

POND SITING REPORT
DRAFT

Florida Department of Transportation

District 7

US 41 (SR 45) at SR 54 PD&E Study

From South of SR 54 Intersection to North of SR 54 Intersection

Pasco County, Florida

Financial Management Number: 419182-1

ETDM Number: 7883

February 2026

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

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US 41 (SR 45) at SR 54 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

POND SITING REPORT

February 2026

Work Program Item Segment No: 419182-1



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EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate capacity and operational improvements at the intersection of United State (US) Highway 41/State Road (SR) 45 and State Road (SR) 54 in Pasco County, Florida. Each roadway is a six-lane divided facility intersecting at-grade with a box span traffic signal. US 41 (SR 45) is a major north-south arterial that provides access to Tampa, Lutz, Land O' Lakes, and Brooksville. SR 54 is a major east-west arterial that connects US 19 near New Port Richey to the west and US 301 in Zephyrhills to the east.

The length of the project is approximately 1.7 miles along US 41 (SR 45), with limits on SR 54 from approximately 1.2 miles east and 1.2 miles west of the intersection, as well as a 0.3-mile section of Dale Mabry Highway (SR 597). This intersection is located in the Land O' Lakes area of unincorporated Pasco County, Florida. This intersection is under the jurisdiction of FDOT.

The purpose of this Pond Siting Report is to discuss the stormwater management plan for the project which evaluated two roadway alternatives—Single Point Urban Interchange (SPUI) and Diverging Diamond Interchange (DDI). This report identifies alternate pond locations, floodplain compensation locations, discusses right-of-way requirements, and documents estimated pond construction costs associated with the alternative pond sites. The preferred pond sites and Floodplain Compensation (FPC) sites identified in this report correspond to the Diverging Diamond Interchange layout.

Existing Drainage Conditions

The project is located within the jurisdiction of the Southwest Florida Water Management District (SWFWMD). The project boundaries are located within 3 basins: the South Branch basin and the Upper Rocky Creek Basin West of the intersection; and the Lake Hanna Outlet Basin East of the intersection.

The US 41 (SR 45) at SR 54 project corridor is generally divided into eight (8) hydrologic basins: south of the intersection includes Basins 3 and 4; middle of the intersection includes Basin 2, north of the intersection includes Basin 1; east of the intersection includes Basin 7 and Basin 8; and west of the intersection includes Basin 5 and 6. General basin boundaries were initially identified utilizing boundaries presented by SWFWMD permits. The hydrologic basin limits were confirmed or adjusted utilizing the Pasco County one (1) foot contour LIDAR (Light Detection and Ranging) data and design survey. Per water management discussion and existing permits, all of the hydrologic basins identified are open basins. The west portion of the intersection is within 2 waterbody ID's; Water Body ID# 1456 and WBID 1463S.

Closed storm sewer systems and wet detention ponds are presently managing the intersection's stormwater and utilizes existing cross drains to discharge into the surrounding wetlands. Each quadrant of the existing interchange area is currently developed with commercial land uses. There is a CSX railroad line along the west side of the interchange.

Proposed Drainage Conditions

The project will not have adverse impacts to the area's water quality or quantity. The design of the stormwater management facilities for the project is governed by the rules set forth by the SWFWMD and FDOT. Water quality treatment and water quantity attenuation requirements will comply with the guidelines as defined in SWFWMD and

FDEP's Environmental Resource Permit (ERP) manual, Volume I (FDEP) and II (SWFWMD), and 2024 FDOT Drainage Manual. This report will be submitted after House Bill HB 7053/Senate Bill SB 7040 Department of Environmental Protection Rules relating to stormwater has been passed as law. New stormwater criteria will be incorporated in final design.

Summary

Alternative pond sites and alternative floodplain compensation sites have been identified along the project corridor within each proposed basin. The evaluation provides estimates for right-of-way needs implementing a volumetric analysis that accounts for the water quantity and quality requirements set forth by FDOT and SWFWMD. Please refer to Table 1 and Table 1A for the Pond and FPC Site Alternatives Evaluation Matrix which includes a right-of-way cost estimate. It should be noted that right-of-way cost estimates are not real estate appraisals and do not reflect market value. The FDOT uses appraisals that comply with the Uniform Standards of Professional Appraisal Practice (USPAP) for acquisition purposes.

The pond sizes and locations are subject to change during final design when detailed data becomes available for the permeability rates of the soils, estimated seasonal high-water elevations, and final roadway profiles. Please refer to Table 7 for the Summary of Stormwater Management Facility Recommendations for the preferred pond alternatives. Preferred pond alternatives are coordinated with the geometric and hydraulic requirements of the DDI configuration.

Table 7 – Summary of Stormwater Management Facility Recommendations

Basin Name	Preferred Pond	Approximate Location	Normal Water Level	Inside Berm Elevation	Design High Water Elevation	Minimum Gutter Elevation	Outfall
1	Exist. Pond D	1103+60 (LT) @ BL_SB_US 41	69.26	73.00	71.25 (25YR/24HR)	73.28	Lake Vienna
2	SMF 2D	2050+00 (RT) @BL BL_NB_US41	68.14	71.60	70.55 (25YR/24HR)	72.38	Lake Floyd
3	SMF 3D	2022+00 to 2034+40 (RT) @ BL_NB_US41	68.50	71.03	70.03 (25YR/24HR)	73.54	Wetland D
4	SMF 4D	2007+00 and 2019+00 (RT) @ BL_NB_US41	68.25	70.60	69.26 (25YR/24HR)	71.74	Wetland B
5	SMF 5D	3002+00 (RT) @ BL_SR54_EB	64.00	66.90	66.15 (25YR/24HR)	67.15	Lake Thomas
6	No pond required. Basin not impacted by preferred alternative.						South Branch Anclote River
7	No pond required. Basin not impacted by preferred alternative.						Lake Floyd
8	No pond required. Basin not impacted by preferred alternative.						Lake Toni
VILLAGE LAKE SHOPPING CENTER DR	No pond required for this Basin						Lake Floyd

Table 1– Pond Alternatives Evaluation Matrix

Pond Site Alternative	FEMA Flood Zone	Wetland Impacts (acre)	Arch./ Historical Impact Potential (Y/N)	Threatened or Endangered Species Impacts (Y/N)	Contamination Risk Rating (For preferred alternatives)	Major Utility Conflict Potential (Y/N)	Existing Land Use	Future Land Use	Pond costs*	Ranking
SMF 3A	X	X	N	N	-	Y	Industrial	Industrial	\$1,054,634	3
	AE	X	N	N	-	N	Transportation	Mixed Use		
SMF 3B	X	X	N	N	-	N	Upland Hardwood Coniferous Mix	Mixed Use	\$1,249,850	4
SMF 3C	X	X	N	N	-	N	Commercial& Services	Mixed Use	\$1,849,091	2
SMF 3D	X	0.05	N	N	Medium	N	Commercial& Services	Mixed Use	\$6,504,489	1
SMF 4D	X	X	N	N	Low	N	Commercial& Services	Mixed Use	\$21,478,834	1
SMF 7A	A	X	N	N	-	N	Commercial& Services	Mixed Use	\$16,146,632	2
SMF 7B	X	X	N	N	Medium	N	Commercial& Services	Mixed Use	\$42,847,550	1
SMF 7C	X	X	N	N	-	N	Commercial& Services	Mixed Use	\$26,434,115	3
SMF 8A	AE	0.28	N	N	No	N	Shrub & Brushland	Mixed Use	\$1,711,072	1
SMF 8B	AE	0.18	N	N	-	N	Commercial& Services	Mixed Use	\$4,985,393	3
SMF 8C	AE	0.8	N	N	-	N	Residential Medium Density	Mixed Use	\$1,966,013	2
SMF 2A	AE	3.81	Y	N	-	Y	Commercial& Services	Mixed Use	\$16,797,060	2
SMF 2B	AE	4.17	Y	N	-	Y	Commercial& Services	Mixed Use	\$25,880,545	3

Pond Site Alternative	FEMA Flood Zone	Wetland Impacts (acre)	Arch./ Historical Impact Potential (Y/N)	Threatened or Endangered Species Impacts	Contamination Risk Rating (For preferred alternatives)	Major Utility Conflict Potential (Y/N)	Existing Land Use	Future Land Use	Pond Costs*	Ranking
SMF 2C	X	0.07	Y	N	-	Y	Commercial& Services	Mixed Use	\$15,072,196	4
SMF 2D	AE	X	N	N	Medium	N	Commercial& Services	Mixed Use	\$8,863,707	1
SMF 6A	AE	X	N	N	Medium	N	Residential Low Density	Residential	\$372,224	1
SMF 6B	AE	X	Y	N	-	N	Residential Medium Density	Residential	\$518,100	3
SMF 6C	X	X	Y	N	-	N	Residential Medium Density	Residential	\$447,228	2
SMF 5A	X	X	Y	N	-	N	Residential Low Density	Commercial	\$4,252,569	2
SMF 5B	X	X	Y	N	-	N	Residential Low Density	Commercial	\$4,579,789	4
SMF 5C	X	X	Y	N	-	N	Residential Low Density	Commercial	\$3,842,349	3
SMF 5D	X	0.11	N	N	Low	N	Commercial& Services	Mixed Use	\$1,181,359	1

*Preliminary pond constructions costs. Actual pond const. costs determined during final design.

Table 1A- FPC Site Alternatives Evaluation Matrix

FPC Site Alternative	FEMA Flood Zone	Wetland Impacts (acre)	Arch./ Historical Impact Potential (Y/N)	Threatened or Endangered Species Impacts (Y/N)	Contamination Risk Rating (For preferred alternatives)	Major Utility Conflict Potential (Y/N)	Existing Land Use	Future Land Use	FPC Site ROW Costs***	Ranking
FPC 105D	AE	0.00	N	N	Medium	N	Industrial	Residential	\$58,400	1
FPC 106D	AE	0.00	N	N	Low	N	Commercial& Services	Industrial	\$93,000	1
FPC 107D	AE	0.10	N	N	Low	N	Commercial& Services	Industrial	\$251,300	1
FPC 109D	AE	0.00	N	N	Medium	N	Commercial& Services	Industrial	\$915,800	1
FPC 110D	AE	0.002	N	N	Medium	N	Commercial& Services	Mixed Use	\$3,008,100	1
FPC 112D	AE	0.00	N	N	Low	N	Commercial& Services	Mixed Use	\$85,300	1
FPC 117D	AE	0.00	N	N	Medium	N	Commercial& Services	Mixed Use	\$1,519,200	1
FPC 118D	AE	0.00	N	N	Medium	N	Commercial& Services	Mixed Use	\$15,129,300	1
FPC 119D	AE	0.01	N	N	Medium	N	Industrial	Industrial	\$796,900	1
FPC 125D	AE	0.00	N	N	Low	N	Commercial& Services	Mixed Use	\$846,900	1
FPC 126D	AE	0.00	N	N	Low	N	Commercial& Services	Mixed Use	\$1,024,000	1
FPC 120A	AE	0.00	N	N	-	Y	Transportation	Mixed Use	\$31,002	2
FPC 120B	AE	0.00	N	N	-	N	Upland Hardwood-Coniferous Mix	Mixed Use	\$31,002	3
FPC 120C	AE	0.00	N	N	-	Y	Industrial	Industrial	\$83,865	4
FPC 117A	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	\$461,791	2
FPC 117B	AE	0.08	N	N	-	N	Commercial & Services	Mixed Use	\$8,383,228	3

FPC Site Alternative	FEMA Flood Zone	Wetland Impacts (acre)	Arch./ Historical Impact Potential (Y/N)	Threatened or Endangered Species Impacts (Y/N)	Contamination Risk Rating (For preferred alternatives)	Major Utility Conflict Potential (Y/N)	Existing Land Use	Future Land Use	FPC Site ROW Costs***	Ranking
FPC 110E	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	\$345,223	2*
FPC 113A	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	\$291,757	2
FPC 113B	AE	0.08	N	N	-	N	Commercial & Services	Mixed Use	\$673,055	3
FPC 113C	AE	0.63	N	N	-	N	Commercial & Services	Mixed Use	\$8,911,340	4
FPC 116A	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	\$6,497,334	3
FPC 116B	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	\$5,354,982 (FPC 116B & FPC 114B)	2
FPC 116C	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	\$9,234,723	4
FPC 114A	A	0.00	N	N	-	N	Commercial & Services	Mixed Use	\$6,497,334	4
FPC 114B	A	0.00	N	N	-	N	Commercial & Services	Mixed Use	\$5,354,982 (FPC 116B & FPC 114B)	2
FPC 114C	A	0.00	N	N	-	N	Commercial & Services	Mixed Use	\$1,033,086	3
FPC 115A	AE	1.86	N	N	-	N	Wetland Forested Mixed	Wetland Forested Mixed	\$1,357,800	2
FPC 115B	AE	0.00	N	N	-	N	Commercial & Services	Residential	\$4,667,248	4
FPC 115C	AE	0.00	N	N	-	N	Commercial & Services	Residential	\$952,501	3
FPC 126A	AE	0.00	N	N	-	N	Residential	Residential	\$214,190	2**
FPC 100A	AE	0.00	N	N	-	N	Residential	Residential	\$354,928	4
FPC 100B	AE	0.00	N	N	-	N	Residential	Residential	\$356,061	2
FPC 100C	AE	0.00	N	N	-	N	Residential	Residential	\$262,780	3

FPC Site Alternative	FEMA Flood Zone	Wetland Impacts (acre)	Arch./ Historical Impact Potential (Y/N)	Threatened or Endangered Species Impacts (Y/N)	Contamination Risk Rating (For preferred alternatives)	Major Utility Conflict Potential (Y/N)	Existing Land Use	Future Land Use	FPC Site ROW Costs***	Ranking
FPC 102A	AE	0.00	N	N	-	N	Residential	Residential	\$93,340	2
FPC 102B	AE	0.00	N	N	-	N	Residential	Residential	\$109,563	3
FPC 102C	AE	0.00	N	N	-	N	Residential	Residential	\$109,563	4
FPC 103A	AE	0.32	N	N	-	N	Residential	Residential	\$607,227	2
FPC 103B	AE	0.00	N	N	-	N	Residential	Residential	\$2,616,087	4
FPC 103C	AE	0.00	N	N	-	N	Residential	Residential	\$382,364	3
FPC 104A	AE	0.00	N	N	-	N	Residential	Residential	\$169,152	2
FPC 104B	AE	0.00	N	N	-	N	Residential	Residential	\$1,277,511	4
FPC 104C	AE	0.00	N	N	-	N	Residential	Residential	\$981,840	3
FPC 107A	AE	0.00	N	N	-	N	Residential	Residential	\$169,152	2
FPC 107B	AE	0.00	N	N	-	N	Residential	Residential	\$169,152	3
FPC 107C	AE	0.13	N	N	-	N	Industrial	Residential	\$696,765	4
FPC 110A	AE	0.10	Y	N	-	N	Commercial & Services	Industrial	\$892,744	2
FPC 110B	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	\$2,267,485	4
FPC 110C	AE	0.03	N	N	-	N	Residential	Residential	\$1,078,759	3

*Preferred site if Basin 2 Alternative 2, SMF 2B, is selected.

**Preferred site if Basin 8 Alternative 3, SMF 8C, is selected.

***Preliminary ROW costs. Actual ROW costs determined during final design.

SECTION 1: INTRODUCTION

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate capacity and operational improvements at the intersection of United State (US) Highway 41/State Road (SR) 45 and State Road (SR) 54 in Pasco County, Florida. Each roadway is a six-lane divided facility intersecting at-grade with a box span traffic signal. US 41 (SR 45) is a major north-south arterial that provides access to Tampa, Lutz, Land O' Lakes, and Brooksville. SR 54 is a major east-west arterial that connects US 19 near New Port Richey to the west and US 301 in Zephyrhills to the east.

The length of the project is approximately 1.7 miles along US 41 (SR 45), with limits on SR 54 from approximately 1.2 miles east and 1.2 miles west of the intersection, as well as a 0.3-mile section of Dale Mabry Highway (SR 597). This intersection is located in the Land O' Lakes area of unincorporated Pasco County, Florida. This intersection is under the jurisdiction of FDOT.

Figure 1 Project Location Map is shown in Appendix 1.

The purpose of this Pond Siting Report is to discuss the stormwater management plan for the project which evaluated two roadway alternatives—Single Point Urban Interchange (SPUI) and Diverging Diamond Interchange (DDI). This report identifies alternate pond locations, floodplain compensation locations, discusses right-of-way requirements, and documents estimated pond construction costs associated with the alternative pond sites. The preferred pond sites and Floodplain Compensation (FPC) sites identified in this report correspond to the Diverging Diamond Interchange layout.

The pond siting analysis documentation for the conceptual pond sites is found in Section 6, Proposed Pond Sites and calculations are grouped by the two roadway alternatives Appendix 6, Pond Alternatives Design Calculations-SPUI and Appendix 15- Pond Alternatives Design Calculations-DDI of this report. All figures for this report are included in Appendix 1. Other supporting documentation and information is provided in the remaining appendices. The vertical datum used for the calculations is NAVD 88 unless otherwise specified.

SECTION 2: EXISTING DRAINAGE CONDITIONS

The project is located within Pasco County and is within the jurisdiction of the Southwest Florida Water Management District (SWFWMD). The Southern project limits along US 41 are located within the Upper Rocky Creek Basin and the Lake Hanna Outlet Basin. The Western project boundaries are located within the South Branch Basin and the Upper Rocky Creek Basin. The Northern and Eastern project limits are in the Lake Hanna Outlet Basin.

The project is located within two watersheds, in the East Pinellas Anclote Watershed to the West of the intersection and in the Cypress Creek Watershed East of the intersection. The existing drainage patterns and basin limits have been approximated based on design survey, aerial imagery, topographic maps, and existing roadway design plans. Existing volumetric calculations were obtained from recent SWFWMD Environmental Resource Permits (ERPs) for US 41 (SR 45) and SR 54. The US 41 (SR 45) at SR 54 interchange is drained by urban (curb and gutter) drainage systems and stormwater piping. US 41 (SR 45) within the project limits drains to existing FDOT wet ponds located on the east side of US 41 (SR 45), south of SR 54. These ponds outfall to existing wetland areas east of the ponds which drain into the Cypress Creek Watershed and ultimately to the Hillsborough River.

The intersection drains to existing FDOT wet ponds located on the Southeast corner of the intersection. These ponds outfall to existing wetland areas just east of the existing ponds. The area continues to drain into the Cypress Creek

watershed which flows to the southeast and, ultimately, to the Hillsborough River. The corridor east of the intersection has two different outfall locations. The portion of the corridor in front of the Village Lakes Shopping Center, drains to an existing FDOT wet pond located south of SR 54 and east of US 41 (SR 45). This pond outfalls to an existing wetland area south of the pond. This wetland area then drains into the Cypress Creek watershed which flows southeast and, ultimately, to the Hillsborough River. The remaining eastern portion of the corridor to the end of the project limits, along SR 54, outfalls into an existing FDOT pond located north of SR 54 and ultimately into Lake Toni. The areas south of the intersection along US 41 from W County Line Rd to the area just past Dale Mabry Hwy and Brinson Rd drain to existing FDOT wet ponds that outfall into wetlands located east of the ponds and ultimately to the Hillsborough River. The area of SR 54 west of the intersection of US 41 (SR 45) at SR 54 drains west to a system of roadside ponds that outfall into surrounding wetlands and, ultimately, drains into the East Pinellas Anclote Basin. The corridor area located at the northern portion of US 41 to the north project limits outfalls to an existing FDOT pond then discharges into Lake Vienna.

Each quadrant of the existing interchange area is currently developed with commercial land uses. There is a CSX railroad line along the west side of the interchange, and there are also several wetland areas and floodplain areas adjacent to the interchange study area.

The project is contained within the boundaries of the following Water Body Identification numbers defined by FDEP:

Anclote River/Coastal Pinellas County Planning Unit:

- 1456 South Branch Anclote River (EPA TMDL- Pollutants: TN and TP. No FDEP TMDL.)

Coastal Old Tampa Bay Tributary Planning Unit:

- 14635S Lake Thomas Outlet (Waters Not Attaining Standards on 303(d) List for Dissolved oxygen. No developed TMDL)

Hillsborough River Planning Unit:

- 1451K Lake Padgett Drain

There are no Outstanding Florida Waters within the project limits.

2.1 TOPOGRAPHY & HYDROLOGIC FEATURES

There are five (5) existing cross drains, shown in Appendix 2, Existing Drainage Map, which convey stormwater runoff under SR 54 and US 41. Generally, the cross drains convey stormwater runoff in a north to south direction under State Road 54 with one (1) of the culverts, conveying runoff in a west to east direction under US 41. Cross drain 4, (2) 8'X3' CBC, connects two wetlands in a north to south direction along SR 54 at station 1452+90.

There are three (3) existing outfalls serving State Road 54 and four (4) existing outfalls service US 41 (SR 45) within the project limits. The outfalls along SR 54 are as follows: Wetland at Sta 1420+00 (LT) via a system of roadside linear ponds, Wetland east of Sienna Village via roadside linear ponds; FDOT Pond 1A via a closed storm sewer system through an existing drainage easement located west of the Lowe's property, and FDOT Pond 2A north Sta. 1509+00 via a closed storm sewer system. The outfalls along US 41 are as follows: FDOT Pond A via a closed storm sewer system, FDOT Pond B via a closed storm sewer system, FDOT Pond C via a closed storm sewer system, and FDOT Pond D via a closed storm sewer system.

Table 2 shows a Summary of Existing Cross Drains.

Table 2 – Summary of Existing Cross Drains

Cross Drain	Approximate Location (CL Const. SR 54)	Description	Outfall
1	2568+80 (CL Const US 41)	(1) – 30" RCP	Wetland
2	1431+25	(1) – 18" RCP	Wetland
3	1436+50	(1) – 42" RCP	Wetland
4	1452+90	(2) – 8' X 3' CBC	Wetland
5	1420+50	(2) – 30" RCP	Wetland

2.2 SOILS DATA & GEOTECHNICAL INVESTIGATIONS

The United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey of Seminole County, Florida has been reviewed for the project corridor. Depth to Water Table data is illustrated in Figure 7 – USDA NRCS Depth to Water Table, in Appendix 1. Hydrologic soil group data is illustrated in Figure 8 – USDA NRCS Hydrologic Soil Group, in Appendix 1.

Twenty-two (22) types of soils were encountered along the project corridor. The soil types vary and range from Hydrological Soil Group (HSG) A to HSG B/D. Type A soils are very well drained soils with low water tables and Type B/D soils have a moderate infiltration rate when thoroughly wet and the potential to have a clay pan or clay layer near the surface. Table 3 – USDA Soil Survey Information summarizes and lists the soil types including relevant information.

Table 3 – USDA Soil Survey Information

Soil No.	Pasco County USDA Soil Name	Depth to Water Table	HSG
		Depth* (feet)	
5	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	0.98	A/D
6	Tavares sand, 0 to 5 percent slopes	4.75	A
8	Sellers mucky loamy fine sand	0	A/D
9	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	1.01	B/D
11	Adamsville fine sand, 0 to 2 percent slopes	1.67	A/D
21	Smyrna fine sand	1.01	A/D

Soil No.	Pasco County USDA Soil Name	Depth to Water Table	HSG
		Depth* (feet)	
22	Basinger fine sand, 0 to 2 percent slopes	0.49	A/D
23	Basinger fine sand, depressional, 0 to 1 percent slopes	0	A/D
24	Quartzipsamments, shaped, 0 to 5 percent slopes	6.0	A
26	Narcoossee fine sand, 0 to 2 percent slopes	2.75	A
38	Urban land, 0 to 2 percent slopes	>6.56	-
42	Pomello fine sand, 0 to 5 percent slopes	2.75	A
46	Cassia fine sand, 0 to 5 percent slopes	1.93	A/D
52	Samsula muck, frequently ponded, 0 to 1 percent slopes	0	A/D
73	Zolfo fine sand, 0 to 2 percent slopes	2.49	A
Soil No.	Hillsborough County USDA Soil Name	Depth to Water Table	HSG
		Depth* (feet)	
2	Adamsville fine sand, 0 to 2 percent slopes	1.67	A/D
5	Basinger, Holopaw, and Samsula soils, depressional	0	A/D
27	Malabar fine sand, 0 to 2 percent slopes	0.49	A/D
29	Myakka fine sand, 0 to 2 percent slopes	1.01	A/D
43	Quartzipsamments, nearly level	>6.56	A
53	Tavares-Millhopper fine sands, 0 to 5 percent slopes	4.75	A
61	Zolfo fine sand, 0 to 2 percent slopes	2.49	A

2.3 ENVIRONMENTAL CHARACTERISTICS

Per the Preliminary Engineering Report dated August 2024, it has been determined that no FDOT PD&E Section 4(f) involvement is anticipated.

2.3.1 Land Use Data

The US 41 (SR 45) at SR 54 intersection project area is located within unincorporated Pasco County. Pasco County's future land use for the portions of the corridor predominantly includes retail/office/residential along the east side of the intersection. On the west side, the intersection is bordered by retail/office/residential, light industrial and residential (six dwelling units per gross acre). South of the interchange, at the SR 597 and US 41 (SR 45) split, future land uses include heavy industrial, residential (nine dwelling units per gross acre) and some retail/office/residential. A map of the Pasco County's 2025 future land uses for the project area is shown in Future Land Use Map, in Appendix 1.

2.3.2 Cultural Features

A Cultural Resources Assessment Survey (CRAS) was prepared in December 2024 for the original Preferred Alternative (the SPUI). A CRAS Addendum was prepared in January 2026 for the updated Preferred Alternative (the DDI). The CRASes were performed to identify and evaluate any significant or potentially significant resources that would be impacted by the project. Both surveys had a finding of No Adverse Effect to Historic Properties.

Below is a list of community features located within ¼-mile of the project study area (there are no parks or cemeteries located within the project area):

Places of Worship

- Keystone Community Church
- Iglesia Asambleas De Dios
- Church of the Lakes
- Willow Bend Community Church

Schools/Daycare Facilities

- Center Academy-Lutz (middle and high school)
- Kids' Stuff Preschool, Private School, and Childcare

Parks, Cemeteries, and Fire Stations

- Pasco County Fire Station 23

Healthcare facilities and Hospitals

- CVS Pharmacy
- Watson Peggy MD Family Medicine
- Tampa Orthopedic Clinic
- Morton Plant North Bay Hospital
- St Luke's Dental
- Roberto Garcia MD PA
- Palm Medical Center
- Sandhill Pediatrics
- David Herson MD PA
- Mahesh Bhamore MD

2.3.3 Natural Resources

For the purposes of this report, the National Wetlands Inventory (NWI) mapping for Pasco County was used to locate and quantify estimated impacts associated with the alternative pond locations. The final identification of wetlands will be conducted and evaluated in the Natural Resources Evaluation Report. Preliminary wetland mitigation costs at the potential impact sites for the pond alternatives shall be quantified using the Senate Bill costs, Florida Statutes Section 373.4137. It is anticipated that during final design and permitting of the project the Uniform Mitigation Assessment Method (UMAM), per Chapter 62-345 Florida Administrative Code, shall be used to classify, describe, and quantify the impact areas and associated mitigation costs.

2.4 EXISTING DRAINAGE BASINS

The US 41/SR 54 project corridor is generally divided into eight (8) hydrologic basins as listed in Table 6 below. General basin boundaries were initially identified utilizing boundaries presented by the SWFWMD and the FDEP. The hydrologic basin limits were confirmed or adjusted utilizing the Pasco County one (1) foot contour lidar data and design survey. The preferred roadway alternative; Diverging Diamond Interchange (DDI), includes Basins 1-5 which are shared with the second roadway alternative that was evaluated; the Single Point Urban Interchange (SPUI). Please refer to Table 4 for the Summary of Existing Drainage Basins.

Table 4 – Summary of Existing Drainage Basins

Basin Name	Begin (CL Const. SR 429)	End (CL Const. SR 429)	Outfall
1	2645+60 @ CL 41	2695+60 @ CL 41	Lake Vienna
2	2617+47 @CL 41 1451+68 @ CL 54	2655+14 @ CL 41 1478+62 @ CL 54	Lake Floyd
3	200+00 @ CL. 597 2588+87 @ CL.41	217+00 @ CL.597 2617+47 @ CL. 41	Wetland D (Cypress Creek)
4	North Begin of Project	2588+87 @ CL. 41	Wetland B (Cypress Creek)
5	1424+60	1433+34	Lake Thomas Outlet
6	Henley Rd	1424+60	South Branch Anclote River
7	1476+81 @ CL 54	1497+38 @ CL 54	Lake Floyd
8	1497+38 @ CL 54	1521+74 @ CL 54	Lake Toni
Village Lake Shopping Center Dr Basin	Raden Drive/Carson Rd	Raden Drive/Village Lakes Shopping Plaza	Lake Floyd

Please refer to APPENDIX 2 and APPENDIX 11 for Existing Drainage Maps.

2.4.1 Existing Basin 1

SPUI configuration: Existing Basin 1 limits begin at CL 41 Sta. 2645+60 to approximately Sta. 2695+60. Basin 1 is the most northern basin within the project limits. Permit SWFWMD ERP permit 43-29402-1 was used to estimate the

northern boundary of existing Basin 1. Existing storm drains collect runoff from the outer limits of basin 1 and flows through pipes to structure D-32 (per SWFWMD permit 43-29402-1) at Sta. 2671+40. Discharge generated within the basin includes median, sidewalks, open collection systems, and offsite properties. Stormwater runoff drains through a 48" pipe to existing FDOT Pond D. Existing FDOT Pond D treats and attenuates discharge from within the basin which outfalls to Lake Vienna.

DDI configuration: For the DDI analysis, Existing Basin 1 limits begin at BL_NB_US41 Sta. 2081+00 to approximately Sta. 2131+00.

2.4.2 Existing Basin 2

Existing Basin 2 is located at the intersection US 41 (SR 45) at SR 54. The basins limits consist of Sta. 2617+47 to Sta. 2655+14 on CL 41 and Sta. 1449+44 to Sta. 1478+62 on CL 54. Existing drainage patterns consist of an existing closed storm drain system that collects all discharge from medians, sidewalks, and travel lanes within the basin limits into the existing Pond C, east of US 41 which outfalls to Lake Floyd. In the Northeast quadrant, commercial properties are included within the basin limits since they connect to the storm drain system directly. Existing Pond C treats and attenuates runoff from existing Basin 2 and includes wetland mitigation within the pond basin per SWFWMD ERP permit 43-12854.

In the SWFWMD ERP permit 43-12854 Basin 2 is labeled as Basin C and is divided into two sub -basins called Basin C Quasi -Equivalent treatment for SR 54 and Basin C. In this Pond Siting report Basin C sub-basins are referred to as Existing Basin 2 Quasi -Equivalent treatment for SR 54 and Existing Basin 2.

Existing Basin 2 Quasi -Equivalent treatment for SR 54 is located on CL 54 at station Sta. 1449+44 to Sta. 1454+64. Existing drainage patterns consist of an existing closed storm drain system that collects all discharge from medians, sidewalks, and travel lanes within the basin limits into an existing double 3x8 box culvert which discharges into a wooded area located within the existing floodplain. In the permit this equivalent treatment basin was implemented where it was impractical to provide treatment for the previous project widening at the project termini where the existing roadway was dropping to elevations which were too low to connect conveyance facilities to the project ponds.

2.4.3 Existing Basin 3

SPUI configuration: Existing Basin 3 consists of four areas. The first area includes roadway pavement and ditches from Sta. 200+00 to Sta. 217+00 at alignment CL. 597. The second area covers the southbound roadway pavement and railway, as well as the northbound roadway pavement, sidewalks, median ditches, and roadside ditches along both sides of Land O' Lakes Blvd from Sta. 2588+87 to Sta. 2617+47 at alignment CL. 41. The third area includes the ROW for existing pond B and the pervious area west of Brinson Rd. from Sta. 204+00 to Sta. 208+20 at alignment CL. 597. The fourth area is the additional right of way needed for proposed SMF 3A, SMF 3B, and SMF 3C. Stormwater runoff from the roadway is collected and conveyed in ditches and storm drain systems that discharge to existing Pond B for treatment per SWFWMD ERP permit 43-12854. Pond B discharges to Wetland D, which ultimately outfalls Cypress Creek.

DDI configuration: Existing Basin 3 consists of four areas. The first area includes roadway pavement and ditches from Sta. 503+70 to Sta. 514+00 along alignment BL_SB_CR597_US41. The second area covers the southbound roadway pavement and railway, as well as the northbound roadway pavement, sidewalks, median ditches, and roadside ditches along both sides of Land O' Lakes Blvd from Sta. 2021+80 to Sta. 2049+90 along alignment BL_NB_US41. The third

area includes the ROW for existing pond B near Sta.2034+00 along alignment BL_NB_US41. The fourth area is the additional right of way needed for the pond alternatives. Stormwater runoff from the roadway is collected and conveyed in ditches and storm drain systems that discharge to existing Pond B for treatment per SWFWMD ERP permit 43-12854. Existing Pond B discharges to Wetland D, which ultimately outfalls Cypress Creek.

2.4.4 Existing Basin 4

SPUI configuration: Existing Basin 4 consists of two areas. The first area includes Land O' Lakes Blvd. northbound and southbound roadway, starting from the intersection of Land O' Lakes Blvd and Willow Bend Parkway to approximately Sta. 2588+87 at alignment CL. 41. The second area includes the ROW of existing Pond A per SWFWMD ERP permit 43-12854. Drainage from the existing roadway pavement, from curb to curb, is collected by storm drain systems and outfalls to existing Pond A for treatment, ultimately discharging into Wetland B and then to Cypress Creek.

DDI configuration: Existing Basin 4 consists of two areas. The first area includes northbound and southbound Land O' Lakes Blvd. from the intersection of Land O' Lakes Blvd and Willow Bend Parkway to approximately Sta. 2021+80 along alignment BL_NB_US41. The second area includes the ROW of existing Pond A per SWFWMD ERP permit 43-12854. Drainage from the existing roadway pavement, from curb to curb, is collected by storm drain systems and outfalls to existing Pond A for treatment, ultimately discharging into Wetland B and then to Cypress Creek.

2.4.5 Existing Basin 5

Existing Basin 5 encompasses the western portion of the US 41/SR 54 project from the end of existing Basin 6 at approximately Sta. 1424+60 as the western boundary to approximately Sta. 1433+34 along SR 54 and is entirely contained within the East Pinellas Anclote Watershed. Waterbody ID 1463S is located within Existing Basin 5 is classified as not attaining water quality and therefore on the Study List for Dissolved Oxygen. A causative pollutant has not been identified.

The stormwater runoff from the existing SR 54 right-of-way corridor in existing Basin 5 is captured within an open collection system consisting of an interconnected system of roadside treatment ponds. The system collects onsite runoff from SR 54 in linear ponds where attenuation and treatment is provided and then outfalls to the wetland area east of Sienna Village's boardwalk, along westbound SR 54 approximately Sta. 1435+50 (RT).

DDI Configuration: For the DDI configuration existing Basin 5 is analyzed in 2 sub-basins: Existing Basin 5-1 and Basin 5-2. Existing Basin 5-1 encompasses drainage areas that contribute to existing pond P13E2, and existing Basin 5-2 encompass drainage areas that contribute to existing linear ponds P15E2, , P16E2, P18E2 and P19E2 per SWFWMD permit #43-16251-18.

2.4.6 Existing Basin 6

Existing Basin 6 encompasses the western portion of the US 41/SR 54 project from Henley Rd, as the western boundary, to approximately Sta. 1424+60 along SR 54 and is entirely contained within the East Pinellas Anclote Watershed. The basin is considered by the SWFWMD as an "open basin". TMDLs for Total Phosphorus and Total Nitrogen were established by EPA in 2008 WBID.

The stormwater runoff from the existing SR 54 right-of-way corridor in existing Basin 6 is captured within an open collection system consisting of an interconnected system of roadside treatment ponds. The system generally collects onsite runoff from SR 54 in linear ponds where attenuation and treatment is provided then discharges to a wetland

north of Sta. 1420+00 and through two (2) existing 30" reinforced concrete pipe (RCP) cross drains that outfall to the wetland area south of eastbound SR 54. The ponds in series are interconnected with equalizer pipes beginning with existing pond P7E1, then existing pond P10E1, and the last pond in series, existing pond P12E1. The existing pond names are referenced from SWFWMD permit # 43-16251-18.

2.4.7 Existing Basin 7

Existing Basin 7 limits begin at CL 54 Sta. 1476+81 to Sta. 1497+38. Existing Basin 7 is located east of the interchange of US 41 (SR 45) at SR 54. Stormwater runoff generated within the basin is conveyed through existing storm drain and roadside ditches to existing FDOT Pond 1A. Existing FDOT Pond 1A treats and attenuates discharge generated within the basin limits and outfalls to existing FDOT Pond 1B which functions as floodplain compensation and discharges to Lake Floyd.

2.4.8 Existing Basin 8

Existing Basin 8 limits begin at CL 54 Sta. 1496+19 to Sta. 1521+74. Existing Basin 8 is the most eastern basin within the project limits. Stormwater runoff generated within the right of way is conveyed through existing storm drain and roadside ditches to existing FDOT Pond 2A. Existing FDOT Pond 2A treats and attenuates discharge generated within the basin limits and outfalls to Existing FDOT Pond 2B which functions as floodplain compensation and discharges to Lake Toni.

2.4.9 Existing Village Lake Shopping Center Dr Basin

Existing Village Lake Shopping Center Dr Basin is located along the existing Raden Drive alignment from Carson Drive to the Village Lakes Shopping Center. Per SWFWMD ERP Permit: 1027.001 (App: 2736), the existing drainage patterns along Raden Drive outfall to an existing pond to the south of the alignment via a series of existing ditches.

2.5 FLOODPLAINS/EXISTING FLOODPLAIN COMPENSATION

The Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) for Pasco County. The existing interchange area is in a FEMA Flood Zone AE flood hazard area according to the FEMA Flood Insurance Rate Maps (FIRMs), dated September 26, 2014. The portions of the FEMA FIRMs (Panels 403, 404 and 412) used for this analysis are presented in Appendix 1 Figure 3. The flood elevations vary from 67.3 feet on the south side of SR 54 west of US 41 (SR 45) to 69.6 feet on the south side of SR 54 east of US 41 (SR 45).

There are SWFWMD permitted existing floodplain compensation ponds associated with both US 41 (SR 45) and SR 54. These floodplain compensation ponds are now floodplain zones as shown on the latest FEMA FIRMs. No impacts to existing floodplain compensation sites are anticipated. Please refer to APPENDIX 9 – FLOODPLAIN COMPENSATION CALCULATIONS-SPUI and APPENDIX 18-FLOODPLAIN COMPENSATION-DDI for the proposed floodplain compensation analysis.

There are also numerous wetland areas adjacent to the proposed project, primarily on the southwest and southeast sides of SR 54, which are discussed in detail under a separate cover in the Natural Resources Evaluation Report, dated January 2026 for the DDI configuration and Natural Resources Evaluation Report, dated August 2024 for the SPUI configuration.

2.6 EXISTING CROSS DRAIN ADEQUACY

The existing cross drains along US 41 (SR 45) and SR 54 were reviewed for hydraulic adequacy. Permit 43-16251-0 documents that culverts #2-5, along SR 54, were extended in 1987 indicating they predate that project. Existing cross drain #1, along US 41 (SR 45) was constructed per Permit 43-12851-1 issued in 1996. Please refer to Existing Cross Drains Exhibit and Calculations in Appendix 10. Initial evaluation of the existing cross drains show extensions may be a viable option. Proposed analysis is not provided in this report due to the large-scale interconnectivity of the floodplains; cross drains should be evaluated using the large-scale model during final design to confirm flow rates considering final pond locations and floodplain impact and compensation areas.

Culvert 1

A 30-inch RCP cross drain is located at US 41 (SR 45) Sta 2568+80 measuring 93.6 feet in length. Based on the SWFWMD Cypress Creek model, the cross drain connects network node NH1760, a ditch West of US 41 (SR 45), to node NH1780, the wetland East of US 41, North of Glory Road. SWFWMD models assign this culvert a hydraulic ID Of 362618_003. This culvert is divided into two components with an inlet in the median.

Since invert elevations are missing from survey data, the invert elevation at the outlet end of the culvert, as retrieved from SWFWMD models, is 65.66 feet and the invert elevation at the inlet end of the culvert at network node NH1760 is assumed to be 68.71 feet based on the floodplain elevation listed for this node. To verify this information, the invert elevations included in SWFWMD models align with existing ground contours downloaded from the NOAA Office of Coastal Management.

HY-8 was used to complete the analysis for this cross drain. Maximum 10-year, 25-year, 50-year, and 100-year storm events flow rate results are obtained from ICPR 3 SWFWMD models. Since this culvert outflows to a wetland, with the downstream end of the culvert having an invert elevation below the water surface level for each storm event (the maximum stage at each storm event from the ICPR model), the channel type in HY-8 is demonstrated to have a "Constant Tailwater Elevation" with the maximum stage for each of the four storm events being used as the tailwater elevation to retrieve the headwater elevation after running the HY-8 model. The maximum stages for the 10-year, 25-year, 50-year, and 100-year storm events are 67.07, 67.50, 67.80, and 68.44 feet.

After running HY-8, results indicate that overtopping occurs for the 100-year storm event. The lowest elevation along the roadway shoulder according to the geospatial contours is 71 feet and the headwater elevation for the 100-year storm events falls at an elevation of 71.01 feet.

Culvert 2

An 18-inch RCP crossing SR 54 at Sta. 1431+25 measuring 100 feet in length. Based on the Anclotte East model received from SWFWMD, the cross drain connects network node NC6820, a ditch located South of Amberfield Dr. and North of SR 54, to node NC6830, a ditch in the median between SR54 Eastbound and Westbound. This culvert is divided into two components with a ditch bottom inlet in the median. The culvert has an upstream invert elevation of 65.18 feet and a downstream invert elevation of 64.10 at the median inlet.

HY-8 was used to complete the analysis for this cross drain. Maximum 50-year and 100-year storm events flow rate results are retrieved from ICPR 3 SWFWMD models. Since the culvert is divided into two components, the second component of the 18-inch pipe connecting the median inlet to the outlet end of the culvert resembles the downstream

channel for the “Tailwater Data” in HY-8, having properties of 2 feet of ditch bottom width, since the outflow pipe from the median inlet measures 24 inches in diameter, and a 0.0068 ft/ft channel slope, as this is the slope of the outflow pipe.

After running HY-8, results indicate that overtopping occurs for the 10-year, 25-year, 50-year storm event, and 100-year storm events. The lowest elevation along the roadway shoulder according to the geospatial contours is 67 feet and the headwater elevation for all four storm events falls slightly above the roadway overtopping elevation at 67.01 feet for the 10-year and 25-year storm events and 67.02 feet for the 50-year and 100-year events.

To avoid overtopping, a proposed 18-inch double RCP crossing SR 54 at this location instead of one 18-inch RCP lowers the headwater elevations for all four storm events to below 67 feet at 66.50, 66.64, 66.78, and 66.87 feet.

Culvert 3

A 42-inch RCP crosses SR 54 at Sta. 1436+50 measuring 118 feet in length. Based on the Anclotte East model received from SWFWMD, the cross drain connects network node NC6810, a channel South of Sterlington Dr., to node NC6850, a ditch in the median between SR54 Eastbound and Westbound. This culvert is divided into two components with a ditch bottom inlet in the median. The upstream invert elevation of the cross drain is 63.18 feet and the downstream invert elevation is 62.70 at the median inlet.

HY-8 was used to complete the analysis for this cross drain. Maximum 50-year and 100-year storm events flow rate results from ICPR 3 SWFWMD models. The culvert is divided into two components, the second component of the 42-inch pipe connecting the inlet in the median to the outlet end of the culvert is treated as the downstream channel for the “Tailwater Data” in HY-8, having properties of 2.7 feet of ditch bottom width, since the outflow pipe from the median inlet measures 42 inches in diameter and the flow area is 9.6 square feet, making the width 2.7 feet, and a 0.0005 ft/ft channel slope, as this is the slope of the outflow pipe.

After running HY-8, results indicate that overtopping does not occur for the 10-year, 25-year, 50-year, and 100-year storm events. The lowest elevation along the roadway shoulder according to the geospatial contours is 71 feet and the headwater elevation for all four storm events are below the roadway overtopping elevation at 63.96 feet, 64.03 feet, 64.08 feet and 64.17 feet.

Culvert 4

Two box culverts measuring 8 feet in span and 3 feet in height are located at SR 54 Sta. 1452+90, measuring 145 feet in length. Based on the Anclotte East model received from SWFWMD, the cross drain connects network node NC6560 to node ND0895, South of SR 54 East and West. The culvert has an upstream invert elevation of 64.97 feet and a downstream invert elevation of 64.17 at the median inlet.

HY-8 was used to complete the analysis for this cross drain. Maximum 10-year, 25-year, 50-year, and 100-year storm events flow rate results are obtained from ICPR 3 SWFWMD models. Since this culvert outflows to a wetland, with the downstream end of the culvert having an invert elevation below the water surface level for each storm event (the maximum stage at each storm event from the ICPR model), the channel type in HY-8 is demonstrated to have a “Constant Tailwater Elevation” with the maximum stage for each of the four storm events being used as the tailwater elevation to retrieve the headwater elevation after running the HY-8 model. The maximum stages for the 10-year, 25-year, 50-year, and 100-year storm events are 66.95, 67.09, 67.15, and 67.30 feet.

After running HY-8, results indicate overtopping does not occur for the 10-year, 25-year, 50-year, and 100-year storm events. The lowest elevation along the roadway shoulder according to the geospatial contours is 69 feet and the headwater elevation for all four storm events are lower than the roadway overtopping elevation at 67.10, 67.39, 67.59, 68.04, and 69.00 feet.

Culvert 5

Two 30" RCP at SR 54 Sta. 1420+50 just West of Wilson Rd, measuring 213 feet in length. Based on The Anclotte East SWFWMD model, the double culvert connects network node NC7140, a ditch North of SR54, to node ND0940, a pond South of SR54, East of Henning Ln. SWFWMD models assign this double culvert link names of RC7140A and RC7140B. The invert elevations at the inlet and outlet ends of the cross drains are 63.11 feet and 62.16 feet.

HY-8 was used to complete the analysis for this cross drain. Maximum 10-year, 25-year, 50-year, and 100-year storm events flow rate results are obtained from ICPR 3 SWFWMD models. Since this culvert outflows to a wetland, with the downstream end of the culvert having an invert elevation below the water surface level for each storm event (the maximum stage at each storm event from the ICPR model), the channel type in HY-8 is demonstrated to have a "Constant Tailwater Elevation" with the maximum stage for each of the four storm events being used as the tailwater elevation to retrieve the headwater elevation after running the HY-8 model. The maximum stages for the 10-year, 25-year, 50-year, and 100-year storm events are 63.72, 64.43, 64.62, and 64.75 feet.

After running HY-8, results indicate that overtopping occurs before the 100-year storm event but after the 10-year, 25-year, and 50-year storm events. The lowest elevation along the roadway shoulder according to the geospatial contours is 69 feet and the headwater elevation for the 100-year storm event falls slightly above the roadway overtopping elevation at 69.08 feet but the headwater elevation for the 10-year, 25-year, and 50-year storm events fall below the overtopping elevation at 65.96 feet, 66.50 feet, and 67.08 feet.

SECTION 3: DESIGN CRITERIA

The design of the stormwater management facilities for the project is governed by the rules set forth by the FDOT and the SWFWMD. Water quality treatment and water quantity attenuation requirements will comply with the guidelines as defined in FDEP Environmental Resource Permit (ERP) manual, Volume I and SWFWMD Environmental Resource Permit (ERP) manual, Vol II, and 2024 FDOT Drainage Manual.

A Pre-Application meeting was held with SWFWMD on March 13, 2014. Minutes from this meeting are shown in Appendix 19-Supporting Documentation.

The project does not lie in the vicinity of any Outstanding Florida Waters.

FDOT Pond Design Criteria:

The pond designs shall meet the following criteria:

- One-foot freeboard from the Design High Water (DHW) to the inside of the maintenance berm.
- Pond maintenance berm slopes are 1:8 or flatter
- Pond maintenance berms are at least 15-feet wide
- Pond side slopes are 1:4 or flatter
- Wet detention ponds shall have a minimum permanent pool depth of six feet

Water Quality:

This project should qualify to be grandfathered into the old water quality regulations, however if PD&E completion is not within the grandfathering time frame the final design will need to review regulatory changes on water quality. This analysis will use the existing presumptive criteria. Water quality treatment shall be based on the contributing area defined as on-site directly connected impervious area in accordance with the SWFWMD Applicant's Handbook Part II (effective June 1, 2018) Section 4.5 Alternatives to Existing Public Roadway Projects Part a.2. Therefore, a wet detention treatment system shall treat one inch of runoff from this contributing area.

On the west side of the intersection, the project is in Waterbody ID 1456 within the South Branch Anclote River Basin. Water Body ID# 1456 has 2008 EPA established Total Maximum Daily Loads (TMDL's) for total nitrogen (TN) and total phosphorus (TP).

Water Body ID# 1463S is located within the South Branch Anclote River Basin and the Lake Thomas Outlet Basin on the West of the intersection. FDEP has labeled this Waterbody ID as a Waters Not Attaining Standards (WNAS) but a causative pollutant has not been identified. It is on FDEP's Florida 303 (d) Study List for Dissolved Oxygen.

Net nutrient loading analysis is required for this project.

Water Quantity:

The intersection is located in an open basin. SWFWMD requires that the 25-year, 24-hour post-development discharge rate not exceed the 25-year, 24-hour pre-development discharge rate. The Pasco County Land Development Code refers to the SWFWMD criteria. SWFWMD provided GIS data of historical flooding complaint locations. These locations are upstream of the project therefore a critical duration analysis will not be performed.

The stormwater runoff from the proposed improvements will be collected by inlets and conveyed to the proposed wet detention ponds. For contingency purposes, conservative estimates were used to determine the feasibility of the pond location and approximate size based on preliminary data and engineering judgment. Final pond configurations may change during final design when sufficient design level data becomes available.

SECTION 4: DATA COLLECTION

For completion of the review of the existing drainage conditions within the project corridor, data from various sources was obtained. Data included design topographic data, geographic information system (GIS) coverages for roadways, Federal Emergency Management Agency (FEMA) flood studies, SWFWMD coverages for wetlands and surface water bodies, and County-generated coverages for topography, land use, and contours. A list of the data collected, and their source(s) is presented in Table 5.

TABLE 5 - LIST OF DATA COLLECTED

DATA	SOURCE	AGENCY
GIS Base Layers, such as county boundaries, highways, roadways, etc.	Florida Geographic Data Library	Florida Department of Transportation (FDOT)
FEMA Floodplain Maps	Florida Geographic Data Library	FEMA
Hydrology GIS layers, such as surface water, wetlands	Florida Geographic Data Library	SWFWMD
Land Use Maps	Pasco County	Pasco County
Topographic information	FDOT	FDOT
Contours	Pasco County	Pasco County
Soil Survey maps	Florida Geographic Data Library	Natural Resources Conservation Service (NRCS)
Surface Drainage Basins	Florida Geographic Data Library	SWFWMD
Aerial Imagery	FDOT	FDOT
Parcel Boundaries	Pasco County	Pasco County

SECTION 5: PROPOSED DRAINAGE CONDITIONS

The existing drainage boundaries and local drainage basins will generally be maintained in the proposed condition. The proposed drainage basin delineations include the pond locations for each alternative. The stormwater runoff from the proposed SR 54 and US 41 (SR 45) will be collected by a closed drainage conveyance system, which will discharge into the proposed stormwater management facilities. Refer to Appendix 3-Proposed Drainage Map-SPUI and Appendix 13-Proposed Drainage Map-DDI for proposed basin delineations.

The project will not have adverse impacts to the area's water quality or quantity. The design of the stormwater management facilities for the project is governed by the rules set forth by the SWFWMD and FDOT. Water quality treatment and water quantity attenuation requirements will comply with the guidelines as defined in SWFWMD and FDEP's Environmental Resource Permit (ERP) manual, Volume I (FDEP) and II (SWFWMD), and 2024 FDOT Drainage Manual

1. The general requirements for treatment volume in a wet detention system are the following:

Wet Detention:

one inch (1") of runoff from the drainage area

2. Special requirements contained within this project corridor are as follows:

Total Maximum Daily Loads – Proposed Basin 6 Only

Proposed improvements shall demonstrate a net improvement for TN and TP

The SCS method has been used to determine the required pond size for each basin. House Bill 599, passed in 2012, and amended in 2013, alleviates the responsibility from FDOT to treat and attenuate offsite stormwater runoff comingled with onsite stormwater runoff, therefore offsite areas were not considered in the basin areas used for the preliminary pond sizing. Ponds were sized to attenuate the most stringent requirement for attenuation defined by the outfall location. Runoff volumes use a 25-year 24-hour storm event defined by SWFWMD. Historical flooding complaints were obtained from Southwest Florida Water Management District. The flooding areas are located upstream of the project location therefore critical duration analysis will not be performed. It should be noted that for

contingency purposes, conservative estimates were used to determine the feasibility of the pond locations and approximate sizes based on preliminary data and engineering judgment. Proposed pond and FPC footprints include a 20% increase in area. Design level geotechnical data was not available at the time of the report. Estimated Seasonal High Water elevations were assumed using existing permits and USDA web soil survey data and used for pond and FPC site calculations.

Existing stormwater outfall locations throughout the corridor have been identified and shall be maintained in the proposed condition. Potential stormwater outfall locations for each pond alternative were considered and recommendations on the preferred alternative are provided in the report.

Based on information available during the pond siting analysis, only hydraulically feasible pond sites which could achieve the design criteria requirements were considered. Pond sites are analyzed and evaluated for the following parameters:

- Hydrologic and hydraulic factors such as existing ground elevation, soil types, estimated Seasonal High Water Table (SHWT) established by a review of the USDA NRCS soils, stormwater conveyance feasibility, and basin outfalls
- Environmental resource impacts including wetlands
- Floodplain impacts
- Impacts to cultural resources
- Hazardous materials and contamination

5.1.1 Basin 1

SPUI configuration: Basin 1 limits begin at CL 41 Sta. 2645+60 to approximately Sta. 2695+60. Basin 1 is the most northern basin within the project limits. The proposed roadway improvements along Land O' Lakes Blvd does not change the total acreage between existing and proposed conditions. The proposed impervious area increased, and the proposed pervious area decreased in the post basin. Drainage from the roadway pavement, is collected by storm drain systems, drains through a 48" pipe to existing Pond D. Pond D treats and attenuates discharge from within the basin which outfalls to Lake Vienna.

DDI configuration: For the DDI analysis, Basin 1 limits begin at BL_NB_US41 Sta. 2081+00 to approximately Sta. 2131+00. The analysis is limited to the portion of the existing basin that is directly impacted by the Diverging Diamond Interchange (DDI) roadway design. While the roadway footprint was expanded to the east, the conversion of land use from commercial development to sidewalk and pervious areas within this affected portion does not result in an increase in runoff. This is because the replacement of highly impervious commercial surfaces with areas that allow infiltration reduces the overall runoff contribution from the impacted limits. As a result, the existing stormwater pond current storage capacity remains sufficient to accommodate the reduced runoff volume associated with these changes.

5.1.2 Basin 2

SPUI configuration: Basin 2 is located at the intersection of US 41 (SR 45) at SR 54. This basins limits consists of Sta. 2617+47 to Sta. 2655+14 on CL 41 and Sta. 1451+68 to Sta. 1478+62 on CL 54. Calculations adjust Basin 2 to account for the additional right of way needed for each pond alternative. Drainage patterns consist of a closed storm drain system that collects all discharge from medians, sidewalks, and travel lanes within the basin limits to Pond C which outfalls to Lake Floyd. In the Northeast quadrant, commercial properties are included within the basin limits since they

connect to the storm drain system directly. Proposed Basin 2 encompasses additional areas along northbound Land O' Lakes Blvd, eastbound, westbound SR 54, and frontage roads due to roadway widening and additional right of way necessary for each pond alternative.

DDI configuration: For the DDI analysis, Basin 2 is located at the intersection of US 41 (SR 45) at SR 54. This basin limit extends from Sta. 2617+47 to Sta. 2655+14 on CL 41 and from Sta. 1453+82 to Sta. 1480+20 on CL 54.

Drainage patterns consist of a closed storm drain system that collects all discharge from medians, sidewalks, and travel lanes within the basin limits to the proposed SMF 2D pond and ultimately outfalls to Lake Floyd. In the Northeast quadrant, commercial properties are included within the basin limits since they connect to the storm drain system directly. Proposed Basin 2 encompasses additional areas along northbound Land O' Lakes Blvd, eastbound, westbound SR 54, and frontage roads due to roadway widening and additional right of way necessary for each pond alternative and compensation site.

Proposed Basin 2 Quasi -Equivalent treatment for SR 54 is located on BL SR54_EB at station Sta. 3004+20 to Sta. 3009+20. Proposed drainage patterns consist of a proposed closed storm drain system that collects all discharge from medians, sidewalks, and travel lanes within the basin limits into an existing double 3x8 box culvert which discharges into a wooded area located within the existing floodplain. In the proposed condition, the CN value decreases due to an increase in pervious area within the median. Even though the total basin area between the pre and post condition increases, the volume retained in ac-ft between pre and post conditions remains the same at 1.23 ac-ft thus water quality requirements are met. This approach is consistent with permit SWFMD ERP# 43-12854 Quasi-Equivalent treatment for SR 54 in system C.

5.1.3 Basin 3

SPUI configuration: Proposed Basin 3 consists of the existing roadway pavement and ditches from Sta. 200+00 to Sta. 217+00 at alignment CL. 597, the southbound roadway pavement and railway, as well as the northbound roadway pavement, sidewalks, median ditches, and roadside ditches along both sides of US 41 from Sta. 2588+87 to Sta. 2617+47 at alignment CL. 41. Calculations adjust Basin 3 to account for the additional right of way needed for each pond alternative. The basin drain pattern and outfall location remains the same as existing. Increase in discharge due to roadway widening will be conveyed in ditches and storm drain systems that discharge to existing Pond B for treatment. Pond B discharges to Wetland D, which ultimately outfalls to Cypress Creek.

DDI configuration: For the DDI analysis, Proposed Basin 3 consists of the proposed roadway pavement along BL_SB_CR597_US41 from Sta. 500+00 to approximately Sta. 514+00. And the existing railway and proposed roadway along Northbound and Southbound US 41 from Sta. 2021+80 to Sta. 2049+90 along alignment BL_NB_US41. This drainage area includes all proposed surface features, proposed roadway and sidewalk, contributing runoff within these limits. Calculations include the additional right of way needed for the preferred pond alternative. The basin drain pattern and outfall location remains the same as existing. Increase in discharge due to roadway widening will be conveyed in ditches and storm drain systems that discharge to proposed SMF 3D for treatment. SMF 3D discharges to Wetland D, which ultimately outfalls to Cypress Creek.

5.1.4 Basin 4

SPUI configuration: The limits of proposed Basin 4 begin at the intersection of Land O' Lakes Blvd and Willow Bend Parkway to approximately Sta. 2588+87 at alignment CL. 41. The basin boundary is similar to the existing Basin 4 basin boundary. The proposed roadway improvements along Land O' Lakes Blvd does not change the total acreage

between existing and proposed conditions. The proposed impervious area decreased, and the proposed pervious area increased in the post basin. Drainage from the roadway pavement, is collected by storm drain systems and outfalls to existing Pond A for treatment, ultimately discharging into Wetland B and then to Cypress Creek.

DDI configuration: The limits of proposed Basin 4 begin at the intersection of Land O' Lakes Blvd and Willow Bend Parkway to approximately Sta. 2021+80 along alignment BL_NB_US41. The proposed roadway improvements along Land O' Lakes Blvd encroach into the parcels east of Land O' Lakes Blvd and impact existing Pond A per SWFWMD ERP permit 43-12854. The increase of impervious area and the impact to the existing pond is mitigated by the proposed pond SMF 4D. Drainage from the roadway pavement, is collected by storm drain systems and outfalls to the proposed pond for treatment and maintains existing drainage patterns by ultimately discharging into Wetland B and then to Cypress Creek.

5.1.5 Basin 5

SPUI configuration: The limits of proposed Basin 5 begin at the end of proposed Basin 6, approximately SR 54 Sta. 142+20, to the beginning of proposed Basin 2, approximately SR 54 Sta. 1451+50.00. Calculations divide Basin 5 corresponding to the additional right of way needed for each pond alternative. The proposed roadway widening eliminates the existing system of interconnected linear ponds. Therefore, unlike in Basin 6, no existing ponds will be able to be used in the proposed condition. All attenuation and treatment volume needs for the basin are met within each proposed pond alternative. The basin will still outfall into the wetland area east of Sienna Village's boardwalk, along westbound SR 54 approximately Sta. 1435+50 (RT). The outfall location will move to the control structure of the selected pond alternative.

Basin 5 is within the South Branch Anclote River Basin and the Lake Thomas Outlet and Water Body ID# 1463S. FDEP has labeled this Waterbody ID as a Waters Not Attaining Standards (WNAS) but a causative pollutant has not been identified. It is on FDEP's Florida 303 (d) Study List for Dissolved Oxygen. BMP selection and calculations may need to be reevaluated during final design per new SB7040.

DDI configuration: For the DDI analysis, the limits of proposed Basin 5 begin approximately SR 54 Sta. 142+20, to the beginning of proposed Basin 2, approximately SR 54 Sta. 1449+44. The proposed roadway widening along SR 54 has minimal impacts close to the basin limits. The impacts due to the roadway widening will only affect sub-basin 5-2 which contributes to the existing linear ponds P15E2, P16E2, P18E2 and P19E2 per SWFWMD permit #43-16251-18. Since the roadway widening of SR 54 does not extend into and affect the drainage areas contributing to existing pond P13E2, sub-basin 5-2 will remain the same as existing conditions. Since the roadway widening of SR 54 does not extend to sub-basin 5-1, basin 5-1 will remain the same as existing conditions. The existing linear ponds cannot accommodate any additional runoff generated due to SR 54 roadway widening resulting in the addition of a new proposed pond which will treat and attenuate the increase runoff generated within the project limits. All attenuation and treatment volume needs for the basin are met with the existing linear ponds together with the proposed alternative. The basin will still outfall into the wetland area east of Sienna Village's boardwalk, along westbound SR 54 approximately Sta. 1435+50 (RT).

Proposed Basin 5 is within the South Branch Anclote River Basin and the Lake Thomas Outlet and Water Body ID# 1463S. FDEP has labeled this Waterbody ID as a Waters Not Attaining Standards (WNAS) but a causative pollutant has not been identified. It is on FDEP's Florida 303 (d) Study List for Dissolved Oxygen. BMP selection and calculations may need to be reevaluated during final design per new SB7040.

5.1.6 Basin 6

The limits of proposed Basin 6 begin at Henley Road to approximately SR 54 Sta. 142+20. Calculations divide Basin 6 corresponding to the additional right of way needed for each pond alternative. Proposed roadway improvements begin halfway within the basin with the roadway widening along the eastbound SR 54 lanes. The basin drain pattern will remain through a series of interconnected linear ponds which discharge into a wetland north of Sta. 1420+00 (LT) and through two (2) existing 30" RCP cross drains that outfall to the wetland area south of eastbound SR 54.

Each pond alternative will work as an added component in the existing system of ponds. The proposed pond alternatives each alter the proposed Basin 6 basin area which is reflected in the calculations.

Basin 6 is within the South Branch Anclote River Basin Springs Coast Group and impaired water body ID #1456. There are TMDL's for Total Phosphorus and Total Nitrogen pollutants. BMP selection and calculations may need to be reevaluated during final design per new SB7040.

5.1.7 Basin 7

Basin 7 limits begin at CL 54 Sta. 1476+81 to Sta. 1497+38. Basin 7 is located east of the interchange of US 41 (SR 45) at SR 54. Proposed Basin 7 includes areas along eastbound, westbound SR 54 and frontage roads due to roadway widening. Calculations adjust Basin 7 corresponding to the additional right of way needed for each pond alternative. Drainage patterns consist of stormwater runoff generated within the basin is conveyed through existing storm drain and roadside ditches to Pond 1A. Pond 1A treats and attenuates discharge generated within the basin limits and outfalls to existing FDOT Pond 1B which functions as floodplain compensation and discharges to Lake Floyd.

5.1.8 Basin 8

Basin 8 limits begin at CL 54 Sta. 1496+19 to Sta. 1521+74. Basin 8 is the most eastern basin within the project limits. Proposed Basin 8 includes areas along eastbound, westbound SR 54 and frontage roads due to roadway widening. Calculations adjusts Basin 8 corresponding to the additional right of way needed for each pond alternative. Drainage patterns consist of stormwater runoff generated within the right of way is conveyed through existing storm drain and roadside ditches to Pond 2A. Pond 2A treats and attenuates discharge generated within the basin limits and outfalls to existing FDOT Pond 2B which functions as floodplain compensation and discharges to Lake Toni.

5.1.9 Village Lake Shopping Center Dr Basin

Proposed Village Lake Shopping Center Dr Basin is located along the existing Raden Drive alignment from Carson Drive to the Village Lakes Shopping Center. The proposed condition is compliant with the SWFWMD ERP Permit: 1027.001 (App: 2736) therefore no water quantity or quality is needed, and no proposed pond alternative is required for this basin.

SECTION 6: PROPOSED POND SITES

6.1 METHODOLOGY OF POND DETERMINATION

Recommended alternatives considered sites that are hydraulically feasible and right of way permissible, and also incorporated environmental assessment results.

Proposed pond sites are analyzed and evaluated for the following parameters:

- Hydrologic and hydraulic factors such as existing ground elevation, soil types, estimated Seasonal High-Water Table (SHWT) established by a review of the USDA NRCS soils, existing permits and field observations, stormwater conveyance feasibility, and basin outfalls
- Environmental resource impacts including wetlands
- Floodplain impacts
- Alternative pond footprints, as seen on Proposed Pond Site Alternatives Exhibit in Appendix 4 and Appendix 13, which include a 20% increase in area to account for variances from final design pond sites.

Per the Natural Resources Evaluation Report dated January 2026, the preferred DDI pond alternatives with wetland impacts are SMF 5D and SMF 3D. The preferred DDI FPC sites with wetland impacts are FPC 107D, FPC 110D and FPC 119D. The project will not have adverse effects on protected species and habitats.

Per the Natural Resources Evaluation Report dated August 2024, the only SPUI pond alternative impacting wetlands is SMF 2A. The only SPUI FPC sites impacting wetlands is FPC 115A and FPC 103A. No critical habitat was identified within the project area. The project will not have adverse effects on protected species and habitats.

An updated Contamination Tech Memo for the preferred pond alternatives is pending, and this report will be updated accordingly. Per the Contamination Tech Memo dated July 2024, the only SPUI pond with a risk rating of High is SMF 2A. Potential contamination impacts are anticipated per the proximity of active and former retail gas stations and of active and former drycleaning facilities.

6.2 STORMWATER PONDS

6.2.1 Existing FDOT Pond A

Existing FDOT Pond A meets with both water quality and quantity requirements. Per SWFWMD ERP permit 43-12854, existing FDOT Pond A is a wet detention pond with NWL of 68.25. Drainage from roadway pavement is collected by the closed systems, treated by the pond, and discharged to Wetland B south of the pond, which ultimately discharges into Cypress Creek. A permanent wet detention volume of 6.62 ac-ft is provided, exceeding the required 3.93 ac-ft. In addition, 1.66 acres of littoral zone area is provided, exceeding the required 1.37 acres. The 25-year, 24-hour peak discharge is 52.40 cfs in pre-development condition and 42.80 cfs in post-development condition. Existing pond stage and storage calculation is provided to match with the information of existing FDOT Pond A from the permit. Existing FDOT Pond A remains effective in the proposed condition due to post-development basin total acreage remains the same as the pre-development basin. Proposed impervious area decreased and proposed pervious area increased in the post condition. No extra right of way is needed.

6.2.2 Existing Pond B

Existing Pond B was designed as a wet detention pond with NWL of 68.50 to meet both water quality and quantity requirements for existing Basin 3. The pond is located approximately at Sta. 2600+00, (RT) at alignment CL. 41. Per SWFWMD ERP permit 43-12854, the required permanent wet pool volume is 5.30 ac-ft, and 7.30 ac-ft is provided. A 0.66-ac littoral zone is required, and 0.91 acres are provided. The 25-year, 24-hour pre-development peak discharge is 63.04 cfs, while the actual routed discharge is 62.94 cfs. Existing pond stage and storage calculation is provided to match with the information of existing pond B per the permit.

According to SWFWMD ERP Applicant Handbook Volume II, section 4.1.a.1, treatment volume should not cause the pond level to rise more than 18 inches above the control elevation. Therefore, with the additional roadway pavement

in the proposed condition, existing pond B will not provide enough attenuation volume by simply increasing its DHW elevation, as the existing DHW is already 18 inches above the control elevation. Existing Pond B will work in conjunction with either pond B1, B2 or B3 to provide the required attenuation volume.

6.2.3 SMF 3A

SMF 3A is a wet detention system comprised of 3 facilities; 2 facilities designed to work together with existing Pond B that are connected by a proposed equalizer pipe. The first facility is located approximately at Sta. 204+00 at alignment CL. 597, (RT), and requires additional easement outside the FDOT ROW. The second facility is located approximately at Sta. 203+00 at alignment CL. 597 (LT), within the current FDOT ROW area. The two ponds will be hydraulically connected to existing Pond B and will discharge into Wetland D, maintaining the same outfall location as the existing condition. Both facilities of SMF 3A have the same NWL as existing Pond B. Existing Pond B will provide the required water quality volume, while SMF 3A will provide the required attenuation volume. Existing ground elevation for the sites is approximately elev. 71 and depth to water is 0.98 ft.

The existing attenuation volume in the basin provided by SWFWMD permitted existed pond B is 3.01 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed runoff volume. SMF 3A was sized to meet the delta attenuation volume needed. Required attenuation volume is 3.87 and the combined provided attenuation volume of SMF 3A is 3.88 ac-ft.

The required water quality treatment volume is 1.05 ac-ft. SMF 3A provide a treatment volume of 1.34 ac-ft, exceeding the required treatment volume.

The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation. The maintenance berm will have a 1.0 % slope and the pond will have 1:4 side slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 side slopes to the pond bottom.

6.2.4 SMF 3B

Proposed SMF 3B is the second alternative wet detention system designed to work with existing Pond B under the proposed condition. Proposed SMF 3B is located at approximately Sta. 206+50 at CL. 597 (LT), outside the 100-year floodplain boundary to avoid floodplain impact. This proposed alternative requires additional area outside the FDOT ROW. SMF 3B will be hydraulically connected to existing pond B and discharge into Wetland D, maintaining the same outfall location as the existing condition. SMF 3B will use the same NWL as existing Pond B. Existing Pond B will provide the required water quality volume, while proposed SMF 3B will provide the required attenuation volume.

The existing attenuation volume in the basin provided by SWFWMD permitted existed pond B is 3.01 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed runoff volume. SMF 3B was sized to meet the delta attenuation volume needed. Required attenuation volume is 3.29 and provided attenuation volume of Pond B and SMF 3B together is 3.47 ac-ft. Existing ground elevation for the site is approximately elev. 70 and depth to water is 0.98 ft.

The required water quality treatment volume is 1.05 ac-ft. Since existing Pond B provides required treatment of 1.05, SMF 3B will not provide treatment for Basin 3.

The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation. The maintenance berm will have a 1.0 % slope and the pond will have 1:4 side slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 side slopes to the pond bottom.

6.2.5 SMF 3C

Proposed SMF 3C is the final and recommended alternative for proposed Basin 3. It is a wet detention system designed to work with existing Pond B under the proposed conditions. Proposed SMF 3C is located at approximately Sta. 2597+50 at CL. 41 (RT), south of existing Pond B. This proposed alternative requires additional easement outside FDOT ROW. SMF 3C will be hydraulically connected to existing pond B, and will discharge into Wetland D, maintaining the same outfall location as the existing condition. SMF 3C will use the same NWL as existing Pond B. Existing Pond B will provide the required water quality volume, while proposed SMF 3C will provide the required attenuation volume. Existing ground elevation for the site is approximately elev. 72 and depth to water is 1.67 ft.

The existing attenuation volume in the basin provided by SWFWMD permitted existed pond B is 3.01 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed runoff volume. SMF 3C was sized to meet the delta attenuation volume needed. Required attenuation volume is 3.32 and provided attenuation volume of Pond B and SMF 3C together is 3.76 ac-ft.

The required water quality treatment volume is 1.05 ac-ft. Since existing Pond B provides required treatment of 1.05, SMF 3C will not provide treatment for Basin 3.

The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation. The maintenance berm will have a 1.0 % slope and the pond will have 1:4 side slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 side slopes to the pond bottom.

6.2.6 Existing Pond 1A

Existing Pond 1A is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 7 along with either alternative SMF 7A, SMF 7B or SMF 7C. The pond is located approximately at Sta. 1480+00 (RT) on alignment SR. 54. Existing Pond 1A was designed with a NWL of 68.70 ft. The permanent pool volume is 6.67 ac-ft. Existing Pond 1A provides 0.59 ac-ft of treatment and 3.18 ac-ft of attenuation. The 25-year- 24-hour peak discharge is 10.89 cfs. Existing pond stage and storage calculation is provided to match with the information of existing pond 1A per the permit SWFWMD ERP permit 19567.003. Pond 1A discharges through a control structure into existing floodplain compensation Pond 1B which discharges to Lake Floyd.

6.2.7 SMF 7A

SMF 7A is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 7. The pond is located along SR 54 at approximately Sta. 1495+00 (LT). The pond site is proposed to span across one (1) property. SMF 7A is designed to work in conjunction with existing Pond 1A at approximately Sta. 1480+00 (RT). Proposed SMF 7A will treat and provide detention for the additional runoff within proposed Basin 7. SMF 7A will outfall, through a proposed storm sewer system, to existing permitted (permit #4319567.00) existing Pond 1B which discharges to Lake Floyd. This will maintain the existing outfall in the proposed condition. SMF 7A design high water elevation and normal water level are designed to match the existing Pond 1A. Existing Pond 1A would not provide

treatment for additional impervious area from the proposed roadway therefore, SMF 7A will provide additional treatment. Existing ground elevation for the site is approximately elev. 72 and depth to water is 2.75 ft.

The existing attenuation volume in the basin provided by SWFWMD permitted existing pond 1A is 3.18 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed runoff volume. Pond 1A (1) was sized to meet required water quality and water quantity (attenuation) volume. Required attenuation volume is 8.06 ac-ft and provided attenuation volume of Pond 1A and Pond 1A (1) together is 8.14 ac-ft.

The required water quality treatment volume accounts for the existing treatment volume of 0.59 ac-ft plus the delta between the existing and proposed treatment volume. Both ponds provide a treatment volume of 1.55 ac-ft, exceeding the required delta of 0.80 ac-ft for both ponds treatment combined.

The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 69.2. The maintenance berm will have a 1.0 % slope and the pond will have 1:4 side slopes from the inside berm to two feet below the normal water level. The pond will have a 1:2 side slope to the pond bottom.

6.2.8 SMF 7B

SMF 7B is a proposed wet detention pond that will provide stormwater treatment and attenuation for proposed Basin 7. The pond is located along SR 54 at approximately Sta. 1490+00 (LT). The pond site is proposed to span across one (1) property. SMF 7B is designed to work in conjunction with existing Pond 1A at approximately Sta. 1480+00 (RT). Proposed SMF 7B will treat and provide detention for the additional runoff within proposed Basin 7. Existing ground elevation for the site is approximately elev. 72 and depth to water is 2.75 ft.

Pond1A(2) will outfall, through a proposed storm sewer system, to existing permitted (permit #4319567.00) floodplain compensation area Pond 1B which discharges to Lake Floyd. This will maintain the existing outfall in the proposed condition. SMF 7B design water level and normal water level are designed to match the existing Pond 1A. Existing Pond 1A would not provide treatment for additional impervious area from the proposed roadway therefore, SMF 7B will provide additional treatment. Proposed Pond 1A (2) is chosen as the preferred alternative for Basin 7.

The existing attenuation volume in the basin provided by SWFWMD permitted existing pond 1A is 3.18 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed runoff volume. SMF 7B was sized to meet the attenuation volume needed. Required attenuation volume is 10.06 and provided attenuation volume of existing Pond 1A and proposed Pond 1A (2) together is 10.28 ac-ft.

The required water quality PAV volume accounts for the existing PAV volume of 0.59 ac-ft plus the delta between the existing and proposed PAV volume. Both ponds provide a PAV volume of 1.93 ac-ft, exceeding the required delta of 0.86 ac-ft for both ponds PAV combined.

The pond has one (1) foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 69.2. The maintenance berm will have a 1.0 % slope and the pond will have 1:4 slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 slope to the pond bottom.

6.2.9 SMF 7C

SMF 7C is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 7. The pond is located along SR 54 at approximately Sta. 1485+00 (LT). The pond site is proposed to span across three (3) properties. SMF 7C is designed to work in conjunction with existing Pond 1A at approximately Sta. 1480+00 (RT). Proposed SMF 7C will treat and provide detention for the additional runoff within proposed Basin 7. Pond 1A(3) will outfall, through a proposed storm sewer system, to existing permitted (permit #4319567.00) Pond 1B which discharges to Lake Floyd. This will maintain the existing outfall in the proposed condition. SMF 7C design water level and normal water level are designed to match the existing Pond 1A. Existing Pond 1A would not provide treatment for additional impervious area from the roadway so Pond 1A (3) will provide additional treatment. Existing ground elevation for the site is approximately elev. 72 and depth to water is 2.75 ft.

The existing attenuation volume in the basin provided by SWFWMD permitted existing Pond 1A is 3.18 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed runoff volume. SMF 7C was sized to meet the attenuation volume needed. Required attenuation volume is 9.63 and provided attenuation volume of SMF 7A and SMF 7C together is 9.64 ac-ft.

The required water quality PAV volume accounts for the existing PAV volume of 0.59 ac-ft plus the delta between the existing and proposed PAV volume. Both ponds provide a PAV volume of 1.81 ac-ft, exceeding the required delta of 0.86 ac-ft for both ponds PAV combined.

The pond has one foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 69.2. The maintenance berm will have a 1.0 % slope and the pond will have 1:4 slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 slope to the pond bottom.

6.2.10 Existing Pond 2A

Existing Pond 2A is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 8 along with either alternative SMF 8B or SMF 8C. The pond is located approximately at Sta. 1521+74 (LT) on alignment SR. 54. Existing Pond 2A was designed with a NWL of 66.96 ft. Existing Pond 2A has a littoral shelf of 66.3 ft and is surrounded by an environmental buffer. Existing Pond 2A has a drainage easement that provides access from SR 54 to the pond. Existing Pond 2A provides 0.79 ac-ft of treatment and 3.01 ac-ft of attenuation. Existing pond stage and storage calculation is provided to match with the information of existing pond 2A per the permit SWFWMD ERP permit 43-19567.00. Pond 2A discharges through a control structure into existing floodplain compensation Pond 2B which discharges to Lake Toni. Existing permit elevations were converted from NGVD 1929 to NAVD 88. 0.846 was subtracted from NGVD 1929 elevation to convert to NAVD 88.

6.2.11 SMF 8A

SMF 8A is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 8. The pond is located along SR 54 at approximately Sta. 1521+00 (LT). The pond site is proposed to span across two (2) properties. SMF 8A is a widening of existing Pond 2A. Proposed SMF 8A will treat and provide detention for the additional runoff within proposed Basin 8. The existing storm drain system will connect to pond 2A and outfall to floodplain compensation Pond 2B which outfalls to Lake Toni. This will maintain the existing outfall in the proposed condition. SMF 8A normal water level is designed to match the existing Pond 2A. Existing Pond 2A would not provide

treatment for additional impervious area from the roadway so proposed SMF 8A was widened to provide additional treatment. Proposed SMF 8A is chosen as the preferred alternative for Basin 8.

The original SWFWMD permit was not located so the existing stage-storage pond calculations were generated using as-built plans from SWFWMD ERP permit App ID: 41866. As-built plans show discharges in meters cubed per second and stages in NGVD 1929. Existing permit elevations were converted from NGVD 1929 to NAVD 88. A value of 0.846 was subtracted from NGVD 1929 elevation to convert to NAVD 88. Existing ground elevation for the site is approximately elev. 69 and depth to water is 1.01 ft.

The existing attenuation volume in the basin provided by SWFWMD permitted existed Pond 2A is 3.01 ac-ft. SMF 8A was sized to meet the delta attenuation volume needed. Required attenuation volume is 4.31 and provided attenuation volume of SMF 8A is 4.34 ac-ft. Existing design high water is 68.73. In proposed conditions, design high water was reduced to 68.63.

The required water quality PAV volume accounts for the existing PAV volume of 0.79 ac-ft plus the delta between the existing and proposed PAV volume. The proposed pond provides a PAV volume of 1.02 ac-ft, exceeding the required delta of 0.78 ac-ft.

The pond has one foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 69.60. The maintenance berm will have a 1.0 % slope and the pond will have 1:4 slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 slope to the pond bottom.

6.2.12 SMF 8B

SMF 8B is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 8. The pond is located along SR 54 at approximately Sta. 1500+00 (LT). The pond site is proposed to span across four (4) properties. SMF 8B is designed to work in conjunction with existing Pond 2A at approximately Sta. 1521+00 (LT). Proposed SMF 8B will treat and provide detention for the additional runoff within proposed Basin 8. An offsite storm drain system will connect both ponds and outfall to floodplain compensation area Pond 2B which outfalls to Lake Toni. This will maintain the existing outfall in the proposed condition. SMF 8B design water level and normal water level are designed to match the existing Pond 2A. Existing Pond 2A would not provide treatment for additional impervious area from roadway so SMF 8B will provide additional treatment.

The original SWFWMD permit was not located so the existing stage-storage pond calculations were generated using as-built plans from SWFWMD ERP permit App ID: 41866. As-built plans show discharges in meters cubed per second and stages in NGVD 1929. Existing permit elevations were converted from NGVD 1929 to NAVD 88. A value of 0.846 was subtracted from NGVD 1929 elevation to convert to NAVD 88. Existing ground elevation for the site is approximately elev. 71 and depth to water is 0.98 ft.

The existing attenuation volume in the basin provided by SWFWMD permitted existing Pond 2A is 3.01 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed attenuation volume. SMF 8B was sized to meet the attenuation volume needed. Required attenuation volume is 5.46 and provided attenuation volume of Pond 2A and SMF 8B together is 5.47 ac-ft.

The required water quality PAV volume accounts for the existing PAV volume of 0.79 ac-ft plus the delta between the existing and proposed PAV volume. Both ponds provide a PAV volume of 1.42 ac-ft, exceeding the required delta of 0.78 ac-ft for both ponds PAV combined.

The pond has one foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 69.60. The maintenance berm will have a 1.0 % slope and the pond will have 1:4 slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 slope to the pond bottom.

6.2.13 SMF 8C

SMF 8C is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 8. The pond is located along SR 54 at approximately Sta. 1509+00 (RT). The pond site is proposed to span across two (2) properties. SMF 8C is designed to work in conjunction with existing Pond 2A at approximately Sta. 1521+00 (LT). Proposed SMF 8C will treat and provide detention for the additional runoff within proposed Basin 8. An offsite storm drain system will connect both ponds and outfall to floodplain compensation area Pond 2B which outfalls to Lake Toni. This will maintain the existing outfall in the proposed condition. SMF 8C design water level and normal water level are designed to match the existing Pond 2A. Existing Pond 2A would not provide treatment for additional impervious area from roadway so SMF 8C will provide additional treatment.

The original SWFWMD permit was not located so the existing stage-storage pond calculations were generated using as-built plans from SWFWMD ERP permit App ID: 41866. As-built plans show discharges in meters cubed per second and stages in NGVD 1929. Existing permit elevations were converted from NGVD 1929 to NAVD 88. A value of 0.846 was subtracted from NGVD 1929 elevation to convert to NAVD 88. Existing ground elevation for the site is approximately elev. 72 and depth to water is 1.01 ft.

The existing attenuation volume in the basin provided by SWFWMD permitted existing pond 2A is 3.01 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed attenuation volume. SMF 8C was sized to meet the attenuation volume needed. Required attenuation volume is 4.44 ac-ft and provided attenuation volume of pond 2A and SMF 8C together is 4.68 ac-ft.

The required water quality PAV volume accounts for the existing PAV volume of 0.79 ac-ft plus the delta between the existing and proposed PAV volume. Both ponds provide a PAV volume of 1.32 ac-ft, exceeding the required delta of 0.78 ac-ft for both ponds PAV combined.

The pond has one (1) foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 69.60. The maintenance berm will have a 1.0 % slope and the pond will have 1:4 slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 slope to the pond bottom.

6.2.14 Existing Pond C

Existing Pond C is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 2. The pond is located approximately at Sta. 2623+60 (RT) on alignment CL. 41. Existing Pond C was designed with a NWL of 68.14 ft. The permanent pool volume is 12.05 ac-ft. Existing Pond C provides 2.24 ac-ft of treatment and 13.87 ac-ft of attenuation. Existing pond stage and storage calculation is provided to match with the

information of existing pond 1A per the permit SWFWMD ERP permit 43012854.001. Existing Pond C discharges into Lake Floyd.

6.2.15 SMF 2A

Treatment and attenuation for Proposed Basin 2 is provided by SMF 2A which is a wet detention system comprised of 3 facilities; regraded existing Pond C and 2 facilities. The existing pond is designed to work in conjunction with the two other proposed facilities approximately located at CL US 41 Sta. 2632+00 (RT). The pond system is proposed to span across eight (8) properties. Proposed SMF 2A will treat and provide detention for the additional runoff within proposed Basin 2. A storm drain system will connect the three ponds and outfall to Lake Floyd. This will maintain the existing outfall in proposed condition. SMF 2A design water level and normal water level are designed to match the existing Pond C. Existing Pond C would not provide treatment for additional impervious area from roadway so SMF 2A will provide additional treatment. The facilities within SMF 2A will be hydraulically interconnected through equalizer pipes to maintain system connectivity. Existing ground elevation for the site is approximately elev. 71 and depth to water is 0.98 ft.

SMF 2A provides a total attenuation of 21.77 which exceeds the required attenuation volume of 21.58 ac-ft. The required water quality PAV volume is 3.01 ac-ft. All three ponds together provide a PAV volume of 3.57 ac-ft, exceeding the required water quality PAV volume.

The pond has one (1) foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 70.3. The maintenance berm will have 1:25 slopes and the pond will have 1:4 slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 slope to the pond bottom.

6.2.16 SMF 2B

Treatment and attenuation for Proposed Basin 2 is provided by SMF 2B which is a wet detention system that includes 4 facilities; regraded existing Pond C, and 3 proposed facilities. The system of ponds spans across six (6) properties. Widened existing Pond C is located in the southeast corner of the intersection of US 41 (SR 45) at SR 54 at approximately Sta. 2629+00 (RT) and Sta. 1464+00 (RT). The second proposed facility of the system is located in the southwest corner of the intersection of US 41 (SR 45) at SR 54. The third and fourth proposed facilities are located in the northeast corner of the intersection of US 41 (SR 45) and SR 54. Existing ground elevation for the site is approximately elev. 71 and depth to water is 0.98 ft.

Hydraulic connectivity between the ponds will be achieved via equalizer pipes. A storm drain system will connect the 3 proposed facilities of SMF 2B to existing Pond C and outfall to Lake Floyd. This will maintain the existing outfall in the proposed condition. The design water level and normal water level of each pond are designed to match the existing Pond C. SMF 2B provides a total attenuation of 23.77 ac-ft which exceeds the required attenuation volume of 23.67 ac-ft. The required water quality PAV volume is 3.17 ac-ft, while the combined pond system provides 3.80 ac-ft, exceeding the minimum requirement.

The ponds have one (1) foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 70.3. The maintenance berm will have a 1:25 slopes and the pond will have 1:4 slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 slope to the pond bottom.

6.2.17 SMF 2C

SMF 2C is a proposed wet detention system that consists of 2 separate, hydraulically connected facilities operating together as a single integrated unit, one of which is the widening of existing Pond C. The system provides stormwater treatment and attenuation for Proposed Basin 2.

The pond is located in the southwest corner of the intersection of US 41 (SR 45) at SR 54 at approximately Sta. 2629+00 (RT) and Sta. 1464+00 (RT) respectively. The pond site is proposed to span across three (3) properties. SMF 2C is designed to work in conjunction with existing Pond C that has been regraded at approximately CL SR54 Sta. 1467+00 (RT). Proposed SMF 2C will treat and provide detention for the additional runoff within proposed Basin 2. An offsite storm drain system will hydraulically connect both ponds and discharge to Lake Floyd, preserving the existing outfall location under proposed conditions. SMF 2C design water level and normal water level are designed to match the existing Pond C. Existing ground elevation for the site is approximately elev. 73 and depth to water is 0.98 ft.

The existing attenuation volume in the basin provided by SWFWMD permitted existed pond C is 13.87 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed attenuation volume. SMF 2C was sized to meet the delta attenuation volume needed. Required attenuation volume is 24.75 and provided attenuation volume of SMF 2C is 25.92 ac-ft.

The required water quality treatment volume accounts for the existing PAV volume of 2.24 ac-ft plus the delta between the existing and proposed reduced runoff volume. SMF 2C provides a treatment volume of 4.34 ac-ft, exceeding the required difference of 3.22 ac-ft for both ponds' treatment volume combined.

The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 70.3. The maintenance berm will have a 1:25 slopes and the pond will have 1:4 side slopes from the inside berm to two feet below the normal water level. The pond will have 1:2 side slopes to the pond bottom.

6.2.18 Existing Pond D

SPUI configuration: Existing Pond D was designed as a wet detention pond with seasonal high-water elevation of 69.26 to meet both water quality and quantity requirements for existing Basin 1. The pond is located at approximately Sta. 2600+00, RT at alignment CL. 41. Per SWFWMD ERP permit 43-12854.01, the required permanent wet pool volume is 9.51 ac-ft, and 9.72 ac-ft is provided. A 1.40-ac littoral zone is required, and 1.86 acres are provided. Existing pond stage/storage calculations and littoral zone required acreage is provided to match with the information of existing Pond D per the permit.

The existing attenuation volume in the basin provided by SWFWMD permitted existed pond D is 8.42 ac-ft. Pond D DHW elevation was increased from 71.25 to 71.26. Required attenuation volume is 8.46 ac-ft and provided attenuation volume of Pond D is 8.46 ac-ft, meeting the required attenuation volume. The provided water quality treatment volume is 1.97 ac-ft. Pond D's weir elevation was increased from 69.66 to 69.75 to meet the required treatment volume needed of 1.98 ac-ft.

DDI configuration: The existing pond provides adequate storage; therefore, the DHW and NWL elevations will remain unchanged from existing Pond D. The required water quality treatment volume is 1.86 ac-ft. Pond D's weir elevation was increased from 69.66 to 69.75 to meet the required treatment volume providing 1.98 ac-ft.

6.2.19 SMF 6A

SMF 6A is a proposed wet detention system that will provide stormwater treatment and attenuation for Basin 6. It is the first alternative for the basin. The pond is located south of SR 54 at approximately Sta. 1414+00 (RT). The pond site is proposed within a FDOT owned property making it the preferred alternative. It is the only alternative with no floodplain and wetland impacts. Per SWFWMD ERP permit 43-34153-004 (App. 852512), the estimated seasonal high groundwater elevation of 63.20 was used for calculations. The pond site has A/D soils. SMF 6A works with the existing system of roadside linear ponds shown in SWFWMD ERP permit 43-16251-18. SMF 6A will be hydraulically connected to keep existing drainage patterns. It will be piped to the existing linear pond system to keep the existing outfall. The system of ponds will discharge into the wetland north of SR54 Sta. 1420+20, through existing (2) 30" RCP cross drains under SR 54, and through the existing wetlands east of Evergreen Lane. Existing ground elevation for the site is approximately elev. 66 and depth to water is 0.98 ft.

The proposed roadway improvements do not impact the existing pond system in the basin. Therefore, the existing storage from the existing system of linear ponds will be used. The proposed pond was sized based on the delta between the existing and proposed condition 25-year, 24-hour peak discharges. The 25-year, 24-hour peak discharge is 10.09 ac-ft in pre-development condition and 11.18 ac-ft in post-development condition.

The existing attenuation volume in the basin provided by SWFWMD permitted existed ponds 7E1, 10E1, 12E1 is 8.36 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed attenuation volume. SMF 6A was sized to meet the attenuation volume needed. This alternative provides a permanent wet detention volume of 1.09 ac-ft, meeting the required 1.09 ac-ft.

The required water quality PAV volume accounts for the existing PAV volume of 0.74 ac-ft plus the delta between the existing and proposed PAV volume. The pond provides a PAV volume of 0.40 ac-ft, exceeding the required delta of 0.06 ac-ft.

The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 64.4. The maintenance berm will have a 1:30 slope and the pond will have 1:4 slopes from the inside berm to the pond bottom.

This project should qualify to be grandfathered into the old water quality regulations, however if PD&E completion is not within the grandfathering time frame the final design will need to review regulatory changes on water quality.

6.2.20 SMF 6B

SMF 6B is a proposed wet detention system that will provide stormwater treatment and attenuation for Basin 6. It is the second alternative for the basin. The pond is located north of SR 54 at approximately station 1414+75 (LT). The pond site is proposed on one (1) offsite property. Per SWFWMD ERP permit 43-34153-004 (App. 852512), the estimated seasonal high groundwater elevation of 61.12 was used for calculations. The pond site has A/D soils. SMF 6B works with the existing system of roadside linear ponds shown in SWFWMD ERP permit 43-16251-18. The existing linear pond system will be hydraulically connected to SMF 6B resulting in a modification of the existing drainage patterns. The outfall will be moved to the north end of SMF 6B to outfall into the existing wetland but at a location that will allow the system to work efficiently. The existing (2) 30" RCP cross drains under SR 54 will remain and continue to discharge into the existing wetlands east of Evergreen Lane. Existing ground elevation for the site is approximately elev. 67 and depth to water is 0.98 ft.

The proposed roadway improvements do not impact the existing pond system in the basin. Therefore, the existing storage from the existing system of linear ponds will be used. The proposed pond was sized based on the delta between the existing and proposed condition 25-year, 24-hour peak discharges. The 25-year, 24-hour peak discharge is 9.61 ac-ft in pre-development condition and 10.94 ac-ft in post-development condition.

The existing attenuation volume in the basin provided by SWFWMD permitted existed ponds 7E1, 10E1, 12E1 is 8.36 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed attenuation volume. SMF 6B was sized to meet the attenuation volume needed. This alternative provides a permanent wet detention volume of 1.33 ac-ft, exceeding the required delta of 1.04 ac-ft.

The required water quality PAV volume accounts for the existing PAV volume of 0.74 ac-ft plus the delta between the existing and proposed PAV volume. The pond provides a PAV volume of 0.71 ac-ft, exceeding the required delta of 0.06 ac-ft.

The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 66.3. The maintenance berm will have a 1:8 slope and the pond will have 1:4 slopes from the inside berm to the pond bottom.

This project should qualify to be grandfathered into the old water quality regulations, however if PD&E completion is not within the grandfathering time frame the final design will need to review regulatory changes on water quality.

6.2.21 SMF 6C

SMF 6C is a proposed wet detention system that will provide stormwater treatment and attenuation for Basin 6. It is the third alternative for the basin. The pond is located north of SR 54 at approximately station 1415+00 (LT). The pond site is proposed on one (1) offsite property. Per SWFWMD ERP permit 43-34153-004 (App. 852512), the estimated seasonal high groundwater elevation of 61.12 was used for calculations. The pond site has A/D soils. SMF 6C works with the existing system of roadside linear ponds shown in SWFWMD ERP permit 43-16251-18. The existing linear pond system will be hydraulically connected to SMF 6C. The outfall will be moved to the north end of SMF 6C to outfall into the existing wetland but at a location that will allow the system to work efficiently. The existing (2) 30" RCP cross drains under SR 54 will remain and continue to discharge into the existing wetlands east of Evergreen Lane. Existing ground elevation for the site is approximately elev. 67 and depth to water is 0.98 ft.

The proposed roadway improvements do not impact the existing pond system in the basin. Therefore, the existing storage from the existing system of linear ponds will be used. The proposed pond was sized based on the delta between the existing and proposed condition 25-year, 24-hour peak discharges. The 25-year, 24-hour peak discharge is 9.82 ac-ft in pre-development condition and 10.85 ac-ft in post-development condition.

The existing attenuation volume in the basin provided by SWFWMD permitted existed ponds 7E1, 10E1, 12E1 is 8.36 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed attenuation volume. SMF 6C was sized to meet the attenuation volume needed. This alternative provides a permanent wet detention volume of 1.02 ac-ft, meeting the required delta of 1.02 ac-ft.

The required water quality PAV volume accounts for the existing PAV volume of 0.74 ac-ft plus the delta between the existing and proposed PAV volume. The pond provides a PAV volume of 0.55 ac-ft, exceeding the required delta 0.06 ac-ft.

The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 66.3. The maintenance berm will have a 1:8 slope and the pond will have 1:4 slopes from the inside berm to the pond bottom.

This project should qualify to be grandfathered into the old water quality regulations, however if PD&E completion is not within the grandfathering time frame the final design will need to review regulatory changes on water quality.

6.2.22 SMF 5A

The proposed roadway eliminates all existing linear roadway ponds within Basin 5. SMF 5A is a proposed wet detention system that will provide stormwater treatment and attenuation for Basin 5. It is the first alternative for the basin and the recommended alternative. This alternative has the least number of parcel impacts, with one parcel impact, vs the other alternatives. The pond is located south of SR 54 at approximately Sta. 1442+00 (RT). The site will require additional easement. The proposed basin will still outfall into the wetland, as it did in the existing condition, but the new outfall location will be SMF 5A's control structure location. Existing ground elevation for the site is approximately elev. 70 and depth to water is 0.98 ft.

The pond was designed with a conservative SHWE of 65.0 determined from SWFWMD permit #43-16251-18 and from field observations where standing water was observed above the weir of the control structure of existing pond P13E2 (naming from SWFWMD permit #43-16251-18). The control elevation of the pond is the normal water level which was set at the seasonal high-water elevation. The design high water elevation was set with a 1-foot clearance of the low point of the roadway. The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 66.9. The 15-foot maintenance berm will have a 1:30 slope and the pond will have 1:4 slopes from the inside berm to the pond bottom.

The proposed roadway improvements eliminate the attenuation and treatment volumes in the basin. Therefore, the existing storage from the existing system of linear ponds is not able to be used. A permanent wet detention volume of 4.14 ac-ft is provided, exceeding the required 4.04 ac-ft. The provided water quality volume is 1.61 ac-ft, exceeding the required 1.04 ac-ft. The 25-year, 24-hour peak discharge is 7.97 ac-ft in pre-development condition and 10.48 ac-ft in post-development condition.

6.2.23 SMF 5B

The proposed roadway eliminates all existing linear roadway ponds within Basin 5. SMF 5B is a proposed wet detention system that will provide stormwater treatment and attenuation for Basin 5. It is the second alternative for the basin. This alternative has two (2) parcel impacts. The pond is located south of SR 54 at approximately station 1443+00 (RT). The site will require additional easement. The proposed basin will still outfall into the wetland, as it did in the existing condition, but the new outfall location will be SMF 5B's control structure location. Existing ground elevation for the site is approximately elev. 69 and depth to water is 0.98 ft.

The pond was designed with a conservative SHWE of 65.0 determined from SWFWMD permit #43-16251-18 and from field observations where standing water was observed above the weir of the control structure of existing pond P13E2 (naming from SWFWMD permit #43-16251-18). The control elevation of the pond is the normal water level which was

set at the seasonal high-water elevation. The design high water elevation was set with a 1-foot clearance of the low point of the roadway. The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 66.9. The 15-foot maintenance berm will have a 1:30 slope and the pond will have 1:4 slopes from the inside berm to the pond bottom.

The proposed roadway improvements eliminate the attenuation and treatment volumes in the basin. Therefore, the existing storage from the existing system of linear ponds is not able to be used. A permanent wet detention volume of 4.22 ac-ft is provided, exceeding the required 4.08 ac-ft. The provided water quality volume is 1.63 ac-ft, exceeding the required 1.04 ac-ft. The 25-year, 24-hour peak discharge is 7.97 ac-ft in pre-development condition and 10.48 ac-ft in post-development condition.

6.2.24 SMF 5C

The proposed roadway eliminates all existing linear roadway ponds within Basin 5. SMF 5C is a proposed wet detention system that will provide stormwater treatment and attenuation for Basin 5. It is the third alternative for the basin. This alternative has six (6) parcel impacts. The pond is located south of SR 54 at approximately station 1444+00 (RT). The site will require additional right of way. The proposed basin will still outfall into the wetland, as it did in the existing condition, but the new outfall location will be SMF 5C's control structure location. Existing ground elevation for the site is approximately elev. 69 and depth to water is 0.98 ft.

The pond was designed with a conservative SHWE of 65.0 determined from SWFWMD permit #43-16251-18 and from field observations where standing water was observed above the weir of the control structure of existing SMF 5C (naming from SWFWMD permit #43-16251-18). The control elevation of the pond is the normal water level which was set at the seasonal high-water elevation. The design high water elevation was set with a 1-foot clearance of the low point of the roadway. The pond has 1 foot of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 66.9. The 15-foot maintenance berm will have a 1:30 slope and the pond will have 1:4 slopes from the inside berm to the pond bottom.

The proposed roadway improvements eliminate the attenuation and treatment volumes in the basin. Therefore, the existing storage from the existing system of linear ponds is not able to be used. A permanent wet detention volume of 4.20 ac-ft is provided, exceeding the required 4.10 ac-ft. The provided water quality volume is 1.62 ac-ft, exceeding the required 1.04 ac-ft. The 25-year, 24-hour peak discharge is 7.97 ac-ft in pre-development condition and 10.50 ac-ft in post-development condition.

6.2.25 SMF 2D

This proposed pond alternative is associated with the DDI configuration.

SMF 2D is a proposed wet detention system comprised of three facilities that together provide stormwater treatment and attenuation for proposed Basin 2. The proposed roadway improvements significantly encroach upon the footprint of the existing pond (SWFWMD ERP permit 43-012854.001) located east of US 41. To mitigate this impact, the first stormwater facility for SMF 2D was designed and graded within the same vicinity—approximately at Sta. 1044+00 (RT) along alignment BL SB_US41—maximizing the use of the remaining unaffected parcel.

The proposed minimum PGL roadway elevations within the Basin 2 limits along SR-54 dictated the design high water (DHW) elevation for this pond, reducing the DHW from 71.27' to 70.55'. NWL of SMF 2D remained the same from the existing conditions at 68.14 and the PAV elevation decreased from 68.70 on the existing condition to 68.50 in the

proposed condition. The inside and outside maintenance berm elevations were matched to those of the existing pond, and the existing littoral zone was restored in the proposed condition to replicate the pre-construction facilities

The second and third facility of SMF 2D is located at Sta. 1067+00 (RT) on alignment BL_SB_US41 which maximizes the use of an affected parcel at the north east corner of the intersection. These stormwater facilities are required, as the initial pond alone could not meet the water quality and attenuation for proposed Basin 2. This facility will be hydraulically connected to the first facility to function as a single facility. The second facility provides treatment of 2.37 ac-ft and 16.73 ac-ft of attenuation.

The three proposed facilities will be hydraulically interconnected and designed to discharge to the same outfall location (Lake Floyd) as the existing pond, thereby maintaining the established drainage patterns.

6.2.26 SMF 3D

This proposed pond alternative is associated with the DDI configuration.

Pond SMF 3D is a wet detention pond designed to provide the required stormwater treatment and attenuation for the proposed roadway condition in addition to the volume provided by the impacted existing Pond B. Pond SMF 3D is located approximately between sta. 2022+00 and sta. 2034+40 (RT) at alignment BL_NB_US41.

The location for the pond SMF 3D requires additional parcel impacts to meet the required attenuation volume. The attenuation volume provided by Pond SMF 3D is 5.35 ac-ft which exceeds the required attenuation volume of 4.95 ac-ft. The required water quality treatment volume is 1.26 ac-ft and Pond SMF 3D provides a volume of 1.80 ac-ft.

Pond SMF 3D is designed to have 1 foot of freeboard between the design high water elevation and the inside berm. The berm will have a slope of 1:20. The pond will have side slopes of 1:4 down to pond bottom. The attenuation, normal water, and pond bottom elevations have been maintained in accordance to SWFWMD permit #43-12854-1. The littoral zone will be designed during final design to ensure compliance with applicable stormwater management criteria.

6.2.27 SMF 4D

This proposed pond alternative is associated with the DDI configuration.

SMF 4D is a proposed wet detention facility that will provide stormwater treatment and attenuation for proposed Basin 4. The pond site is located approximately between Sta. 2007+00 and Sta 2019+00 (RT) along alignment BL_NB_US41. Drainage patterns are kept the same as permitted conditions where the drainage from the roadway pavement is collected by the closed systems, treated by the pond, and discharged to Wetland B south of the pond, which ultimately discharges into Cypress Creek.

The proposed DDI roadway impacts the existing pond along US 41 (SR 45). SMF 4D grading preserves as much of the existing pond footprint (per permit #43-12854) as possible on the southern side, where a wetland mitigation area currently exists. However, expansion into three adjacent parcels will be necessary to accommodate the impacts on the existing pond.

The proposed pond was sized based on the delta between the existing and proposed condition 25-yr, 24-hour runoff volume. Permitted Seasonal High Water Table of 68.25 is used as the existing pond NWL and remains the same in the proposed pond. Outside and inside berm elevations remain the same as the permitted pond. The proposed pond

provides 1.34 ft of freeboard meeting FDOT criteria. The 25-year, 24-hour peak discharge is 11.64 acre-ft in pre-development condition and 12.18 ac-ft in post-development condition.

The existing attenuation volume in the basin provided by SWFWMD permitted existing FDOT Pond A is 3.95 ac-ft. The required attenuation volume for the proposed basin is the sum of the existing attenuation volume and the delta between the existing and proposed runoff volume. SMF 4D provides an attenuation volume of 4.5 ac-ft, meeting the required 4.50 ac-ft. And a permanent wet detention volume of 8.87 ac-ft.

The required water quality PAV volume accounts for the higher of the permitted PAV and the calculated PAV from the existing and proposed PAV volume. The pond provides a PAV volume of 0.86 ac-ft, meeting the required 0.85 ac-ft.

During pond expansion, construction activities may temporarily impact the existing wetland mitigation area. Since the normal water level elevation has been maintained consistent with the littoral zone, any disturbed littoral areas can be successfully reestablished following construction.

6.2.28 SMF 5D

This proposed pond alternative is associated with the DDI configuration.

Since the existing linear ponds P15E2, P16E2, P18E2 and P19E2 cannot accommodate the increase runoff generated due to the proposed roadway, SMF 5D will work in conjunction with the existing linear ponds to provide treatment and attenuation for Basin 5. This alternative will impact one parcel and is the preferred alternative for proposed Basin 5. Proposed pond SMF 5D is located south of SR 54 at approximately Sta. 3002+00 (RT). The site will require additional right of way and keeps existing drainage patterns outfalling into the existing wetland east of Sienna Village's boardwalk.

The pond was designed to match the existing linear pond's, P15E2, P16E2, P18E2 and P19E2, SHWE of 64.0 determined from SWFWMD permit #43-16251-18. Field observations showed standing water was observed above the weir of the control structure of existing pond P13E2 (naming from SWFWMD permit #43-16251-18). Final SHWE will have to be re-evaluated during final design.

The control elevation of the pond is the normal water level which was set at the seasonal high-water elevation. The design high water elevation was set with a 1-foot clearance of the low point of the roadway. Design high water elevation was lowered from the existing pond linear ponds to 66.15 ft since the lowest PGL elevation was observed to be 67.15 ft on the existing road along the limits of the contributing runoff into proposed SMF 5D. Since SMF 5D was designed to work linearly with existing P15E2, P16E2, P18E2 and P19E2, the final elevation of the proposed design high water of SMF 5D will have to be finalized in the design phase. The SMF 5D has 2.35 ft of freeboard between the design high water and the inside berm. The inside berm elevation is set to be outside of the 100-year floodplain elevation of 66.9. The 15-foot maintenance berm will have a 1:10 slope and the pond will have 1:4 slopes from the inside berm to the pond bottom. The water quality volume provided is 0.52 ac-ft, meeting the required 0.18 ac-ft. SMF 5D provides attenuation of 0.95 which meets the required attenuation of 0.84 ac-ft.

SECTION 7: PROPOSED FLOODPLAIN COMPENSATION SITES

Alternatives for FPC sites are provided per impacted floodplain. Floodplains in the project area are either zone A or AE. Many of the impacts are to Zone AE floodplains with a couple impacts to Zone A flood zones on the east side of the intersection. The proposed floodplain compensation sites compensate the impacts both from the proposed roadway

and from impacts due to proposed pond site alternatives. Impacts were estimated per planview and seasonal high water and floodplain elevations.

Portions of the proposed Interchange SPUI improvements of US 41 (SR 45) at SR 54 will encroach into areas classified as FEMA Flood Zone AE and A as identified in the Pasco County FIRM (Panels 403, 404 and 412, September 2014). The floodplain encroachment impact areas can be seen on Appendix 7-FLOODPLAIN IMPACT EXHIBIT & SUMMARY TABLE-SPUI. A single floodplain can have multiple impacts. Therefore, the Summary Table of Floodplain Impacts lists which impacts correspond to each floodplain. Refer to Appendix 8- FLOODPLAIN COMPENSATION SITE EXHIBIT & SUMMARY TABLE-SPUI for a summary table of all the proposed floodplain compensation sites alternatives. All proposed floodplain compensation areas, including all preferred compensation areas for the SPUI configuration are shown in Appendix 4- PROPOSED POND AND FPC SITE ALTERNATIVES EXHIBIT-SPUI. Detailed floodplain impact and floodplain compensation calculations are included in Appendix 9- FLOODPLAIN COMPENSATION CALCULATIONS-SPUI.

Floodplain compensation analysis information for the DDI configuration is found:

APPENDIX 13-PROPOSED POND AND FPC SITE ALTERNATIVES EXHIBIT-DDI

APPENDIX 16-FLOODPLAIN IMPACT EXHIBIT & SUMMARY TABLE-DDI

APPENDIX 17-FLOODPLAIN COMPENSATION SITE EXHIBIT & SUMMARY TABLE-DDI

APPENDIX 18-FLOODPLAIN COMPENSATION CALCULATIONS-DDI

Compensation for the floodplain impacts was determined using a “cup for cup” methodology. Areas identified for viable compensation sites have varying depths of flood storage due to the topography around the area and varying depths to the estimated seasonal high groundwater table. Final geotechnical data will be required for final design.

Detailed modeling will be required during the design phase, based on the complex interconnectivity of the floodplains around the intersection.

Below are the FPC sites first grouped by the floodplain they are providing compensation for and then grouped by the roadway configuration, SPUI configuration followed by the DDI configuration.

Section 7.1 Floodplain #120 Zone AE Elev. 70.3 :

Section 7.1.1 FPC 120A

FPC 120A spans from Sta. 204+80 to Sta. 213+00 (LT) at alignment CL. 597 by expanding and regrading the existing ditch on the left side of CL. 597. Its purpose is to provide floodplain compensation for the floodplain impact resulting from roadway widening within flood Zone AE with the 100-year flood elevation of 70.3.

Compensation is provided between SHWE 69 and BFE 70.30. Floodplain impact net volume is 0.192 ac-ft, and the compensation volume provided by FPC 120A is 0.356 ac-ft, which meets the requirement. FPC 120A can be utilized in conjunction with either the proposed SMF 3B or SMF 3C alternatives.

Section 7.1.2 FPC 120B

FPC 120B extends from Sta. 200+00 to Sta. 201+50 (LT) at alignment CL. 597, LT. Its purpose is to provide floodplain compensation for the floodplain impact resulting from roadway widening within flood Zone AE with the 100-year flood elevation of 70.3. Compensation is provided between SHWE 69 and BFE 70.30. FPC 120B will be hydraulically connected to the existing ditch north of it by a proposed pipe installed underneath the driveway. Floodplain impact net

volume is 0.192 ac-ft, and compensation volume provided by FPC 120B is 0.354 ac-ft, which meets the requirement. FPC 120B can be utilized if either proposed SMF 3B or SMF 3C is chosen as an alternative.

Section 7.1.3 FPC 120C

FPC 120C spans from Sta. 202+50 to 205+50(RT) at alignment CL. 597, RT. This FPC site is located between Dale Mabry Hwy and US 41 (SR 45). It is designed to offset floodplain impact resulting from roadway widening within flood Zone AE with the 100-year flood elevation of 70.3. Compensation is provided between SHWE 69 and BFE 70.30. FPC 120C will be connected hydraulically to the existing ditches west of the site. The compensation volume provided by FPC 120C is 0.531 ac-ft, meeting requirements.

If proposed pond alternative Pond B1 is selected, which includes Pond B1A, Pond B1B, and existing Pond B, floodplain compensation will be provided in proposed Pond B1A (between Dale Mabry Hwy and US 41 (SR 45)). FPC 120C also serves as an alternative FPC site location if either proposed SMF 3B or SMF 3C is selected since it is located in the same parcel as proposed alternative Pond B1. This eliminates the need for additional floodplain compensation sites.

Section 7.2 Floodplain #110 Zone AE Elev. 67.3 :

Section 7.2.1 FPC 110E

FPC 110E is located on State Road 54 approximately from CL 597 stations 1459+00 to 1461+00 (RT). This floodplain compensation site will offset floodplain impact as a result of SMF 2B. It provides compensation for the impacts to the Zone AE floodplain with Elev 67.3. The site is proposed on one (1) property. This site provides compensation for the impacts from the proposed roadway design plus the impacts from the proposed pond alternative with the greatest floodplain impacts. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 67.01 and 100-year flood elevation 67.30. The compensation volume provided by FPC 110E is 0.27 ac-ft, which meets the floodplain impact volume of 0.261 ac-ft.

Section 7.3 Floodplain # 117 Zone AE Elev. 69.6 :

Section 7.3.1 FPC 117A

FPC 117A is located on State Road 54 approximately from stations 1466+75 to 1470+36 (RT). It provides compensation for the impacts to the Zone AE floodplain with Elev 69.60. The site is proposed on one (1) property. Per SWFWMD Permit 43-12854 Existing Pond C has an existing mitigation area of 1.47 acres that are impacted as a result of widening Pond C. This floodplain compensation was analyzed conservatively to restore the impacts caused as a result of choosing alternative SMF 2A or SMF 2B and provide compensation for the impacts from the proposed roadway design plus the impacts from the proposed pond alternative with the greatest floodplain impacts. This floodplain site is shared as an option for alternative SMF 2A or SMF 2B.

Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 68.14 and 100-year flood elevation 69.60. The compensation volume provided is 3.70 ac-ft, which meets the floodplain impact volume of 3.65 ac-ft.

Section 7.3.2 FPC 117B

FPC 117B is comprised of two sites that together provide the necessary floodplain compensation. The site is located on State Road 54 approximately from stations 1467+10 to 1474+50 (RT). These floodplain compensation sites will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 69.60. The site is proposed on two (2) properties. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design as a result of choosing option SMF 2C. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 68.14 and 100-year flood elevation 69.60. The compensation volume provided by FPC 117B are 1.40 ac-ft, which meets the floodplain impact volume of 1.37 ac-ft in the event SMF 2C is selected.

Section 7.4 Floodplain #113 Zone AE Elev. 70.8 :

Section 7.4.1 FPC 113A

FPC 113A is located on State Road 54 approximately from stations 1479+35 to 1479+95 (LT). This floodplain compensation site will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the roadway impacts to the Zone AE floodplain with Elev 70.80. The site is proposed on one (1) property. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 69.24 and 100-year flood elevation 70.80. The compensation volume provided by FPC 113A is 0.10 ac-ft, which meets the floodplain impact volume of 0.08 ac-ft.

Section 7.4.2 FPC 113B

FPC 113B is located on State Road 54 approximately from stations 1476+75 to 1477+15 (LT). This floodplain compensation site will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 70.80. The site is proposed on one (1) property. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 69.24 and 100-year flood elevation 70.80. The compensation volume provided by FPC 113B is 0.13 ac-ft, which meets the floodplain impact volume of 0.08 ac-ft.

Section 7.4.3 FPC 113C

FPC 113C is located on State Road 54 approximately from stations 1476+65 to 1479+50 (LT). This floodplain compensation site will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 70.80. The site is proposed on one (1) property. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design.

Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 69.24 and 100-year flood elevation 70.80. The compensation volume provided by FPC 113C is 0.11 ac-ft, which meets the floodplain impact volume of 0.08 ac-ft.

Section 7.5 Floodplain #116 Zone AE Elev. 69.20:

Section 7.5.1 FPC 116A

FPC 116A is located on State Road 54 approximately from stations 1492+25 to 1494+05 (LT). This floodplain compensation site will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 69.20. The site is proposed on one (1) property. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design. Floodplain compensation site is meant to offset floodplain impact from the widening of the proposed road. however, due to the floodplain being adjacent to a neighborhood, the floodplain site was chosen to be hydraulically connected with the pond 1A (1) and impacted floodplain through proposed storm drain.

Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 69.08 and 100-year flood elevation 69.20. The compensation volume provided by FPC 116A is 0.07 ac-ft, which meets the floodplain impact volume of 0.07 ac-ft.

Section 7.5.2 FPC 116B

FPC 116B is located on State Road 54 approximately from stations 1488+25 to 1491+90 (LT). This floodplain compensation site will offset floodplain impact because of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 69.20. The site is proposed on one (1) property. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design. Floodplain compensation site is meant to offset floodplain impact from the widening of the proposed road. however, due to the floodplain being adjacent to a neighborhood, the floodplain site was chosen to be hydraulically connected with the SMF 7B and impacted floodplain through proposed storm drain.

Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 69.08 and 100-year flood elevation 69.20. The compensation volume provided by FPC 116B is 0.085 ac-ft, which meets the floodplain impact volume of 0.071 ac-ft.

Section 7.5.3 FPC 116C

FPC 116C is located on State Road 54 approximately from stations 1482+05 to 1487+20 (LT). This floodplain compensation site will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 69.20. The site is proposed on one (1) property. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design. Floodplain compensation site is meant to offset floodplain impact from the widening of the proposed road. however, due to the floodplain being adjacent to a neighborhood, the floodplain site was chosen to be hydraulically connected with the pond 1A (3) and impacted floodplain through proposed storm drain.

Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 69.08 and 100-year flood elevation 69.20. The compensation volume provided by FPC 116C is 0.082 ac-ft, which meets the floodplain impact volume of 0.071 ac-ft.

Section 7.6 Floodplain #114 Zone A Elev. 69.20:

Section 7.6.1 FPC 114A

FPC 114A is located on State Road 54 approximately from stations 1493+00 to 1494+55 (LT). This floodplain compensation site will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone A floodplain with Elev 69.20. The site is proposed on one (1) property. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design. Elevation of floodplain Zone A will be confirmed and adjusted for the design phase of the project to represent accurately the outfall of this floodplain impact area.

Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 69.08 and 100-year flood elevation 69.20. The compensation volume provided by FPC 114A is 0.01 ac-ft, which meets the floodplain impact volume of 0.01 ac-ft.

Section 7.6.2 FPC 114B

FPC 114B is located on State Road 54 approximately from stations 1492+50 to 1493+00 (LT). This floodplain compensation site will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone A floodplain with Elev 69.20. The site is proposed on one (1) property. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design. Elevation of floodplain Zone A will be confirmed and adjusted for the design phase of the project to represent accurately the outfall of this floodplain impact area.

Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 69.08 and 100-year flood elevation 69.20. The compensation volume provided by FPC 114B is 0.01 ac-ft, which meets the floodplain impact volume of 0.01 ac-ft.

Section 7.6.3 FPC 114C

FPC 114C is located on State Road 54 approximately from stations 1493+85 to 1495+15 (RT). This floodplain compensation site will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone A floodplain with Elev 69.20. The site is proposed on one (1) property. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design. Elevation of floodplain Zone A will be confirmed and adjusted for the design phase of the project to represent accurately the outfall of this floodplain impact area.

Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 69.08 and 100-year flood elevation 69.20. The compensation volume provided by FPC 1A(1)_A3 is 0.01 ac-ft, which meets the floodplain impact volume of 0.01 ac-ft.

Section 7.7 Floodplain #115 Zone AE Elev. 69.60 :

Section 7.7.1 FPC 115A

FPC 115A is located on State Road 54 approximately from stations 1510+85 to 1514+20 (LT). It provides compensation for the impacts to the Zone AE floodplain with Elev 69.60. The site is proposed on one (1) property. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design plus the impacts

from the proposed pond alternative with the greatest floodplain impacts. To offset impacts to this floodplain, existing floodplain compensation Pond 2B was widened from existing to accommodate additional impacts.

Web soil survey data indicates type A/D soils. Per SWFWMD Permit 43-19567.00, SHW was provided in NAVGD 1929. SHWE from permit was converted from metric units to Imperial/U.S. Measurement Systems and elevation was adjusted to NAVD 88. Compensation is provided between seasonal high water of 66.96 and 100-year flood elevation 69.60. The compensation volume provided by FPC 115A is 3.12 ac-ft, which meets the floodplain impact volume of 3.12 ac-ft. in the event SMF 8A is selected.

Section 7.7.2 FPC 115B

FPC 115B is located on State Road 54 approximately from stations 1498+60 to 1503+35 (RT). It provides compensation for the impacts to the Zone AE floodplain with Elev 69.60. The site is proposed on one (1) property. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design plus the impacts from the proposed pond alternative with the greatest floodplain impacts.

Web soil survey data indicates type A/D soils. Per SWFWMD Permit 43-19567.00, SHW was provided in NAVGD 1929. SHWE from permit was converted from metric units to Imperial/U.S. Measurement Systems and elevation was adjusted to NAVD 88. Compensation is provided between seasonal high water of 66.96 and 100-year flood elevation 69.60. The compensation volume provided by FPC 115B is 3.80 ac-ft, which meets the floodplain impact volume of 3.77 ac-ft in the event SMF 8B is selected.

Section 7.7.3 FPC 115C

FPC 115C consists of two locations that together provide the required compensation needed due to the proposed roadway widening. FPC 115C is located north of State Road 54 approximately from stations 1499+25 to 1501+80 (LT). It provides compensation for the impacts to the Zone AE floodplain with Elev 69.60. The site is proposed on three (3) properties. These sites were analyzed conservatively to provide compensation for the impacts from the proposed roadway design. These two floodplains compensation sites will be hydraulically connected to the impacted floodplain to mitigate affected area.

Web soil survey data indicates type A/D soils. Per SWFWMD Permit 43-19567.00, SHW was provided in NAVGD 1929. SHWE from permit was converted from metric units to Imperial/U.S. Measurement Systems and elevation was adjusted to NAVD 88. Compensation is provided between seasonal high water of 66.96 and 100-year flood elevation 69.60. The compensation volume provided by FPC 115C is 1.79 ac-ft, which meets the floodplain impact volume of 1.61 ac-ft in the event SMF 8C is selected.

Section 7.8 Floodplain #126 Zone AE Elev. 68.5 :

Section 7.8.1 FPC 126A

FPC 126A is located on State Road 54 approximately from stations 1508+50 to 1511+30 (RT). It provides compensation for the impacts to the Zone AE floodplain with Elev 68.50. The site is proposed on two (2) properties.

Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 66.96 and 100-year flood elevation 68.50. The compensation volume provided by FPC 126A is 1.35 ac-ft, which meets the floodplain impact volume of 1.26 ac-ft in the event SMF 8C is selected.

Section 7.9 Floodplain #100 Zone AE Elev. 66.3 :

Section 7.9.1 FPC 100A

FPC 100A is located on the north side of State Road 54 approximately from stations 1412+00 to 1414+00 (LT). It provides compensation for the impacts to the Zone AE floodplain with elev 66.3. The site is proposed on one (1) property. It is intended to utilize the same parcel in conjunction with pond alternative SMF 6B. This site was analyzed for the impacts from the proposed roadway design plus the impacts from the proposed pond alternative with the greatest floodplain impacts.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 100A provides 1.64 ac-ft of compensation, exceeding the impact volume of 1.57 ac-ft.

Section 7.9.2 FPC 100B

FPC 100B is located on the north side of State Road 54 approximately from stations 1417+00 to 1420+00 (LT). It provides compensation for the impacts to the Zone AE floodplain with elev 66.3. This floodplain compensation area is the preferred alternative for its utilization of existing FDOT RW. Most of the FPC site is intended to utilize the existing FDOT RW in the area. The FPC will require RW acquisition from an additional property to not encroach near the existing outfall area. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design plus the impacts from the proposed pond alternative with the greatest floodplain impacts.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 100B provides 1.59 ac-ft of compensation, exceeding the impact volume of 1.57 ac-ft.

Section 7.9.3 FPC 100C

FPC 100C is located on the north side of State Road 54 approximately from station 1421+00 to 1425+00 (LT). The site is proposed on one (1) property. Access to the site will be off Wilson Road. It provides compensation for the impacts to the Zone AE floodplain with elev 66.3. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design plus the impacts from the proposed pond alternative with the greatest floodplain impacts.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 100C provides 1.70 ac-ft of compensation, exceeding the impact volume of 1.57 ac-ft.

Section 7.10 Floodplain #102 Zone AE Elev. 64.8 :

Section 7.10.1 FPC 102A

FPC 102A is located on the south side of State Road 54 approximately from stations 1415+90 to 1417+00 (RT). It provides compensation for the impacts to the Zone AE floodplain with elev 64.8. This floodplain compensation area is the preferred alternative for it would expand the existing floodplain within existing FDOT RW next to Evergreen Lane. This site provides compensation for the floodplain impacts from the proposed roadway along Eastbound SR 54.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 102A provides 0.005 ac-ft of compensation, meeting the impact volume of 0.005 ac-ft.

Section 7.10.2 FPC 102B

FPC 102B is located on the south side of State Road 54 approximately from stations 1422+00 to 1423+00 (RT). It provides compensation for the impacts to the Zone AE floodplain with elev 64.8. The floodplain impacts are from the proposed roadway along Eastbound SR 54. This proposed floodplain compensation area would expand the existing floodplain and would require a drainage easement for access.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 102B provides 0.005 ac-ft of compensation, meeting the impact volume of 0.005 ac-ft.

Section 7.10.3 FPC 102C

FPC 102C is located on the south side of State Road 54 approximately from stations 1419+00 to 1420+00 (RT). It provides compensation for the impacts to the Zone AE floodplain with elev 64.8. The floodplain impacts are from the proposed roadway along Eastbound SR 54. This proposed floodplain compensation area would expand the existing floodplain. The site is off Henning Lane and would require a drainage easement for access.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 102C provides 0.005 ac-ft of compensation, meeting the impact volume of 0.005 ac-ft.

Section 7.11 Floodplain #103 Zone AE Elev. 66.9 :

Section 7.11.1 FPC 103A

FPC 103A is located on the south side of State Road 54 approximately from stations 1440+00 to 1443+00 (RT). It provides compensation for the impacts to the Zone AE floodplain with elev 66.9. The floodplain impacts are from the proposed roadway along Eastbound SR 54. This proposed floodplain compensation area would expand the existing floodplain. This is the preferred alternative for this floodplain impact because if SMF 5A is chosen it would result in only needing a single parcel for both the proposed pond and floodplain site.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 103A provides 1.91 ac-ft of compensation, exceeding the impact volume of 1.74 ac-ft.

Section 7.11.2 FPC 103B

FPC 103B is located on the south side of State Road 54 approximately from stations 1437+00 to 1439+20 (RT). It provides compensation for the impacts to the Zone AE floodplain with elev 66.9. The floodplain impacts are from the proposed roadway along Eastbound SR 54. This proposed floodplain compensation area would expand the existing floodplain. This FPC site would be near the preferred SMF 5A. This floodplain is the outfall for Basin 5 and therefore the outfall location would be closer to the preferred pond. However, this site would impact an existing business off Brunell Trace making it the least preferred alternative.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 103B provides 1.95 ac-ft of compensation, exceeding the impact volume of 1.74 ac-ft.

Section 7.11.3 FPC 103C

FPC 103C is located on the south side of State Road 54 approximately from stations 1432+00 to 1434+00 (RT). It provides compensation for the impacts to the Zone AE floodplain with elev 66.9. The floodplain impacts are from the proposed roadway along Eastbound SR 54. A drainage easement will be required for maintenance access to the site. The site is located between two proposed driveways.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 103C provides 2.59 ac-ft of compensation, exceeding the impact volume of 1.74 ac-ft.

Section 7.12 Floodplain # 104 Zone AE Elev. 67.20 :

Section 7.12.1 FPC 104A

FPC 104A is located on the north side of State Road 54 approximately from stations 1445+65 to 1447+10 (LT). It provides compensation for the impacts to the Zone AE floodplain with elev 67.20. The floodplain impacts are from the proposed roadway along Westbound SR 54. There is limited space for floodplain compensation areas in this area. This site is the preferred location because it is the only alternative right next to the project limits. A drainage easement will be required for maintenance access to the site. The nearest cross street is Hunt Road.

The seasonal highwater elevation of 67.02 was evaluated using the lowest contour elevation and soil data for the site. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 104A provides 0.13 ac-ft of compensation, exceeding the impact volume of 0.12 ac-ft.

Section 7.12.2 FPC 104B

FPC 104B is located on the north side of State Road 54 approximately from stations 1439+40 to 1440+70 (LT). It provides compensation for the impacts to the Zone AE floodplain with elev 67.20. This site is near the impacted floodplain however is not favorable due to RW acquisition. The FPC takes two business buildings closest to the floodplain. A drainage easement will be required for maintenance access to the site which could be provided off Devonoak Road.

The seasonal highwater elevation of 66.02 was evaluated using the lowest contour elevation and soil data for the site. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 104B provides 0.86 ac-ft of compensation, exceeding the impact volume of 0.80 ac-ft.

Section 7.12.3 FPC 104C

FPC 104C is located on the north side of State Road 54 approximately from stations 1447+00 to 1449+50 (LT). It provides compensation for the impacts to the Zone AE floodplain with elev 67.20. floodplain impacts are from the proposed roadway along Westbound SR 54. There is gate access to the neighborhood off Hunt Rd. It looks to be the access to the existing pond that is within the existing Zone AE elev 70.5 floodplain in the southern portion of the neighborhood. The proposed FPC site would be located next to this existing Zone AE floodplain. This site is not a preferred site for it would require RW takes of homes in the neighborhood that are closest in proximity to impacted floodplain, closest to the project limits and the existing pond access. The existing pond access can be evaluated as the drainage easement required for maintenance access.

The seasonal highwater elevation of 66.25 was evaluated using the lowest contour elevation and soil data for the site. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 104C provides 0.65 ac-ft of compensation, exceeding the impact volume of 0.65 ac-ft.

Section 7.13 Floodplain #107 Zone AE Elev. 67.60 :

Section 7.13.1 FPC 107A

FPC 107A is located on the north side of State Road 54 approximately from stations 1449+00 to 1452+50 (LT). It provides compensation for the impacts to the Zone AE floodplain with elev 67.60. The floodplain impacts are from the proposed roadway along Westbound SR 54. This is a preferred compensation site for it is located within one (1) parcel and next to the project limits. A drainage easement will be required for maintenance access to the site. The nearest cross street is Hunt Road.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 107A provides 4.32 ac-ft of compensation, exceeding the impact volume of 1.49 ac-ft.

Section 7.13.2 FPC 107B

FPC 107B is located on the north side of State Road 54 approximately from stations 1447+50 to 1452+50 (LT). It provides compensation for the impacts to the Zone AE floodplain with elev 67.60. The floodplain impacts are from the proposed roadway along Westbound SR 54. This location results in one (1) parcel impact. A drainage easement will be required for maintenance access to the site. The nearest cross street is Hunt Road.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 107B provides 3.06 ac-ft of compensation, exceeding the impact volume of 1.49 ac-ft.

Section 7.13.3 FPC 107C

FPC 107C is located on the north side of State Road 54 approximately from stations 1452+90 to 1454+00 (LT). It provides compensation for the impacts to the Zone AE floodplain with elev 67.60. The floodplain impacts are from the proposed roadway along Westbound SR 54. This is the least preferred compensation site for this floodplain due to the RW acquisition that would be required. Parcel impacts would include building and parking lot takes. A drainage easement will be required for maintenance access to the site. The nearest cross street is Hunt Road.

The seasonal highwater elevation of 64.72 was referenced from SWFWMD permit # 43-16251-18. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 107C provides 2.98 ac-ft of compensation, exceeding the impact volume of 1.49 ac-ft.

Section 7.14 Floodplain #110 Zone AE Elev. 67.30 :

Section 7.14.1 FPC 110A

FPC 110A is located on the north side of State Road 54 approximately from stations 1452+50 to 1454+50 (RT). It provides compensation for the impacts to the Zone AE floodplain with elev 67.30. The floodplain impacts are from the proposed roadway along Eastbound SR 54. This is the preferred compensation site because it results in a single parcel impact. However, this is a viable location if proposed alternative, SMF 2C is not chosen. Maintenance access could be evaluated along SR 54.

The seasonal highwater elevation of 67.02 was evaluated using the lowest contour elevation and soil data for the site. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 110A provides 0.59 ac-ft of compensation, exceeding the impact volume of 0.55 ac-ft.

Section 7.14.2 FPC 110B

FPC 110B is located on the north side of State Road 54 approximately from stations 1446+50 to 1462+50 (RT). It provides compensation for the impacts to the Zone AE floodplain with elev 67.30. The floodplain impacts are from the proposed roadway along Eastbound SR 54. This FPC site results in a single parcel impact. This is a viable location if proposed alternative, SMF 2C is not chosen. Maintenance access could be gained off a proposed driveway along SR 54.

The seasonal highwater elevation of 65.02 was evaluated using the lowest contour elevation and soil data for the site. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 110B provides 4.82 ac-ft of compensation, exceeding the impact volume of 4.51 ac-ft.

Section 7.14.3 FPC 110C

FPC 110C is located on the north side of State Road 54 approximately from stations 1446+00 to 1449+50 (RT). It provides compensation for the impacts to the Zone AE floodplain with elev 67.30. The floodplain impacts are from the proposed roadway along Eastbound SR 54. The location results in one parcel impact. The adjacent road, Sofia Road, is a private road therefore drainage maintenance access would need to be off US54.

The seasonal highwater elevation of 67.02 was evaluated using the lowest contour elevation and soil data for the site. USDA web soil survey data indicates type A/D soils.

Compensation was provided between the floodplain elevation and the seasonal high-water elevation. An updated geotechnical report will be required for the design phase of the project. FPC 110C provides 0.57 ac-ft of compensation, exceeding the impact volume of 0.55 ac-ft

Section 7.15 Floodplain #105 Zone AE Elev. 68.60 :

Section 7.15.1 FPC 105D

This proposed FPC alternative is associated with the DDI configuration.

FPC 105D is located along BL_SR56_WB approximately at station 4000+00 (LT). This floodplain compensation sites will offset floodplain impact as a result of the widening along State Road 54 due to the DDI roadway alternative. It provides compensation for the impacts to the Zone AE floodplain with Elev 68.50. The site is proposed one (1) parcel. A conservative analysis was performed to account for impacts through expansion of the existing floodplain. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 67.50 and 100-year flood elevation 68.50. The compensation volume provided by FPC 105D is 0.05 ac-ft, which meets the floodplain impact volume of 0.026 ac-ft.

Section 7.16 Floodplain #106 Zone AE Elev. 70.60 :

Section 7.16.1 FPC 106D

This proposed FPC alternative is associated with the DDI configuration.

FPC 106D is located along BL_SR56_EB approximately at station 3011+00 (RT). This floodplain compensation sites will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 70.60. The site is proposed on one (1) parcel. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 69.62 and 100-year flood elevation 70.60. The compensation volume provided by FPC 106D is 0.016 ac-ft, which meets the floodplain impact volume of 0.015 ac-ft.

Section 7.17 Floodplain #107 Zone AE Elev. 67.60 :

Section 7.17.1 FPC 107D

This proposed FPC alternative is associated with the DDI configuration.

FPC 107D is located west of BL_US41_Ramp A approximately at station 613+00 (LT). This floodplain compensation sites will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 67.60. The site is proposed one (1) parcel. A conservative analysis was performed to account for impacts through expansion of the existing floodplain. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 66.62 and 100-year flood elevation 67.60. The compensation volume provided by FPC 107D is 0.068 ac-ft, which meets the floodplain impact volume of 0.015 ac-ft.

Section 7.18 Floodplain #109 Zone AE Elev. 70.30 :

Section 7.18.1 FPC 109D

This proposed FPC alternative is associated with the DDI configuration.

FPC 109D is located along BL_SR56_EB approximately at station 3012+00 (RT). This floodplain compensation sites will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 70.30. The site is proposed one (1) parcel. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 68.14 and 100-year flood elevation 70.30. The compensation volume provided by FPC 109D is 0.136 ac-ft, which meets the floodplain impact volume of 0.130 ac-ft.

Section 7.19 Floodplain #110 Zone AE Elev. 67.30 :

Section 7.19.1 FPC 110D

This proposed FPC alternative is associated with the DDI configuration.

FPC 110D is located along BL_SR56_WB approximately at station 4012+00 (RT). This floodplain compensation sites will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 67.30. The proposed site spans two (2) parcels that will be directly impacted by the proposed roadway improvements. A conservative analysis was performed to account for impacts through expansion of the existing floodplain. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 66.32 and 100-year flood elevation 67.30. The compensation volume provided by FPC 110D is 0.719 ac-ft, which meets the floodplain impact volume of 0.691 ac-ft.

Section 7.20 Floodplain #112 Zone AE Elev. 73.20 :

Section 7.20.1 FPC 112D

This proposed FPC alternative is associated with the DDI configuration.

FPC 112D is located along BL_SR56_WB_Ramp D1 approximately at station 708+00 (RT). This floodplain compensation sites will offset floodplain impact as a result of the widening of US 41 (SR 45). It provides compensation for the impacts to the Zone AE floodplain with Elev 73.20. The proposed site spans one (1) parcel that will be directly impacted by the proposed roadway improvements. A conservative analysis was performed to account for impacts through expansion of the existing floodplain. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 72.22 and 100-year flood elevation 73.20. The compensation volume provided by FPC 112D is 0.046 ac-ft, which meets the floodplain impact volume of 0.029 ac-ft.

Section 7.21 Floodplain #117 Zone AE Elev. 69.60 :

Section 7.21.1 FPC 117D

This proposed FPC alternative is associated with the DDI configuration.

FPC 117D is located along BL_SR56_WB approximately at station 4030+00 (LT). This floodplain compensation sites will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 69.60. The site is proposed on two (2) properties. This site was analyzed conservatively to provide compensation for the impacts from the proposed roadway design. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 68.14 and 100-year flood elevation 69.60. The compensation volume provided by FPC 117D is 0.337 ac-ft, which meets the floodplain impact volume of 0.313 ac-ft.

Section 7.22 Floodplain #118 Zone AE Elev. 70.30 :

Section 7.22.1 FPC 118D

This proposed FPC alternative is associated with the DDI configuration.

FPC 118D is located along BL_Ramp_C approximately at station 25+00 (RT). This floodplain compensation sites will offset floodplain impact as a result of the widening of State Road 54. It provides compensation for the impacts to the Zone AE floodplain with Elev 70.30. The site is proposed one (1) parcel. A conservative analysis was performed to account for impacts through expansion of the existing floodplain. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 68.14 and 100-year flood elevation 70.30. The compensation volume provided by FPC 118D is 4.622 ac-ft, which meets the floodplain impact volume of 4.234 ac-ft.

Section 7.23 Floodplain #119 Zone AE Elev. 69.90 :

Section 7.23.1 FPC 119D

This proposed FPC alternative is associated with the DDI configuration.

FPC 119D is located along BL_NB_CR597_US41 approximately at station 608+50 (RT). This floodplain compensation sites will offset floodplain impact as a result of the widening along N Dale Mabry Highway (SR 597). It provides compensation for the impacts to the Zone AE floodplain with Elev 69.90. The site is proposed on one (1) parcel. A conservative analysis was performed to account for impacts through expansion of the existing floodplain. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 68.90 and 100-year flood elevation 69.90. The compensation volume provided by FPC 119D is 0.425 ac-ft, which meets the floodplain impact volume of 0.420 ac-ft.

Section 7.24 Floodplain #125 Zone AE Elev. 69.60 :

Section 7.24.1 FPC 125D

This proposed FPC alternative is associated with the DDI configuration.

FPC 125D is located along BL_NB_US41 approximately at station 2016+00 (RT). This floodplain compensation sites will offset floodplain impact as a result of the widening of US 41 (SR 45). It provides compensation for the impacts to the Zone AE floodplain with Elev 69.60. The site is proposed on one (1) parcel. A conservative analysis was performed to account for impacts through expansion of the existing floodplain. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 68.25 and 100-year flood elevation 69.60. The compensation volume provided by FPC 125D is 0.803 ac-ft, which meets the floodplain impact volume of 0.794 ac-ft.

Section 7.25 Floodplain #126 Zone AE Elev. 68.50 :

Section 7.25.1 FPC 126D

This proposed FPC alternative is associated with the DDI configuration.

FPC 126D is located along BL_NB_US41 approximately at station 2003+00 (RT). This floodplain compensation sites will offset floodplain impact as a result of the widening of US 41 (SR 45). It provides compensation for the impacts to the Zone AE floodplain with Elev 68.50. The site is proposed on one (1) parcel. A conservative analysis was

performed to account for impacts through expansion of the existing floodplain. Site access will be provided via an easement along Glory Road. Web soil survey data indicates type A/D soils. Compensation is provided between seasonal high water of 68.25 and 100-year flood elevation 68.50. The compensation volume provided by FPC 126D is 0.036 ac-ft, which meets the floodplain impact volume of 0.033 ac-ft.

SECTION 8: CONTAMINATION SITES

The results for the drainage sites of the preferred roadway alternative; Diverging Diamond Interchange (DDI), is pending completion of analysis.

Thirty (30) contamination sites were evaluated within the project area. Detailed results are documented in the Contamination Tech Memo dated July 2023. The risk rating for the preferred sites are summarized in Table 6- Summary of Risk Rating for Preferred Drainage Sites.

Table 6 – Summary of Risk Rating for DDI Drainage Sites

Preferred Ponds	Risk Rating
SMF 2D	Medium
SMF 3D	Medium
SMF 4D	Low
SMF 5D	Low
Preferred FPC	Risk Rating
FPC 105D	Medium
FPC 106D	Low
FPC 107D	Low
FPC 109D	Medium
FPC 110D	Medium
FPC 112D	Low
FPC 117D	Medium
FPC 118D	Medium
FPC 119D	Medium
FPC 125D	Low
FPC 126D	Low

SECTION 9: CONCLUSION

Alternative pond sites have been identified along the project corridor. The evaluation provides estimates for right-of-way needs implementing a volumetric analysis that accounts for the water quantity and quality requirements set forth by FDOT and SWFWMD for the project area. The right-of-way cost estimate provided in this report is a budget tool used by the FDOT to estimate total acquisition costs for the properties associated with each stormwater management facility and to budget the appropriate funds for acquisition. It should be noted that right-of-way cost estimates are not real estate appraisals and do not reflect market value. The FDOT uses appraisals that comply with the Uniform Standards of Professional Appraisal Practice (USPAP) for acquisition purposes.

The preliminary calculations used to support the recommendations are included in Appendix 6. The graphical representation of the pond alternatives and the roadway alignment is provided in the exhibits in Appendix 4. Please

note that the recommendations are based on preliminary data and calculations, reasonable engineering judgment, and assumptions. The pond sizes and locations are subject to change during final design when detailed data becomes available for the permeability rates of the soils, estimated seasonal high-water elevations, and final roadway profiles. Please refer to Table 7 for the Summary of Stormwater Management Facility Recommendations.

Table 7 – Summary of Stormwater Management Facility Recommendations

Basin Name	Preferred Pond	Approximate Location	Normal Water Level	Inside Berm Elevation	Design High Water Elevation	Minimum Gutter Elevation	Outfall
1	Exist. Pond D	1103+60 (LT) @ BL_SB_US 41	69.26	73.00	71.25 (25YR/24HR)	73.28	Lake Vienna
2	SMF 2D	2050+00 (RT) @BL BL_NB_US41	68.14	71.60	70.55 (25YR/24HR)	72.38	Lake Floyd
3	SMF 3D	2022+00 to 2034+40 (RT) @ BL_NB_US41	68.50	71.03	70.03 (25YR/24HR)	73.54	Wetland D
4	SMF 4D	2007+00 and 2019+00 (RT) @ BL_NB_US41	68.25	70.60	69.26 (25YR/24HR)	71.74	Wetland B
5	SMF 5D	3002+00 (RT) @ BL_SR54_EB	64.00	66.90	66.15 (25YR/24HR)	67.15	Lake Thomas
6	No pond required. Basin not impacted by preferred alternative.						South Branch Anclote River
7	No pond required. Basin not impacted by preferred alternative.						Lake Floyd
8	No pond required. Basin not impacted by preferred alternative.						Lake Toni
VILLAGE LAKE SHOPPING CENTER DR	No pond required for this Basin						Lake Floyd