MEMORANDUM

To:	Jennifer Marshall, PE FDOT Chief Engineer of Production
From:	Victor Gallo, PE – Project Manager Armando Orozco, PE – Deputy Project Manager Kimley-Horn & Associates, Inc.
Date:	February 3, 2026
Subject:	New Stormwater Rule Evaluation for State Road 54 Project Development and Environment (PD&E) Study

Introduction & Objective

This project is located at the intersection of US Highway 41/State Road 45 (US 41/SR 45) and State Road 54 (SR 54) in Pasco County, FL. This technical memorandum provides a revised analysis of the US 41 at SR 54 PD&E Study from November 2024 (FPID: 419182-1) following the new water quality and nutrient reduction rule as set forth in Chapter 62-330, F.A.C. and the 2024 Applicant's Handbook Volume 1 (A.H. Vol. 1). The project's aim is to improve regional mobility and accommodate the future traffic needs of US 41 and SR 54. The proposed improvements primarily consist of altering the existing 6-lane curb and gutter typical section facility on SR 54 to having a 4-lane raised frontage roadway over US 41. The center lanes of SR 54 will be a choice lane to either continue up over US 41 or remain at grade and continue to the signalized intersection with US 41. Along the at-grade lanes, bike lanes and sidewalks will be added East and West. Along US 41 North and South, turning lanes will be added on the right and left. The roadway travel lanes impervious area will increase per the calculations in the original Pond Siting Report (PSR); thus, triggering the need of an individual Environmental Resource Permit (ERP). The total length of this project is approximately 1.5 miles along US 41, with limits on SR 54 from approximately 1.2 miles east and 1.2 miles west of the intersection, as well as 0.3 miles of Dale Mabry Highway (SR 597).

The objective of this task is to review the preferred pond site alternatives developed in the original PSR which utilized traditional first flush treatment volume design and performance standards, and to assess the modifications required to meet the new nutrient reduction criteria established by the new stormwater rule. The new nutrient reduction criteria is quantified differently, focusing on the removal of Total Nitrogen (TN) and Total Phosphorus (TP) in surface water discharges, as determined by Best Management Practice (BMP) efficiency rates based on the existing ambient water quality conditions of the downstream Water of the State, as outlined in Sections 8.3.2 through 8.3.5 of the Applicant's Handbook Volume I (A.H. Vol. 1).

This technical memorandum aims to provide findings and updated alternatives targeting the impacts of the new stormwater rule for this project. The original PSR indicates this project proposes a curb and gutter typical section, which was evaluated accordingly. Lastly, no changes in volumetric attenuation are expected, so attenuation volumes were not evaluated.

New Stormwater Rule

The new stormwater rule criteria is quantified differently, focusing on the reduction of Total Nitrogen (TN) and Total Phosphorus (TP) in surface water discharges, as determined by Best Management Practice (BMP) efficiency rates based on the existing ambient water quality conditions of the downstream Water of the State, as outlined in Sections 8.3.2 through 8.3.5 of the Applicant's Handbook Volume I (A.H. Vol 1). This technical memorandum presents the findings and verification calculations for the proposed stormwater management facilities to provide reasonable assurance with the nutrient reduction performance standards established under the new stormwater rule, set forth in Chapter 62-330, F.A.C. No changes in volumetric attenuation are expected, so attenuation volumes were not evaluated.

For this evaluation, the Florida Department of Environmental Protection (FDEP) Division of Environmental Assessment and Restoration's (DEAR) Waters Not Attaining Standards (WNAS) from the adopted 2022-2024 Biennial Assessment dataset was used to identify impaired waterbodies (WBIDs) within the HUC 12 sub-watersheds. Impaired WBIDs are defined as those that are not meeting their applicable water quality standards under Chapter 62-302, F.A.C., and have been verified as impaired under Chapter 62-303, F.A.C., which are associated with assessment categories 4a, 4b, and 5. This definition of impaired waterbodies for administration of the ERP program was confirmed with FDEP's DEAR and Division of Water Resource Management administrators. This memorandum is focused on the A.H. Vol. 1 of the stormwater rule, Applicant's Handbook Volume II (A.H. Vol. 2) will vary by Water Management District (WMD). Although the new rule establishes nutrient reduction rate standards for TN and TP, the rule does not specify if the impairment classification is to be used for nutrient and nutrient response variable impairments, or all water quality parameters (e.g. bacteria, mercury and metals). Thus, two ambient water quality scenarios were evaluated:

- Scenario 1: focused on nutrient-specific impairments.
- Scenario 2: considered additional risks of using impaired WBIDs with any water quality parameters, including but not limited to nutrients, bacteria, mercury, and metals.

This memorandum presents the results of applying the new stormwater rule, as outlined in the A.H. Vol. 1. While the new stormwater rule standards are not yet in effect for current ERP applications, this assessment assumes full implementation without grandfathering to evaluate future impacts on the Department's Work Program. **Table 1** summarizes the applicable performance standards from Section 8.3, limited to those relevant to the SR 54 project.

Table 1: Minimum Stormwater Treatment Performance Standards

Downstream Ambient Water Quality	Post Dev. TP Minimum Reduction Rate %	Post Dev. TN Minimum Reduction Rate %	Nutrient Loading Analysis	Presumptive TSS Removal %	A.H. Section
All Sites	80	55	Post ≤ Pre	80	8.3.2
Impaired Waters	80	80	Post ≤ Pre	80	8.3.4
OFW	90	80	Post ≤ Pre	95	8.3.3
Impaired + OFW	95	95	Post ≤ Pre	95	8.3.4

It should be noted that impaired waters not meeting their designated use at the time of application must follow the impaired performance standards. For example, during the PD&E phase, a WBID may be listed as assessment category 4a (impaired with a TMDL); however, by the time the project advances to design and the ERP application is submitted, the WBID could be reclassified as assessment category 2t (meeting its designated use). Then the WBID would no longer be considered impaired and the impaired performance standards would not apply. As the impaired list is updated every two years, the opposite may be true as well. A waterbody that may not be impaired during the PD&E phase could change to impaired with the biennial assessment update by the time the project advances to design and the ERP application is submitted. Then the WBID would be considered impaired and the impaired performance standards would apply. The impairment status of a WBID at the time of ERP application will ultimately determine the water quality performance standard requirements.

Methodology

BMPTrains 2020 Version 4.3.5 was employed to evaluate the post-development minimum nutrient reduction rates provided by the preferred stormwater alternatives originally sized and sited in the PSR. Based on findings, two different BMP alternatives were evaluated in conjunction with the originally sited ponds in treatment trains to upgrade the facilities to meet new nutrient reduction standards. The two BMP elements evaluated as alternatives are the bank side filters in wet ponds, and the split BMP – which is a hybrid facility composed of a dry and wet pond. These were modeled in series with BMPs originally proposed in the PSR to determine combined post-development minimum nutrient reduction rates for each roadway subbasin, and HUC 12 sub watershed. The original preferred pond sites were modified into split BMPs, providing a dry retention BMP and a wet detention pond with side bank filter to address nutrient reduction deficiencies and achieve the required post-development minimum nutrient reduction rates as needed in the new rule.

The BMPTrains model's primary focus was on the reduction efficiency rate of TN and TP, providing reasonable assurance with the new required nutrient reduction performance standards. For each roadway subbasin, BMPTrains models were developed with separate catchments for each pond alternative (as set forth in the original PSR). The pre/post Event Mean Concentration (EMC) values were sourced from the A.H. Vol. 1, Table 9.2. The treatment section in BMPTrains incorporated the relevant treatments of dry retention, wet detention, and side bank filter BMPs. Nutrient removal efficiency rates were analyzed for each basin for each alternative and for both Scenario 1 and Scenario 2. Refer to **Appendix A** for a comprehensive BMP Matrix.

For wet ponds, limits to the average residence time throughout the state were used to calculate post-development minimum nutrient reduction rates for both TN and TP. Appendix O of the A.H Vol. 1 identifies the maximum average annual residence time as 200 days, which yields maximum efficiency rates of 43% and 80% for TN and TP respectively. Stand-alone nutrient reduction efficiencies from BMPTrains models, along with equations and limitations in Appendix O of the A.H. Vol 1. were used to determine efficiency rates of wet ponds.

For dry retention systems, the average annual effectiveness was calculated using the annual capture rate based on project-specific parameters and provided retention depth that can be stored within the retention system. The retention depth is expressed as inches over the catchment area. BMPTrains interpolates between the retention tables in Appendix O of the A.H Vol 1. to determine the efficiency rates of dry retention systems.

Existing linear ponds in Basin E1 are recommended to be re-evaluated as they were permitted as wet detention ponds; however, they have been observed to be dry and no permanent pool volume calculations

have been documented. Thus, for the purposes of this study they were modeled as dry retention BMPs, this will need to be confirmed and remodeled with updated information during the design phase. Additionally, in Basin C(1), linear retention swales were added under and along the elevated corridor to increase the treatment efficiency in the basin. These were preliminarily sized for this exercise but will need to be evaluated in detail in the design phase of this project to determine feasibility.

For bank side filters, detention with media filtration was used to determine the BMP efficiency of the side banks. Refer to Alternative 1 in the following narrative for more details on methodology and approach.

Nutrient reduction in wet pond BMPs is directly proportional to the permanent pool volume (PPV). The ponds' PPVs were modeled in BMPTrains under the assumption it can occupy all of its planned volume. However, littoral zones in wet ponds, which is required by SWFWMD, will reduce the available PPV. The existing wet ponds have existing littoral zones, some of which provide wetland mitigation for the existing corridor. For the purposes of this evaluation, BMPs were prioritized over wetland impacts to assess whether the nutrient reduction standards of the new rule could be achieved within the existing right-of-way. In ponds where the littoral zone was removed to improve nutrient reduction through split BMPs, additional wetland mitigation may be required during design. This approach was primarily applied in basins requiring higher nutrient reductions, since Split BMPs and PPVs occupying the same space as the littoral zone provide greater treatment efficiency than littoral zones. Littoral zones are limited to a maximum treatment efficiency of 10%, per Appendix O of A.H., Vol. 1. For ponds that retained the existing littoral zone as a BMP, littoral zones were incorporated in series within the BMP treatment train along with the PPV. Ultimately, the designer will be responsible for performing cost – benefit analyses of the alternatives evaluated in this report and for refining models and calculations as necessary during the design phase.

ICPR4.07.04 recovery analyses were conducted to assess the water quality recovery performance of dry retention systems. In all instances, the systems achieved full recovery within the stipulated 72-hour period, providing reasonable assurance with Appendix O of the A.H. Vol 1. In the absence of geotechnical data, assumptions regarding soil properties were made to facilitate the completion of these analyses. Further recovery analysis is needed during the design phase when more soil information is available. Please note Ponds C(1) and D may require FDOT A-3 soils to increase the fillable porosity value to meet recovery criteria. Refer to **Appendix D** for ICPR recovery models.

Alternative solutions include up to four BMPs in series. Therefore, the combined efficiency rates for were found using Equation 9-5 from the Appendix O of the A.H. Vol. 1:

$$Overall\ Treatment\ Train\ Efficiency = 1 - [(1 - Eff1)x(1 - Eff2)x(1 - Eff3)x(1 - Eff4)]$$

Eff1 = efficiency of initial treatment system
Eff 2 = efficiency of second treatment system
Eff3 = efficiency of third treatment system
Eff4 = efficiency of fourth treatment system

Analysis & Results

The original PSR presents eight roadway subbasins with a total of nine preferred stormwater wet pond alternatives. Two treatment scenarios for each preferred alternative were analyzed in BMPTrains to assess the performance of the ponds and other BMPs, as detailed in the following narrative. Scenario 1 includes basins that are impaired for either TN, TP, or a nutrient response variable, as historically required to be analyzed by Water Management Districts (WMDs). Scenario 2 includes WBIDs impaired for any water quality parameter. During this evaluation, stormwater ponds are considered to not meet performance

standards unless they satisfy both TN and TP post-development minimum nutrient reduction rate requirements. The roadway sub basins and ponds for this project are located in two different HUC-12 sub watersheds: three ponds are in the Upper Anclote River and six in the Lower Cypress Creek HUC sub watershed. The Lower Cypress Creek is classified as an Outstanding Florida Water (OFW), requiring a higher nutrient reduction. Refer to **Appendix A** for an ambient water quality exhibit.

None of the facilities proposed in the original PSR meet the new stormwater rule criteria without modifications or the addition of BMPs. The eight originally selected preferred alternatives and the one existing wet pond were unable to achieve the required post-development nutrient reduction rates for both TN and TP on their own. To address this, each alternative was refined to optimize its footprint and upgrade the systems to provide higher nutrient reduction rates, thereby minimizing any additional right-of-way needs beyond those identified in the original PSR. It should be noted that the preferred ponds were established by the original PSR team before this evaluation. Our assessment expands upon their work and does not reexamine their selections. Any impacts issues or clarifications regarding those decisions should be addressed with the original PSR team.

In Scenario 1, none of the nine ponds discharge to a downstream nutrient response variable WBID within the HUC 12 sub watershed limits, but six ponds discharge to the Lower Cypress Creek which is an OFW. Refer to **Table 2** for a summary of findings for Scenario 1.

Table 2: Summary of Findings for Scenario 1

Total No. Ponds	Ponds Impaired for Total Nitrogen	Basins Impaired for Total Phosphorus	Ponds Discharging to an OFW
9	0	0	6

For the three alternatives in the Upper Anclote River HUC 12 sub watershed in Scenario 1, the wet ponds' PPV, side bank filters, and existing retention ponds in series were used to meet the nutrient reduction requirements (55%TN and 80% TP). The PPV modeled was pulled from the original PSR. The detention through filtration volume for the side bank filters equates to the treatment volume reserve in each pond in the first flush volumetric methodology. For the six alternatives in the Lower Cypress Creek, split BMPs with side bank filters were placed in series to meet the nutrient reduction requirements (80% TN and 90% TP). Side bank filters and split BMPs are discussed in detail later under this section.

In Scenario 2, the three alternatives in the Upper Anclote River HUC 12 sub watershed discharge downstream to the Anclote River Freshwater Segment (WBID 1440F), which is impaired for bacteria. Moreover, the six alternatives in the Lower Cypress Creek HUC 12 sub watershed discharge to Cypress Creek which is an OFW. Please note, these alternatives discharge west through wetlands and do not drain through the Lake Hanna Outlet (WBID 1451), which is an impaired WBID. Refer to **Table 3** for a summary of findings for Scenario 2.

Table 3: Summary of Findings for Scenario 2

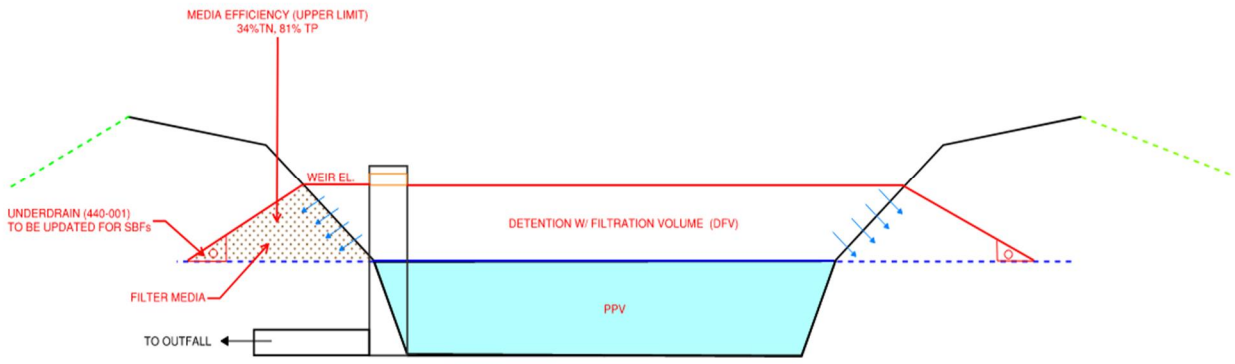
Total No. Ponds	Ponds Impaired (Bacteria)	Ponds Discharging to an OFW
9	3	6

For the three alternatives in the Upper Anclote River HUC 12 sub watershed in Scenario 2, split BMPs, side bank filters, and existing retention ponds in series were used to meet the nutrient reduction requirements (80% TN and 80% TP). The detention through filtration volume for the side bank filters equates to the treatment volume reserve in each pond in the first flush volumetric methodology. The reconfigured BMPs function in parallel under both scenarios and met the required TN and TP reduction under the new rule. For the six alternatives in the Lower Cypress Creek, the same BMP configuration as scenario 1 was employed (split BMPs and side bank filters). The following narrative discussed side bank filters and split BMPs in detail.

Side Bank Filters

Side bank filters refer to the earthen banks above the Normal Water Level (NWL) of a wet pond, that can be used for treatment with the implementation of a weir or grate control structure to mechanically control the stage and volume of water above the permanent pool volume. Refer to **Figure 1**.

Figure 1: Side Bank Filter Section



The *detention with media filtration*, a traditional BMP type in Appendix O in the A.H Vol. I, was used to determine the BMP efficiency of the side banks. The following equation was used to determine the efficiency rate of side bank filters.

Detention with Filtration BMP Efficiency = Retention BMP Efficiency[1] X Media Efficiency[2]

1. Retention volume measured from NWL up the assumed weir or grate elevation of the control structure, treated as “dry retention”. For ponds as sited in the original PSR, this was the treatment volume. Retention volume was recalculated for ponds regraded into split BMPs.

2. Efficiency of filter media. Upper limits for TN and TP are 34% and 81% respectively. This assumes 3-feet deep select soils to match the results in BDV24-977-25

In both scenarios, side bank filters were integrated in series with the permanent pool volume of the wet detention ponds. The detention with filtration equation reflects that side bank filters can provide an additional 12-24% of TN and 29%-58% of TP nutrient reduction in this project. This approach aligns with best management practices that emphasize the importance of integrating various treatment methods to achieve optimal nutrient reduction outcomes. Refer to **Appendix A** for a performance matrix of this alternative.

Split BMPs

In both scenarios, the original pond sites that were proposed in the PSR are optimized to include additional treatment using a treatment train of a dry retention BMP and the permanent pool volume of a wet pond at

a maximum treatment per Appendix O. Dry retention BMPs provide significant additional treatment compared to wet ponds. The dry retention BMPs were sized proportionally to each individual basin to bridge the gap between the new required nutrient reduction and the nutrient reduction provided by the ponds in the original PSR. These dry BMPs are designed to be no deeper than 2-feet, with 1-foot for retention and 1-foot for freeboard and other variables. **Figure 2** shows the cross-section of the dry retention BMP and wet pond treatment train.

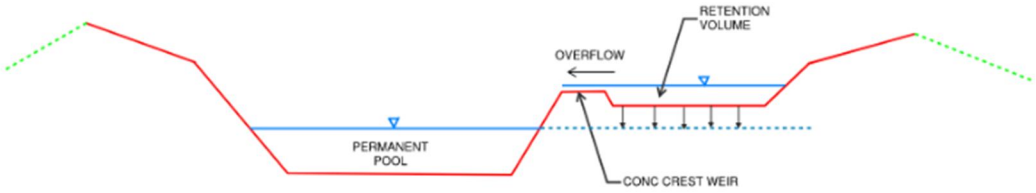


Figure 2: Cross Section of Split BMP Treatment Train

The split BMP would also include a flow diversion structure that would connect to the stormwater trunkline. A flow diversion structure would direct stormwater towards the dry BMP at a higher elevation while also routing it to the wet pond, ensuring sufficient flow during larger storm events. A key element of determining hydraulic feasibility is in modeling and preliminarily sizing the flow diversion structure weir to balance the optimization of nutrient reduction, meet attenuation pre-post requirements, without introducing flood risks. SWFWMD 2018 ERP AH Vol. 2 was used for attenuation analysis since that is the currently effective AH Vol. 2 for this area. **Figure 3** shows a diagram of a flow diversion structure.

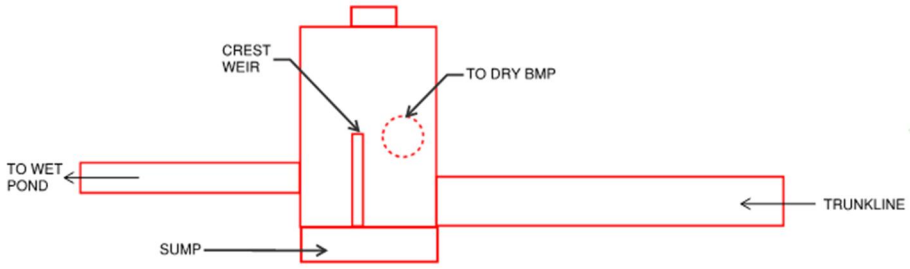


Figure 3: Flow Diversion Structure Sketch

All Split BMPs significantly improved the overall performance of each facility within the same footprint planned for in the original PSR. For further details, refer to **Appendix A** for a matrix of updated BMPs, including the impairment associated with each pond or parameter group of any other impaired waterbodies. ICPR models were analyzed to ensure there were no adverse impacts to attenuation on Split BMP. Post discharge rate models were evaluated in ICPR and compared to permitted discharge rates where possible. The original PSR provides permitted pond discharges (in cfs) for some ponds, whereas other facilities only have basin discharge (ac-ft) documented. Further analysis is needed on the existing routing for an accurate comparison of the pre-post discharge rates (cfs) from each facility and meet the SWFWMD requirements. Therefore, the sizing and elevations of grates and weirs in the control structures shown in the models of this evaluation are preliminary and will need to be revised during design when more information is available. Recovery models for the dry retention BMP in the split BMPs were also analyzed to adhere to recovery standards in the A.H. Vol. 1. For this analysis, the dry ponds' initial stage was assumed to equate to the

treatment volume specified in the original PSR. Further evaluation, such as the 36-hour draw down analysis, will be required in the design phase of the project.

Other Alternatives Considered

Roadside linear treatment swales are a possible alternate treatment BMP to increase treatment efficiency rates within the HUC-12s. The urban typical section could be maintained by incorporating closed flume inlets or open flumes. Swale blocks could be added to further improve treatment efficiency as long as it does not negatively impact the base clearance of the road. The inclusion of swales in the treatment train could provide an alternate opportunity for the HUC-12 basins to meet the required criteria using compensatory measures in place. However, linear treatment swales combined with the ponds sited in the original PSR were not as effective as the Split BMP in meeting the required nutrient reduction of the new rule. Linear treatment swales were initially considered in this study but removed since the split BMPs provided sufficient treatment efficiency for both Scenarios in all HUC-12s. This alternative could be further explored in design. This was not explored in detail in this evaluation due to insufficient documentation in the original PSR to aid an evaluation that would yield results with reasonable assurance. Roadside swales could be further evaluated in the design phase if needed.

Conclusion

In conclusion, this technical memorandum evaluated the preferred stormwater alternatives identified in the PSR for the US 41/SR 45 at SR 54 PD&E Study under the nutrient reduction criteria in Chapter 62-330, F.A.C. and A.H. Vol. 1. BMPTrains modeling indicates that none of the original PSR pond alternatives achieve the required post-development TN and TP reduction rates without modification under either Scenario 1 or Scenario 2. Refinements to the originally selected pond sites through the use of side bank filters and split BMPs provide a viable approach for achieving the applicable nutrient reduction performance standards within both the Upper Anclote River and Lower Cypress Creek HUC-12 sub-watershed in both Scenario 1 and 2. Evaluated treatment trains improve nutrient reduction performance while remaining within the footprints and right-of-way assumptions established in the PSR. All analyses were completed using available PSR data and conservative assumptions, with several elements, including pond configuration, control structures, recovery, and attenuation routing, identified for further evaluation during design.

APPENDIX A

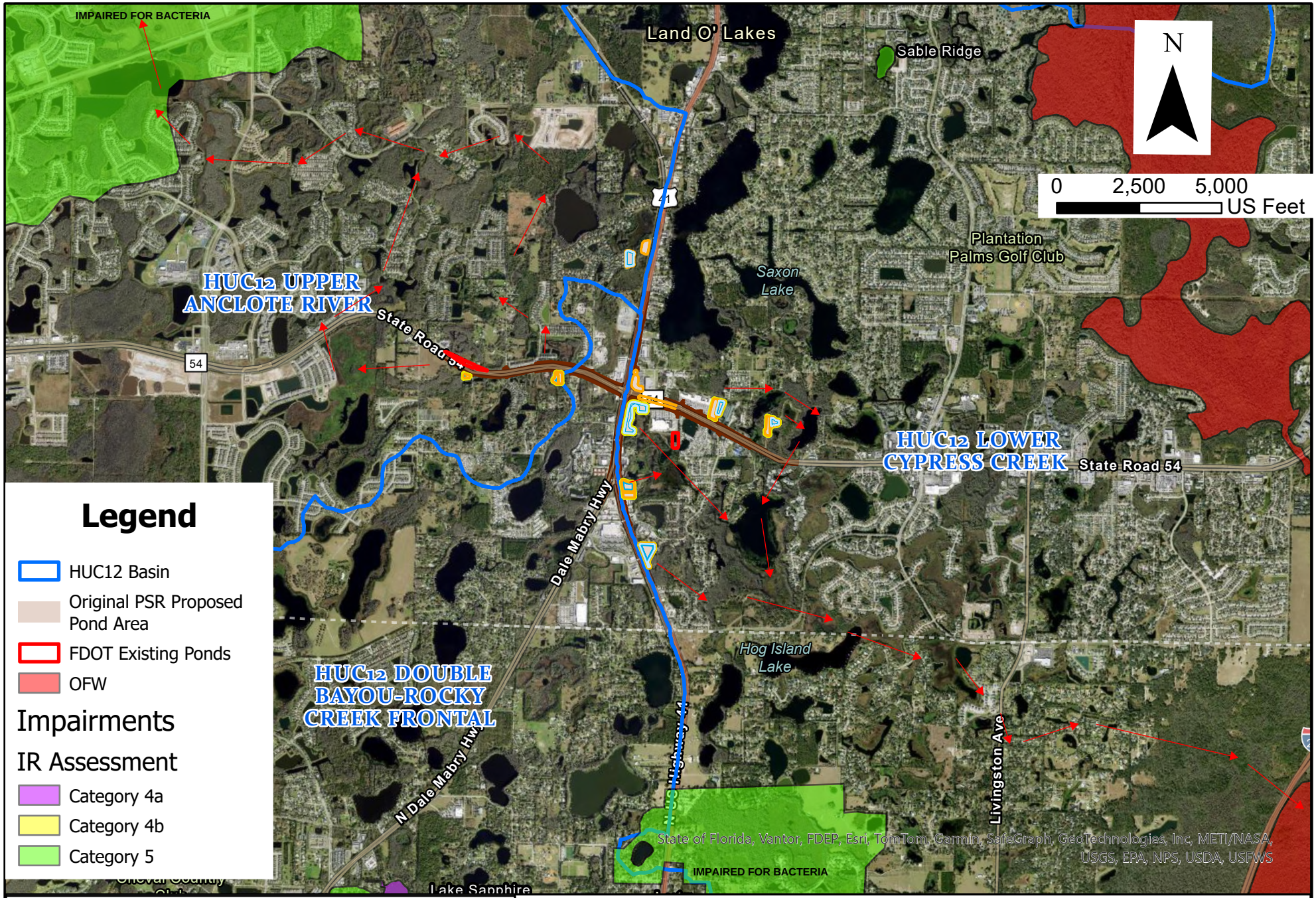
Nutrient Loading Analysis

Current PSR BMPTrains 2020 Version 4.3.5 Table

Scenario 1 BMPTrains 2020 Version 4.3.5 Results

Scenario 2 BMPTrains 2020 Version 4.3.5 Results

Exhibits: Impaired WBIDs and HUC-12 Basins, Scenario 1 BMPs, Scenario 2 BMPs



Kimley»Horn

© 2025 Kimley-Horn and Associates, Inc.

200 S Orange Ave, Suite 600, Orlando, FL 32801
Phone: (407) 898-1511
www.kimley-horn.com CA 00000696

WNAS & HUC 12 BASINS

SR-54 NEW RULES POND SITING ANALYSIS
PASCO COUNTY, FLORIDA

Scale: As Noted	FPID: 419182-1	January 2026	Figure 1

K:\ORL_Roadway\240000011_New Stormwater Rule Analysis\D-7 SR 45 at SR 54 Pond Siting Report\FM419182-1\Memo\GIS\GIS\SR 54 MC.aprx - 1/7/2026 9:16 AM - Cheyenne.Schumacher

Nutrient Loading Analysis									
HUC-12 ID	HUC-12 Name	Basin ID	WBID	Total Nitrogen			Total Phosphorus		
				Pre Loading (kg/y)	Post Loading (kg/y)	Loading Change (%)	Pre Loading (kg/y)	Post Loading (kg/y)	Loading Change (%)
31002070501	UPPER ANCLOTE RIVER	BASIN E1	WBID 1456 -SOUTH BRANCH ANCLOTE RIVER	32.22	67.41	52.20%	4.46	9.33	52.21%
		BASIN E2	WBID 1463S - LAKE THOMAS OUTLET	30.82	78.26	60.62%	4.27	10.83	60.62%
		BASIN D	WBID 1451K - LAKE PADGETT DRAIN / WBID 1456A1 - LAKE THOMAS DRAIN	104.66	105.95	1.22%	14.49	14.66	1.21%
31002050404	LOWER CYPRESS CREEK	BASIN C	WBID 1463S - LAKE THOMAS OUTLET / WBID 1451K - LAKE PADGETT DRAIN	132.99	201.55	34.02%	18.41	27.90	34.02%
		BASIN B3	WBID 1463S - LAKE THOMAS OUTLET / WBID 1451K - LAKE PADGETT DRAIN	81.88	85.70	4.45%	11.33	11.86	4.46%
		BASIN A	WBID 1451K - LAKE PADGETT DRAIN	69.44	68.62	-1.20%	9.61	9.50	-1.21%
		BASIN 1A	WBID 1451K - LAKE PADGETT DRAIN	43.92	87.75	49.95%	6.08	12.15	49.95%
		BASIN 2A	WBID 1451K - LAKE PADGETT DRAIN	49.25	62.89	21.70%	6.82	8.70	21.69%

Performance Efficiency Rates Matrix (Current PSR) - Scenario 1

HUC-12		PSR Data					BMP Series Train		Nitrogen				Phosphorus			
HUC-12 ID	HUC-12 Name	Basin ID	Pond ID	Facility Type	WBID	Basin Impairments	BMP Element 1	BMP Element 2	BMP Element 1	BMP Element 2	Req. Nitrogen Treatment (New Rule)	Nitrogen Combined Efficiency Rate	BMP Element 1	BMP Element 2	Req. Phosphorus Treatment (New Rule)	Phosphorus Combined Efficiency Rate
31002070501	UPPER ANCLOTE RIVER	BASIN E1	P1E1 & EXISTING LINEAR PONDS	wet	WBID 1456 -SOUTH BRANCH ANCLOTE RIVER	No Verified Impairments	Wet Pond	Existing Linear Ponds	20%	35%	55%	48%	49%	35%	80%	67%
		BASIN E2	P1E2	wet	WBID 1463S - LAKE THOMAS OUTLET	No Verified Impairments	Wet Pond	-	31%	-	55%	31%	57%	-	80%	57%
		BASIN D	EX POND D1	wet	WBID 1451K - LAKE PADGETT DRAIN / WBID 1456A1 - LAKE THOMAS DRAIN	No Verified Impairments	Wet Pond	Littoral zone	40%	10%	55%	46%	69%	10%	80%	72%
31002050404	LOWER CYPRESS CREEK	BASIN C	C(1), C(1)A, & C(1)B	wet	WBID 1463S - LAKE THOMAS OUTLET / WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond	Existing Littoral zone	41%	10%	80%	47%	71%	10%	90%	74%
		BASIN B3	B3 & EX FDOT POND B	wet	WBID 1463S - LAKE THOMAS OUTLET / WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond	Littoral zone	32%	10%	80%	39%	57%	10%	90%	61%
		BASIN A	EX FDOT POND A	wet	WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond	Littoral zone	40%	10%	80%	46%	69%	10%	90%	72%
		BASIN 1A	1A(2)	wet	WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond	Littoral zone	42%	10%	80%	48%	76%	10%	90%	78%
			EX FDOT POND 1A	wet	WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond	Littoral zone	40%	10%	80%	46%	67%	10%	90%	70%
		BASIN 2A	2A(1)	wet	WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond	Existing Littoral zone	42%	10%	80%	48%	73%	10%	90%	76%

Scenario 1																							
HUC-12		PSR Data				BMP Series Train				Nitrogen						Phosphorus							
HUC-12 ID	HUC-12 Name	Basin ID	Pond ID	WBID	Downstream Ambient Water Quality	BMP Element 1	BMP Element 2	BMP Element 3	BMP Element 4	BMP Element 1	BMP Element 2	BMP Element 3	BMP Element 4	*Req. Nitrogen Treatment (New Rule)*	Nitrogen Combined Efficiency Rate	BMP Element 1	BMP Element 2	BMP Element 3	BMP Element 4	*Req. Phosphorus Treatment (New Rule)*	Phosphorus Combined Efficiency Rate
31002070501	UPPER ANCLOTE RIVER	BASIN E1	P1E1 & EXISTING LINEAR PONDS	WBID 1456 -SOUTH BRANCH ANCLOTE RIVER	No Verified Impairments	Wet Pond	Side Bank Filter	Existing Retention (FDOT Ponds)	-	20%	12%	86%	-	*55%*	90%	49%	29%	86%	-	*80%*	95%
		BASIN E2	P1E2	WBID 1463S - LAKE THOMAS OUTLET	No Verified Impairments	Wet Pond	Side Bank Filter	-	-	31%	25%	-	-	*55%*	48%	57%	60%	-	-	*80%*	83%
		BASIN D	EX POND D1	WBID 1451K - LAKE PADGETT DRAIN / WBID 1456A1 - LAKE THOMAS DRAIN	No Verified Impairments	Wet Pond + Littoral zone	Side Bank Filter	-	-	46%	22%	-	-	*55%*	58%	72%	53%	-	-	*80%*	87%
31002050404	LOWER CYPRESS CREEK	BASIN C	C(1), C(1)A, & C(1)B	WBID 1463S - LAKE THOMAS OUTLET / WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	Additional Dry Retention	43%	24%	45%	40%	*80%*	86%	78%	56%	45%	40%	*90%*	97%
		BASIN B3	B3 & EX FDOT POND B	WBID 1463S - LAKE THOMAS OUTLET / WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	-	42%	18%	50%	-	*80%*	76%	75%	43%	50%	-	*90%*	93%
		BASIN A	EX FDOT POND A	WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond + Littoral Zone	Side Bank Filter	-	-	46%	20%	-	-	*80%*	57%	72%	47%	-	-	*90%*	85%
		BASIN 1A	1A(2)	WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	-	42%	12%	52%	-	*80%*	88%	73%	29%	52%	-	*90%*	98%
			EX FDOT POND 1A	WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond + Littoral Zone	Side Bank Filter	-	-	46%	13%	-	-	*80%*		70%	31%	-	-	*90%*	
		BASIN 2A	2A(1)	WBID 1451K - LAKE PADGETT DRAIN	OFW	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	-	42%	15%	78%	-	*80%*	89%	73%	36%	78%	-	*90%*	96%

Scenario 1 - Nutrient Loading & Nutrient Reduction Analysis Summary (Lake Hamilton HUC 12)

Basin	HUC 12	Pre-Dev. Loading (kg/yr)		Post-Dev. Loading (kg/yr)		BMP Series Train Description				Annual Capture Efficiency Rate								Provided BMP Efficiency Rate	
										TN				TP					
		TN	TP	TN	TP					BMP1	BMP2	BMP3	BMP4	BMP1	BMP2	BMP3	BMP4	TN	TP
BASIN E1	UPPER ANCLOTE RIVER	32.22	4.46	67.41	9.33	Wet Pond	Side Bank Filter	Existing Retention (FDOT Ponds)	-	20%	12%	86%	-	49%	29%	86%	-	90%	95%
BASIN E2		30.82	4.27	78.26	10.83	Wet Pond	Side Bank Filter	-	-	31%	25%	-	-	57%	60%	-	-	48%	83%
BASIN D		104.66	14.49	105.95	14.66	Wet Pond + Littoral zone	Side Bank Filter	-	-	46%	22%	-	-	72%	53%	-	-	58%	87%
BASIN C	LOWER CYPRESS CREEK	132.99	18.41	201.55	27.90	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	Additional Dry Retention	43%	24%	45%	40%	78%	56%	45%	40%	86%	97%
BASIN B3		81.88	11.33	85.70	11.86	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	-	42%	18%	50%	-	75%	43%	50%	-	76%	93%
BASIN A		69.44	9.61	68.62	9.50	Wet Pond with Littoral zone	Side Bank Filter	-	-	46%	20%	-	-	72%	47%	-	-	57%	85%
BASIN 1A		43.92	6.08	87.75	12.15	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	-	42%	12%	52%	-	73%	29%	52%	-	88%	98%
						Wet Pond with Littoral zone	Side Bank Filter	-	-	46%	13%	-	-	70%	31%	-	-		
BASIN 2A		49.25	6.82	62.89	8.70	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	-	42%	15%	78%	-	73%	36%	78%	-	89%	96%

	TN	TP	
Minimum BMP Efficiency:	55%	80%	E1, E2, D
Minimum BMP Efficiency:	80%	90%	All Other Basins

Ambient Water Quality: OFW
TMDL/BMAP/RAP? No

		Minimum Required Treatment Summary												Provided Treatment Summary					
Basins	HUC 12	Pre-Dev. Nutrient Loading (kg/yr)		Post-Dev. Nutrient Loading (kg/yr)		Development Loading Increase (kg/yr)		Post-Dev. BMP Load Allowable (kg/yr)		Post Condition Required Reduction		Required BMP Efficiency Rate		Post-Dev. BMP Nutrient Loading (kg/yr)		Provided BMP Efficiency Rate		Provided Pre-Development Reductions	
		TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP
E1, E2, D	UPPER ANCLOTE RIVER	167.7	23.2	251.6	34.8	83.9	11.6	113.2	7.0	33%	33%	55%	80%	91.8	4.3	64%	88%	45%	82%
C, B3, A, 1A, 2A	LOWER CYPRESS CREEK	377.5	52.2	506.5	70.1	129.0	17.9	101.3	7.0	25%	25%	80%	90%	95.8	3.7	81%	95%	75%	93%

Performance Efficiency Rates Matrix (Current PSR) - Scenario 2

HUC-12		PSR Data						BMP Series Train		Nitrogen				Phosphorus			
HUC-12 ID	HUC-12 Name	Basin ID	Pond ID	Facility Type	WBID	Basin Impairments	Impairment Assessment Category	BMP Element 1	BMP Element 2	BMP Element 1	BMP Element 2	Req. Nitrogen Treatment (New Rule)	Nitrogen Combined Efficiency Rate	BMP Element 1	BMP Element 2	Req. Phosphorus Treatment (New Rule)	Phosphorus Combined Efficiency Rate
31002070501	UPPER ANCLOTE RIVER	BASIN E1	P1E1 & EXISTING LINEAR PONDS	wet	WBID 1456 -SOUTH BRANCH ANCLOTE RIVER	Impaired Waters	Bacteria	Wet Pond	Existing Linear Ponds	20%	35%	80%	48%	49%	35%	80%	67%
		BASIN E2	P1E2	wet	WBID 1463S - LAKE THOMAS OUTLET	Impaired Waters	Bacteria	Wet Pond	-	31%	-	80%	31%	57%	-	80%	57%
		BASIN D	EX POND D1	wet	WBID 1451K - LAKE PADGETT DRAIN / WBID 1456A1 - LAKE THOMAS DRAIN	Impaired Waters	Bacteria	Wet Pond	Littoral zone	40%	10%	80%	46%	69%	10%	80%	72%
31002050404	LOWER CYPRESS CREEK	BASIN C	C(1), C(1)A, & C(1)B	wet	WBID 1463S - LAKE THOMAS OUTLET / WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond	Existing Littoral zone	41%	10%	80%	47%	71%	10%	90%	74%
		BASIN B3	B3 & EX FDOT POND B	wet	WBID 1463S - LAKE THOMAS OUTLET / WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond	Littoral zone	32%	10%	80%	39%	57%	10%	90%	61%
		BASIN A	EX FDOT POND A	wet	WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond	Littoral zone	40%	10%	80%	46%	69%	10%	90%	72%
		BASIN 1A	1A(2)	wet	WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond	Littoral zone	42%	10%	80%	48%	76%	10%	90%	78%
			EX FDOT POND 1A	wet	WBID 1451K - LAKE PADGETT DRAIN	OFW		Wet Pond	Littoral zone	40%	10%	80%	46%	67%	10%	90%	70%
		BASIN 2A	2A(1)	wet	WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond	Existing Littoral zone	42%	10%	80%	48%	73%	10%	90%	76%

Scenario 2																							
HUC-12		PSR Data					BMP Series Train				Nitrogen						Phosphorus						
HUC-12 ID	HUC-12 Name	Basin ID	Pond ID	WBID	Downstream Ambient Water Quality	Impairments	BMP Element 1	BMP Element 2	BMP Element 3	BMP Element 4	BMP Element 1	BMP Element 2	BMP Element 3	BMP Element 4	*Req. Nitrogen Treatment (New Rule)*	Nitrogen Combined Efficiency Rate	BMP Element 1	BMP Element 2	BMP Element 3	BMP Element 4	*Req. Phosphorus Treatment (New Rule)*	Phosphorus Combined Efficiency Rate
31002070501	UPPER ANCLOTE RIVER	BASIN E1	P1E1 & EXISTING LINEAR PONDS	WBID 1456 -SOUTH BRANCH ANCLOTE RIVER	Impaired Waters	Bacteria	Wet Pond (split BMP)	Dry Retention BMP (split BMP)	Side Bank Filter	Existing Retention (FDOT Ponds)	25%	14%	7%	86%	*80%*	92%	52%	14%	18%	86%	*80%*	95%
		BASIN E2	P1E2	WBID 1463S - LAKE THOMAS OUTLET	Impaired Waters	Bacteria	Wet Pond (split BMP)	Dry Rentention BMP (split BMP)		-	38%	76%	-	-	*80%*	85%	63%	76%	-	-	*80%*	91%
		BASIN D	EX POND D1	WBID 1451K - LAKE PADGETT DRAIN / WBID 1456A1 - LAKE THOMAS DRAIN	Impaired Waters	Bacteria	Wet Pond (split BMP)	Dry Rentention BMP (split BMP)		-	43%	61%	-	-	*80%*	78%	77%	61%	-	-	*80%*	91%
31002050404	LOWER CYPRESS CREEK	BASIN C	C(1), C(1)A, & C(1)B	WBID 1463S - LAKE THOMAS OUTLET / WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	Additional Dry Retention	43%	24%	45%	40%	*80%*	86%	78%	56%	45%	40%	*90%*	97%
		BASIN B3	B3 & EX FDOT POND B	WBID 1463S - LAKE THOMAS OUTLET / WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	-	42%	18%	50%	-	*80%*	76%	75%	43%	50%	-	*90%*	93%
		BASIN A	EX FDOT POND A	WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond + Littoral Zone	Side Bank Filter	-	-	46%	20%	-	-	*80%*	57%	72%	47%	-	-	*90%*	85%
		BASIN 1A	1A(2)	WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	-	42%	12%	52%	-	*80%*	88%	73%	29%	52%	-	*90%*	98%
			EX FDOT POND 1A	WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond + Littoral Zone	Side Bank Filter	-	-	46%	13%	-	-			70%	31%	-	-		
		BASIN 2A	2A(1)	WBID 1451K - LAKE PADGETT DRAIN	OFW	-	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP (split BMP)	-	42%	15%	78%	-	*80%*	89%	73%	36%	78%	-	*90%*	83%

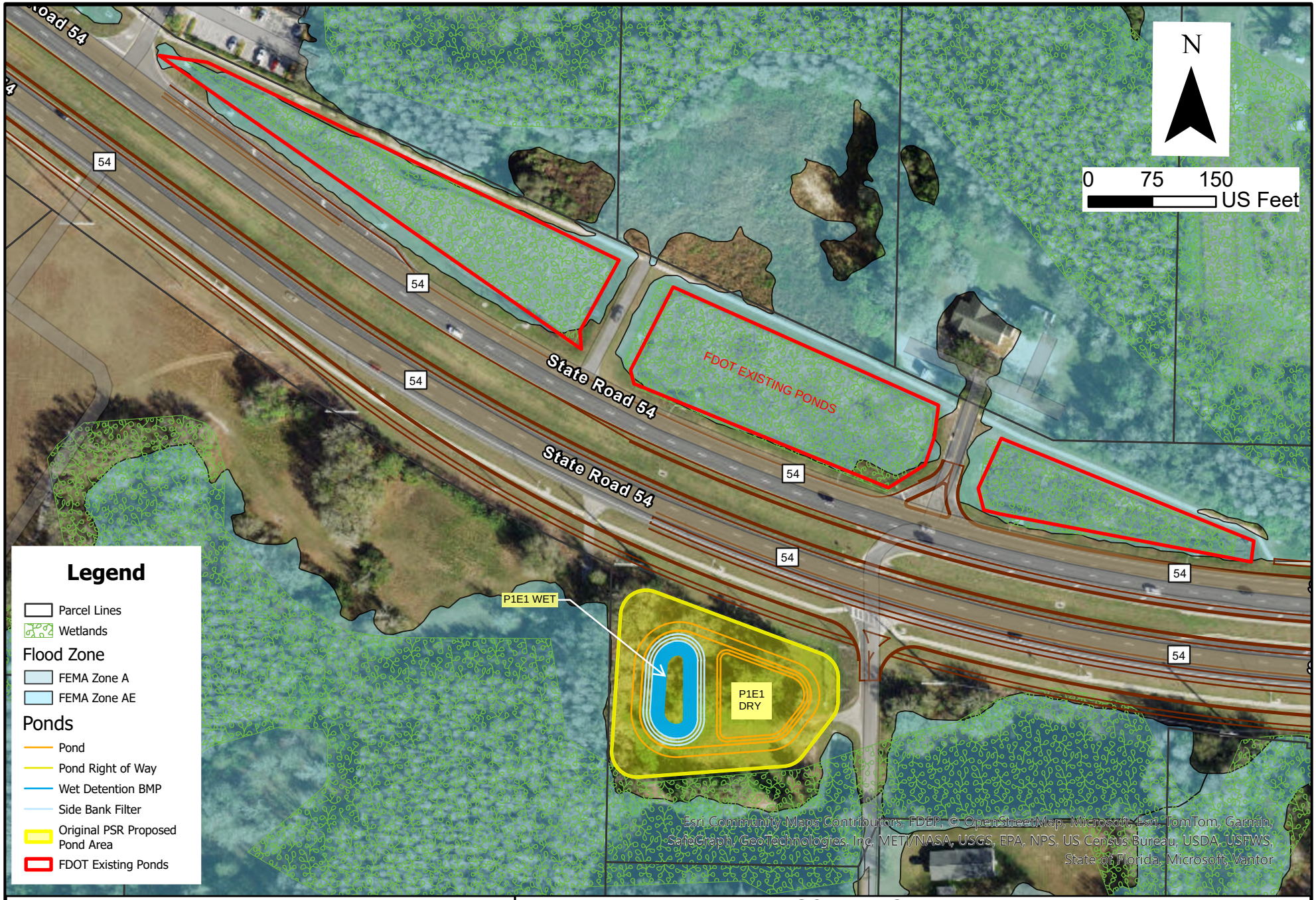
Scenario 2 - Nutrient Loading & Nutrient Reduction Analysis Summary (Lake Hamilton HUC 12) - Scenario 2

Basin	HUC 12	Pre-Dev. Loading (kg/yr)		Post-Dev. Loading (kg/yr)		BMP Series Train Description				Annual Capture Efficiency Rate								Provided BMP Efficiency Rate	
										TN				TP					
		TN	TP	TN	TP					BMP1	BMP2	BMP3	BMP4	BMP1	BMP2	BMP3	BMP4	TN	TP
BASIN E1	UPPER ANCLOTE RIVER	32.22	4.46	67.41	9.33	Wet Pond (split BMP)	Dry Retention BMP	Side Bank Filter	Exisitng Retention	25%	14%	7%	86%	52%	14%	18%	86%	92%	95%
BASIN E2		30.82	4.27	78.26	10.83	Wet Pond (split BMP)	Dry Rentention BMP	-	-	38%	76%	-	-	63%	76%	-	-	85%	91%
BASIN D		104.66	14.49	105.95	14.66	Wet Pond + Littoral zone	Dry Rentention BMP	-	-	43%	61%	-	-	77%	61%	-	-	78%	91%
BASIN C	LOWER CYPRESS CREEK	132.99	18.41	201.55	27.90	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP	Additional Dry Retention	43%	24%	45%	40%	78%	56%	45%	40%	86%	97%
BASIN B3		81.88	11.33	85.70	11.86	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP	-	42%	18%	50%	-	75%	43%	50%	-	76%	93%
BASIN A		69.44	9.61	68.62	9.50	Wet Pond + Littoral Zone	Side Bank Filter	-	-	46%	20%	-	-	72%	47%	-	-	57%	85%
BASIN 1A		43.92	6.08	87.75	12.15	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP	-	42%	12%	52%	-	73%	29%	52%	-	88%	98%
						Wet Pond + Littoral Zone	Side Bank Filter	-	-	46%	13%	-	-	70%	31%	-	-		
BASIN 2A		49.25	6.82	62.89	8.70	Wet Pond (split BMP)	Side Bank Filter	Dry Retention BMP	-	42%	15%	78%	-	73%	36%	78%	-	89%	96%

Ambient Water Quality: OFW + Impaired
TMDL/BMAP/RAP? No

	TN	TP	
Minimum BMP Efficiency:	*80%*	*80%*	E1, E2, D
Minimum BMP Efficiency:	*80%*	*90%*	All Other Basins

		Minimum Required Treatment Summary												Provided Treatment Summary					
Basins	HUC 12	Pre-Dev. Nutrient Loading (kg/yr)		Post-Dev. Nutrient Loading (kg/yr)		Development Loading Increase (kg/yr)		Post-Dev. BMP Load Allowable (kg/yr)		Post Condition Required Reduction		Required BMP Efficiency Rate		Post-Dev. BMP Nutrient Loading (kg/yr)		Provided BMP Efficiency Rate		Provided Pre-Development Reductions	
		TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP
E1, E2, D	UPPER ANCLOTE RIVER	167.7	23.2	251.6	34.8	83.9	11.6	50.3	7.0	33%	33%	*80%*	*80%*	40.9	2.7	84%	92%	76%	88%
C, B3, A, 1A, 2A	LOWER CYPRESS CREEK	377.5	52.2	506.5	70.1	129.0	17.9	101.3	7.0	25%	25%	*80%*	*90%*	95.8	3.7	81%	95%	75%	93%



Kimley»Horn

© 2026 Kimley-Horn and Associates, Inc.
200 S Orange Ave, Suite 600, Orlando, FL 32801
Phone: (407) 898-1511
www.kimley-horn.com CA 00000696

SCENARIO 2 - Basin P1E1

SR-54 NEW RULE POND SITING ANALYSIS
PASCO COUNTY, FLORIDA

Scale: As Noted	FPID: 419182-1	January 2026	Figure 2

K:\ORL_Roadway\240000011_New Stormwater Rule Analysis\D-7 SR 45 at SR 54 Pond Siting Report\FM419182-1\Memo\GIS\GIS\SR 54 MC.aprx - 1/7/2026 10:00 AM - Cheyenne.Schumacher



K:\ORL_Roadway\240000011_New Stormwater Rule Analysis\D-7 SR 45 at SR 54 Pond Siting Report\VFM419182-1\Memo\GIS\GIS\SR 54 MC.aprx - 1/7/2026 10:01 AM - Cheyenne.Schumacher

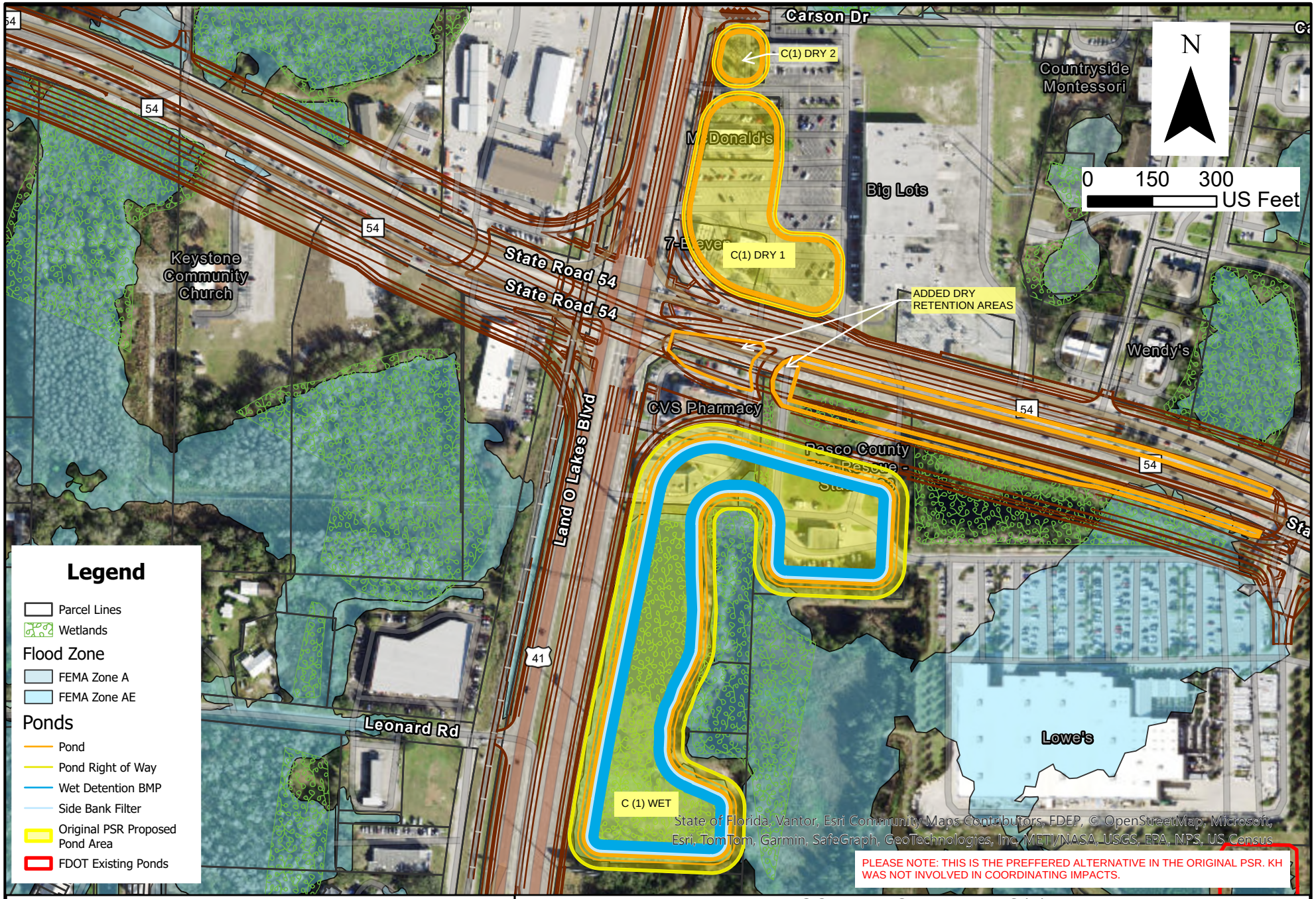
Kimley»Horn

© 2026 Kimley-Horn and Associates, Inc.
200 S Orange Ave, Suite 600, Orlando, FL 32801
Phone: (407) 898-1511
www.kimley-horn.com CA 00000696

SCENARIO 2 - Basin P1E2

SR-54 NEW RULE POND SITING ANALYSIS
PASCO COUNTY, FLORIDA

Scale: As Noted	FPID: 419182-1	January 2026	Figure 3



K:\ORL_Roadway\240000011_New Stormwater Rule Analysis\D-7 SR 45 at SR 54 Pond Siting Report\FM419182-1\Memo\GIS\GIS\SR 54 MC.aprx - 1/7/2026 10:01 AM - Cheyenne.Schumacher

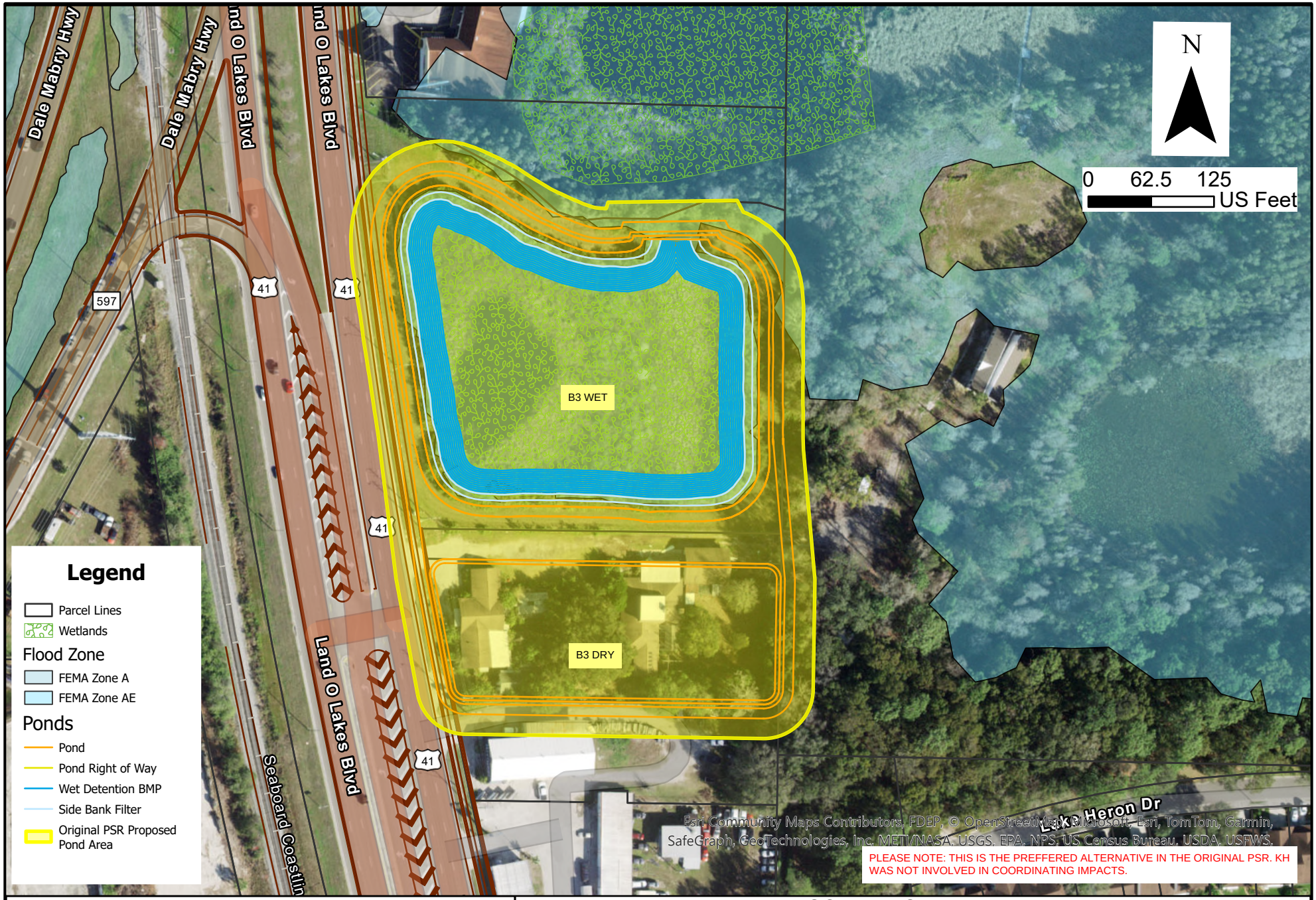
Kimley»Horn

© 2026 Kimley-Horn and Associates, Inc.
200 S Orange Ave, Suite 600, Orlando, FL 32801
Phone: (407) 898-1511
www.kimley-horn.com CA 00000696

SCENARIO 2 - Basin C(1)

SR-54 NEW RULE POND SITING ANALYSIS
PASCO COUNTY, FLORIDA

Scale: As Noted	FPID: 419182-1	January 2026	Figure 4



K:\ORL_Roadway\240000011_New Stormwater Rule Analysis\D-7 SR 45 at SR 54 Pond Siting Report\FM419182-1\Memo\GIS\GIS\SR 54 MC.aprx - 1/7/2026 10:01 AM - Cheyenne.Schumacher

Kimley»Horn

© 2026 Kimley-Horn and Associates, Inc.
200 S Orange Ave, Suite 600, Orlando, FL 32801
Phone: (407) 898-1511
www.kimley-horn.com CA 00000696

SCENARIO 2 - Basin B3

SR-54 NEW RULE POND SITING ANALYSIS
PASCO COUNTY, FLORIDA

Scale: As Noted	FPID: 419182-1	January 2026	Figure 5



Kimley»Horn

© 2026 Kimley-Horn and Associates, Inc.

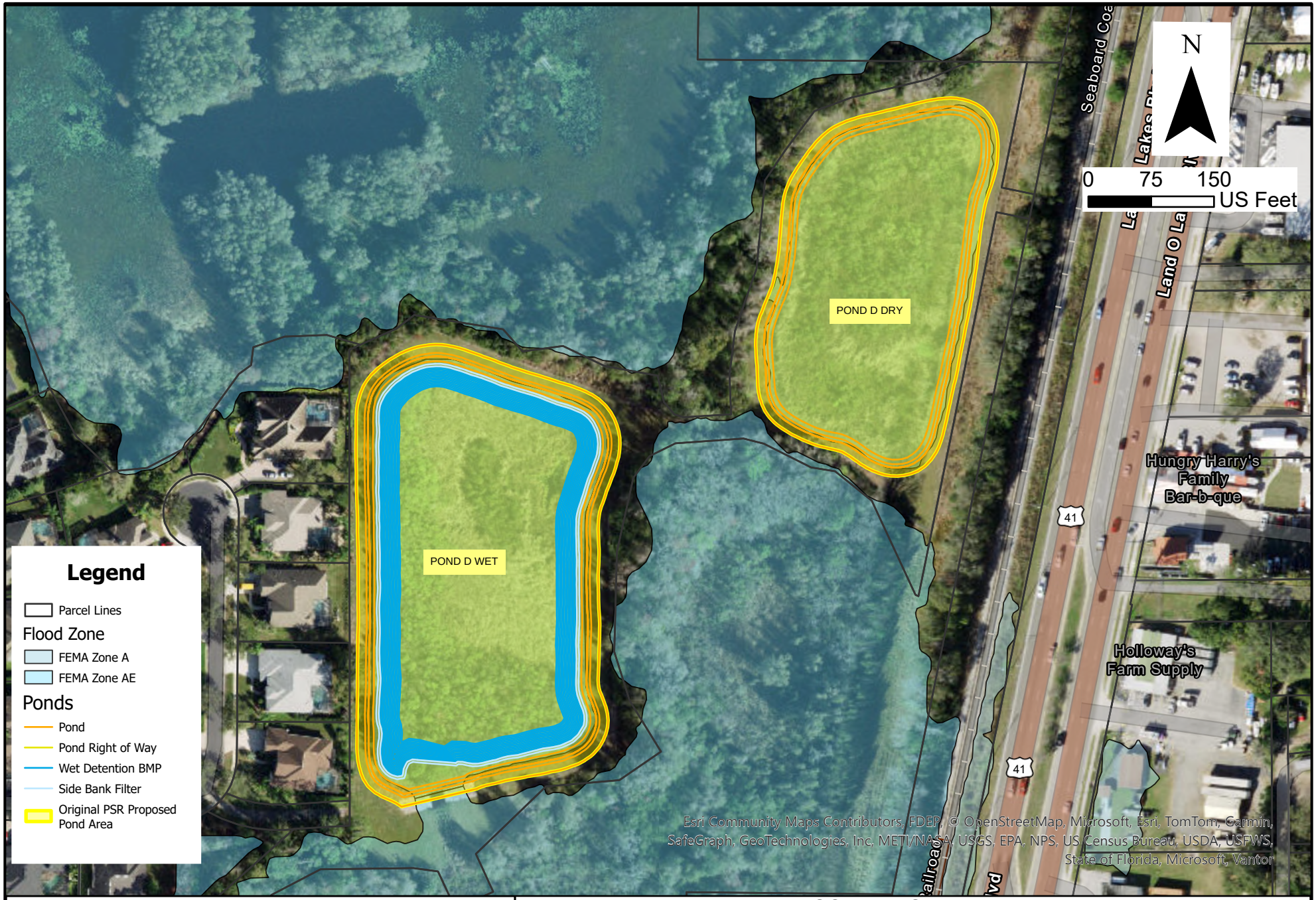
200 S Orange Ave, Suite 600, Orlando, FL 32801
Phone: (407) 898-1511
www.kimley-horn.com CA 00000696

SCENARIO 2 - Basin A

SR-54 NEW RULE POND SITING ANALYSIS
PASCO COUNTY, FLORIDA

Scale: As Noted	FPID: 419182-1	January 2026	Figure 6

K:\ORL_Roadway\240000011_New Stormwater Rule Analysis\D-7 SR 45 at SR 54 Pond Siting Report\FM419182-1\Memo\GIS\GIS\SR 54 MC.aprx - 1/7/2026 10:01 AM - Cheyenne.Schumacher



Kimley»Horn

© 2026 Kimley-Horn and Associates, Inc.

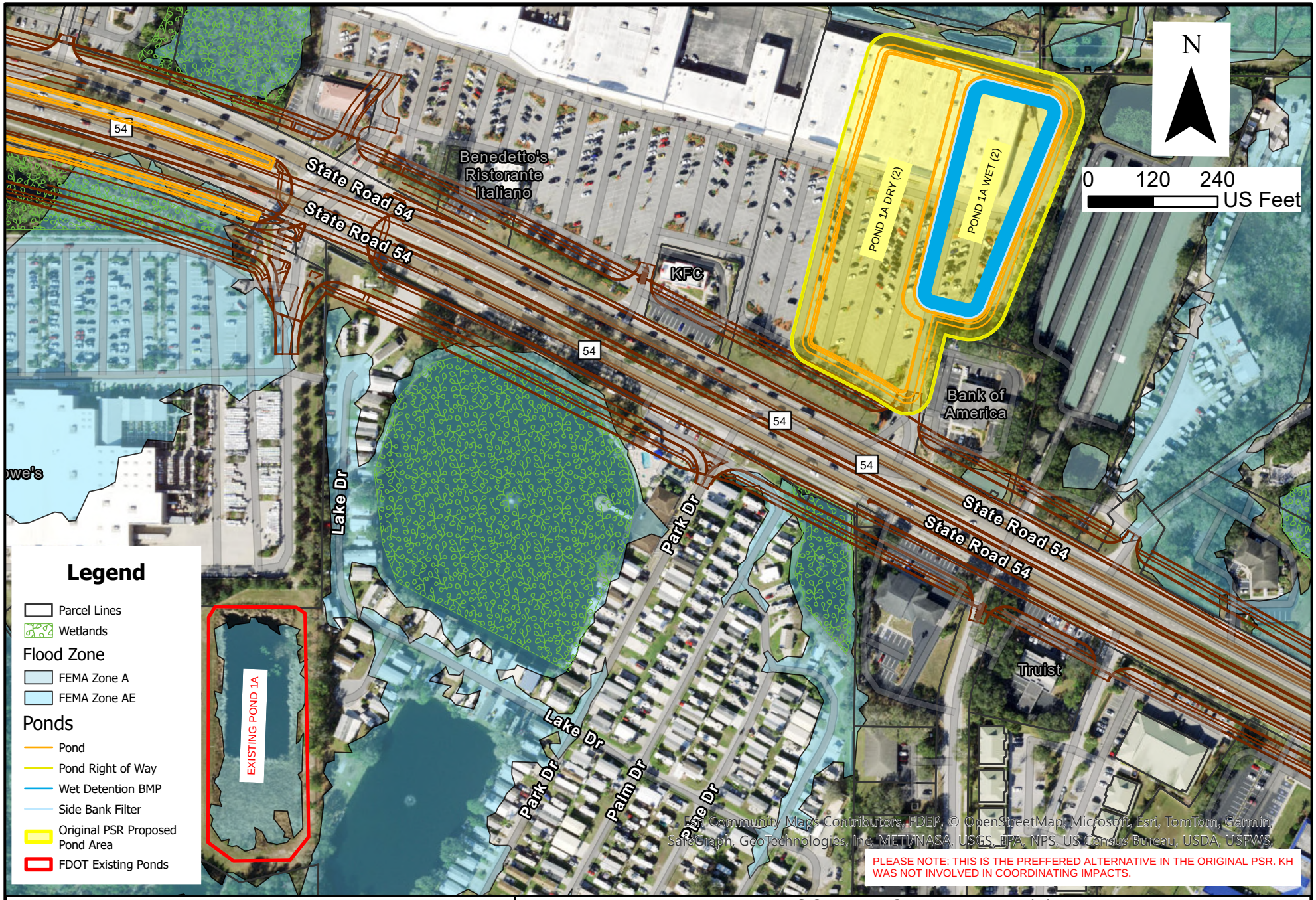
200 S Orange Ave, Suite 600, Orlando, FL 32801
Phone: (407) 898-1511
www.kimley-horn.com CA 00000696

SCENARIO 2 - Basin D

SR-54 NEW RULE POND SITING ANALYSIS
PASCO COUNTY, FLORIDA

Scale: As Noted	FPID: 419182-1	January 2026	Figure 7

K:\ORL_Roadway\240000011_New Stormwater Rule Analysis\D-7 SR 45 at SR 54 Pond Siting Report\FM419182-1\Memo\GIS\GIS\SR 54 MC.aprx - 1/7/2026 10:01 AM - Cheyenne.Schumacher



K:\ORL_Roadway\240000011_New Stormwater Rule Analysis\D-7 SR 45 at SR 54 Pond Siting Report\FM419182-1\Memo\GIS\GIS\SR 54 MC.aprx - 1/7/2026 10:01 AM - Cheyenne.Schumacher

Kimley»Horn

© 2026 Kimley-Horn and Associates, Inc.
200 S Orange Ave, Suite 600, Orlando, FL 32801
Phone: (407) 898-1511
www.kimley-horn.com CA 00000696

SCENARIO 2 - Basin 1A(2)

SR-54 NEW RULE POND SITING ANALYSIS
PASCO COUNTY, FLORIDA

Scale: As Noted	FPID: 419182-1	January 2026	Figure 8



K:\ORL_Roadway\240000011_New Stormwater Rule Analysis\D-7 SR 45 at SR 54 Pond Siting Report\FM419182-1\Memo\GIS\GIS\SR 54 MC.aprx - 1/7/2026 10:01 AM - Cheyenne.Schumacher

Kimley»Horn

© 2026 Kimley-Horn and Associates, Inc.
200 S Orange Ave, Suite 600, Orlando, FL 32801
Phone: (407) 898-1511
www.kimley-horn.com CA 00000696

SCENARIO 2 - Basin 2A(1)

SR-54 NEW RULE POND SITING ANALYSIS
PASCO COUNTY, FLORIDA

Scale: As Noted	FPID: 419182-1	January 2026	Figure 9

Stage-Area Calculations of Split BMPs

Pond P1E1 PPV

Stage ft-NAVD	Area acres	Volume ac-ft	Description
55.20	0.04	0.00	Pond Bottom
63.20	0.13	0.67	Control
66.50			New Inside Berm EL.
66.74			Outside Berm (per PSR)

Pond P1E1 Dry Retention

Stage ft-NAVD	Area acres	Volume ac-ft	Description
64.20	0.17	0.00	BMP Bottom
65.00	0.20	0.15	Weir EL.
66.50			New Inside Berm EL.
66.74			Outside Berm (per PSR)

Pond P1E1 Side Bank Filter (Scenario 2)

Stage ft-NAVD	Area acres	Volume ac-ft	Description
63.20	0.13	0.00	Control
65.00	0.15	0.25	Weir / Treatment El.

Pond P1E2 PPV

Stage ft-NAVD	Area acres	Volume ac-ft	Description
53.00	0.16	0.00	Pond Bottom
65.00	0.47	3.78	Control
70.00			Inside Berm (per PSR)
70.50			Outside Berm (per PSR)

Pond P1E2 Dry Retention

Stage ft-NAVD	Area acres	Volume ac-ft	Description
66.00	0.76	0.00	BMP Bottom
68.00	0.95	1.70	Weir EL.
70.00			Inside Berm (per PSR)
70.50			Outside Berm (per PSR)

Pond D PPV

Stage ft-NAVD	Area acres	Volume ac-ft	Description
56.00	1.76	0.00	Pond Bottom
69.00	2.56	28.08	Control
73.00			Top of Bank (per PSR)

Pond D Dry Retention

Stage ft-NAVD	Area acres	Volume ac-ft	Description
70.00	1.68	0.00	BMP Bottom
71.00	1.82	1.75	Weir EL.
73.00			Top of Bank (per PSR)

Pond C(1) PPV

Stage ft-NAVD	Area acres	Volume ac-ft	Description
56.00	3.67	0.00	Pond Bottom
68.00	5.54	55.26	Control
72.27			Inside Berm (per PSR)
73.00			Outiside Berm (per PSR)

Pond C(1) Dry Retention

Stage ft-NAVD	Area acres	Volume ac-ft	Description
69.00	2.28	0.00	BMP Bottom
69.80	2.31	1.83	Weir EL.
72.27			Inside Berm (per PSR)
73.00			Outiside Berm (per PSR)

Pond C(1) Side Bank Filter

Stage ft-NAVD	Area acres	Volume ac-ft	Description
68.00	5.54	0.00	Control
68.70	5.80	3.97	Weir / Treatment El.
72.27			Inside Berm (per PSR)
73.00			Outiside Berm (per PSR)

Additional Dry Retention

Stage ft-NAVD	Area acres	Volume ac-ft	Description
71.00	1.00	0.00	BMP Bottom
72.20	1.55	1.53	Weir
72.70			BMP Top
73.00			EOP

Added retention area under and along elevated corridor.

Pond B3 PPV

Stage ft-NAVD	Area acres	Volume ac-ft	Description
56.50	1.22	0.00	Pond Bottom
68.50	1.81	18.18	Control
71.50			Inside Berm (per PSR)
72.00			Outside Berm (per PSR)

Pond B3 Dry Retention

Stage ft-NAVD	Area acres	Volume ac-ft	Description
69.50	1.00	0.00	BMP Bottom
70.40	1.04	0.92	Weir EL.
71.50			Inside Berm (per PSR)
72.00			Outside Berm (per PSR)

Pond B3 Side Bank Filter

Stage ft-NAVD	Area acres	Volume ac-ft	Description
68.50	1.81	0.00	Control
69.05	1.87	1.01	Weir / Treatment El.
71.50			Inside Berm (per PSR)
72.00			Outside Berm (per PSR)

Pond 1A(2) PPV

Stage ft-NAVD	Area acres	Volume ac-ft	Description
57.08	0.93	0.00	Pond Bottom
69.08	1.51	14.64	Control
71.89			Inside Berm (New)
72.00			Outside Berm (per PSR)

Pond 1A(2) Dry Retention

Stage ft-NAVD	Area acres	Volume ac-ft	Description
70.08	2.13	0.00	BMP Bottom
70.50	2.16	0.90	Weir EL.
71.89			Inside Berm (New)
72.00			Outside Berm (per PSR)

Pond 1A(2) Side Bank Filter

Stage ft-NAVD	Area acres	Volume ac-ft	Description
69.08	1.51	0.00	Control
69.43	1.55	0.54	Weir / Treatment El.
71.89			Inside Berm (New)
72.00			Outside Berm (per PSR)

Pond 2A(1) PPV

Stage ft-NAVD	Area acres	Volume ac-ft	Description
54.96	0.58	0.00	Pond Bottom
66.96	1.02	9.60	Control
70.34			Inside Berm (per PSR)
70.65			Outside Berm (per PSR)

Pond 2A(1) Dry Retention

Stage ft-NAVD	Area acres	Volume ac-ft	Description
67.96	1.29	0.00	BMP Bottom
69.00	1.50	1.45	Weir EL.
70.34			Inside Berm (per PSR)
70.65			Outside Berm (per PSR)

Pond 2A(1) Side Bank Filter

Stage ft-NAVD	Area acres	Volume ac-ft	Description
66.96	1.02	0.00	Control
67.45	1.06	0.51	Weir / Treatment El.
70.34			Inside Berm (per PSR)
70.65			Outside Berm (per PSR)

APPENDIX B

BMPTrains 2020 Version 4.3.5 Reports

CURRENT PSR BMPTRAIN REPORTS

Basin E1

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 55% P: 80%

Catchment Name	Pond P1E1
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	16.30
Pre Rational Coefficient (0-1)	0.29
Pre Non DCIA Curve Number	86.91
Pre DCIA Percent (0-100)	12.52
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	20.906
Pre Nitrogen Loading (kg/yr)	32.221
Pre Phosphorus Loading (kg/yr)	4.459
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	18.02
Post Rational Coefficient (0-1)	0.55
Post Non DCIA Curve Number	71.86
Post DCIA Percent (0-100)	63.20
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	43.739
Post Nitrogen Loading (kg/yr)	67.413
Post Phosphorus Loading (kg/yr)	9.330

Wet Detention Design

Permanent Pool Volume (ac-ft)	0.450
Permanent Pool Volume (ac-ft) for 31 days residence	3.715
Annual Residence Time (days)	4

Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	18.02
Contributing Area (acres)	18.020
Non-DCIA Curve Number	71.86
DCIA Percent	63.20
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	20
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	49

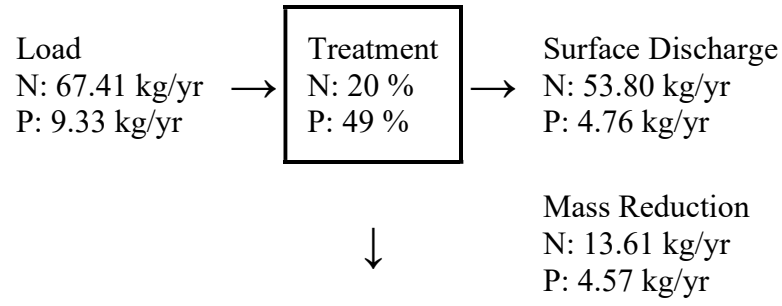
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Retention Design

Retention Depth (in)	0.260
Retention Volume (ac-ft)	0.390

Watershed Characteristics

Catchment Area (acres)	18.02
Contributing Area (acres)	18.020
Non-DCIA Curve Number	71.86
DCIA Percent	63.20
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	35
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	35

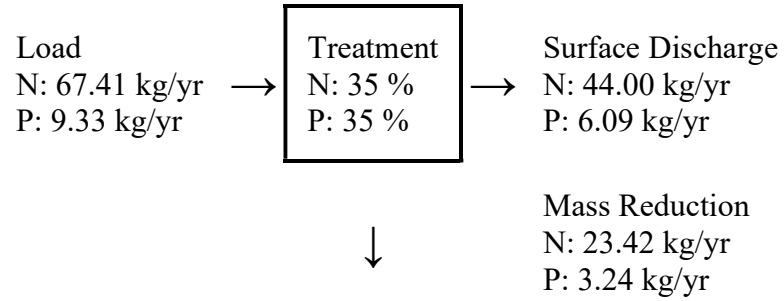
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	23.417
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	3.241
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



Basin E2

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 55% P: 80%

Catchment Name	Pond P1E2
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	15.19
Pre Rational Coefficient (0-1)	0.30
Pre Non DCIA Curve Number	83.26
Pre DCIA Percent (0-100)	20.41
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	19.999
Pre Nitrogen Loading (kg/yr)	30.823
Pre Phosphorus Loading (kg/yr)	4.266
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	18.37
Post Rational Coefficient (0-1)	0.63
Post Non DCIA Curve Number	77.48
Post DCIA Percent (0-100)	72.24
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	50.779
Post Nitrogen Loading (kg/yr)	78.263
Post Phosphorus Loading (kg/yr)	10.832

Wet Detention Design

Permanent Pool Volume (ac-ft)	1.530
Permanent Pool Volume (ac-ft) for 31 days residence	4.313
Annual Residence Time (days)	11
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	18.37
Contributing Area (acres)	18.370
Non-DCIA Curve Number	77.48
DCIA Percent	72.24
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	31
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	57

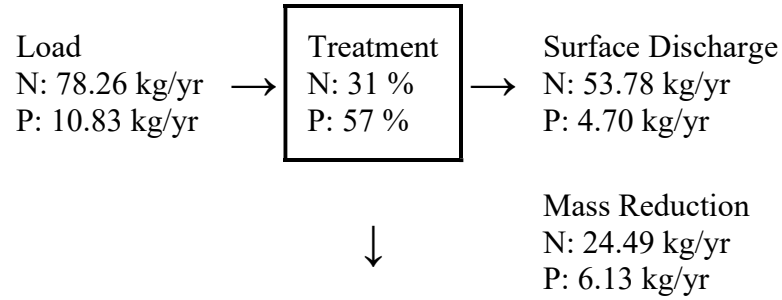
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Basin D

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 55% P: 80%

Catchment Name	Pond D
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	32.64
Pre Rational Coefficient (0-1)	0.47
Pre Non DCIA Curve Number	86.95
Pre DCIA Percent (0-100)	42.16
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	67.905
Pre Nitrogen Loading (kg/yr)	104.659
Pre Phosphorus Loading (kg/yr)	14.485
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	32.64
Post Rational Coefficient (0-1)	0.48
Post Non DCIA Curve Number	86.99
Post DCIA Percent (0-100)	43.05
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	68.742
Post Nitrogen Loading (kg/yr)	105.949
Post Phosphorus Loading (kg/yr)	14.663

Wet Detention Design

Permanent Pool Volume (ac-ft)	9.720
Permanent Pool Volume (ac-ft) for 31 days residence	5.838
Annual Residence Time (days)	52
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	32.64
Contributing Area (acres)	32.640
Non-DCIA Curve Number	86.99
DCIA Percent	43.05
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	40
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	69

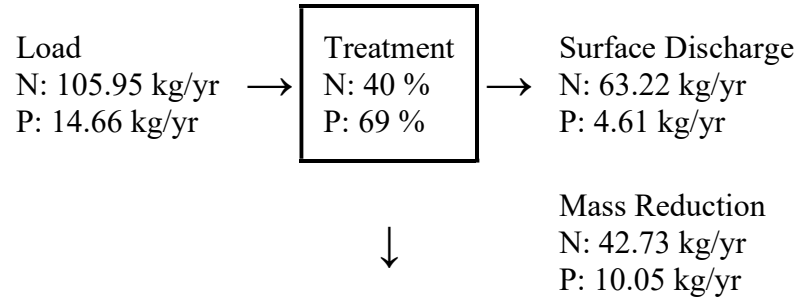
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Basin C

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 90%

Catchment Name	Pond C(1)
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	41.64
Pre Rational Coefficient (0-1)	0.47
Pre Non DCIA Curve Number	87.04
Pre DCIA Percent (0-100)	41.71
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	86.289
Pre Nitrogen Loading (kg/yr)	132.994
Pre Phosphorus Loading (kg/yr)	18.406
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	52.78
Post Rational Coefficient (0-1)	0.56
Post Non DCIA Curve Number	86.63
Post DCIA Percent (0-100)	57.35
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	130.773
Post Nitrogen Loading (kg/yr)	201.554
Post Phosphorus Loading (kg/yr)	27.895

Wet Detention Design

Permanent Pool Volume (ac-ft)	26.170
Permanent Pool Volume (ac-ft) for 31 days residence	11.107
Annual Residence Time (days)	73
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	52.78
Contributing Area (acres)	52.780
Non-DCIA Curve Number	86.63
DCIA Percent	57.35
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	41
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	71

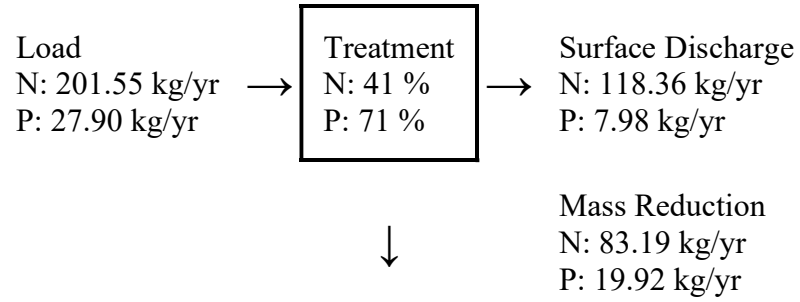
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Basin B3

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 90%

Catchment Name	Pond B3
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	23.86
Pre Rational Coefficient (0-1)	0.50
Pre Non DCIA Curve Number	87.17
Pre DCIA Percent (0-100)	47.27
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	53.127
Pre Nitrogen Loading (kg/yr)	81.882
Pre Phosphorus Loading (kg/yr)	11.332
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	24.20
Post Rational Coefficient (0-1)	0.52
Post Non DCIA Curve Number	87.28
Post DCIA Percent (0-100)	49.77
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	55.603
Post Nitrogen Loading (kg/yr)	85.698
Post Phosphorus Loading (kg/yr)	11.861

Wet Detention Design

Permanent Pool Volume (ac-ft)	1.850
Permanent Pool Volume (ac-ft) for 31 days residence	4.722
Annual Residence Time (days)	12
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	24.20
Contributing Area (acres)	24.200
Non-DCIA Curve Number	87.28
DCIA Percent	49.77
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	32
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	57

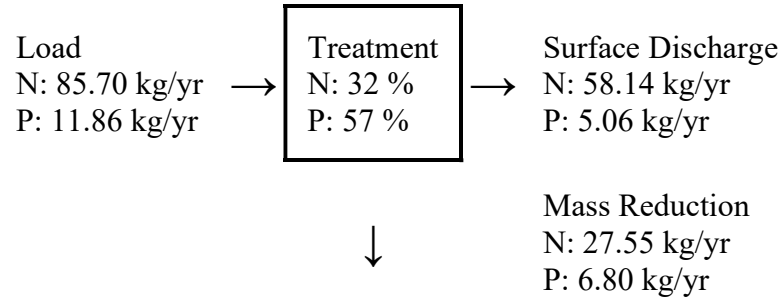
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Basin A

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 90%

Catchment Name	Pond A
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	14.64
Pre Rational Coefficient (0-1)	0.70
Pre Non DCIA Curve Number	85.87
Pre DCIA Percent (0-100)	79.82
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	45.057
Pre Nitrogen Loading (kg/yr)	69.444
Pre Phosphorus Loading (kg/yr)	9.611
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	14.64
Post Rational Coefficient (0-1)	0.69
Post Non DCIA Curve Number	86.01
Post DCIA Percent (0-100)	78.41
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	44.519
Post Nitrogen Loading (kg/yr)	68.615
Post Phosphorus Loading (kg/yr)	9.496

Wet Detention Design

Permanent Pool Volume (ac-ft)	6.620
Permanent Pool Volume (ac-ft) for 31 days residence	3.781
Annual Residence Time (days)	54
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	14.64
Contributing Area (acres)	14.640
Non-DCIA Curve Number	86.01
DCIA Percent	78.41
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	40
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	69

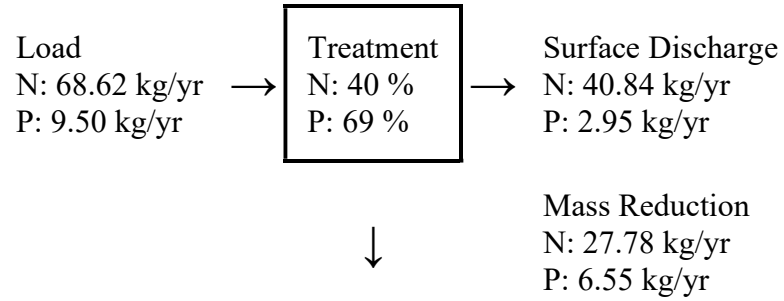
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Basin 1A

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 90%

Catchment Name	Pond 1A(2)
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	10.17
Pre Rational Coefficient (0-1)	0.63
Pre Non DCIA Curve Number	80.96
Pre DCIA Percent (0-100)	72.37
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	28.495
Pre Nitrogen Loading (kg/yr)	43.918
Pre Phosphorus Loading (kg/yr)	6.078
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	21.61
Post Rational Coefficient (0-1)	0.60
Post Non DCIA Curve Number	77.57
Post DCIA Percent (0-100)	68.11
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	56.937
Post Nitrogen Loading (kg/yr)	87.753
Post Phosphorus Loading (kg/yr)	12.145

Project: Basin 1A
Date: 1/28/2026

Wet Detention Design

Permanent Pool Volume (ac-ft)	20.920
Permanent Pool Volume (ac-ft) for 31 days residence	4.836
Annual Residence Time (days)	134
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	21.61
Contributing Area (acres)	21.610
Non-DCIA Curve Number	77.57
DCIA Percent	68.11
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	42
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	76

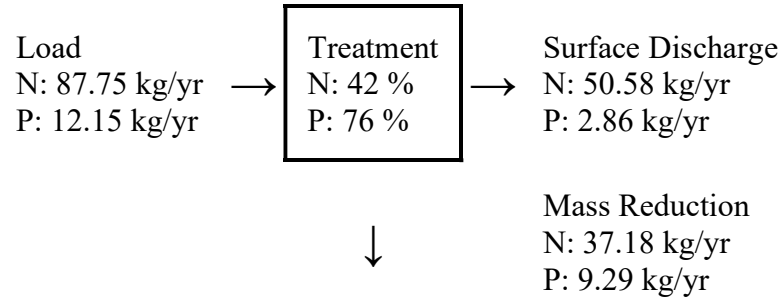
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Basin 2A

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 90%

Catchment Name	Pond 2A(1)
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	11.67
Pre Rational Coefficient (0-1)	0.62
Pre Non DCIA Curve Number	76.46
Pre DCIA Percent (0-100)	71.68
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	31.952
Pre Nitrogen Loading (kg/yr)	49.246
Pre Phosphorus Loading (kg/yr)	6.816
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	14.03
Post Rational Coefficient (0-1)	0.66
Post Non DCIA Curve Number	79.09
Post DCIA Percent (0-100)	76.47
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	40.806
Post Nitrogen Loading (kg/yr)	62.892
Post Phosphorus Loading (kg/yr)	8.704

Wet Detention Design

Permanent Pool Volume (ac-ft)	9.650
Permanent Pool Volume (ac-ft) for 31 days residence	3.466
Annual Residence Time (days)	86
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	14.03
Contributing Area (acres)	14.030
Non-DCIA Curve Number	79.09
DCIA Percent	76.47
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	42
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	73

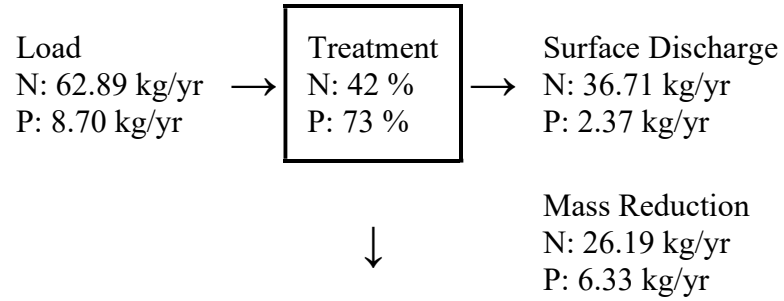
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



BMPTRAINS – SCENARIO 1

Note: PPV and side bank filter values used for Ponds P1E1, P1E2 and D in Scenario 1 come from the original PSR. For the side bank filters, the treatment volume was used.

BASIN E1

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 55% P: 80%

Catchment Name	Pond P1E1
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	16.30
Pre Rational Coefficient (0-1)	0.29
Pre Non DCIA Curve Number	86.91
Pre DCIA Percent (0-100)	12.52
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	20.906
Pre Nitrogen Loading (kg/yr)	32.221
Pre Phosphorus Loading (kg/yr)	4.459
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	18.02
Post Rational Coefficient (0-1)	0.55
Post Non DCIA Curve Number	71.86
Post DCIA Percent (0-100)	63.20
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	43.739
Post Nitrogen Loading (kg/yr)	67.413
Post Phosphorus Loading (kg/yr)	9.330

Wet Detention Design

Permanent Pool Volume (ac-ft)	0.450
Permanent Pool Volume (ac-ft) for 31 days residence	3.575
Annual Residence Time (days)	4
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	18.02
Contributing Area (acres)	18.020
Non-DCIA Curve Number	71.86
DCIA Percent	63.20
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	20
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	49

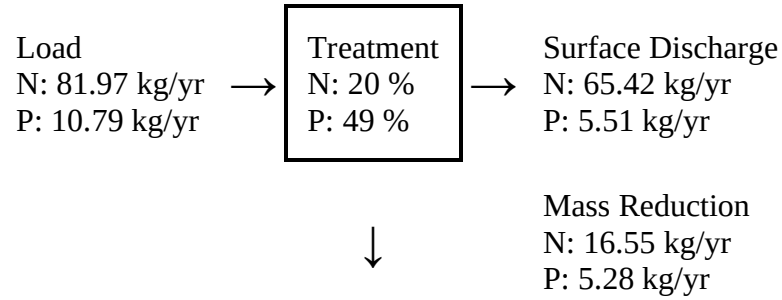
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Surface Discharge Filtration Design

Treatment Depth (in)	0.267
Hydraulic Capture Efficiency (%)	35
Media Type	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Watershed Characteristics

Catchment Area (acres)	18.02
Contributing Area (acres)	18.020
Non-DCIA Curve Number	71.86
DCIA Percent	63.20
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	12
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	29

Media Mix Information

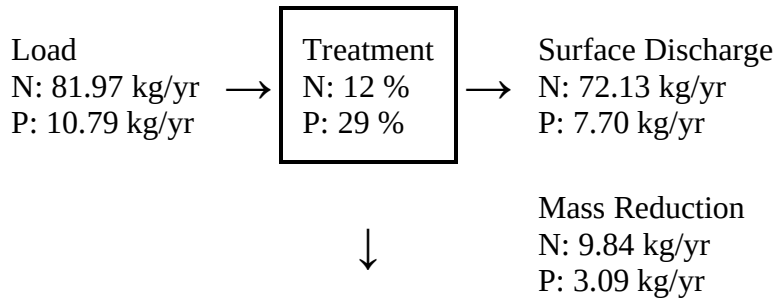
Type of Media Mix	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	5.033
TN Mass Load (kg/yr)	72.131
TN Concentration (mg/L)	3.786

TP Mass Load (kg/yr)	7.701
TP Concentration (mg/L)	0.404

Load Diagram for Surface Discharge Filtration (stand-alone)



Existing Retention (FDOT Pond)

Stage-Areas measured in CAD with LiDAR contours.

Retention Design

Retention Depth (in)	1.490
Retention Volume (ac-ft)	2.237

Watershed Characteristics

Catchment Area (acres)	18.02
Contributing Area (acres)	18.020
Non-DCIA Curve Number	71.86
DCIA Percent	63.20
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	86
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	86

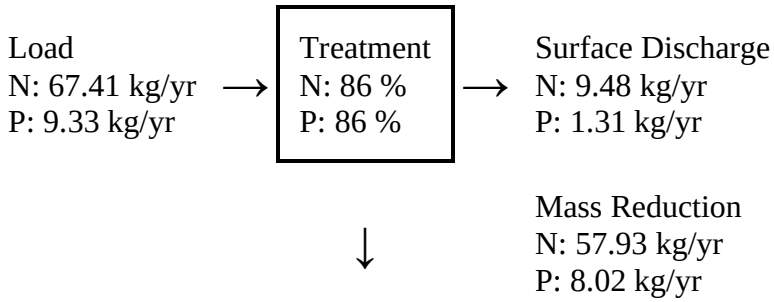
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	57.932
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	8.018
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



BASIN E2

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 55% P: 80%

Catchment Name	Pond P1E2
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	15.19
Pre Rational Coefficient (0-1)	0.30
Pre Non DCIA Curve Number	83.26
Pre DCIA Percent (0-100)	20.41
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	19.999
Pre Nitrogen Loading (kg/yr)	30.823
Pre Phosphorus Loading (kg/yr)	4.266
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	18.37
Post Rational Coefficient (0-1)	0.63
Post Non DCIA Curve Number	77.48
Post DCIA Percent (0-100)	72.24
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	50.779
Post Nitrogen Loading (kg/yr)	78.263
Post Phosphorus Loading (kg/yr)	10.832

Wet Detention Design

Permanent Pool Volume (ac-ft)	1.530
Permanent Pool Volume (ac-ft) for 31 days residence	4.313
Annual Residence Time (days)	11
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	18.37
Contributing Area (acres)	18.370
Non-DCIA Curve Number	77.48
DCIA Percent	72.24
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	31
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	57

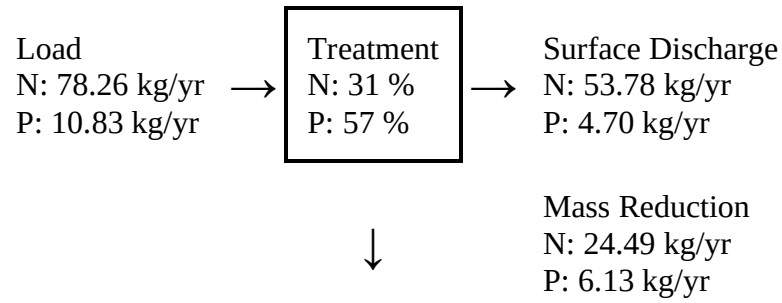
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Surface Discharge Filtration Design

Treatment Depth (in)	1.054
Hydraulic Capture Efficiency (%)	74

Media Type	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Watershed Characteristics

Catchment Area (acres)	18.37
Contributing Area (acres)	18.370
Non-DCIA Curve Number	77.48
DCIA Percent	72.24
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	25
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	60

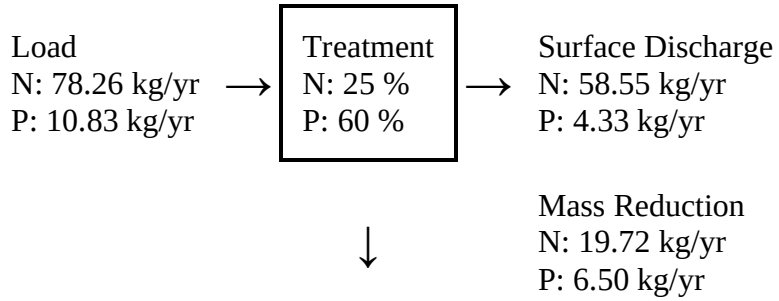
Media Mix Information

Type of Media Mix	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	12.261
TN Mass Load (kg/yr)	58.547
TN Concentration (mg/L)	1.262
TP Mass Load (kg/yr)	4.331
TP Concentration (mg/L)	0.093

Load Diagram for Surface Discharge Filtration (stand-alone)



BASIN D

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 55% P: 80%

Catchment Name	Pond D
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	32.64
Pre Rational Coefficient (0-1)	0.47
Pre Non DCIA Curve Number	86.95
Pre DCIA Percent (0-100)	42.16
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	67.905
Pre Nitrogen Loading (kg/yr)	104.659
Pre Phosphorus Loading (kg/yr)	14.485
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	32.64
Post Rational Coefficient (0-1)	0.48
Post Non DCIA Curve Number	86.99
Post DCIA Percent (0-100)	43.05
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	68.742
Post Nitrogen Loading (kg/yr)	105.949
Post Phosphorus Loading (kg/yr)	14.663

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	9.720
Permanent Pool Volume (ac-ft) for 31 days residence	5.838
Annual Residence Time (days)	52
Littoral Zone Efficiency Credit	10
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	32.64
Contributing Area (acres)	32.640
Non-DCIA Curve Number	86.99
DCIA Percent	43.05
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	46
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	72

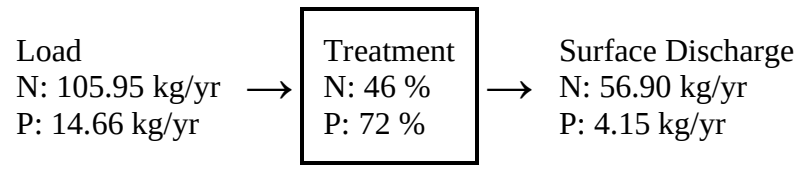
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



↓

Mass Reduction
N: 49.05 kg/yr
P: 10.52 kg/yr

Surface Discharge Filtration Design

Treatment Depth (in)	0.730
Hydraulic Capture Efficiency (%)	65
Media Type	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Watershed Characteristics

Catchment Area (acres)	32.64
Contributing Area (acres)	32.640
Non-DCIA Curve Number	86.99
DCIA Percent	43.05
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	22
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	53

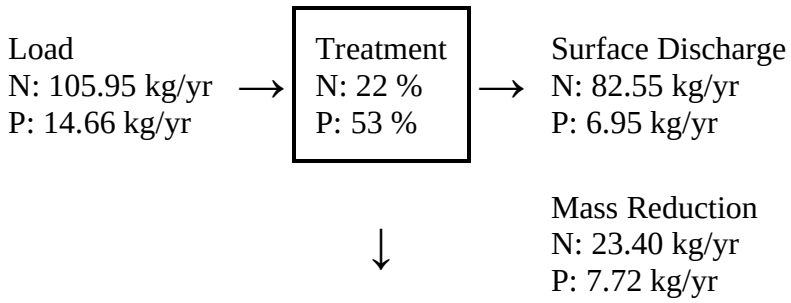
Media Mix Information

Type of Media Mix	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	14.553
TN Mass Load (kg/yr)	82.547
TN Concentration (mg/L)	1.499
TP Mass Load (kg/yr)	6.947
TP Concentration (mg/L)	0.126

Load Diagram for Surface Discharge Filtration (stand-alone)



Basins C, B3, A, 1A, and 2A are the same for Scenario 1 as Scenario 2

BMPTRAINS – SCENARIO 2

BASIN E1

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 80%

Catchment Name	Pond P1E1
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	16.30
Pre Rational Coefficient (0-1)	0.29
Pre Non DCIA Curve Number	86.91
Pre DCIA Percent (0-100)	12.52
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	20.906
Pre Nitrogen Loading (kg/yr)	32.221
Pre Phosphorus Loading (kg/yr)	4.459
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	18.02
Post Rational Coefficient (0-1)	0.55
Post Non DCIA Curve Number	71.86
Post DCIA Percent (0-100)	63.20
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	43.739
Post Nitrogen Loading (kg/yr)	67.413
Post Phosphorus Loading (kg/yr)	9.330

Wet Detention Design

Permanent Pool Volume (ac-ft)	0.670
Permanent Pool Volume (ac-ft) for 31 days residence	3.715
Annual Residence Time (days)	6

Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	18.02
Contributing Area (acres)	18.020
Non-DCIA Curve Number	71.86
DCIA Percent	63.20
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	25
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	52

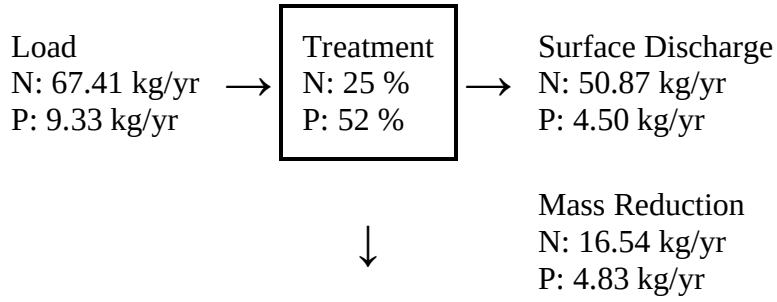
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Retention Design

Retention Depth (in)	0.100
Retention Volume (ac-ft)	0.150

Watershed Characteristics

Catchment Area (acres)	18.02
Contributing Area (acres)	18.020
Non-DCIA Curve Number	71.86
DCIA Percent	63.20
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	14
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	14

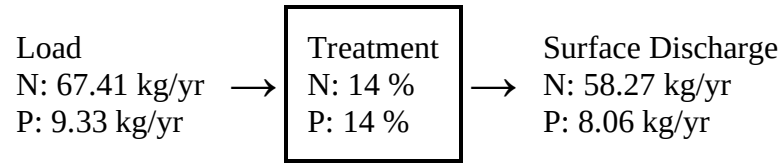
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	9.145
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	1.266
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



↓

Mass Reduction
N: 9.14 kg/yr
P: 1.27 kg/yr

Surface Discharge Filtration Design

Treatment Depth (in)	0.160
Hydraulic Capture Efficiency (%)	22
Media Type	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Watershed Characteristics

Catchment Area (acres)	18.02
Contributing Area (acres)	18.020
Non-DCIA Curve Number	71.86
DCIA Percent	63.20
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	7
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	18

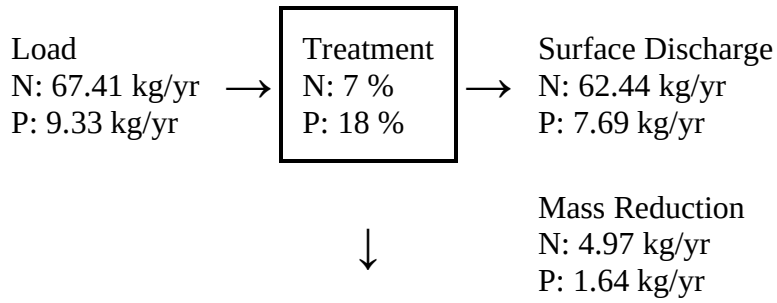
Media Mix Information

Type of Media Mix	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	3.094
TN Mass Load (kg/yr)	62.438
TN Concentration (mg/L)	5.332
TP Mass Load (kg/yr)	7.690
TP Concentration (mg/L)	0.657

Load Diagram for Surface Discharge Filtration (stand-alone)



Existing Retention (FDOT Pond)

Stage-Areas measured in CAD with LiDAR contours.

Retention Design

Retention Depth (in)	1.490
Retention Volume (ac-ft)	2.237

Watershed Characteristics

Catchment Area (acres)	18.02
Contributing Area (acres)	18.020
Non-DCIA Curve Number	71.86
DCIA Percent	63.20
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	55
Provided TN Treatment Efficiency (%)	86
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	86

Media Mix Information

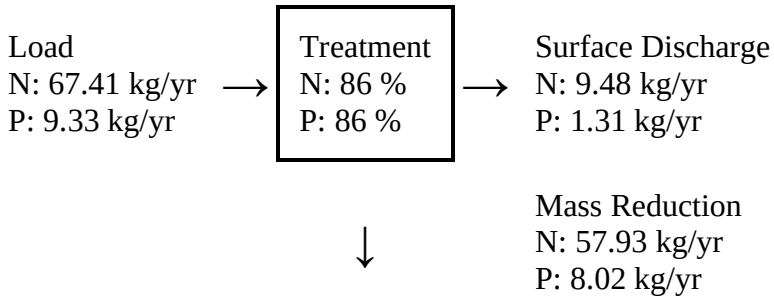
Type of Media Mix	Not Specified
Media N Reduction (%)	

Media P Reduction (%)

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	57.932
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	8.018
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



BASIN E2

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 80%

Catchment Name	Pond P1E2
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	15.19
Pre Rational Coefficient (0-1)	0.30
Pre Non DCIA Curve Number	83.26
Pre DCIA Percent (0-100)	20.41
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	19.999
Pre Nitrogen Loading (kg/yr)	30.823
Pre Phosphorus Loading (kg/yr)	4.266
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	18.37
Post Rational Coefficient (0-1)	0.63
Post Non DCIA Curve Number	77.48
Post DCIA Percent (0-100)	72.24
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	50.779
Post Nitrogen Loading (kg/yr)	78.263
Post Phosphorus Loading (kg/yr)	10.832

Wet Detention Design

Permanent Pool Volume (ac-ft)	3.780
Permanent Pool Volume (ac-ft) for 31 days residence	4.313
Annual Residence Time (days)	27
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	18.37
Contributing Area (acres)	18.370
Non-DCIA Curve Number	77.48
DCIA Percent	72.24
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	38
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	63

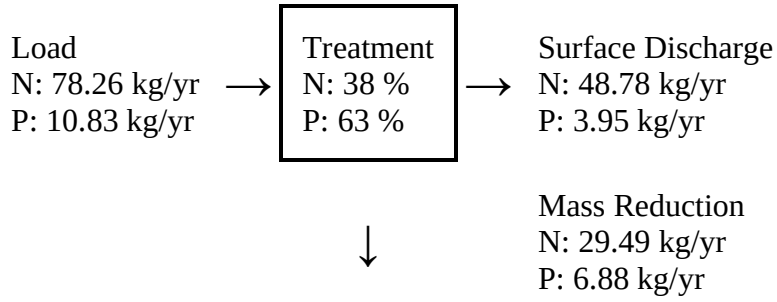
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Retention Design

Retention Depth (in)	1.115
Retention Volume (ac-ft)	1.707

Watershed Characteristics

Catchment Area (acres)	18.37
Contributing Area (acres)	18.370
Non-DCIA Curve Number	77.48
DCIA Percent	72.24
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	76
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	76

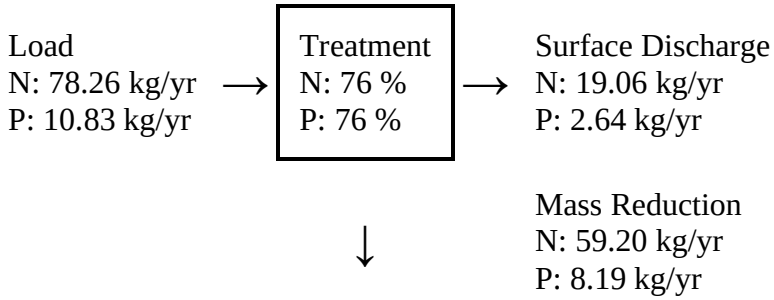
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	59.204
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	8.194
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



BASIN D

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 80%

Catchment Name	Pond D
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	32.64
Pre Rational Coefficient (0-1)	0.47
Pre Non DCIA Curve Number	86.95
Pre DCIA Percent (0-100)	42.16
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	67.905
Pre Nitrogen Loading (kg/yr)	104.659
Pre Phosphorus Loading (kg/yr)	14.485
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	32.64
Post Rational Coefficient (0-1)	0.48
Post Non DCIA Curve Number	86.99
Post DCIA Percent (0-100)	43.05
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	68.742
Post Nitrogen Loading (kg/yr)	105.949
Post Phosphorus Loading (kg/yr)	14.663

Wet Detention Design

Permanent Pool Volume (ac-ft)	28.080
Permanent Pool Volume (ac-ft) for 31 days residence	5.838
Annual Residence Time (days)	149
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	32.64
Contributing Area (acres)	32.640
Non-DCIA Curve Number	86.99
DCIA Percent	43.05
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	43
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	77

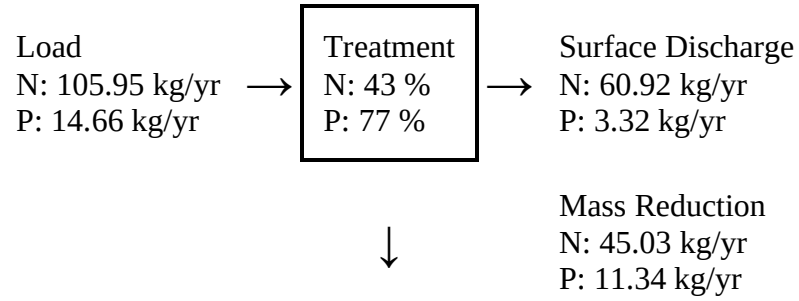
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Retention Design

Retention Depth (in)	0.643
Retention Volume (ac-ft)	1.749

Watershed Characteristics

Catchment Area (acres)	32.64
Contributing Area (acres)	32.640
Non-DCIA Curve Number	86.99
DCIA Percent	43.05
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	61
Required TP Treatment Efficiency (%)	80
Provided TP Treatment Efficiency (%)	61

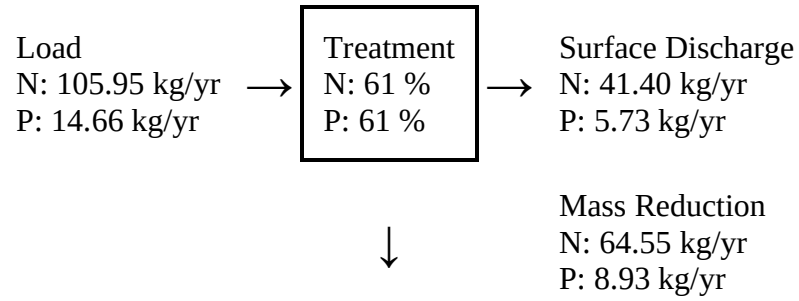
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	64.546
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	8.933
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



END OF UPPER ANCLOTE RIVER;

BEGINNING OF LOWER CYPRESS CREEK HUC 12 SUB WATERSHED

BASIN C

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 90%

Catchment Name	Pond C(1)
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	41.64
Pre Rational Coefficient (0-1)	0.47
Pre Non DCIA Curve Number	87.04
Pre DCIA Percent (0-100)	41.71
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	86.289
Pre Nitrogen Loading (kg/yr)	132.994
Pre Phosphorus Loading (kg/yr)	18.406
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	52.78
Post Rational Coefficient (0-1)	0.56
Post Non DCIA Curve Number	86.63
Post DCIA Percent (0-100)	57.35
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	130.773
Post Nitrogen Loading (kg/yr)	201.554
Post Phosphorus Loading (kg/yr)	27.895

Wet Detention Design

Permanent Pool Volume (ac-ft)	55.260
Permanent Pool Volume (ac-ft) for 31 days residence	11.107
Annual Residence Time (days)	154
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	52.78
Contributing Area (acres)	52.780
Non-DCIA Curve Number	86.63
DCIA Percent	57.35
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	43
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	78

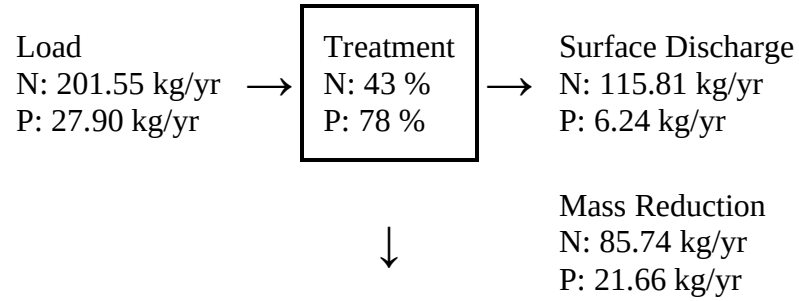
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Retention Design

Retention Depth (in)	0.416

Retention Volume (ac-ft)	1.830

Watershed Characteristics

Catchment Area (acres)	52.78
Contributing Area (acres)	52.780
Non-DCIA Curve Number	86.63
DCIA Percent	57.35
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	45
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	45

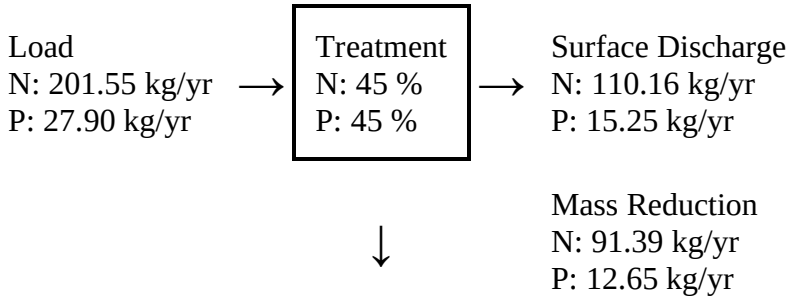
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	91.389
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	12.648
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



Surface Discharge Filtration Design

Treatment Depth (in)	0.900
Hydraulic Capture Efficiency (%)	69
Media Type	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Watershed Characteristics

Catchment Area (acres)	52.78
Contributing Area (acres)	52.780
Non-DCIA Curve Number	86.63
DCIA Percent	57.35
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	24
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	56

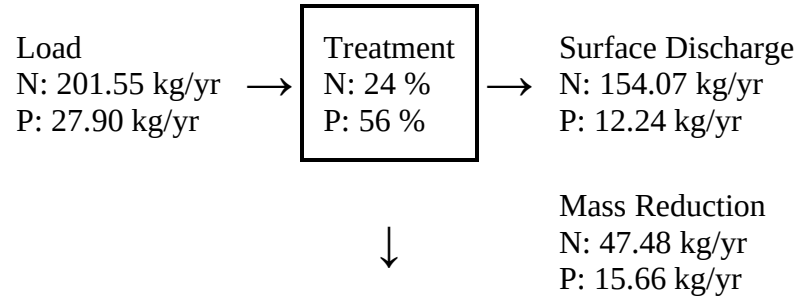
Media Mix Information

Type of Media Mix	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	29.526
TN Mass Load (kg/yr)	154.073
TN Concentration (mg/L)	1.379
TP Mass Load (kg/yr)	12.240
TP Concentration (mg/L)	0.110

Load Diagram for Surface Discharge Filtration (stand-alone)



Project: Basin C(1) – Added Retention Areas (Under and along elevation corridor).

Retention Design

Retention Depth (in)	0.348
Retention Volume (ac-ft)	1.530

Watershed Characteristics

Catchment Area (acres)	52.78
Contributing Area (acres)	52.780
Non-DCIA Curve Number	86.63
DCIA Percent	57.35
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	40
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	40

Media Mix Information

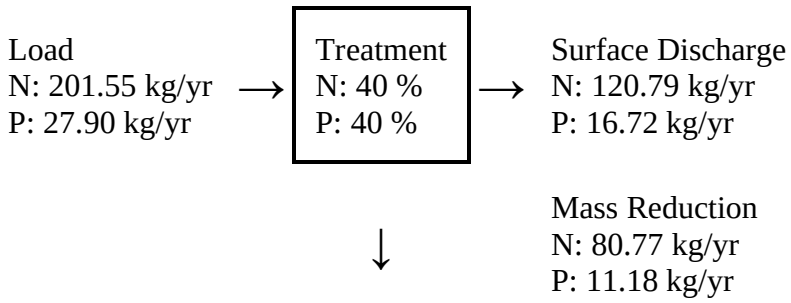
Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	80.765
TN Concentration (mg/L)	0.000

TP Mass Load (kg/yr)	11.178
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



Basin B

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 90%

Catchment Name	Pond B3
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	23.86
Pre Rational Coefficient (0-1)	0.50
Pre Non DCIA Curve Number	87.17
Pre DCIA Percent (0-100)	47.27
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	53.127
Pre Nitrogen Loading (kg/yr)	81.882
Pre Phosphorus Loading (kg/yr)	11.332
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	24.20
Post Rational Coefficient (0-1)	0.52
Post Non DCIA Curve Number	87.28
Post DCIA Percent (0-100)	49.77
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	55.603
Post Nitrogen Loading (kg/yr)	85.698
Post Phosphorus Loading (kg/yr)	11.861

Wet Detention Design

Permanent Pool Volume (ac-ft)	18.180
Permanent Pool Volume (ac-ft) for 31 days residence	4.722
Annual Residence Time (days)	119
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	24.20
Contributing Area (acres)	24.200
Non-DCIA Curve Number	87.28
DCIA Percent	49.77
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	42
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	75

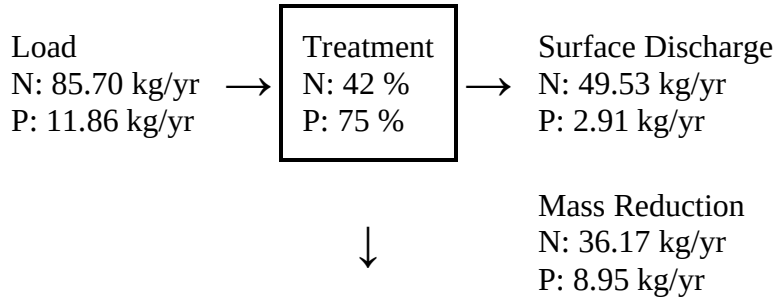
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Retention Design

Retention Depth (in)	0.456
Retention Volume (ac-ft)	0.920

Watershed Characteristics

Catchment Area (acres)	24.20
Contributing Area (acres)	24.200
Non-DCIA Curve Number	87.28
DCIA Percent	49.77
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	50
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	50

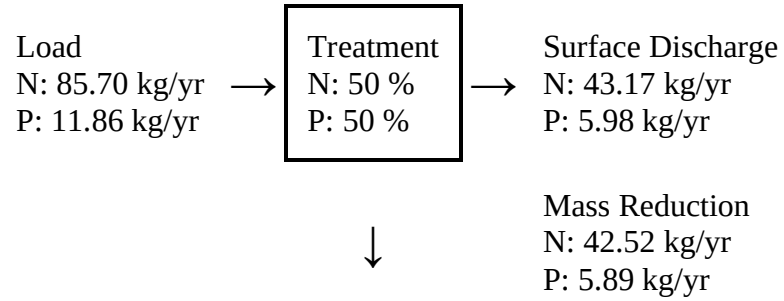
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	42.525
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	5.885
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



Surface Discharge Filtration Design

Treatment Depth (in)	0.500
Hydraulic Capture Efficiency (%)	53

Media Type	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Watershed Characteristics

Catchment Area (acres)	24.20
Contributing Area (acres)	24.200
Non-DCIA Curve Number	87.28
DCIA Percent	49.77
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	18
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	43

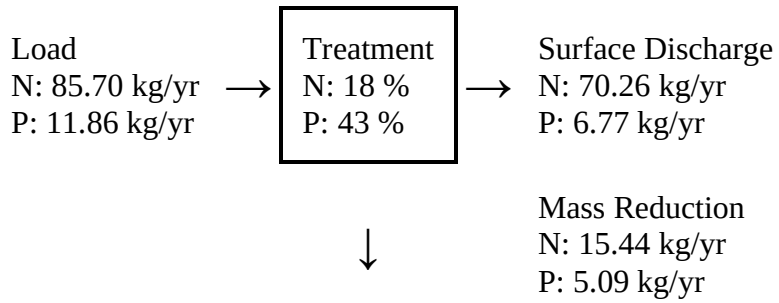
Media Mix Information

Type of Media Mix	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	9.601
TN Mass Load (kg/yr)	70.259
TN Concentration (mg/L)	1.933
TP Mass Load (kg/yr)	6.770
TP Concentration (mg/L)	0.186

Load Diagram for Surface Discharge Filtration (stand-alone)



Basin A

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 90%

Catchment Name	Pond A
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	14.64
Pre Rational Coefficient (0-1)	0.70
Pre Non DCIA Curve Number	85.87
Pre DCIA Percent (0-100)	79.82
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	45.057
Pre Nitrogen Loading (kg/yr)	69.444
Pre Phosphorus Loading (kg/yr)	9.611
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	14.64
Post Rational Coefficient (0-1)	0.69
Post Non DCIA Curve Number	86.01
Post DCIA Percent (0-100)	78.41
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	44.519
Post Nitrogen Loading (kg/yr)	68.615
Post Phosphorus Loading (kg/yr)	9.496

Project: Basin A
Date: 1/28/2026

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	6.620
Permanent Pool Volume (ac-ft) for 31 days residence	3.781
Annual Residence Time (days)	54

Littoral Zone Efficiency Credit	10
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	14.64
Contributing Area (acres)	14.640
Non-DCIA Curve Number	86.01
DCIA Percent	78.41
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	46
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	72

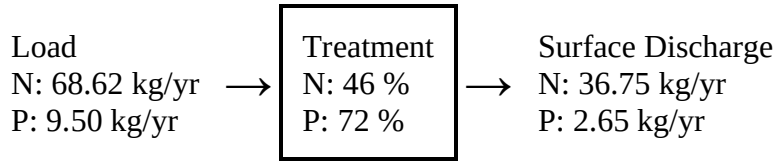
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



↓

Mass Reduction
N: 31.86 kg/yr
P: 6.85 kg/yr

Surface Discharge Filtration Design

Treatment Depth (in)	0.696
Hydraulic Capture Efficiency (%)	58
Media Type	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Watershed Characteristics

Catchment Area (acres)	14.64
Contributing Area (acres)	14.640
Non-DCIA Curve Number	86.01
DCIA Percent	78.41
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	20
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	47

Media Mix Information

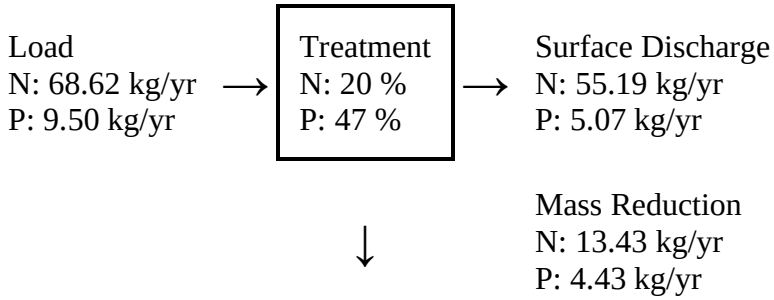
Type of Media Mix	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	8.350
TN Mass Load (kg/yr)	55.189
TN Concentration (mg/L)	1.746
TP Mass Load (kg/yr)	5.069

TP Concentration (mg/L) 0.160

Load Diagram for Surface Discharge Filtration (stand-alone)



BASIN 1A(2)

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 90%

Catchment Name	Pond 1A(2)
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	10.17
Pre Rational Coefficient (0-1)	0.63
Pre Non DCIA Curve Number	80.96
Pre DCIA Percent (0-100)	72.37
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	28.495
Pre Nitrogen Loading (kg/yr)	43.918
Pre Phosphorus Loading (kg/yr)	6.078
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	21.61
Post Rational Coefficient (0-1)	0.60
Post Non DCIA Curve Number	77.57
Post DCIA Percent (0-100)	68.11
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	56.937
Post Nitrogen Loading (kg/yr)	87.753
Post Phosphorus Loading (kg/yr)	12.145

Wet Detention Design

Permanent Pool Volume (ac-ft)	14.640
Permanent Pool Volume (ac-ft) for 31 days residence	4.836
Annual Residence Time (days)	94
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	21.61
Contributing Area (acres)	21.610
Non-DCIA Curve Number	77.57
DCIA Percent	68.11
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	42
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	73

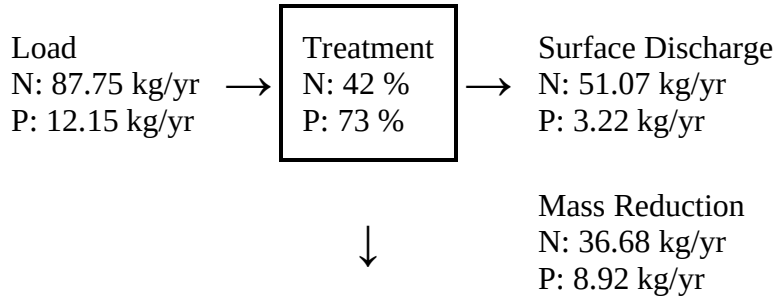
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Retention Design

Retention Depth (in)	0.500
Retention Volume (ac-ft)	0.900

Watershed Characteristics

Catchment Area (acres)	21.61
Contributing Area (acres)	21.610
Non-DCIA Curve Number	77.57
DCIA Percent	68.11
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	52
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	52

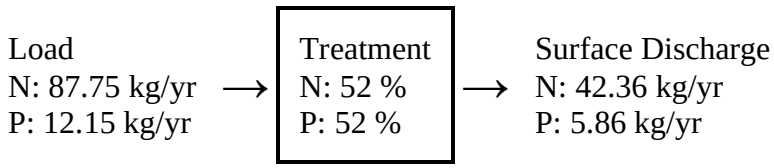
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	45.395
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	6.283
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



↓

Mass Reduction
N: 45.40 kg/yr
P: 6.28 kg/yr

Surface Discharge Filtration Design

Treatment Depth (in)	0.300
Hydraulic Capture Efficiency (%)	36
Media Type	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Watershed Characteristics

Catchment Area (acres)	21.61
Contributing Area (acres)	21.610
Non-DCIA Curve Number	77.57
DCIA Percent	68.11
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	12
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	29

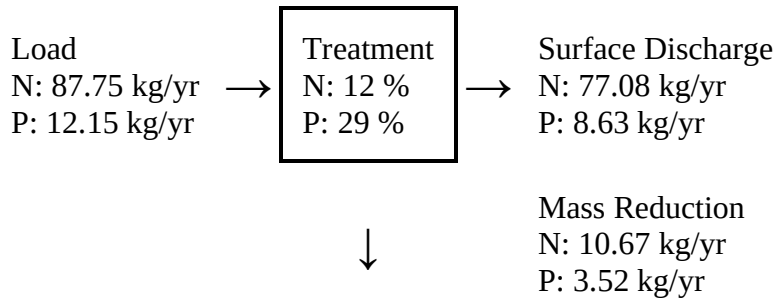
Media Mix Information

Type of Media Mix	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	6.635
TN Mass Load (kg/yr)	77.083
TN Concentration (mg/L)	3.069
TP Mass Load (kg/yr)	8.627
TP Concentration (mg/L)	0.343

Load Diagram for Surface Discharge Filtration (stand-alone)



Existing FDOT Pond 1A

Wet Detention with Littoral Shelf Design

Permanent Pool Volume (ac-ft)	6.670
Permanent Pool Volume (ac-ft) for 31 days residence	4.836
Annual Residence Time (days)	43
Littoral Zone Efficiency Credit	10
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	21.61
Contributing Area (acres)	21.610
Non-DCIA Curve Number	77.57
DCIA Percent	68.11
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	46
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	70

Media Mix Information

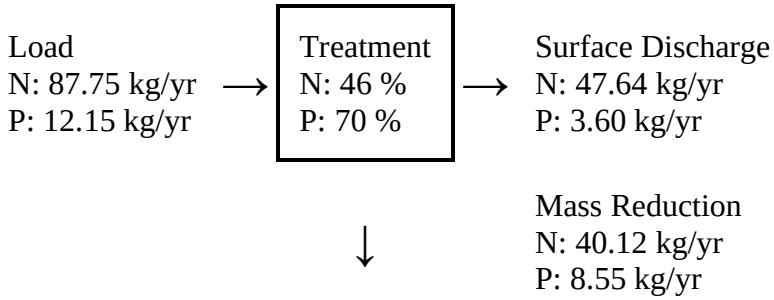
Type of Media Mix	Not Specified
Media N Reduction (%)	

Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention with Littoral Shelf (stand-alone)



Surface Discharge Filtration Design – TREATMENT VOLUME OF EXISTING POND 1A

Treatment Depth (in)	0.327
Hydraulic Capture Efficiency (%)	38
Media Type	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Watershed Characteristics

Catchment Area (acres)	21.61
Contributing Area (acres)	21.610
Non-DCIA Curve Number	77.57
DCIA Percent	68.11
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	13
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	31

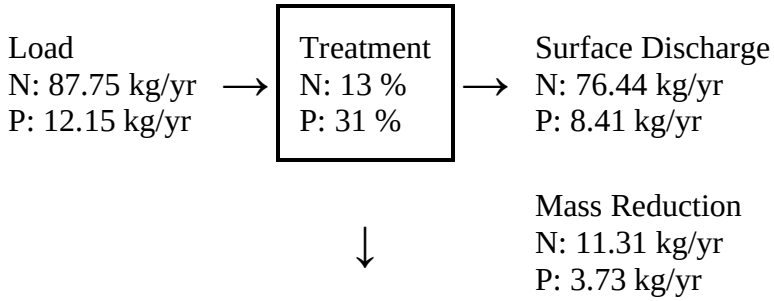
Media Mix Information

Type of Media Mix	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	7.035
TN Mass Load (kg/yr)	76.440
TN Concentration (mg/L)	2.871
TP Mass Load (kg/yr)	8.415
TP Concentration (mg/L)	0.316

Load Diagram for Surface Discharge Filtration (stand-alone)



BASIN 2A

Catchment Information

Analysis: Specified Removal Efficiency Required Removal N: 80% P: 90%

Catchment Name	Pond 2A(1)
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall (in)	53.00
Pre-Condition Landuse Information	
Pre-Condition Landuse	User Defined Values
Pre Condition Area (acres)	11.67
Pre Rational Coefficient (0-1)	0.62
Pre Non DCIA Curve Number	76.46
Pre DCIA Percent (0-100)	71.68
Pre Nitrogen EMC (mg/l)	1.250
Pre Phosphorus EMC (mg/l)	0.173
Pre Runoff Volume (ac-ft/yr)	31.952
Pre Nitrogen Loading (kg/yr)	49.246
Pre Phosphorus Loading (kg/yr)	6.816
Post-Condition Landuse Information	
Post-Condition Landuse	User Defined Values
Post Condition Area (acres)	14.03
Post Rational Coefficient (0-1)	0.66
Post Non DCIA Curve Number	79.09
Post DCIA Percent (0-100)	76.47
Post Nitrogen EMC (mg/l)	1.250
Post Phosphorus EMC (mg/l)	0.173
Post Runoff Volume (ac-ft/yr)	40.806
Post Nitrogen Loading (kg/yr)	62.892
Post Phosphorus Loading (kg/yr)	8.704

Wet Detention Design

Permanent Pool Volume (ac-ft)	9.600
Permanent Pool Volume (ac-ft) for 31 days residence	3.466
Annual Residence Time (days)	86
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	14.03
Contributing Area (acres)	14.030
Non-DCIA Curve Number	79.09
DCIA Percent	76.47
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	42
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	73

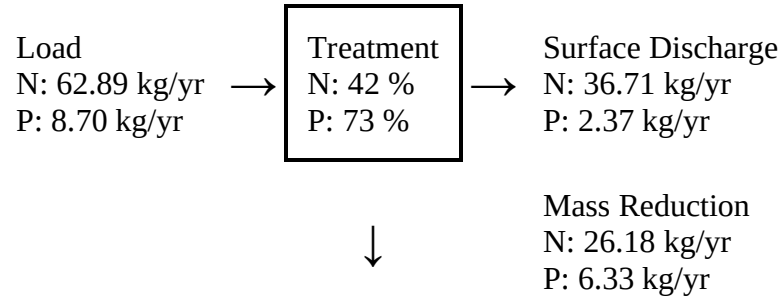
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Surface Discharge Filtration Design

Treatment Depth (in)	0.440
Hydraulic Capture Efficiency (%)	44
Media Type	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Watershed Characteristics

Catchment Area (acres)	14.03
Contributing Area (acres)	14.030
Non-DCIA Curve Number	79.09
DCIA Percent	76.47
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	15
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	36

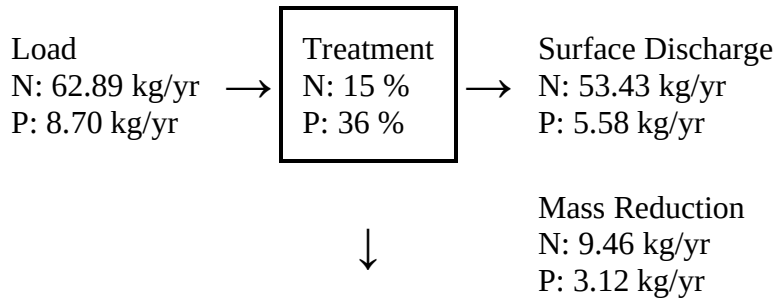
Media Mix Information

Type of Media Mix	User Defined
Media N Reduction (%)	34
Media P Reduction (%)	81

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	5.883
TN Mass Load (kg/yr)	53.431
TN Concentration (mg/L)	2.399
TP Mass Load (kg/yr)	5.585
TP Concentration (mg/L)	0.251

Load Diagram for Surface Discharge Filtration (stand-alone)



Retention Design

Retention Depth (in)	1.240
Retention Volume (ac-ft)	1.450

Watershed Characteristics

Catchment Area (acres)	14.03
Contributing Area (acres)	14.030
Non-DCIA Curve Number	79.09
DCIA Percent	76.47
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	80
Provided TN Treatment Efficiency (%)	78
Required TP Treatment Efficiency (%)	90
Provided TP Treatment Efficiency (%)	78

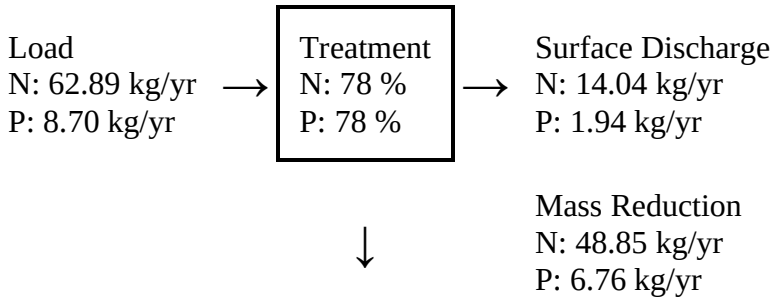
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	48.853
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	6.761
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



APPENDIX C

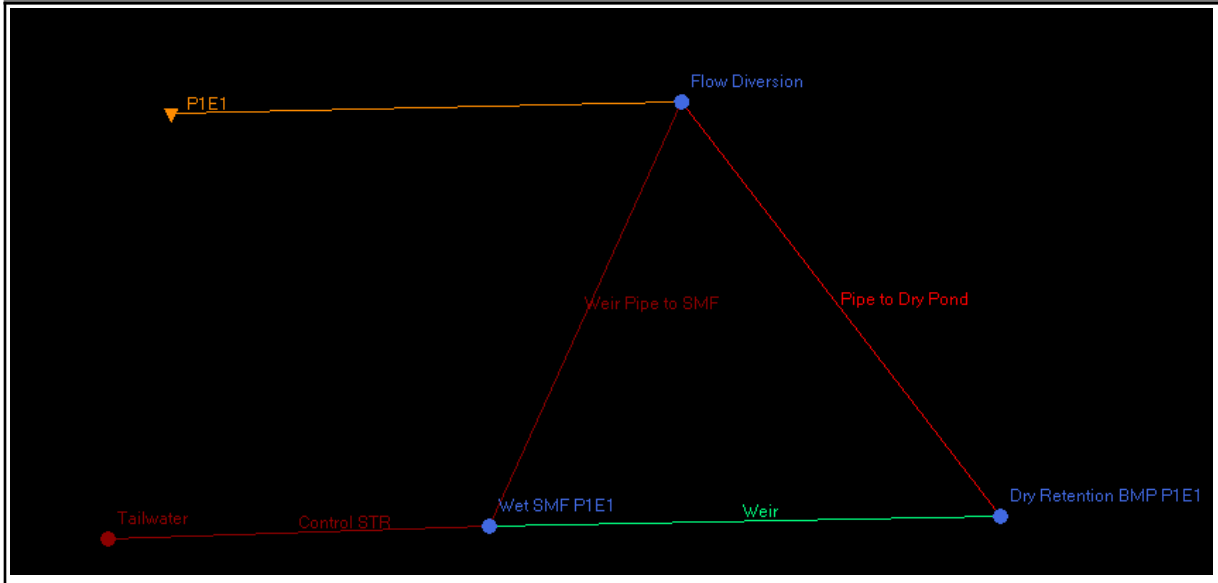
ICPR Reports

ICPR Results Hydraulic Evaluation Comparison Matrix										
Pond ID	Wet Pond Design Peak Stage	Dry BMP Design Peak Stage	Post DHW in Original PSR	Inside Berm Elevation[1]	Retention Weir Elevation	Flow Diversion Structure HGL	LEOP	Pre Discharge (cfs) from PSR[2]	Post Discharge (cfs)	Notes
Pond P1E1	65.51	65.51	65.24	66.5	65.0	66.54	69'	-	79.33	Inside berm to be raised from 66.24' to 66.50' to meet 1' freeboard, outside berm to remain unchanged.
Pond P1E2	67.58	68.31	67.50	70.0	68.0	68.77	69'	-	63.34	
Pond D	70.69	71.05	71.26	73.0	71.0	72.34	73'	-	136.00	
Pond B3	70.16	70.43	70.03	71.5	70.4	71.51	72'	63.04	96.48	
C (1)	70.27	70.29	71.27	72.27	69.8	72.24	73'	-	257.96	
1A(2)	70.9	70.61	70.87	71.89	70.5	72.2	73'	10.89	51.29	Inside berm to be raised from 71.87' to 71.89' to meet 1' freeboard, outside berm to remain unchanged.
2A(1)	68.47	69.04	68.63	70.34	69.0	69.69	72'	-	57.62	

1. Red values indicate modifications to inside berm elevation to meet 1' freeboard.

2. The original PSR provided basin discharge (ac-ft), but not discharge (cfs) from the ponds. Further analysis is needed to meet the SWFWMD pre-post discharge (cfs) requirements.

Background Image: Proposed



Simple Basin: P1E1

Scenario:	Proposed
Node:	Flow Diversion
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	18.0200 ac
Curve Number:	71.9
% Impervious:	63.20
% DCIA:	63.20
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin Runoff Summary [Proposed]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
P1E1	25yr-24hr	1.30	1.5167	0.16	0.09	18.0200	99.3	63.20	63.20

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP P1E1	25yr-24hr	65.24	64.73	0.0010	1.27	0.00	8285
Flow Diversion	25yr-24hr	66.24	64.95	0.0010	1.27	1.27	100
Tailwater	25yr-24hr	0.00	63.00	0.0000	0.00	0.00	0
Wet SMF P1E1	25yr-24hr	67.00	63.20	0.0000	0.00	0.00	5663

Node: Dry Retention BMP P1E1

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 64.20 ft
Warning Stage: 65.24 ft

Stage [ft]	Area [ac]	Area [ft2]
64.20	0.1700	7405
65.00	0.2000	8712

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP P1E1	25yr-24hr	65.24	64.73	0.0010	1.27	0.00	8285

Node: Flow Diversion

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 63.20 ft
Warning Stage: 66.24 ft

Stage [ft]	Area [ac]	Area [ft2]
63.20	0.0010	44
68.00	0.0020	87

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Flow Diversion	25yr-24hr	66.24	64.95	0.0010	1.27	1.27	100

Node: Tailwater

Scenario: Proposed
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 63.00 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	63.00
0	0	0	24.0000	63.00

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Tailwater	25yr-24hr	0.00	63.00	0.0000	0.00	0.00	0

Node: Wet SMF P1E1

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 63.20 ft
Warning Stage: 67.00 ft

Stage [ft]	Area [ac]	Area [ft2]
63.20	0.1300	5663
64.20	0.1500	6534

Stage [ft]	Area [ac]	Area [ft2]
65.20	0.1860	8102
66.20	0.4849	21122
67.20	0.6197	26994

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Wet SMF P1E1	25yr-24hr	67.00	63.20	0.0000	0.00	0.00	5663

Drop Structure Link: Control STR		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	57.50 ft	Invert:	57.00 ft
From Node:	Wet SMF P1E1	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Tailwater	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	3.50 ft	Max Depth:	3.50 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	100.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	65.00 ft	Ref Node:	
Control Elevation:	65.00 ft	Discharge Coefficients	
Max Depth:	8.17 ft	Weir Default:	3.200
Max Width:	14.17 ft	Weir Table:	
Fillet:	0.00 ft		

Orifice Default: 0.600
Orifice Table:

Weir Comment: 2-Type D

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Control STR - Pipe	25yr-24hr	0.00	0.00	0.00	0.00	0.00	0.00
Control STR - Weir: 1	25yr-24hr	0.00	0.00	0.00	0.00	0.00	0.00

Pipe Link: Pipe to Dry Pond		Upstream		Downstream	
Scenario:	Proposed	Invert:	64.30 ft	Invert:	64.20 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Dry Retention BMP P1E1	Geometry: Circular		Geometry: Circular	
		Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	30.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.30	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Pipe to Dry Pond	25yr-24hr	1.27	0.00	0.00	2.38	3.42	2.87

Weir Link: Weir			
Scenario:	Proposed	Bottom Clip	
From Node:	Dry Retention BMP P1E1	Default:	0.00 ft
To Node:	Wet SMF P1E1	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Horizontal	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	65.00 ft	Discharge Coefficients	
Control Elevation:	65.00 ft	Weir Default:	2.800
Max Depth:	999.00 ft	Weir Table:	
Max Width:	115.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	
Comment:			

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Weir	25yr-24hr	0.00	0.00	0.00	0.00	0.00	0.00

Drop Structure Link: Weir Pipe to SMF		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	58.00 ft	Invert:	57.50 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Wet SMF P1E1	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	152.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				
Pipe Comment:					

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	

Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	65.00 ft
Control Elevation:	65.00 ft
Max Depth:	999.00 ft
Max Width:	30.00 ft
Fillet:	0.00 ft

Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Flow Diversion Weir

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Weir Pipe to SMF - Pipe	25yr-24hr	0.00	0.00	0.00	0.00	0.00	0.00
Weir Pipe to SMF - Weir: 1	25yr-24hr	0.00	0.00	0.00	0.00	0.00	0.00

Simulation: 25yr-24hr

Scenario:	Existing
Run Date/Time:	1/30/2026 11:53:45 AM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	8.81 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 25yr-24hr

Scenario: Proposed
Run Date/Time: 1/30/2026 11:54:06 AM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:

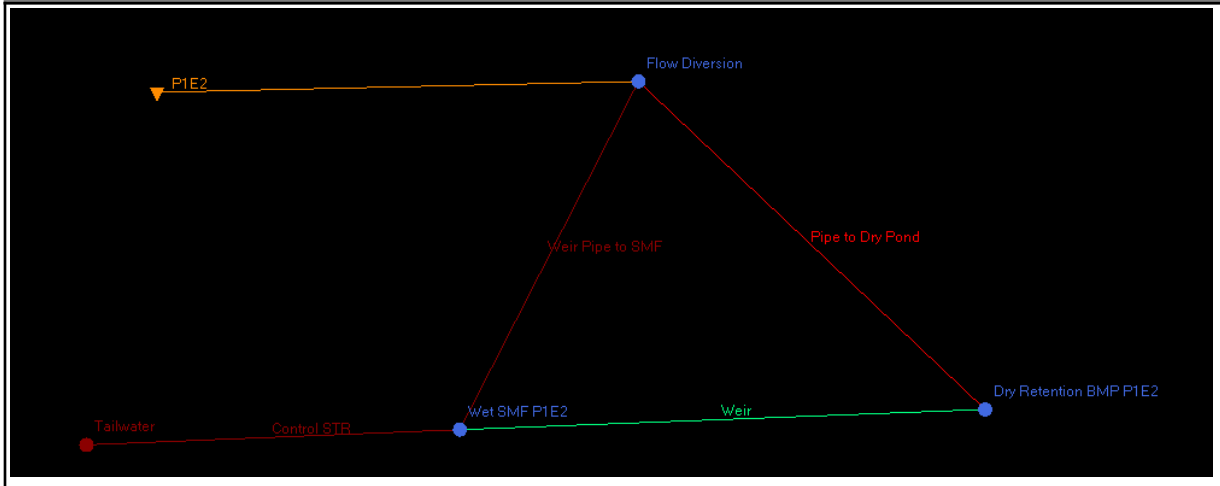
Vertical Layers Set:	
Impervious Set:	
Roughness Set:	
Crop Coef Set:	
Fillable Porosity Set:	
Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	8.81 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Background Image: Proposed



Simple Basin: P1E2

Scenario:	Proposed
Node:	Flow Diversion
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	18.3700 ac
Curve Number:	77.5
% Impervious:	72.24
% DCIA:	72.24
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin Runoff Summary [Proposed]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
P1E2	25yr-24hr	91.70	12.0500	8.09	7.29	18.3700	93.8	72.24	72.24

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP P1E2	25yr-24hr	68.00	68.31	0.0010	16.33	14.63	41383
Flow Diversion	25yr-24hr	70.00	68.77	0.0010	91.70	91.72	100
Tailwater	25yr-24hr	0.00	65.00	0.0000	63.34	0.00	0
Wet SMF P1E2	25yr-24hr	68.00	67.58	0.0010	89.29	63.34	66930

Node: Dry Retention BMP P1E2

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 66.00 ft
Warning Stage: 68.00 ft

Stage [ft]	Area [ac]	Area [ft2]
66.00	0.7600	33106
68.00	0.9500	41382

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP P1E2	25yr-24hr	68.00	68.31	0.0010	16.33	14.63	41383

Node: Flow Diversion

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 65.00 ft
Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
63.00	0.0010	44
70.00	0.0010	44

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Flow Diversion	25yr-24hr	70.00	68.77	0.0010	91.70	91.72	100

Node: Tailwater

Scenario: Proposed
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 65.00 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	65.00
0	0	0	999.0000	65.00

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Tailwater	25yr-24hr	0.00	65.00	0.0000	63.34	0.00	0

Node: Wet SMF P1E2

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 65.00 ft
Warning Stage: 68.00 ft

Stage [ft]	Area [ac]	Area [ft2]
65.00	0.4700	20473
66.00	0.5300	23087

Stage [ft]	Area [ac]	Area [ft2]
67.00	1.4500	63162
68.00	1.6000	69696
69.00	1.8800	81893
70.00	2.1500	93654

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Wet SMF P1E2	25yr-24hr	68.00	67.58	0.0010	89.29	63.34	66930

Drop Structure Link: Control STR		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	60.00 ft	Invert:	59.00 ft
From Node:	Wet SMF P1E2	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Tailwater	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	100.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	66.00 ft	Ref Node:	
Control Elevation:	66.00 ft	Discharge Coefficients	
Max Depth:	6.00 ft	Weir Default:	3.200
Max Width:	10.00 ft		

Fillet:	0.00 ft		
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 2-type E DBIs

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Pipe Link: Pipe to Dry Pond		Upstream		Downstream	
Scenario:	Proposed	Invert:	66.10 ft	Invert:	66.00 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Dry Retention BMP P1E2	Geometry: Circular		Geometry: Circular	
		Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	30.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.30	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [Proposed]

Weir Link: Weir			
Scenario:	Proposed	Bottom Clip	
From Node:	Dry Retention BMP P1E2	Default:	0.00 ft
To Node:	Wet SMF P1E2	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	68.00 ft	Discharge Coefficients	
Control Elevation:	68.00 ft	Weir Default:	2.800

Max Depth:	999.00 ft		
Max Width:	30.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [Proposed]

Drop Structure Link: Weir Pipe to SMF		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	61.00 ft	Invert:	60.00 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Wet SMF P1E2	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	100.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	68.00 ft	Op Table:	
Control Elevation:	68.00 ft	Ref Node:	
Max Depth:	999.00 ft	Discharge Coefficients	
Max Width:	35.00 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Simulation: 25yr-24hr

Scenario: Proposed
Run Date/Time: 1/7/2026 11:08:25 AM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:

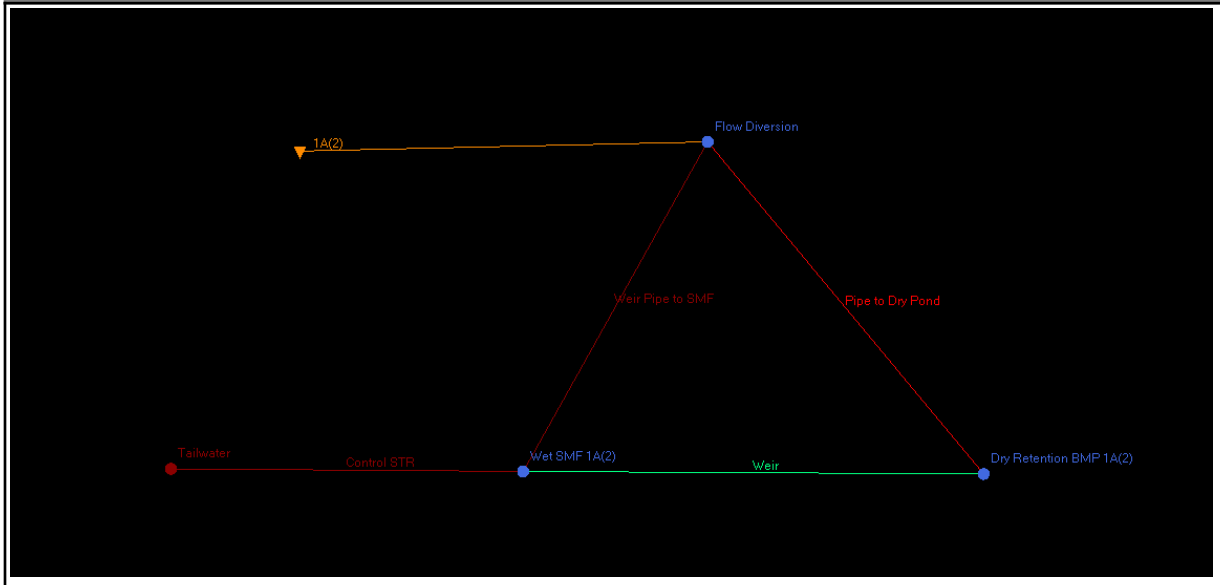
Vertical Layers Set:	
Impervious Set:	
Roughness Set:	
Crop Coef Set:	
Fillable Porosity Set:	
Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	8.81 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Background Image: Proposed



Simple Basin: 1A(2)

Scenario:	Proposed
Node:	Flow Diversion
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	21.6100 ac
Curve Number:	77.6
% Impervious:	68.11
% DCIA:	68.11
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin Runoff Summary [Proposed]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
1A(2)	25yr-24hr	107.00	12.0500	8.81	7.91	21.6100	92.8	68.11	68.11

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP 1A(2)	25yr-24hr	70.87	70.61	0.0002	5.59	0.18	94102
Flow Diversion	25yr-24hr	72.00	72.20	0.0010	107.00	106.96	100
Tailwater	25yr-24hr	69.08	69.08	0.0000	51.29	0.00	0
Wet SMF 1A(2)	25yr-24hr	70.87	70.90	-0.0010	101.37	51.30	172835

Node: Dry Retention BMP 1A(2)

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 70.08 ft
Warning Stage: 70.87 ft

Stage [ft]	Area [ac]	Area [ft2]
70.08	2.1300	92783
70.50	2.1600	94090

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP 1A(2)	25yr-24hr	70.87	70.61	0.0002	5.59	0.18	94102

Node: Flow Diversion

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 69.08 ft
Warning Stage: 72.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.08	0.0010	44
72.00	0.0020	87

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Flow Diversion	25yr-24hr	72.00	72.20	0.0010	107.00	106.96	100

Node: Tailwater

Scenario: Proposed
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 69.08 ft
Warning Stage: 69.08 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	999.0000	69.08
0	0	0	0.0000	69.08

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Tailwater	25yr-24hr	69.08	69.08	0.0000	51.29	0.00	0

Node: Wet SMF 1A(2)

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 69.08 ft
Warning Stage: 70.87 ft

Stage [ft]	Area [ac]	Area [ft2]
69.08	1.5100	65776
70.08	1.6200	70567

Stage [ft]	Area [ac]	Area [ft2]
70.50	1.6600	72310
70.50	3.8200	166399
70.87	3.9600	172498
71.87	4.2150	183605

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Wet SMF 1A(2)	25yr-24hr	70.87	70.90	-0.0010	101.37	51.30	172835

Drop Structure Link: Control STR		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	65.00 ft	Invert:	64.00 ft
From Node:	Wet SMF 1A(2)	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Tailwater	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	3.50 ft	Max Depth:	3.50 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	100.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	3	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	69.43 ft	Ref Node:	
Control Elevation:	69.43 ft	Discharge Coefficients	
Max Depth:	2.00 ft	Weir Default:	3.200
Max Width:	3.08 ft		

Fillet: 0.00 ft

Weir Table:
Orifice Default: 0.600
Orifice Table:

Weir Comment: 3-type C

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Control STR - Pipe	25yr-24hr	51.29	0.00	-0.06	0.00	0.00	0.00
Control STR - Weir: 1	25yr-24hr	51.30	0.00	-0.04	3.77	3.77	3.77

Pipe Link: Pipe to Dry Pond		Upstream		Downstream	
Scenario:	Proposed	Invert:	70.18 ft	Invert:	70.08 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Dry Retention BMP 1A(2)	Geometry: Circular		Geometry: Circular	
		Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	25.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.30	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Pipe to Dry Pond	25yr-24hr	5.59	-0.18	-0.09	7.11	7.33	7.22

Weir Link: Weir			
Scenario:	Proposed	Bottom Clip	
From Node:	Dry Retention BMP 1A(2)	Default:	0.00 ft
To Node:	Wet SMF 1A(2)	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	71.00 ft	Discharge Coefficients	
Control Elevation:	71.00 ft	Weir Default:	2.800
Max Depth:	999.00 ft	Weir Table:	
Max Width:	350.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	
Comment:			

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Weir	25yr-24hr	0.00	0.00	0.00	0.00	0.00	0.00

Drop Structure Link: Weir Pipe to SMF		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	62.00 ft	Invert:	61.00 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Wet SMF 1A(2)	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	130.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				
Pipe Comment:					

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	

Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	70.50 ft
Control Elevation:	70.50 ft
Max Depth:	999.00 ft
Max Width:	35.00 ft
Fillet:	0.00 ft

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Weir Pipe to SMF - Pipe	25yr-24hr	101.37	0.00	0.14	0.00	0.00	0.00
Weir Pipe to SMF - Weir: 1	25yr-24hr	101.38	0.00	0.23	2.47	2.47	2.47

Simulation: 25yr-24hr

Scenario:	Proposed
Run Date/Time:	1/13/2026 2:53:47 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

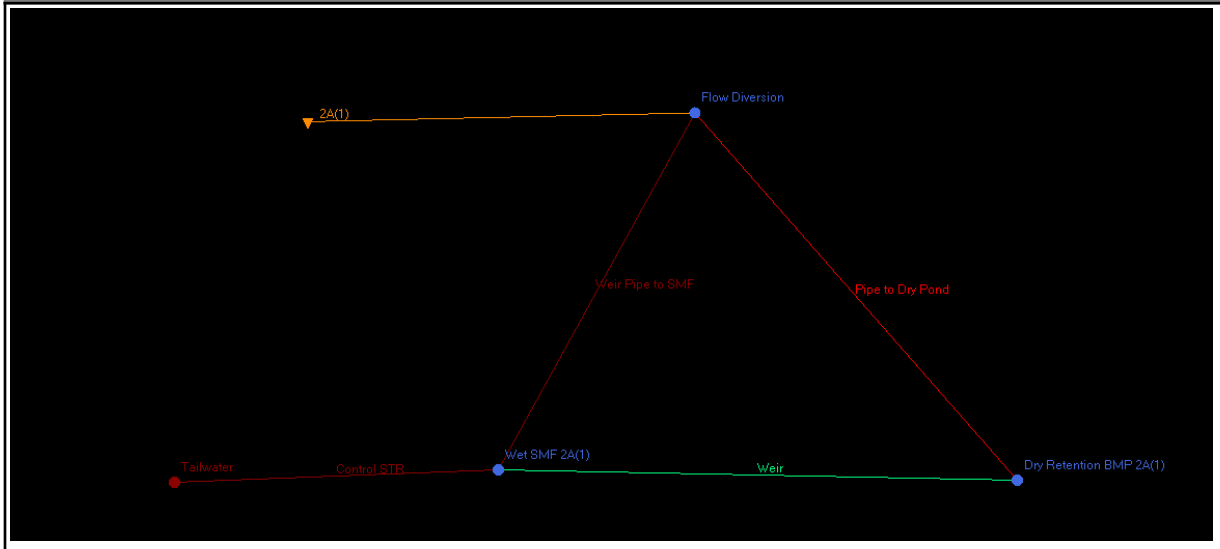
Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	8.81 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Background Image: Proposed



Simple Basin: 2A(1)

Scenario:	Proposed
Node:	Flow Diversion
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	14.0300 ac
Curve Number:	79.1
% Impervious:	76.47
% DCIA:	76.47
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin Runoff Summary [Proposed]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
2A(1)	25yr-24hr	71.04	12.0500	8.81	8.18	14.0300	95.1	76.47	76.47

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP 2A(1)	25yr-24hr	69.34	69.04	0.0010	7.52	7.39	65361
Flow Diversion	25yr-24hr	71.00	69.69	0.0011	71.04	71.12	100
Tailwater	25yr-24hr	66.96	66.96	0.0000	57.61	0.00	0
Wet SMF 2A(1)	25yr-24hr	69.34	68.47	0.0010	70.88	57.62	52983

Node: Dry Retention BMP 2A(1)

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 67.96 ft
Warning Stage: 69.34 ft

Stage [ft]	Area [ac]	Area [ft2]
67.96	1.2900	56192
69.00	1.5000	65340

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP 2A(1)	25yr-24hr	69.34	69.04	0.0010	7.52	7.39	65361

Node: Flow Diversion

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 66.96 ft
Warning Stage: 71.00 ft

Stage [ft]	Area [ac]	Area [ft2]
66.96	0.0010	44
72.00	0.0020	87

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Flow Diversion	25yr-24hr	71.00	69.69	0.0011	71.04	71.12	100

Node: Tailwater

Scenario: Proposed
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 66.96 ft
Warning Stage: 66.96 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	66.96
0	0	0	999.0000	66.96

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Tailwater	25yr-24hr	66.96	66.96	0.0000	57.61	0.00	0

Node: Wet SMF 2A(1)

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 66.96 ft
Warning Stage: 69.34 ft

Stage [ft]	Area [ac]	Area [ft2]
66.96	1.0200	44431
68.33	1.2100	52708

Stage [ft]	Area [ac]	Area [ft2]
68.99	1.2400	54014
69.00	2.7100	118048
69.34	2.7500	119790
70.34	3.0800	134165

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Wet SMF 2A(1)	25yr-24hr	69.34	68.47	0.0010	70.88	57.62	52983

Drop Structure Link: Control STR		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	63.00 ft	Invert:	62.50 ft
From Node:	Wet SMF 2A(1)	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Tailwater	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	100.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	2	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	67.45 ft	Ref Node:	
Control Elevation:	67.45 ft	Discharge Coefficients	
Max Depth:	3.00 ft	Weir Default:	3.200
Max Width:	8.75 ft		

Fillet: 0.00 ft

Weir Table:
Orifice Default: 0.600
Orifice Table:

Weir Comment: Type H

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Control STR - Pipe	25yr-24hr	57.61	0.00	0.11	0.00	0.00	0.00
Control STR - Weir: 1	25yr-24hr	57.62	0.00	0.08	3.23	3.23	3.23

Pipe Link: Pipe to Dry Pond		Upstream		Downstream	
Scenario:	Proposed	Invert:	68.20 ft	Invert:	67.96 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Dry Retention BMP 2A(1)	Geometry: Circular		Geometry: Circular	
		Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	28.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.30	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Pipe to Dry Pond	25yr-24hr	7.52	0.00	0.88	5.22	6.24	5.73

Weir Link: Weir			
Scenario:	Proposed	Bottom Clip	
From Node:	Wet SMF 2A(1)	Default:	0.00 ft
To Node:	Dry Retention BMP 2A(1)	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	69.00 ft	Discharge Coefficients	
Control Elevation:	69.00 ft	Weir Default:	2.800
Max Depth:	999.00 ft	Weir Table:	
Max Width:	300.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	
Comment:			

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Weir	25yr-24hr	0.00	-7.39	-0.05	0.00	0.00	0.00

Drop Structure Link: Weir Pipe to SMF		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	62.00 ft	Invert:	61.00 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Wet SMF 2A(1)	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.50 ft	Max Depth:	4.50 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	95.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				
Pipe Comment:					

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	

Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	69.00 ft
Control Elevation:	69.00 ft
Max Depth:	999.00 ft
Max Width:	35.00 ft
Fillet:	0.00 ft

Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Weir Pipe to SMF - Pipe	25yr-24hr	63.58	0.00	-0.16	0.00	0.00	0.00
Weir Pipe to SMF - Weir: 1	25yr-24hr	63.60	0.00	0.30	2.65	2.65	2.65

Simulation: 25yr-24hr

Scenario:	Proposed
Run Date/Time:	1/13/2026 4:11:17 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

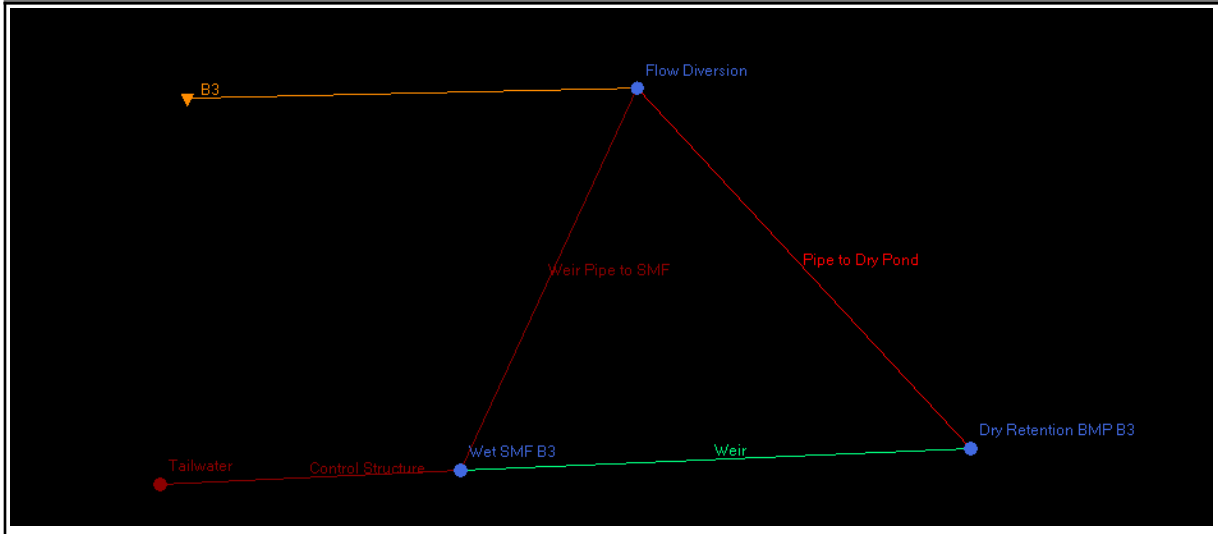
Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	8.81 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Background Image: Proposed



Simple Basin: B3

Scenario:	Proposed
Node:	Flow Diversion
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	24.2000 ac
Curve Number:	87.3
% Impervious:	49.77
% DCIA:	49.77
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin Runoff Summary [Proposed]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
B3	25yr-24hr	123.03	12.0500	8.81	8.01	24.2000	93.6	49.77	49.77

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP B3	25yr-24hr	72.50	70.43	0.0010	4.92	4.83	45314
Flow Diversion	25yr-24hr	73.00	71.51	0.0010	123.03	123.03	100
Tailwater	25yr-24hr	0.00	68.50	0.0000	96.47	0.00	0
Wet SMF B3	25yr-24hr	74.50	70.16	0.0010	122.84	96.48	91400

Node: Dry Retention BMP B3

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 69.50 ft
Warning Stage: 72.50 ft

Stage [ft]	Area [ac]	Area [ft2]
69.50	1.0000	43560
70.40	1.0400	45302

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP B3	25yr-24hr	72.50	70.43	0.0010	4.92	4.83	45314

Node: Flow Diversion

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 68.50 ft
Warning Stage: 73.00 ft

Stage [ft]	Area [ac]	Area [ft2]
68.50	0.0010	44
73.50	0.0020	87

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Flow Diversion	25yr-24hr	73.00	71.51	0.0010	123.03	123.03	100

Node: Tailwater

Scenario: Proposed
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 68.50 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	68.50
0	0	0	999.0000	68.50

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Tailwater	25yr-24hr	0.00	68.50	0.0000	96.47	0.00	0

Node: Wet SMF B3

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 68.50 ft
Warning Stage: 74.50 ft

Stage [ft]	Area [ac]	Area [ft2]
68.50	1.8200	79279
69.50	2.0100	87556
70.40	2.1300	92783

Stage [ft]	Area [ac]	Area [ft2]
70.40	3.1700	138085
71.50	3.5200	153331
72.50	4.0700	177289
73.50	4.4600	194278

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Wet SMF B3	25yr-24hr	74.50	70.16	0.0010	122.84	96.48	91400

Drop Structure Link: Control Structure		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	63.00 ft	Invert:	62.50 ft
From Node:	Wet SMF B3	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Tailwater	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.50 ft	Max Depth:	4.50 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	110.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	3	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	69.05 ft	Ref Node:	
Control Elevation:	69.05 ft	Discharge Coefficients	
Max Depth:	3.00 ft	Weir Default:	3.200
Max Width:	8.75 ft	Weir Table:	
Fillet:	0.00 ft		

Orifice Default: 0.600
Orifice Table:

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Control Structure - Pipe	25yr-24hr	96.47	0.00	0.17	0.00	0.00	0.00
Control Structure - Weir: 1	25yr-24hr	96.48	0.00	0.12	3.31	3.31	3.31

Pipe Link: Pipe to Dry Pond		Upstream		Downstream	
Scenario:	Proposed	Invert:	69.70 ft	Invert:	69.50 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Dry Retention BMP B3	Geometry: Circular		Geometry: Circular	
		Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	36.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.30	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Pipe to Dry Pond	25yr-24hr	4.92	0.00	-0.05	6.27	6.46	6.36

Weir Link: Weir			
Scenario:	Proposed	Bottom Clip	
From Node:	Dry Retention BMP B3	Default:	0.00 ft
To Node:	Wet SMF B3	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	70.40 ft	Discharge Coefficients	
Control Elevation:	70.40 ft	Weir Default:	2.800
Max Depth:	999.00 ft	Weir Table:	
Max Width:	300.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	
Comment:			

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Weir	25yr-24hr	4.83	0.00	0.03	0.00	0.00	0.00

Drop Structure Link: Weir Pipe to SMF		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	64.00 ft	Invert:	63.00 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Wet SMF B3	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	130.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.00	Op Table:		Op Table:	
Exit Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				
Pipe Comment:					

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	

Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	70.40 ft
Control Elevation:	70.40 ft
Max Depth:	999.00 ft
Max Width:	35.00 ft
Fillet:	0.00 ft

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Weir Pipe to SMF - Pipe	25yr-24hr	118.09	0.00	-0.16	0.00	0.00	0.00
Weir Pipe to SMF - Weir: 1	25yr-24hr	118.11	0.00	0.31	3.12	3.12	3.12

Simulation: 25yr-24hr

Scenario:	Proposed
Run Date/Time:	1/7/2026 1:49:15 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

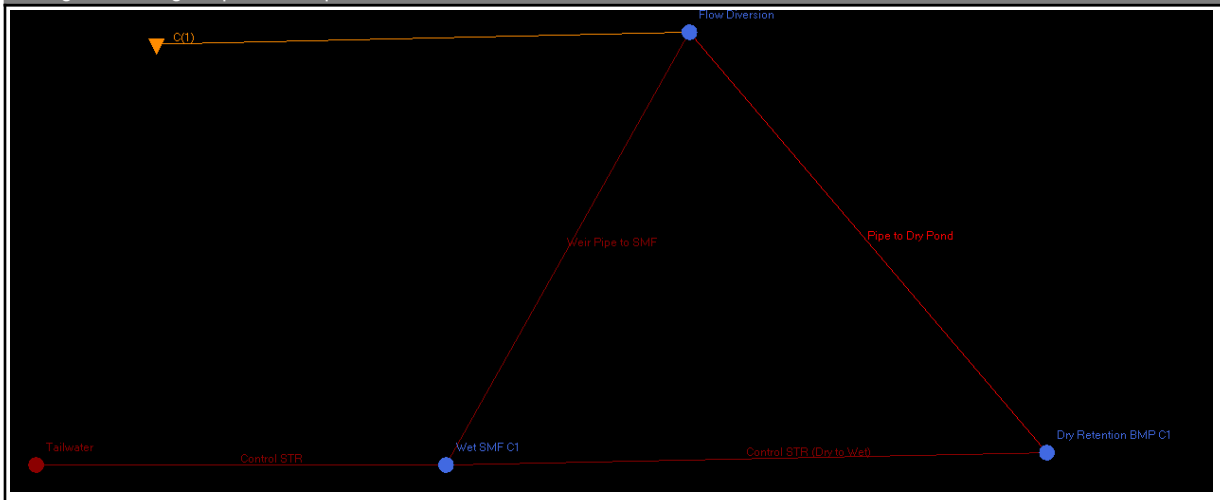
Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	8.81 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Background Image: Updated Proposed



Simple Basin: C(1)

Scenario:	Proposed
Node:	Flow Diversion
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	52.7800 ac
Curve Number:	86.6
% Impervious:	57.35
% DCIA:	57.35
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin Runoff Summary [Proposed]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
C(1)	25yr-24hr	3.77	3.0167	0.34	0.18	52.7800	98.3	57.35	57.35

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP C1	25yr-24hr	71.27	69.20	0.0002	2.13	0.00	99662
Flow Diversion	25yr-24hr	72.00	69.85	0.0010	3.72	3.78	100
Tailwater	25yr-24hr	0.00	68.00	0.0000	0.00	0.00	0
Wet SMF C1	25yr-24hr	71.27	68.05	0.0001	1.63	0.00	242066

Node: Dry Retention BMP C1

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 69.00 ft
Warning Stage: 71.27 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	2.2800	99317
69.80	2.3100	100624

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP C1	25yr-24hr	71.27	69.20	0.0002	2.13	0.00	99662

Node: Flow Diversion

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 68.00 ft
Warning Stage: 72.00 ft

Stage [ft]	Area [ac]	Area [ft2]
68.00	0.0010	44
73.00	0.0020	87

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Flow Diversion	25yr-24hr	72.00	69.85	0.0010	3.72	3.78	100

Node: Tailwater

Scenario: Proposed
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 68.00 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	68.00
0	0	0	999.0000	68.00

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Tailwater	25yr-24hr	0.00	68.00	0.0000	0.00	0.00	0

Node: Wet SMF C1

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 68.00 ft
Warning Stage: 71.27 ft

Stage [ft]	Area [ac]	Area [ft2]
68.00	5.5400	241322
68.70	5.8000	252648
71.27	7.6600	333670

Stage [ft]	Area [ac]	Area [ft2]
72.27	8.1100	353272
73.00	9.9100	431680

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Wet SMF C1	25yr-24hr	71.27	68.05	0.0001	1.63	0.00	242066

Drop Structure Link: Control STR		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	62.00 ft	Invert:	61.50 ft
From Node:	Wet SMF C1	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Tailwater	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.50 ft	Max Depth:	4.50 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	127.72 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	2	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	68.70 ft	Ref Node:	
Control Elevation:	68.70 ft	Discharge Coefficients	
Max Depth:	3.00 ft	Weir Default:	3.200
Max Width:	8.75 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 2-Type H

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Control STR - Pipe	25yr-24hr	0.00	0.00	0.00	0.00	0.00	0.00
Control STR - Weir: 1	25yr-24hr	0.00	0.00	0.00	0.00	0.00	0.00

Drop Structure Link: Control STR (Dry to Wet)		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	63.00 ft	Invert:	62.00 ft
From Node:	Dry Retention BMP C1	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Wet SMF C1	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	400.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.30	Op Table:		Op Table:	
Exit Loss Coef:	0.50	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	69.80 ft	Ref Node:	
Control Elevation:	69.80 ft	Discharge Coefficients	
Max Depth:	3.00 ft	Weir Default:	3.200
Max Width:	4.60 ft		

Fillet: 0.00 ft

Weir Table:
Orifice Default: 0.600
Orifice Table:

Weir Comment: 1 Type E

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Control STR (Dry to Wet) - Pipe	25yr-24hr	0.00	0.00	0.00	0.00	0.00	0.00
Control STR (Dry to Wet) - Weir: 1	25yr-24hr	0.00	0.00	0.00	0.00	0.00	0.00

Pipe Link: Pipe to Dry Pond		Upstream		Downstream	
Scenario:	Proposed	Invert:	69.10 ft	Invert:	69.00 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Dry Retention BMP	Geometry: Circular		Geometry: Circular	
	C1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	36.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.30	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Pipe to Dry Pond	25yr-24hr	2.13	0.00	-0.01	2.42	3.63	3.03

Drop Structure Link: Weir Pipe to SMF		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	61.00 ft	Invert:	59.00 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Wet SMF C1	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	5.50 ft	Max Depth:	5.50 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	155.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	69.80 ft	Ref Node:	
Control Elevation:	69.80 ft	Discharge Coefficients	
Max Depth:	999.00 ft	Weir Default:	3.200
Max Width:	50.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Weir Pipe to SMF - Pipe	25yr-24hr	1.63	0.00	-0.09	0.00	0.00	0.00
Weir Pipe to SMF - Weir: 1	25yr-24hr	1.65	0.00	-0.13	0.00	0.00	0.00

Simulation: 25yr-24hr

Scenario: Proposed
Run Date/Time: 1/30/2026 12:20:34 PM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:

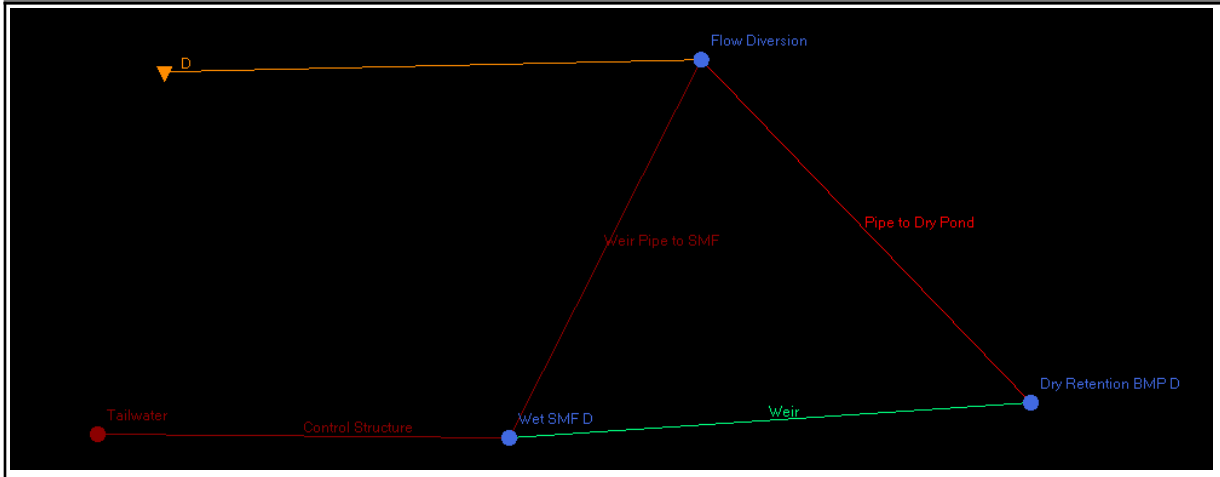
Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	8.81 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Background Image: Proposed



Simple Basin: D

Scenario:	Proposed
Node:	Flow Diversion
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	32.6400 ac
Curve Number:	87.0
% Impervious:	43.05
% DCIA:	43.05
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin Runoff Summary [Proposed]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
D	25yr-24hr	12.18	10.5000	1.99	1.27	32.6400	93.8	43.05	43.05

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP D	25yr-24hr	0.00	70.98	0.0007	2.43	0.00	79173
Flow Diversion	25yr-24hr	71.30	71.18	-0.0010	12.18	12.28	100
Tailwater	25yr-24hr	0.00	69.00	0.0000	0.00	0.00	0
Wet SMF D	25yr-24hr	74.00	69.66	0.0005	9.99	0.00	115834

Node: Dry Retention BMP D

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 70.00 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
70.00	1.6800	73181
71.00	1.8200	79279

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Dry Retention BMP D	25yr-24hr	0.00	70.98	0.0007	2.43	0.00	79173

Node: Flow Diversion

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 69.00 ft
Warning Stage: 71.30 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.0010	44
73.00	0.0010	44

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Flow Diversion	25yr-24hr	71.30	71.18	-0.0010	12.18	12.28	100

Node: Tailwater

Scenario: Proposed
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 69.00 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	69.00
0	0	0	999.0000	69.00

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Tailwater	25yr-24hr	0.00	69.00	0.0000	0.00	0.00	0

Node: Wet SMF D

Scenario: Proposed
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 69.00 ft
Warning Stage: 74.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	2.5600	111514
70.00	2.7100	118048
71.00	2.8300	123275

Stage [ft]	Area [ac]	Area [ft2]
71.00	4.7200	205603
72.00	4.9600	216058
73.00	5.5600	242194

Comment:

Node Max Conditions [Proposed]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Wet SMF D	25yr-24hr	74.00	69.66	0.0005	9.99	0.00	115834

Drop Structure Link: Control Structure		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	63.00 ft	Invert:	62.00 ft
From Node:	Wet SMF D	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Tailwater	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	5.00 ft	Max Depth:	5.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	100.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	2	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	69.75 ft	Ref Node:	
Control Elevation:	69.75 ft	Discharge Coefficients	
Max Depth:	3.00 ft	Weir Default:	3.200
Max Width:	8.75 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600

	Orifice Table:

Weir Comment: 3-Type H (4 Grate) in parallel

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Pipe Link: Pipe to Dry Pond		Upstream		Downstream	
Scenario:	Proposed	Invert:	70.30 ft	Invert:	70.00 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Dry Retention BMP D	Geometry: Circular		Geometry: Circular	
		Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	36.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.30	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [Proposed]

Weir Link: Weir			
Scenario:	Proposed	Bottom Clip	
From Node:	Dry Retention BMP D	Default:	0.00 ft
To Node:	Wet SMF D	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	71.00 ft	Discharge Coefficients	
Control Elevation:	71.00 ft	Weir Default:	2.800
Max Depth:	999.00 ft	Weir Table:	
Max Width:	185.00 ft	Orifice Default:	0.600

Fillet:	0.00 ft		
		Orifice Table:	

Comment: overflow weir

Link Min/Max Conditions [Proposed]

Drop Structure Link: Weir Pipe to SMF		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed	Invert:	65.00 ft	Invert:	64.00 ft
From Node:	Flow Diversion	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Wet SMF D	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	5.00 ft	Max Depth:	5.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	100.00 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	71.00 ft	Op Table:	
Control Elevation:	71.00 ft	Ref Node:	
Max Depth:	999.00 ft	Discharge Coefficients	
Max Width:	40.00 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [Proposed]

Simulation: 25yr-24hr

Scenario: Existing
Run Date/Time: 1/30/2026 12:30:26 PM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:

Vertical Layers Set:	
Impervious Set:	
Roughness Set:	
Crop Coef Set:	
Fillable Porosity Set:	
Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	8.81 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 25yr-24hr

Scenario:	Proposed
Run Date/Time:	1/30/2026 12:32:28 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	8.81 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2

Energy Switch (2D): Energy

Energy Switch (1D): Energy

Comment:

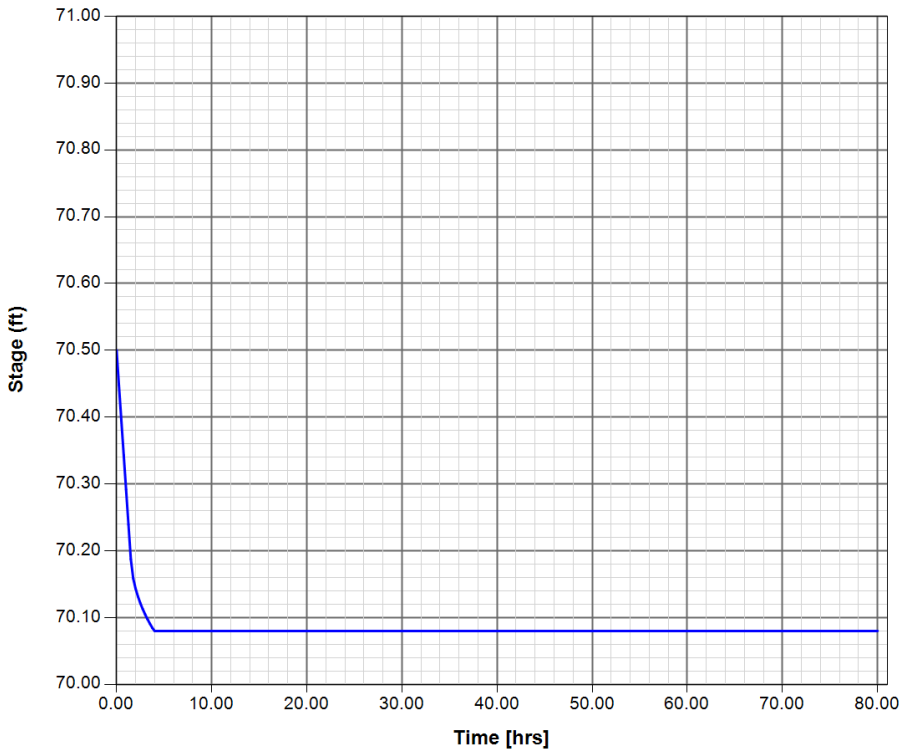
Node: 1A(2)

Scenario: 1A(2)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 70.50 ft
Warning Stage: 71.87 ft

Stage [ft]	Area [ac]	Area [ft2]
70.08	2.1300	92783
70.90	2.2000	95832

Comment:

Stage [Node: 1A(2)]



Node: 2A(1)

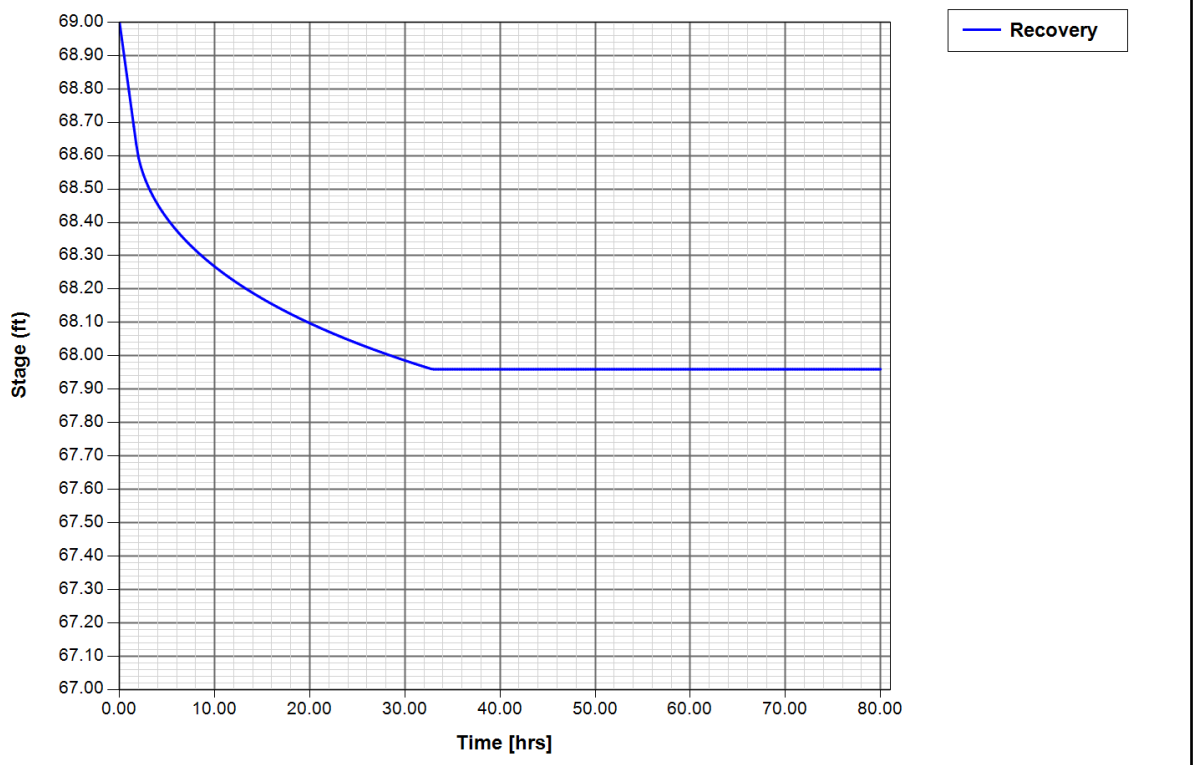
Scenario: 2A(1)
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 69.00 ft
Warning Stage: 70.34 ft

Stage [ft]	Area [ac]	Area [ft2]
67.96	1.2900	56192
69.34	1.5400	67082

Comment:

Stage [Node: 2A(1)]



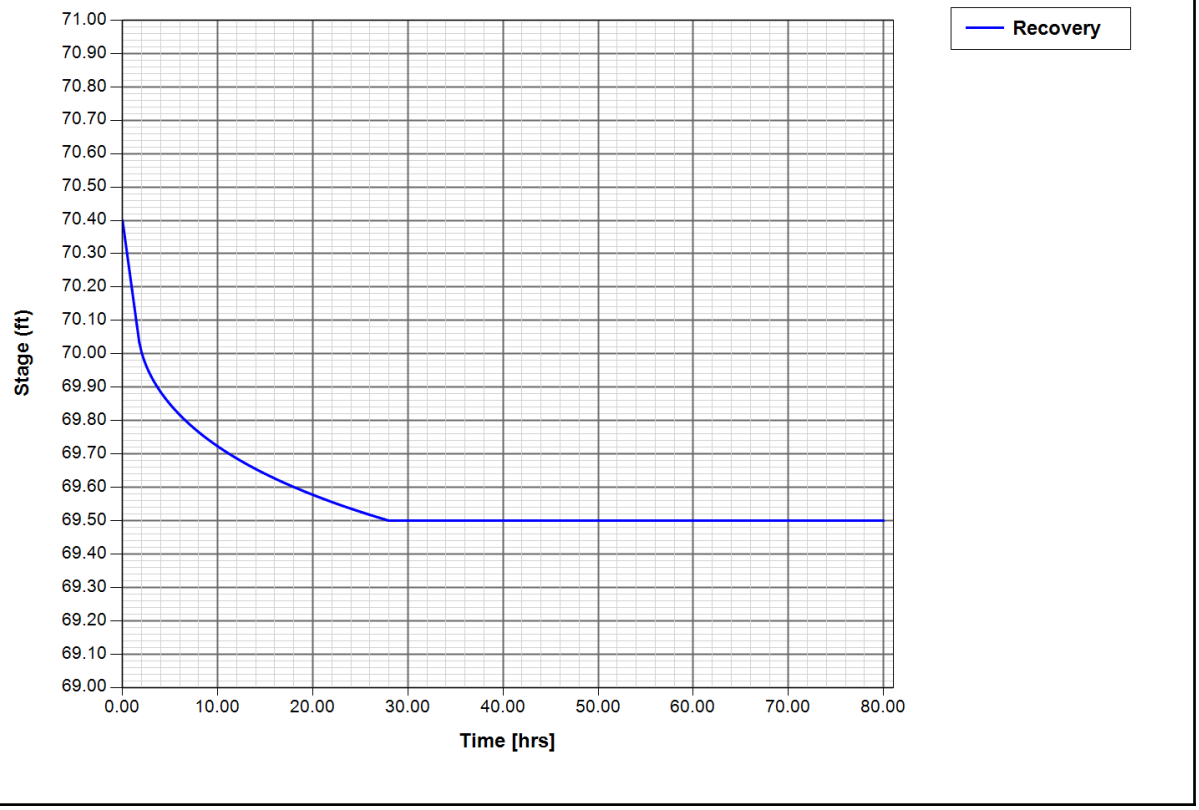
Node: B3

Scenario: B3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 70.40 ft
Warning Stage: 72.50 ft

Stage [ft]	Area [ac]	Area [ft2]
69.50	1.0000	43560
71.50	1.0800	47045

Comment:

Stage [Node: B3]



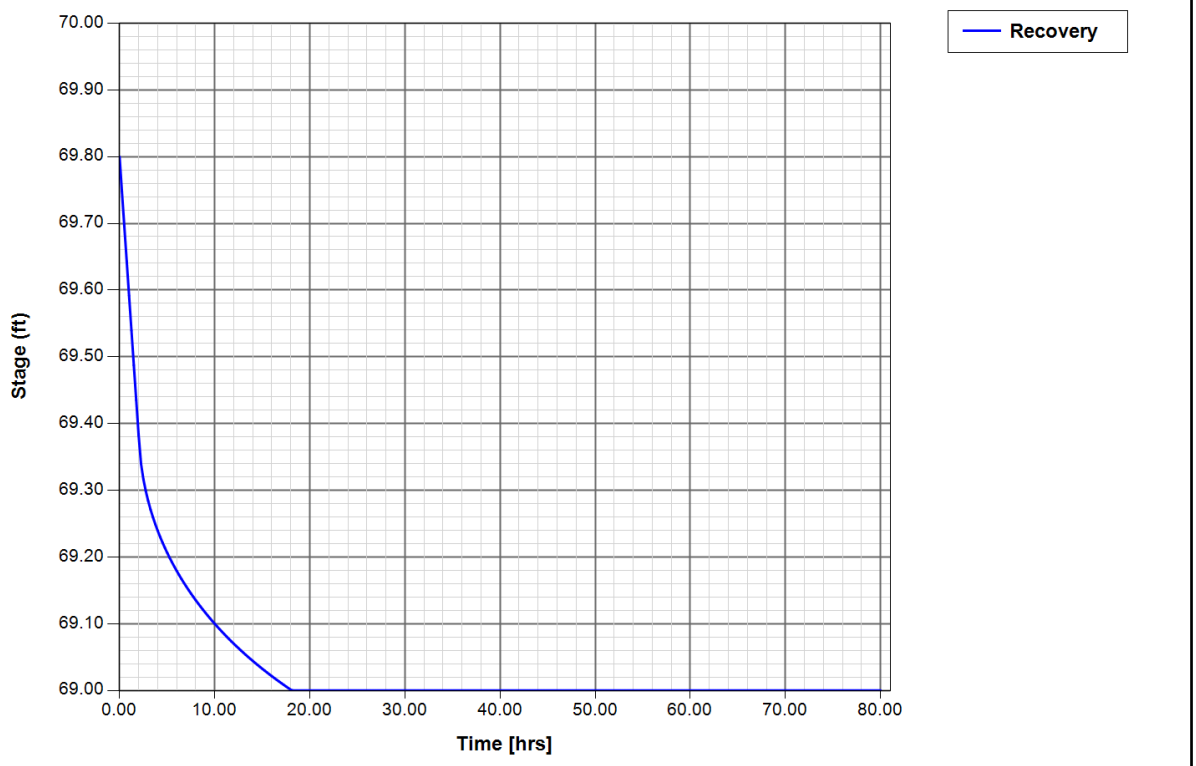
Node: C(1)

Scenario: C(1)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 69.80 ft
Warning Stage: 72.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	2.2800	99317
71.00	2.6100	113692

Comment:

Stage [Node: C(1)]



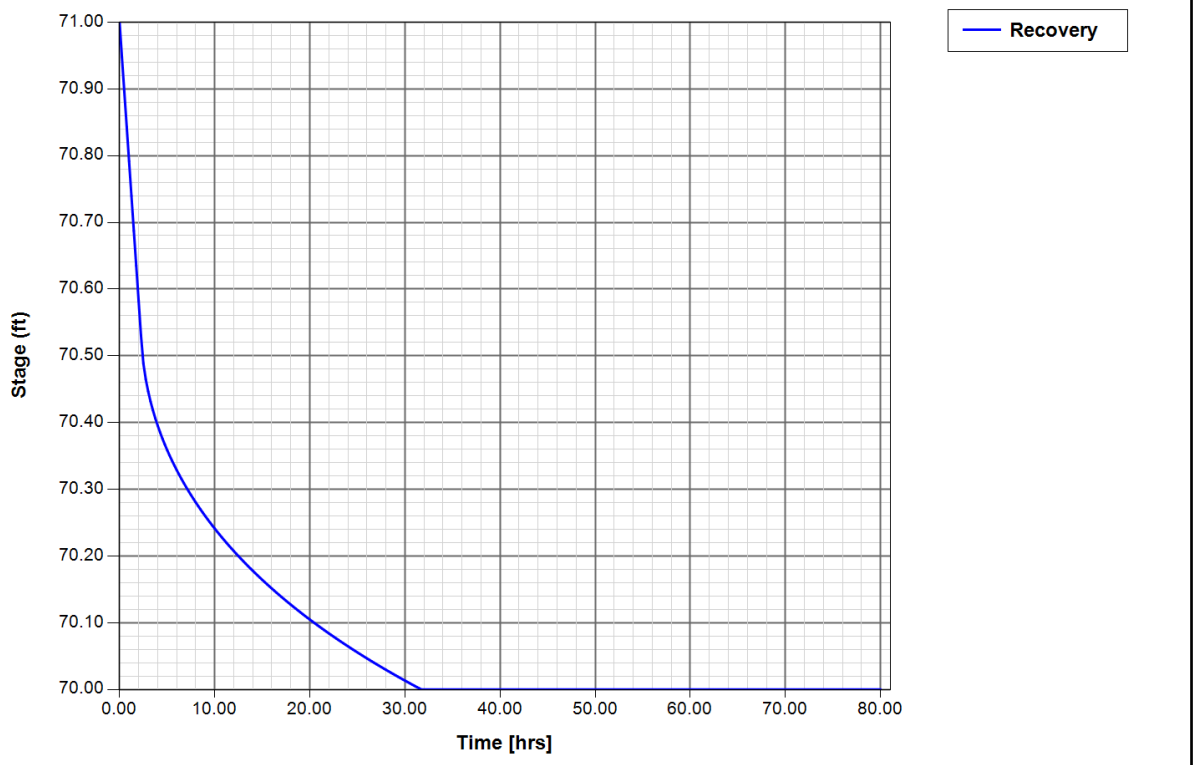
Node: D

Scenario: D
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 71.00 ft
Warning Stage: 73.00 ft

Stage [ft]	Area [ac]	Area [ft2]
70.00	1.6800	73181
71.00	1.8200	79279

Comment:

Stage [Node: D]



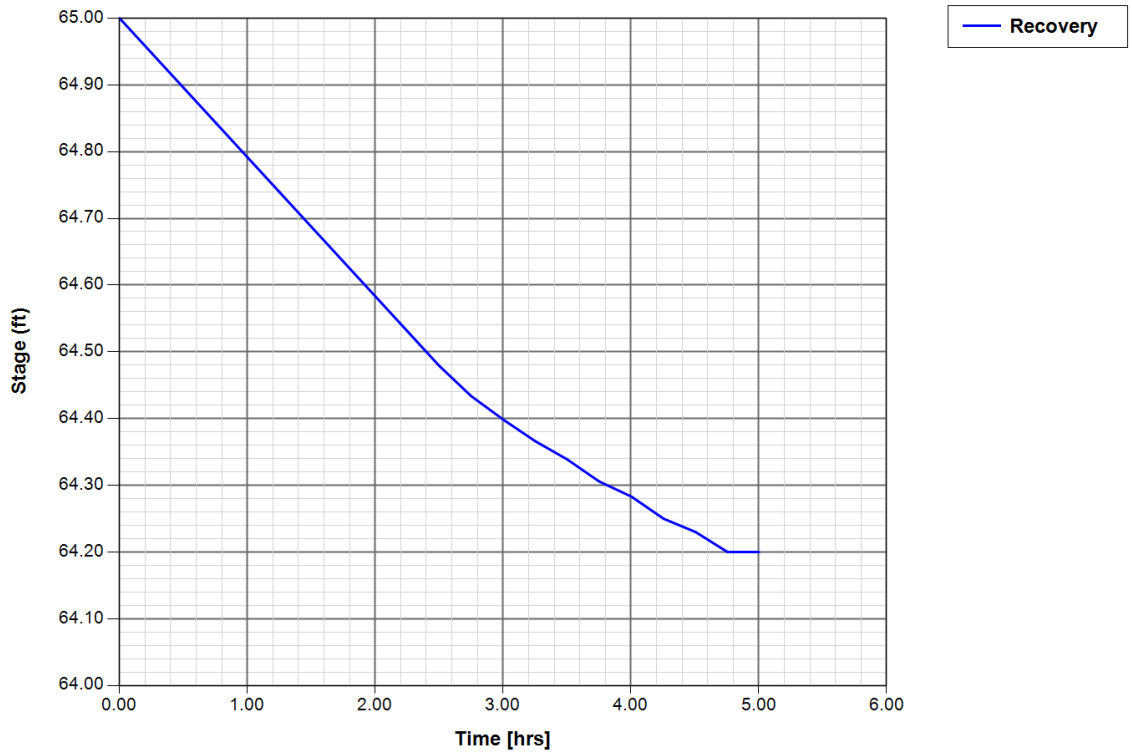
Node: P1E1

Scenario: P1E1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 65.00 ft
Warning Stage: 66.00 ft

Stage [ft]	Area [ac]	Area [ft2]
64.20	0.1700	7405
65.00	0.2000	8712
65.50	0.2200	9583

Comment:

Stage [Node: P1E1]



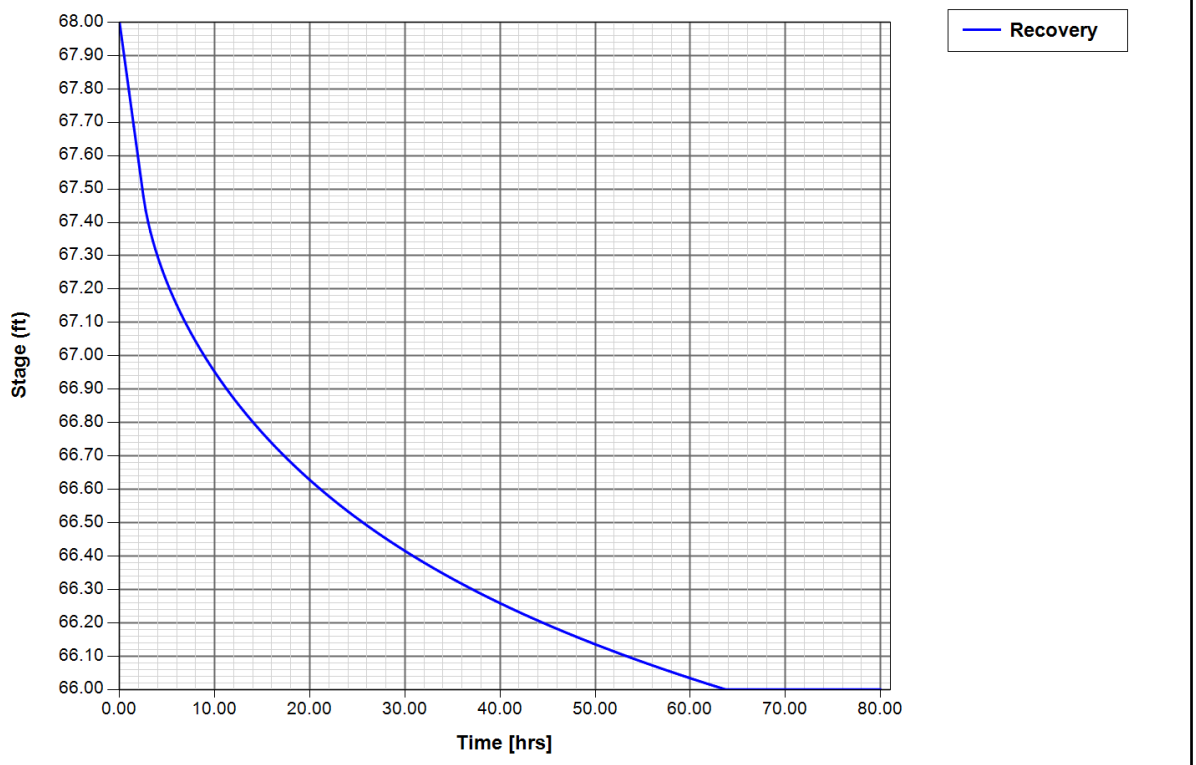
Node: P1E2

Scenario: P1E2
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 68.00 ft
Warning Stage: 69.00 ft

Stage [ft]	Area [ac]	Area [ft2]
66.00	0.7600	33106
68.00	0.9500	41382

Comment:

Stage [Node: P1E2]



Percolation Link: GWT

Scenario:	1A(2)	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	1A(2)		
To Node:	GWT	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	1533.00 ft
Flow Direction:	Both	Perimeter 2:	1844.00 ft
Aquifer Base Elevation:	-51.00 ft	Perimeter 3:	4652.00 ft
Water Table Elevation:	69.08 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	450.00 ft
Horizontal Conductivity:	10.000 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	5.000 fpd	# of Cells P2 to P3:	45
Fillable Porosity:	0.300		
Layer Thickness:	1.00 ft		

Comment:

Percolation Link: GWT

Scenario:	2A(1)	Surface Area Option:	Vary Based on Stage/Area

From Node:	2A(1)		
To Node:	GWT		Table
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	1341.00 ft
Aquifer Base Elevation:	-52.00 ft	Perimeter 2:	1718.00 ft
Water Table Elevation:	66.96 ft	Perimeter 3:	2900.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	10.000 fpd	Distance P2 to P3:	226.00 ft
Vertical Conductivity:	5.000 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.300	# of Cells P2 to P3:	45
Layer Thickness:	1.00 ft		

Comment:

Percolation Link: GWT

Scenario:	B3	Surface Area Option:	Vary Based on Stage/Area
From Node:	B3		Table
To Node:	GWT	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	907.00 ft
Flow Direction:	Both	Perimeter 2:	1221.00 ft
Aquifer Base Elevation:	-52.00 ft	Perimeter 3:	3000.00 ft
Water Table Elevation:	68.50 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	340.00 ft
Horizontal Conductivity:	10.000 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	5.000 fpd	# of Cells P2 to P3:	45
Fillable Porosity:	0.300		
Layer Thickness:	1.00 ft		

Comment:

Percolation Link: GWT

Scenario:	C(1)	Surface Area Option:	Vary Based on Stage/Area
From Node:	C(1)		Table
To Node:	GWT	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	1764.00 ft
Flow Direction:	Both	Perimeter 2:	2039.00 ft
Aquifer Base Elevation:	-52.00 ft	Perimeter 3:	4771.00 ft
Water Table Elevation:	68.00 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	450.00 ft
Horizontal Conductivity:	10.000 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	5.000 fpd	# of Cells P2 to P3:	45
Fillable Porosity:	0.400		
Layer Thickness:	1.00 ft		

Comment:

Percolation Link: GWT

Scenario:	D	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	D		
To Node:	GWT	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	1125.00 ft
Flow Direction:	Both	Perimeter 2:	1439.00 ft
Aquifer Base Elevation:	-51.00 ft	Perimeter 3:	2790.00 ft
Water Table Elevation:	69.00 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	217.00 ft
Horizontal Conductivity:	10.000 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	5.000 fpd	# of Cells P2 to P3:	45
Fillable Porosity:	0.450		
Layer Thickness:	1.00 ft		

Comment:

Percolation Link: GWT

Scenario:	P1E1	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	P1E1		
To Node:	GWT	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	360.00 ft
Flow Direction:	Both	Perimeter 2:	575.00 ft
Aquifer Base Elevation:	-57.00 ft	Perimeter 3:	1290.00 ft
Water Table Elevation:	63.20 ft	Distance P1 to P2:	26.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	165.00 ft
Horizontal Conductivity:	10.000 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	5.000 fpd	# of Cells P2 to P3:	45
Fillable Porosity:	0.300		
Layer Thickness:	1.00 ft		

Comment:

Percolation Link: GWT

Scenario:	P1E2	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	P1E2		
To Node:	GWT	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	874.00 ft
Flow Direction:	Both	Perimeter 2:	1300.00 ft
Aquifer Base Elevation:	-55.00 ft	Perimeter 3:	1818.00 ft
Water Table Elevation:	65.00 ft	Distance P1 to P2:	40.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	120.00 ft
Horizontal Conductivity:	10.000 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	5.000 fpd	# of Cells P2 to P3:	45
Fillable Porosity:	0.300		
Layer Thickness:	1.00 ft		

Comment:

Simulation: Recovery

Scenario: 1A(2)
Run Date/Time: 1/13/2026 5:31:43 PM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	0.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: Recovery

Scenario:	2A(1)
Run Date/Time:	1/13/2026 5:59:32 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	0.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: Recovery

Scenario: B3
Run Date/Time: 1/13/2026 6:12:36 PM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	0.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: Recovery

Scenario:	C(1)
Run Date/Time:	1/13/2026 6:20:43 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	0.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: Recovery

Scenario: D
Run Date/Time: 1/13/2026 6:27:42 PM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	0.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: Recovery

Scenario:	P1E1
Run Date/Time:	1/13/2026 6:33:44 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	0.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: Recovery

Scenario: P1E2
Run Date/Time: 1/13/2026 6:34:47 PM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	0.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

APPENDIX D

Original Pond Siting Report

POND SITING REPORT

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, Work Program Item Segment No. 419182-1 Efficient

Transportation Decision Making (ETDM) Number: 7883

November 2024

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.









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

POND SITING REPORT

November 2024

Work Program Item Segment No: 419182-1

FDOT

Professional Engineer Certificate

I hereby certify that I am a registered professional engineer in the State of Florida practicing with AECOM, Inc. a corporation, authorized to operate as an engineering business, by the State of Florida, Department of Business and Professional Regulation, Board of Professional Engineers, and that I have reviewed or approved the evaluation, findings, opinions, conclusions, or technical advice hereby reported for:

Project: US41 at SR54 PD&E Study

FPN: 419182-1-22-01

Location: Pasco County, Florida

Client: FDOT-District 7

This **Draft** Pond Siting Report includes a summary of data collection efforts and conceptual drainage analysis prepared for conceptual analysis for the US41/SR54 PD&E Study in Pasco County, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of civil engineering as applied through the design standards and criteria set forth by the federal, state, and local regulatory agencies as well as professional judgement and experience.

Name: Jennifer Flores

Signature:

P.E. Number: 84372

Date:

Address: 150 N Orange Ave
Suite 200
Orlando, FL 32801

TABLE OF CONTENTS

PAGE

EXECUTIVE SUMMARY 5

PAGE

SECTION 1 INTRODUCTION 12

SECTION 2 EXISTING DRAINAGE CONDITIONS 12

2.1 TOPOGRAPHY & HYDROLOGIC FEATURES 13
2.2 SOILS DATA & GEOTECHNICAL INVESTIGATIONS 14
2.3 ENVIRONMENTAL CHARACTERISTICS 15
2.3.1 LAND USE DATA 16
2.3.2 CULTURAL FEATURES 16
2.3.3 NATURAL RESOURCES 17
2.4 EXISTING DRAINAGE BASINS 17
2.4.1 EXISTING BASIN A 17
2.4.2 EXISTING BASIN B1 18
2.4.3 EXISTING BASIN B2 18
2.4.4 EXISTING BASIN B3 18
2.4.5 EXISTING BASIN C 18
2.4.6 EXISTING BASIN D 18
2.4.7 EXISTING BASIN 1A 19
2.4.8 EXISTING BASIN 2A 19
2.4.9 EXISTING BASIN E1 19
2.4.10 EXISTING BASIN E2 19
2.5 FLOODPLAINS/EXISTING FLOODPLAIN COMPENSATION 20
2.6 EXISTING CROSS DRAIN ADEQUACY 20

SECTION 3 DESIGN CRITERIA 22

SECTION 4 DATA COLLECTION 24

SECTION 5 PROPOSED DRAINAGE CONDITIONS 24
5.1.1 BASIN A 25
5.1.2 BASIN B 25
5.1.3 BASIN C 26
5.1.4 BASIN D 26
5.1.5 BASIN 1A 26
5.1.6 BASIN 2A 26
5.1.7 BASIN E1 26
5.1.8 BASIN E2 27

SECTION 6 PROPOSED POND SITES 27

6.1 METHODOLOGY OF POND DETERMINATION 27
6.2 STORMWATER PONDS 28
6.2.1 EXISTING POND A 28

6.2.2 EXISTING POND B 28
6.2.3 POND B1A AND POND B1B 29
6.2.4 POND B2 29
6.2.5 POND B3 29
6.2.6 EXISTING POND 1A 30
6.2.7 POND 1A(1) 30
6.2.8 POND 1A(2) 31
6.2.9 POND 1A(3) 31
6.2.10 EXISTING POND 2A 32
6.2.11 POND 2A (1) 32
6.2.12 POND 2A (2) 33
6.2.13 POND 2A (3) 33
6.2.14 EXISTING POND C 34
6.2.15 POND C(1), POND C(1)A AND POND C(1)B 34
6.2.16 POND C(2), POND C(2)A, POND C(2)B AND POND C(2)C 35
6.2.17 POND C(3) 35
6.2.18 EXISTING POND D 36
6.2.19 POND P1E1 36
6.2.20 POND P2E1 37
6.2.21 POND P3E1 38
6.2.22 POND P1E2 39
6.2.23 POND P2E2 39
6.2.24 POND P3E2 40

SECTION 7 PROPOSED FLOODPLAIN COMPENSATION SITES 40

7.1 FLOODPLAIN ZONE AE ELEV. 70.3 41
7.1.1 FPC B1 41
7.1.2 FPC B2 41
7.1.3 FPC POND B1A 41

7.2 FLOODPLAIN ZONE AE ELEV. 67.3 42
7.2.1 FPC POND C(2) 42

7.3 FLOODPLAIN ZONE AE ELEV. 69.6 42
7.3.1 FPC POND C1 AND POND C2 42
7.3.2 FPC POND C_A3 (1) & (2) 42

7.4 FLOODPLAIN ZONE AE ELEV. 70.8 43
7.4.1 FPC C A1 43
7.4.2 FPC C A2 43
7.4.3 FPC C A3 43

7.5 FLOODPLAIN ZONE AE ELEV. 69.20 43
7.5.1 FPC 1A_B1 43
7.5.2 FPC 1A_B2 44
7.5.3 FPC 1A_B3 44

7.6 FLOODPLAIN ZONE A ELEV. 69.20 44
7.6.1 FPC 1A(1)_A1 44
7.6.2 FPC 1A(1)_A2 44

7.6.3 FPC 1A(1)_A3 45

7.7 FLOODPLAIN ZONE AE ELEV. 69.60 45
7.7.1 FPC 2A_A1 45
7.7.2 FPC 2A_A2 45
7.7.3 FPC POND 2A_A3(1) & FPC POND 2A_A3(2) 46

7.8 FLOODPLAIN ZONE AE ELEV. 68.5 46
7.8.1 FPC 2A(3) 46

7.9 FLOODPLAIN ZONE AE ELEV. 66.3 46
7.9.1 FPC E1_A1 46
7.9.2 FPC E1_A2 47
7.9.3 FPC E1_A3 47

7.10 FLOODPLAIN ZONE AE ELEV. 64.8 47
7.10.1 FPC E1_B1 47
7.10.2 FPC E1_B2 48
7.10.3 FPC E1_B3 48

7.11 FLOODPLAIN ZONE AE ELEV. 66.9 48
7.11.1 FPC E2_C1 48
7.11.2 FPC E2_C2 48
7.11.3 FPC E2_C3 49

7.12 FLOODPLAIN ZONE AE ELEV. 67.20 49
7.12.1 FPC E2_D1 49
7.12.2 FPC E2_D2 49
7.12.3 FPC E2_D3 50

7.13 FLOODPLAIN ZONE AE ELEV. 67.60 50
7.13.1 FPC E2_E1 50
7.13.2 FPC E2_E2 51
7.13.3 FPC E2_E3 51

7.14 FLOODPLAIN ZONE AE ELEV. 67.30 51
7.14.1 FPC E2_F1 51
7.14.2 FPC E2_F2 52
7.14.3 FPC E2_F3 52

SECTION 8 CONTAMINATION SITES 52

SECTION 9 CONCLUSION 53

TABLES

TABLE 1 – POND ALTERNATIVES EVALUATION MATRIX 7
TABLE 1A –FPC SITE ALTERNATIVES EVALUATION MATRIX 8
TABLE 2 – SUMMARY OF EXISTING CROSS DRAINS 14
TABLE 3 – USDA NRCS SOIL SURVEY INFORMATION 14
TABLE 4 – SUMMARY OF EXISTING DRAINAGE BASINS 17

TABLE 5 – LIST OF DATA COLLECTED 24
TABLE 6 – SUMMARY OF RISK RATING FOR PREFERRED DRAINAGE SITES 52
TABLE 7 – SUMMARY OF STORMWATER MANGEMENT FACILITY RECOMMENDATIONS 53

APPENDICES

APPENDIX 1 – FIGURES
APPENDIX 2 – EXISTING DRAINAGE MAP
APPENDIX 3 – PROPOSED DRAINAGE MAP
APPENDIX 4 – PROPOSED POND AND FPC SITE ALTERNATIVES EXHIBIT
APPENDIX 5 – BASIN & POND SUMMARY TABLES
APPENDIX 6 – POND ALTERNATIVES DESIGN CALCULATIONS
APPENDIX 7 – FLOODPLAIN IMPACT EXHIBIT & SUMMARY TABLE
APPENDIX 8 – FLOODPLAIN COMPENSATION SITE EXHIBIT AND SUMMARY TABLE
APPENDIX 9 – FLOODPLAIN COMPENSATION CALCULATIONS
APPENDIX 10- EXISTING CROSS DRAINS CALCULATIONS
APPENDIX 11 – SUPPORTING DOCUMENTATION
APPENDIX 12 – EXISTING PERMITS
APPENDIX 13 – CONTAMINATION SCREENING EVALUATION REPORT

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 U.S. Highway 41/State Road 45 (US 41/SR 45) and State Road 54 (SR 54) in Pasco County, FL. Each roadway is a six-lane divided facility intersecting at-grade with a box span traffic signal. US 41 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 1.5 miles along US 41, 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 document the preliminary stormwater management plan for the project. This report identifies alternate pond locations, discusses right-of-way requirements, and documents estimated pond construction costs associated with the alternative pond sites. In addition, this report provides a recommendation for the preferred pond locations.

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 54 project corridor is generally divided into eight (8) hydrologic basins: south of the intersection includes Basins A and B; middle of the intersection includes Basin C, north of the intersection includes Basin D; east of the intersection includes Basin 1A and Basin 2A; and west of the intersection includes Basin E1 and E2. 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.

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
A	Ex. Pond A	NA	68.25	70.6	69.25 (25YR/24HR)	71.00	Wetland B
B	Ex. Pond B + B3	Sta. 2600+00 @ CL. 41, RT (Ex. Pond B) Sta. 2597+50 @ CL. 41, RT (B3)	68.50 (Ex. Pond B) 68.50 (B3)	71.50	70.03 (25YR/24HR)	73.00	Wetland D
C	Pond C(1) + Pond C(1)A + Pond C(1)B	1465+20 @CL 54 (LT)	68.14	72.27	71.27 (25YR/24HR)	72.30	Lake Floyd
D	Exist. Pond D1	2670+85 @CL 41 (LT)	69.26	73.00	71.25 (25YR/24HR)	72.71	Lake Vienna
1A	Pond 1A(2)	1490+25 @CL 54 (LT)	69.08	71.87	70.87 (25YR/24HR)	72.57	Lake Floyd
2A	Pond 2A(1)	1507+60 @CL 54 (LT)	66.96	70.34	68.63 (25YR/24HR)	69.69	Lake Toni
E1	Pond P1E1	1414+00 @CL 54 (RT)	63.20	66.24	65.24 (25YR/24HR)	68.50	South Branch Anclote River
E2	Pond P1E2	1442+00 @CL 54 (RT)	65.00	70.00	67.50 (25YR/24HR)	68.50	Lake Thomas

*Minimum gutter elevations less than outside berm elevation. Emergency overflow structure recommended during Design Phase.

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 Construction Costs*	Pond ROW Costs	Ranking
Pond B1A	X	X	N	N	-	Y	Industrial	Industrial	$595,834	$458,800	2
Pond B1B	AE	X	N	N	-	N	Transportation	Mixed Use			
Pond B2	X	X	N	N	-	N	Upland Hardwood Coniferous Mix	Mixed Use	$397,950	$851,900	3
Pond B3	X	X	N	N	Low	N	Commercial& Services	Mixed Use	$348,691	$1,500,400	1
Pond 1A(1)	A	X	N	N	-	N	Commercial& Services	Mixed Use	$2,173,932	$13,972,700	2
Pond 1A(2)	X	X	N	N	Medium	N	Commercial& Services	Mixed Use	$2,817,250	$40,030,300	1
Pond 1A(3)	X	X	N	N	-	N	Commercial& Services	Mixed Use	$2,483,915	$23,950,200	3
Pond 2A(1)	AE	0.28	N	N	No	N	Shrub & Brushland	Mixed Use	$1,711,072	N/A-within FDOT RW	1
Pond 2A(2)	AE	0.18	N	N	-	N	Commercial& Services	Mixed Use	$1,007,093	$3,978,300	3
Pond 2A(3)	AE	0.8	N	N	-	N	Residential Medium Density	Mixed Use	$765,513	$1,200,500	2
Pond C(1) & Pond C(1)A & Pond C(1)B	AE	3.81	Y	N	High	Y	Commercial& Services	Mixed Use	$5,251,460	$11,545,600	1
Pond C(2) & Pond C(2)A & Pond C(2)B& Pond C(2)C	AE	4.17	Y	N	-	Y	Commercial& Services	Mixed Use	$5,657,045	$20,223,500	3
Pond C3	X	0.07	Y	N	-	Y	Commercial& Services	Mixed Use	$5,462,696	$9,609,500	2

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 Construction Costs*	Pond ROW Costs	Ranking
Pond P1E1	AE	X	N	N	Medium	N	Residential Low Density	Residential	$372,224	N/A-within FDOT RW	1
Pond P2E1	AE	X	Y	N	-	N	Residential Medium Density	Residential	$277,700	$240,400	3
Pond P3E1	X	X	Y	N	-	N	Residential Medium Density	Residential	$233,828	$213,400	2
Pond P1E2	X	X	Y	N	Low	N	Residential Low Density	Commercial	$1,251,369	$3,001,200	1
Pond P2E2	X	X	Y	N	-	N	Residential Low Density	Commercial	$1,182,389	$3,397,400	3
Pond P3E2	X	X	Y	N	-	N	Residential Low Density	Commercial	$,1,197,149	$2,645,200	2

*Preliminary pond constructions costs using state-wide unit costs from 2024/04/01 to 2024/09/30. 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 B1	AE	0.00	N	N	Medium	Y	Transportation	Mixed Use	$31,002	1
FPC B2	AE	0.00	N	N	-	N	Upland Hardwood-Coniferous Mix	Mixed Use	$31,002	2
FPC Pond B1A	AE	0.00	N	N	-	Y	Industrial	Industrial	$83,865	3
FPC Pond C1	AE	0.00	N	N	Low	N	Commercial & Services	Mixed Use	$461,791	1
FPC Pond C2	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	$461,791	2

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	Pond ROW Costs	Ranking
FPC Pond C_A3 (1) & (2)	AE	0.08	N	N	-	N	Commercial & Services	Mixed Use	$8,383,228	3
FPC Pond C(2)	AE	0.00	N	N	Low	N	Commercial & Services	Mixed Use	$345,223	1*
FPC C A1	AE	0.00	N	N	Medium	N	Commercial & Services	Mixed Use	$291,757	1
FPC C A2	AE	0.08	N	N	-	N	Commercial & Services	Mixed Use	$673,055	2
FPC C A3	AE	0.63	N	N	-	N	Commercial & Services	Mixed Use	$8,911,340	3
FPC 1A_B1	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	$6,497,334	2
FPC 1A_B2	AE	0.00	N	N	Medium	N	Commercial & Services	Mixed Use	$5,354,982 (FPC 1A_B2 & FPC 1A(1)_A2)	1
FPC 1A_B3	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	$9,234,723	3
FPC 1A(1)_A1	A	0.00	N	N	-	N	Commercial & Services	Mixed Use	$6,497,334	3
FPC 1A(1)_A2	A	0.00	N	N	Medium	N	Commercial & Services	Mixed Use	$5,354,982 (FPC 1A_B2 & FPC 1A(1)_A2)	1
FPC 1A(1)_A3	A	0.00	N	N	-	N	Commercial & Services	Mixed Use	$1,033,086	2
FPC 2A_A1	AE	1.86	N	N	No	N	Wetland Forested Mixed	Wetland Forested Mixed	$1,357,800	1
FPC 2A_A2	AE	0.00	N	N	-	N	Commercial & Services	Residential	$4,667,248	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	Pond ROW Costs	Ranking
FPC 2A A3(1) & (2)	AE	0.00	N	N	-	N	Commercial & Services	Residential	$952,501	2
FPC 2A(3)	AE	0.00	N	N	-	N	Residential	Residential	$214,190	1**
FPC E1_A1	AE	0.00	N	N	-	N	Residential	Residential	$354,928	3
FPC E1_A2	AE	0.00	N	N	Low	N	Residential	Residential	$356,061	1
FPC E1_A3	AE	0.00	N	N	-	N	Residential	Residential	$262,780	2
FPC E1_B1	AE	0.00	N	N	**Low**	N	Residential	Residential	$93,340	1
FPC E1_B2	AE	0.00	N	N	-	N	Residential	Residential	$109,563	2
FPC E1_B3	AE	0.00	N	N	-	N	Residential	Residential	$109,563	3
FPC E2_C1	AE	0.32	N	N	**No**	N	Residential	Residential	$607,227	1
FPC E2_C2	AE	0.00	N	N	-	N	Residential	Residential	$2,616,087	3
FPC E2_C3	AE	0.00	N	N	-	N	Residential	Residential	$382,364	2
FPC E2_D1	AE	0.00	N	N	**Low**	N	Residential	Residential	$169,152	1
FPC E2_D2	AE	0.00	N	N	-	N	Residential	Residential	$1,277,511	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	Pond ROW Costs	Ranking
FPC E2_D3	AE	0.00	N	N	-	N	Residential	Residential	$981,840	2
FPC E2_E1	AE	0.00	N	N	Low	N	Residential	Residential	$169,152	1
FPC E2_E2	AE	0.00	N	N	-	N	Residential	Residential	$169,152	2
FPC E2_E3	AE	0.13	N	N	-	N	Industrial	Residential	$696,765	3
FPC E2_F1	AE	0.10	Y	N	Low	N	Commercial & Services	Industrial	$892,744	1
FPC E2_F2	AE	0.00	N	N	-	N	Commercial & Services	Mixed Use	$2,267,485	3
FPC E2_F3	AE	0.03	N	N	-	N	Residential	Residential	$1,078,759	2

***Preferred site if Basin C Alternative 2, Pond C(2)A, is selected.**

****Preferred site if Basin 2A Alternative 3, Pond 2A(3), is selected.**

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 U.S. Highway 41/State Road 45 (US 41/SR 45) and State Road 54 (SR 54) in Pasco County, Florida. US 41 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 1.5 miles along US 41, 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 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. 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. In addition, this report provides a recommendation for the preferred pond locations.

The pond siting analysis documentation for the conceptual pond sites is found in **Section 6, Proposed Stormwater Management Facilities** and **Appendix 6, Pond Alternatives Design Calculations** 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 datum used for the calculations is NAVD 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 US41 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 and SR 54. The SR 54/US 41 interchange is drained by urban (curb and gutter) drainage systems and stormwater piping. US 41 within the project limits drains to existing FDOT wet ponds located on the east side of US 41, 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. 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 SR54 and ultimately into Lake Toni. The areas south of the intersection along US41 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 US 41/SR 54 intersection 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 US41 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 US41. 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 US41. Cross drain 5, (2) 8'X3' CBC, connects two wetlands in a north to south direction along SR54 at station 1452+90.

There are three (3) existing outfalls serving State Road 54 and four (4) existing outfalls service US 41 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 US41 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 C/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 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/US 41 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 April 2015 and a CRAS desktop analysis was performed in 2021 to identify and evaluate any significant or potentially significant resources that would be impacted by the project. Past assessments have revealed 15 recorded historic resources which include two linear resources, the Tampa Northern Railroad and SR 54 and 13 buildings.
An updated Cultural Resources Assessment Survey is being conducted for this project and will be provided prior to the Public Hearing.
Below is a list of community features located within 500 feet of the project study area (there are no parks or cemeteries located within the project area):

Places of Worship

- Keystone Community Church
- Iglesia Tempo elias
- Church of the Lake
- Willow Bend Community Church

Schools/Daycare Facilities

- Center Academy-Lutz
- Kids' Stuff Preschool, Private School, and Childcare

Parks, Cemeteries, and Fire Stations

- Pasco Conty Fire Station 23

Healthcare facilities and Hospitals

- CVS
- Lutz Pharmacy
- Watson Peggy MD Family Medicine
- Central Pasco Medical Care
- Tampa Orthopedic Clinic
- Dan Orthodontics
- Family Express Urgent Care
- Morton Plan North Bay Hospital and Recovery Center

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 a 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 US41/SR54 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. 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**
A	North Begin of Project	2588+87 @ CL. 41	Wetland B (Cypress Creek)
B	200+00 @ CL. 597 2588+87 @ CL.41	217+00 @ CL.597 2617+47 @ CL. 41	Wetland D (Cypress Creek)
C	2617+47 @CL 41 1451+68 @ CL 54	2655+14 @ CL 41 1478+62 @ CL 54	Lake Floyd
D	2645+60 @ CL 41	2695+60 @ CL 41	Lake Vienna
1A	1476+81 @ CL 54	1497+38 @ CL 54	Lake Floyd
2A	1497+38 @ CL 54	1521+74 @ CL 54	Lake Toni
E1	Henley Rd	1424+60	South Branch Anclote River
E2	1424+60	1433+34	Lake Thomas Outlet

Please refer to **APPENDIX 2** for **Existing Drainage Map**.

2.4.1 Existing Basin A

Existing Basin A 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.

2.4.2 Existing Basin B1

Existing Basin B1 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 Pond B1A. Stormwater runoff from the roadway is collected and conveyed in ditches and storm drain systems that discharge to existing Pond B for treatment per SWFMD ERP permit 43-12854. Pond B discharges to Wetland D, which ultimately outfalls Cypress Creek.

2.4.3 Existing Basin B2

Existing Basin B2 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 Pond B2. Stormwater runoff from the roadway is collected and conveyed in ditches and storm drain systems that discharge to existing Pond B for treatment per SWFMD ERP permit 43-12854. Pond B discharges to Wetland D, which ultimately outfalls Cypress Creek.

2.4.4 Existing Basin B3

Existing Basin B3 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 Pond B3. Stormwater runoff from the roadway is collected and conveyed in ditches and storm drain systems that discharge to existing Pond B for treatment per SWFMD ERP permit 43-12854. Pond B discharges to Wetland D, which ultimately outfalls Cypress Creek.

2.4.5 Existing Basin C

Basin C is located at the intersection between US 41 and SR 54. The basins limits consist of Sta. 2617+47 to Sta. 2655+14 on CL 41 and Sta. 1451+68 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 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. Pond C, which treats and attenuates runoff from existing Basin C, includes wetland mitigation within the pond basin per SFWMD ERP permit 43-29402-1.

2.4.6 Existing Basin D

Basin D limits begin at CL 41 Sta. 2645+60 to approximately Sta. 2695+60. Basin D is the most northern basin within the project limits. Permit SFWMD ERP permit 43-29402-1 was used to estimate the northern boundary of existing Basin D. Existing storm drains collect runoff from the outer limits of basin D and flows through pipes to structure D-32

(per SFWMD 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 Pond D. Pond D treats and attenuates discharge from within the basin which outfalls to Lake Vienna.

2.4.7 Existing Basin 1A

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

2.4.8 Existing Basin 2A

Existing Basin 2A limits begin at CL 54 Sta. 1496+19 to Sta. 1521+74. Existing Basin 2A 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 Pond 2A. Pond 2A treats and attenuates discharge generated within the basin limits and outfalls to Pond 2B which functions as floodplain compensation and discharges to Lake Toni.

2.4.9 Existing Basin E1

Existing Basin E1 encompasses the western portion of the US41/SR54 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 Basin E1 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 pond names are referenced from SWFWMD permit # 43-16251-18.

2.4.10 Existing Basin E2

Existing Basin E2 encompasses the western portion of the US41/SR54 project from the end of Basin E1 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 E2 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 Basin E2 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).

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 to 69.6 feet on the south side of SR 54 east of US 41.

There are SWFWMD permitted existing floodplain compensation ponds associated with both US 41 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** 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 August 2024.

2.6 EXISTING CROSS DRAIN ADEQUACY

The existing cross drains along US 41 and SR 54 were reviewed for hydraulic adequacy. 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.

Culvert 1

A 30-inch RCP cross drain is located at US 41 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, to node NH1780, the wetland East of US41, North of Glory Road. SWFWMD models assign this culvert a hydraulic ID 0f 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 11-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 report will be submitted after House Bill HB 7053/SB 7040 Department of Environmental Protection Rules relating to storm water has been passed as law. Per direction from FDOT District 7, potential updates that may be required will be considered at a later date. 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 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** 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. 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. Per direction from FDOT D7, potential updates that may be required per the HB 7053/SB 7040 will be considered at a later date.

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 E1 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 A

The limits of proposed Basin A 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 A 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.

5.1.2 Basin B

Proposed Basin B 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 US41 from Sta. 2588+87 to Sta. 2617+47 at alignment CL. 41. Calculations divide Basin B into Basin B1, B2, and B3 corresponding to 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.

5.1.3 Basin C

Basin C is located at the intersection between US 41 and 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 divide Basin C into Basin C(1), C(2), and C(3) corresponding to 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 C1 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.

5.1.4 Basin D

Basin D limits begin at CL 41 Sta. 2645+60 to approximately Sta. 2695+60. Basin D 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.

5.1.5 Basin 1A

Basin 1A limits begin at CL 54 Sta. 1476+81 to Sta. 1497+38. Basin 1A is located east of the interchange of US 41 and SR 54. Proposed Basin 1A includes areas along eastbound, westbound SR 54 and frontage roads due to roadway widening. Calculations divide Basin 1A into Basin 1A(1), 1A(2), and 1A(3) 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.

5.1.6 Basin 2A

Basin 2A limits begin at CL 54 Sta. 1496+19 to Sta. 1521+74. Basin 2A is the most eastern basin within the project limits. Proposed Basin 1A includes areas along eastbound, westbound SR 54 and frontage roads due to roadway widening. Calculations divide Basin 2A into Basin 2A(1), 2A(2), and 2A(3) 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.

5.1.7 Basin E1

The limits of proposed Basin E1 begin at Henley Road to approximately SR 54 Sta. 142+20. Calculations divide Basin E1 into Basin P1E1, P2E1, and P3E1 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 E1 basin area which is reflected in the calculations.

Basin E1 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 will need to be reevaluated during final design per new SB7040.

5.1.8 Basin E2

The limits of proposed Basin E2 begin at the end of proposed Basin E1, approximately SR 54 Sta. 142+20, to the beginning of proposed Basin C, approximately SR 54 Sta. 1451+50.00. Calculations divide Basin E2 into Basin P1E2, P2E2, and P3E2 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 E1, 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 to 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 E2 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 will need to be reevaluated during final design per new SB7040.

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**, which include a 20% increase in area to account for variances from final design pond sites.

The only preferred pond alternative impacting wetlands is Pond C(1). The only preferred FPC sites impacting wetlands is FPC 2A_A1 and FPC E2_C1. No critical habitat was identified within the project area. Per the Natural

Resources Evaluation Report dated August 2024, the project will not have adverse effects on protected species and habitats.

Per the Contamination Tech Memo dated July 2024, the only preferred pond with a risk rating of High is Pond C (1) which is comprised of Pond C(1) and Pond C(1)A. 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 Pond A

Existing Pond A meets with both water quality and quantity requirements. Per SWFWMD ERP permit 43-12854, existing 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 Pond A from the permit. Existing 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 B. 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 Pond B1A and Pond B1B

Pond B1A and Pond B1B are connected by a proposed equalizer pipe and are part of the wet detention system designed to work together with existing Pond B under the proposed conditions. Pond B1A is located approximately at Sta. 204+00 at alignment CL. 597, (RT), and requires additional easement outside the FDOT ROW. Pond B1B 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 Pond B1A and Pond B1B will use the same NWL as existing Pond B. Existing Pond B will provide the required water quality volume, while proposed Pond B1A and Pond B1B 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. Pond B1A and Pond B1B were sized to meet the delta attenuation volume needed. Required attenuation volume is 3.87 and the combined provided attenuation volume of Pond B1A and Pond B1B is 3.88 ac-ft.

The required water quality treatment volume is 1.05 ac-ft. Pond B1A and Pond B1B 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 Pond B2

Proposed Pond B2 is the second alternative wet detention system designed to work with existing Pond B under the proposed condition. Proposed Pond B2 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. Pond B2 will be hydraulically connected to existing pond B and discharge into Wetland D, maintaining the same outfall location as the existing condition. Pond B2 will use the same NWL as existing Pond B. Existing Pond B will provide the required water quality volume, while proposed Pond B2 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. Pond B2 was sized to meet the delta attenuation volume needed. Required attenuation volume is 3.29 and provided attenuation volume of Pond B and Pond B2 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, Pond B2 will not provide treatment for Basin B2.

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 Pond B3

Proposed Pond B3 is the final and recommended alternative for proposed Basin B. It is a wet detention system designed to work with existing Pond B under the proposed conditions. Proposed Pond B3 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. Pond B3 will be hydraulically connected to existing pond B, and will discharge into Wetland D, maintaining the same outfall location as the existing condition. Pond B3 will use the same NWL as existing Pond B. Existing Pond B will provide the required water quality volume, while proposed Pond B3 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. Pond B3 was sized to meet the delta attenuation volume needed. Required attenuation volume is 3.32 and provided attenuation volume of Pond B and Pond B2 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, Pond B3 will not provide treatment for Basin B3.

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 1A along with either alternative Pond 1A(1), Pond 1A(2) or Pond 1A(3). 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 Pond 1A(1)

Pond 1A(1) is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 1A. The pond is located along SR 54 at approximately Sta. 1495+00 (LT). The pond site is proposed to span across one (1) property. Pond 1A(1) is designed to work in conjunction with existing Pond 1A at approximately Sta. 1480+00 (RT). Proposed Pond 1A(1) will treat and provide detention for the additional runoff within proposed Basin 1A. Pond 1A(1) 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. Pond 1A(1) 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, Pond 1A(1) 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 Pond 1A(2)

Pond 1A(2) is a proposed wet detention pond that will provide stormwater treatment and attenuation for proposed Basin 1A. The pond is located along SR 54 at approximately Sta. 1490+00 (LT). The pond site is proposed to span across one (1) property. Pond 1A(2) is designed to work in conjunction with existing Pond 1A at approximately Sta. 1480+00 (RT). Proposed Pond 1A(2) will treat and provide detention for the additional runoff within proposed Basin 1A. 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. Pond 1A(2) 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, Pond 1A(2) will provide additional treatment. Proposed Pond 1A (2) is chosen as the preferred alternative for basin 1A.

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(2) 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 Pond 1A(3)

Pond 1A(3) is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 1A. The pond is located along SR 54 at approximately Sta. 1485+00 (LT). The pond site is proposed to span across three (3) properties. Pond 1A(3) is designed to work in conjunction with existing Pond 1A at approximately Sta. 1480+00 (RT). Proposed Pond 1A(3) will treat and provide detention for the additional runoff within proposed Basin 1A. Pond1A(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. Pond 1A(3) 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. Pond 1A(3) was sized to meet the attenuation volume needed. Required attenuation volume is 9.63 and provided attenuation volume of pond 1A and pond 1A(3) 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 2A along with either alternative Pond 2A(2) or Pond 2A(3). 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 Pond 2A (1)

Pond 2A (1) is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 2A. The pond is located along SR 54 at approximately Sta. 1521+00 (LT). The pond site is proposed to span across two (2) properties. Pond 2A (1) is a widening of existing Pond 2A. Proposed Pond 2A (1) will treat and provide detention for the additional runoff within proposed Basin 2A. 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. Pond 2A (1) 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 Pond 2A (1) was widened to provide additional treatment. Proposed Pond 2A (1) is chosen as the preferred alternative for basin 2A.

The original SFWMD 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. Pond 2A (1) was sized to meet the delta attenuation volume needed. Required attenuation volume is 4.31 and provided attenuation volume of Pond 2A (1) 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 Pond 2A (2)

Pond 2A (2) is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 2A. The pond is located along SR 54 at approximately Sta. 1500+00 (LT). The pond site is proposed to span across four (4) properties. Pond 2A (2) is designed to work in conjunction with existing Pond 2A at approximately Sta. 1521+00 (LT). Proposed Pond 2A (2) will treat and provide detention for the additional runoff within proposed Basin 2A. 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. Pond 2A (2) 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 Pond 2A (2) will provide additional treatment.

The original SFWMD 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. Pond 2A (2) was sized to meet the attenuation volume needed. Required attenuation volume is 5.46 and provided attenuation volume of Pond 2A and Pond 2A (2) 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 Pond 2A(3)

Pond 2A(3) is a proposed wet detention system that will provide stormwater treatment and attenuation for proposed Basin 2A. The pond is located along SR 54 at approximately Sta. 1509+00 (RT). The pond site is proposed to span across two (2) properties. Pond 2A(3) is designed to work in conjunction with existing Pond 2A at approximately Sta. 1521+00 (LT). Proposed Pond 2A(3) will treat and provide detention for the additional runoff within proposed Basin 2A. 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. Pond 2A(3) 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 Pond 2A(3) will provide additional treatment.

The original SFWMD 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. Pond 2A(3) was sized to meet the attenuation volume needed. Required attenuation volume is 4.44 ac-ft and provided attenuation volume of pond 2A and pond 2A(3) 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 C along with either alternative Pond C(3). 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 Pond C(1), Pond C(1)A and Pond C(1)B

Treatment and attenuation for Proposed Basin C is provided by the wet detention system that includes Pond C(1), Pond C(1)A, and Pond C(1)B. The pond system is proposed to span across eight (8) properties. Pond C(1) is designed to work in conjunction with Pond C(1)A and C(1)B at approximately CL US41 Sta. 2632+00 (RT). Proposed Pond C(1), Pond C(1)A and Pond C(1)B will treat and provide detention for the additional runoff within proposed Basin C. A storm drain system will connect the three ponds and outfall to Lake Floyd. This will maintain the existing outfall in proposed condition. Pond C(1), Pond C(1)A and Pond C(1)B 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 Pond C(1), Pond C(1)A and Pond C(1)B will provide additional treatment. Pond C(1), Pond C(1)A and Pond C(1)B will be connected to each other through equalizer pipes. Existing ground elevation for the site is approximately elev. 71 and depth to water is 0.98 ft.

Existing Pond C(1) has been widened and works simultaneously with pond C(1)A and pond C(1)B to provide a total attenuation of 21.77 ac-ft. Pond C(1), Pond C(1)A and Pond C(1)B were sized to meet the attenuation volume required 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 Pond C(2), Pond C(2)A, Pond C(2)B and Pond C(2)C

Treatment and attenuation for Proposed Basin C is provided by the wet detention system that includes Pond C(2), Pond C(2)A, and Pond C(2)B, and Pond C(2)C. The system of ponds is proposed to span across six (6) properties. Pond C(2) is located in the southeast corner of US 41 and SR 54 intersection at approximately Sta. 2629+00 (RT) and Sta. 1464+00 (RT), respectively. Pond C(2)A is located in the southwest corner of US 41 and SR 54 intersection. Pond C(2)B and Pond C(2)C are located in the northeast corner of US 41 and SR 54 intersection. Existing ground elevation for the site is approximately elev. 71 and depth to water is 0.98 ft.

The ponds will be connected to each other through equalizer pipes. A storm drain system will connect the Pond C(2)A, Pond C(2)B and Pond C(2)C to Pond C(2) 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. Existing Pond C would not provide treatment for additional impervious area from roadway. Existing Pond C has been widened (Pond C(2) in the proposed condition) and works simultaneously with pond C(2)A, C(2)B and pond C(2)C to provide a total attenuation of 23.77 ac-ft. The individual ponds were sized to meet, as a system, the attenuation volume required of 23.67 ac-ft. The required water quality PAV volume is 3.17 ac-ft. The ponds together provide a PAV volume of 3.80 ac-ft, exceeding the required water quality PAV volume.

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 Pond C(3)

Pond C(3) is a proposed wet detention system that will provide stormwater treatment and attenuation for Proposed Basin 1A. The pond is located in the southwest corner of US 41 and 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. Pond C(3) is designed to work in conjunction with existing Pond C at approximately CL SR54 Sta. 1467+00 (RT). Proposed Pond C (3) will treat and provide detention for the additional runoff within proposed Basin C. An offsite storm drain system will connect both ponds and outfall to Lake Floyd. This will maintain the existing outfall in proposed condition. Pond C(3) 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 Pond C (3) will provide additional treatment. 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. Pond C(3) was sized to meet the delta attenuation volume needed. Required attenuation volume is 24.75 and provided attenuation volume of existing pond C and pond C (3) together 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. Both ponds provide 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

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 D. 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 required 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.

6.2.19 Pond P1E1

Pond P1E1 is a proposed wet detention system that will provide stormwater treatment and attenuation for basin E1. 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. Pond P1E1 works with the existing system of roadside linear ponds shown in SWFWMD ERP permit 43-16251-18. Pond P1E1 will be hydraulically connected to keep existing drainage patterns. It will be piped to the existing linear pond system in order to keep the existing outfall. The system of ponds will discharge into the wetland north of SR54 Sta. 1420+20, through the (2) 30" RCP cross drains under SR 54, and though 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. Pond P1E1 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.

During final design, BMP calculations will need to be finalized per new SWFWMD criteria from House Bill HB 7053/SB 7040 that was passed into law July 2024. Per FDOT D7 guidance the new criteria will be applied during final design. The proposed wet detention pond is not a sufficient BMP to meet the new Bill's Total Nitrogen and Total Phosphorus pollutant requirements. A possible option to meet the new SWFWMD TMDL criteria is to add a surface discharge filter to the wet detention pond. Further BMP options will be analyzed during final design.

6.2.20 Pond P2E1

Pond P2E1 is a proposed wet detention system that will provide stormwater treatment and attenuation for basin E1. 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. Pond P2E1 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 Pond P2E1 resulting in a modification of the existing drainage patterns. The outfall will be moved to the north end of Pond P2E1 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. Pond P2E1 was sized to meet the attenation 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.

During final design, BMP calculations will need to be finalized per new SWFWMD criteria from House Bill HB 7053/SB 7040 that was passed into law July 2024. Per FDOT D7 guidance the new criteria will be applied during final design. The proposed wet detention pond is not a sufficient BMP to meet the new Bill's Total Nitrogen and Total Phosphorus pollutant requirements. A possible option to meet the new SWFWMD TMDL criteria is to add a surface discharge filter to the wet detention pond. Further BMP options will be analyzed during final design.

6.2.21 Pond P3E1

Pond P3E1 is a proposed wet detention system that will provide stormwater treatment and attenuation for basin E1. 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. Pond P3E1 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 Pond P3E1. The outfall will be moved to the north end of Pond P3E1 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. Pond P3E1 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.

During final design, BMP calculations will need to be evaluated per new SWFWMD criteria from House Bill HB 7053/SB 7040 that was passed into law July 2024. Per FDOT D7 guidance the new criteria will be applied during final design. The proposed wet detention pond is not a sufficient BMP to meet the new Bill's Total Nitrogen and Total Phosphorus pollutant requirements. A possible option to meet the new SWFWMD TMDL criteria is to add a surface discharge filter to the wet detention pond. Further BMP options will be analyzed during final design.

6.2.22 Pond P1E2

The proposed roadway eliminates all existing linear roadway ponds within Basin E2. Pond P1E2 is a proposed wet detention system that will provide stormwater treatment and attenuation for Basin E2. 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 pond P1E2'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.

During final design, BMP calculations will need to be evaluated per new SWFWMD criteria from House Bill HB 7053/SB 7040 that was passed into law July 2024. Per FDOT D7 guidance the new criteria will be applied during final design.

6.2.23 Pond P2E2

The proposed roadway eliminates all existing linear roadway ponds within Basin E2. Pond P2E2 is a proposed wet detention system that will provide stormwater treatment and attenuation for Basin E2. 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 pond P2E2'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.

During final design, BMP calculations will need to be evaluated per new SWFWMD criteria from House Bill HB 7053/SB 7040 that was passed into law July 2024. Per FDOT D7 guidance the new criteria will be applied during final design.

6.2.24 Pond P3E2

The proposed roadway eliminates all existing linear roadway ponds within Basin E2. Pond P3E2 is a proposed wet detention system that will provide stormwater treatment and attenuation for Basin E2. 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 pond P3E2'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 P3E2 (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.

During final design, BMP calculations will need to be evaluated per new SWFWMD criteria from House Bill HB 7053/SB 7040 that was passed into law July 2024. Per FDOT D7 guidance the new criteria will be applied during final design.

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.

The floodplain encroachment impact areas can be seen on **Appendix 7 Floodplain Impacts Exhibit**. A single floodplain can have multiple impacts. Therefore, the Summary Table of Floodplain Impacts lists which impacts correspond to each floodplain. Refer to **Appendix 7** for a summary table of all the proposed floodplain compensation sites alternatives. All proposed floodplain compensation areas, including all preferred compensation areas are shown on **Proposed FPC Sites Alternatives Exhibit** in **Appendix 4**. Detailed floodplain impact and floodplain compensation calculations are included in **Appendix 9**.

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.

Portions of the proposed US 41/SR 54 Interchange improvements 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**. Refer to **Appendix 8** for a summary table of all the proposed floodplain compensation sites alternatives. All proposed floodplain compensation areas, including all preferred compensation areas are shown on **Proposed FPC Site Alternatives Exhibit** in **Appendix 4**. Detailed floodplain impact and floodplain compensation calculations are included in **Appendix 9**.

Compensation for the floodplain impacts incurred by the proposed US 41/SR 54 interchange improvements will be provided by off-site floodplain compensation (FPC) areas. Listed below are the 13 Zone AE floodplains that were impacted because of the intersection improvements along with their corresponding compensation areas.

Section 7.1 Floodplain Zone AE Elev. 70.3 :

Section 7.1.1 FPC B1

FPC B1 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 B1 is 0.356 ac-ft, which meets the requirement. FPC B1 can be utilized in conjunction with either the proposed Pond B2 or B3 alternatives.

Section 7.1.2 FPC B2

FPC B2 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 B2 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 B2 is 0.354 ac-ft, which meets the requirement. FPC B2 can be utilized if either proposed Pond B2 or B3 is chosen as an alternative.

Section 7.1.3 FPC Pond B1A

FPC Pond B1A 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. 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 Pond B1A will be connected hydraulically to the existing ditches west of the site. The compensation volume provided by FPC Pond B1A 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). FPC Pond B1A also serves as an alternative FPC site location if either proposed Pond B2 or Pond B3 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 Zone AE Elev. 67.3 :

Section 7.2.1 FPC Pond C(2)

FPC Pond C(2) is located on State Road 54 approximately from stations 1459+00 to 1461+00 (RT). This floodplain compensation site will offset floodplain impact as a result of Pond C(2)A. 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 Pond C(2) is 0.27 ac-ft, which meets the floodplain impact volume of 0.261 ac-ft in the event Pond C(2)A is selected.

Section 7.3 Floodplain Zone AE Elev. 69.6 :

Section 7.3.1 FPC Pond C1 and Pond C2

FPC Pond C1 and Pond C2 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 SFWMD 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 Pond C(1) or Pond C(2) 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 Pond C1 or Pond C2.

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 Pond C1 or Pond C2 is 3.70 ac-ft, which meets the floodplain impact volume of 3.65 ac-ft in the event Pond C(1) or Pond C(2) is selected.

Section 7.3.2 FPC Pond C_A3 (1) & (2)

FPC Pond C_A3 (1) & (2) are 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 Pond C (3). 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 C_A3 (1) & (2) are 1.40 ac-ft, which meets the floodplain impact volume of 1.37 ac-ft in the event Pond C(3) is selected.

Section 7.4 Floodplain Zone AE Elev. 70.8 :

Section 7.4.1 FPC C A1

FPC C A1 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 C A1 is 0.10 ac-ft, which meets the floodplain impact volume of 0.08 ac-ft.

Section 7.4.2 FPC C A2

FPC C A2 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 C A2 is 0.13 ac-ft, which meets the floodplain impact volume of 0.08 ac-ft.

Section 7.4.3 FPC C A3

FPC C A3 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 C A3 is 0.11 ac-ft, which meets the floodplain impact volume of 0.08 ac-ft.

Section 7.5 Floodplain Zone AE Elev. 69.20:

Section 7.5.1 FPC 1A_B1

FPC 1A_B1 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 1A_B1 is 0.07 ac-ft, which meets the floodplain impact volume of 0.07 ac-ft.

Section 7.5.2 FPC 1A_B2

FPC 1A_B2 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 pond 1A (2) 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 1A_B2 is 0.085 ac-ft, which meets the floodplain impact volume of 0.071 ac-ft.

Section 7.5.3 FPC 1A_B3

FPC 1A_B3 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 1A_B3 is 0.082 ac-ft, which meets the floodplain impact volume of 0.071 ac-ft.

Section 7.6 Floodplain Zone A Elev. 69.20:

Section 7.6.1 FPC 1A(1)_A1

FPC 1A(1)_A1 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 1A(1)_A1 is 0.01 ac-ft, which meets the floodplain impact volume of 0.01 ac-ft.

Section 7.6.2 FPC 1A(1)_A2

FPC 1A(1)_A2 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 1A(1)_A2 is 0.01 ac-ft, which meets the floodplain impact volume of 0.01 ac-ft.

Section 7.6.3 FPC 1A(1)_A3

FPC 1A(1)_A3 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 Zone AE Elev. 69.60 :

Section 7.7.1 FPC 2A_A1

FPC 2A_A1 is located on State Road 54 approximately from stations 1510+85 to 1514+20 (LT). This floodplain compensation site will offset floodplain impact as a result of choosing Pond 2A (1). 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 SFWMD 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 2A_A1 is 3.12 ac-ft, which meets the floodplain impact volume of 3.12 ac-ft. in the event Pond 2A (1) is selected.

Section 7.7.2 FPC 2A_A2

FPC 2A_A2 is located on State Road 54 approximately from stations 1498+60 to 1503+35 (RT). This floodplain compensation site will offset floodplain impact as a result of choosing Pond 2A (2). 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 SFWMD 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 2A_A2 is 3.80 ac-ft, which meets the floodplain impact volume of 3.77 ac-ft in the event Pond 2A (2) is selected.

Section 7.7.3 FPC Pond 2A_A3(1) & FPC Pond 2A_A3(2)

FPC Pond 2A_A3(1) & FPC Pond 2A_A3(2) are located on State Road 54 approximately from stations 1499+25 to 1501+80 (LT). These floodplain compensation sites will offset floodplain impact as a result of choosing Pond 2A (3). 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. FPC Pond 2A_A3(1) & FPC Pond 2A_A3(2) jointly provide compensation to impacts to the floodplain due to roadway widening. 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 SFWMD 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 2A_A2 is 1.79 ac-ft, which meets the floodplain impact volume of 1.61 ac-ft in the event Pond 2A (3) is selected.

Section 7.8 Floodplain Zone AE Elev. 68.5 :

Section 7.8.1 FPC 2A(3)

FPC 2A(3) is located on State Road 54 approximately from stations 1508+50 to 1511+30 (RT). This floodplain compensation site will offset alternative Pond 2A(3)'s floodplain impact. 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 2A(3) is 1.35 ac-ft, which meets the floodplain impact volume of 1.26 ac-ft in the event Pond 2A(3) is selected.

Section 7.9 Floodplain Zone AE Elev. 66.3 :

Section 7.9.1 FPC E1_A1

FPC E1_A1 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 P2E1. 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 E1_A1 provides 1.64 ac-ft of compensation, exceeding the impact volume of 1.57 ac-ft.

Section 7.9.2 FPC E1_A2

FPC E1_A2 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 E1_A2 provides 1.59 ac-ft of compensation, exceeding the impact volume of 1.57 ac-ft.

Section 7.9.3 FPC E1_A3

FPC E1_A3 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 E1_A3 provides 1.70 ac-ft of compensation, exceeding the impact volume of 1.57 ac-ft.

Section 7.10 Floodplain Zone AE Elev. 64.8 :

Section 7.10.1 FPC E1_B1

FPC E1_B1 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 E1_B1 provides 0.005 ac-ft of compensation, meeting the impact volume of 0.005 ac-ft.

Section 7.10.2 FPC E1_B2

FPC E1_B2 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 E1_B1 provides 0.005 ac-ft of compensation, meeting the impact volume of 0.005 ac-ft.

Section 7.10.3 FPC E1_B3

FPC E1_B3 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 E1_B1 provides 0.005 ac-ft of compensation, meeting the impact volume of 0.005 ac-ft.

Section 7.11 Floodplain Zone AE Elev. 66.9 :

Section 7.11.1 FPC E2_C1

FPC E2_C1 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 Pond P1E2 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 E2_C1 provides 1.91 ac-ft of compensation, exceeding the impact volume of 1.74 ac-ft.

Section 7.11.2 FPC E2_C2

FPC E2_C2 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 pond P1E2. This floodplain is the outfall for Basin E2 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 E2_C2 provides 1.95 ac-ft of compensation, exceeding the impact volume of 1.74 ac-ft.

Section 7.11.3 FPC E2_C3

FPC E2_C3 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 E2_C3 provides 2.59 ac-ft of compensation, exceeding the impact volume of 1.74 ac-ft.

Section 7.12 Floodplain Zone AE Elev. 67.20 :

Section 7.12.1 FPC E2_D1

FPC E2_D1 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 E2_D1 provides 0.13 ac-ft of compensation, exceeding the impact volume of 0.12 ac-ft.

Section 7.12.2 FPC E2_D2

FPC E2_D2 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 E2_D2 provides 0.86 ac-ft of compensation, exceeding the impact volume of 0.80 ac-ft.

Section 7.12.3 FPC E2_D3

FPC E2_D3 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 E2_D3 provides 0.65 ac-ft of compensation, exceeding the impact volume of 0.65 ac-ft.

Section 7.13 Floodplain Zone AE Elev. 67.60 :

Section 7.13.1 FPC E2_E1

FPC E2_E1 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 E2_E1 provides 4.32 ac-ft of compensation, exceeding the impact volume of 1.49 ac-ft.

Section 7.13.2 FPC E2_E2

FPC E2_E2 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 is 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 E2_E2 provides 3.06 ac-ft of compensation, exceeding the impact volume of 1.49 ac-ft.

Section 7.13.3 FPC E2_E3

FPC E2_E3 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 E2_E3 provides 2.98 ac-ft of compensation, exceeding the impact volume of 1.49 ac-ft.

Section 7.14 Floodplain Zone AE Elev. 67.30 :

Section 7.14.1 FPC E2_F1

FPC E2_F1 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, Pond C(3) 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 E2_F1 provides 0.59 ac-ft of compensation, exceeding the impact volume of 0.55 ac-ft.

Section 7.14.2 FPC E2_F2

FPC E2_F2 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, Pond C(3) 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 E2_F2 provides 4.82 ac-ft of compensation, exceeding the impact volume of 4.51 ac-ft.

Section 7.14.3 FPC E2_F3

FPC E2_F3 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 of 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 E2_F3 provides 0.57 ac-ft of compensation, exceeding the impact volume of 0.55 ac-ft

SECTION 8: CONTAMINATION SITES

Thirty (30) contamination sites were evaluated within the project area. Detailed results are documented in the Contamination Tech Memo dated July 2023 in **Appendix 13**. Please refer to the *Contamination Site Map* in Appendix A of the **Contamination Tech Memo** in **Appendix 13** for the contamination sites in relation to the preferred pond and FPC sites. 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 Preferred Drainage Sites

Preferred Ponds	Risk Rating
Pond 1A(2)	Medium
Pond 2A(1)	No
Pond B3	Low
Pond C(1)	High
Pond C(1)A	High
Pond C(1)B	Medium
Pond P1E1	Medium
Pond P1E2	Low

Preferred FPC	Risk Rating
FPC 1A_B2	Medium
FPC 2A_A1	No
FPC B1	Medium
FPC Pond C1	Low
FPC C A1	Medium
FPC E1_B1	Low
FPC E1_A2	Low
FPC E2_C1	No
FPC E2_D1	Low
FPC E2_E1	Low
FPC E2_F1	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, SWFWMD, and Pasco County 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

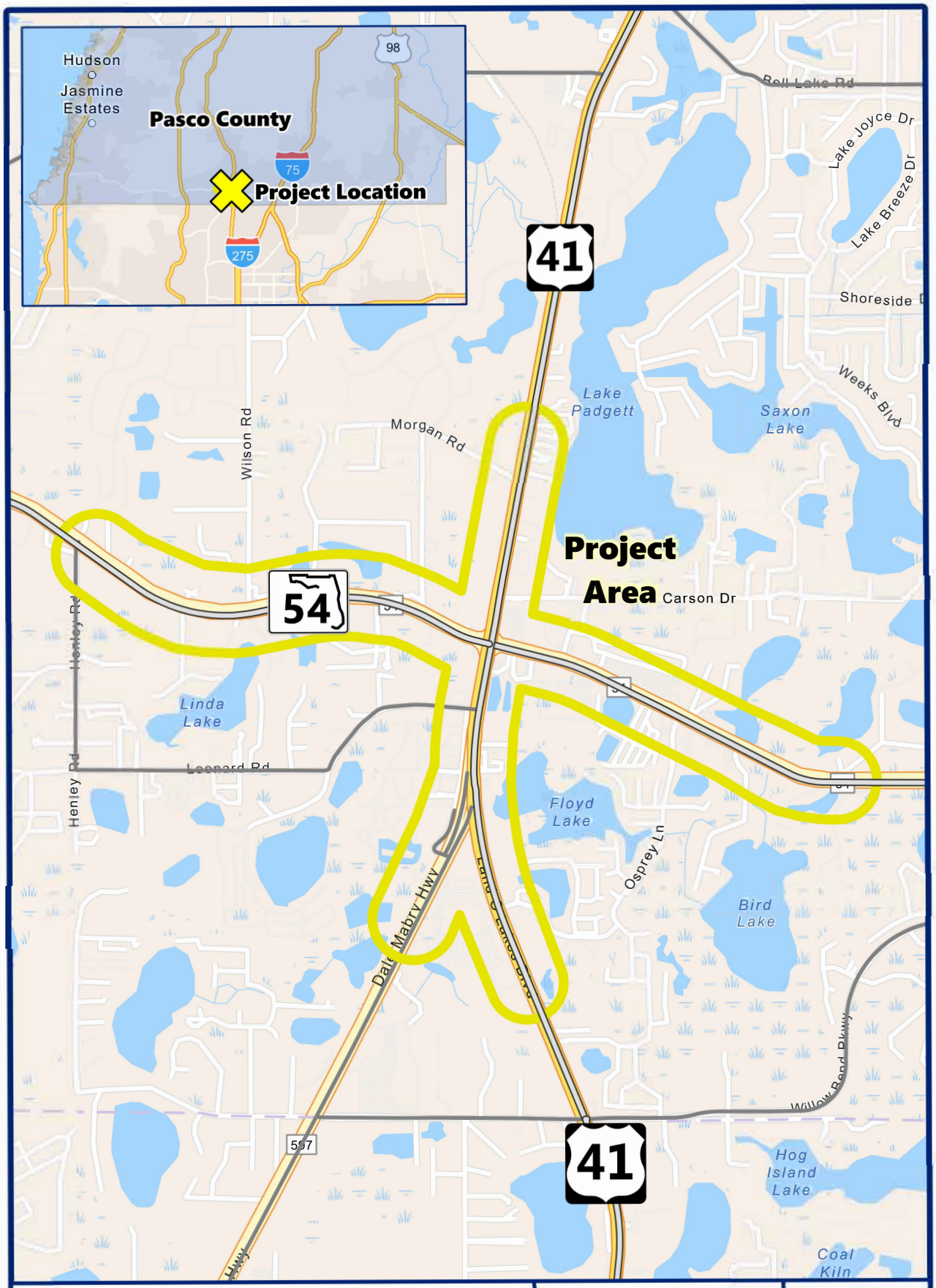
Basin Name	Preferred Pond	Approximate Location	Normal Water Level	Inside Berm Elevation	Design High Water Elevation	Minimum Gutter Elevation*	Outfall
A	Ex. Pond A	NA	68.25	70.6	69.25 (25YR/24HR)	71.00	Wetland B
B	Ex. Pond B + B3	Sta. 2600+00 @ CL. 41, RT ((Ex. Pond B) Sta. 2597+50 @ CL. 41, RT ((B3))	68.50 (Ex. Pond B) 68.50 (B3)	71.50	70.03 (25YR/24HR)	73.00	Wetland D

C	Pond C(1) + Pond C(1)A + Pond C(1)B	1465+20 @CL 54 (LT)	68.14	72.27	71.27 (25YR/24HR)	72.30	Lake Floyd
D	Exist. Pond D	2600+00 @CL 41 (LT)	69.26	73.00	71.25 (25YR/24HR)	72.71	Lake Vienna
1A	Pond 1A(2)	1490+00 @CL 54 (LT)	69.08	71.87	70.87 (25YR/24HR)	72.57	Lake Floyd
2A	Pond 2A(1)	1521+00 @CL 54 (LT)	66.96	70.34	68.63 (25YR/24HR)	69.69	Lake Toni
E1	Pond P1E1	1414+00 @CL 54 (RT)	63.20	66.24	65.24 (25YR/24HR)	68.50	South Branch Anclote River
E2	Pond P1E2	1442+00 @CL 54 (RT)	65.00	70.00	67.50 (25YR/24HR)	68.50	Lake Thomas

*Minimum gutter elevations less than outside berm elevation. Emergency overflow structure recommended during Design Phase.

APPENDIX 1

FIGURES



US 41 at SR 54 PD&E Study

from South of SR 54 Intersection to North of SR 54 Intersection

Figure 1
Project Location Map

NOAA Atlas 14, Volume 9, Version 2
Location name: Lutz, Florida, USA*
Latitude: 28.1911°, Longitude: -82.4652°
Elevation: 72 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.543** (0.456-0.660)	**0.611** (0.512-0.742)	**0.717** (0.599-0.874)	**0.801** (0.665-0.982)	**0.913** (0.725-1.15)	**0.994** (0.771-1.27)	**1.07** (0.799-1.41)	**1.15** (0.815-1.56)	**1.24** (0.844-1.74)	**1.31** (0.865-1.88)
10-min	**0.796** (0.668-0.966)	**0.894** (0.750-1.09)	**1.05** (0.877-1.28)	**1.17** (0.974-1.44)	**1.34** (1.06-1.68)	**1.46** (1.13-1.86)	**1.57** (1.17-2.06)	**1.68** (1.19-2.28)	**1.82** (1.24-2.54)	**1.92** (1.27-2.74)
15-min	**0.970** (0.815-1.18)	**1.09** (0.914-1.32)	**1.28** (1.07-1.56)	**1.43** (1.19-1.75)	**1.63** (1.30-2.05)	**1.78** (1.38-2.27)	**1.92** (1.43-2.52)	**2.05** (1.46-2.78)	**2.22** (1.51-3.10)	**2.34** (1.54-3.35)
30-min	**1.50** (1.26-1.82)	**1.66** (1.40-2.02)	**1.94** (1.62-2.36)	**2.16** (1.80-2.65)	**2.47** (1.97-3.12)	**2.70** (2.10-3.47)	**2.94** (2.19-3.87)	**3.17** (2.25-4.31)	**3.47** (2.36-4.87)	**3.70** (2.44-5.30)
60-min	**1.95** (1.64-2.36)	**2.17** (1.82-2.64)	**2.54** (2.12-3.10)	**2.85** (2.36-3.49)	**3.28** (2.62-4.15)	**3.61** (2.81-4.64)	**3.95** (2.95-5.22)	**4.29** (3.06-5.85)	**4.75** (3.24-6.68)	**5.11** (3.38-7.31)
2-hr	**2.40** (2.03-2.89)	**2.68** (2.26-3.23)	**3.14** (2.64-3.80)	**3.53** (2.95-4.30)	**4.08** (3.28-5.14)	**4.52** (3.54-5.78)	**4.96** (3.73-6.52)	**5.42** (3.88-7.34)	**6.04** (4.14-8.44)	**6.51** (4.33-9.27)
3-hr	**2.61** (2.22-3.14)	**2.93** (2.48-3.52)	**3.47** (2.92-4.18)	**3.93** (3.29-4.76)	**4.60** (3.72-5.79)	**5.14** (4.04-6.57)	**5.70** (4.31-7.49)	**6.29** (4.53-8.52)	**7.10** (4.89-9.91)	**7.74** (5.17-11.0)
6-hr	**3.02** (2.57-3.60)	**3.40** (2.89-4.06)	**4.09** (3.47-4.90)	**4.73** (3.99-5.69)	**5.71** (4.67-7.22)	**6.54** (5.19-8.36)	**7.43** (5.67-9.76)	**8.40** (6.11-11.4)	**9.78** (6.80-13.6)	**10.9** (7.33-15.4)
12-hr	**3.50** (3.00-4.15)	**3.96** (3.39-4.70)	**4.86** (4.14-5.78)	**5.74** (4.86-6.86)	**7.17** (5.95-9.11)	**8.43** (6.77-10.8)	**9.83** (7.58-12.9)	**11.4** (8.38-15.4)	**13.7** (9.62-19.1)	**15.6** (10.6-21.8)
24-hr	**4.08** (3.52-4.79)	**4.62** (3.98-5.44)	**5.75** (4.93-6.78)	**6.90** (5.88-8.18)	**8.81** (7.39-11.2)	**10.5** (8.54-13.5)	**12.5** (9.72-16.4)	**14.7** (10.9-19.9)	**18.0** (12.7-25.0)	**20.8** (14.1-28.8)
2-day	**4.74** (4.11-5.53)	**5.38** (4.66-6.28)	**6.72** (5.80-7.87)	**8.10** (6.94-9.54)	**10.4** (8.80-13.2)	**12.5** (10.2-16.0)	**14.9** (11.7-19.5)	**17.6** (13.1-23.7)	**21.6** (15.4-29.8)	**25.0** (17.1-34.5)
3-day	**5.20** (4.52-6.04)	**5.89** (5.12-6.85)	**7.32** (6.34-8.54)	**8.80** (7.57-10.3)	**11.3** (9.55-14.2)	**13.5** (11.0-17.1)	**16.0** (12.6-20.9)	**18.9** (14.2-25.3)	**23.2** (16.6-31.8)	**26.8** (18.4-36.8)
4-day	**5.61** (4.90-6.50)	**6.32** (5.51-7.33)	**7.80** (6.76-9.07)	**9.32** (8.03-10.9)	**11.8** (10.1-14.9)	**14.1** (11.6-17.9)	**16.7** (13.2-21.7)	**19.7** (14.8-26.2)	**24.0** (17.2-32.9)	**27.7** (19.1-38.0)
7-day	**6.75** (5.91-7.77)	**7.48** (6.55-8.63)	**9.00** (7.84-10.4)	**10.5** (9.13-12.3)	**13.1** (11.2-16.3)	**15.4** (12.7-19.3)	**18.0** (14.3-23.2)	**21.0** (15.8-27.8)	**25.3** (18.3-34.5)	**29.0** (20.1-39.6)
10-day	**7.75** (6.81-8.89)	**8.54** (7.50-9.81)	**10.1** (8.85-11.7)	**11.7** (10.2-13.5)	**14.2** (12.1-17.5)	**16.5** (13.6-20.5)	**19.1** (15.1-24.3)	**21.9** (16.6-28.8)	**26.1** (18.9-35.3)	**29.6** (20.6-40.2)
20-day	**10.6** (9.37-12.1)	**11.7** (10.3-13.4)	**13.7** (12.0-15.6)	**15.5** (13.5-17.8)	**18.1** (15.3-21.7)	**20.3** (16.7-24.7)	**22.6** (17.9-28.3)	**25.1** (19.0-32.4)	**28.6** (20.7-38.2)	**31.5** (22.1-42.5)
30-day	**13.2** (11.7-14.9)	**14.6** (12.9-16.6)	**17.0** (15.0-19.4)	**19.0** (16.7-21.8)	**21.9** (18.5-25.9)	**24.1** (19.9-29.1)	**26.4** (21.0-32.7)	**28.8** (21.8-36.8)	**31.9** (23.2-42.2)	**34.4** (24.2-46.2)
45-day	**16.7** (14.8-18.8)	**18.5** (16.5-20.9)	**21.5** (19.1-24.4)	**24.0** (21.1-27.3)	**27.3** (23.1-32.0)	**29.7** (24.5-35.5)	**32.1** (25.5-39.5)	**34.5** (26.2-43.8)	**37.6** (27.3-49.3)	**39.9** (28.2-53.4)
60-day	**19.8** (17.7-22.3)	**22.1** (19.7-24.8)	**25.6** (22.7-28.9)	**28.5** (25.1-32.3)	**32.2** (27.3-37.6)	**35.0** (28.9-41.6)	**37.6** (30.0-46.0)	**40.2** (30.6-50.8)	**43.5** (31.6-56.7)	**45.8** (32.5-61.2)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

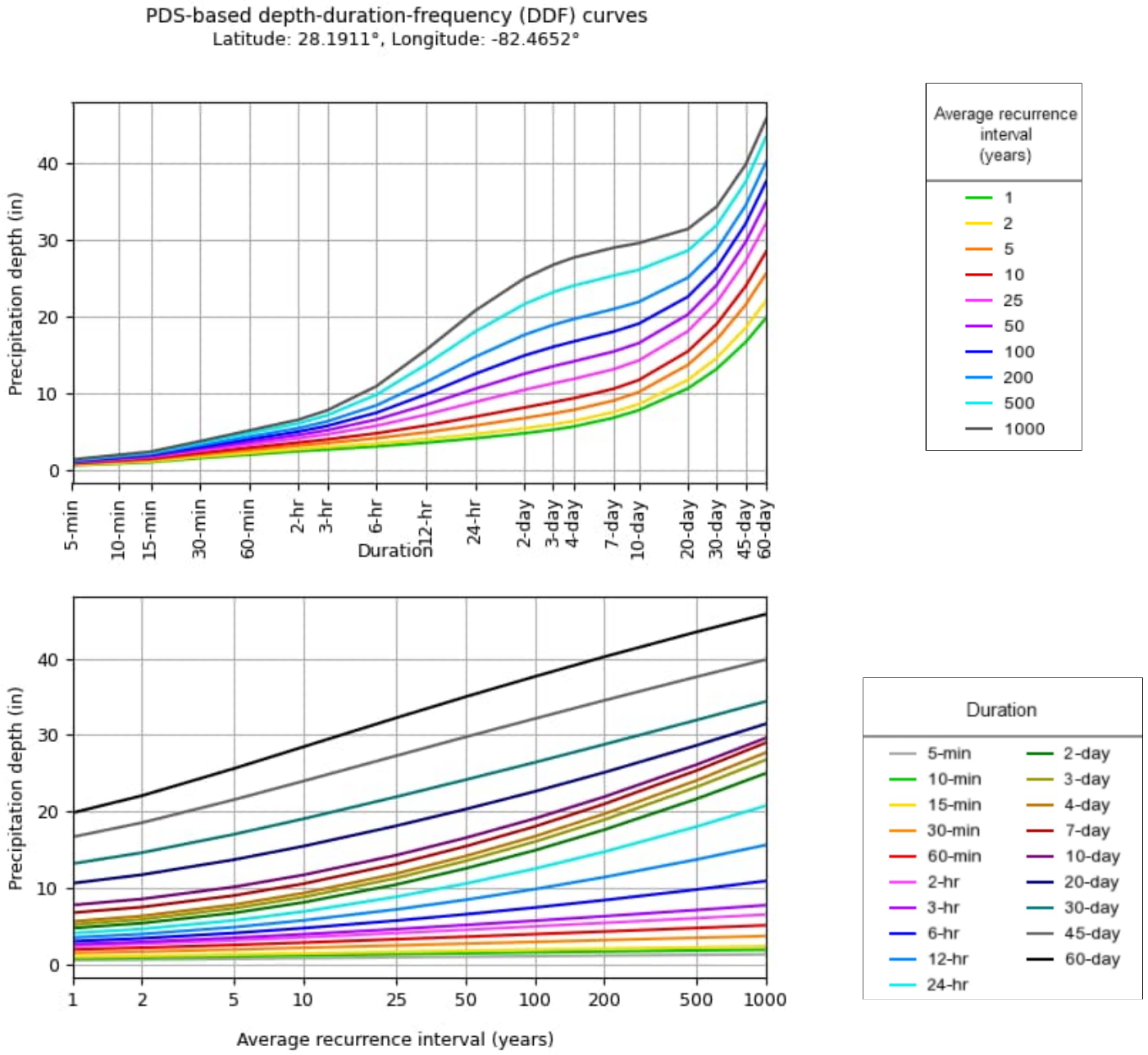
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

FIGURE 2



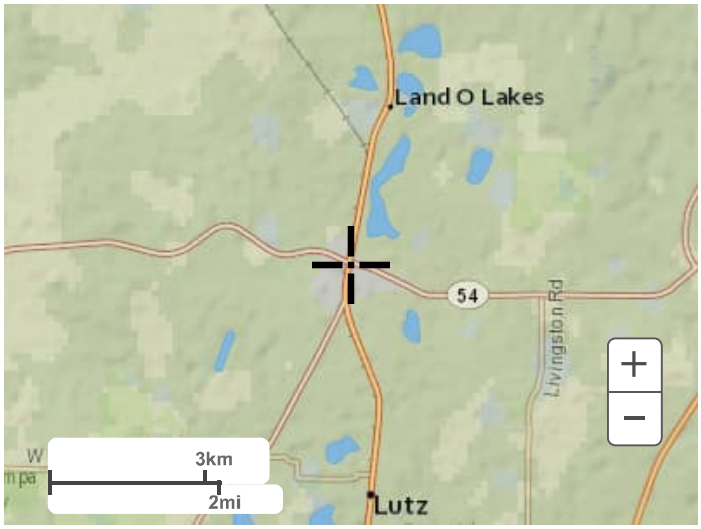
NOAA Atlas 14, Volume 9, Version 2

Created (GMT): Tue Apr 16 14:50:23 2024

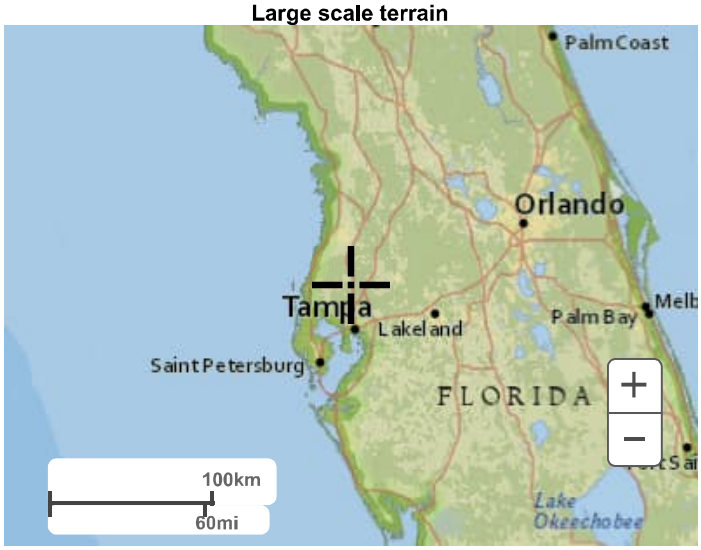
Back to Top

Maps & aerials

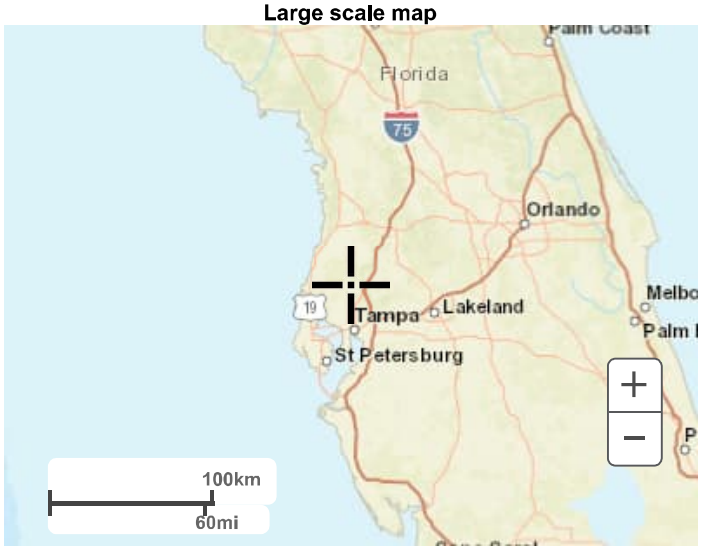
Small scale terrain



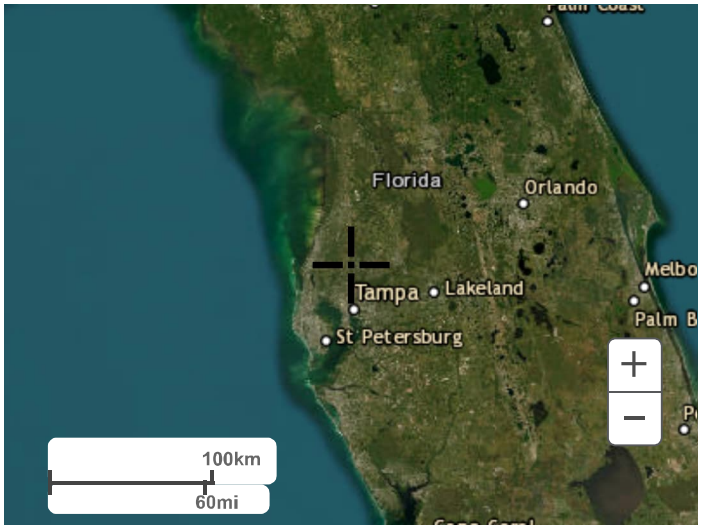
Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

NOAA Atlas 14, Volume 9, Version 2
Location name: Lutz, Florida, USA*
Latitude: 28.1816°, Longitude: -82.4656°
Elevation: 73 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.544** (0.458-0.660)	**0.612** (0.513-0.743)	**0.718** (0.600-0.874)	**0.802** (0.666-0.982)	**0.914** (0.726-1.15)	**0.995** (0.772-1.27)	**1.07** (0.800-1.41)	**1.15** (0.815-1.56)	**1.24** (0.844-1.74)	**1.31** (0.865-1.87)
10-min	**0.797** (0.670-0.967)	**0.896** (0.752-1.09)	**1.05** (0.879-1.28)	**1.18** (0.976-1.44)	**1.34** (1.06-1.68)	**1.46** (1.13-1.86)	**1.57** (1.17-2.06)	**1.68** (1.19-2.28)	**1.82** (1.24-2.54)	**1.92** (1.27-2.74)
15-min	**0.972** (0.817-1.18)	**1.09** (0.917-1.33)	**1.28** (1.07-1.56)	**1.43** (1.19-1.75)	**1.63** (1.30-2.05)	**1.78** (1.38-2.27)	**1.92** (1.43-2.52)	**2.05** (1.46-2.78)	**2.22** (1.51-3.10)	**2.34** (1.54-3.34)
30-min	**1.50** (1.26-1.82)	**1.67** (1.40-2.02)	**1.94** (1.62-2.36)	**2.17** (1.80-2.65)	**2.47** (1.97-3.12)	**2.70** (2.10-3.47)	**2.94** (2.19-3.87)	**3.17** (2.25-4.30)	**3.47** (2.36-4.86)	**3.69** (2.44-5.28)
60-min	**1.95** (1.64-2.36)	**2.17** (1.82-2.64)	**2.54** (2.13-3.10)	**2.85** (2.37-3.49)	**3.28** (2.62-4.15)	**3.62** (2.81-4.65)	**3.95** (2.96-5.22)	**4.30** (3.06-5.85)	**4.76** (3.24-6.68)	**5.11** (3.38-7.30)
2-hr	**2.40** (2.03-2.89)	**2.68** (2.26-3.23)	**3.14** (2.64-3.80)	**3.54** (2.96-4.30)	**4.09** (3.29-5.14)	**4.52** (3.54-5.78)	**4.97** (3.74-6.53)	**5.43** (3.89-7.35)	**6.04** (4.14-8.44)	**6.52** (4.34-9.26)
3-hr	**2.62** (2.22-3.14)	**2.93** (2.48-3.52)	**3.47** (2.93-4.18)	**3.94** (3.30-4.77)	**4.61** (3.73-5.80)	**5.15** (4.05-6.58)	**5.71** (4.32-7.50)	**6.30** (4.54-8.52)	**7.11** (4.90-9.92)	**7.75** (5.18-11.0)
6-hr	**3.02** (2.57-3.59)	**3.40** (2.90-4.06)	**4.10** (3.48-4.90)	**4.74** (3.99-5.69)	**5.71** (4.68-7.21)	**6.54** (5.20-8.36)	**7.43** (5.67-9.76)	**8.40** (6.11-11.4)	**9.79** (6.81-13.6)	**10.9** (7.34-15.4)
12-hr	**3.50** (3.01-4.15)	**3.96** (3.39-4.69)	**4.85** (4.14-5.76)	**5.74** (4.86-6.84)	**7.16** (5.94-9.09)	**8.42** (6.76-10.8)	**9.82** (7.57-12.9)	**11.4** (8.37-15.4)	**13.7** (9.62-19.1)	**15.6** (10.6-21.8)
24-hr	**4.08** (3.52-4.79)	**4.62** (3.98-5.43)	**5.74** (4.93-6.77)	**6.89** (5.88-8.16)	**8.80** (7.39-11.2)	**10.5** (8.54-13.5)	**12.5** (9.71-16.4)	**14.7** (10.9-19.8)	**18.0** (12.7-24.9)	**20.7** (14.1-28.8)
2-day	**4.74** (4.11-5.52)	**5.38** (4.66-6.28)	**6.72** (5.80-7.87)	**8.11** (6.95-9.54)	**10.4** (8.81-13.2)	**12.5** (10.2-15.9)	**14.9** (11.7-19.5)	**17.6** (13.1-23.6)	**21.6** (15.4-29.8)	**25.0** (17.1-34.4)
3-day	**5.20** (4.53-6.04)	**5.89** (5.12-6.84)	**7.32** (6.34-8.53)	**8.80** (7.57-10.3)	**11.3** (9.55-14.2)	**13.5** (11.0-17.1)	**16.0** (12.6-20.8)	**18.9** (14.1-25.2)	**23.2** (16.6-31.8)	**26.7** (18.4-36.7)
4-day	**5.61** (4.90-6.50)	**6.32** (5.51-7.32)	**7.80** (6.77-9.06)	**9.31** (8.03-10.9)	**11.8** (10.1-14.8)	**14.1** (11.6-17.8)	**16.7** (13.2-21.6)	**19.7** (14.8-26.2)	**24.0** (17.2-32.8)	**27.7** (19.1-37.9)
7-day	**6.75** (5.92-7.76)	**7.48** (6.55-8.62)	**8.99** (7.85-10.4)	**10.5** (9.13-12.2)	**13.1** (11.2-16.2)	**15.4** (12.7-19.3)	**18.0** (14.2-23.1)	**20.9** (15.8-27.7)	**25.3** (18.2-34.4)	**28.9** (20.1-39.4)
10-day	**7.75** (6.82-8.88)	**8.54** (7.51-9.80)	**10.1** (8.86-11.6)	**11.7** (10.2-13.5)	**14.2** (12.1-17.5)	**16.5** (13.6-20.5)	**19.0** (15.1-24.3)	**21.9** (16.5-28.7)	**26.1** (18.8-35.2)	**29.6** (20.6-40.1)
20-day	**10.6** (9.38-12.1)	**11.7** (10.4-13.3)	**13.7** (12.1-15.6)	**15.5** (13.5-17.8)	**18.1** (15.4-21.7)	**20.3** (16.7-24.7)	**22.6** (17.9-28.3)	**25.1** (19.0-32.4)	**28.6** (20.7-38.1)	**31.5** (22.0-42.4)
30-day	**13.2** (11.7-14.9)	**14.6** (13.0-16.6)	**17.0** (15.0-19.4)	**19.1** (16.7-21.8)	**21.9** (18.5-25.9)	**24.2** (19.9-29.1)	**26.4** (21.0-32.7)	**28.8** (21.8-36.8)	**32.0** (23.2-42.2)	**34.4** (24.2-46.2)
45-day	**16.7** (14.8-18.8)	**18.5** (16.5-20.9)	**21.5** (19.1-24.4)	**24.0** (21.1-27.3)	**27.3** (23.1-32.0)	**29.7** (24.6-35.5)	**32.2** (25.6-39.5)	**34.5** (26.2-43.8)	**37.6** (27.3-49.2)	**39.9** (28.2-53.4)
60-day	**19.8** (17.7-22.3)	**22.1** (19.7-24.8)	**25.6** (22.8-28.9)	**28.5** (25.1-32.3)	**32.2** (27.3-37.5)	**35.0** (28.9-41.5)	**37.6** (30.0-46.0)	**40.2** (30.6-50.7)	**43.5** (31.6-56.7)	**45.8** (32.5-61.1)

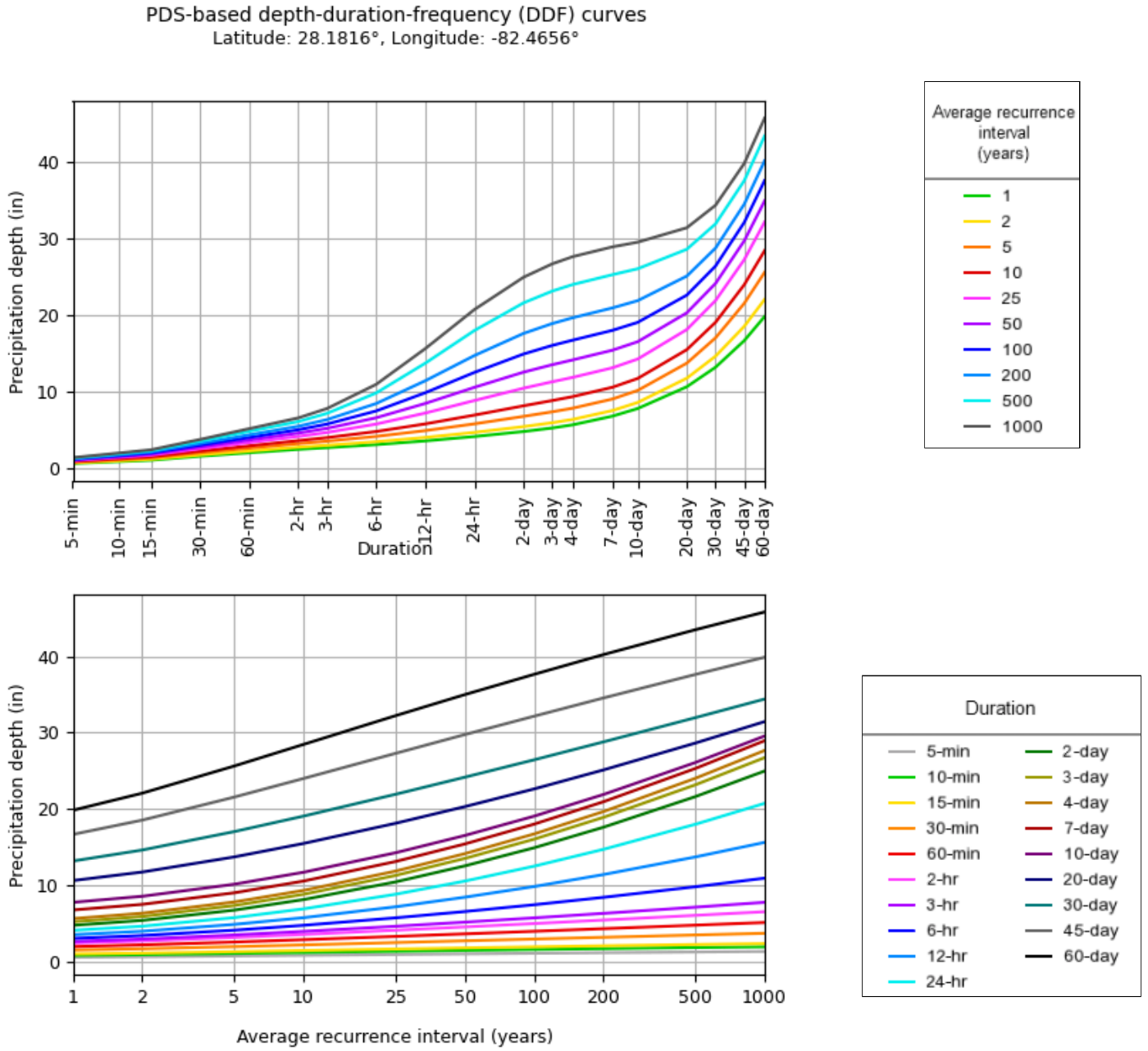
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



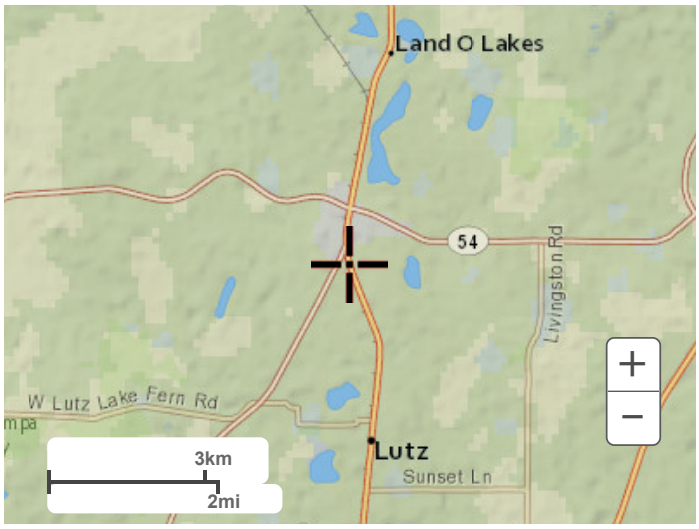
NOAA Atlas 14, Volume 9, Version 2

Created (GMT): Tue May 7 20:05:07 2024

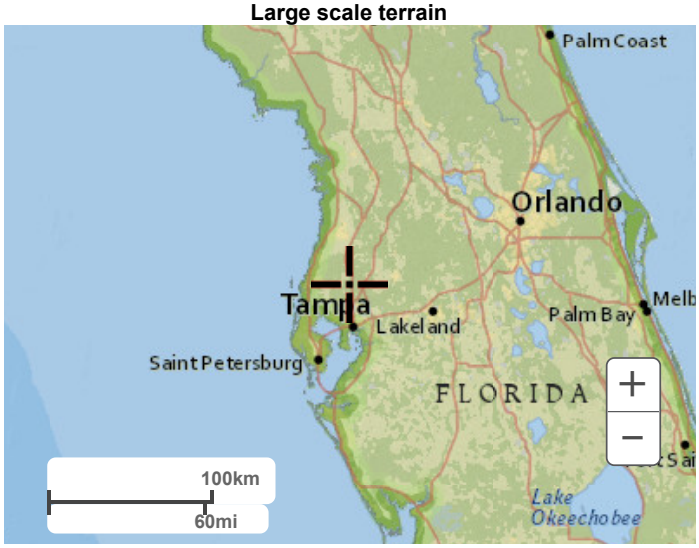
Back to Top

Maps & aerials

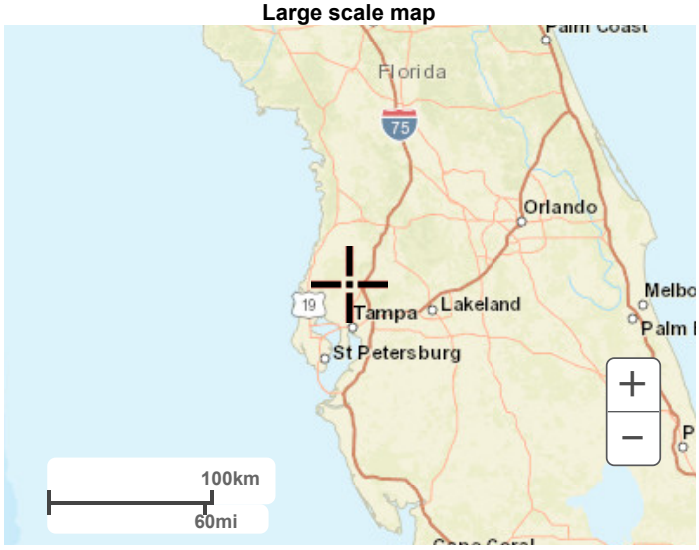
Small scale terrain



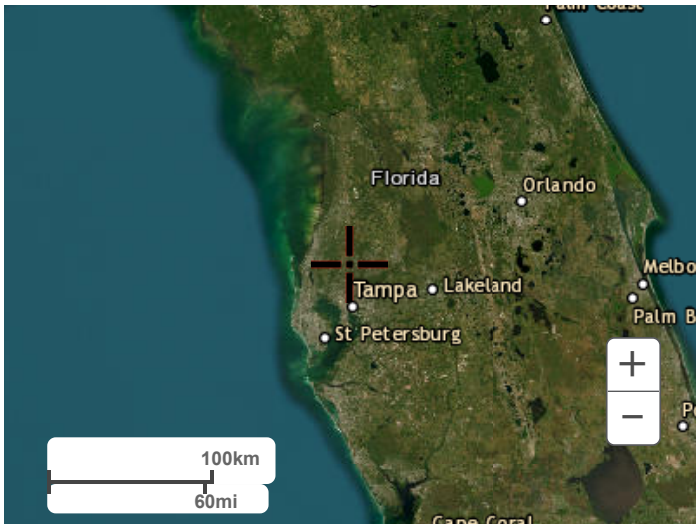
Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

NOAA Atlas 14, Volume 9, Version 2
Location name: Lutz, Florida, USA*
Latitude: 28.19°, Longitude: -82.4598°
Elevation: 73 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.543 (0.456-0.659)	0.610 (0.512-0.742)	0.716 (0.598-0.873)	0.800 (0.664-0.981)	0.911 (0.724-1.14)	0.993 (0.770-1.27)	1.07 (0.798-1.41)	1.15 (0.814-1.55)	1.24 (0.842-1.73)	1.31 (0.864-1.87)
10-min	0.795 (0.668-0.965)	0.893 (0.749-1.09)	1.05 (0.876-1.28)	1.17 (0.973-1.44)	1.34 (1.06-1.68)	1.45 (1.13-1.86)	1.57 (1.17-2.06)	1.68 (1.19-2.27)	1.82 (1.23-2.54)	1.91 (1.26-2.74)
15-min	0.969 (0.814-1.18)	1.09 (0.914-1.32)	1.28 (1.07-1.56)	1.43 (1.19-1.75)	1.63 (1.29-2.04)	1.77 (1.38-2.27)	1.91 (1.42-2.51)	2.05 (1.45-2.77)	2.21 (1.50-3.10)	2.33 (1.54-3.34)
30-min	1.50 (1.26-1.82)	1.66 (1.40-2.02)	1.94 (1.62-2.36)	2.16 (1.80-2.65)	2.47 (1.97-3.12)	2.70 (2.10-3.47)	2.93 (2.19-3.87)	3.16 (2.25-4.30)	3.47 (2.36-4.86)	3.69 (2.44-5.29)
60-min	1.95 (1.64-2.36)	2.17 (1.82-2.64)	2.54 (2.12-3.10)	2.85 (2.36-3.49)	3.28 (2.62-4.15)	3.61 (2.81-4.64)	3.95 (2.95-5.22)	4.29 (3.06-5.85)	4.75 (3.24-6.68)	5.10 (3.37-7.30)
2-hr	2.40 (2.03-2.89)	2.68 (2.26-3.23)	3.14 (2.64-3.80)	3.53 (2.95-4.30)	4.08 (3.28-5.14)	4.52 (3.54-5.78)	4.96 (3.73-6.52)	5.42 (3.88-7.34)	6.03 (4.14-8.43)	6.51 (4.33-9.26)
3-hr	2.61 (2.22-3.14)	2.93 (2.48-3.52)	3.46 (2.92-4.18)	3.93 (3.29-4.76)	4.60 (3.72-5.79)	5.14 (4.04-6.57)	5.70 (4.31-7.49)	6.29 (4.53-8.52)	7.10 (4.89-9.91)	7.74 (5.17-11.0)
6-hr	3.01 (2.57-3.59)	3.40 (2.89-4.06)	4.09 (3.47-4.90)	4.73 (3.98-5.69)	5.70 (4.67-7.21)	6.53 (5.19-8.36)	7.42 (5.66-9.76)	8.39 (6.10-11.4)	9.78 (6.80-13.6)	10.9 (7.33-15.3)
12-hr	3.50 (3.00-4.14)	3.96 (3.39-4.69)	4.85 (4.14-5.77)	5.74 (4.86-6.86)	7.16 (5.94-9.10)	8.42 (6.76-10.8)	9.82 (7.57-12.9)	11.4 (8.37-15.4)	13.7 (9.61-19.1)	15.6 (10.6-21.8)
24-hr	4.08 (3.51-4.79)	4.62 (3.98-5.44)	5.74 (4.92-6.78)	6.89 (5.87-8.17)	8.80 (7.38-11.2)	10.5 (8.53-13.5)	12.5 (9.70-16.4)	14.7 (10.9-19.9)	18.0 (12.7-24.9)	20.7 (14.1-28.8)
2-day	4.74 (4.11-5.53)	5.37 (4.65-6.28)	6.71 (5.79-7.86)	8.09 (6.93-9.53)	10.4 (8.79-13.2)	12.5 (10.2-15.9)	14.9 (11.6-19.4)	17.6 (13.1-23.6)	21.6 (15.4-29.8)	24.9 (17.1-34.4)
3-day	5.20 (4.52-6.04)	5.88 (5.11-6.85)	7.31 (6.33-8.53)	8.79 (7.56-10.3)	11.2 (9.53-14.2)	13.5 (11.0-17.1)	16.0 (12.6-20.8)	18.9 (14.1-25.2)	23.1 (16.6-31.8)	26.7 (18.4-36.7)
4-day	5.61 (4.89-6.50)	6.32 (5.50-7.33)	7.79 (6.76-9.06)	9.30 (8.02-10.9)	11.8 (10.0-14.8)	14.1 (11.6-17.8)	16.7 (13.2-21.7)	19.6 (14.7-26.2)	24.0 (17.2-32.9)	27.7 (19.1-37.9)
7-day	6.75 (5.91-7.77)	7.48 (6.55-8.63)	8.99 (7.84-10.4)	10.5 (9.13-12.2)	13.1 (11.1-16.3)	15.4 (12.7-19.3)	18.0 (14.2-23.1)	20.9 (15.8-27.7)	25.3 (18.2-34.4)	29.0 (20.1-39.5)
10-day	7.75 (6.81-8.89)	8.54 (7.50-9.81)	10.1 (8.85-11.7)	11.7 (10.2-13.5)	14.2 (12.1-17.5)	16.5 (13.6-20.5)	19.0 (15.1-24.3)	21.9 (16.5-28.8)	26.1 (18.8-35.3)	29.6 (20.6-40.2)
20-day	10.6 (9.37-12.1)	11.7 (10.3-13.4)	13.7 (12.0-15.6)	15.4 (13.5-17.8)	18.1 (15.3-21.7)	20.3 (16.7-24.7)	22.6 (17.9-28.3)	25.1 (19.0-32.4)	28.6 (20.7-38.1)	31.4 (22.0-42.4)
30-day	13.2 (11.7-14.9)	14.6 (12.9-16.6)	17.0 (15.0-19.4)	19.0 (16.7-21.8)	21.9 (18.5-25.9)	24.1 (19.9-29.1)	26.4 (20.9-32.7)	28.7 (21.8-36.8)	31.9 (23.1-42.1)	34.4 (24.2-46.2)
45-day	16.6 (14.8-18.8)	18.5 (16.5-20.9)	21.5 (19.1-24.4)	24.0 (21.1-27.3)	27.2 (23.0-32.0)	29.7 (24.5-35.5)	32.1 (25.5-39.5)	34.5 (26.2-43.8)	37.6 (27.3-49.2)	39.8 (28.1-53.3)
60-day	19.8 (17.7-22.3)	22.1 (19.7-24.9)	25.6 (22.7-28.9)	28.5 (25.1-32.3)	32.2 (27.3-37.6)	35.0 (28.9-41.6)	37.6 (29.9-46.0)	40.2 (30.5-50.8)	43.5 (31.6-56.7)	45.8 (32.4-61.1)

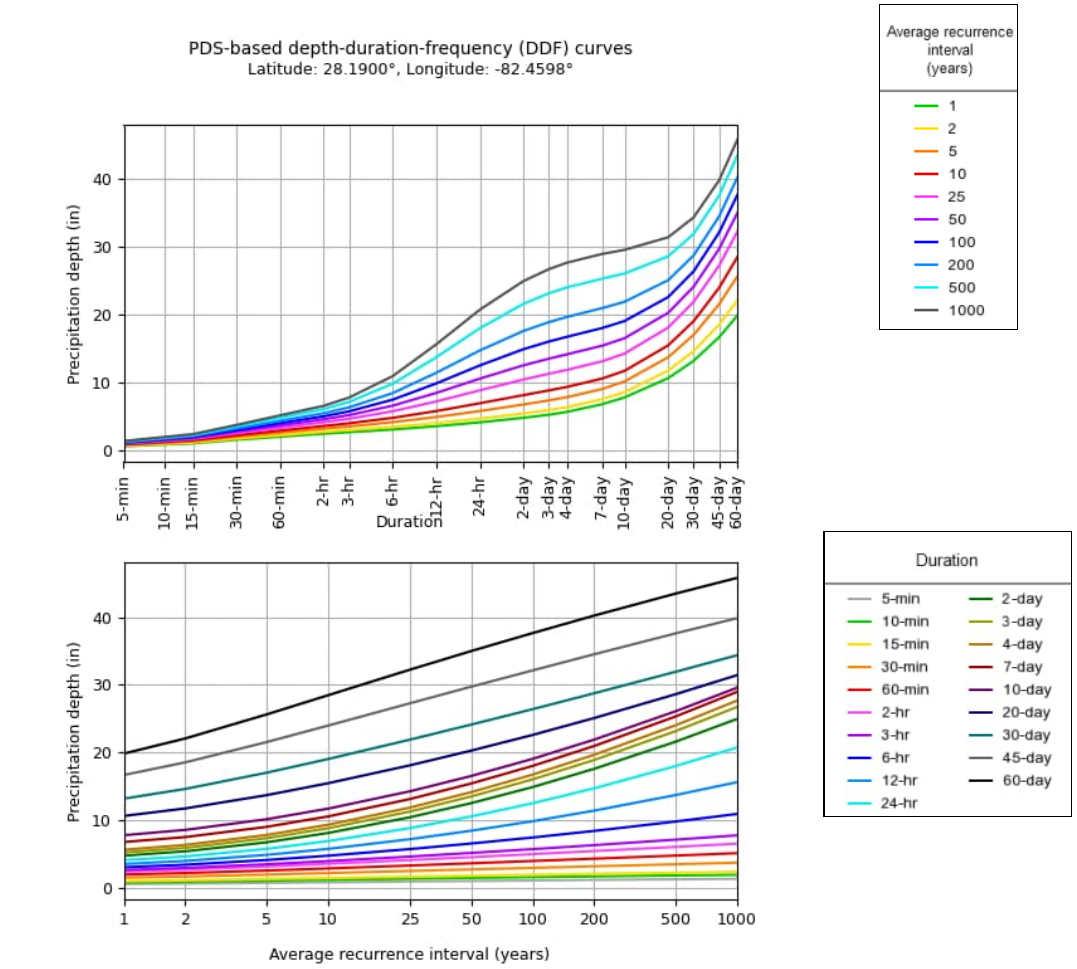
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



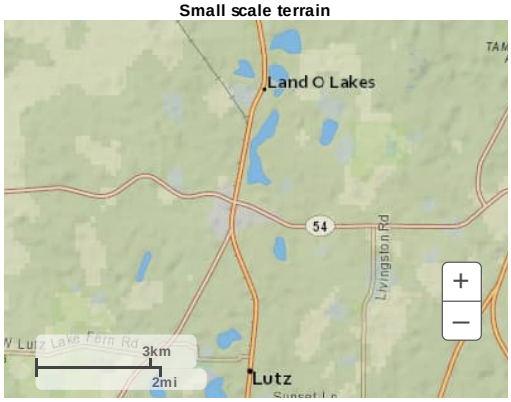
NOAA Atlas 14, Volume 9, Version 2

Created (GMT): Fri May 10 13:04:00 2024

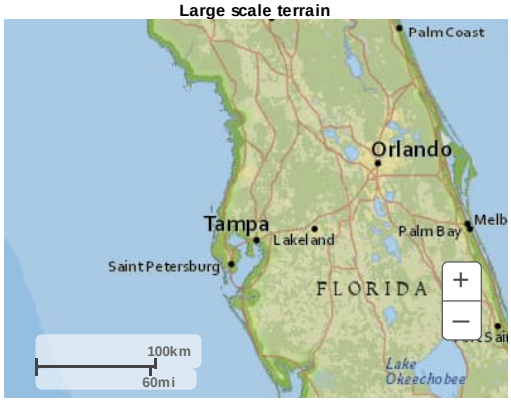
Back to Top

Maps & aerials

Small scale terrain

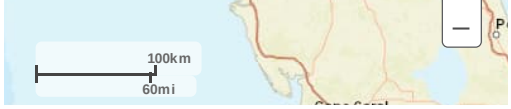


Large scale terrain

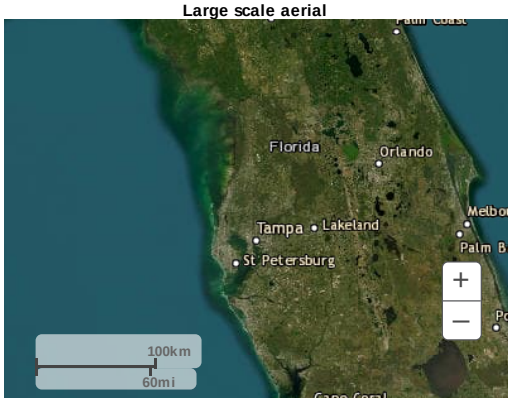


Large scale map





Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

od Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET

PROJECT AREA

PANEL 0403F

NFIP NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

PASCO COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 403 OF 500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PASCO COUNTY	120230	0403	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 12101C0403F

EFFECTIVE DATE SEPTEMBER 26, 2014

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

JOINS PANEL 0411

500000 FT

505000 FT

82°28'07.5"

28°11'15"

252618

1405000 F

FIGURE 3

d Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET

PROJECT AREA

PADGETT LAKE

LAKE FLOYD

ZONE A

ZONE AE (EL 71.5)

ZONE AE (EL 68.9)

ZONE AE (EL 68.8)

ZONE AE (EL 72.8)

ZONE AE (EL 67.6)

ZONE AE (EL 69.8)

ZONE AE (EL 67.8)

ZONE AE (EL 73.2)

ZONE AE (EL 71.6)

ZONE AE (EL 71.4)

ZONE AE (EL 71.0)

ZONE AE (EL 70.8)

ZONE AE (EL 70.6)

ZONE AE (EL 70.3)

ZONE AE (EL 67.3)

ZONE AE (EL 68.3)

ZONE AE (EL 69.6)

ZONE AE (EL 69.2)

ZONE AE (EL 68.9)

ZONE AE (EL 68.8)

7NC6510 7NC6500 7NC6390 7NC6490 7NC6520 7NC6550 7NC6530 7NC6540 7ND0710 7ND0885 7ND0875 7ND0877 7ND1385 7ND0707 7ND1375 7ND1390 7ND1360 7ND1380 7ND1370

3NH1205 3NH1210 3NH1215 3NH1230 3NH1140 3NH1470 3NH1220 3NH1240 3NH1200 3NH1255 3NH1260 3NH1540 3NH1270 3NH1560 3NH1520 3NH1620 3NH1280

AL6406 AL6407 AL0525

3BNDY5

252618

PAOLI DR

RUSTIC LODGE LN

MC KAIG LN

COAKLEY LN

MORGAN RD

STATION LN

LAND O LAKES BLVD

RAILROAD

JESSIE LN

EARLENE DR

CABOT RD

OTIS WAY

WILSKY RD

CUDJOE LN

CARSON DR

RADEN DR

OASIS DR

DEKAN LN

MARINER PL

VIL LKS SHOPG CTR DR

KNIGHT RD

OSPREY LN

BRINSON RD

LEONARD RD

54

$^{31}20^{000m}N$

$^{31}19^{000m}N$

28°11'15"

82°28'07.5"

R. 18 E.

R. 19 E.

JOINS PANEL 0412

510000 FT

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0404F

FIRM

FLOOD INSURANCE RATE MAP

PASCO COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 404 OF 500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PASCO COUNTY	120230	0404	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 12101C0404F

EFFECTIVE DATE SEPTEMBER 26, 2014

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

82°28'07.5"
28°11'15"
$^{3}56^{000m}$E
$^{3}57^{000m}$E
$^{31}18^{000m}$N
R. 18 E.
R. 19 E.
JOINS PANEL 0404

MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET METERS

PROJECT AREA

Pasco County
Unincorporated Areas
120230

LAKE FLOYD
BIRD LAKE

ZONE AE (EL 69.6)
ZONE AE (EL 69.4)
LAZY DAYS CIR
ZONE AE (EL 71.9)
ZONE AE (EL 70.3)
ZONE A
BRINSON RD
7ND1170
ZONE AE (EL 69.6)
ZONE AE (EL 69.8)
7ND1230
ZONE AE (EL 69.6)
7ND1220
ZONE AE (EL 69.4)
ZONE A
ZONE AE (EL 67.4)
7ND1210
7ND0445
ZONE AE (EL 69.9)
RAILROAD
DALE MABRY STATE HIGHWAY
ZONE A
ZONE AE (EL 69.1)
7ND1485
7ND0740
ZONE AE (EL 69.6)
ZONE AE (EL 70.6)
3NH1720
ZONE AE (EL 69.6)
7ND1520
ZONE AE (EL 69.4)
3ANCLOTE
ZONE A
ZONE AE (EL 70.1)
ZONE A
7ND1160
ZONE AE (EL 71.0)
7ND1550
3NH1600
3NH1640
252618
ZONE AE (EL 69.2)
ZONE AE (EL 69.2)
ZONE AE (EL 69.2)
ZONE AE (EL 69.6)
54
3NH1660
ZONE AE (EL 69.3)
ZONE AE (EL 69.2)
BRAINERD CT
CHENEY CT
CLOVERDALE CT
3NH1680
ZONE AE (EL 68.9)
MIMS WAY
WYTHEVILLE WAY
ZONE AE (EL 68.5)
ROSEWOOD CT
AL6408
HAMMOCK
ZONE AE (EL 69.5)
NESTING CT
DAIQUIRI LN
BUTTONBUSH DR
LAKE HERON DR
SNOWY EGRET PL
WOODSTORK LN
COOT DR
PINTAIL CT
CURLEW CT
OSPREY LN
ZONE AE (EL 68.5)
ZONE AE (EL 68.5)
ZONE AE (EL 68.5)
3NH2080
ZONE AE (EL 69.9)
3NH1580
AARON CT
GRAY TERN CT
GREBE CT
CLUBSIDE LP
LAKE FLOYD DR
ZONE AE (EL 69.9)
ZONE AE (EL 68.6)
KEATING WAY
PLOVER CT
362618
3NH1700
3NH1780
LAND O LAKES BLVD
ZONE AE (EL 69.4)
7ND1530
ZONE A
ZONE AE (EL 68.6)
GLORY RD
3NH1760
3NH1740
ZONE AE (EL 68.8)
NORTHWOOD DR
TEAL CT
EASTWOOD DR
LAGOON DR
ZONE AE (EL 68.5)
3NH1800
ZONE AE (EL 68.5)

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0412F

FIRM

FLOOD INSURANCE RATE MAP

PASCO COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 412 OF 500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PASCO COUNTY	120230	0412	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

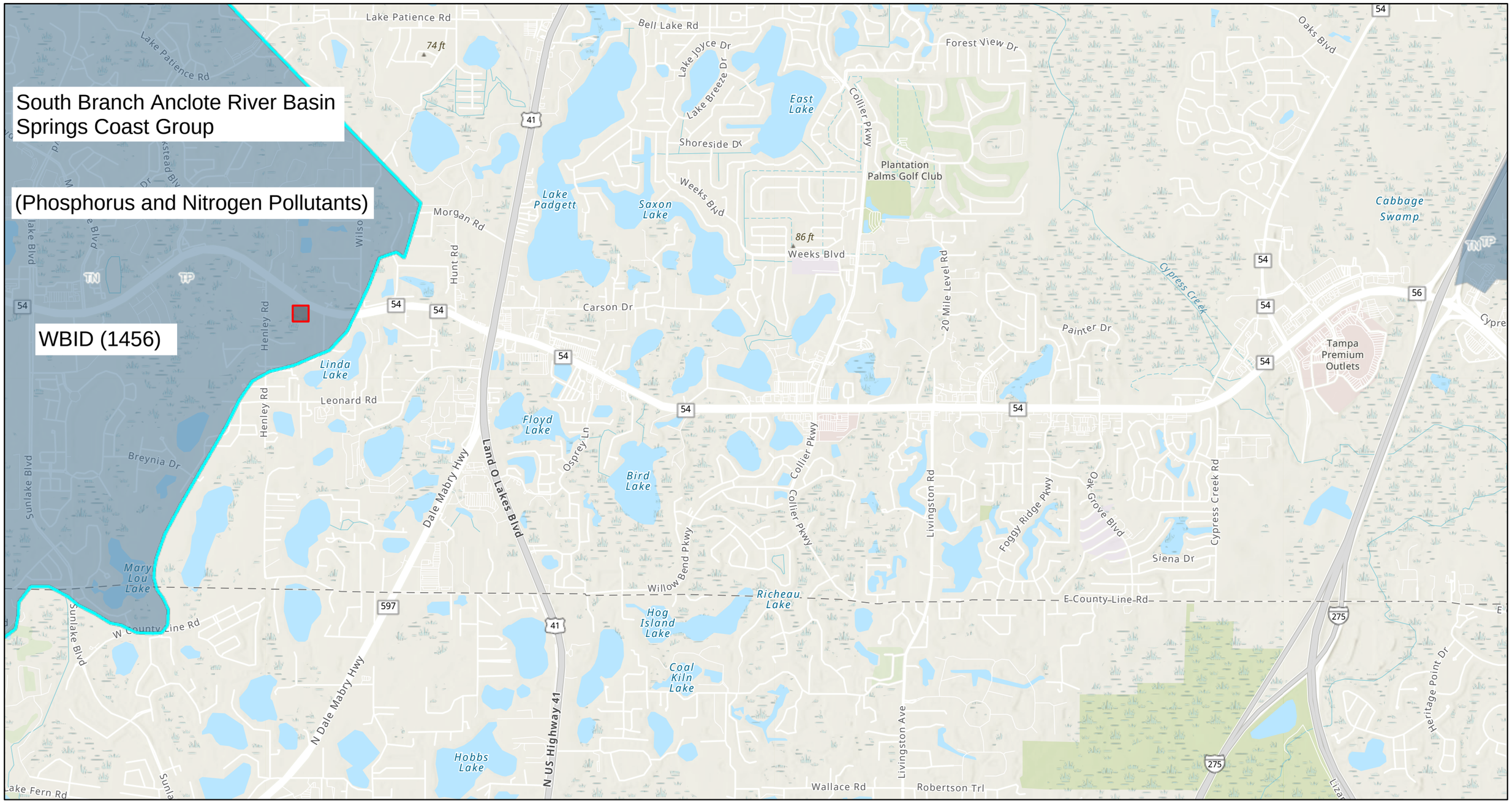
MAP NUMBER
12101C0412F

EFFECTIVE DATE
SEPTEMBER 26, 2014

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

EPA Established TMDL's



March 27, 2024

EPA Established Total Maximum Daily Loads (TMDLs)

- AMMONIA; NUTRIENTS; ORGANIC ENRICHMENT/OXYGEN DEPLETION
- PATHOGENS

1:36,112

0 0.4 0.8 1.6 mi

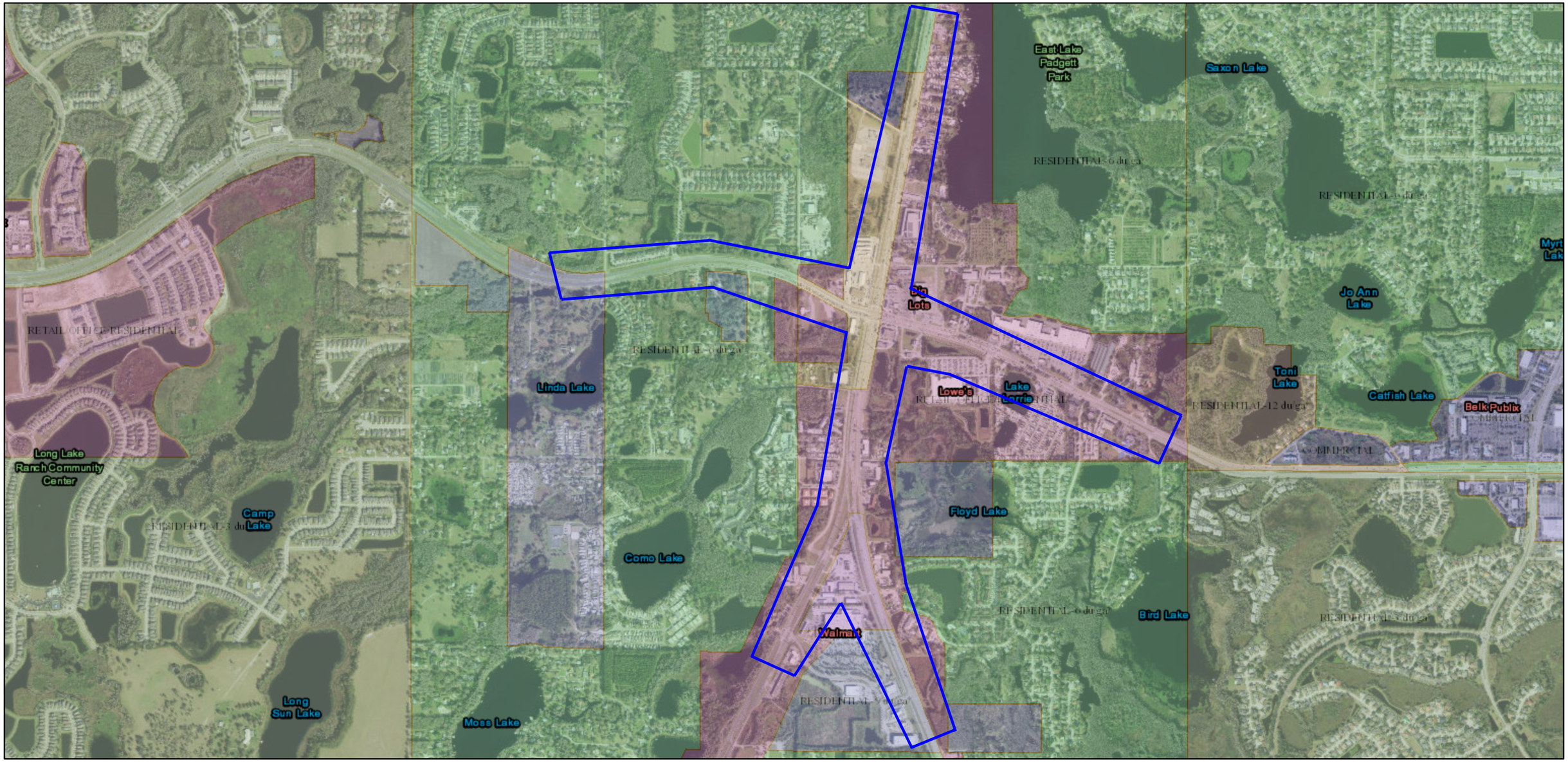
0 0.5 1 2 km

FDEP, DEAR, Esri, NASA, NGA, USGS, FEMA, FDEP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

FIGURE 4

Map created by Map Direct, powered by ESRI. NITROGEN AND
Florida Department of Environmental Protection makes no warranty,expressed or implied,or assumes any legal liability or responsibility for the accuracy,completeness,or usefulness of any information,apparatus,product,or process disclosed,or represents that its use would not infringe privately owned rights.

US 41 and SR 54 Future Land Use Map



4/3/2024, 1:23:15 PM

1:18,056

0 0.17 0.35 0.7 mi

0 0.3 0.6 1.2 km

Esri, HERE, Garmin, iPC, Maxar

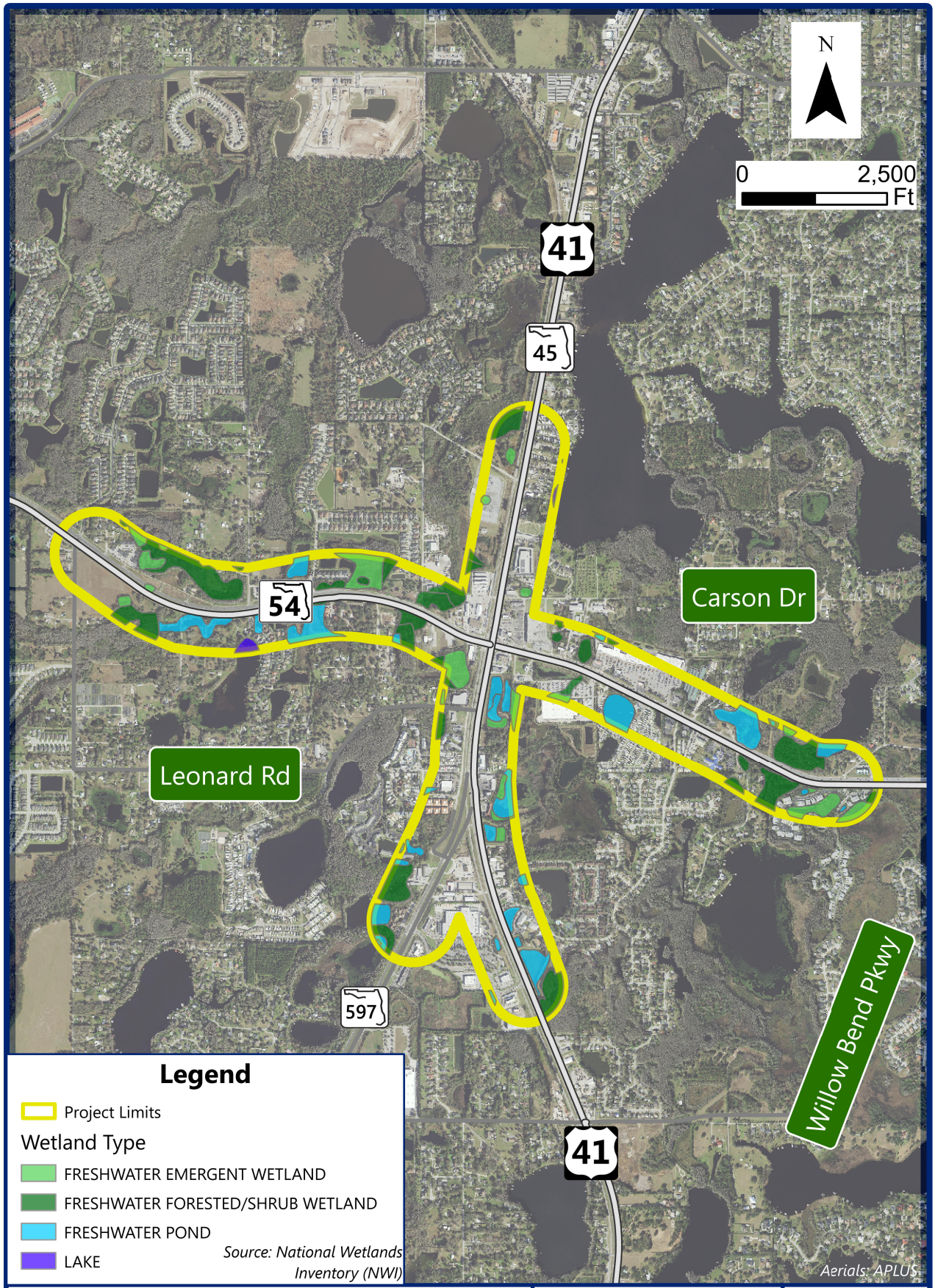
Future Landuse

- AGRICULTURAL-.1 du/ga*
- AGRICULTURAL/RURAL-.2 du/ga*
- COASTAL LAND .025 du/ga**
- COMMERCIAL
- COMMERCIAL
- CONSERVATION LANDS
- EMPLOYMENT CENTER
- GATEWAY HUB
- INDUSTRIAL-HEAVY
- INDUSTRIAL-LIGHT
- LIGHT INDUSTRIAL
- MAJOR ATTRACTORS
- MAJOR PUBLIC/SEMI-PUBLIC
- MAJOR RECREATION/OPEN SPACE
- MIXED USES
- NEW PORT CORNERS
- NEWTOWN
- OFFICE
- OFFICE
- OFFICE
- PLANNED DEVELOPMENT
- RESIDENTIAL-1 du/ga*
- RESIDENTIAL-12 du/ga*
- RESIDENTIAL-24 du/ga*
- RESIDENTIAL-3 du/ga*
- RESIDENTIAL-6 du/ga*
- RESIDENTIAL-9 du/ga*
- RETAIL/OFFICE/RESIDENTIAL
- TOWN CENTER
- VILLAGE MIXED USE - TYPE 1
- VILLAGE MIXED USE - TYPE 2B
- VILLAGE MIXED USE - TYPE 2A

Author

J Edwards | Maxar | Esri, HERE, Garmin, iPC |

FIGURE 5



US 41 at SR 54 PD&E Study

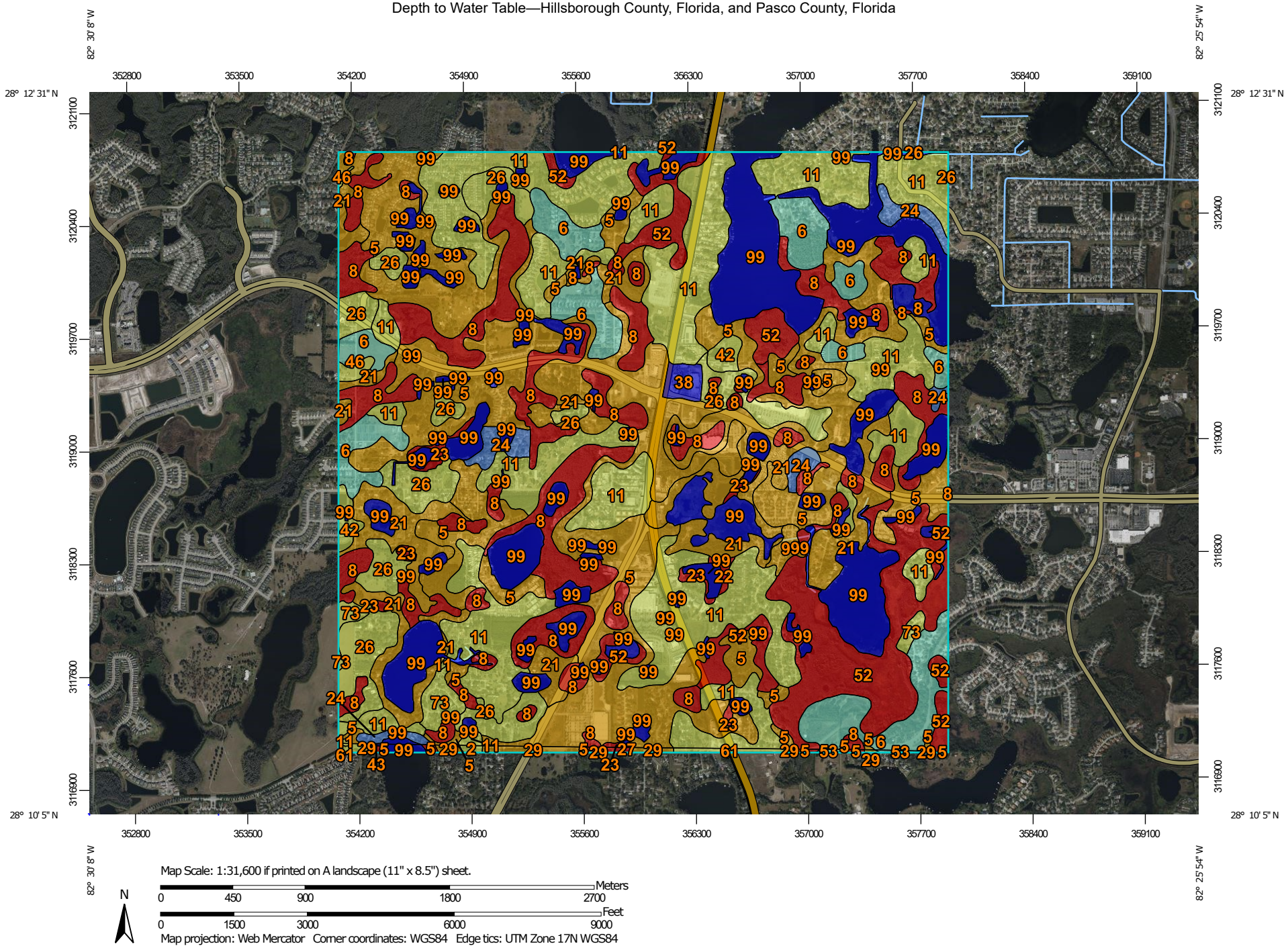
from South of SR 54 Intersection to North of SR 54 Intersection

Wetlands and Surface Waters

FIGURE 6

FIGURE 7- USDA NRCS Depth to Water Table

Depth to Water Table—Hillsborough County, Florida, and Pasco County, Florida



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Hillsborough County, Florida
Survey Area Data: Version 23, Aug 28, 2023

Soil Survey Area: Pasco County, Florida
Survey Area Data: Version 22, Sep 6, 2023

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Jan 6, 2022—Jan 30, 2022

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

Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
2	Adamsville fine sand, 0 to 2 percent slopes	51	1.7	0.0%
5	Basinger, Holopaw, and Samsula soils, depressional	0	3.8	0.1%
27	Malabar fine sand, 0 to 2 percent slopes	15	1.6	0.0%
29	Myakka fine sand, 0 to 2 percent slopes	31	11.3	0.3%
43	Quartzipsamments, nearly level	>200	0.2	0.0%
53	Tavares-Millhopper fine sands, 0 to 5 percent slopes	145	1.6	0.0%
61	Zolfo fine sand, 0 to 2 percent slopes	76	6.3	0.2%
99	Water	>200	3.3	0.1%
Subtotals for Soil Survey Area			**29.7**	**0.8%**
Totals for Area of Interest			**3,517.0**	**100.0%**

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
5	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	30	679.3	19.3%
6	Tavares sand, 0 to 5 percent slopes	145	210.9	6.0%
8	Sellers mucky loamy fine sand	0	426.7	12.1%
9	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	31	8.5	0.2%
11	Adamsville fine sand, 0 to 2 percent slopes	51	748.0	21.3%
21	Smyrna fine sand	31	313.9	8.9%
22	Basinger fine sand, 0 to 2 percent slopes	15	3.0	0.1%
23	Basinger fine sand, depressional, 0 to 1 percent slopes	0	17.3	0.5%
24	Quartzipsamments, shaped, 0 to 5 percent slopes	183	42.9	1.2%

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
26	Narcoossee fine sand, 0 to 2 percent slopes	84	185.8	5.3%
38	Urban land, 0 to 2 percent slopes	>200	12.3	0.4%
42	Pomello fine sand, 0 to 5 percent slopes	84	17.7	0.5%
46	Cassia fine sand, 0 to 5 percent slopes	59	5.9	0.2%
52	Samsula muck, frequently ponded, 0 to 1 percent slopes	0	265.5	7.5%
73	Zolfo fine sand, 0 to 2 percent slopes	76	27.1	0.8%
99	Water	>200	522.5	14.9%
Subtotals for Soil Survey Area			**3,487.2**	**99.2%**
Totals for Area of Interest			**3,517.0**	**100.0%**

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

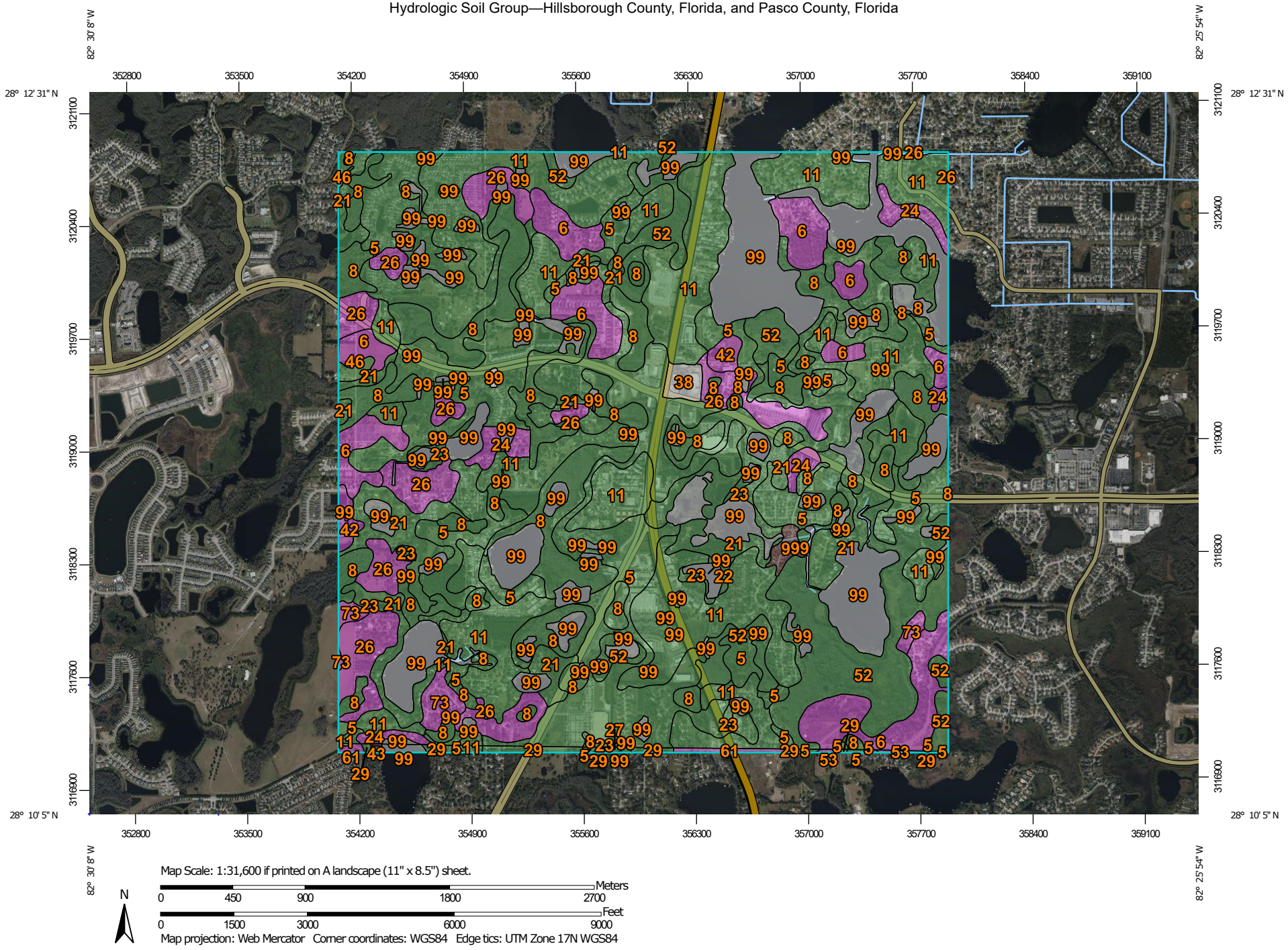
Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

FIGURE 8- USDA NRCS Hydrologic Soil Group

Hydrologic Soil Group—Hillsborough County, Florida, and Pasco County, Florida



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Hillsborough County, Florida
Survey Area Data: Version 23, Aug 28, 2023

Soil Survey Area: Pasco County, Florida
Survey Area Data: Version 22, Sep 6, 2023

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Jan 6, 2022—Jan 30, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Adamsville fine sand, 0 to 2 percent slopes	A/D	1.7	0.0%
5	Basinger, Holopaw, and Samsula soils, depressional	A/D	3.8	0.1%
27	Malabar fine sand, 0 to 2 percent slopes	A/D	1.6	0.0%
29	Myakka fine sand, 0 to 2 percent slopes	A/D	11.3	0.3%
43	Quartzipsamments, nearly level	A	0.2	0.0%
53	Tavares-Millhopper fine sands, 0 to 5 percent slopes	A	1.6	0.0%
61	Zolfo fine sand, 0 to 2 percent slopes	A	6.3	0.2%
99	Water		3.3	0.1%
Subtotals for Soil Survey Area			**29.7**	**0.8%**
Totals for Area of Interest			**3,517.0**	**100.0%**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
5	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	A/D	679.3	19.3%
6	Tavares sand, 0 to 5 percent slopes	A	210.9	6.0%
8	Sellers mucky loamy fine sand	A/D	426.7	12.1%
9	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	B/D	8.5	0.2%
11	Adamsville fine sand, 0 to 2 percent slopes	A/D	748.0	21.3%
21	Smyrna fine sand	A/D	313.9	8.9%
22	Basinger fine sand, 0 to 2 percent slopes	A/D	3.0	0.1%
23	Basinger fine sand, depressional, 0 to 1 percent slopes	A/D	17.3	0.5%
24	Quartzipsamments, shaped, 0 to 5 percent slopes	A	42.9	1.2%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
26	Narcoossee fine sand, 0 to 2 percent slopes	A	185.8	5.3%
38	Urban land, 0 to 2 percent slopes		12.3	0.4%
42	Pomello fine sand, 0 to 5 percent slopes	A	17.7	0.5%
46	Cassia fine sand, 0 to 5 percent slopes	A/D	5.9	0.2%
52	Samsula muck, frequently ponded, 0 to 1 percent slopes	A/D	265.5	7.5%
73	Zolfo fine sand, 0 to 2 percent slopes	A	27.1	0.8%
99	Water		522.5	14.9%
Subtotals for Soil Survey Area			**3,487.2**	**99.2%**
Totals for Area of Interest			**3,517.0**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX 2

EXISTING DRAINAGE MAP

LEGEND

Existing BASIN P1E1
TOTAL AREA: 16.30 AC
IMPERVIOUS AREA: 8.50 AC
PERVIOUS AREA: 5.76 AC
WATER SURFACE: 2.04 AC
CN: 88.55

Existing BASIN P1E2
TOTAL AREA: 15.19 AC
IMPERVIOUS AREA: 6.59 AC
PERVIOUS AREA: 8.12 AC
WATER SURFACE: 0.48 AC
CN: 86.33

Existing BASIN D
TOTAL AREA: 32.64 AC
IMPERVIOUS AREA: 23.49 AC
PERVIOUS AREA: 7.17 AC
WATER SURFACE: 1.98 AC
CN: 91.73

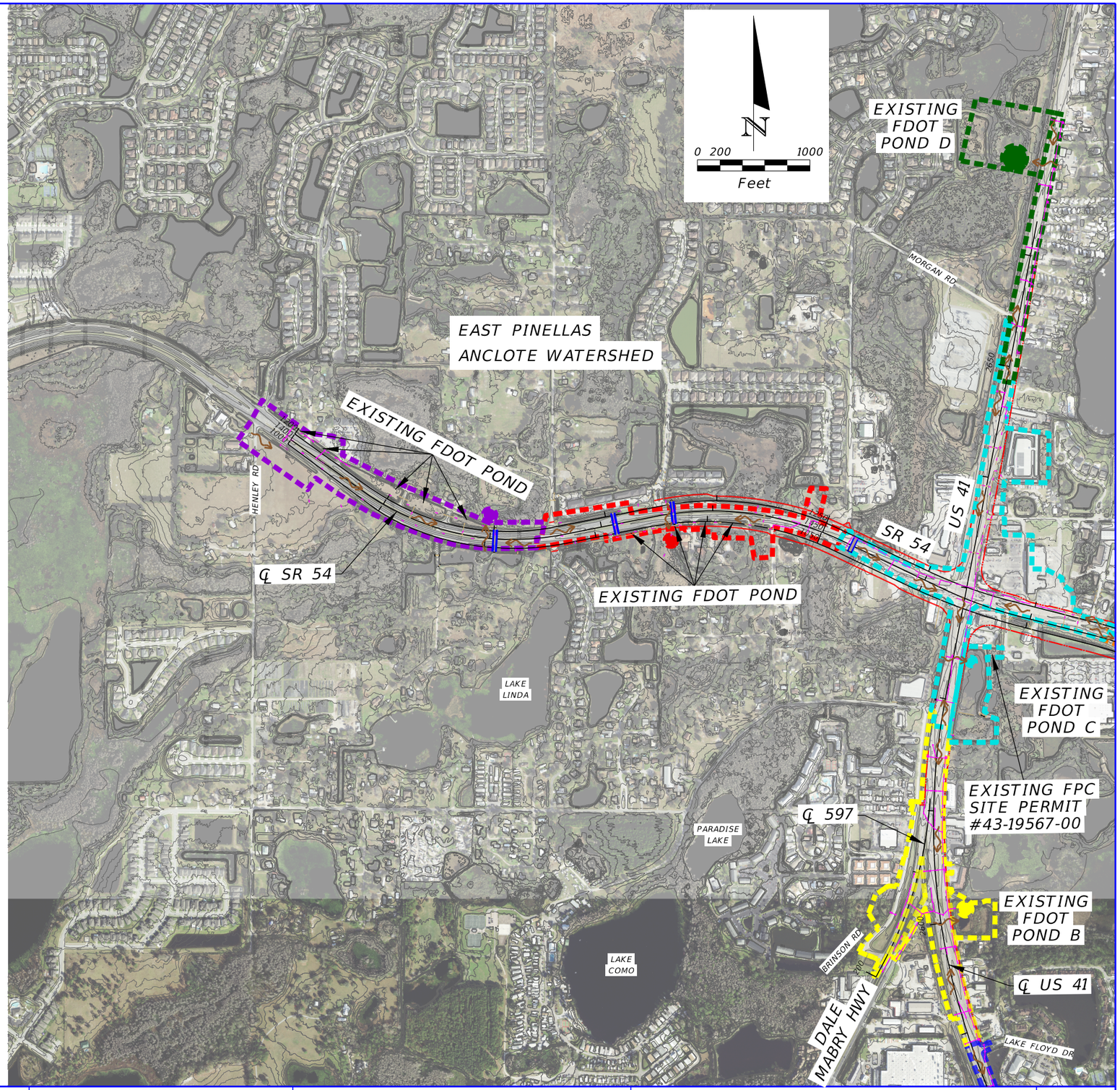
Existing BASIN C(1)
TOTAL AREA: 41.64 AC
IMPERVIOUS AREA: 28.88 AC
PERVIOUS AREA: 8.39 AC
WATER SURFACE: 4.37 AC
CN: 92.75

Existing BASIN B3
TOTAL AREA: 23.86 AC
IMPERVIOUS AREA: 12.25 AC
PERVIOUS AREA: 9.74 AC
WATER SURFACE: 1.88 AC
CN: 92.45

FLOW ARROW

CROSS DRAIN

R/W LINE



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
JENNIFER FLORES, P.E.
LICENSE NUMBER: 84372
AECOM TECHNICAL SERVICES, INC.
150 N ORANGE AVE
ORLANDO, FLORIDA 32810

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US41 SR54	PASCO	

US 41 SR 54
EXISTING BASIN MAP

SHEET NO.

LEGEND

Existing BASIN C(1)
TOTAL AREA: 41.64 AC
IMPERVIOUS AREA: 28.88 AC
PERVIOUS AREA: 8.39 AC
WATER SURFACE: 4.37 AC
CN: 92.75

Existing BASIN B3
TOTAL AREA: 23.86 AC
IMPERVIOUS AREA: 12.25 AC
PERVIOUS AREA: 9.74 AC
WATER SURFACE: 1.88 AC
CN: 92.45

Existing BASIN A
TOTAL AREA: 14.64 AC
IMPERVIOUS AREA: 8.22 AC
PERVIOUS AREA: 2.56 AC
WATER SURFACE: 3.86 AC
CN: 96.08

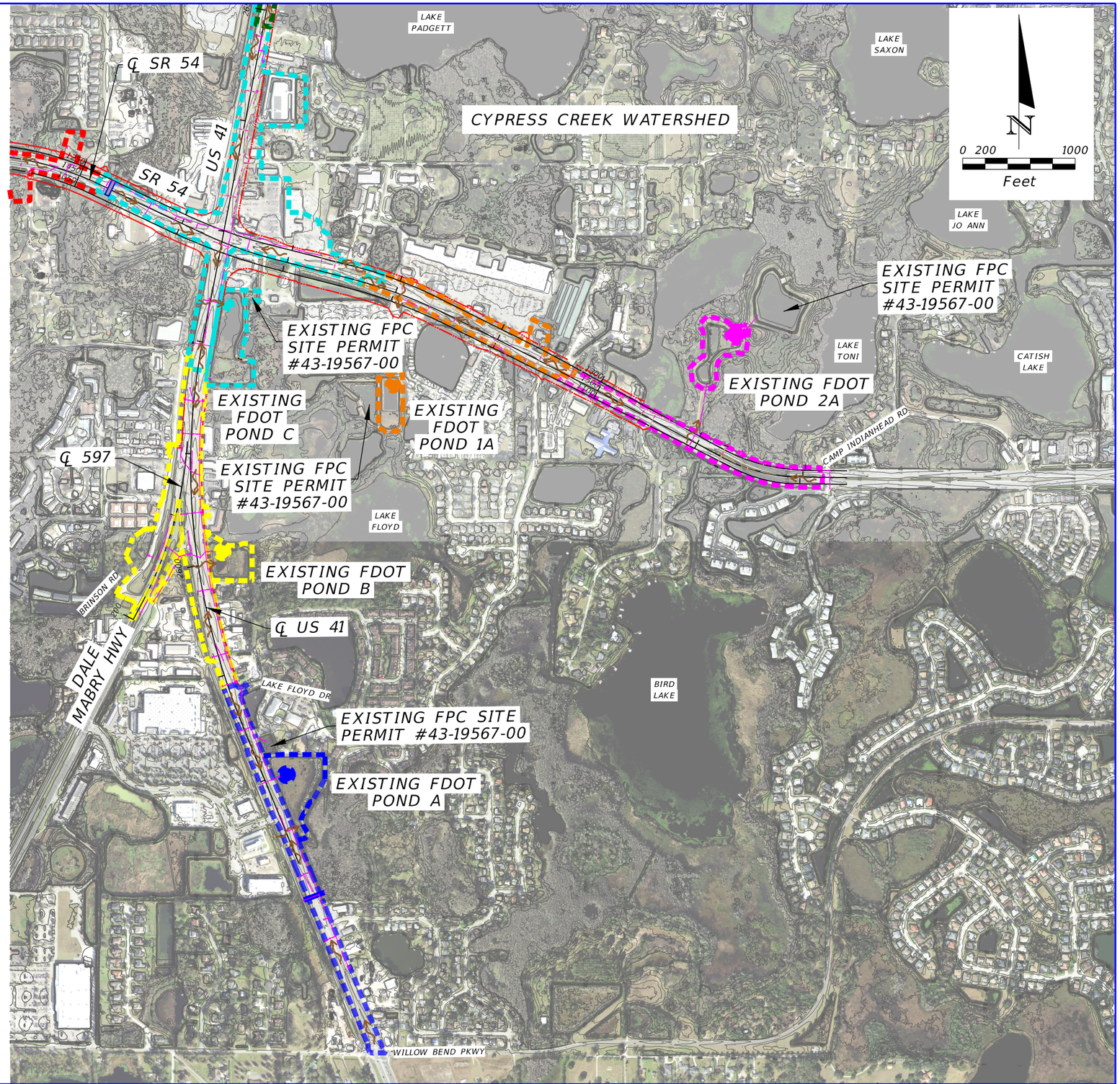
Existing BASIN 1A(2)
TOTAL AREA: 10.17 AC
IMPERVIOUS AREA: 5.89 AC
PERVIOUS AREA: 2.57
WATER SURFACE: 1.71 AC
CN: 93.63

Existing BASIN 2A(1)
TOTAL AREA: 11.67 AC
IMPERVIOUS AREA: 7.07 AC
PERVIOUS AREA: 3.03 AC
WATER SURFACE: 1.57 AC
CN: 92.17

FLOW ARROW

CROSS DRAIN

R/W LINE



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
JENNIFER FLORES, P.E.
LICENSE NUMBER: 84372
AECOM TECHNICAL SERVICES, INC.
150 N ORANGE AVE
ORLANDO, FLORIDA 32810

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US41 SR54	PASCO	

US 41 SR 54
EXISTING BASIN MAP

SHEET NO.

APPENDIX 3

PROPOSED DRAINAGE MAP

LEGEND

BASIN P1E1
TOTAL AREA: 18.02 AC
IMPERVIOUS AREA: 9.55 AC
PERVIOUS AREA: 5.87 AC
WATER SURFACE: 2.60 AC
CN: 88.70

BASIN P1E2
TOTAL AREA: 18.37 AC
IMPERVIOUS AREA: 12.46 AC
PERVIOUS AREA: 4.33 AC
WATER SURFACE: 1.58 AC
CN: 83.96

BASIN D
TOTAL AREA: 32.64 AC
IMPERVIOUS AREA: 23.65 AC
PERVIOUS AREA: 7.01 AC
WATER SURFACE: 1.98 AC
CN: 91.85

BASIN C(1)
TOTAL AREA: 52.78 AC
IMPERVIOUS AREA: 36.06 AC
PERVIOUS AREA: 10.47 AC
WATER SURFACE: 6.25 AC
CN: 93.39

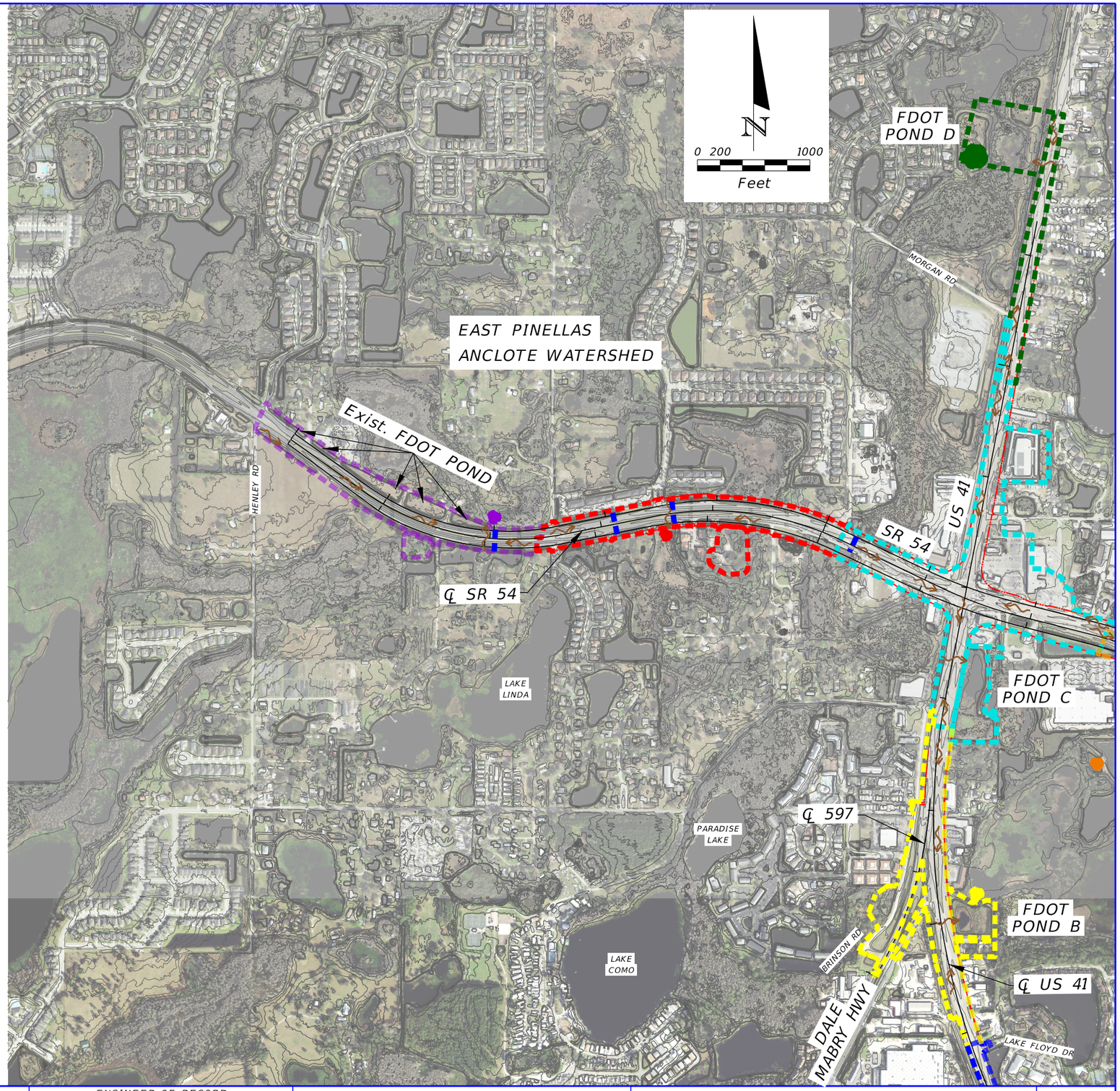
BASIN B3
TOTAL AREA: 24.20 AC
IMPERVIOUS AREA: 12.58 AC
PERVIOUS AREA: 9.31 AC
WATER SURFACE: 2.32 AC
CN: 92.81

FLOW ARROW

CROSS DRAIN

R/W LINE

NOTE: PROPOSED BASINS OF PREFFERED ALTERNATIVES



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
JENNIFER FLORES, P.E.
LICENSE NUMBER: 84372
AECOM TECHNICAL SERVICES, INC.
150 N ORANGE AVE
ORLANDO, FLORIDA 32810

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US41 SR54	PASCO	

US 41 SR 54
POST DEVELOPMENT BASIN MAP

SHEET NO.

LEGEND

BASIN C(1)
TOTAL AREA: 52.78 AC
IMPERVIOUS AREA: 36.06 AC
PERVIOUS AREA: 10.47 AC
WATER SURFACE: 6.25 AC
CN: 93.39

BASIN B3
TOTAL AREA: 24.20 AC
IMPERVIOUS AREA: 12.58 AC
PERVIOUS AREA: 9.31 AC
WATER SURFACE: 2.32 AC
CN: 92.81

BASIN A
TOTAL AREA: 14.64 AC
IMPERVIOUS AREA: 8.07 AC
PERVIOUS AREA: 2.71 AC
WATER SURFACE: 3.86 AC
CN: 95.94

BASIN 1A(2)
TOTAL AREA: 21.61 AC
IMPERVIOUS AREA: 10.34 AC
PERVIOUS AREA: 5.75 AC
WATER SURFACE: 5.52 AC
CN: 92.00

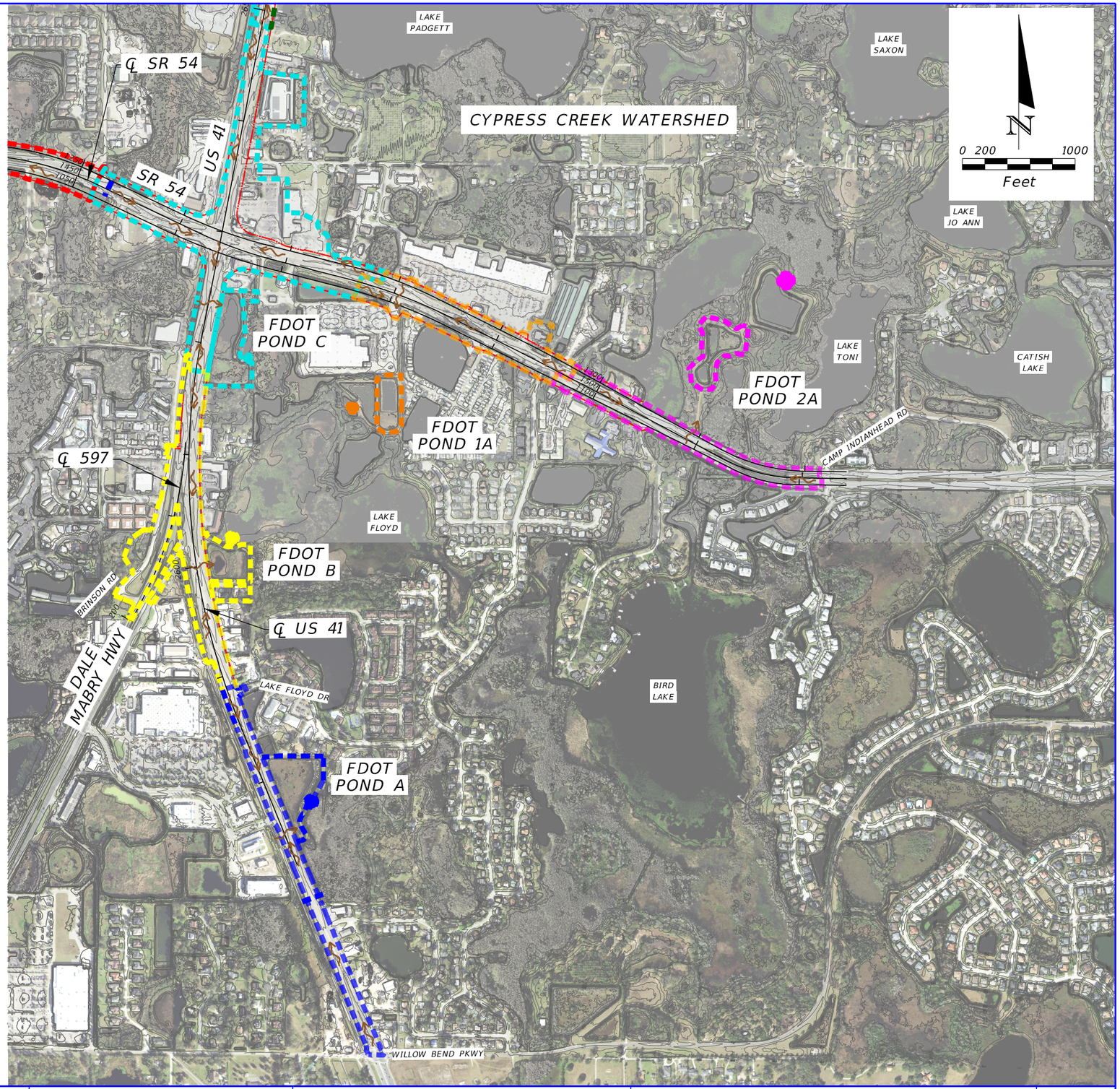
BASIN 2A(1)
TOTAL AREA: 14.03 AC
IMPERVIOUS AREA: 9.39 AC
PERVIOUS AREA: 2.60 AC
WATER SURFACE: 2.04 AC
CN: 93.84

FLOW ARROW

CROSS DRAIN

R/W LINE

NOTE: PROPOSED BASINS OF PREFERRED ALTENATIVES



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
JENNIFER FLORES, P.E.
LICENSE NUMBER: 84372
AECOM TECHNICAL SERVICES, INC.
150 N ORANGE AVE
ORLANDO, FLORIDA 32810

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US41 SR54	PASCO	

US 41 SR 54
POST DEVELOPMENT BASIN MAP

SHEET NO.

APPENDIX 4

PROPOSED POND AND FPC SITE ALTERNATIVES EXHIBITS

NO POND OR FPC ALTERNATIVES FOR BASIN D
PLEASE REFER TO PERMIT #43-12854-1
FOR BASIN D LIMITS

N

0 200 1000
Feet

BEGIN PROJECT

EAST PINELLAS
ANCLOTE WATERSHED

CYPRESS CREEK WATERSHED

℄ SR 54

℄ 597

℄ US 41

SR 54

US 41

DALE MABRY HWY

BASIN E1 PREFERRED POND & FPC ALTERNATIVE

BASIN E2 PREFERRED POND & FPC ALTERNATIVE

BASIN C PREFERRED POND & FPC ALTERNATIVE

BASIN 1A
PREFERRED POND & FPC ALTERNATIVE

BASIN 2A PREFERRED POND & FPC ALTERNATIVE

BASIN B PREFERRED POND & FPC ALTERNATIVE

BASIN D OUTFALL

BASIN E1 OUTFALL

BASIN E2 OUTFALL

BASIN C OUTFALL

BASIN 1A OUTFALL

BASIN 2A OUTFALL

BASIN B OUTFALL

BASIN A OUTFALL

LAKE PADGETT

LAKE SAXON

LAKE JO ANN

LAKE LINDA

LAKE TONI

CATISH LAKE

PARADISE LAKE

LAKE FLOYD

LAKE COMO

BIRD LAKE

END PROJECT

NO POND OR FPC ALTERNATIVES FOR BASIN A
BASIN A EXTENDS TO W COUNTY LINE RD

LEGEND

- PREFERRED POND SITE
- PREFERRED FLOODPLAIN
- EXISTING R/W
- PROPOSED R/W
- PROPERTY LINE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD

JENNIFER FLORES, P.E.
LICENSE NUMBER: 84372
AECOM TECHNICAL SERVICES, INC.
150 N ORANGE AVE
ORLANDO, FLORIDA 32810

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US41 SR54	PASCO	

US 41 SR 54
PREFERRED POND & FPC SITES

SHEET NO.

NO POND ALTERNATIVES FOR BASIN D
PLEASE REFER TO PERMIT #43-12854-1
FOR BASIN D LIMITS

BEGIN PROJECT

EAST PINELLAS
ANCLOTE WATERSHED

CYPRESS CREEK WATERSHED

BASIN E1 POND ALTERNATIVES
Alternative 2: POND P2E1
Alternative 3: POND P3E1
Alternative 1: POND P1E1
BASIN E1 OUTFALL

BASIN E2 POND ALTERNATIVES
Alternative 1: POND P1E2
Alternative 2: POND P2E2
Alternative 3: POND P3E2
BASIN E2 OUTFALL

BASIN C POND ALTERNATIVES
Alternative 1: POND C1(1)B
Alternative 1: POND C1(1)A
Alternative 2: POND C1(2)B
Alternative 2: POND C1(2)C
Alternative 3: POND C1(3)
Alternative 2: POND C1(2)A
Alternative 1: POND C1(1)
Alternative 2: POND C1(2)
BASIN C OUTFALL
Alternative 3: Existing POND C
BASIN 2A OUTFALL

BASIN 1A POND ALTERNATIVES
Alternative 3: POND 1A(3)
Alternative 2: POND 1A(2)
Alternative 1: POND 1A(1)

BASIN 2A POND ALTERNATIVES
Alternative 2: POND 2A(2)
Alternative 1: POND 2A(1)
Alternative 3: POND 2A(3)
BASIN 2A OUTFALL

BASIN B POND ALTERNATIVES
Alternative 2: POND B2
Alternative 1: POND B1A
Alternative 1: POND B1B
Alternative 3: POND B3
BASIN B OUTFALL

BASIN A OUTFALL

NO POND ALTERNATIVES FOR BASIN A
BASIN A EXTENDS TO W COUNTY LINE RD

℄ SR 54
℄ 597
℄ US 41
US 41
SR 54
DALE MABRY HWY
END PROJECT

LAKE PADGETT
LAKE SAXON
LAKE JO ANN
LAKE TONI
CATISH LAKE
LAKE LINDA
PARADISE LAKE
LAKE COMO
LAKE FLOYD
BIRD LAKE

N
0 200 1000
Feet

LEGEND

- PREFERRED POND SITE
- ALTERNATIVE POND SITE
- EXISTING R/W
- PROPOSED R/W
- PROPERTY LINE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
JENNIFER FLORES, P.E.
LICENSE NUMBER: 84372
AECOM TECHNICAL SERVICES, INC.
150 N ORANGE AVE
ORLANDO, FLORIDA 32810

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US41 SR54	PASCO	

US 41 SR 54
PROPOSED POND SITES

SHEET NO.

NO FPC ALTERNATIVES FOR BASIN D
PLEASE REFER TO PERMIT #43-12854-1
FOR BASIN D LIMITS

BEGIN PROJECT

EAST PINELLAS
ANCLOTE WATERSHED

CYPRESS CREEK WATERSHED

BASIN E1 FPC ALTERNATIVES

BASIN E2 FPC ALTERNATIVES

BASIN C FPC ALTERNATIVES

BASIN 1A FPC ALTERNATIVES

BASIN 2A FPC ALTERNATIVES

BASIN B FPC ALTERNATIVES

℄ SR 54

℄ 597

℄ US 41

US 41

SR 54

DALE MABRY HWY

BASIN D OUTFALL

BASIN E1 OUTFALL

BASIN E2 OUTFALL

BASIN C OUTFALL

BASIN 1A OUTFALL

BASIN 2A OUTFALL

BASIN B OUTFALL

BASIN A OUTFALL

LAKE PADGETT

LAKE SAXON

LAKE JO ANN

LAKE TONI

CATISH LAKE

LAKE LINDA

PARADISE LAKE

LAKE COMO

LAKE FLOYD

BIRD LAKE

N

0 200 1000

Feet

END PROJECT

NO FPC ALTERNATIVES FOR BASIN A
BASIN A EXTENDS TO W COUNTY LINE RD

LEGEND

- PREFERRED FLOODPLAIN
- ALTERNATIVE FLOODPLAIN
- EXISTING R/W
- PROPOSED R/W
- PROPERTY LINE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
JENNIFER FLORES, P.E.
LICENSE NUMBER: 84372
AECOM TECHNICAL SERVICES, INC.
150 N ORANGE AVE
ORLANDO, FLORIDA 32810

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US41 SR54	PASCO	

US 41 SR 54
PROPOSED FPC SITES

SHEET NO.

APPENDIX 5

BASIN & POND SUMMARY TABLES

US 41/SR 54 PD&E

MADE BY: JF DATE: 6/3/2024
CHECKED BY: DP DATE: 6/10/2024

SHEET DESCRIPTION: BASIN SUMMARY TABLE

BASIN:	OUTFALL DESIGNATION:	SPECIAL CRITERIA:	BASELINE:	BEGIN STA:	END STA:	PGL LOW POINT STA:	PGL ELEV:	BASIN AREA (AC.)	PRE CN:	POST CN:	OPEN / CLOSED:	ATTENUATION$_{req.}$ (AC-FT)	TREATMENT$_{req.}$ (AC-FT)	CONTR. CRITERIA	POND (FACILITY TYPE):	TREATMENT$_{prov.}$ (AC-FT):	ATTENUATION$_{prov.}$ (AC-FT):	ALLOWABLE POND BASIN PGL LOW POINT EL.	POND DHW EL:	POND BASIN LOW POINT ALIGNMENT	POND BASIN LOW POINT STA:
A- No alternatives needed	CYPRESS CREEK	NA						14.64	96.08	95.94	OPEN	3.93	0.67	25yr/24hr	Wet Detention	0.85	3.95	71.00	69.25	CL. 41	Alignment not Covered
Remarks: Attenuation and treatment based on proposd condition can be provided by Ex. Pond A.			CL. 41	North Begin of Project	2588+87	Alignment not Covered	71.00														
															Ex. Pond A	0.85	3.95	71.00	69.25	CL. 41	Alignment not Covered
B-Alternative 1	CYPRESS CREEK	NA						24.08	92.85	92.86	OPEN	3.87	1.05	25yr/24hr	Wet Detention	1.34	3.88	71.00	70.03	CL. 597	204+00
Remarks: Attenuation based on proposed condition will require three ponds - Ex. Pond B, B1A, and B1B.			CL. 597	200+00	217+00	204+00	71.00														
			CL. 41	2588+87	2617+47	2605+00	73.00														
															Ex. Pond B	1.05	3.01	72.00	70.03	CL. 41	2600+00
															Pond B1A	0.2	0.6	71.00	70.03	CL. 597	204+00
															Pond B1B	0.09	0.27	71.00	70.03	CL. 597	204+00
B-Alternative 2	CYPRESS CREEK	NA						23.7	92.63	92.88	OPEN	3.29	1.05	25yr/24hr	Wet Detention	1.05	3.47	71.00	70.03	CL. 597	207+00
Remarks: Basin B2 is dfferent than Basin B1 due to extra ROW needed for proposed pond B2. Attenuation based on proposed condition will require two ponds - Ex. Pond B and B2.			CL. 597	200+00	217+00	204+00	71.00														
			CL. 41	2588+87	2617+47	2605+00	73.00														
															Ex. Pond B	1.05	3.01	72.00	70.03	CL. 41	2600+00
															Pond B2	0	0.46	71.00	70.03	CL. 597	207+00
B-Alternative 3	CYPRESS CREEK	NA						24.2	92.45	92.81	OPEN	3.32	1.05	25yr/24hr	Wet Detention	1.05	3.76	72.00	70.03	CL. 41	2600+00
Remarks: Basin B3 is dfferent than Basin B1 and B2 due to extra ROW needed for proposed pond B3. Attenuation based on proposed condition will require two ponds - Ex. Pond B and B3.			CL. 597	200+00	217+00	204+00	71.00														
			CL. 41	2588+87	2617+47	2605+00	73.00														
															Ex. Pond B (W.D.)	1.05	3.01	72.00	70.03	CL. 41	2600+00
															Pond B3 (W.D.)	0	0.75	73.00	70.03	CL. 41	2600+00
1A(1)-Alternative 1	CYPRESS CREEK	NA						18.43	93.63	92.00	OPEN	8.06	0.8	25yr/24hr	Wet Detention	1.55	8.14	72.57	70.87	SR 54	1480+00
Remarks: Existing Pond 1A can not accommodate increased discharge. Basin 1A(1) will use the existing pond and a new proposed Pond 1A(1) to handle the increased runoff.			CL. SR 54	1476+81	1497+38	1495+50	73.31														
															Ex Pond 1A	0.59	3.18	72.57	70.87	SR 54	1480+00
															Pond 1A(1)	0.96	4.96	72.57	70.87	SR 54	1495+50
1A(2)-Alternative 2	CYPRESS CREEK	NA						21.61	93.63	91.56	OPEN	10.06	0.86	25yr/24hr	Wet Detention	1.93	10.28	72.57	70.87	SR 54	1480+00
Remarks: Existing Pond 1A can not accommodate increased discharge. Basin 1A(2) will use the existing pond and a new proposed Pond 1A(2) to handle the increased runoff.			CL. SR 54	1476+81	1497+38	1495+50	73.31														
															Ex Pond 1A	0.59	3.18	72.57	70.87	SR 54	1480+00
															Pond 1A(2)	1.34	7.10	72.57	70.87	SR 54	1492+50

US 41/SR 54 PD&E

MADE BY: JF DATE: 6/3/2024
CHECKED BY: DP DATE: 6/10/2024

SHEET DESCRIPTION: BASIN SUMMARY TABLE

BASIN:	OUTFALL DESIGNATION:	SPECIAL CRITERIA:	BASELINE:	BEGIN STA:	END STA:	PGL LOW POINT STA:	PGL ELEV:	BASIN AREA (AC.)	PRE CN:	POST CN:	OPEN / CLOSED:	$ATTENUATION_{eqd.}$ (AC-FT)	$TREATMENT_{eqd.}$ (AC-FT)	CONTR. CRITERIA	POND (FACILITY TYPE):	$TREATMENT_{prov.}$ (AC-FT):	$ATTENUATION_{prov.}$ (AC-FT):	ALLOWABLE POND BASIN PGL LOW POINT EL.	POND DHW EL:	POND BASIN LOW POINT ALIGNMENT	POND BASIN LOW POINT STA:
1A(3)-Alternative 3	CYPRESS CREEK	NA						19.39	93.63	91.97	OPEN	9.63	0.86	25yr/24hr	Wet Detention	1.81	9.64	72.57	70.87	SR 54	1480+00
Remarks: Existing Pond 1A can not accommodate increased discharge. Basin 1A(3) will use the existing pond and a new proposed Pond 1A(3) to handle the increased runoff.			CL. SR 54	1476+81	1497+38	1495+50	73.31														
															Ex Pond 1A	0.59	3.18	72.57	70.87	SR 54	1480+00
															Pond 1A(3)	1.22	6.46	72.57	70.87	SR 54	1488+50
2A(1)-Alternative 1	CYPRESS CREEK	NA						14.0	92.17	93.84	OPEN	4.32	0.78	25yr/24hr	Wet Detention	1.02	4.34	69.69	68.63	SR 54	1521+74
Remarks: Existing Pond 2A was widened to accommodate increase discharge from the project.			CL. SR 54	1497+38	East end of Project	1517+60	69.69														
															Pond 2A(1)	1.02	4.34	69.69	68.63	SR 54	1521+74
2A(2)-Alternative 2	CYPRESS CREEK	NA						16.0	92.17	92.63	OPEN	5.46	0.78	25yr/24hr	Wet Detention	1.42	5.47	69.69	68.72	SR 54	1521+74
Remarks: Existing Pond 2A can not accommodate increased discharge. Basin 2A(2) will use the existing pond and a new proposed Pond 2A(2) to handle the increased runoff.			CL. SR 54	1497+38	East end of Project	1517+60	69.69														
															EX Pond 2A	0.79	3.01	69.69	68.73	SR 54	1521+74
															Pond 2A(2)	0.63	2.46	69.69	68.71	SR 54	1521+74
2A(3)-Alternative 3	CYPRESS CREEK	NA						15.64	92.17	91.61	OPEN	4.44	0.78	25yr/24hr	Wet Detention	1.32	4.67	69.69	68.59	SR 54	1521+74
Remarks: Existing Pond 2A can not accommodate increased discharge. Basin 2A(3) will use the existing pond and a new proposed Pond 2A(3) to handle the increased runoff.			CL. SR 54	1497+38	East end of Project	1517+60	69.69														
															EX Pond 2A	0.79	3.01	69.69	68.73	SR 54	1521+74
															Pond 2A(3)	0.53	1.66	69.69	68.44	SR 54	1521+74
C(1)-Alternative 1	CYPRESS CREEK	NA						52.75	92.75	93.39	OPEN	21.58	3.01	25yr/24hr	Wet Detention	3.57	21.77	72.30	71.27	CL. 41	2623+60
Remarks: Due to widening at the intersection, Pond C was widened and will work in cojunction with Pond C(1)A and Pond C(1)B			CL. SR 54	1451+67	1476+81	1473+25	87.86														
			CL. 41	2617+74	2648+60	2623+60	73.09														
															Pond C(1) & Pond C(1)A & Pond C(1)B	3.57	21.77	72.30	71.27	CL. 41	2623+60
C(2)-Alternative 2	CYPRESS CREEK	NA						55.32	92.75	92.26	OPEN	23.67	3.17	25yr/24hr	Wet Detention	3.8	23.77	72.30	71.33	CL. 41	2623+60
Remarks: Due to widening at the intersection, Pond C was widened and will work in cojunction with Pond C(2)A, Pond C(2)B & Pond C(2)C			CL. SR 54	1451+67	1476+81	1473+25	87.86														
			CL. 41	2617+74	2648+60	2623+60	73.09														
															Pond C(2) & Pond C(2)A , Pond C(2)B & Pond C(2)C	3.8	23.77	72.30	71.33	CL. 41	2623+60

US 41/SR 54 PD&E

MADE BY: JF DATE: 6/3/2024

CHECKED BY: DP DATE: 6/10/2024

SHEET DESCRIPTION: BASIN SUMMARY TABLE

BASIN:	OUTFALL DESIGNATION:	SPECIAL CRITERIA:	BASELINE:	BEGIN STA:	END STA:	PGL LOW POINT STA:	PGL ELEV:	BASIN AREA (AC.)	PRE CN:	POST CN:	OPEN / CLOSED:	ATTENUATION$_{reqd.}$ (AC-FT)	TREATMENT$_{reqd.}$ (AC-FT)	CONTR. CRITERIA	POND (FACILITY TYPE):	TREATMENT$_{prov.}$ (AC-FT):	ATTENUATION$_{prov.}$ (AC-FT):	ALLOWABLE POND BASIN PGL LOW POINT EL.	POND DHW EL:	POND BASIN LOW POINT ALIGNMENT	POND BASIN LOW POINT STA:
C(3)-Alternative 3	CYPRESS CREEK	NA						57.41	92.75	93.53	OPEN	24.75	3.22	25yr/24hr	Wet Detention	6.56	25.92	72.30	71.27	CL. 41	2623+60
Remarks: Due to widening at the intersection, Existing Pond C is being utilized with Proposed Pond C3			CL. SR 54	1451+67	1476+81	1473+25	87.86														
			CL. 41	2617+74	2648+60	2623+60	73.09														
															Ex Pond C	2.24	13.88	72.30	71.27	CL. 41	2623+60
															Pond C(3)	4.32	12.04	72.30	71.27	CL. 41	2623+68
D-No alternatives needed	EAST PINELLAS ANCLOTE	NA						32.64	91.73	91.85	OPEN	8.46	1.97	25yr/24hr	Wet Detention	2.03	1.98	72.71	71.26	CL. 41	2268+20
Remarks: Control Structure was adjusted to accommodate increase discharge. Existing pond can handle increase impervious			CL. 41	2648+60	North End of Project	2668+30	74.00														
															Existing Pond D1	2.03	1.98	72.71	71.26	CL. 41	2268+20
P1E1-Alternative 1	EAST PINELLAS ANCLOTE	TN/TP						18.02	88.55	88.70	OPEN	9.45	0.86	25yr/24hr	Wet Detention	1.14	9.45	68.50	65.76	SR 54	1410+50
Remarks: Attenuation and treatment based on proposd condition is provided by existing system of roadside linear ponds plus alternative P1E1			CL. SR 54	Henley Rd	1424+60	1410+50	69.28														
															EX Pond E1	0.74	8.36	68.50	66.28	SR 54	1410+50
															P1E1	0.40	1.09	68.50	65.24	SR 54	1413+00
P2E1-Alternative 2	EAST PINELLAS ANCLOTE	TN/TP						17.68	88.91	88.52	OPEN	9.40	0.86	25yr/24hr	Wet Detention	1.45	9.69	68.50	65.70	SR 54	1410+50
Remarks: Attenuation and treatment based on proposd condition is provided by existing system of roadside linear ponds plus alternative P2E1			CL. SR 54	Henley Rd	1424+60	1410+50	69.28														
															EX Pond E1	0.74	8.36	68.50	66.28	SR 54	1410+50
															P2E1	0.71	1.33	68.50	65.11	SR 54	1413+60
P3E1-Alternative 3	EAST PINELLAS ANCLOTE	TN/TP						17.52	89.07	88.57	OPEN	9.38	0.86	25yr/24hr	Wet Detention	1.29	9.38	68.50	65.67	SR 54	1410+50
Remarks: Attenuation and treatment based on proposd condition is provided by existing system of roadside linear ponds plus alternative P3E1			CL. SR 54	Henley Rd	1424+60	1410+50	69.28														
															EX Pond E1	0.74	8.36	68.50	66.28	SR 54	1410+50
															P3E1	0.55	1.02	68.50	65.05	SR 54	1414+60

US 41/SR 54 PD&E

MADE BY: JF DATE: 6/3/2024

CHECKED BY: DP DATE: 6/10/2024

SHEET DESCRIPTION: BASIN SUMMARY TABLE

BASIN:	OUTFALL DESIGNATION:	SPECIAL CRITERIA:	BASELINE:	BEGIN STA:	END STA:	PGL LOW POINT STA:	PGL ELEV:	BASIN AREA (AC.)	PRE CN:	POST CN:	OPEN / CLOSED:	ATTENUATION$_{req.}$ (AC-FT)	TREATMENT$_{req.}$ (AC-FT)	CONTR. CRITERIA	POND (FACILITY TYPE):	TREATMENT$_{prov.}$ (AC-FT):	ATTENUATION$_{prov.}$ (AC-FT):	ALLOWABLE POND BASIN PGL LOW POINT EL.	POND DHW EL:	POND BASIN LOW POINT ALIGNMENT	POND BASIN LOW POINT STA:
P1E2-Alternative 1	EAST PINELLAS ANCLOTE	NA						18.50	86.33	83.38	OPEN	4.04	1.34	25yr/24hr	Wet Detention	1.61	4.14	68.50	67.50	SR 54	1443+09
Remarks: Alternative P1E2 provides attenuation and treatment for entire basin. Proposed condition elminates existing attenuation/treatment.			CL. SR 54	1424+60	1451+67	1433+34	69.04														
															EX Pond E2	N/A	N/A	N/A	N/A	N/A	N/A
															P1E2	1.61	4.14	68.50	67.50	SR 54	1443+09
P2E2-Alternative 2	EAST PINELLAS ANCLOTE	NA						18.56	86.29	83.28	OPEN	4.05	1.34	25yr/24hr	Wet Detention	1.63	4.22	68.50	67.50	N/A	N/A
Remarks: Alternative P2E2 provides attenuation and treatment for entire basin. Proposed condition elminates existing attenuation/treatment.			CL. SR 54	1424+60	1451+67	1433+34	69.04														
															EX Pond E2	N/A	N/A	N/A	N/A	N/A	N/A
															P2E2	1.63	4.22	68.50	67.50	SR 54	1443+09
P3E2-Alternative 3	EAST PINELLAS ANCLOTE	NA						18.63	86.22	83.32	OPEN	4.10	1.34	25yr/24hr	Wet Detention	1.62	4.20	68.50	67.50	N/A	N/A
Remarks: Alternative P3E2 provides attenuation and treatment for entire basin. Proposed condition elminates existing attenuation/treatment.			CL. SR 54	1424+60	1451+67	1433+34	69.04														
															EX Pond E2	N/A	N/A	N/A	N/A	N/A	N/A
															P3E2	1.62	4.20	68.50	67.50	SR 54	1443+30

US 41/SR 54 PD&E

MADE BY: JF DATE: 6/3/2024

CHECKED BY: DP DATE: 6/10/2024

SHEET DESCRIPTION: POND SUMMARY TABLE

BASIN:	POND ALTERNATIVE	LOCATION	L&G BASIN PGL LOW EL	AVG. ESHWE (PD&E/L&G/ Design)	POND CONTR. EL.	SOIL TYPE	NUMBER OF PARCELS IMPACTED	POND SIZE (AC.)	POND (FACILITY TYPE):	PARCEL NUMBERS	REMARKS	RECOMMENDED
A												
	Ex.Pond A		71.00	68.25	68.25	A/D	0	5.18	WET DETENTION	N/A	Ex. Pond A to remain. Provides sufficient attenuation/treatment volumes	X
B												
	Ex. Pond B	Sta. 2600+00 @ CL. 41, RT	72.00	68.50	68.50	A/D	0	2.64	WET DETENTION	N/A	Ex. Pond B remains and provides all required treatment volume and part of attenuation volume in proposed condition.	
	Pond B1A	Sta. 204+00 @ CL. 597, RT	71.00	68.50	68.50	A/D	1	0.75	WET DETENTION	N/A	Pond B1A and Pond B1B work together with Ex. Pond B and provide the rest of attenuation volume in the proposed condition. NWL and DHW match with the Ex. Pond B.	
	Pond B1B	Sta. 203+00 @ CL. 597, LT	71.00	68.50	68.50	A/D	0	0.40	WET DETENTION	N/A		
	Ex. Pond B	Sta. 2600+00 @ CL. 41, RT	72.00	68.50	68.50	A/D	0	2.64	WET DETENTION	N/A	Ex. Pond B remains and provides all required treatment volume and part of attenuation volume in proposed condition.	
	Pond B2	Sta. 206+50 @ CL. 597, LT	71.00	68.50	68.50	A/D	1	0.57	WET DETENTION	N/A	Pond B2 works together with Ex. Pond B and provides the rest of attenuation volume in the proposed condition. NWL and DHW match with the Ex. Pond B.	
	Ex. Pond B	Sta. 2600+00 @ CL. 41, RT	72.00	68.50	68.50	A/D	0	2.64	WET DETENTION	N/A	Preferred alternative: Ex. Pond B remains and provides all required treatment volume and part of attenuation volume in proposed condition. Pond B3 works together with Ex. Pond B and provides the rest of attenuation volume in the proposed condition. NWL and DHW match with the Ex. Pond B. Pond B2 is closest to existing pond and to existing outfall and will not require piping under existing rail or US41.	X
	Pond B3	Sta. 2597+50 @ CL. 41, RT	73.00	68.50	68.50	A/D	1	0.90	WET DETENTION	N/A		

US 41/SR 54 PD&E

MADE BY: JF DATE: 6/3/2024

CHECKED BY: DP DATE: 6/10/2024

SHEET DESCRIPTION: POND SUMMARY TABLE

BASIN:	POND ALTERNATIVE	LOCATION	L&G BASIN PGL LOW EL	AVG. ESHWE (PD&E/L&G/ Design)	POND CONTR. EL.	SOIL TYPE	NUMBER OF PARCELS IMPACTED	POND SIZE (AC.)	POND (FACILITY TYPE):	PARCEL NUMBERS	REMARKS	RECOMMENDED
1A												
	Pond 1A(1)	Sta. 1494+25 @ CL SR 54, LT	73.31	69.08	69.08	A/D	1	3.41	WET DETENTION	N/A		
	Pond 1A(2)	Sta. 1490+25 @ CL SR 54, LT	73.31	69.08	69.08	A/D	1	4.92	WET DETENTION	N/A	Preferred alternative: Pond location chosen instead of utilizing trailer park along eastbound SR54 and can be piped to existing outfall. This alternative has less of an impact to existing shopping center.	X
	Pond 1A(3)	Sta. 1485+00 @ CL SR 54, LT	73.31	69.08	69.08	A/D	3	4.48	WET DETENTION	N/A		
2A												
	Pond 2A(1)	Sta. 1507+60 @ CL SR 54, LT	69.69	66.96	66.96	A/D	1	3.31	WET DETENTION	N/A	Preferred alternative: utilizes existing pond, least number of parcel impacts	X
	Pond 2A(2)	Sta 1499+00 @ CL SR 54, LT	69.69	66.96	66.96	A/D	5	2.47	WET DETENTION	N/A		
	Pond 2A(3)	Sta. 1509+00 @ CL SR 54, RT	69.69	66.96	66.96	A/D	2	1.74	WET DETENTION	N/A		
C												
	Pond C(1) & Pond C(1)A & Pond C(1)B	Sta. 1465+20 @ CL SR 54, LT	72.30	68.14	68.14	A/D	8	9.91	WET DETENTION	N/A	Preferred alternative: alternative will not require piping under railroad.	X
	Pond C(2) & Pond C(2)A , Pond C(2)B & Pond C(2)C	Sta. 1462+80 @ CL SR 54, RT	72.30	68.14	68.14	A/D	5	9.56	WET DETENTION	N/A		
	Existing Pond C & Pond C3	Sta. 1457+45 @ CL SR 54, RT	72.30	68.14	68.14	A/D	7	11.92	WET DETENTION	N/A		
D												
	Existing Pond D1	Sta. 2670+85 @ CL 41, LT	72.71	69.26	69.26	A/D	1	4.89	WET DETENTION	N/A	Existing pond to remain. Provides sufficient attenuation/treatment volumes	X

US 41/SR 54 PD&E

MADE BY: JF DATE: 6/3/2024

CHECKED BY: DP DATE: 6/10/2024

SHEET DESCRIPTION: POND SUMMARY TABLE

BASIN:	POND ALTERNATIVE	LOCATION	L&G BASIN PGL LOW EL	AVG. ESHWE (PD&E/L&G/ Design)	POND CONTR. EL.	SOIL TYPE	NUMBER OF PARCELS IMPACTED	POND SIZE (AC.)	POND (FACILITY TYPE):	PARCEL NUMBERS	REMARKS	RECOMMENDED
E1												
	Pond P1E1	Sta. 1414+00 @ CL SR 54, RT	68.50	63.20	63.20	A/D	1	0.91	WET DETENTION	N/A	Preferred alternative plus (6) existing linear ponds: within FDOT RW therefore no additional RW takes needed, no floodplain impacts, no wetland impacts	X
	Pond P2E1	Sta. 1414+75 @ CL SR 54, LT	68.50	61.12	61.12	A/D	1	0.51	WET DETENTION	N/A		
	Pond P3E1	Sta. 1415+00 @ CL SR 54, LT	68.50	61.12	61.12	A/D	1	0.39	WET DETENTION	N/A		
E2												
	Pond P1E2	Sta. 1442+00 @ CL SR 54, RT	68.50	65.00	65.00	A/D	1	2.30	WET DETENTION	N/A	Preferred alternative: 1 parcel impact, no floodplain impacts, no wetland impacts	X
	Pond P2E2	Sta. 1443+00 @ CL SR 54, RT	68.50	65.00	65.00	A/D	2	2.36	WET DETENTION	N/A		
	Pond P3E2	Sta. 1444+00 @ CL SR 54, RT	68.50	65.00	65.00	A/D	6	2.43	WET DETENTION	N/A		

APPENDIX 6

POND ALTERNATIVES DESIGN CALCULATIONS

SOUTH OF INTERSECTION:
BASIN A & B
BASIN CALCULATIONS

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN A			**DATE**
POND/NODE DESIGNATION:	Existing POND A	**MADE BY:**	YW	4/25/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JD	6/6/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond A NWL	N/A	N/A	100	3.86	386.00
			TOTALS	**3.86**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Treated)	N/A	N/A	98	7.82	766.76
			TOTALS	**7.82**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Sidewalks (Treated)	N/A	N/A	98	0.40	38.77
			TOTALS	**0.40**	
PERVIOUS AREAS					
Open Spaces, Fair Condition (Grass cover on 50%-75% of the area)	Basinger, Holopaw, and Samsula soils, depressional - 5 Adamsville fine sand, 0 to 2 percent slopes - 11 Samsula muck, frequently ponded, 0 to 1 percent slopes - 52	A/D	84	2.56	214.94
			TOTALS	**2.56**	

Information of Ex. Pond A is from SWFWMD ER Permit #: 43-12854.

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.68**	**TOTAL BASIN AREA**	**14.64**	**COMPOSITE CN**	**85.87**
TOTAL DCIA	**79.82%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**96.08**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD (NOAA)	25-year / 24-hour	8.80	0.41	8.33	**10.16**
SWFWMD (NOAA)	100-year / 24-hour	12.50	0.41	12.02	**14.67**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN A	**MADE BY:**	YW	4/25/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND A	**CHECKED BY:**	JD	6/6/2024

Stage Storage Calculations (Information from permit #: 43-12854)

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
71.40	Outside Berm	5.18				13.38
			4.74	0.80	3.79	
70.60	Inside Berm	4.30				9.59
			4.17	1.35	5.63	
69.25	DHW/ATT (25yr/24hr)	4.05				3.95
			3.97	0.78	3.10	
68.47	(PAV)	3.90				0.85
			3.88	0.22	0.85	
68.25	(NWL)	3.86				0.00
			2.94	-2.25	(6.62)	
66.00	Pond Bottom	2.02				(6.62)

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN A			**DATE**
POND/NODE DESIGNATION:	POND A	**MADE BY:**	YW	4/25/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JD	6/6/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
EX. Pond A NWL	N/A	N/A	100	3.86	386.00
			TOTALS	**3.86**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Treated)	N/A	N/A	98	7.62	746.44
			TOTALS	**7.62**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Sidewalks/Pavement (Treated)	N/A	N/A	98	0.45	44.40
			TOTALS	**0.45**	
PERVIOUS AREAS					
Open Spaces, Fair Condition (Grass cover on 50%-75% of the area)	Basinger, Holopaw, and Samsula soils, depressional - 5 Adamsville fine sand, 0 to 2 percent slopes - 11 Samsula muck, frequently ponded, 0 to 1 percent slopes - 52	A/D	84	2.71	227.45
Information of Ex. Pond A is from SWFWMD ER Permit #: 43-12854.			**TOTALS**	**2.71**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.48**	**TOTAL BASIN AREA**	**14.64**	**COMPOSITE CN**	**86.01**
TOTAL DCIA	**78.41%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**95.94**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.42	8.31	**10.14**
SWFWMD	100-year / 24-hour	12.50	0.42	12.01	**14.64**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN A	**MADE BY:**	YW	4/25/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND A	**CHECKED BY:**	JD	6/6/2024

Water Quality

Total Basin Area =	14.64	ac
Pond Area at NWL =	3.86	ac
Total Impervious Area =	8.07	ac

A. Existing Permitted Water Quality PAV = **0.85** Ac-Ft

B. 1.0 " Over Total Impervious Area = 0.67 Ac-Ft
Required PAV = **0.67** Ac-Ft
Provided PAV = **0.85** Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**(0.02)**	**ac-ft.**
Pre Att. Volume (Ex. Ponds A1)	**3.95**	**ac-ft.**
Required Att. Volume (Delta V(R) + Pre Att. Volume	**3.93**	**ac-ft.**

Stage Storage Calculations (based on permit #: 43-12854)

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
71.40	Outside Berm	5.18				13.38
			4.74	0.80	3.79	
70.60	Inside Berm	4.30				9.59
			4.17	1.35	5.63	
69.25	DHW/ATT (25yr/24hr)	4.05				3.95
			3.97	0.78	3.10	
68.47	(PAV)	3.90				0.85
			3.88	0.22	0.85	
68.25	(NWL)	3.86				0.00
			2.94	-2.25	(6.62)	
66.00	Pond Bottom	2.02				(6.62)

Required Detention Volume for Open Spaces (25YR/24HR) = 3.93 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	1.97 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.34 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	0.67 Ac-Ft

Proposed area matches with existing, Ex. Pond A work in proposed condition.
No additional floodplain impact in proposed condition, thus no floodplain compensation needed for basin A.

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN B(1)			**DATE**
POND/NODE DESIGNATION:	Existing POND B(1)	**MADE BY:**	YW	4/26/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JD	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond B NWL	N/A	N/A	100	1.88	188.00
			TOTALS	**1.88**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Treated)	N/A	N/A	98	9.40	921.08
			TOTALS	**9.40**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Sidewalks (Treated)	N/A	N/A	98	2.85	279.00
			TOTALS	**2.85**	
PERVIOUS AREAS					
Open Spaces (Fair Condition, grass cover on 50%-75% of the area)	Adamsville fine sand, 0 to 2 percent slopes - 11 Basinger, Holopaw, and Samsula soils, depressional - 5 Smyrna fine sand - 21	A/D	84	8.65	726.48
			TOTALS	**8.65**	

Information of Ex. Pond A is from SWFWMD ER Permit #: 43-12854.

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.28**	**TOTAL BASIN AREA**	**22.77**	**COMPOSITE CN**	**87.47**
TOTAL DCIA	**49.52%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.85**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.77	7.94	**15.07**
SWFWMD	100-year / 24-hour	12.50	0.77	11.62	**22.05**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN B	**MADE BY:**	YW	4/25/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	EX. POND B	**CHECKED BY:**	JD	6/4/2024

Stage Storage Calculations (Information from permit #: 43-12854)

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
72.20	Outside Berm	2.64				7.85
			2.43	0.70	1.70	
71.50	Inside Berm	2.22				6.15
			2.14	1.47	3.14	
70.03	DHW/ATT (25yr/24hr)	2.05				3.01
			2.00	0.98	1.96	
69.05	(PAV)	1.94				1.05
			1.91	0.55	1.05	
68.50	(NWL)	1.88				0.00
			1.35	-2.93	(3.96)	
65.57	Top of Deep Pool	0.82				(3.96)
			0.67	-5.07	(3.37)	
60.50	Pond Bottom	0.51				(7.33)

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN B(1)			**DATE**
POND/NODE DESIGNATION:	POND B1A & POND B1B	**MADE BY:**	YW	4/26/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JD	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Ex. Pond B NWL	N/A	N/A	100	1.88	188.00
Proposed Pond B1A NWL	N/A	N/A	100	0.35	35.13
Proposed Pond B1B NWL	N/A	N/A	100	0.09	9.00
			TOTALS	**2.32**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Treated)	N/A	N/A	98	9.73	953.20
			TOTALS	**9.73**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Sidewalks/Pavement (Treated)	N/A	N/A	98	2.85	279.30
			TOTALS	**2.85**	
PERVIOUS AREAS					
Open Spaces (Fair Condition, grass cover on 50%-75% of the area)	Adamsville fine sand, 0 to 2 percent slopes - 11 Basinger, Holopaw, and Samsula soils, depressional - 5 Smyrna fine sand - 21	A/D	84	9.18	771.01
Information of Ex. Pond A is from SWFWMD ER Permit #: 43-12854.			**TOTALS**	**9.18**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**12.05**	**TOTAL BASIN AREA**	**24.08**	**COMPOSITE CN**	**87.32**
TOTAL DCIA	**50.04%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.86**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.77	7.94	**15.93**
SWFWMD	100-year / 24-hour	12.50	0.77	11.62	**23.32**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN B(1)	**MADE BY:**	YW	4/25/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND B1A & POND B1B	**CHECKED BY:**	JD	6/4/2024

Water Quality

Total Basin Area =	24.08	ac
Pond Area at NWL =	2.32	ac
Total Impervious Area =	12.58	ac

A. Existing Permitted Water Quality PAV = **1.05** Ac-Ft

B. 1.0 " Over Total Impervious Area = 1.05 Ac-Ft

Required PAV = **1.05** Ac-Ft

Provided PAV = **1.05** Ac-Ft Provided by Ex. Pond B.

Water Quantity

Post V(R)- Pre V(R) =	**0.86**	**ac-ft.**	Provided by Proposed Pond B1A and Pond B1B
Pre Att. Volume (Ex. Ponds B1)	**3.01**	**ac-ft.**	Provided by Ex. Pond B
Required Att. Volume (Delta V(R) + Pre Att. Volume	**3.87**	**ac-ft.**	

Stage Storage Calculations

Pond B1A

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
72.00	Outside Berm	0.75				1.57	
			0.63	0.20	0.13		
71.80	Inside Berm	0.52				1.44	
			0.48	1.77	0.84		
70.03	DHW/ATT (25yr/24hr)	0.43				0.60	DHW match with Ex. Pond B
			0.42	0.23	0.10		
69.80		0.42				0.50	
			0.38	1.30	0.50		
68.50	(NWL)	0.35				0.00	NWL match with Ex. Pond B
			0.31	-2.00	(0.61)		
66.50	Slope Change	0.26				(0.61)	
			0.22	-4.00	(0.88)		
62.50	Pond Bottom	0.18				(1.49)	

Pond B1B

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
71.20	Outside Berm	0.40				0.54	
			0.32	0.10	0.03		
71.10	Inside Berm	0.24				0.51	
			0.22	1.07	0.24		
70.03	DHW/ATT (25yr/24hr)	0.20				0.27	DHW match with Ex. Pond B
			0.20	0.23	0.05		
69.80		0.20				0.23	
			0.17	1.30	0.23		
68.50	(NWL)	0.15				0.00	
			0.12	-2.00	(0.24)		
66.50	Slope Change	0.09				(0.24)	
			0.07	-4.00	(0.26)		
62.50	Pond Bottom	0.04				(0.50)	

Required Detention Volume for Open Spaces (25YR/24HR) = 3.87 Ac-Ft

1/2 of the required detention volume (w/in 24 hrs) = 1.94 Ac-Ft

1/2 of the required treatment volume (w/in no less than 60 hrs) = 0.52 Ac-Ft

Total required treament volume (w/in no less than 120 hrs) = 1.05 Ac-Ft

Proposed pond option 1 - Pond B1 consists of Pond B1A and Pond B1B.

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN B2			**DATE**
POND/NODE DESIGNATION:	Existing POND B2	**MADE BY:**	YW	4/26/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JD	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond B NWL	N/A	N/A	100	1.88	188.00
			TOTALS	**1.88**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Treated)	N/A	N/A	98	9.40	921.08
			TOTALS	**9.40**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Sidewalks (Treated)	N/A	N/A	98	2.85	279.00
			TOTALS	**2.85**	
PERVIOUS AREAS					
Open Spaces (Fair Condition, grass cover on 50%-75% of the area)	Adamsville fine sand, 0 to 2 percent slopes - 11 Basinger, Holopaw, and Samsula soils, depressional - 5 Smyrna fine sand - 21	A/D	84	9.23	775.33
			TOTALS	**9.23**	

Information of Ex. Pond A is from SWFWMD ER Permit #: 43-12854.

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.28**	**TOTAL BASIN AREA**	**23.36**	**COMPOSITE CN**	**87.30**
TOTAL DCIA	**48.29%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.63**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.80	7.91	**15.40**
SWFWMD	100-year / 24-hour	12.50	0.80	11.59	**22.56**

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN B2			**DATE**
POND/NODE DESIGNATION:	POND B2	**MADE BY:**	YW	4/26/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JD	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Ex. Pond B NWL	N/A	N/A	100	1.88	188.00
Proposed Pond B2 NWL	N/A	N/A	100	0.27	26.79
			TOTALS	**2.15**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Treated)	N/A	N/A	98	9.73	953.20
			TOTALS	**9.73**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Sidewalks/Pavement (Treated)	N/A	N/A	98	2.85	279.30
			TOTALS	**2.85**	
PERVIOUS AREAS					
Open Spaces (Fair Condition, grass cover on 50%-75% of the area)	Adamsville fine sand, 0 to 2 percent slopes - 11 Basinger, Holopaw, and Samsula soils, depressional - 5 Smyrna fine sand - 21	A/D	84	8.97	753.66
			TOTALS	**8.97**	

Information of Ex. Pond A is from SWFWMD ER Permit #: 43-12854.

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.87**	**TOTAL BASIN AREA**	**23.70**	**COMPOSITE CN**	**87.38**
TOTAL DCIA	**50.11%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.88**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.77	7.94	**15.68**
SWFWMD	100-year / 24-hour	12.50	0.77	11.62	**22.96**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN B2	**MADE BY:**	YW	4/25/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND B2	**CHECKED BY:**	JD	6/4/2024

Water Quality

Total Basin Area =	23.70	ac
Pond Area at NWL =	2.15	ac
Total Impervious Area =	12.58	ac

A. Existing Permitted Water Quality PAV = **1.05** Ac-Ft

B. 1.0 " Over Total Impervious Area = 1.05 Ac-Ft

Required PAV = **1.05** Ac-Ft

Provided PAV = **1.05** Ac-Ft Provided by Ex. Pond B.

Water Quantity

Post V(R)- Pre V(R) =	**0.28**	**ac-ft.**	Provided by Proposed Pond B2
Pre Att. Volume (Ex. Ponds B1)	**3.01**	**ac-ft.**	Provided by Ex. Pond B.
Required Att. Volume (Delta V(R) + Pre Att. Volume	**3.29**	**ac-ft.**	

Stage Storage Calculations (based on permit #: 43-12854)

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
71.20	Outside Berm	0.57				0.90	
			0.48	0.17	0.08		
71.03	Inside Berm	0.38				0.82	
			0.36	1.00	0.36		
70.03	DHW/ATT (25yr/24hr)	0.34				0.46	***DHW match with Ex. Pond B***
			0.31	1.03	0.32		
69.00		0.29				0.14	
			0.28	0.50	0.14		
68.50	(NWL)	0.27				0.00	NWL match with Ex. Pond B
			0.23	-2.00	(0.46)		
66.50	Slope Change	0.19				(0.46)	
			0.16	-4.00	(0.62)		
62.50	Pond Bottom	0.12				(1.08)	

Required Detention Volume for Open Spaces (25YR/24HR) = 3.29 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	1.65 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.52 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	1.05 Ac-Ft

Proposed pond option 2 - Pond B2

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN B3			**DATE**
POND/NODE DESIGNATION:	Existing POND B3	**MADE BY:**	YW	4/26/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JD	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond B NWL	N/A	N/A	100	1.88	188.00
			TOTALS	**1.88**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Treated)	N/A	N/A	98	9.40	921.08
			TOTALS	**9.40**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Sidewalks (Treated)	N/A	N/A	98	2.85	279.00
			TOTALS	**2.85**	
PERVIOUS AREAS					
Open Spaces (Fair Condition, grass cover on 50%-75% of the area)	Adamsville fine sand, 0 to 2 percent slopes - 11 Basinger, Holopaw, and Samsula soils, depressional - 5 Smyrna fine sand - 21	A/D	84	9.74	817.80
			TOTALS	**9.74**	

Information of Ex. Pond A is from SWFWMD ER Permit #: 43-12854.

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.28**	**TOTAL BASIN AREA**	**23.86**	**COMPOSITE CN**	**87.17**
TOTAL DCIA	**47.27%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.45**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.82	7.89	**15.69**
SWFWMD	100-year / 24-hour	12.50	0.82	11.57	**23.01**

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN B3			**DATE**
POND/NODE DESIGNATION:	POND B3	**MADE BY:**	YW	4/26/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JD	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Ex. Pond B NWL	N/A	N/A	100	1.88	188.00
Proposed Pond B3 NWL	N/A	N/A	100	0.44	43.88
			TOTALS	**2.32**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Treated)	N/A	N/A	98	9.73	953.20
			TOTALS	**9.73**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Sidewalks/Pavement (Treated)	N/A	N/A	98	2.85	279.30
			TOTALS	**2.85**	
PERVIOUS AREAS					
Open Spaces (Fair Condition, grass cover on 50%-75% of the area)	Adamsville fine sand, 0 to 2 percent slopes - 11 Basinger, Holopaw, and Samsula soils, depressional - 5 Smyrna fine sand - 21	A/D	84	9.31	781.77
			TOTALS	**9.31**	

Information of Ex. Pond A is from SWFWMD ER Permit #: 43-12854.

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**12.05**	**TOTAL BASIN AREA**	**24.20**	**COMPOSITE CN**	**87.28**
TOTAL DCIA	**49.77%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.81**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.77	7.93	**16.00**
SWFWMD	100-year / 24-hour	12.50	0.77	11.62	**23.43**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN B3	**MADE BY:**	YW	4/25/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND B3	**CHECKED BY:**	JD	6/4/2024

Water Quality

Total Basin Area =	24.20	ac
Pond Area at NWL =	2.32	ac
Total Impervious Area =	12.58	ac

A. Existing Permitted Water Quality PAV = **1.05** Ac-Ft

B. 1.0 " Over Total Impervious Area = 1.05 Ac-Ft

Required PAV = **1.05** Ac-Ft

Provided PAV = **1.05** Ac-Ft Provided by Ex. Pond B.

Water Quantity

Post V(R)- Pre V(R) =	**0.31**	**ac-ft.**	Provided by Proposed Pond B3
Pre Att. Volume (Ex. Ponds B1)	**3.01**	**ac-ft.**	Provided by Ex. Pond B
Required Att. Volume (Delta V(R) + Pre Att. Volume	**3.32**	**ac-ft.**	

Stage Storage Calculations (based on permit #: 43-12854)

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
72.00	Outside Berm	0.90				1.98	
			0.76	0.50	0.38		
71.50	Inside Berm	0.63				1.60	
			0.58	1.47	0.86		
70.03	DHW/ATT (25yr/24hr)	0.54				0.75	DHW match with Ex. Pond B
			0.53	0.23	0.12		
69.80		0.52				0.62	
			0.48	1.30	0.62		
68.50	(NWL)	0.44				0.00	NWL match with Ex. Pond B
			0.38	-2.00	(0.76)		
66.50	Slope Change	0.32				(0.76)	
			0.27	-4.00	(1.08)		
62.50	Pond Bottom	0.22				(1.85)	

Required Detention Volume for Open Spaces (25YR/24HR) = 3.32 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	1.66 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.52 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	1.05 Ac-Ft

Proposed pond option 3 - Pond B3

EAST OF INTERSECTION:
BASIN 1A & 2A CALCULATIONS

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN 1A(1)			**DATE**
POND/NODE DESIGNATION:	Existing POND 1A(1)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	YW	6/3/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	1.71	171.00
			TOTALS	**1.71**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lanes)	N/A	N/A	98	5.65	553.70
			TOTALS	**5.65**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Roadway (Sidewalk)	N/A	N/A	98	0.24	23.52
			TOTALS	**0.24**	
PERVIOUS AREAS					
Open Spaces (Good Condition, grass cover on 75% or more of the area)			74	1.42	105.08
Open Spaces (Poor Condition, grass cover on 50% or less of the area) Offsite-Undeveloped			86	1.15	98.90
Per SWFWMD ERP Permit App ID. 67030 (Permit #: 19567.003)			**TOTALS**	**2.57**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**7.36**	**TOTAL BASIN AREA**	**10.17**	**COMPOSITE CN**	**80.96**
TOTAL DCIA	**72.37%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**93.63**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	9.30	0.68	8.53	**7.23**
SWFWMD	100-year / 24-hour	13.00	0.68	12.22	**10.35**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN 1A(1)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND 1A	**CHECKED BY:**	YW	6/3/2024

Water Quality

Total Basin Area =	10.17	ac
Pond Area at NWL =	1.71	ac
Existing Impervious Area =	5.89	ac

A.	Existing Permitted Water Quality PAV =		**0.59**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	0.49	Ac-Ft
		Required PAV =	**0.49**	Ac-Ft

Water Quantity

Existing Provided Detention Volume= 3.18 ac-ft. Per Permit 43-16251-18 - Attenuation Volume Provided

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
71.00	TOB	1.90				3.43	
			1.89	0.13	0.25		
70.87	DHW/ATT	1.88				**3.18**	Provided Detention Volume
			1.80	1.44	2.59		
69.43	Weir/PAV	1.71				0.59	Provided Treatment Volume
			1.69	0.35	0.59		
69.08	Orifice/NWL	1.67				0.00	NWL is at orifice elevation
			1.65	-0.38	(0.63)		
68.70	SHW	1.62				(0.63)	
			1.29	-1.70	(2.19)		
67.00		0.96				(2.82)	
			0.77	-5.00	(3.85)		
62.00	Pond Bottom	0.58				(6.67)	

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN 1A(1)			**DATE**
POND/NODE DESIGNATION:	POND 1A(1)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	YW	6/3/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond System	N/A	N/A	100	1.71	171.00
Proposed Pond System	N/A	N/A	100	2.44	244.00
			TOTALS	**4.15**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	9.20	901.60
			TOTALS	**9.20**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Roadway (Sidewalks)	N/A	N/A	98	0.45	44.17
			TOTALS	**0.45**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	2.93	216.82
Open Spaces Grass Good condition: grass cover on 75% or more of the area Offsite	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	0.72	53.28
Open Spaces Grass Good condition: grass cover on 75% or more of the area Pond Offsite	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	0.98	72.52
			TOTALS	**4.63**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**13.35**	**TOTAL BASIN AREA**	**18.43**	**COMPOSITE CN**	**76.13**
TOTAL DCIA	**72.43%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.42**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.82	7.89	**12.11**
SWFWMD	100-year / 24-hour	12.50	0.82	11.57	**17.77**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN 1A(1)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND 1A(1)	**CHECKED BY:**	YW	6/3/2024

Water Quality

Total Basin Area =	18.43	ac
Pond Area at NWL =	4.15	ac
Total Impervious Area =	9.65	ac

A. Existing Permitted Water Quality PAV = **0.59** Ac-Ft

B. 1.0 " Over Total Impervious Area = 0.80 Ac-Ft
Required PAV = **0.80** Ac-Ft
Provided PAV = **0.96** Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**4.88**	**ac-ft.**	
Pre Att. Volume (Ponds 1A)	**3.18**	**ac-ft.**	
Required Att. Volume (Delta V(R) + Pre Att. Volume	**8.06**	**ac-ft.**	EX_Pond1A will remain in use. Delta V (R) to be provided

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
72.00	Outside Berm	3.41				8.22	
			3.15	0.13	0.41		
71.87	Inside Berm	2.88				7.81	
		.	2.85	1.00	2.85		
70.87	DHW/ATT	2.82				4.96	Provided Detention Volume
			2.78	1.44	4.01		
69.43	(PAV)	2.74				0.96	Provided Treatment Volume
			2.73	0.35	0.96		
69.08	(NWL)	2.72				0.00	NWL is at orifice elevation
			2.34	-5.08	(11.86)		
64.00	Pond Bottom	1.95				(11.86)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 8.06 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	4.03 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.40 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	0.80 Ac-Ft

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN 1A(2)			**DATE**
POND/NODE DESIGNATION:	Existing BASIN 1A(2)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	YW	6/3/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	1.71	171.00
			TOTALS	**1.71**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lanes)	N/A	N/A	98	5.65	553.70
			TOTALS	**5.65**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Roadway (Sidewalk)	N/A	N/A	98	0.24	23.52
			TOTALS	**0.24**	
PERVIOUS AREAS					
Open Spaces (Good Condition, grass cover on 75% or more of the area)		C	74	1.42	105.08
Open Spaces (Poor Condition, grass cover on 50% or less of the area) Offsite-Undeveloped		C	86	1.15	98.90
Per SWFWMD ERP Permit App ID. 67030 (Permit #: 19567.003)			**TOTALS**	**2.57**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**7.36**	**TOTAL BASIN AREA**	**10.17**	**COMPOSITE CN**	**80.96**
TOTAL DCIA	**72.37%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**93.63**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	9.30	0.68	8.53	**7.23**
SWFWMD	100-year / 24-hour	13.00	0.68	12.22	**10.35**

CYPRESS CREEK WATERSHED

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN 1A(2)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND 1A	**CHECKED BY:**	YW	6/3/2024

Water Quality

Total Basin Area =	10.17	ac
Pond Area at NWL =	1.71	ac
Existing Impervious Area =	5.89	ac

A.	Existing Permitted Water Quality PAV =		**0.59**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	0.49	Ac-Ft
		Required PAV =	**0.49**	Ac-Ft

Water Quantity

Existing Provided Detention Volume= **3.18** **ac-ft.** Per Permit 43-16251-18 - Attenuation Volume Provided

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
71.00	TOB	1.90				3.43	
			1.89	0.13	0.25		
70.87	DHW/ATT	1.88				**3.18**	Provided Detention Volume
			1.80	1.44	2.59		
69.43	Weir/PAV	1.71				0.59	Provided Treatment Volume
			1.69	0.35	0.59		
69.08	Orifice/NWL	1.67				0.00	NWL is at orifice elevation
			1.65	-0.38	(0.63)		
68.70	SHW	1.62				(0.63)	
			1.29	-1.70	(2.19)		
67.00		0.96				(2.82)	
			0.77	-5.00	(3.85)		
62.00	Pond Bottom	0.58				(6.67)	

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN 1A(2)			DATE
POND/NODE DESIGNATION:	POND 1A(2)	MADE BY:	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	YW	6/3/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond System	N/A	N/A	100	1.71	171.00
Proposed Pond System	N/A	N/A	100	3.81	381.00
			TOTALS	**5.52**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	9.20	901.60
			TOTALS	**9.20**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Roadway (Sidewalks)	N/A	N/A	98	0.45	44.17
Commercial and Business Areas (85% impervious)	N/A	N/A	94	0.69	64.86
			TOTALS	**1.14**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	2.93	216.82
Open Spaces Grass Good condition: grass cover on 75% or more of the area Offsite	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	2.82	208.68
			TOTALS	**5.75**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**14.72**	**TOTAL BASIN AREA**	**21.61**	**COMPOSITE CN**	**77.57**
TOTAL DCIA	**68.11%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.00**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.87	7.84	**14.11**
SWFWMD	100-year / 24-hour	12.50	0.87	11.51	**20.73**

CYPRESS CREEK WATERSHED

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN 1A(2)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND 1A(2)	**CHECKED BY:**	YW	6/3/2024

Water Quality

Total Basin Area =	21.61	ac
Pond Area at NWL =	5.52	ac
Total Impervious Area =	10.34	ac

A.	Existing Permitted Water Quality PAV =		**0.59**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	0.86	Ac-Ft
		Required PAV =	**0.86**	Ac-Ft
		Provided PAV =	**1.34**	Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**6.88**	**ac-ft.**	
N/A	**3.18**	**ac-ft.**	
Required Att. Volume (Delta V(R) + Pre Att. Volume	**10.06**	**ac-ft.**	EX_Pond1A will remain in use. Delta V (R) to be provided

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
72.00	Outside Berm	4.93				11.92	
			4.62	0.13	0.60		
71.87	Inside Berm	4.31				11.32	
		.	4.22	1.00	4.22		
70.87	DHW/ATT	4.13				7.10	Provided Detention Volume
			4.00	1.44	5.76		
69.43	(PAV)	3.87				1.34	Provided Treatment Volume
			3.84	0.35	1.34		
69.08	(NWL)	3.81				0.00	NWL is at orifice elevation
			2.96	-7.08	(20.92)		
62.00	Pond Bottom	2.10				(20.92)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 10.06 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	5.03 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.43 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	0.86 Ac-Ft

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN 1A(3)			**DATE**
POND/NODE DESIGNATION:	Existing BASIN 1A(3)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	YW	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	1.71	171.00
			TOTALS	**1.71**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lanes)	N/A	N/A	98	5.65	553.70
			TOTALS	**5.65**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Roadway (Sidewalk)	Mostly poorly drained sandy soils	N/A	98	0.24	23.52
			TOTALS	**0.24**	
PERVIOUS AREAS					
Open Spaces (Good Condition, grass cover on 75% or more of the area)		C	74	1.42	105.08
Open Spaces (Poor Condition, grass cover on 50% or less of the area) Offsite-Undeveloped		C	86	1.15	98.90
Per SWFWMD ERP Permit App ID. 67030 (Permit #: 19567.003)			**TOTALS**	**2.57**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**7.36**	**TOTAL BASIN AREA**	**10.17**	**COMPOSITE CN**	**80.96**
TOTAL DCIA	**72.37%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**93.63**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	9.30	0.68	8.53	**7.23**
SWFWMD	100-year / 24-hour	13.00	0.68	12.22	**10.35**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN 1A(3)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND 1A(3)	**CHECKED BY:**	YW	6/4/2024

Water Quality

Total Basin Area =	10.17	ac
Pond Area at NWL =	1.71	ac
Existing Impervious Area =	5.89	ac

A.	Existing Permitted Water Quality PAV =		**0.59**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	0.49	Ac-Ft
		Required PAV =	**0.49**	Ac-Ft

Water Quantity

Existing Provided Detention Volume= 3.18 ac-ft. Per Permit 43-16251-18 - Attenuation Volume Provided

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
71.00	TOB	1.90				3.43	
			1.89	0.13	0.25		
70.87	DHW/ATT	1.88				**3.18**	Provided Detention Volume
			1.80	1.44	2.59		
69.43	Weir/PAV	1.71				0.59	Provided Treatment Volume
			1.69	0.35	0.59		
69.08	Orifice/NWL	1.67				0.00	NWL is at orifice elevation
			1.65	-0.38	(0.63)		
68.70	SHW	1.62				(0.63)	
			1.29	-1.70	(2.19)		
67.00		0.96				(2.82)	
			0.77	-5.00	(3.85)		
62.00	Pond Bottom	0.58				(6.67)	

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN 1A(3)			**DATE**
POND/NODE DESIGNATION:	BASIN 1A(3)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	YW	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond System	N/A	N/A	100	1.71	171.00
Proposed Pond System	N/A	N/A	100	3.46	346.00
			TOTALS	**5.17**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	9.20	901.60
			TOTALS	**9.20**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Roadway (Sidewalks)	N/A	N/A	98	0.45	44.17
Commercial and Business Areas (85% impervious)	N/A	N/A	94	0.69	64.86
			TOTALS	**1.14**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	2.93	216.82
Open Spaces Grass Good condition: grass cover on 75% or more of the area Offsite	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	2.44	180.56
			TOTALS	**5.37**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**14.37**	**TOTAL BASIN AREA**	**20.88**	**COMPOSITE CN**	**77.78**
TOTAL DCIA	**68.82%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.19**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.85	7.86	**13.68**
SWFWMD	100-year / 24-hour	12.50	0.85	11.54	**20.08**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN 1A(3)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND 1A(3)	**CHECKED BY:**	YW	6/4/2024

Water Quality

Total Basin Area =	20.88	ac
Pond Area at NWL =	5.17	ac
Total Impervious Area =	10.34	ac

A. Existing Permitted Water Quality PAV = **0.59** Ac-Ft

B. 1.0 " Over Total Impervious Area = 0.86 Ac-Ft

Required PAV = **0.86** Ac-Ft

Provided PAV = **1.22** Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**6.45**	**ac-ft.**	
Pre Att. Volume (Ponds 1A)	**3.18**	**ac-ft.**	
Required Att. Volume (Delta V(R) + Pre Att. Volume	**9.63**	**ac-ft.**	EX_Pond1A will remain in use. Delta V (R) to be provided

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
72.00	Outside Berm	4.48				10.84	
			4.20	0.13	0.55		
71.87	Inside Berm	3.92				10.30	
		.	3.84	1.00	3.84		
70.87	DHW/ATT	3.76				6.46	Provided Detention Volume
			3.64	1.44	5.24		
69.43	(PAV)	3.52				1.22	Provided Treatment Volume
			3.49	0.35	1.22		
69.08	(NWL)	3.46				0.00	NWL is at orifice elevation
			3.16	-7.08	(22.34)		
62.00	Pond Bottom	2.85				(22.34)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 9.63 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	4.81 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.43 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	0.86 Ac-Ft

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN 2A(1)			**DATE**
POND/NODE DESIGNATION:	Existing POND 2A(1)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	YW	6/5/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	1.57	157.25
			TOTALS	**1.57**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lanes)	N/A	N/A	98	6.79	665.42
			TOTALS	**6.79**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Roadway (Sidewalk)	N/A	N/A	98	0.28	26.96
			TOTALS	**0.28**	
PERVIOUS AREAS					
Open Spaces (Good Condition, grass cover on 75% or more of the area)		C	74	1.74	128.60
Woods: Good Cover		A/D	77	0.02	1.24
Woods: Good Cover (OFFSITE)		A/D	77	0.49	38.07
Open Spaces (Good Condition, grass cover on 75% or more of the area) (OFFSITE)		A/D	74	0.78	57.72
Per SWFWMD ERP Permit App ID. 41866 (Permit #: 19567.000)			**TOTALS**	**3.03**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**8.36**	**TOTAL BASIN AREA**	**11.67**	**COMPOSITE CN**	**76.46**
TOTAL DCIA	**71.68%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.17**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	9.30	0.85	8.35	**8.12**
SWFWMD	100-year / 24-hour	13.00	0.85	12.03	**11.70**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN 2A(1)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND 2A(1)	**CHECKED BY:**	YW	6/5/2024

Water Quality

Total Basin Area =	11.67	ac
Pond Area at NWL =	1.57	ac
Existing Impervious Area =	7.07	ac

A.	Existing Permitted Water Quality PAV =		**0.79**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	0.59	Ac-Ft
		Required PAV =	**0.59**	Ac-Ft

Water Quantity

Existing Provided Detention Volume= 3.01 ac-ft.

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
70.34	TOB	2.07				6.14	
			1.95	1.61	3.13		
68.73	DHW/ATT	1.83				**3.01**	Provided Detention Volume/Elevation of DHW
			1.74	1.28	2.22		
67.45	Weir/PAV	1.64				0.79	Provided Treatment Volume/Weir Elevation
			1.61	0.49	0.79		
66.96	Orifice/NWL	1.57				0.00	NWL and SHW is at bleeder/orifice/v-notch Elevation
			1.04	-6.99	(7.30)		
59.97	Pond Bottom	0.52				(7.30)	

**** Stage-Storage Calculations have been generated from Pond detail sheets Per SWFWMD ERP Permit App ID. 41866 (Permit #: 19567.000)**
*****Original permit on NGVD 1929. Elevation have been converted to NAVD 88**
****Conversion factor NGVD 1929 Elevation - 0.846

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN 2A(1)			**DATE**
POND/NODE DESIGNATION:	POND 2A(1)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	YW	6/5/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond System	N/A	N/A	100	1.57	157.00
Proposed Pond System	N/A	N/A	100	0.47	47.00
			TOTALS	**2.04**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	8.69	851.62
			TOTALS	**8.69**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Roadway (Sidewalks)	N/A	N/A	98	0.70	68.60
			TOTALS	**0.70**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	1.32	97.79
Woods: Good Cover (OFFSITE)	Adaamsville Fine Sand, 0 to 2% slopes	A/D	77	0.00	0.00
Open Spaces (Good Condition, grass cover on 75% or more of the area) (OFFSITE)	Adaamsville Fine Sand, 0 to 2% slopes	A/D	74	1.28	94.72
			TOTALS	**2.60**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**10.73**	**TOTAL BASIN AREA**	**14.03**	**COMPOSITE CN**	**79.09**
TOTAL DCIA	**76.47%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**93.84**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.66	8.06	**9.42**
SWFWMD	100-year / 24-hour	12.50	0.66	11.75	**13.73**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN 2A(1)	**MADE BY:**	JDZ	05/14/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND 2A(1)	**CHECKED BY:**	YW	6/5/2024

Water Quality

Total Basin Area =	14.03	ac
Pond Area at NWL =	2.04	ac
Total Impervious Area =	9.39	ac

A. Existing Permitted Water Quality PAV = **0.79** Ac-Ft

B. 1.0 " Over Total Impervious Area = 0.78 Ac-Ft

Required PAV = **0.78** Ac-Ft

Provided PAV = **1.02** Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**1.30**	**ac-ft.**
Pre Att. Volume (Ponds 1A)	**3.01**	**ac-ft.**
Required Att. Volume (Delta V(R) + Pre Att. Volume	**4.31**	**ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
70.65	Outside Berm	3.31				10.44	
			2.92	0.32	0.92		
70.34	Inside Berm	2.53				9.52	
			3.03	1.71	5.18		
68.63	DHW/ATT	3.53				4.34	Provided Detention Volume
			2.82	1.18	3.32		
67.45	(PAV)	2.11				1.02	Provided Treatment Volume
			2.08	0.49	1.02		
66.96	(NWL)	2.04				0.00	
			1.38	-6.99	(9.65)		
59.97	Pond Bottom	0.72				(9.65)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 4.31 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	2.16 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.39 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	0.78 Ac-Ft

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN 2A(2)			**DATE**
POND/NODE DESIGNATION:	Existing POND 2A(2)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	YW	6/6/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	1.57	157.25
			TOTALS	**1.57**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lanes)	N/A	N/A	98	6.79	665.42
			TOTALS	**6.79**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Roadway (Sidewalk)	N/A	N/A	98	0.28	26.96
			TOTALS	**0.28**	
PERVIOUS AREAS					
Open Spaces (Good Condition, grass cover on 75% or more of the area)		C	74	1.74	128.60
Woods: Good Cover		A/D	77	0.02	1.24
Woods: Good Cover (OFFSITE)		A/D	77	0.49	38.07
Open Spaces (Good Condition, grass cover on 75% or more of the area) (OFFSITE)		A/D	74	0.78	57.72
Per SWFWMD ERP Permit App ID. 41866 (Permit #: 19567.000)			**TOTALS**	**3.03**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**8.36**	**TOTAL BASIN AREA**	**11.67**	**COMPOSITE CN**	**76.46**
TOTAL DCIA	**71.68%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.17**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	9.30	0.85	8.35	**8.12**
SWFWMD	100-year / 24-hour	13.00	0.85	12.03	**11.70**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN 2A(2)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND 2A(2)	**CHECKED BY:**	YW	6/6/2024

Water Quality

Total Basin Area =	11.67	ac
Pond Area at NWL =	1.57	ac
Existing Impervious Area =	7.07	ac

A.	Existing Permitted Water Quality PAV =		**0.79**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	0.59	Ac-Ft
		Required PAV =	**0.59**	Ac-Ft

Water Quantity

Existing Provided Detention Volume= 3.01 ac-ft.

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
70.34	TOB	2.07				6.15	
			1.95	1.61	3.13		
68.73	DHW/ATT	1.83				**3.01**	Provided Detention Volume/Elevation of DHW
			1.74	1.28	2.22		
67.45	Weir/PAV	1.64				0.79	Provided Treatment Volume/Weir Elevation
			1.61	0.49	0.79		
66.96	Orifice/NWL	1.57				0.00	NWL and SHW is at bleeder/orifice/v-notch Elevation
			1.04	-6.99	(7.30)		
59.97	Pond Bottom	0.52				(7.30)	

**** Stage-Storage Calculations have been generated from Pond detail sheets Per SWFWMD ERP Permit App ID. 41866 (Permit #: 19567.000)**
*****Original permit on NGVD 1929. Elevation have been converted to NAVD 88**
****Conversion factor NGVD 1929 Elevation - 0.846

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN 2A(2)			**DATE**
POND/NODE DESIGNATION:	POND 2A(2)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	YW	6/6/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Proposed Pond System	N/A	N/A	100	1.25	125.00
Existing Pond System	N/A	N/A	100	1.57	157.00
			TOTALS	**2.82**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	8.69	851.62
			TOTALS	**8.69**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Roadway (Sidewalks)	N/A	N/A	98	0.70	68.60
Commercial and Business Areas (85% impervious)	N/A	N/A	94	0.00	0.00
			TOTALS	**0.70**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	1.32	97.79
Woods: Good Cover (OFFSITE)	Adaamsville Fine Sand, 0 to 2% slopes	A/D	77	0.00	0.00
Open Spaces (Good Condition, grass cover on 75% or more of the area) (OFFSITE)	Adaamsville Fine Sand, 0 to 2% slopes	A/D	74	1.27	93.98
Open Spaces Grass Good condition: grass cover on 75% or more of the area (OFFSITE)	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	1.23	91.02
			TOTALS	**3.82**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.51**	**TOTAL BASIN AREA**	**16.03**	**COMPOSITE CN**	**77.72**
TOTAL DCIA	**71.80%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.63**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.80	7.91	**10.57**
SWFWMD	100-year / 24-hour	12.50	0.80	11.59	**15.49**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN 2A(2)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND 2A(2)	**CHECKED BY:**	YW	6/6/2024

Water Quality

Total Basin Area =	16.03	ac
Pond Area at NWL =	2.82	ac
Total Impervious Area =	9.39	ac

A.	Existing Permitted Water Quality PAV =		**0.79**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	0.78	Ac-Ft
		Required PAV =	**0.78**	Ac-Ft
		Provided PAV =	**1.42**	Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**2.45**	**ac-ft.**	Existing Pond to remain. Proposed pond design for PostV(R) -Pre V(R)
Pre Att. Volume (Ponds 1A)	**3.01**	**ac-ft.**	
Required Att. Volume (Delta V(R) + Pre Att. Volume	**5.46**	**ac-ft.**	

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
71.65	Outside Berm	2.47				8.20	
			2.11	1.92	4.05		
69.73	Inside Berm	1.75				4.15	
			1.66	1.02	1.69		
68.71	DHW/ATT	1.57				2.46	Provided Detention Volume
			1.45	1.26	1.83		
67.45	(PAV)	1.34				0.63	Provided Treatment Volume
			1.29	0.49	0.63		
66.96	(NWL)	1.25				0.00	
			0.94	-5.00	(4.70)		
61.96	Pond Bottom	0.63				(4.70)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 5.46 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	2.73 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.39 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	0.78 Ac-Ft

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN 2A(3)			**DATE**
POND/NODE DESIGNATION:	Existing POND 2A(3)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	YW	6/5/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	1.57	157.25
			TOTALS	**1.57**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lanes)	N/A	N/A	98	6.79	665.42
			TOTALS	**6.79**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Roadway (Sidewalk)	N/A	N/A	98	0.28	26.96
			TOTALS	**0.28**	
PERVIOUS AREAS					
Open Spaces (Good Condition, grass cover on 75% or more of the area)		C	74	1.74	128.60
Woods: Good Cover		A/D	77	0.02	1.24
Woods: Good Cover (OFFSITE)		A/D	77	0.49	38.07
Open Spaces (Good Condition, grass cover on 75% or more of the area) (OFFSITE)		A/D	74	2.02	149.34
Per SWFWMD ERP Permit App ID. 41866 (Permit #: 19567.000)			**TOTALS**	**4.27**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**8.36**	**TOTAL BASIN AREA**	**12.90**	**COMPOSITE CN**	**75.79**
TOTAL DCIA	**64.81%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**90.43**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	9.30	1.06	8.14	**8.75**
SWFWMD	100-year / 24-hour	13.00	1.06	11.81	**12.70**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN 2A(3)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND 2A(3)	**CHECKED BY:**	YW	6/5/2024

Water Quality

Total Basin Area =	12.90	ac
Pond Area at NWL =	1.57	ac
Existing Impervious Area =	7.07	ac

A.	Existing Permitted Water Quality PAV =		**0.79**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	0.59	Ac-Ft
		Required PAV =	**0.59**	Ac-Ft

Water Quantity

Existing Provided Detention Volume= 3.01 ac-ft.

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
70.34	TOB	2.07				6.14	
			1.95	1.61	3.13		
68.73	DHW/ATT	1.83				**3.01**	Provided Detention Volume/Elevation of DHW
			1.74	1.28	2.22		
67.45	Weir/PAV	1.64				0.79	Provided Treatment Volume/Weir Elevation
			1.61	0.49	0.79		
66.96	Orifice/NWL	1.57				0.00	NWL and SHW is at bleeder/orifice/v-notch Elevation
			1.04	-6.99	(7.30)		
59.97	Pond Bottom	0.52				(7.30)	

**** Stage-Storage Calculations have been generated from Pond detail sheets Per SWFWMD ERP Permit App ID. 41866 (Permit #: 19567.000)**
*****Original permit on NGVD 1929. Elevation have been converted to NAVD 88**
****Conversion factor NGVD 1929 Elevation - 0.846

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN 2A(3)			**DATE**
POND/NODE DESIGNATION:	POND 2A(3)	**MADE BY:**	JDZ	5/10/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	YW	6/5/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Proposed Pond System	N/A	N/A	100	1.06	106.00
Existing Pond System	N/A	N/A	100	1.57	157.00
			TOTALS	**2.63**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	8.69	851.62
			TOTALS	**8.69**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Roadway (Sidewalks)	N/A	N/A	98	0.70	68.60
Commercial and Business Areas (85% impervious)	N/A	N/A	94	0.00	0.00
			TOTALS	**0.70**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	1.32	97.79
Woods: Good Cover (OFFSITE)	Adaamsville Fine Sand, 0 to 2% slopes	A/D	77	0.49	38.07
Open Spaces (Good Condition, grass cover on 75% or more of the area) (OFFSITE)	Adaamsville Fine Sand, 0 to 2% slopes	A/D	74	0.95	70.30
Open Spaces Grass Good condition: grass cover on 75% or more of the area (OFFSITE)	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	0.50	37.00
			TOTALS	**3.27**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.32**	**TOTAL BASIN AREA**	**15.29**	**COMPOSITE CN**	**78.61**
TOTAL DCIA	**74.06%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**93.31**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.80	0.72	7.99	**10.18**
SWFWMD	100-year / 24-hour	12.50	0.72	11.68	**14.88**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN 2A(3)	**MADE BY:**	JDZ	5/14/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND 2A(3)	**CHECKED BY:**	YW	6/5/2024

Water Quality

Total Basin Area =	15.29	ac
Pond Area at NWL =	2.63	ac
Total Impervious Area =	9.39	ac

A. Existing Permitted Water Quality PAV = **0.79** Ac-Ft

B. 1.0 " Over Total Impervious Area = 0.78 Ac-Ft

Required PAV = **0.78** Ac-Ft

Provided PAV = **1.32** Ac-Ft

Water Quantity

Post V(R)- Pre V(R) = **1.43** **ac-ft.** **Existing Pond to remain. Proposed pond design for PostV(R) -Pre V(R)**

Pre Att. Volume (Ponds 1A) **3.01** **ac-ft.**

Required Att. Volume (Delta V(R) + Pre Att. Volume **4.44** **ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
71.00	Outside Berm	1.74				5.11	
			1.55	0.66	1.03		
70.34	Inside Berm	1.36				4.08	
			1.28	1.90	2.42		
68.44	DHW/ATT	1.19				1.66	Provided Detention Volume
			1.15	0.99	1.13		
67.45	(PAV)	1.10				0.53	Provided Treatment Volume
			1.08	0.49	0.53		
66.96	(NWL)	1.06				0.00	
			0.60	-6.99	(4.20)		
59.97	Pond Bottom	0.14				(4.20)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 4.44 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	2.22 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.39 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	0.78 Ac-Ft

AT THE INTERSECTION:
BASIN C
CALCULATIONS

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN C(1)			**DATE**
POND/NODE DESIGNATION:	Existing POND C(1)	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JDZ	06/17/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond	N/A	N/A	100	4.37	437.00
			TOTALS	**4.37**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Impervious (Sidwalk)	N/A	N/A	98	13.00	1273.61
			TOTALS	**13.00**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Commercial and Business Areas (85% impervious)	N/A	N/A	95	9.81	931.95
Commercial and Business Areas (85% impervious)	N/A	N/A	94	1.41	132.54
Residential (1/4 acre)	N/A	N/A	83	0.22	18.26
Residential (1/2 acre, 25% Impervious)	N/A	N/A	80	0.82	65.60
Industrial	N/A	N/A	93	0.87	80.91
Median	N/A	N/A	79	1.29	101.91
Added Area From Addendum	N/A	N/A	94	1.46	137.24
			TOTALS	**15.88**	
PERVIOUS AREAS					
Open Spaces (Good Condition, grass cover on 75% of the area)		D	80	1.34	107.20
Open Spaces (Good Condition, grass cover on 75% of the area)		C	74	1.49	110.26
Open Spaces (Fair Condition, grass cover on 75% of the area)		C	79	3.04	240.24
Open Spaces (Good Condition, grass cover on 75% of the area)		C	74	0.77	56.68
Open Spaces (Good Condition, grass cover on 75% of the area)		C	74	1.75	129.80
Per SWFWMD ERP Permit App ID. 29402 (Permit #: 12854)			**TOTALS**	**8.39**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**17.37**	**TOTAL BASIN AREA**	**41.64**	**COMPOSITE CN**	**87.04**
TOTAL DCIA	**41.71%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.75**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	0.78	7.94	**27.54**
SWFWMD	100-year / 24-hour	12.50	0.78	11.61	**40.28**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN C(1)	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND C(1)	**CHECKED BY:**	JDZ	06/17/2024

Water Quality

Total Basin Area =	41.64	ac	
Pond Area at NWL =	4.37	ac	
Existing Impervious Area =	24.96	ac	* Per permit page 274

A. Existing Permitted Water Quality PAV = **2.24** Ac-Ft *From Permit page 276

B. 1.0 " Over Total Impervious Area = 2.08 Ac-Ft

Required PAV = **2.08** Ac-Ft

Water Quantity

Existing Provided Detention Volume= 14.04 ac-ft. Per Permit 43-16251-18 - Attenuation Volume Provided

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
73.00	Outside Berm	5.27				20.79
			4.82	1.40	6.75	
71.60	Inside Berm	4.37				14.04
			4.33	0.33	1.43	
71.27	DHW/ATT	4.30				12.61
			4.03	2.57	10.37	
68.70	(PAV)	3.77				2.24
			3.71	0.56	2.08	
68.14	NWL/SHW	3.65				0.00
			2.60	-4.64	(12.05)	
63.50	Pond Bottom	1.55				(12.05)

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN C(1)			**DATE**
POND/NODE DESIGNATION:	POND C(1)	**MADE BY:**	JDZ	6/17/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	YW	6/17/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond C	N/A	N/A	100	4.37	437.00
Proposed Existing Pond C	N/A	N/A	100	1.88	188.00
			TOTALS	**6.25**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	24.02	2353.96
			TOTALS	**24.02**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Commercial and Business (85% impervious)	N/A	N/A	98	9.93	973.14
Residential (Average Lot Size: 1/2 acre)	N/A	N/A	94	0.00	0.00
Sidewalks	N/A	N/A	98	1.58	154.84
Railroad (Gravel)	N/A	N/A	89	0.53	47.17
			TOTALS	**12.04**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	5.65	418.10
Open Spaces Grass Good condition: grass cover on 75% or more of the area Pond Offsite	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	4.82	356.68
			TOTALS	**10.47**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**30.27**	**TOTAL BASIN AREA**	**52.78**	**COMPOSITE CN**	**86.63**
TOTAL DCIA	**57.35%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**93.39**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	0.71	8.01	**35.25**
SWFWMD	100-year / 24-hour	12.50	0.71	11.69	**51.41**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN C(1)	**MADE BY:**	JDZ	6/17/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND C(1)+ POND C(1)A+ POND C(1)B	**CHECKED BY:**	YW	6/17/2024

Water Quality

Total Basin Area =	52.78	ac
Pond Area at NWL =	6.25	ac
Total Impervious Area =	36.06	ac

A. Existing Permitted Water Quality PAV = **2.24** Ac-Ft

B. 1.0 " Over Total Impervious Area = 3.01 Ac-Ft
Required PAV = **3.01** Ac-Ft
Provided PAV = **3.57** Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**7.71**	**ac-ft.**
Pre Att. Volume	**14.04**	**ac-ft.**
Required Att. Volume (Delta V(R) + Pre Att. Volume	**21.75**	**ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
73.00	Outside Berm	9.91				36.23	
			9.01	0.73	6.58		
72.27	Inside Berm	8.11				29.65	
			7.88	1.00	7.88		
71.27	DHW/ATT (25yr/24hr)	7.66				21.77	Provided Detention Volume
			7.08	2.57	18.20		
68.70	(PAV)	6.50				3.57	Provided Treatment Volume
			6.38	0.56	3.57		
68.14	(NWL)	6.25				0.00	
			5.64	-4.64	(26.17)		
63.50	Pond Bottom	5.03				(26.17)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 21.75 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	10.87 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	1.50 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	3.01 Ac-Ft

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN C(2)			**DATE**
POND/NODE DESIGNATION:	Existing POND C(2)	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JDZ	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond	N/A	N/A	100	4.37	437.00
			TOTALS	**4.37**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Impervious	N/A	N/A	98	13.00	1273.61
			TOTALS	**13.00**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Commercial and Business Areas (85% impervious)	N/A	N/A	95	9.81	931.95
Commercial and Business Areas (85% impervious)	N/A	N/A	94	1.41	132.54
Residential (1/4 acre)	N/A	N/A	83	0.22	18.26
Residential (1/2 acre, 25% Impervious)	N/A	N/A	80	0.82	65.60
Industrial	N/A	N/A	93	0.87	80.91
Median	N/A	N/A	79	1.29	101.91
Added Area From Addendum	N/A	N/A	94	1.46	137.24
			TOTALS	**15.88**	
PERVIOUS AREAS					
Open Spaces (Good Condition, grass cover on 75% of the area)		D	80	1.34	107.20
Open Spaces (Good Condition, grass cover on 75% of the area)		C	74	1.49	110.26
Open Spaces (Fair Condition, grass cover on 75% of the area)		C	79	3.04	240.24
Open Spaces (Good Condition, grass cover on 75% of the area) Railroad Offsite		C	74	0.77	56.68
Open Spaces (Good Condition, grass cover on 75% of the area) Pond offsite		C	74	1.75	129.80
Per SWFWMD ERP Permit App ID. 29402 (Permit #: 12854)			**TOTALS**	**8.39**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**17.37**	**TOTAL BASIN AREA**	**41.64**	**COMPOSITE CN**	**87.04**
TOTAL DCIA	**41.71%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.75**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	0.78	7.94	**27.54**
SWFWMD	100-year / 24-hour	12.50	0.78	11.61	**40.28**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN C(2)	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND C(2)	**CHECKED BY:**	JDZ	6/4/2024

Water Quality

Total Basin Area =	41.64	ac	
Pond Area at NWL =	4.37	ac	
Existing Impervious Area =	24.96	ac	* Per permit page 274

A. Existing Permitted Water Quality PAV = **2.24** Ac-Ft *From Permit page 276

B. 1.0 " Over Total Impervious Area = 2.08 Ac-Ft

Required PAV = **2.08** Ac-Ft

Water Quantity

Existing Provided Detention Volume= 13.88 ac-ft. Per Permit 43-16251-18 - Attenuation Volume Provided

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
73.00	Outside Berm	5.27				20.63
			4.82	1.40	6.75	
71.60	Inside Berm	4.37				13.88
			4.33	0.33	1.43	
71.27	DHW/ATT	4.30				12.45
			4.03	2.57	10.37	
68.70	(PAV)	3.77				2.08
			3.71	0.56	2.08	
68.14	NWL/SHW	3.65				0.00
			2.60	-4.64	(12.05)	
63.50	Pond Bottom	1.55				(12.05)

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN C(2)			**DATE**
POND/NODE DESIGNATION:	POND C(2)+ POND C(2)A+ POND C(2)B+POND C(2)C	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JDZ	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond C	N/A	N/A	100	4.37	437.00
Proposed Existing Pond C	N/A	N/A	100	2.27	227.00
			TOTALS	**6.64**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	24.02	2353.96
			TOTALS	**24.02**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Commercial and Business (85% impervious)	N/A	N/A	98	11.85	1161.30
Residential (Average Lot Size: 1/2 acre)	N/A	N/A	94	0.00	0.00
Sidewalks	N/A	N/A	98	1.58	154.84
Railroad (Gravel)	N/A	N/A	89	0.53	47.17
			TOTALS	**13.96**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	5.65	418.10
Open Spaces Grass Good condition: grass cover on 75% or more of the area Pond Offsite	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	5.73	424.02
			TOTALS	**11.38**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**30.66**	**TOTAL BASIN AREA**	**56.00**	**COMPOSITE CN**	**87.03**
TOTAL DCIA	**54.75%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**93.27**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	0.72	8.00	**37.33**
SWFWMD	100-year / 24-hour	12.50	0.72	11.67	**54.48**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN C(2)	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND C(2)+ POND C(2)A, POND C(2)B+POND C(2)C	**CHECKED BY:**	JDZ	6/4/2024

Water Quality

Total Basin Area =	56.00	ac
Pond Area at NWL =	6.64	ac
Total Impervious Area =	37.98	ac

A. Existing Permitted Water Quality PAV = **2.24** Ac-Ft

B. 1.0 " Over Total Impervious Area = 3.17 Ac-Ft
Required PAV = **3.17** Ac-Ft
Provided PAV = **3.80** Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**9.79**	**ac-ft.**
Pre Att. Volume	**13.88**	**ac-ft.**
Required Att. Volume (Delta V(R) + Pre Att. Volume	**23.67**	**ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
73.00	Outside Berm	9.83				38.52	
			9.30	0.67	6.23		
72.33	Inside Berm	8.77				32.29	
			8.52	1.00	8.52		
71.33	DHW/ATT (25yr/24hr)	8.26				23.77	Provided Detention Volume
			7.59	2.63	19.97		
68.70	(PAV)	6.92				3.80	Provided Treatment Volume
			6.78	0.56	3.80		
68.14	(NWL)	6.64				0.00	
			5.87	-4.64	(27.21)		
63.50	Pond Bottom	5.09				(27.21)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 23.67 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	11.84 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	1.58 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	3.17 Ac-Ft

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN C(3)			**DATE**
POND/NODE DESIGNATION:	Existing POND C(3)	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JDZ	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond	N/A	N/A	100	4.37	437.00
			TOTALS	**4.37**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Impervious	N/A	N/A	98	13.00	1273.61
			TOTALS	**13.00**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Commercial and Business Areas (85% impervious)	N/A	N/A	95	9.81	931.95
Commercial and Business Areas (85% impervious)	N/A	N/A	94	1.41	132.54
Residential (1/4 acre)	N/A	N/A	83	0.22	18.26
Residential (1/2 acre, 25% Impervious)	N/A	N/A	80	0.82	65.60
Industrial	N/A	N/A	93	0.87	80.91
Median	N/A	N/A	79	1.29	101.91
Added Area From Addendum	N/A	N/A	94	1.46	137.24
			TOTALS	**15.88**	
PERVIOUS AREAS					
Open Spaces (Good Condition, grass cover on 75% of the area)		D	80	1.34	107.20
Open Spaces (Good Condition, grass cover on 75% of the area)		C	74	1.49	110.26
Open Spaces (Fair Condition, grass cover on 75% of the area)		C	79	3.04	240.24
Open Spaces (Good Condition, grass cover on 75% of the area) Railroad Offsite		C	74	0.77	56.68
Open Spaces (Good Condition, grass cover on 75% of the area) Pond offsite		C	74	1.75	129.80
Per SWFWMD ERP Permit App ID. 29402 (Permit #: 12854)			**TOTALS**	**8.39**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**17.37**	**TOTAL BASIN AREA**	**41.64**	**COMPOSITE CN**	**87.04**
TOTAL DCIA	**41.71%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**92.75**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	0.78	7.94	**27.54**
SWFWMD	100-year / 24-hour	12.50	0.78	11.61	**40.28**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN C(3)	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND C(3)	**CHECKED BY:**	JDZ	6/4/2024

Water Quality

Total Basin Area =	41.64	ac	
Pond Area at NWL =	4.37	ac	
Existing Impervious Area =	24.96	ac	* Per permit page 274

A. Existing Permitted Water Quality PAV = **2.24** Ac-Ft *From Permit page 276

B. 1.0 " Over Total Impervious Area = 2.08 Ac-Ft

Required PAV = **2.08** Ac-Ft

Water Quantity

Existing Provided Detention Volume= 13.88 ac-ft. Per Permit 43-16251-18 - Attenuation Volume Provided

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
73.00	Outside Berm	5.27				20.63
			4.82	1.40	6.75	
71.60	Inside Berm	4.37				13.88
			4.33	0.33	1.43	
71.27	DHW/ATT	4.30				12.45
			4.03	2.57	10.37	
68.70	(PAV)	3.77				2.08
			3.71	0.56	2.08	
68.14	NWL/SHW	3.65				0.00
			2.60	-4.64	(12.05)	
63.50	Pond Bottom	1.55				(12.05)

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN C(3)			**DATE**
POND/NODE DESIGNATION:	POND C(3)	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JDZ	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond C	N/A	N/A	100	4.37	437.00
Proposed Existing Pond C	N/A	N/A	100	3.23	323.00
			TOTALS	**7.60**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	24.02	2353.96
			TOTALS	**24.02**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Commercial and Business (85% impervious)	N/A	N/A	98	12.55	1229.90
Residential (Average Lot Size: 1/2 acre)	N/A	N/A	94	0.00	0.00
Sidewalks	N/A	N/A	98	1.58	154.84
Railroad (Gravel)	N/A	N/A	89	0.53	47.17
			TOTALS	**14.66**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	5.65	418.10
Open Spaces Grass Good condition: grass cover on 75% or more of the area Pond Offsite	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	5.48	405.52
			TOTALS	**11.13**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**31.62**	**TOTAL BASIN AREA**	**57.41**	**COMPOSITE CN**	**87.46**
TOTAL DCIA	**55.08%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**93.53**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	0.69	8.03	**38.42**
SWFWMD	100-year / 24-hour	12.50	0.69	11.71	**56.01**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN C(3)	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND C(3)	**CHECKED BY:**	JDZ	6/4/2024

Water Quality

Total Basin Area =	57.41	ac
Pond Area at NWL =	7.60	ac
Total Impervious Area =	38.68	ac

A. Existing Permitted Water Quality PAV = **2.24** Ac-Ft

B. 1.0 " Over Total Impervious Area = 3.22 Ac-Ft
Required PAV = **3.22** Ac-Ft
Provided PAV = **4.32** Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**10.88**	**ac-ft.**
Pre Att. Volume	**13.88**	**ac-ft.**
Required Att. Volume (Delta V(R) + Pre Att. Volume	**24.76**	**ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
73.00	Outside Berm	11.42				42.71	
			10.41	0.73	7.60		
72.27	Inside Berm	9.40				35.11	
			9.18	1.00	9.18		
71.27	DHW/ATT (25yr/24hr)	8.96				25.92	Provided Detention Volume
			8.40	2.57	21.60		
68.70	(PAV)	7.84				4.32	Provided Treatment Volume
			7.72	0.56	4.32		
68.14	(NWL)	7.60				0.00	
			5.92	-4.64	(27.47)		
63.50	Pond Bottom	4.24				(27.47)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 24.76 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	12.38 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	1.61 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	3.22 Ac-Ft

NORTH OF INTERSECTION:
BASIN D
CALCULATIONS

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN D			DATE
POND/NODE DESIGNATION:	Existing POND D	MADE BY:	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	PRE	CHECKED BY:	JDZ	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond D1 NWL	N/A	N/A	100	1.98	198.00
			TOTALS	**1.98**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lanes)	N/A	N/A	98	11.78	1154.44
			TOTALS	**11.78**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Commercial and Business Areas (85% impervious)	N/A	N/A	94	5.77	542.38
Commercial and Business Areas (85% impervious)	N/A	N/A	95	0.20	19.00
Residential (1/8 acre, 65% Impervious)	N/A	N/A	90	5.07	456.30
Residential (1/2 acre, 25% Impervious)	N/A	N/A	85	0.67	56.95
			TOTALS	**11.71**	
PERVIOUS AREAS					
Open Spaces (Poor Condition, grass cover on 50% or less of the area)		C	86	0.17	14.62
Open Spaces (Fair Condition, grass cover on 50%-75% of the area)		C	79	3.94	311.26
Open Spaces (Poor Condition, grass cover on 50% or less of the area)		C	84	0.80	67.20
Open Spaces (Fair Condition, grass cover on 50%-75% of the area)		D	84	0.02	1.68
Wood or Forest Land (Fair cover)		N/A	73	0.66	48.18
Wood or Forest Land (Good cover)		C	70	0.08	5.60
Median		N/A	79	1.50	118.50
			TOTALS	**7.17**	

Per SWFWMD ERP Permit App ID. 29402 (Permit #: 12854)

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**13.76**	**TOTAL BASIN AREA**	**32.64**	**COMPOSITE CN**	**86.95**
TOTAL DCIA	**42.16%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**91.73**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	0.90	7.81	**21.25**
SWFWMD	100-year / 24-hour	12.50	0.90	11.48	**31.22**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	Existing BASIN D	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	PRE			
POND DESIGNATION:	Existing POND D	**CHECKED BY:**	JDZ	6/4/2024

Water Quality

Total Basin Area =	32.64	ac	
Pond Area at NWL =	1.98	ac	
Existing Impervious Area =	19.02	ac	* Per permit page 410 Calculations Part 2

A. Existing Permitted Water Quality PAV = **1.60** Ac-Ft *From Permit page 276

B. 1.0 " Over Total Impervious Area = 1.59 Ac-Ft

Required PAV = **1.59** Ac-Ft

Water Quantity

Existing Provided Detention Volume= 8.42 ac-ft. Per Permit 43-16251-18 - Attenuation Volume Provided

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
73.00	Top of Bank	4.89				16.61	
			4.68	1.75	8.19		
71.25	DHW/ATT	4.47				8.42	Provided detention volume
			4.27	1.63	6.96		
69.62	(PAV)	4.08				1.45	Provided treatment volume
			4.03	0.36	1.45		
69.26	(NWL)	3.99				0.00	NWL at seasonal high water
			2.59	3.76	9.72		
65.50	Pond Bottom	1.18				9.72	
			0.00	0.00	0.00		

CYPRESS CREEK WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN D			DATE
POND/NODE DESIGNATION:	POND D	MADE BY:	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	JDZ	6/4/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond D1 NWL	N/A	N/A	100	1.98	198.00
			TOTALS	**1.98**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lanes)	N/A	N/A	98	12.07	1182.86
			TOTALS	**12.07**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Commercial and Business Areas (85% impervious)	N/A	N/A	94	5.66	532.04
Commercial and Business Areas (85% impervious)	N/A	N/A	95	0.20	19.00
Residential (1/8 acre, 65% Impervious)	N/A	N/A	90	5.05	454.50
Residential (1/2 acre, 25% Impervious)	N/A	N/A	85	0.67	56.95
			TOTALS	**11.58**	
PERVIOUS AREAS					
Open Spaces (Poor Condition, grass cover on 50% or less of		C	86	0.17	14.62
Open Spaces (Fair Condition, grass cover on 50%-75% of		C	79	3.82	301.78
Open Spaces (Poor Condition, grass cover on 50% or less of		C	84	0.80	67.20
Open Spaces (Fair Condition, grass cover on 50%-75% of		D	84	0.02	1.68
Wood or Forest Land (Fair cover)		N/A	73	0.62	45.26
Wood or Forest Land (Good cover)		C	70	0.08	5.60
Median		N/A	79	1.50	118.50
			TOTALS	**7.01**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**14.05**	**TOTAL BASIN AREA**	**32.64**	**COMPOSITE CN**	**86.99**
TOTAL DCIA	**43.05%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**91.85**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	0.89	7.83	**21.29**
SWFWMD	100-year / 24-hour	12.50	0.89	11.49	**31.27**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN D	**MADE BY:**	LH	5/20/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND D	**CHECKED BY:**	JDZ	6/4/2024

Water Quality

Total Basin Area =	32.64	ac
Pond Area at NWL =	1.98	ac
Total Impervious Area =	23.65	ac

A.	Existing Permitted Water Quality PAV =		**1.60**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	1.97	Ac-Ft
		Required PAV =	**1.97**	Ac-Ft
		Provided PAV =	**1.98**	Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**0.04**	**ac-ft.**
Pre Att. Volume	**8.42**	**ac-ft.**
Required Att. Volume (Delta V(R) + Pre Att. Volume	**8.46**	**ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
73.00	Top of Bank	4.89				16.61	
		.	4.68	1.74	8.14		
71.26	DHW/ATT	4.47				8.46	Provided Detention Volume
			4.29	1.51	6.48		
69.75	(PAV)	4.11				1.98	Provided Treatment Volume
			4.05	0.49	1.98		
69.26	(NWL)	3.99				0.00	
			2.59	3.76	9.72		
65.50	Pond Bottom	1.18				9.72	Permanent Pool Volume
			0.00	0.00	0.00		

Required Detention Volume for Open Spaces (25YR/24HR) = 8.46 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	4.23 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.99 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	1.97 Ac-Ft

WEST OF INTERSECTION:
BASIN E1
CALCULATIONS

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN P1E1			**DATE**
POND/NODE DESIGNATION:	POND P7E1, P10E1, P12E1	**MADE BY:**	MB	4/15/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JF	5/13/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	0.95	95.00
Existing Pond P10E1 NWL	N/A	N/A	100	0.80	80.00
Existing Pond P12E1 NWL	N/A	N/A	100	0.29	29.00
			TOTALS	**2.04**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
			TOTALS	**0.00**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Offsite	Mostly poorly drained sandy soils	C	0	0.00	
Offsite (Grass Cover >75%)	Mostly poorly drained sandy soils	C	74	0.17	12.58
Offsite (Open Space > 75%)	Mostly poorly drained sandy soils	C	74	0.66	48.84
Existing Roadway (Travel Lane)	N/A	N/A	98	4.29	420.42
Existing Roadway (Other Impervious)	N/A	N/A	98	3.38	331.24
			TOTALS	**8.50**	
PERVIOUS AREAS					
Streets and Roads (Dirt)	Mostly poorly drained sandy soils	C	74	4.75	351.50
PROPOSED POND P1E1 FOOTPRINT	Sellers Mucky Loamy Fine Sand	A/D	74	1.01	74.74
			TOTALS	**5.76**	

Per SWFWMD ERP Permit App. 16251.018 (App: 712877)

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**2.04**	**TOTAL BASIN AREA**	**16.30**	**COMPOSITE CN**	**86.91**
TOTAL DCIA	**12.52%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**88.55**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.29	7.43	**10.09**
SWFWMD	100-year / 24-hour	12.50	1.29	11.07	**15.04**

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN P1E1			**DATE**
POND/NODE DESIGNATION:	POND P1E1	**MADE BY:**	JF	4/15/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JD	5/18/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	0.95	94.90
Existing Pond P10E1 NWL	N/A	N/A	100	0.80	79.90
Existing Pond P12E1 NWL	N/A	N/A	100	0.29	29.00
Proposed Pond P1E1 NWL	N/A	N/A	101	0.56	56.82
			TOTALS	**2.60**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	8.79	861.42
			TOTALS	**8.79**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Sidewalks (Treated)	N/A	N/A	98	0.76	74.48
			TOTALS	**0.76**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on	Mostly poorly drained sandy soils	A	39	0.48	18.72
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Tavares Sand, 0 to 5% slopes	A	39	0.45	17.39
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Adamsville Fine Sand, 0 to 2 % slopes	A/D	74	1.26	93.24
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Sellers Mucky Loamy Fine Sand	A/D	74	0.16	11.77
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Smyrna Fine Sand	A/D	74	0.05	3.40
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	3.09	228.66
Proposed Pond P1E1	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	0.39	29.02
			TOTALS	**5.87**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.39**	**TOTAL BASIN AREA**	**18.02**	**COMPOSITE CN**	**71.86**
TOTAL DCIA	**63.20%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**88.70**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.27	7.45	**11.18**
SWFWMD	100-year / 24-hour	12.50	1.27	11.09	**16.66**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN P1E1	**MADE BY:**	JF	4/15/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND P1E1	**CHECKED BY:**	JD	5/18/2024

Water Quality

Total Basin Area =	18.02	ac
Pond Area at NWL =	2.60	ac
Total Impervious Area =	9.55	ac

A. Existing Permitted Water Quality PAV = **0.74** Ac-Ft

B. 1.0 " Over Total Impervious Area = 0.80 Ac-Ft

Required PAV = **0.86** Ac-Ft

Provided PAV = **1.14** Ac-Ft

Water Quantity

Post V(R)- Pre V(R) = **1.09** **ac-ft.** < **1.09** **ac-ft.**

Pre Att. Volume (Ponds 7E1, 10E1, 12E1) **8.36** **ac-ft.**

Required Att. Volume (Delta V(R) + Pre Att. Volume **9.45** **ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
66.74	Outside Berm	0.91				2.11	
			0.78	0.50	0.39		
66.24	Inside Berm	0.65				1.72	
			0.62	1.00	0.62		
65.24	DHW/ATT	0.60				1.09	> Post V (R)-Pre V (R)
			0.56	1.24	0.69		
64.00	(PAV)	0.52				0.40	Provided Treatment Volume
			0.50	0.80	0.40		
63.20	(NWL)	0.48				0.00	
			0.45	-1.00	(0.45)		
62.20	Pond Bottom	0.42				(0.45)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 9.45 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	4.73 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.43 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	0.86 Ac-Ft

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN P2E1			**DATE**
POND/NODE DESIGNATION:	POND P7E1, P10E1, P12E1	**MADE BY:**	MB	4/15/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JF	5/13/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	0.95	95.00
Existing Pond P10E1 NWL	N/A	N/A	100	0.80	80.00
Existing Pond P12E1 NWL	N/A	N/A	100	0.29	29.00
			TOTALS	**2.04**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
			TOTALS	**0.00**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Offsite	Mostly poorly drained sandy soils	C	0	0.00	
Offsite (Grass Cover >75%)	Mostly poorly drained sandy soils	C	74	0.17	12.58
Offsite (Open Space > 75%)	Mostly poorly drained sandy soils	C	74	0.66	48.84
Existing Roadway (Travel Lane)	N/A	N/A	98	4.29	420.42
Existing Roadway (Other Impervious)	N/A	N/A	98	3.38	331.24
			TOTALS	**8.50**	
PERVIOUS AREAS					
Streets and Roads (Dirt)	Mostly poorly drained sandy soils	C	74	4.75	351.50
PROPOSED POND P2E1 FOOTPRINT	Sellers Mucky Loamy Fine Sand	A/D	74	0.61	45.36
			TOTALS	**5.36**	

Per SWFWMD ERP Permit App. 16251.018 (App: 712877)

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**2.04**	**TOTAL BASIN AREA**	**15.90**	**COMPOSITE CN**	**87.28**
TOTAL DCIA	**12.83%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**88.91**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.25	7.47	**9.90**
SWFWMD	100-year / 24-hour	12.50	1.25	11.12	**14.73**

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN P2E1			
POND/NODE DESIGNATION:	POND P2E1	**MADE BY:**	JF	4/15/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JD	5/18/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	0.95	94.90
Existing Pond P10E1 NWL	N/A	N/A	100	0.80	79.90
Existing Pond P12E1 NWL	N/A	N/A	100	0.29	29.00
Proposed Pond P2E1 NWL	N/A	N/A	101	0.26	26.21
			TOTALS	**2.30**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lanes)	N/A	N/A	98	8.79	861.42
			TOTALS	**8.79**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Sidewalks (Treated)	N/A	N/A	98	0.76	74.48
			TOTALS	**0.76**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Mostly poorly drained sandy soils	A	39	0.48	18.72
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Tavares Sand, 0 to 5% slopes	A	39	0.45	17.39
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Adamsville Fine Sand, 0 to 2 % slopes	A/D	74	1.26	93.24
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Sellers Mucky Loamy Fine Sand	A/D	74	0.16	11.77
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Smyrna Fine Sand	A/D	74	0.05	3.40
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	3.09	228.66
Proposed Pond P2E1	Sellers Mucky Loamy Fine Sand, Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	0.35	26.16
			TOTALS	**5.83**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.09**	**TOTAL BASIN AREA**	**17.68**	**COMPOSITE CN**	**71.85**
TOTAL DCIA	**62.71%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**88.52**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.30	7.42	**10.94**
SWFWMD	100-year / 24-hour	12.50	1.30	11.07	**16.31**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN P2E1	**MADE BY:**	JF	4/15/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND P2E1	**CHECKED BY:**	JD	5/18/2024

Water Quality

Total Basin Area =	17.68	ac
Pond Area at NWL =	2.30	ac
Total Impervious Area =	9.55	ac

A.	Existing Permitted Water Quality PAV =		**0.74**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	0.80	Ac-Ft
		Required PAV =	**0.86**	Ac-Ft
		Provided PAV =	**1.45**	Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**1.04**	**ac-ft.**	**<**	**1.33** **ac-ft.**
Pre Att. Volume (Ponds 7E1, 10E1, 12E1)	**8.36**	**ac-ft.**		
Required Att. Volume (Delta V(R) + Pre Att. Volume	**9.40**	**ac-ft.**		

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
66.61	Outside Berm	0.51				1.99	
			0.48	0.50	0.24		
66.11	Inside Berm/TOB	0.44				1.75	
			0.42	1.00	0.42		
65.11	DHW/ATT (25yr/24hr)	0.41				1.33	> Post V (R)-Pre V (R)
			0.38	1.65	0.62		
63.46	(PAV)	0.35				0.71	Provided Treatment Volume
			0.30	2.34	0.71		
61.12	(NWL)	0.26				0.00	
			0.23	-1.00	(0.23)		
60.12	Pond Bottom	0.20				(0.23)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 9.40 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	4.70 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.43 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	0.86 Ac-Ft

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E	FDOT		AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN P3E1			**DATE**
POND/NODE DESIGNATION:	POND P7E1, P10E1, P12E1	**MADE BY:**	MB	4/15/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JF	5/13/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond P7E1 NWL	N/A	N/A	100	0.95	95.00
Existing Pond P10E1 NWL	N/A	N/A	100	0.80	80.00
Existing Pond P12E1 NWL	N/A	N/A	100	0.29	29.00
			TOTALS	**2.04**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
			TOTALS	**0.00**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Offsite	Mostly poorly drained sandy soils	C	0	0.00	
Offsite (Grass Cover >75%)	Mostly poorly drained sandy soils	C	74	0.17	12.58
Offsite (Open Space > 75%)	Mostly poorly drained sandy soils	C	74	0.66	48.84
Existing Roadway (Travel Lane)	N/A	N/A	98	4.29	420.42
Existing Roadway (Other Impervious)	N/A	N/A	98	3.38	331.24
			TOTALS	**8.50**	
PERVIOUS AREAS					
Streets and Roads (Dirt)	Mostly poorly drained sandy soils	C	74	4.75	351.50
PROPOSED POND P3E1 FOOTPRINT	Sellers Mucky Loamy Fine Sand	A/D	74	0.45	33.10
			TOTALS	**5.20**	

Per SWFWMD ERP Permit App. 16251.018 (App: 712877)

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**2.04**	**TOTAL BASIN AREA**	**15.74**	**COMPOSITE CN**	**87.44**
TOTAL DCIA	**12.96%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**89.07**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.23	7.49	**9.82**
SWFWMD	100-year / 24-hour	12.50	1.23	11.14	**14.61**

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN P3E1			**DATE**
POND/NODE DESIGNATION:	POND P3E1	**MADE BY:**	JF	4/15/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JD	5/18/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION		SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE						
Existing Pond P7E1 NWL		N/A	N/A	100	0.95	94.90
Existing Pond P10E1 NWL		N/A	N/A	100	0.80	79.90
Existing Pond P12E1 NWL		N/A	N/A	100	0.29	29.00
Proposed Pond P3E1 NWL		N/A	N/A	101	0.20	20.59
				TOTALS	**2.24**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)						
Roadway (Travel Lanes)		N/A	N/A	98	8.79	861.42
				TOTALS	**8.79**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)						
Sidewalks (Treated)		N/A	N/A	98	0.76	74.48
				TOTALS	**0.76**	
PERVIOUS AREAS						
Open Spaces Grass Good condition	26	Mostly poorly drained sandy soils	A	39	0.48	18.72
Open Spaces Grass Good condition	6	Tavares Sand, 0 to 5% slopes	A	39	0.45	17.39
Open Spaces Grass Good condition	11	Adamsville Fine Sand, 0 to 2 % slopes	A/D	74	1.26	93.24
Open Spaces Grass Good condition	8	Sellers Mucky Loamy Fine Sand	A/D	74	0.16	11.77
Open Spaces Grass Good condition	21	Smyrna Fine Sand	A/D	74	0.05	3.40
Open Spaces Grass Good condition	5	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	3.09	228.66
Proposed Pond P3E1		Sellers Mucky Loamy Fine Sand, Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	0.24	18.01
				TOTALS	**5.72**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**11.03**	**TOTAL BASIN AREA**	**17.52**	**COMPOSITE CN**	**71.81**
TOTAL DCIA	**62.98%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**88.57**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.29	7.43	**10.85**
SWFWMD	100-year / 24-hour	12.50	1.29	11.07	**16.17**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN P3E1	**MADE BY:**	JF	4/15/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	POND P3E1	**CHECKED BY:**	JD	5/18/2024

Water Quality

Total Basin Area =	17.52	ac
Pond Area at NWL =	2.24	ac
Total Impervious Area =	9.55	ac

A. Existing Permitted Water Quality PAV = **0.74** Ac-Ft

B. 1.0 " Over Total Impervious Area = 0.80 Ac-Ft

Required PAV = **0.86** Ac-Ft

Provided PAV = **1.29** Ac-Ft

Water Quantity

Post V(R)- Pre V(R) = **1.02** **ac-ft.** < **1.02** **ac-ft.**

Pre Att. Volume (Ponds 7E1, 10E1, 12E1) **8.36** **ac-ft.**

Required Att. Volume (Delta V(R) + Pre Att. Volume **9.38** **ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
66.55	Outside Berm	0.39				1.53	
			0.37	0.50	0.18		
66.05	Inside Berm	0.34				1.35	
			0.33	1.00	0.33		
65.05	DHW/ATT	0.31				1.02	> Post V (R)-Pre V (R)
			0.29	1.59	0.46		
63.46	(PAV)	0.27				0.55	Provided Treatment Volume
			0.24	2.34	0.55		
61.12	(NWL)	0.20				0.00	
			0.18	-1.00	(0.18)		
60.12	Pond Bottom	0.16				(0.18)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR) = 9.38 Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	4.69 Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.43 Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	0.86 Ac-Ft

WEST OF INTERSECTION:
BASIN E2
CALCULATIONS

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN P1E2			**DATE**
POND/NODE DESIGNATION:	Pond P13E2, P15E2, P16E2, P18E2, P19E2	**MADE BY:**	MB	4/3/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JF	5/20/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond NWL (P13E2)	N/A	N/A	100	0.24	24.00
Existing Pond NWL (P15,16,18,19E2)	N/A	N/A	100	0.24	24.00
			TOTALS	**0.48**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lane)	N/A	N/A	98	2.23	218.54
Existing Roadway (Other Impervious)	N/A	N/A	98	0.39	38.22
			TOTALS	**2.62**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Roadway (Travel Lane)	N/A	N/A	98	1.74	170.52
Existing Roadway (Other Impervious)	N/A	N/A	98	2.23	218.54
			TOTALS	**3.97**	
PERVIOUS AREAS					
Open Spaces: Good condition: grass cover on 75% or more of the area	Mostly poorly drained sandy soils	C	74	3.04	224.96
Offsite	Mostly poorly drained sandy soils	C	0	0.00	
Offsite (Grass Cover > 75%)	Mostly poorly drained sandy soils	D	80	2.78	222.40
PROPOSED POND P1E2 SITE	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	2.30	170.36
			TOTALS	**8.12**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**3.10**	**TOTAL BASIN AREA**	**15.19**	**COMPOSITE CN**	**83.26**
TOTAL DCIA	**20.41%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**86.33**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.58	7.16	**9.06**
SWFWMD	100-year / 24-hour	12.50	1.58	10.78	**13.65**

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN P1E2			**DATE**
POND/NODE DESIGNATION:	POND P1E2	**MADE BY:**	MB	4/15/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JF	5/20/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
PROPOSED POND P1E2 NWL	N/A	N/A	100	1.58	158.03
			TOTALS	**1.58**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lane)	N/A	N/A	98	11.69	1145.76
			TOTALS	**11.69**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Roadway (Sidewalks)	N/A	N/A	98	0.77	75.17
			TOTALS	**0.77**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	2.23	165.32
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Sellers Mucky Loamy Fine Sand	A/D	74	1.36	100.45
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Tavares Sand, 0 to 5% slopes	A	39	0.02	0.73
PROPOSED POND P1E2 SITE	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes, Basinger fine sand, depressional, 0 to 1 percent slopes, Narcoossee fine sand, 0 to 2 percent slopes	A/D	74	0.72	53.42
			TOTALS	**4.33**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**13.27**	**TOTAL BASIN AREA**	**18.37**	**COMPOSITE CN**	**77.48**
TOTAL DCIA	**72.24%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**83.96**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.91	6.87	**10.52**
SWFWMD	100-year / 24-hour	12.50	1.91	10.47	**16.02**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN P1E2	**MADE BY:**	JF	4/22/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	Pond P1E2	**CHECKED BY:**	JD	5/24/2024

Water Quality

Total Basin Area =	18.37	ac
Pond Area at NWL =	1.58	ac
Total Impervious Area =	12.46	ac

A.	Existing Permitted Water Quality PAV =		**0.00**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	1.04	Ac-Ft
		Required PAV =	**1.34**	Ac-Ft
		Provided PAV =	**1.61**	Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**2.54**	**ac-ft.**		
Pre Att. Volume ('Pond P13E2, P15E2, P16E2, P18E2, P19E2)	**1.53**	**ac-ft.**		
Required Att. Volume (Delta V(R) + Pre Att. Volume	**4.07**	**ac-ft.**	< **4.14**	**ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
70.50	Outside Berm	2.30				9.72	
			2.10	0.50	1.05		
70.00	Inside Berm	1.89				8.67	
			1.81	2.50	4.53		
67.50	DHW/ATT	1.73				4.14	Provided Detention Volume
			1.69	1.50	2.53		
66.00	(PAV)	1.64				1.61	Provided Treatment Volume
			1.61	1.00	1.61		
65.00	(NWL)	1.58				0.00	
			1.53	-1.00	(1.53)		
64.00	Pond Bottom	1.48				(1.53)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR)	=	4.07	Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	2.04	Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.67	Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	1.34	Ac-Ft

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	Existing BASIN P2E2			**DATE**
POND/NODE DESIGNATION:	Pond P13E2, P15E2, P16E2, P18E2, P19E2	**MADE BY:**	MB	4/3/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JF	5/20/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond NWL (P13E2)	N/A	N/A	100	0.24	24.00
Existing Pond NWL (P15,16,18,19E2)	N/A	N/A	100	0.24	24.00
			TOTALS	**0.48**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lane)	N/A	N/A	98	2.23	218.54
Existing Roadway (Other Impervious)	N/A	N/A	98	0.39	38.22
			TOTALS	**2.62**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Roadway (Travel Lane)	N/A	N/A	98	1.74	170.52
Existing Roadway (Other Impervious)	N/A	N/A	98	2.23	218.54
			TOTALS	**3.97**	
PERVIOUS AREAS					
Open Spaces: Good condition: grass cover on 75% or more of the area	Mostly poorly drained sandy soils	C	74	3.04	224.96
Offsite	Mostly poorly drained sandy soils	C	0	0.00	
Offsite (Grass Cover > 75%)	Mostly poorly drained sandy soils	D	80	2.78	222.40
PROPOSED POND P2E2 SITE	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	2.36	174.43
			TOTALS	**8.18**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**3.10**	**TOTAL BASIN AREA**	**15.25**	**COMPOSITE CN**	**83.22**
TOTAL DCIA	**20.33%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**86.29**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.59	7.15	**9.09**
SWFWMD	100-year / 24-hour	12.50	1.59	10.78	**13.69**

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN P2E2			**DATE**
POND/NODE DESIGNATION:	POND P2E2	**MADE BY:**	MB	4/15/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JF	5/20/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
PROPOSED POND P1E2 NWL	N/A	N/A	100	1.60	159.87
			TOTALS	**1.60**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lane)	N/A	N/A	98	11.69	1145.76
			TOTALS	**11.69**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Roadway (Sidewalks)	N/A	N/A	98	0.77	75.17
			TOTALS	**0.77**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	2.23	165.32
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Sellers Mucky Loamy Fine Sand	A/D	74	1.36	100.45
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Tavares Sand, 0 to 5% slopes	A	39	0.02	0.73
PROPOSED POND P2E2 SITE	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	0.76	56.12
			TOTALS	**4.37**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**13.29**	**TOTAL BASIN AREA**	**18.43**	**COMPOSITE CN**	**77.46**
TOTAL DCIA	**72.13%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**83.86**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.92	6.86	**10.53**
SWFWMD	100-year / 24-hour	12.50	1.92	10.45	**16.05**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN P2E2	**MADE BY:**	JF	4/22/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	Pond P2E2	**CHECKED BY:**	JD	5/24/2024

Water Quality

Total Basin Area =	18.43	ac
Pond Area at NWL =	1.60	ac
Total Impervious Area =	12.46	ac

A.	Existing Permitted Water Quality PAV =		**0.00**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	1.04	Ac-Ft
		Required PAV =	**1.34**	Ac-Ft
		Provided PAV =	**1.63**	Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**2.55**	**ac-ft.**			
Pre Att. Volume ('Pond P13E2, P15E2, P16E2, P18E2, P19E2)	**1.53**	**ac-ft.**			
Required Att. Volume (Delta V(R) + Pre Att. Volume	**4.08**	**ac-ft.**	<	**4.22**	**ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
70.00	Outside Berm	2.36				8.99	
			2.14	0.50	1.07		
69.50	Inside Berm	1.92				7.92	
			1.85	2.00	3.70		
67.50	DHW/ATT	1.78				4.22	Provided Detention Volume
			1.72	1.50	2.59		
66.00	(PAV)	1.67				1.63	Provided Treatment Volume
			1.63	1.00	1.63		
65.00	(NWL)	1.60				0.00	
			1.55	-1.00	(1.55)		
64.00	Pond Bottom	1.50				(1.55)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR)	=	4.08	Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	2.04	Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.67	Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	1.34	Ac-Ft

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN P3E2			**DATE**
POND/NODE DESIGNATION:	Pond P13E2,P15E2, P16E2, P18E2, P19E2	**MADE BY:**	MB	4/3/2024
BASIN ANALYSIS (PRE/POST):	PRE	**CHECKED BY:**	JF	5/20/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond NWL (P13E2)	N/A	N/A	100	0.24	24.00
Existing Pond NWL (P15,16,18,19E2)	N/A	N/A	100	0.24	24.00
			TOTALS	**0.48**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Travel Lane)	N/A	N/A	98	2.23	218.54
Existing Roadway (Other Impervious)	N/A	N/A	98	0.39	38.22
			TOTALS	**2.62**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Roadway (Travel Lane)	N/A	N/A	98	1.74	170.52
Existing Roadway (Other Impervious)	N/A	N/A	98	2.23	218.54
			TOTALS	**3.97**	
PERVIOUS AREAS					
Open Spaces: Good condition: grass cover on 75% or more of the area	Mostly poorly drained sandy soils	C	74	3.04	224.96
Offsite	Mostly poorly drained sandy soils	C	0	0.00	
Offsite (Grass Cover > 75%)	Mostly poorly drained sandy soils	D	80	2.78	222.40
PROPOSED POND P3E2 SITE	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes, Basinger fine sand, depressional, 0 to 1 percent slopes, Narcoossee fine sand, 0 to 2 percent slopes	A/D	74	2.43	180.06
			TOTALS	**8.25**	

ICPR DATA

* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**3.10**	**TOTAL BASIN AREA**	**15.32**	**COMPOSITE CN**	**83.16**
TOTAL DCIA	**20.23%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**86.22**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.60	7.15	**9.12**
SWFWMD	100-year / 24-hour	12.50	1.60	10.77	**13.75**

EAST PINELLAS ANCLOTE WATERSHED				
PROJECT TITLE:	US41/SR54 PD&E			AECOM
PROJECT NUMBER:	60596589			
BASIN DESIGNATION:	BASIN P3E2			**DATE**
POND/NODE DESIGNATION:	POND P3E2	**MADE BY:**	MB	4/15/2024
BASIN ANALYSIS (PRE/POST):	POST	**CHECKED BY:**	JF	5/20/2024

BASIN RUNOFF CURVE NUMBER WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
PROPOSED POND P2E2 NWL	N/A	N/A	100	1.58	157.75
			TOTALS	**1.58**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Roadway (Travel Lane)	N/A	N/A	98	11.69	1145.76
			TOTALS	**11.69**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Roadway (Sidewalks)	N/A	N/A	98	0.77	75.17
			TOTALS	**0.77**	
PERVIOUS AREAS					
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes	A/D	74	2.23	165.32
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Sellers Mucky Loamy Fine Sand	A/D	74	1.36	100.45
Open Spaces Grass Good condition: grass cover on 75% or more of the area	Tavares Sand, 0 to 5% slopes	A	39	0.02	0.73
PROPOSED POND P3E2 SITE	Myakka-Myakka, wet, fine sands, 0 to 2 % slopes, Basinger fine sand, depressional, 0 to 1 percent slopes, Narcoossee fine sand, 0 to 2 percent slopes	A/D	74	0.86	63.32
			TOTALS	**4.47**	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	**13.27**	**TOTAL BASIN AREA**	**18.50**	**COMPOSITE CN**	**77.39**
TOTAL DCIA	**71.72%**				

ESTIMATE OF RUNOFF VOLUME

PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:

1) DETERMINE SOIL STORAGE - S ----------> S = (1000 / CN) - 10 (inches)

2) DETERMINE RUNOFF - R ----------> R = (P - 0.2*S)^2 / (P + 0.8*S) (inches)

P = rainfall in inches

3) DETERMINE RUNOFF VOLUME - V(R) ----------> V(R) = (R / 12)*BASIN AREA (acres-feet)

CALCULATION TABLE

			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		**83.90**
Agency	**Design Storm Frequency**	**P (in)**	**S (in)**	**R (in)**	**V(R) (ac-ft)**
SWFWMD	25-year / 24-hour	8.81	1.92	6.86	**10.58**
SWFWMD	100-year / 24-hour	12.50	1.92	10.46	**16.13**

US41/SR54 PD&E Study				
PROJECT TITLE:	US41/SR54 PD&E Study	FDOT		AECOM
PROJECT NUMBER:	60596589			**DATE**
BASIN DESIGNATION:	BASIN P3E2	**MADE BY:**	JF	4/22/2024
BASIN ANALYSIS (PRE/POST):	POST			
POND DESIGNATION:	Pond P3E2	**CHECKED BY:**	JD	5/24/2024

Water Quality

Total Basin Area =	18.50	ac
Pond Area at NWL =	1.58	ac
Total Impervious Area =	12.46	ac

A. Existing Permitted Water Quality PAV =			**0.00**	Ac-Ft
B.	1.0	" Over Total Impervious Area =	1.04	Ac-Ft
		Required PAV =	**1.34**	Ac-Ft
		Provided PAV =	**1.62**	Ac-Ft

Water Quantity

Post V(R)- Pre V(R) =	**2.61**	**ac-ft.**			
Pre Att. Volume ('Pond P13E2, P15E2, P16E2, P18E2, P19E2)	**1.53**	**ac-ft.**			
Required Att. Volume (Delta V(R) + Pre Att. Volume	**4.13**	**ac-ft.**	<	**4.20**	**ac-ft.**

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)	
70.00	Outside Berm	2.43				9.02	
			2.19	0.50	1.09		
69.50	Inside Berm	1.94				7.93	
			1.86	2.00	3.73		
67.50	DHW/ATT	1.78				4.20	Provided Detention Volume
			1.72	1.50	2.58		
66.00	(PAV)	1.66				1.62	Provided Treatment Volume
			1.62	1.00	1.62		
65.00	(NWL)	1.58				0.00	
			1.52	-1.00	(1.52)		
64.00	Pond Bottom	1.46				(1.52)	Permanent Pool Volume

Required Detention Volume for Open Spaces (25YR/24HR)	=	4.13	Ac-Ft

Bleed Down Requirements

1/2 of the required detention volume (w/in 24 hrs)	=	2.07	Ac-Ft
1/2 of the required treatment volume (w/in no less than 60 hrs)	=	0.67	Ac-Ft
Total required treament volume (w/in no less than 120 hrs)	=	1.34	Ac-Ft