991 AT 16:58:3





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R F>TASK>M BIGGS>WEIGH>PUNTA>S.xs-b14 SPOOLED BY CLEGG ON 26 NOV 1991 AT 18: 43

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ASK>M HIGGS>WEIGH>PUNTA>s xs-b16 SPOOLED BY CLEGG ON OP DEC 1991 AT 11:39:

