Lake Okeechobee
Basin Management Action Plan

Division of Environmental Assessment and Restoration
Water Quality Restoration Program
Florida Department of Environmental Protection

with participation from the
Lake Okeechobee Stakeholders

April 2025

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Acknowledgments

The *2025 Lake Okeechobee Basin Management Action Plan* was prepared as part of a statewide watershed management approach to restore and protect Florida's water quality. It was prepared by the Florida Department of Environmental Protection with participation from the Lake Okeechobee stakeholders identified below.

Florida Department of Environmental Protection
Alexis A. Lambert, Secretary

Table ES-1. Lake Okeechobee stakeholders

Type of Governmental or Private Entity	Participant
Responsible Entities	Agriculture Glades County Hendry County Highlands County Martin County Okeechobee County Orange County Osceola County Palm Beach County Polk County City of Avon Park City of Clewiston City of Edgewood City of Kissimmee City of Moore Haven City of Okeechobee City of Orlando City of Sebring Town of Lake Placid Town of Windermere Avon Park Air Force Range Central Florida Tourism Oversight District Istokpoga Marsh Watershed Improvement District Okeechobee Utility Authority Spring Lake Improvement District South Florida Conservancy District Valencia Water Control District
Responsible Agencies	County Health Departments Florida Department of Agriculture and Consumer Services Florida Department of Environmental Protection South Florida Water Management District Florida Department of Transportation (FDOT) District 1 FDOT District 4 FDOT District 5 FDOT Turnpike Enterprise

See **Appendix A** for links to resources referenced in this document. For additional information, contact:

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List of Acronyms and Abbreviations

ACE	Agricultural Cooperative Regional Water Quality Elements
ac-ft	Acre-Feet
ALG	Agricultural Lands
ASR	Aquifer Storage and Recovery
AWT	Advanced Waste Treatment
BAM	Biosorption Activated Media
BMAP	Basin Management Action Plan
BMP	Best Management Practice
CAFO	Concentrated Animal Feeding Operation
CDS	Continuous Deflective Separation (Unit)
CIB	Curb Inlet Basket
CR	County Road
DEP	Florida Department of Environmental Protection
DWM	Dispersed Water Management
F.A.C.	Florida Administrative Code
FAVT	Floating Aquatic Vegetation Treatment
FDACS	Florida Department of Agriculture and Consumer Services
FDOT	Florida Department of Transportation
FEB	Flow Equalization Basin
FFS	Florida Forest Service
F.S.	Florida Statutes
FSAID	Florida Statewide Agricultural Irrigation Demand
FWM	Flow Weighted Mean
FYN	Florida Yards and Neighborhoods
GIS	Geographic Information System
HSPF	Hydrological Simulation Program-FORTRAN
HWTT	Hybrid Wetland Treatment Technology
IMWID	Istokpoga Marsh Watershed Improvement District
IV	Implementation Verification
lbs/ac	Pounds per Acre
lbs/yr	Pounds Per Year
LET	Load Estimation Tool
L.O.F.	Laws of Florida
LOW	Lake Okeechobee Watershed
LOWPP	Lake Okeechobee Watershed Protection Plan
MAPS	Managed Aquatic Plant System
mgd	Million Gallons Per Day
mg/L	Milligrams per Liter
MS4	Municipal Separate Storm Sewer System
mt/yr	Metric Tons Per Year
NA	Not Applicable
NEEPP	Northern Everglades and Estuaries Protection Program

NGVD29	National Geodetic Vertical Datum of 1929
NMP	Nutrient Management Plan
NNC	Numeric Nutrient Criteria
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRP	Nutrient Reduction Plan
NSBB	Nutrient-Separating Baffle Box
OAWP	Office of Agricultural Water Policy
OSTDS	Onsite Sewage Treatment and Disposal System
PSA	Public Service Announcement
RAP	Reasonable Assurance Plan
ROC	Regional Operations Center
SAV	Submerged Aquatic Vegetation
SFER	South Florida Environmental Report
SFWMD	South Florida Water Management District
SLID	Spring Lake Improvement District
SR	State Road
STA	Stormwater Treatment Area
SWET	Soil and Water Engineering Technology, Inc.
SWMP	Stormwater Management Program
TBD	To Be Determined
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TRA	Targeted Restoration Area
UAL	Unit Area Load
UF–IFAS	University of Florida Institute of Food and Agricultural Sciences
USGS	U.S. Geological Survey
WAM	Watershed Assessment Model
WCD	Water Control District
WMA	Water Management Area
WMD	Water Management District
WPB	West Palm Beach
WRF	Water Reclamation Facility
WWTF	Wastewater Treatment Facility
WY	Water Year

Executive Summary

Background

Lake Okeechobee is the largest lake in the southeastern United States and is vital to the state of Florida and its residents. A shallow, eutrophic lake, it covers approximately 730 square miles, with an average depth of 9 feet (Florida Department of Environmental Protection [DEP] 2001). This multipurpose waterbody provides drinking water for urban areas, irrigation water and frost protection for agricultural lands, recharge for aquifers, fresh water for the Everglades, habitat for fish and wildlife, flood control, navigation, and many recreational activities (DEP 2001). Lake Okeechobee and the associated Lake Okeechobee Watershed (LOW) are primarily located in subtropical south-central Florida in Glades, Hendry, Highlands, Martin, Okeechobee, Orange, Osceola, Palm Beach, and Polk Counties. The LOW is divided into 9 subwatersheds (see **Figure ES-1**).

Lake Okeechobee and its watershed have been subjected to hydrologic, land use, and other anthropogenic modifications over the past century that have degraded its water quality and affected the water quality of the connected Caloosahatchee and St. Lucie Rivers and Estuaries. To help address the nutrient impairment, DEP adopted a total maximum daily load (TMDL) to identify the target load for total phosphorus (TP) discharges to the lake. This basin management action plan (BMAP) represents the joint efforts of multiple stakeholders to identify where nutrients, both nitrogen and phosphorus, can be reduced through regulatory and nonregulatory programs, incentive-based programs, and the implementation of projects that will ultimately achieve the TP TMDL for Lake Okeechobee and help reduce nitrogen in the lake and connected estuaries.

TMDLs

TMDLs are water quality targets designed to address verified impairments for specific pollutants, such as phosphorus. DEP identified Lake Okeechobee as impaired by TP in 1998. In August 2001, DEP adopted the TP TMDL in the LOW as a target for the lake's restoration. The TMDL proposed a load of 140 metric tons per year (mt/yr) of TP to Lake Okeechobee. The attainment of the TMDL will be calculated using a 5-year rolling average of the monthly loads calculated from measured flow and concentration values. Of the 140 mt/yr, 35 mt/yr of TP are estimated to fall directly on the lake through atmospheric deposition; therefore, the remaining 105 mt/yr of TP is the load allocation for the LOW and its associated land uses to meet the Lake Okeechobee TMDL. As authorized by Subparagraph 403.067(7)(a)2., Florida Statutes (F.S.), the 105 mt/yr of TP is allocated to the entire LOW.

As part of the overall restoration strategy, DEP is prioritizing the development of TMDLs for local waterbodies in the LOW. This approach enhances the overall BMAP because, in most cases, the nutrient reductions needed to achieve local waterbody TMDLs are greater than what is needed for Lake Okeechobee from the same area.

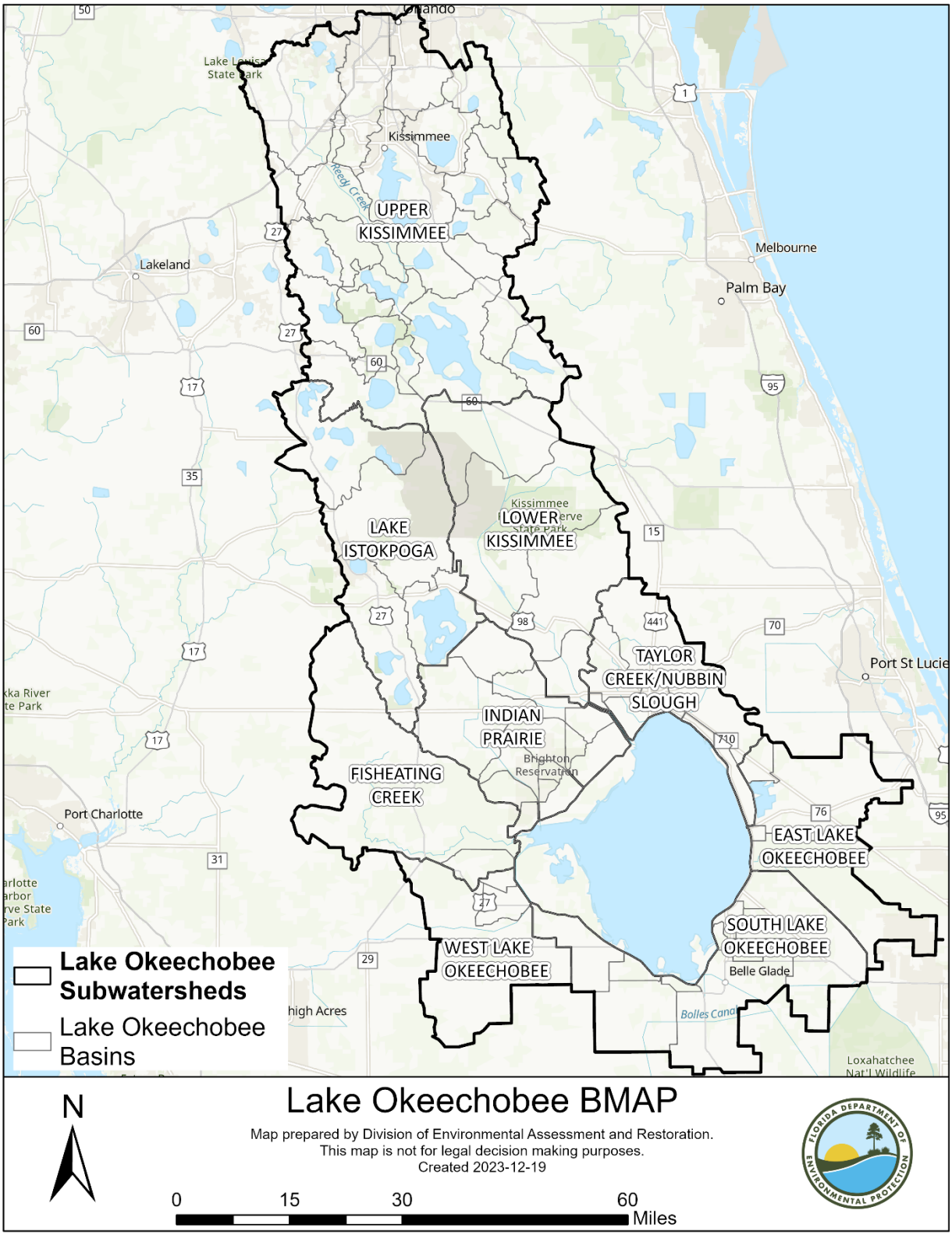

Figure ES-1. Lake Okeechobee subwatersheds and basins

Lake Okeechobee BMAP

DEP first adopted the Lake Okeechobee BMAP in December 2014 to implement the TP TMDL in the LOW. BMAPs are designed to be implemented in a phased approach and, at the end of each five-year phase, a review is completed and submitted to the Legislature and Governor. The first Five-Year Review was published in 2020 in the same document as the 2020 BMAP update, following Executive Order 19-12 (Item C). The 2020 BMAP update included updates to the modeling to expand the BMAP area to the three basins south of the lake. The 2024 Five-Year Review was published in December 2024, and the recommendations have been incorporated into this updated BMAP.

This 2025 BMAP update includes information on changes since the 2020 BMAP was adopted, as well as recent legislative requirements related to the implementation of BMAPs. These legislative requirements include wastewater and onsite sewage treatment and disposal system (OSTDS) remediation plans, changes to reclaimed wastewater effluent limits, and requirements for agricultural regional cooperative elements.

Summary of Load Reductions

DEP asked the stakeholders to provide information on management actions, including projects, programs, and activities, that would reduce nutrient loads from the LOW. Management actions were required by the original BMAP to address nutrient loads to the lake and had to meet several criteria to be considered eligible for credit. Through November 15,2024, 302 projects were completed or ongoing, and an additional 84 projects were underway or planned. Based on the load estimation tool (LET) developed from the Watershed Assessment Model (WAM), the completed activities are estimated to achieve total reductions of 131.8 mt/yr or 290,555 pounds per year (lbs/yr) of TP, which is 54% of the reductions needed to meet the TMDL. This 54% reduction exceeds the 10-year milestone for 2024 of 40% of the required reductions. **Figure ES-2** shows progress towards the TP TMDL load reductions based on projects completed through November 15, 2024. This date was chosen to allow adequate time to review project documentation and calculate reductions based on accepted methodologies and best management practice (BMP) efficiencies. Updated project information will be provided each year in the Statewide Annual Report and at an annual meeting.

To achieve the TMDL in 20 years, stakeholders must identify and submit additional local projects and the Coordinating Agencies (DEP, Florida Department of Agriculture and Consumer Services [FDACS], and South Florida Water Management District [SFWMD]) must identify additional regional projects as well as determine the significant funding that will be necessary. Enhancements to programs addressing basinwide sources will also be required. In addition, the legacy phosphorus contribution in the watershed must be addressed through further studies and projects targeted at this source. Once this additional information is provided, the Coordinating Agencies will address these constraints and estimate the time needed to achieve the TMDL in a future BMAP update. Due to the fact that necessary local and regional nutrient reduction projects

are still being identified, it does not seem practicable to achieve reductions sufficient to meet the TMDL within 20 years.

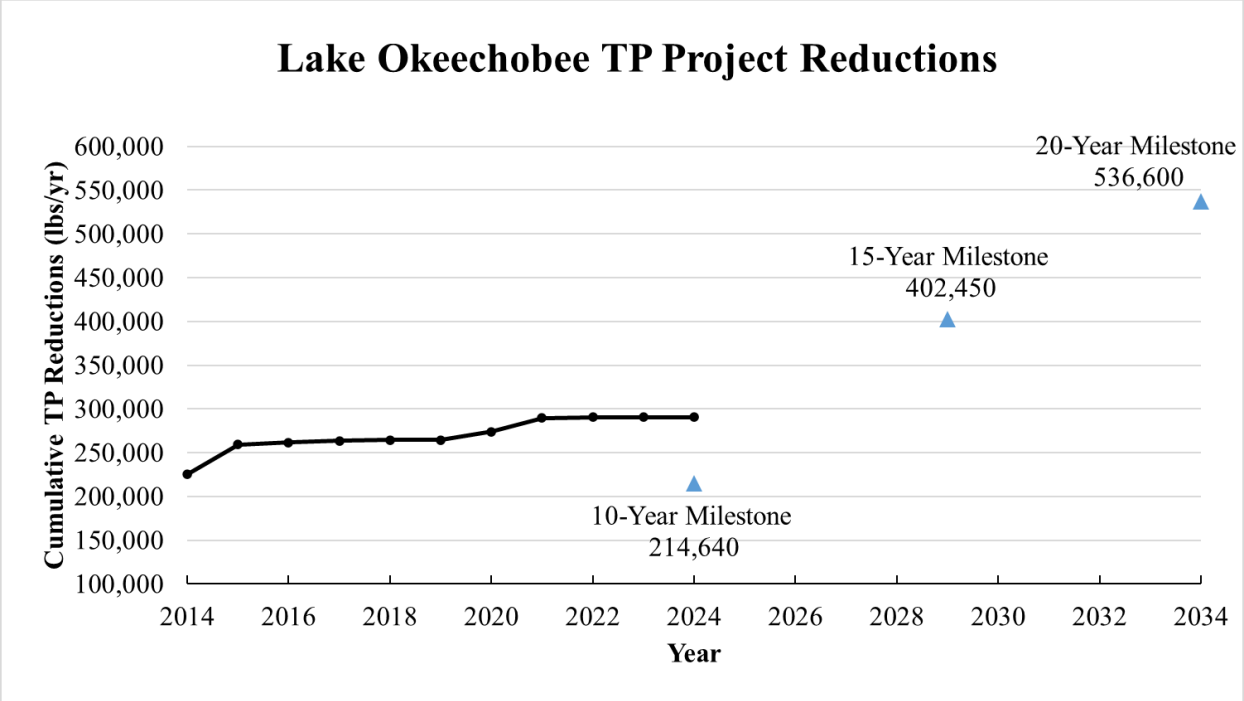

Figure ES-2. Estimated progress towards meeting the TP TMDL allocated to the LOW with projects completed through November 15, 2024

Source Requirements

Subparagraph 403.067(7)(a)9., F.S., specifies that local governments (county governments and municipalities) within a BMAP must develop a wastewater treatment plan and/or an OSTDS remediation plan containing information if DEP "identifies domestic wastewater treatment facilities or onsite sewage treatment and disposal systems as contributors of at least 20% of point source or nonpoint source nutrient pollution or if the Department determines remediation is necessary to achieve the [TMDL]."

DEP determined that the domestic wastewater treatment facilities and/or OSTDS sources within the Lake Okeechobee BMAP met the 20% contribution and/or remediation of these sources is necessary to achieve the TMDL. A final order (23-0119) was issued to prescribe timelines for local governments to submit these plans on June 12, 2023. Draft wastewater treatment and OSTDS remediation plans were submitted by February 1, 2024, and final plans were submitted by August 1, 2024. Projects outlined in the plans addressing domestic wastewater sources are incorporated into this BMAP update.

Additionally, DEP has determined facilities that land apply reclaimed water identified in **Appendix D** are subject to the nitrogen and phosphorus limits set forth in section 403.086, F.S.

The facilities listed in **Appendix D** have 10 years from BMAP adoption to meet the applicable advanced waste treatment (AWT) standards. More information can be found in **Section 2.3.3**.

Agricultural nonpoint sources are the predominant contributor of TP loading to the LOW. Attainment of the TMDL is largely contingent upon addressing the agricultural loading to the lake and contributing waterways. The Lake Okeechobee BMAP was originally adopted in December 2014, and many agricultural producers have enrolled and are implementing BMPs. FDACS has focused efforts to improve enrollment efforts, resulting in 92% of the agricultural lands in the BMAP being enrolled in the BMP program as of April 30, 2024. FDACS will continue to carry out its statutory authority and fulfill its statutory obligations by actively engaging agricultural nonpoint sources to enroll in BMPs and by adequately verifying BMP implementation.

FDACS is responsible for verifying that all eligible agricultural producers are enrolled in appropriate BMP programs. FDACS will perform onsite inspections of all agricultural operations enrolled in BMPs to ensure that these practices are being properly implemented every two years. FDACS will continue to collect nitrogen and phosphorus fertilization records during implementation verification visits from each agricultural producer enrolled in BMPs and is required to provide DEP the nutrient application records in accordance with subsection 403.067(7)(c)5., F.S.

Further reductions beyond the implementation of required agricultural owner–implemented BMPs will be necessary to achieve the TMDL. As such, pursuant to subsection 373.4595(3), F.S., where water quality problems are demonstrated for agricultural nonpoint sources despite the appropriate implementation of adopted BMPs, a reevaluation of the BMPs shall be conducted pursuant to subsection 403.067(7), F.S. If a reevaluation of the BMPs is needed, FDACS will also include DEP, the appropriate water management district, and other partners in the reevaluation and BMP update processes.

Further reductions can also be achieved through the implementation of additional agricultural projects or activities. The Coordinating Agencies (DEP, FDACS, and SFWMD) will work together to identify cost-share practices and other projects that can be undertaken to achieve these nutrient reductions and identify and implement additional projects and activities in priority targeted restoration areas (TRAs). These additional projects and activities are to be implemented in conjunction with the BMP Program, which needs to achieve full enrollment with verification to ensure that the BMAP goals are achieved.

Within five years of the adoption of this BMAP, DEP will evaluate any entity located in the BMAP area that serves a minimum resident population of at least 1,000 individuals who are not currently covered by a municipal separate storm sewer system (MS4) permit and designate eligible entities as regulated MS4s, in accordance with Chapter 62-624, Florida Administrative Code (F.A.C.).

Water Quality Monitoring

The BMAP monitoring network includes 331 stations sampled by local entities, DEP, SFWMD, and U.S. Geological Survey (USGS). The monitoring network is organized into tiers as follows: (1) Tier 1 stations are the primary/priority stations used in periodic water quality analyses to track BMAP progress and water quality trends over the long term in the basin, (2) Tier 2 stations will provide secondary information that can be used to help focus and adaptively manage implementation efforts, and (3) Tier 3 stations are the gauges where flow and/or stage are monitored, generally by USGS. The monitoring stations are not specifically BMAP stations—i.e., they are designed for other purposes—but some of the data collected at these sites are used to monitor the effectiveness of BMAP implementation.

BMAP Model

A multi-year effort is underway to prepare an updated watershed model for the LOW using the Hydrological Simulation Program FORTRAN (HSPF) model. DEP anticipates that this effort will be completed in 2027. This work will provide the necessary technical support for potential updates to allocations to meet the TMDL and achieve the BMAP requirements. After model completion, DEP will reevaluate and, if necessary, adopt another iteration of the Lake Okeechobee BMAP, mostly likely before 2030. The next iteration may include updated pollutant loading information, timelines, milestones and potential updates to required reductions for the responsible stakeholders.

BMAP Cost

The project costs provided for the BMAP may include capital costs as well as those associated with construction and routine operations and maintenance and monitoring. Many BMAP projects were built to achieve multiple objectives and not just nutrient reductions. Funds for some projects have already been spent, others have been obligated to ongoing projects, and the remainder are yet to be appropriated.

The funding sources for the projects range from local public and private contributions to state and federal legislative appropriations. DEP will continue to work with stakeholders to explore new opportunities for funding assistance to ensure that the activities listed in this BMAP can be maintained at the necessary level of effort and that additional projects can be constructed.

Chapter 2023-169, Laws of Florida (L.O.F.), expanded grant opportunities for local governments and eligible entities working to address a TMDL. Previously, grant funding was available for specific project types, including septic-to-sewer, AWT expansion or upgrades, and OSTDS upgrades. Now, through the Water Quality Improvement Grant program, eligible entities can also apply for grant funding for stormwater, regional agricultural projects, and a broader suite of wastewater projects including collection systems and domestic wastewater reuse. Projects are prioritized that have the maximum nutrient load per project, demonstrate project readiness, are cost-effective, have a cost-share by the applicant (except for Rural Areas of Opportunity), have previous state commitment and are in areas where reductions are most needed.

Chapter 2024-180, L.O.F., created a program to expeditiously review new and innovative enhanced nutrient-reducing OSTDS to reduce the nutrients entering Florida's waterways.

Chapter 1. Context, Purpose, and Scope of the Plan

1.1. Water Quality Standards and Total Maximum Daily Loads (TMDLs)

Florida's water quality standards are designed to ensure that surface waters fully support their designated uses, such as drinking water, aquatic life, recreation, and agriculture. Lake Okeechobee is designated as a Class I water, with uses including public water supply, recreation, and propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Most surface waters in Florida, including those in the Lake Okeechobee Watershed (LOW), which ultimately reach Lake Okeechobee, are categorized as Class III waters. **Table 1** lists all designated use classifications for Florida surface waters.

Table 1. Designated use attainment categories for Florida surface waters

[1] Class I and II waters additionally include all Class III uses.

Classification	Description
Class I[1]	**Potable water supplies**
Class II[1]	Shellfish propagation or harvesting
Class III	**Fish consumption, recreation, propagation and maintenance of a healthy, well-balanced population of fish and wildlife**
Class III-Limited	Fish consumption, recreation or limited recreation, and/or propagation and maintenance of a limited population of fish and wildlife
Class IV	Agricultural water supplies
Class V	Navigation, utility, and industrial use (*no current Class V designations*)

Section 303(d) of the federal Clean Water Act requires that every two years each state must identify its "impaired" waters, including estuaries, lakes, rivers, and streams, that do not meet their designated uses. Florida Department of Environmental Protection (DEP) staff in the Division of Environmental Assessment and Restoration are responsible for assessing Florida's waters for inclusion on the Verified List of Impaired Waters (when a causative pollutant for the impairment has been identified) and Study List (when a causative pollutant has not been identified and additional study is needed). These lists are then provided to the U.S. Environmental Protection Agency as an annual update to the state "303(d) list." In 1998, DEP identified Lake Okeechobee as impaired for total phosphorus (TP).

1.1.1. Lake Okeechobee TMDL

A TMDL is the maximum amount of a specific pollutant that a waterbody can assimilate while maintaining its designated uses, and in August 2001, DEP adopted the Lake Okeechobee TMDL for TP. The TMDL is an annual TP load to Lake Okeechobee of 140 metric tons per year (mt/yr) (308,647 pounds per year [lbs/yr]), of which 35 mt/yr (77,162 lbs/yr) is estimated to fall directly on the lake through atmospheric deposition. The remaining 105 mt/yr (231,485 lbs/yr) of TP are allocated to the 9 subwatersheds in the LOW, as authorized by Subparagraph 403.067(7)(a)2., Florida Statutes (F.S.). The attainment of the TMDL will be calculated using a 5-year rolling average based on the monthly loads calculated from measured flow and concentration values. Information about TMDL compliance can be found in **Section 4.3** of this document. Because

there were no National Pollutant Discharge Elimination System (NPDES) facilities that directly discharged into the lake at that time, the adopted TMDL assigned all reductions to the permitted and unpermitted nonpoint source inflows to the lake.

1.2. Lake Okeechobee Basin Management Action Plan (BMAP)

DEP implements TMDLs through permits and BMAPs; the latter contain strategies to reduce and prevent pollutant discharges through various cost-effective means. During the watershed restoration process, DEP and the interested stakeholders jointly develop BMAPs or other implementation approaches. Stakeholder involvement is critical to the success of the watershed restoration program and varies with each phase of implementation to achieve different purposes. The BMAP development process is structured to achieve cooperation and consensus among a broad range of interested parties, including the South Florida Water Management District (SFWMD), Florida Department of Agriculture and Consumer Services (FDACS), and stakeholders representing other agencies, governments, and interested parties.

In the context of the BMAP, there are different organizations named in the plan.

- Responsible entities are those organizations who are assigned load reductions and must comply with the BMAP provisions; these organizations are sometimes referred to as "Lead Entities."

- Responsible agencies may be accountable for reducing loads from their own activities or have an important public sector role in BMAP implementation such as regulatory oversight, monitoring, research, or other related duties.

- Interested stakeholders are those organizations that have engaged with BMAP development and implementation with the intention to influence the implementation process and outcomes.

- Stakeholders is a more general term often used in the BMAP context to include all three of the previously mentioned organizations—responsible entities, responsible agencies, and interested stakeholders.

The Florida Watershed Restoration Act, Subparagraph 403.067(7)(a)1., F.S., establishes an adaptive management process for BMAPs that continues until the TMDL is achieved and maintained. This approach allows for incrementally reducing loadings through the implementation of projects and programs, while simultaneously monitoring and conducting studies to better understand water quality dynamics (sources and response variables) in each impaired waterbody. The original Lake Okeechobee BMAP was adopted in December 2014. Section 373.4595, F.S., calls for a review of the BMAP to be completed and submitted to the Legislature and Governor every five years. Two Five-Year Reviews have been completed, the first in 2020 and the second in 2024. This document updates the 2020 BMAP and is the second

update since the original BMAP was adopted in 2014. **Figure 1** shows the LOW BMAP area which is divided into 9 subwatersheds that are further divided into 64 "basins" (**Figure 2**).

The Clean Waterways Act passed in 2020 required local governments to develop and submit wastewater and onsite sewage treatment and disposal system (OSTDS) (also known as septic system) remediation plans to be incorporated into the BMAPs by July 1, 2025. This document serves as the update to the 2020 BMAP based on recommendations from the second 5-Year Review published in December 2024 and to incorporate the Clean Waterways Act requirements.

The final *2025 South Florida Environmental Report (SFER) – Volume I, Chapter 8B* prepared by SFWMD, reports the 5-year average (based on data from water year [WY] 2020 to WY2024 [May 1, 2019–April 30, 2024]) annual TP load from the watershed as 348.4 mt/yr (768,083 lbs/yr). Therefore, to achieve the allowable TMDL load of 105 mt/yr, the TP required reduction is 243.4 mt/yr (536,600 lbs/yr). The TP required reduction was assigned to each subwatershed based on the contribution of the total load from that subwatershed as listed in **Table 2**. The 5-year average annual TP load from the watershed is updated annually in the SFER.

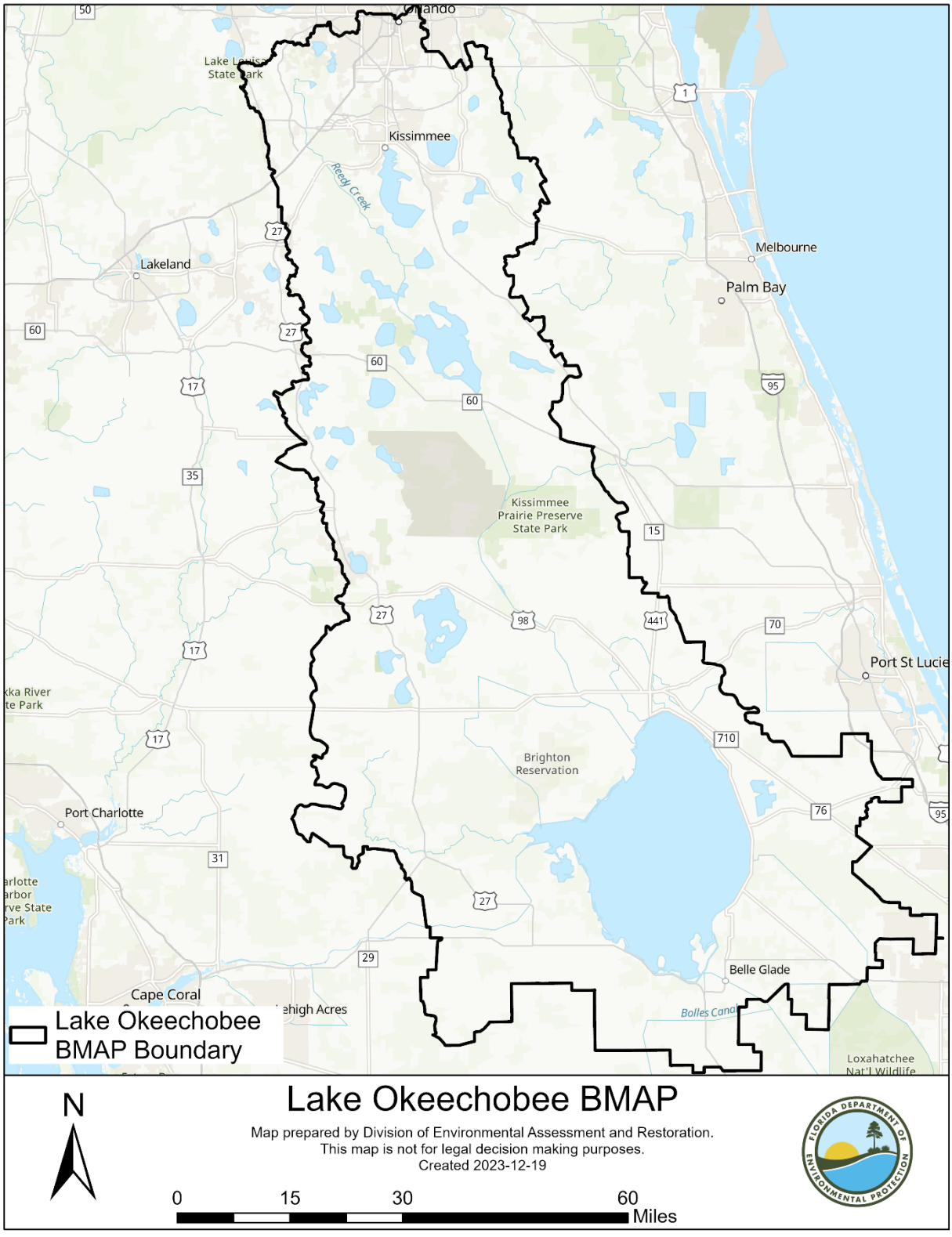

Figure 1. LOW BMAP area

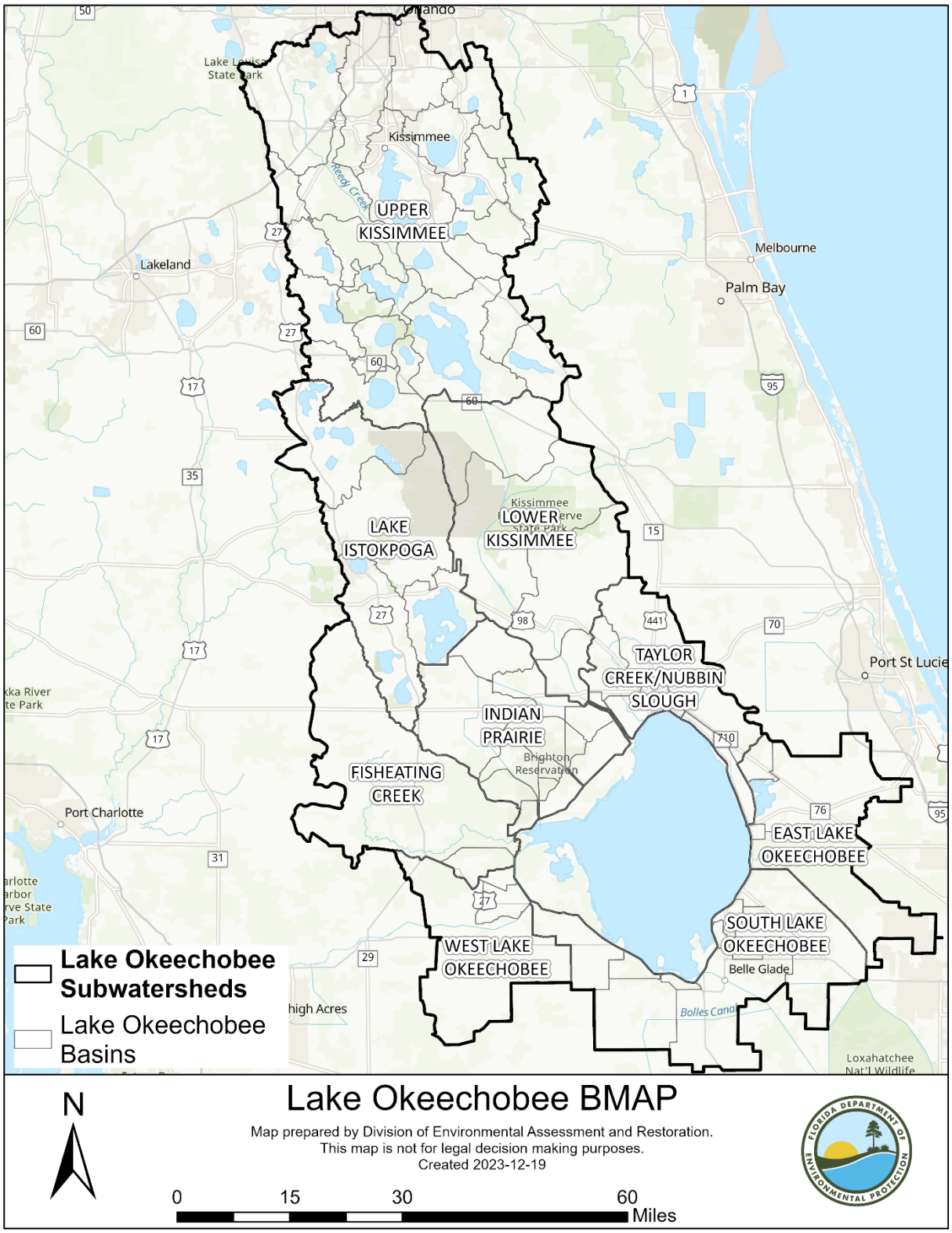

Figure 2. LOW subwatersheds and basins

Table 2. Load reductions and targets by subwatershed

Subwatershed	WY2020–WY2024 TP Load (mt/yr)	% Contribution of Load	TP Load Required Reduction (mt/yr)	TP Target (mt/yr)
Fisheating Creek	38.6	11.1	27.0	11.6
Indian Prairie	50.7	14.6	35.4	15.3
Lake Istokpoga	34.6	9.9	24.2	10.4
Lower Kissimmee	81.6	23.4	57.0	24.6
Taylor Creek/Nubbin Slough	53.1	15.2	37.1	16.0
Upper Kissimmee	72.5	20.8	50.7	21.8
East Lake Okeechobee	13.7	3.9	9.6	4.1
South Lake Okeechobee	3.6	1.0	2.5	1.1
West Lake Okeechobee	0.0	0.0	0.0	0.0
Total	**348.4**	**100.0**	**243.4**	**105.0**

Figure 3 shows the estimated progress toward meeting the Lake Okeechobee TMDL with projects completed through November 15, 2024. Subsection 373.4595(4)(d), F.S., requires DEP to set an implementation schedule for achieving the BMAP load reductions. To meet this requirement, DEP establishes a set of 5-year milestones by which a certain percentage of the load reductions must be met. Additionally, Section 403.067, F.S., requires any responsible entity within the BMAP that has an assigned pollutant load reduction requirement to identify projects or strategies to meet the upcoming 5-year milestone, even if the identified project or strategy will not be completed by the milestone. Stakeholders need to provide DEP with reasonable assurance that they have enough project credits to achieve required reductions within the period established by the BMAP. This BMAP establishes a goal of achieving the full load reductions in 2034, which is 20 years after the initial BMAP adoption. See **Section 2.2** for details on the established milestones by subwatershed.

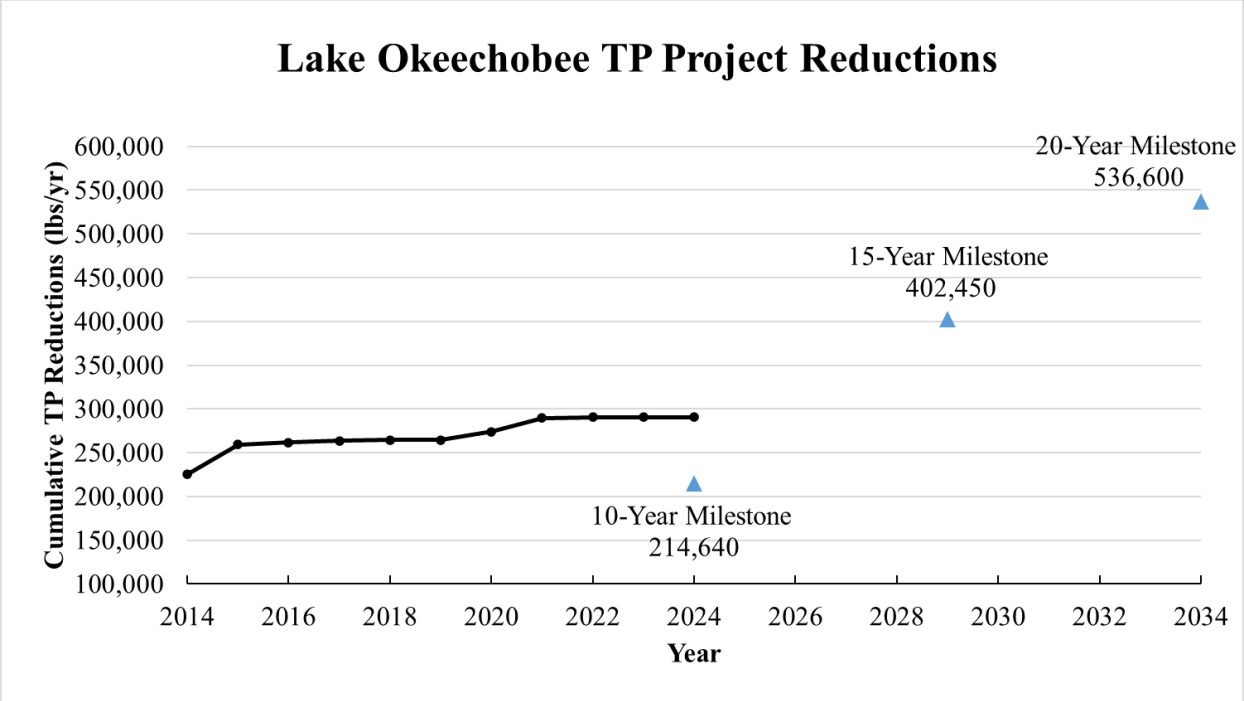

Figure 3. Estimated progress towards meeting the TP TMDL allocated to the LOW with projects completed through November 15, 2024

1.2.1. 5-Year Review

The second 5-Year Review, published in January 2025, provided recommendations for improving the health of the LOW and these recommendations are included throughout this updated BMAP. The 5-Year Review also included a water quality trend analysis to track trends in TN and TP concentrations in the LOW. The results of this trend analysis are used in the targeted restoration area (TRA) approach described in **Section 2.4**.

The 5-Year Review also noted that DEP will be developing a new Hydrological Simulation Program-FORTRAN (HSPF) model for the LOW to support a future BMAP update. The goal is to prepare a model that represents TP and total nitrogen (TN) loading throughout the watershed to estimate the nutrient load reaching Lake Okeechobee. Upon model completion, DEP will reevaluate and, if necessary, adopt another iteration of the BMAP. The next iteration may include updated, required reductions, timelines, 5-year milestones, and entity specific required reductions.

1.2.2. Pollutant Sources

There are various sources of pollution in the LOW. Nonpoint (i.e., diffuse) sources in the watershed contribute the majority of the TP and TN loads to Lake Okeechobee and include agricultural and urban stormwater runoff. Several reports, such as the SFWMD's South Florida Environmental Report and periodic Lake Okeechobee Watershed Protection Plan updates, document more detailed information regarding phosphorus and nitrogen inputs from the LOW. **Table 3** summarizes the percent contribution of TP and TN loads to Lake Okeechobee from each

land use category in each subwatershed as determined by the Watershed Assessment Model (WAM) load estimation tool (LET) discussed in **Subsection 2.1.1**. The subsections below discuss the sources included in this BMAP in more detail.

Table 3. Summary of TP and TN loads by WAM land use category by subwatershed

Subwatershed	Land Use Category	TP Load (% contribution)	TN Load (% contribution)
Fisheating Creek	Urban	1.3	4.7
Fisheating Creek	Agriculture	64.7	57.2
Fisheating Creek	Natural	34.0	38.1
Indian Prairie	Urban	2.5	9.9
Indian Prairie	Agriculture	84.9	73.8
Indian Prairie	Natural	12.6	16.3
Lake Istokpoga	Urban	52.5	24.0
Lake Istokpoga	Agriculture	20.7	57.4
Lake Istokpoga	Natural	26.8	18.6
Lower Kissimmee	Urban	3.0	7.4
Lower Kissimmee	Agriculture	62.9	51.7
Lower Kissimmee	Natural	34.2	40.9
Taylor Creek/Nubbin Slough	Urban	13.2	18.3
Taylor Creek/Nubbin Slough	Agriculture	82.6	75.1
Taylor Creek/Nubbin Slough	Natural	4.2	6.7
Upper Kissimmee	Urban	21.0	36.4
Upper Kissimmee	Agriculture	37.3	43.9
Upper Kissimmee	Natural	41.7	19.7
East Lake Okeechobee	Urban	5.4	9.4
East Lake Okeechobee	Agriculture	75.0	61.2
East Lake Okeechobee	Natural	19.6	29.4
South Lake Okeechobee	Urban	7.5	8.0
South Lake Okeechobee	Agriculture	91.6	90.6
South Lake Okeechobee	Natural	0.9	1.4
West Lake Okeechobee	Urban	9.9	7.8
West Lake Okeechobee	Agriculture	83.2	83.7
West Lake Okeechobee	Natural	6.9	8.5

1.2.2.1. Agricultural Nonpoint Sources

For this 2025 BMAP update, FDACS used the parcel-level polygon agricultural lands (ALG) data that are part of the Florida Statewide Agricultural Irrigation Demand (FSAID) geodatabase to estimate agricultural acreages statewide. The percentage of agricultural land use within the Lake Okeechobee BMAP was then determined by comparing the FSAID 11 ALG and total acreage of the BMAP boundary. The total agricultural land in the BMAP is 1,646,661 acres. To estimate the agricultural acres enrolled in the best management practice (BMP) program, FDACS Office of Agricultural Water Policy (OAWP) overlayed the FSAID ALG and BMP enrollment data to calculate the acres of agricultural land in an enrolled parcel. **Table 4** summarizes agricultural lands within the Lake Okeechobee BMAP based on the FSAID 11 and the results of the FDACS unenrolled agricultural lands characterization.

FDACS will seek the further enrollment of producers in the BMAP area. As of April 30, 2024, there are 1,522,384 agricultural acres enrolled in the BMP program. **Table 5** summarizes the acres enrolled in the BMP Program by commodity. Currently, no producers are conducting water quality monitoring in lieu of implementing BMPs.

Appendix B provides more information on agricultural activities in the LOW.

Table 4. Summary of agricultural land use acreage in the Lake Okeechobee BMAP area for enrollment through April 30, 2024

Subwatershed	Agricultural Acres	Unenrolled – Unlikely Enrollable Acres	Agricultural Acres - Adjusted	Agricultural Acres Enrolled
Fisheating Creek	213,477	8,260	205,217	199,224
Indian Prairie	230,095	31,447	198,648	183,395
Lake Istokpoga	128,211	12,087	116,124	100,878
Lower Kissimmee	263,119	34,376	228,743	206,640
Taylor Creek/Nubbin Slough	148,107	10,228	137,879	125,735
Upper Kissimmee	268,960	53,935	215,026	180,932
East Lake Okeechobee	93,242	10,819	82,422	73,568
South Lake Okeechobee	327,062	5,079	321,983	318,767
West Lake Okeechobee	150,059	9,440	140,619	133,244
Total	**1,822,332**	**175,671**	**1,646,661**	**1,522,383**

Table 5. Agricultural lands enrolled in the Lake Okeechobee BMAP by BMP Program commodity

Commodity	Agricultural Acres Enrolled
Citrus	85,820
Conservation Plan	159,828
Cow/Calf	520,714
Equine	1,949
Fruit/Nut	792
Lake Okeechobee Protection Plan	782
Multiple Commodities	1,139
Nursery	337,234
Poultry	3,988
Row/Field Crop	135
Sod	399,741
Total	**1,522,384**
Percent of Agricultural Lands Enrolled in BMPs	**92%**

1.2.2.2. Municipal Separate Storm Sewer Systems (MS4s)

Many of the municipalities in the watershed are regulated by the Florida NPDES Stormwater Program. An MS4 is a conveyance or system of conveyances, such as roads with stormwater systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels, or storm drains. If an MS4 permittee is identified as a contributor in the BMAP, the permitted MS4 must undertake projects specified in the BMAP. The BMAP projects required to be undertaken by MS4s are detailed for each subwatershed in **Chapter 3**.

Regulated MS4s are required to implement stormwater management programs (SWMP) to reduce pollutants to the maximum extent practicable and address applicable TMDL allocations. Both Phase I and Phase II MS4 permits include provisions for the modification of SWMP activities. Phase I medium and large MS4s are regulated under an individual permit, with multiple permittees having coverage under the same permit as "co-permittees." Phase II small MS4s are regulated under a generic permit. Under the "NPDES Two-Step Generic Permit for Discharge of Stormwater from Phase II MS4s" (Paragraph 62-621.300(7)(a), Florida Administrative Code [F.A.C.]), regulated Phase II MS4s must develop a SWMP that includes BMPs with measurable goals and a schedule for implementation to meet six minimum control measures.

Additionally, in accordance with Section 403.067, F.S., if an MS4 permittee is identified in an area with an adopted BMAP, the permittee must comply with the adopted provisions of the BMAP that specify activities to be undertaken by the permittee. If the permittee discharges stormwater to a waterbody with an adopted TMDL pursuant to Chapter 62-304, F.A.C., then the permittee must revise its SWMP to address the assigned wasteload in the TMDL.

DEP can designate an entity as a regulated MS4 if its discharges meet the requirements of the rule and are determined to be a significant contributor of pollutants to surface waters of the state in accordance with Rule 62-624.800, F.A.C. A Phase II MS4 can be designated for regulation when a TMDL has been adopted for a waterbody or segment into which the MS4 discharges the pollutant(s) of concern.

Table 6 lists the Phase I and Phase II MS4s in the LOW.

Table 6. Entities in the LOW designated as MS4s

Permittee	Permit Number	Phase
Orange County and copermittees:	**FLS000011**	**I**
City of Belle Isle	FLS266795	I
City of Edgewood	FLS266817	I
Florida Department of Transportation (FDOT) District 5	FLS266876	I
Valencia Water Control District (WCD)	FLS266868	I
City of Orlando	**FLS000014**	**I**
Palm Beach County and copermittees:	**FLS000018**	**I**
City of Belle Glade	FLS643459	I
FDOT District 4	FLS266493	I
City of South Bay	FLS645281	I
Indian Trail Improvement District	FLS606723	I
Polk County and copermittees:	**FLS000015**	**I**
City of Davenport	FLS266621	I
Town of Dundee	FLS266639	I
City of Frostproof	FLS266663	I
City of Haines City	FLS266671	I
Town of Hillcrest Heights	FLS266698	I
City of Lake Wales	FLS266736	I
FDOT District 1	FLS266779	I
Central Florida Tourism Oversight District	**FLS000010**	**I**

Permittee	Permit Number	Phase
Glades County	**FLR04E137**	**II**
Hendry County	**FLR04E138**	**II**
Highlands County	**FLR04E148**	**II**
Martin County	**FLR04E013**	**II**
Okeechobee County	**FLR04E140**	**II**
Osceola County	**FLR04E012**	**II**
City of Avon Park	**FLR04E150**	**II**
City of Clewiston	**FLR04E134**	**II**
City of Kissimmee	**FLR04E064**	**II**
City of Sebring	**FLR04E149**	**II**
City of St. Cloud	**FLR04E112**	**II**
FDOT District 1 – Highlands County	**FLR04E147**	**II**
FDOT Florida's Turnpike Enterprise	**FLR04E049**	**II**
Town of Windermere	**FLR04E063**	**II**

1.2.2.3. Urban Nonpoint Sources

Subsubparagraph 403.067(7)(b)2.f., F.S., prescribes the pollutant reduction actions required for nonagricultural pollutant sources that are not subject to NPDES permitting. "Non-MS4 sources" must also implement the pollutant reduction requirements detailed in a BMAP and are subject to enforcement action by DEP or a water management district if they fail to implement their responsibilities under the BMAP. **Table 7** lists the nonpoint sources in the LOW.

Table 7. Urban nonpoint sources in the LOW

Type of Entity	Participant
Municipalities	City of Moore Haven City of Okeechobee City of Pahokee Town of Lake Placid Village of Highland Park Village of Indiantown
Government entities and special districts	Avon Park Air Force Range Barron WCD Clewiston Drainage District Collins Slough WCD Coquina Water Management District Devils Garden WCD Disston Island Conservancy District East Beach WCD East Hendry County Drainage District East Shore WCD Flaghole Drainage District Henry Hillard WCD Highlands Glades Drainage District Istokpoga Marsh Watershed Improvement District (IMWID) Northern Palm Beach County Improvement District Pahokee Drainage District Pelican Lake WCD Ritta Drainage District South Florida Conservancy District South Shore Drainage District Spring Lake Improvement District (SLID) Sugarland Drainage District

1.2.2.4. Wastewater Treatment Facilities (WWTFs)

The TMDL identified 190 domestic and industrial WWTFs in the LOW, none of which directly discharged to the lake. Many of the discharges were through wells to groundwater. Therefore, these facilities were not assigned a wasteload allocation. As of December 2024, there were 270 individually permitted wastewater facilities or activities in the LOW. Of these, 61 hold NPDES permits and therefore are authorized, within the limitations of their permits, to discharge directly to surface waters within the LOW. The remaining 209 do not have authorization to discharge directly to surface waters.

1.2.2.5. OSTDS

Based on 2024 data from the Florida Department of Health, there are 124,176 known or likely OSTDS located throughout the LOW (**Figure 4**). **Table 8** summarizes the number of OSTDS by subwatershed.

Table 8. OSTDS counts by subwatershed

Subwatershed	Number of OSTDS
Fisheating Creek	471
Indian Prairie	2,000

Subwatershed	Number of OSTDS
Lake Istokpoga	29,754
Lower Kissimmee	1,118
Taylor Creek/Nubbin Slough	10,242
Upper Kissimmee	60,951
East Lake Okeechobee	12,773
South Lake Okeechobee	2,449
West Lake Okeechobee	1,869
Total	**122,302**

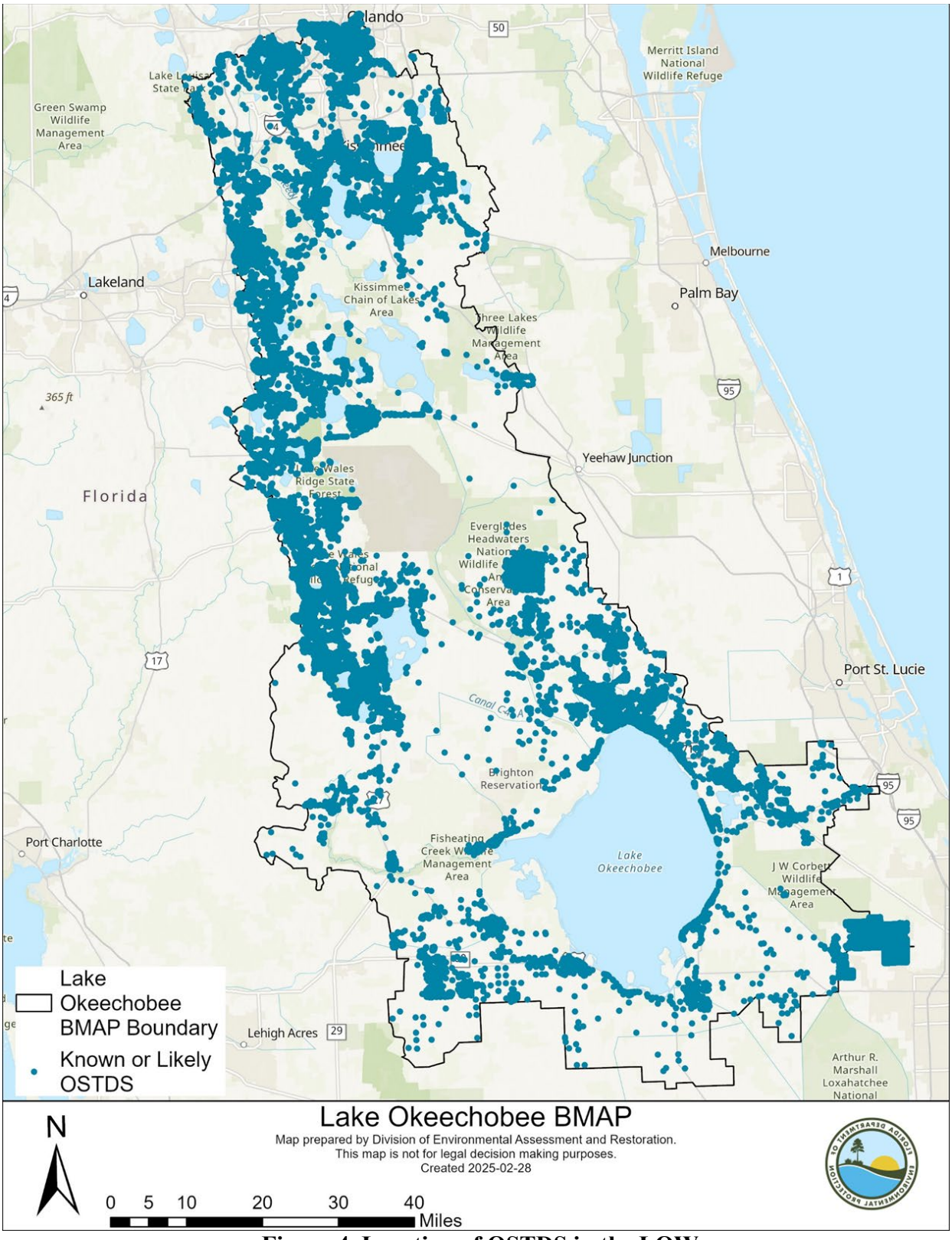

Figure 4. Location of OSTDS in the LOW

1.2.2.6. Biosolids

Paragraph 62-640.400(11), F.A.C., prohibits the land application of biosolids in the LOW unless the applicant for a site permit affirmatively demonstrates that the phosphorus in the biosolids will not add to phosphorus loadings in Lake Okeechobee or its tributaries. This demonstration must be included in the site nutrient management plan (NMP). This prohibition does not apply to Class AA biosolids that are marketed and distributed as fertilizer products in accordance with Rule 62-640.850, F.A.C.

Subparagraph 373.4595(3)(b)19., F.S. requires all entities disposing of septage within the LOW to develop and submit to an agricultural use plan that limits applications based on phosphorus loading consistent with the Lake Okeechobee BMAP.

1.2.3. Assumptions

The water quality impacts of BMAP implementation are based on several fundamental assumptions about the pollutants targeted by the TMDL, modeling approaches, waterbody response, and natural processes. The following assumptions were used during the BMAP process:

- Certain BMPs were assigned provisional nutrient reduction benefits for load reductions in this BMAP iteration while additional monitoring and research are conducted to quantify their effectiveness. These estimated reductions may change in future BMAP iterations, as additional information becomes available.

- Nutrient reduction benefits of the stakeholders' projects were calculated using the best available methodologies. Project-specific monitoring, where available, will be used to verify the calculations, and reduction benefits may be adjusted as necessary.

1.2.4. Considerations

This BMAP requires stakeholders to implement projects to achieve reductions within the specified 5-year milestone period. However, the full implementation of the BMAP will be a long-term, adaptively managed process. While some of the BMAP projects and activities were recently completed or are currently ongoing, several projects require more time to design, secure funding, and construct. Regular follow-up and continued coordination and communication by the stakeholders will be essential to ensure the implementation of management strategies and assessment of incremental effects. Additionally, land use, water quality or project data in this document may not match information published by partner agencies, as each agency reports on different metrics and schedules, and data is evaluated for separate purposes.

During the BMAP process, several items were identified that should be addressed in future watershed management cycles to ensure that future BMAPs use the most accurate information:

- **Land Uses** – The loading estimates in the BMAP are based on land uses at a particular point in time, allowing the model to be validated and calibrated. The loading estimates for this BMAP iteration were based on the WAM, which used 2009 land use data updated by SFWMD during 2013 to refine the land use categories. This dataset is referred to in this document as the 2009 land use. WAM updates in this BMAP will allow for the differentiation of phosphorus loading from various land use types. DEP is developing a new HSPF model for the LOW to support a future BMAP update. The HSPF model will be based on the latest land use coverage available at the time. Agricultural land use data are updated annually in the FSAID. The land use data used for modeling loads in this BMAP may not match information published by FDACS.

- **Basin Boundaries** –Basin boundaries will be updated as part of the HSPF model revision, and those revised basins will be reflected in the next BMAP update. Basin boundaries for this iteration of the BMAP may not match information published by SFWMD in the latest South Florida Environmental Report.

- **Chapter 40E-61, F.A.C.** – SFWMD has completed rulemaking in 2021 to revise Chapter 40E-61, F.A.C., to ensure its objectives are consistent with Sections 373.4595 and 403.067, F.S.

- **Complexity of Problem** – DEP acknowledges the complexity of the dynamics that affect the water quality of Lake Okeechobee and its watershed; therefore, this BMAP is designed to encompass a wide variety of projects that will cumulatively act to significantly reduce nutrient loads.

- **Legacy Phosphorus** – DEP recognizes that legacy phosphorus is present in Lake Okeechobee and in the LOW as a result of past anthropogenic activities, and this watershed load has the potential to be transported to Lake Okeechobee. In June 2023, SFWMD kicked off the Basinger Dairy Legacy Phosphorus Project aimed at researching methods to address legacy phosphorus. The Coordinating Agencies (DEP, FDACS, and SFWMD) and stakeholders will continue to identify projects and management strategies that will address the legacy load.

- **Attenuation Factors** – Attenuation factors were calculated for each of the LOW subwatersheds using the 2017 WAM outputs. These factors were applied during the project credit calculation process to determine the nutrient reduction benefits to Lake Okeechobee.

- **Other TMDLs in the LOW** – As part of the overall restoration strategy, DEP is prioritizing waterbody TMDLs in the LOW. DEP has adopted nutrient

TMDLs for 33 waterbodies throughout the LOW and is prioritizing an additional five lakes in the 2024–2026 list for nutrient TMDL development. The statewide priority list is posted on the DEP website.

- **TN** – Although the Lake Okeechobee TMDL only addresses TP, TN is of particular importance to the Northern Everglades and Estuaries system, including the Caloosahatchee and St. Lucie Estuaries, which receive flows directly from Lake Okeechobee. Each of these estuaries has a TMDL and a BMAP in place to address TN; therefore, DEP has calculated project reduction benefits for TN to track TN management efforts in the LOW that will directly or indirectly benefit the lake and downstream waters. In addition, DEP is evaluating TN concentrations compared with benchmark concentrations to help prioritize basins for restoration activities.

- **Previous Restoration Efforts** – DEP recognizes that stakeholders throughout the watershed have implemented stormwater management projects as well as statutorily mandated diversions away from Lake Okeechobee prior to 2009 and that these efforts have benefited water quality.

- **Estuary BMAP Overlap** – Portions of the LOW overlap with the watersheds for the Caloosahatchee River and Estuary and St. Lucie River and Estuary. The projects in these overlap areas are included in both this BMAP and the applicable estuary BMAP. The benefits of these projects will vary by BMAP as the reductions are calculated for the waterbody that is the focus of the BMAP.

Chapter 2. Modeling, Load Estimates, and Restoration Approach

2.1. Watershed Model

Since the BMAP was adopted in 2014, the Lake Okeechobee WAM has been updated and revised. WAM was developed to evaluate the impact of alternative land uses and management practices associated with the implementation of BMPs and nutrient load reduction projects for the LOW. It is a process-based model that can be used to perform hydrologic and water quality analysis to carry out the following (Soil and Water Engineering Technology, Inc. [SWET] 2017a):

- Simulate flows and nutrient loads for existing land uses, soils, and land management practices.
- Analyze the hydrologic and water quality impacts on streams and lakes for management scenarios, such as land use changes, the implementation of BMPs, or the addition of regional stormwater treatment areas (STAs).
- View and analyze the simulated flow and concentrations for every source cell and stream reach in the LOW under the ArcGIS platform.
- Prioritize geographic areas to focus BMP efforts.

The Coordinating Agencies contracted with SWET to update and recalibrate WAM for the 2020 BMAP update to utilize more recent land use, soils, hydrography, control projects, and weather databases for the six northern subwatersheds and to extend the model to include the three southern subwatersheds (SWET 2017a).

2.1.1. Development of the LET

The purpose of the LET is to provide the stakeholders with the ability to evaluate the relative benefits of projects based on their location in the LOW. As part of the contract to update the WAM in 2017, SWET updated the LET using the 2017 WAM that included all nine subwatersheds. This updated LET provided separate estimates of TP and TN loads for surface and groundwater at the source cells, after attenuation to the nearest stream/reach, and loads from the source cells that ultimately reach Lake Okeechobee. The updated version is currently used to estimate load reduction benefits from the BMAP projects.

2.1.2. Subwatershed Attenuation Rates

Based on a comparison of the source loads and loads that reach the lake from each subwatershed within the LET, attenuation factors were calculated for each of the LOW subwatersheds. These factors were applied during the project credit calculation process (where project base loads were not already attenuated) to determine the nutrient reduction benefits to Lake Okeechobee. **Table 9** lists the attenuation rates used for each subwatershed in the LOW.

Table 9. Attenuation factors in the LOW by subwatershed

Subwatershed	TP Attenuation Rate	TN Attenuation Rate
Fisheating Creek	0.38	0.70
Indian Prairie	0.03	0.37
Lake Istokpoga	0.69	0.64
Lower Kissimmee	0.38	0.68
Taylor Creek/Nubbin Slough	0.21	0.40
Upper Kissimmee	0.47	0.67
East Lake Okeechobee	0.66	0.70
South Lake Okeechobee	0.90	0.53
West Lake Okeechobee	0.93	0.90

2.2. Milestones

Section 403.067, F.S., requires that BMAPs include 5-year milestones for the implementation of TMDLs. Any responsible entity within the BMAP must identify projects or strategies to meet the upcoming 5-year milestone, even if the identified project or strategy will not be completed by the milestone. Each project must include a planning-level cost estimate and an estimated date of completion that is included in the BMAP and statewide annual reporting process.

As part of the 2020 5-Year Review, milestones with percent reduction goals were established based on achieving the Lake Okeechobee TMDL within 20 years of BMAP adoption, which is 2034. The following summarizes the milestone timelines and percent reductions required by to be achieved in each subwatershed:

- 5-year milestone (2019): 15%.
- 10-year milestone (2024): 40%.
- 15-year milestone (2029): 75%.
- 20-year milestone (2034): 100%.

Table 10 summarizes the TP milestones for each subwatershed, based on loads from the 2025 SFER. DEP is developing a new HSPF model for the LOW that may be used in a future BMAP update to revise required reductions, including potentially adding entity specific required reductions. DEP providing revised starting loads and allocations is an expected part of the iterative BMAP process where loading estimates are reassessed as land uses and other loading sources change over time as. Responsible entities and agencies should expect periodic adjustments to the subwatershed reduction assignments during the BMAP process.

Table 10. Subwatershed-specific TP reduction milestones for the LOW

Subwatershed	5-year (2019) TP Reduction Milestone (lbs/yr)	10-year (2024) TP Reduction Milestone (lbs/yr)	15-year (2029) TP Reduction Milestone (lbs/yr)	20-year (2034) TP Reduction Milestone (lbs/yr)
Fisheating Creek	8,917.7	23,780.4	44,588.3	59,451.1
Indian Prairie	11,713.1	31,234.8	58,565.3	78,087.0

Subwatershed	5-year (2019) TP Reduction Milestone (lbs/yr)	10-year (2024) TP Reduction Milestone (lbs/yr)	15-year (2029) TP Reduction Milestone (lbs/yr)	20-year (2034) TP Reduction Milestone (lbs/yr)
Lake Istokpoga	7,993.5	21,316.1	39,967.7	53,290.3
Lower Kissimmee	18,851.8	50,271.6	94,259.2	125,678.9
Taylor Creek/Nubbin Slough	12,267.6	32,713.5	61,337.8	81,783.7
Upper Kissimmee	16,749.5	44,665.3	83,747.4	111,663.2
East Lake Okeechobee	3,165.1	8,440.2	15,825.4	21,100.5
South Lake Okeechobee	831.7	2,217.9	4,158.5	5,544.7
West Lake Okeechobee	0.0	0.0	0.0	0.0
Total	**80,490.0**	**214,639.8**	**402,449.6**	**536,599.4**

Responsible entities must submit a sufficient list of additional projects and management strategies to DEP no later than January 14, 2026, to be compliant with the upcoming BMAP milestone or be subject to further department enforcement.

If any lead entity is unable to submit a sufficient list of eligible management strategies to meet the next 5-year milestone reductions for their subwatersheds, specific project identification efforts are required to be submitted by January 14, 2026. Any such project identification efforts must define the purpose of and a timeline to identify sufficient projects to meet the upcoming milestone. The project description and estimated completion date for any such project identification effort must be provided and reflect the urgency of defining, funding, and implementing projects to meet the upcoming and future BMAP milestones. These planning efforts are ineligible for BMAP credit themselves but are necessary to demonstrate that additional eligible management actions will be forthcoming and BMAP compliance will be achieved. Examples of project identification efforts include:

- Plan and implement stormwater improvement projects.
- Address excess fertilizer applications from sports turfgrass and golf courses.
- Develop interagency/interdepartmental agreements or memorandum of understanding for collaboration on nutrient reduction projects that cross jurisdictional or administrative boundaries.
- Update future growth considerations in local comprehensive plans, land development reviews, and audits of relevant codes and ordinances.
- Develop and/or update OSTDS and WWTF remediation plans to implement projects to address OSTDS and WWTF contributions.
- Research and implement innovative nutrient removal treatment technologies.

Only those entities that provide sufficient project identification efforts will be deemed as possessing a defined compliance schedule. Those entities without an adequate project list nor a defined compliance schedule to meet the upcoming 5-year milestone for their subwatershed may be subject to enforcement actions.

After the Lake Okeechobee model update is complete, DEP will reevaluate and, if necessary,

adopt another iteration of the BMAP, most likely before 2030. The next iteration may include updated required reductions, timelines, 5-year milestones, and entity specific allocations.

2.2.1. Project Progress

Figure 5 summarizes the progress towards the final milestone for the LOW by subwatershed. Total project reductions in each subwatershed were compared to the respective 2034 milestones and are displayed as percentages in the bar graphs. **Chapter 3** includes the project details. As part of the annual reporting process, stakeholders will be required to provide a detailed and quantified description of their ordinance enforcement and environmental education activities to receive credits for these activities. Based on progress towards meeting the TMDL and water quality monitoring results, reductions from ordinances and education efforts may be reevaluated in future BMAP updates, particularly with respect to enforcement of ordinances.

DEP continues to work with the appropriate agencies and other stakeholders to identify and prioritize needed projects and management strategies required to meet the reduction milestones.

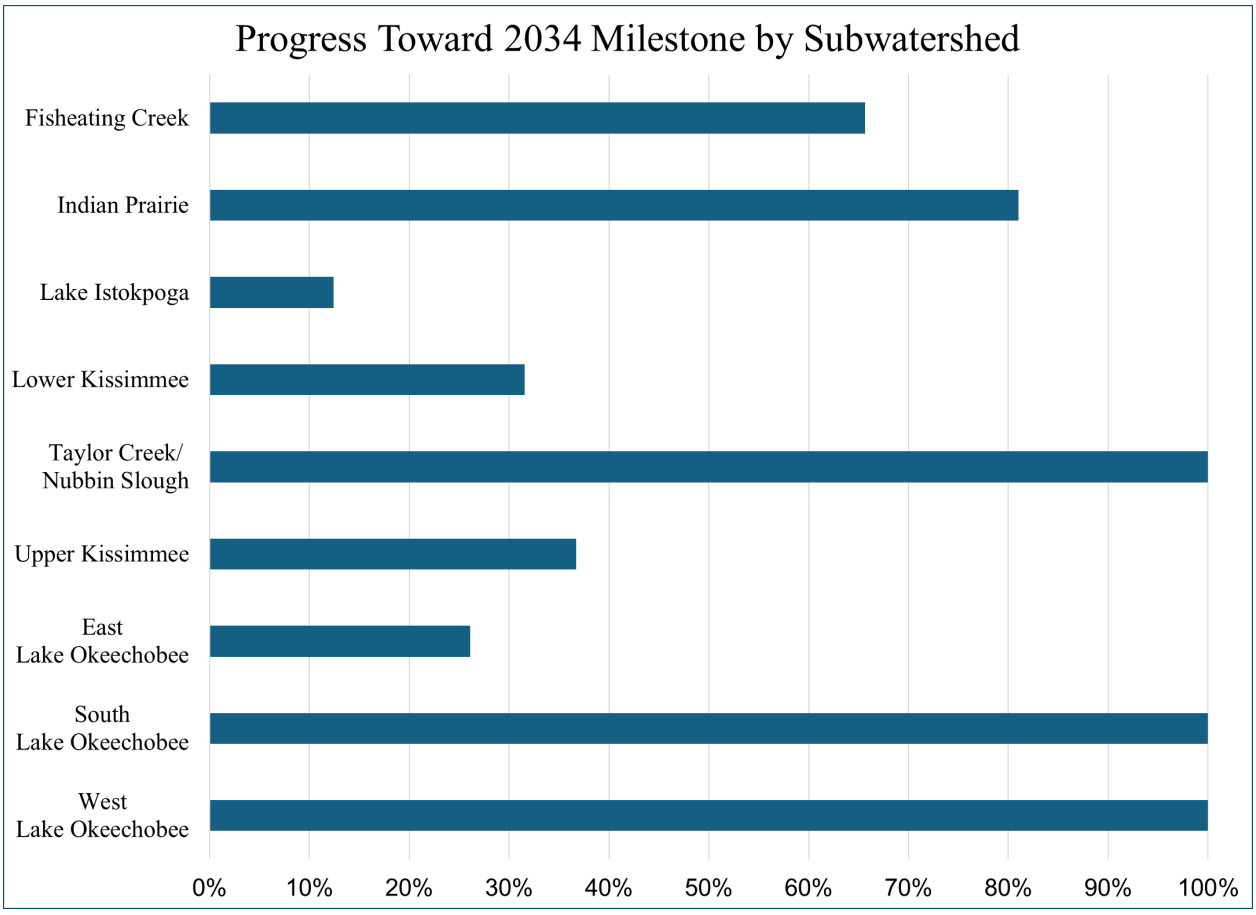

Figure 5. Milestone progress by subwatershed

2.3. Basinwide Sources Approach

2.3.1. Agriculture

2.3.1.1. Agricultural BMPs

To address nutrient loading from agricultural operations effectively, a balanced approach is necessary—one that supports agricultural productivity while safeguarding water resources. This entails promoting farming practices that optimize nutrient and water use efficiency, minimize runoff, and enhance soil health. Section 403.067, F.S., requires agricultural producers in adopted BMAPs to either enroll and properly implement the applicable FDACS BMPs for their operation or to conduct water quality monitoring activities as required by Chapter 62-307, F.A.C. Agricultural BMPs include practices such as nutrient management, irrigation management and water resource protection, and can mitigate nutrient loading while promoting environmental stewardship among Florida's agricultural producers. In many BMAPs, however, the implementation of BMPs alone will not be sufficient to meet water quality restoration goals. BMP manuals adopted by FDACS are available at https://www.fdacs.gov/Agriculture-Industry/Water/Agricultural-Best-Management-Practices. Agricultural landowners that do not enroll in BMPs are referred to DEP for water quality monitoring or enforcement under sections 403.121, 403.141 and 403.161, F.S.

Every two years FDACS is required to perform onsite inspections of each agricultural producer that enrolls in BMPs to ensure that the practices are being properly implemented. The verification includes review and collection of nutrient application records that producers must maintain to demonstrate compliance with the BMP Program; verification that all other applicable BMPs are being properly implemented; verification that any cost shared practices are being properly implemented; and identification of potential cost share practices, projects or other applicable BMPs not identified during enrollment. Rule 5M-1.008, F.A.C., outlines the procedures used to verify the implementation of agricultural BMPs. Producers not implementing BMPs according to the process outlined in Chapter 5M-1, F.A.C., are referred to DEP for enforcement action after attempts at remedial action by FDACS are exhausted. Failure to implement BMPs or conduct water quality monitoring that demonstrates compliance with pollutant reductions may result in enforcement action by DEP (paragraph 403.067(7)(b), F.S.).

Pursuant to paragraph 403.067(7)(c), F.S., where water quality problems are demonstrated despite the appropriate implementation, operation and maintenance of adopted BMPs, DEP, a WMD or FDACS, in consultation with DEP, must conduct a reevaluation of the BMPs. If a reevaluation of the BMPs is needed, FDACS will also include DEP, the appropriate WMD, and other partners in the reevaluation and BMP update processes.

Although it is anticipated that additional enrollment in agricultural BMPs along with more frequent implementation verification site visits by FDACS will increase nutrient reductions from agricultural nonpoint sources, it is also recognized that further reductions, beyond the implementation of required owner-implemented BMPs, will be necessary to achieve the TMDLs.

In 2024, FDACS updated its existing BMP manuals to incorporate updated BMPs based on the latest scientific and technical research

Further nutrient reductions can be achieved through implementation of additional agricultural projects or activities. The Coordinating Agencies will continue to collaborate to identify cost-share practices and other projects that can be undertaken to achieve these nutrient reductions and identify and implement additional projects and activities in priority TRAs. Chapter 2023-169, Laws of Florida amended 403.067, F.S., to include regional water quality improvement projects that will be developed by DEP and FDACS, in cooperation with agricultural landowners, where these projects are necessary to achieve TMDLs.

SFWMD is implementing projects that encourage low-input agriculture and water quality improvement technologies. FDACS also provides funding to some agricultural operations to add other practices beyond owner-implemented BMPs. Examples include drainage improvements, fencing, water control structures, precision agriculture technology, and fertigation. The Coordinating Agencies will also investigate the possibility of implementing other incentive-based programs—such as providing incentives for producers to transition to less intensive crops, changing land use to fallow or native landscape, or changing the type of cropping system—that would reduce nutrient loading in the BMAP area.

Other reductions associated with the implementation and modification of BMPs may be realized through ongoing studies, data collection, and WMD initiatives. These additional projects and activities are to be implemented in conjunction with the BMP Program, which needs to achieve full enrollment with verification to ensure that the BMAP goals are achieved.

2.3.1.2. Dairies and Other Concentrated Animal Feed Operations (CAFOs)

CAFO dairies permitted under Chapter 62-670, F.A.C., located within a BMAP, may not cause or contribute to a violation of water quality standards and must implement nutrient management practices identified in the permits. To minimize infiltration of liquid manure, waste storage ponds must be lined using a concrete or geosynthetic liner. If a clay liner exists, then the dairy will need to upgrade to a concrete or geosynthetic liner when funding is available, or it must demonstrate that the liner does not allow leaching that results in water quality exceedances.

Additionally, sampling for TP and TN of land applied effluent/wastewater must be included in the DEP-approved nutrient monitoring plan in the permit and implemented in accordance with the monitoring plan.

2.3.1.3. Livestock Operations Without CAFO Permits

Livestock operations may not cause or contribute to a violation of water quality standards. Not all livestock operations are large enough to require an NPDES CAFO permit under Chapter 62-670, F.A.C. For these operations, section 403.067, F.S., requires the operation to enroll in the FDACS BMP Program and implement applicable BMPs or to conduct a monitoring program according to Chapter 62-307, F.A.C., that is approved by DEP or the WMD.

2.3.1.4. Aquaculture

Under the federal Clean Water Act, aquaculture activities are defined as a point source. In 1999, the Florida Legislature amended Chapter 597, F.S., Florida Aquaculture Policy Act, to create a program within FDACS that requires those who sell aquatic species to annually acquire an Aquaculture Certificate of Registration and implement Chapter 5L-3, F.A.C., Aquaculture BMPs. Permit holders must be certified every year.

2.3.1.5. Silviculture

The Florida Forest Service (FFS) within FDACS is the lead agency responsible for assisting landowners, loggers and forestry professionals with silviculture BMP implementation as well as conducting statewide silviculture BMP training and compliance monitoring. FFS implements Chapter 5I-6, F.A.C., and encourages both private and public forest landowners across the state to comply with BMPs and the rule. Compliance with the rule involves submitting a Notice of Intent to Implement BMPs (NOI) to FFS and thereby committing to follow BMPs during all current and future forestry operations.

2.3.1.6. Agricultural Cooperative Regional Elements

Section 403.067, F.S., requires FDACS, DEP and agricultural producers to work together to establish Agricultural Cooperative Regional Water Quality Elements (ACE) in BMAPs where agricultural nonpoint sources contribute at least 20% of nonpoint source nutrient discharges to impaired waterbodies, or where DEP determines this element is necessary to achieve the TMDLs. FDACS is responsible for providing DEP a list of projects which, in combination with BMPs, state-sponsored regional projects and other management strategies, will achieve the needed pollutant load reductions established for agricultural nonpoint sources. The list of projects included in the ACE must include a planning-level cost estimate of each project along with the estimated amount of nutrient reduction that such project will achieve. Partner agencies and key stakeholders referred to in this process include FDACS, DEP and agricultural producers.

Addressing nutrient loading from agricultural sources in Florida's waterways requires collective action and partnership among key stakeholders, and in consultation with the WMDs. By fostering cooperation and engagement, the ACE framework facilitates the exchange of knowledge, resources and expertise, leading to innovative solutions and effective strategies for tackling water quality challenges. Engaging producers in the decision-making process ensures that projects are practical, feasible, and tailored to the needs and realities of agricultural operations. Partner agencies provide technical support, regulatory guidance, and funding opportunities that will enhance the implementation and success of regional water quality improvement initiatives. This cooperative effort is essential for implementing targeted actions that balance the economic and social benefits of agriculture with the obligation to address agricultural nonpoint source loading beyond statutorily required BMP implementation and cost share.

The ACE framework leverages resources and technical expertise to efficiently identify regional projects and other strategies tailored to the diverse agriculture production methods, landscapes, and watersheds that will need to be implemented to achieve the TMDLs. Regional project types will vary among the different BMAPs, and can include, but are not limited to, a combination of traditional projects that focus on water treatment, land acquisition in fee or conservation easements on the lands of willing sellers, site-specific water quality improvement projects, dispersed water management projects, innovative technologies, and regional projects funded through existing or enhanced cost share programs administered by FDACS or the WMDs.

While FDACS is assigned the lead role on project solicitation, development, selection and implementation, FDACS will work closely with all the key stakeholders, including DEP as a partner agency, to define and identify regional projects that will be included in the BMAP and to leverage existing programs and resources. FDACS will lead engagement with producers and industry groups through annual workshops to identify potential regional projects. Identified regional projects will be implemented through various mechanisms, such as existing agency cost share or grant programs or through a legislative budget request and eventual appropriation. Upon identification of a project, FDACS will update DEP on project development and implementation, including the funding strategy.

FDACS and DEP will work together to track progress on agricultural water quality projects under the ACE framework through the development of performance metrics and collection of water quality monitoring data in the basin or, if necessary, at the project level. The default performance measures will be the expected range of pollutant removal efficiencies associated with a project or strategy. Tools may be needed to determine the effectiveness of projects, such as modeling and, where feasible, onsite water quality monitoring.

FDACS will report on projects annually through DEP's Statewide Annual Report process and during BMAP update and/or development. Projects and other management strategies implemented through the ACE will be evaluated cooperatively by partner agencies using the predetermined performance metrics. The ACE process provides for adaptive management, allowing flexibility to adapt and improve based on regional project or management strategy results.

Agricultural nonpoint sources contribute 72% of the nutrient sources in the Lake Okeechobee BMAP. Pursuant to subparagraph 403.067(7)(e)1., F.S., an ACE is required in this BMAP.

Most agricultural lands are engaged in row crop production. **Table 11** shows the three dominant crop types within the Lake Okeechobee BMAP.

Table 11. Three dominant crop types within the Lake Okeechobee BMAP

Crop Type	Acres
Row Crops	950,721
Grazing Land	517,594
Citrus	101,889

Targeting future funding toward precision agriculture, manure management, innovative technologies, or soil health practices, including combining practices where applicable, to address nutrient impacts from row crop production on a regional scale could provide additional reductions to meet future milestones.

In the Lake Okeechobee BMAP, further progress is being achieved through regional water treatment projects funded by FDACS or in partnership with the Coordinating Agencies (section 373.4595, F.S.) and landowners. The project tables in **Chapter 3** provide additional details regarding these regional projects, including the resulting TP and TN reductions.

FDACS will continue to work with key stakeholders in the Lake Okeechobee BMAP to identify additional options for addressing agricultural nonpoint source nutrient loading. For more information on the FDACS Regional Projects Program, please see the links in **Appendix B**.

2.3.1.7. Description of BMPs Adopted by Rule

Appendix B provides detailed information on BMPs and agricultural practices in the BMAP area. **Table 12** identifies the adopted BMPs and BMP manuals relevant to this BMAP.

Table 12. BMPs and BMP manuals adopted by rule as of July 2025

Agency	F.A.C. Chapter	Chapter Title
FDACS OAWP	5M-1	Office of Agricultural Water Policy
FDACS OAWP	5M-06	Florida Nursery Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices
FDACS OAWP	5M-08	Florida Vegetable and Agronomic Crop Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices
FDACS OAWP	5M-09	Florida Sod Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices
FDACS OAWP	5M-11	Florida Cattle Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices
FDACS OAWP	5M-12	Conservation Plans for Specified Agricultural Operations
FDACS OAWP	5M-13	Florida Specialty Fruit and Nut Crop Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices
FDACS OAWP	5M-14	Florida Equine Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices
FDACS OAWP	5M-16	Florida Citrus Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices
FDACS OAWP	5M-17	Florida Dairy Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices
FDACS OAWP	5M-18	Florida Agriculture Wildlife Best Management Practices
FDACS OAWP	5M-19	Florida Poultry Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices
FDACS OAWP	5M-21	Florida Small Farms and Specialty Livestock Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices
FDACS Division of Agriculture Environmental Services	5E-1	Fertilizer

Agency	F.A.C. Chapter	Chapter Title
FDACS Division of Aquaculture	5L-3	Aquaculture Best Management Practices
FFS	5I-6	Best Management Practices for Silviculture
DEP	62-330	Environmental Resource Permitting

2.3.2. Stormwater

Stormwater from urban areas is a considerable source of nutrient loading to Lake Okeechobee, and many of these areas are already regulated under the NPDES Stormwater Program. An MS4 is a conveyance or system of conveyances, such as roads with stormwater systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels, or storm drains. If an MS4 permittee is identified as a contributor in the BMAP, the permitted MS4 must undertake projects specified in the BMAP.

Regulated MS4s are required to implement SWMP to reduce pollutants to the maximum extent practicable and address applicable TMDL allocations. Both Phase I and Phase II MS4 permits include provisions for the modification of SWMP activities. Phase I medium and large MS4s are regulated under an individual permit, with multiple permittees having coverage under the same permit as "co-permittees." Phase II small MS4s are regulated under a generic permit. Under the "NPDES Two-Step Generic Permit for Discharge of Stormwater from Phase II MS4s" (paragraph 62-621.300(7)(a), F.A.C.), regulated Phase II MS4s must develop a SWMP that includes BMPs with measurable goals and a schedule for implementation to meet six minimum control measures.

DEP can designate an entity as a regulated MS4 if its discharges meet the requirements of the rule and are determined to be a significant contributor of pollutants to surface waters of the state in accordance with Rule 62-624.800, F.A.C. A Phase II MS4 can be designated for regulation when a TMDL has been adopted for a waterbody or segment into which the MS4 discharges the pollutant(s) of concern. Because urban areas located in the BMAP that are not currently covered by an MS4 permit also significantly contribute to nutrient loading, individually or in aggregate, the NPDES Stormwater Program will, within five years of BMAP adoption, evaluate any entity located in the BMAP area that serves a minimum resident population of at least 1,000 individuals that is not currently covered by an MS4 permit and designate eligible entities as regulated MS4s, in accordance with Chapter 62-624, F.A.C.

On June 28, 2024, Governor Ron DeSantis signed Senate Bill 7040 into law, which updates Florida's stormwater rules and design criteria, including Chapter 62-330, F.A.C., to protect the state's waterways. The new regulations aim to manage runoff from developments, ensuring that future stormwater systems are better maintained. Operation and maintenance entities will be required to have estimates for the expected routine maintenance costs and to certify that they have the financial capability to maintain the stormwater system over time. The rule will also provide for more consistent oversight through a required periodic inspection routine and reporting on the inspection results to the permitting agency.

Additionally, under Chapter 62-330, F.A.C., the new rule establishes requirements for applicants to demonstrate, through calculations or modeling, that the future stormwater management systems would provide additional treatment to meet new Environmental Resource Permits stormwater treatment performance standards for an 80% reduction for TP and 55% reduction for TN, along with additional requirements that would apply where a project discharges to Outstanding Florida Waters or impaired waters. Additional permitting requirements to protect ground water can be found within the Applicant Handbook Volume I, Section 8.5.2.

2.3.2.1. Urban BMPs and Eligibility

Management actions must reduce TP and/or TN loads and meet certain criteria to be considered eligible for credit in the BMAP. Urban structural projects completed since January 1, 2009, and planned in the future were eligible for BMAP credit. Urban structural projects only received credit for the portion of the load reduction that was over and above any permit requirements. This criterion was needed because permit conditions are established to prevent impacts from the new development and do not contribute to water quality improvement.

Public education and outreach efforts and nonstructural projects were eligible for BMAP credit regardless of when they were implemented because these efforts were excluded in the Lake Okeechobee model. Estimates of TP and TN reductions from street sweeping and BMP clean out were made using a tool developed by the Florida Stormwater Association in 2012, based on data collected by Sansalone et al. (2011) that uses the volume or weight of material removed to estimate the pounds of TP and TN removed.

2.3.2.2. Sports Turfgrass and Golf Courses

Sports turfgrass sources include golf courses and other sporting facilities. Sporting facilities are required to follow the 2025 Sports Turf BMP Manual to protect water resources.

Superintendents of all publicly owned golf courses within the BMAP must obtain a certification for golf course BMPs under section 403.9339, F.S. and all golf courses must implement the BMPs described in DEP's golf course BMP manual, Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses (DEP, 2021). All publicly owned golf courses located within a BMAP are required to submit a NMP to DEP that is designed to sustain even plant growth while minimizing excessive growth and nutrient losses. Required information for the NMP is available in **Appendix C**. A draft NMP must be submitted to DEP within one year of BMAP adoption and a final document is due two years after adoption. All soil, water, and tissue sampling must include appropriate nitrogen and phosphorous analyses.

If a facility (either golf course or other sporting facility) uses fertilizer rates greater than those in the BMP manuals, the facility is required to conduct water quality monitoring prescribed by DEP or a WMD that demonstrates compliance with water quality standards.

2.3.3. WWTFs

2.3.3.1. Facility Improvements and Effluent Limits

DEP issues permits for facilities and activities to discharge wastewater to surface waters and groundwaters of the state. DEP is authorized by the U.S. Environmental Protection Agency to issue permits for discharges to surface waters under the NPDES Program. Permits for discharges to groundwaters are issued by DEP based on Florida law and rules. Wastewater discharge permits establish specific limitations and requirements based on the location and type of facility or activity releasing industrial or domestic wastewater from a point source. In areas with an adopted, nutrient-related BMAP prior to July 1, 2023, section 403.086, F.S., requires any facility discharging to a waterbody to upgrade to advanced waste treatment (AWT) by January 1, 2033. Further, waterbodies determined not to be attaining nutrient or nutrient-related standards after July 1, 2023, or subject to a BMAP or reasonable assurance plan (RAP) after July 1, 2023, have 10 years to provide AWT after such determination or adoption.

The nitrogen and phosphorus effluent limits set forth in **Table 13** and **Table 14** will be applied as an annual average, taken at end of pipe before any land disposal (or other authorized compliance point), to all new and existing WWTFs with a DEP-permitted discharge or disposal area within this BMAP. DEP will evaluate the need for more stringent nutrient effluent limits as appropriate.

Short-term or intermittent discharges are not significant sources of TN or TP in the LOW, and are not subject to the limits in **Table 13** and **Table 14**. Intermittent, rainfall-driven, diffuse overflow releases of wastewater from ponds or basins designed to hold precipitation from a 25-year**,** 24-hour rainfall event or less frequent rainfall event and that infrequently reaches surface waters are considered insignificant sources of TN and TP. The owners or operators of cooling pond reservoirs must operate each spillway gate either during regular operation or on a test basis to protect the structural integrity of the reservoir. Because of the short duration and low volume of wastewater released during spillway gate testing, releases either on an annual or semi-annual basis are considered insignificant sources of TN and TP.

Table 13. Nitrogen effluent limits for WWTFs

mgd = Million gallons per day
mg/L = milligrams per liter

Facility Capacity (mgd)	Surface Water Discharges (mg/L)	WWTFs Listed in Appendix D (mg/L)	WWTFs Not Listed in Appendix D – Rapid Rate Land Application Effluent Disposal System (mg/L)	WWTFs Not Listed in Appendix D – All Other Disposal Methods, Including Reuse (mg/L)
Greater than or equal to 0.5	3	3	3	10
Less than 0.5 and greater than or equal to 0.01	3	3	6	10
Less than 0.01	3	Not applicable (NA)	10	10

Table 14. Phosphorus effluent limits for WWTFs

mgd = Million gallons per day
mg/L = milligrams per liter

Facility Capacity (mgd)	Surface Water Discharges (mg/L)	WWTFs Listed in Appendix D (mg/L)	WWTFs Not Listed in Appendix D – Rapid Rate Land Application Effluent Disposal System (mg/L)	WWTFs Not Listed in Appendix D – All Other Disposal Methods, Including Reuse (mg/L)
Greater than or equal to 0.5	1	1	1	6
Less than 0.5 and greater than or equal to 0.01	1	1	3	6
Less than 0.01	1	NA	6	6

Where the law does not provide for a compliance timeframe, new effluent standards will take effect at the time of permit renewal or no later than five years after BMAP adoption, whichever is sooner.

Additionally, new and existing wastewater permits in the BMAP area must require at least quarterly sampling of the effluent discharge for TN and TP and report these sampling results in the discharge monitoring reports submitted to DEP.

In 2021, subsection 403.064(16), F.S., was amended where domestic wastewater utilities that dispose of effluent, reclaimed water, or reuse water by surface water discharge were required to submit for DEP review and approval, a plan for eliminating non-beneficial surface water discharge by January 1, 2032. A utility must fully implement the approved plan by January 1, 2032. If a plan was not timely submitted or approved by DEP, the utility's domestic WWTFs may not dispose of effluent, reclaimed water, or reuse water by surface water discharge after January 1, 2028. Violations are subject to administrative and civil penalties pursuant to sections 403.121, 403.131 and 403.141, F.S.

2.3.3.2. Reclaimed Water Effluent Limits

In accordance with section 403.086. F.S., by July 1, 2034, any WWTF providing reclaimed water that will be used for commercial or residential irrigation or be otherwise land applied within a nutrient BMAP or RAP area is required to meet AWT standards for TN and TP such that the reclaimed water product contains not more, on a permitted annual average basis, of 3 mg/L of TN and 1 mg/L of TP. DEP has determined that the use of reclaimed water is causing or contributing to the nutrient impairments being addressed in this BMAP area. These requirements do not apply to reclaimed water that is land applied as part of a water quality restoration project or water resource development project approved by DEP to meet a TMDL or minimum flow or level and where the TN and TP will be at or below AWT standards prior to entering groundwater or surface water.

DEP has determined that certain WWTFs providing reclaimed water for the purpose of commercial or residential irrigation or that is otherwise being land applied within this BMAP area are causing or contributing to the nutrient impairments being addressed in this BMAP. Based on DEP's determination, these facilities are identified in **Appendix D** are subject to the

nitrogen and phosphorus limits set forth in section 403.086, F.S. The facilities listed in **Appendix D** have 10 years from BMAP adoption to meet the applicable AWT standards. This requirement does not prevent the department from requiring an alternative treatment standard, if the department determines the alternative standard is necessary to achieve the TMDL(s) or applicable water quality criteria. For facilities that did not have adequate information to complete an evaluation or where a change occurs to the facility's application of reclaimed water after the initial evaluation (e.g. increase in facility capacity or change in location of reclaimed water application), the department will evaluate the land application of reclaimed water as more information becomes available pursuant to section 403.086, F.S.

All new permitted facilities providing reclaimed water that will be used for commercial or residential irrigation or be otherwise land applied in the BMAP, are required to meet AWT standards for TN and TP in accordance with section 403.086, F.S.

2.3.3.3. WWTF Plans

Subparagraph 403.067(7)(a)9., F.S., requires local governments within a BMAP to develop WWTF plans to be adopted as part of nutrient BMAPs no later than July 1, 2025, if DEP identifies domestic wastewater as contributors of at least 20% of point source or nonpoint source nutrient pollution or if DEP determines remediation is necessary to achieve the TMDL. The WWTF plans must be developed by each local government in cooperation with DEP, WMDs, and public and private domestic WWTFs within the jurisdiction of the local government. Each local government's wastewater treatment plan for this BMAP must contain the information outlined in Final Order 23-0119 for each existing or proposed domestic wastewater facility in the local government's jurisdiction.

Subparagraph 403.067(7)(a)9., F.S., was amended in 2024 to clarify that private domestic wastewater facilities must provide this information to local governments effective July 1, 2024. Information related to private facilities will need to be included in future local government WWTF plans if not captured in the initial plans.

2.3.3.4. Connection to Sewer

The installation of new OSTDS within a BMAP area is prohibited where connection to sewer lines is available. For existing OSTDS, the owner must connect to sewer within 365 days of written notification by the utility that connection to its sewer line is available. A utility is statutorily required (section 381.00655, F.S.) to provide written notice to existing OSTDS owners regarding the availability of sewer lines for connection. Additionally, existing OSTDS needing repair or modification must connect to available sewer lines within 90 days of notification by DEP.

To facilitate an inventory of noncompliant properties, by February 2, 2026, and every two years thereafter, each utility with sewer lines in the BMAP shall provide DEP a list of properties with existing OSTDS where sewer is available but has not connected. For each identified property,

include the date(s) which the utility provided written notice to the owners of the availability of sewer.

2.3.4. OSTDS

Beginning July 1, 2023, section 403.067, F.S., prohibits any new conventional OSTDS serving a lot of one acre or less where central sewer is available. Within all BMAP areas, if central sewer is unavailable, then the owner must install a DEP-approved enhanced nutrient-reducing OSTDS that achieves 65% nitrogen reduction, or other wastewater system that achieves 65% reduction.

2.3.4.1. BMAP OSTDS Remediation Plan

This BMAP contains a remediation plan for OSTDS consisting of management actions, including those described in **Chapter 3** and updated annually through the statewide reporting process, that reduce loads from existing OSTDS through either sewer connection, adding enhancement nitrogen treatment to OSTDS, or installing another type of wastewater system on the property, as applicable.

Subparagraph 403.067(7)(a)9.b., F.S., also requires local governments within a BMAP to develop an OSTDS remediation plan to be adopted as part of the BMAP no later than July 1, 2025, if DEP identifies OSTDS as contributors of at least 20% of point source or nonpoint source nutrient pollution or if DEP determines remediation is necessary to achieve the TMDL. When applicable, the OSTDS remediation plans must be developed by each local government in cooperation with DEP, WMDs, and public and private domestic wastewater facilities. Each OSTDS remediation plan for this BMAP must contain the information outlined in DEP Final Order 23-0119. Stakeholders submit projects describing how OSTDS loads are addressed as part of BMAP reporting and estimate the load reductions associated with each project. The estimated reductions to the basin from addressing these OSTDS will be based on several factors, including location, how they are addressed, and the amount of attenuation that occurs.

2.3.4.2. Local Government Ordinances

Local governments may have existing ordinances or could adopt new ordinances that add additional requirements for enhancement of OSTDS. To expedite remediation of wastewater sources and to facilitate achievement of assigned milestones in this BMAP, DEP encourages local governments to adopt such ordinances.

2.4. TRA Approach

To better prioritize and focus resources to most efficiently achieve restoration in the LOW, DEP developed the TRA approach. This approach uses measured data collected throughout the watershed to evaluate TP and TN concentrations, as well as flow, in the basins in each of the LOW subwatersheds. The measured nutrient concentrations were compared with selected benchmarks to identify those basins that should be the highest priority for restoration. This advisory process is not intended to be a management strategy under Chapter 403.067, F.S. The

benchmarks are not intended to measure progress towards restoration; they were only used to prioritize resources.

Chapter 3 summarizes the results of the TRA evaluation process for the basins in each subwatershed of the LOW. For each basin, a priority was assigned based on the TP concentration, TN concentrations, and flows. These priorities were set to help focus resources and projects in the basins that are in most need of improvement. Stations were selected for each basin that best represent the nutrient concentration from that basin. Each representative station must have at least one data point from each of the five years used in the TRA assessment to be considered sufficient for use. Basins were assessed and prioritized as follows (see **Figure 6**):

1. **Assess the five-year average concentration at representative stations and compare with the numeric nutrient criteria (NNC) benchmark:**
    a. Priority 1: Concentration is two times greater than the NNC.
    b. Priority 2: Concentration is greater than the NNC but less than two times the NNC.
    c. Priority 3: Concentration is less than or equal to the NNC.
2. **Assess the 5-year average flow weight mean (FWM) concentration and compare with the NNC benchmark. This step is weighted above Step 1; therefore, the results for the FWM concentrations would supersede the priorities from Step 1:**
    a. Priority 1: FWM concentration is two times greater than the NNC.
    b. Priority 2: FWM concentration is greater than the NNC but less than two times the NNC.
    c. Priority 3: FWM concentration is less than or equal to the NNC.
3. **Assess the attenuated unit area load (UAL), which is the average load per acre in each subwatershed from the LET, and compare it with the subwatershed UAL calculated target (derived from the loading in the final *2025 SFER – Volume I, Chapter 8B*. and the subwatershed targets described in Section 4.3). This step is weighted above Step 2 where data are available; therefore, results would increase or decrease the priority accordingly:**
    a. Priority increases: UAL is greater than 50% above the subwatershed target UAL.
    b. Priority decreases: UAL is less than the subwatershed target UAL.
    c. Priority remains unchanged: UAL is above the subwatershed target UAL, but less than 50%.
4. **Assess the water quality trends from the water quality analysis for statistical significance (as described in the 5-Year Review). This step is weighted above Step 3**

where data are available; therefore, the results would increase or decrease the priority accordingly:

a. Priority increases: Trend is significantly increasing.

b. Priority decreases: Trend is significantly decreasing.

c. Priority remains unchanged: No significant trend is detected.

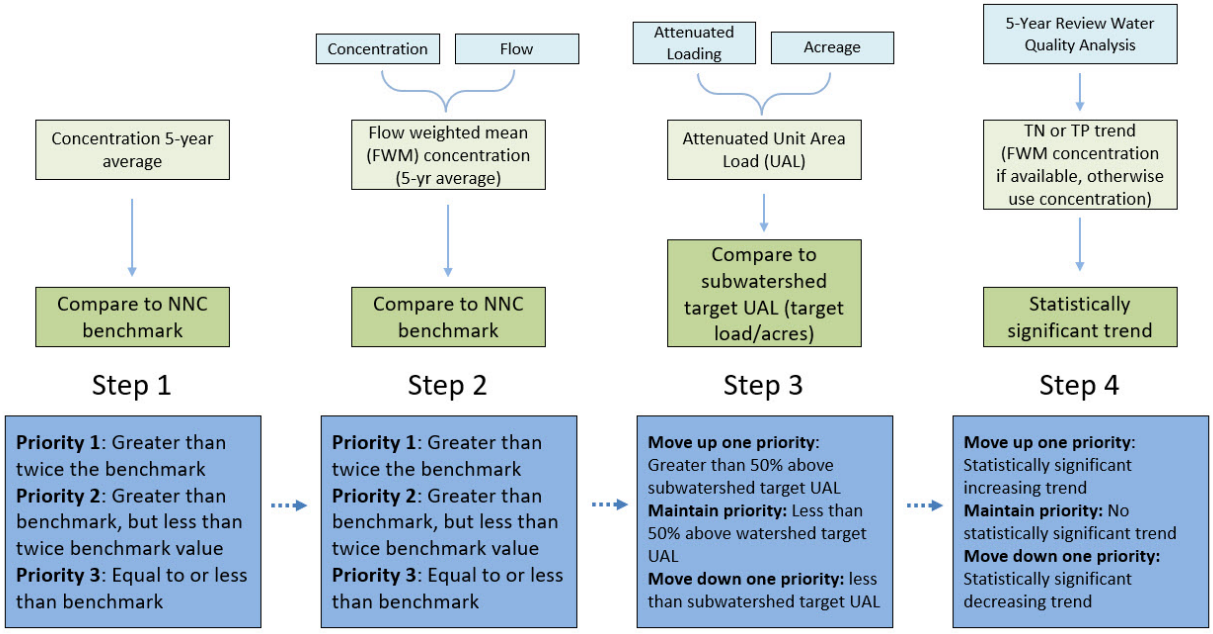

Figure 6. Summary of the TRA prioritization process

2.5. Hot Spot Analysis

To better prioritize and focus resources to most efficiently achieve restoration in the Lake Okeechobee BMAP, DEP developed the hot spot analysis approach. This approach uses measured data collected throughout the watershed to evaluate TN and TP concentrations. This process is not intended to be a management strategy under Chapter 403.067, F.S. The benchmarks are not intended to measure progress towards restoration or compliance; they will only be used to prioritize resources.

The measured nutrient concentrations were compared with selected benchmarks to identify areas that should be the highest priority for restoration. Four statistics are calculated for the whole BMAP and are used to compare against each station average: TN or TP concentration average, TN or TP 90th percentile, TN or TP standard deviation, and TN or TP percent frequency of samples over the BMAP threshold. Stations are assigned a rank of 0, 1, or 2 for each category, as shown in **Figure 7**. The scores for each category are summed by station to determine an overall rank. **Chapter 3** summarizes the results of the hot spot analysis for the basins in each Lake Okeechobee subwatershed.

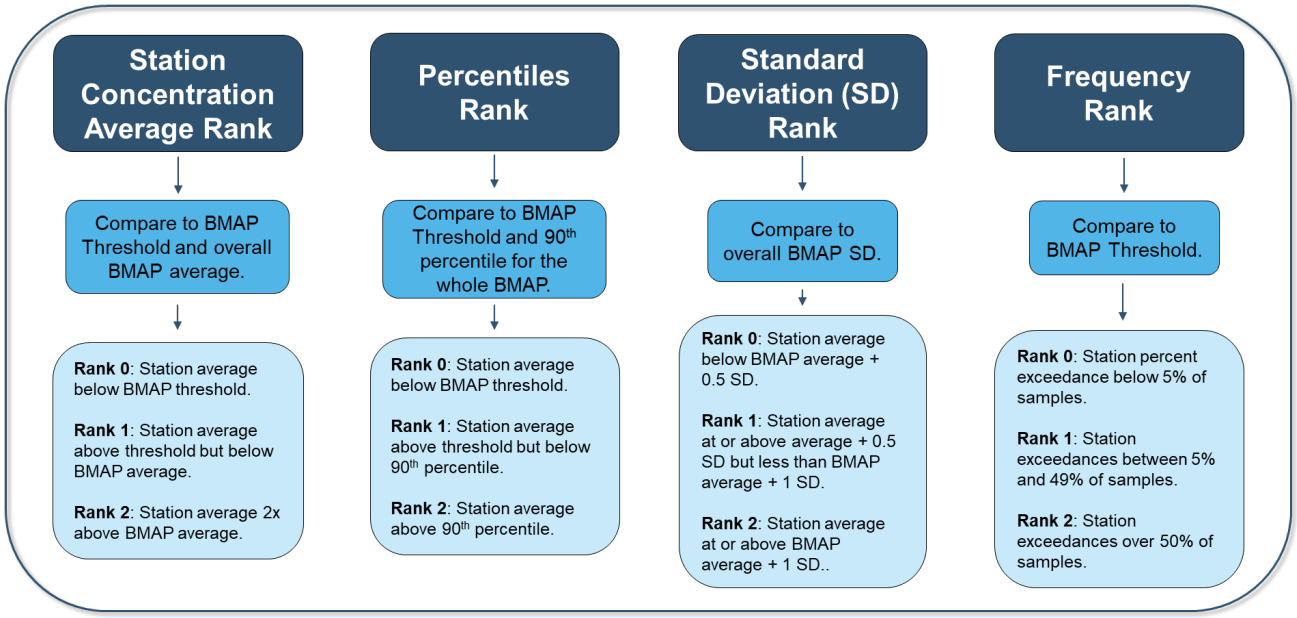

Figure 7. Summary of hot spot analysis approach

2.6. Water Quality Monitoring Plan

The BMAP monitoring network provides information to help track BMAP progress and better focus management efforts.

2.6.1. Objectives and Parameters

The Lake Okeechobee BMAP monitoring plan was designed to enhance the understanding of basin loads, identify areas with high nutrient concentrations, and track water quality trends. The information gathered through the monitoring plan measures progress toward achieving the TMDLs and provides a better understanding of watershed loading. The BMAP monitoring plan consists of ambient water quality sampling, sampling at discharge structures, and flow monitoring. In addition, information on water quality throughout the watershed and within the estuary can be found in the latest SFER, published annually by SFWMD.

Focused objectives are critical for a monitoring strategy to provide the information needed to evaluate implementation success. The primary and secondary objectives of the monitoring strategy for the LOW, described below, are used to evaluate the success of the BMAP, help interpret the data collected, and provide information for potential future refinements of the BMAP.

Primary Objective

- To continue to track trends in TP loads and concentrations by subwatershed and basin.

Secondary Objectives

- To continue to track trends in TN loads and concentrations by subwatershed and basin.
- To continue to identify areas in the watershed with elevated TP and TN loading to better focus management efforts.
- To continue to measure the effectiveness of individual or collective projects in reaching TMDL target-pollutant loadings.

To achieve the objectives above, the monitoring strategy focuses on the following suggested parameters:

- Alkalinity.
- Ammonia (N).
- Biochemical Oxygen Demand.
- Carbon – Organic.
- Carbon – Total.
- Chlorophyll a.
- Color.
- Dissolved Oxygen.
- Dissolved Oxygen Saturation.
- Flow.
- Nitrate-Nitrite (N).
- Nitrogen – Total Kjeldahl.
- Nitrogen – Total.
- Orthophosphate (P)
- pH.
- Phosphorus – Total.
- Specific Conductance/ Salinity.
- Temperature, Water.
- Total Suspended Solids.
- Turbidity.

2.6.2. Monitoring Network

The monitoring network comprises a tiered system for the sampling stations, as follows:

- **Tier 1** stations are the primary/priority stations used in periodic water quality analyses to track BMAP progress and water quality trends over the long term in the basin. Tier 1 stations consist of only SFWMD water control structure stations that measure water quality and flow at each station. These stations will be used to calculate annual TP and TN loads for each subwatershed or basin.

- **Tier 2** stations will provide secondary information that can be used to help focus and adaptively manage implementation efforts. These include SFWMD ambient stations, which are mostly open-water stations, and do not record flow data. Tier 2 also includes the monitoring associated with the Lake Tohopekaliga Nutrient Reduction Plan (NRP) (CDM 2011).

- **Tier 3** consists of U.S. Geological Survey (USGS) gauges where flow and/or stage are monitored.

Figure 8 shows the stations included in each of these tiers. In addition to monitoring throughout the LOW, various agencies also sample stations in Lake Okeechobee.

SFWMD plans to relocate seven monitoring stations in the next WY (starting May 1, 2025) to better capture conditions. The changes will be made to one station in the Upper Kissimmee subwatershed, three stations in the Indian Prairie subwatershed, and three stations in the Taylor Creek/Nubbin Slough subwatershed. **Chapter 3** includes additional information about the BMAP monitoring network, including these modifications, and stations used in the TRA process.

2.6.3. Data Management and Quality Assurance/Quality Control

BMAP data providers have agreed to upload ambient water quality data at least once every six months on the completion of the appropriate quality assurance and quality control checks. Data must be collected following DEP standard operating procedures, and the results must be analyzed by a National Environmental Laboratory Accreditation Program–certified laboratory.

In addition to ambient water quality data, flow data are used to track loading trends for the BMAP. Data collected by USGS are available through its website, and some flow data are also available through the SFWMD corporate environmental database, DBHYDRO.

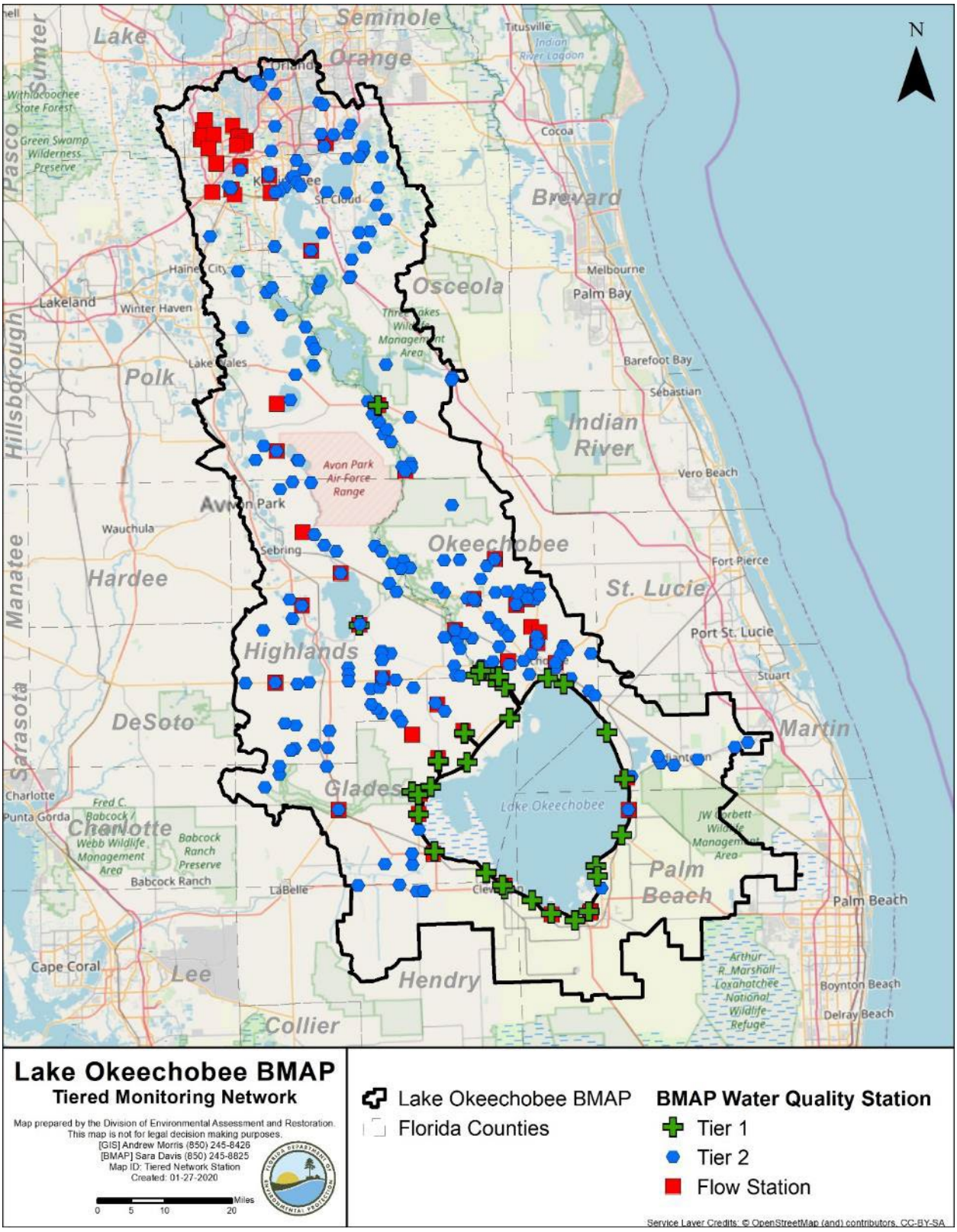

Figure 8. Lake Okeechobee BMAP monitoring network

Chapter 3. Subwatersheds

Section 3.1 through **Section 3.10** provide specific information on the nine subwatersheds and within the LOW. The land use summaries are based on the 2009 land use in WAM, and **Appendix B** provides additional details on agricultural land uses. Monitoring network stations in the subwatershed or the lake are provided along with designations for the basin where the station is located, monitoring entity, BMAP monitoring network tier, whether the station is a representative site for the TRA approach discussed in **Section 2.4**, and whether additional data are needed for the TRA approach in that basin or at that station. The TN, TP, and flow priority results of the TRA evaluation are provided for basins in each subwatershed.

Finally, all projects identified as part of this BMAP update are provided by subwatershed. The table of existing and planned projects lists those projects submitted by stakeholders to help meet their obligations under the BMAP. Stakeholders have identified future projects to help meet the remaining reductions needed; however, many of these projects are conceptual, in early design stages, or have not been fully funded. Information in the tables was provided by the lead entity and is subject to change as the project develops and more information becomes available.

DEP will also be monitoring and working to achieve the subwatershed targets identified in **Table 15.** Load reductions and targets by subwatershed. DEP will use this information to identify problem areas and sources that are not meeting the target, acknowledge them through annual reporting and public engagement, and focus resources accordingly (i.e., regulatory programs through permitting decisions, compliance and enforcement, and nutrient reduction projects).

Table 15. Load reductions and targets by subwatershed

Subwatershed	WY2020–WY2024 TP Load (mt/yr)	% Contribution of Load	TP Load Required Reduction (mt/yr)	TP Target (mt/yr)
Fisheating Creek	38.6	11.1	27.0	11.6
Indian Prairie	50.7	14.6	35.4	15.3
Lake Istokpoga	34.6	9.9	24.2	10.4
Lower Kissimmee	81.6	23.4	57.0	24.6
Taylor Creek/Nubbin Slough	53.1	15.2	37.1	16.0
Upper Kissimmee	72.5	20.8	50.7	21.8
East Lake Okeechobee	13.7	3.9	9.6	4.1
South Lake Okeechobee	3.6	1.0	2.5	1.1
West Lake Okeechobee	0.0	0.0	0.0	0.0
Total	**348.4**	**100.0**	**243.4**	**105.0**

3.1. Fisheating Creek Subwatershed

The Fisheating Creek subwatershed covers more than 318,000 acres of the LOW and comprises 2 basins. As shown in **Table 16**, agriculture makes up the majority of the subwatershed with 54.7% of the area, followed by wetlands with 23.8%. Stakeholders in the Fisheating Creek subwatershed are Glades County and Highlands County.

Table 16. Summary of land uses in the Fisheating Creek subwatershed

Level 1 Land Use Code	Land Use Description	Acres	% Total
1000	Urban and Built-Up	5,581	1.8
2000	Agriculture	174,019	54.7
3000	Upland Nonforested	14,163	4.5
4000	Upland Forests	45,809	14.4
5000	Water	1,050	0.3
6000	Wetlands	75,623	23.8
7000	Barren Land	1,025	0.3
8000	Transportation, Communication, and Utilities	774	0.2
-	**Total**	**318,044**	**100.0**

3.1.1. Water Quality Monitoring

In the Fisheating Creek subwatershed, the BMAP monitoring network includes water quality stations in both of the basins. **Table 17** summarizes the water quality monitoring stations in the subwatershed, and **Figure 9** shows the station locations.

Table 17. Water quality monitoring stations in the Fisheating Creek subwatershed

[1] Water quality data are collected by SFWMD and flow data are collected by USGS at these stations.

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
Fisheating Creek/L-61	No	SFWMD	L61W	1	NA
Fisheating Creek/L-61	Yes	SFWMD	FECSR78	1	Sufficient TN and TP data
Nicodemus Slough North	Yes	SFWMD	CULV5	1	Sufficient TN and TP data
Fisheating Creek/L-61	No	SFWMD/ USGS	02255600[1]	2	NA
Fisheating Creek/L-61	No	SFWMD/ USGS	02256500[1]	2	NA
Fisheating Creek/L-61	No	SFWMD	BH04392912	2	NA
Fisheating Creek/L-61	No	SFWMD	BH32382914	2	NA
Fisheating Creek/L-61	No	SFWMD	FE03382911	2	NA
Fisheating Creek/L-61	No	SFWMD	FE20393013	2	NA
Fisheating Creek/L-61	No	SFWMD	FE21392913	2	NA
Fisheating Creek/L-61	No	SFWMD	FE21392914	2	NA
Fisheating Creek/L-61	No	SFWMD	FE26362812	2	NA
Fisheating Creek/L-61	No	SFWMD	FE29403212	2	NA
Fisheating Creek/L-61	No	SFWMD	FE32372814	2	NA
Fisheating Creek/L-61	No	SFWMD	GA09393011	2	NA
Fisheating Creek/L-61	No	SFWMD	GG05403011	2	NA
Fisheating Creek/L-61	No	SFWMD	GT07402911	2	NA
Fisheating Creek/L-61	No	SFWMD	HS06402911	2	NA
Fisheating Creek/L-61	No	SFWMD	PB24392912	2	NA
Fisheating Creek/L-61	No	SFWMD	RS23402811	2	NA
Fisheating Creek/L-61	No	USGS	02255600[1]	3	NA
Fisheating Creek/L-61	No	USGS	02256500[1]	3	NA
Fisheating Creek/L-61	No	USGS	02257000	3	NA
Nicodemus Slough North	No	U.S. Army Corps of Engineers	CULV5	3	NA

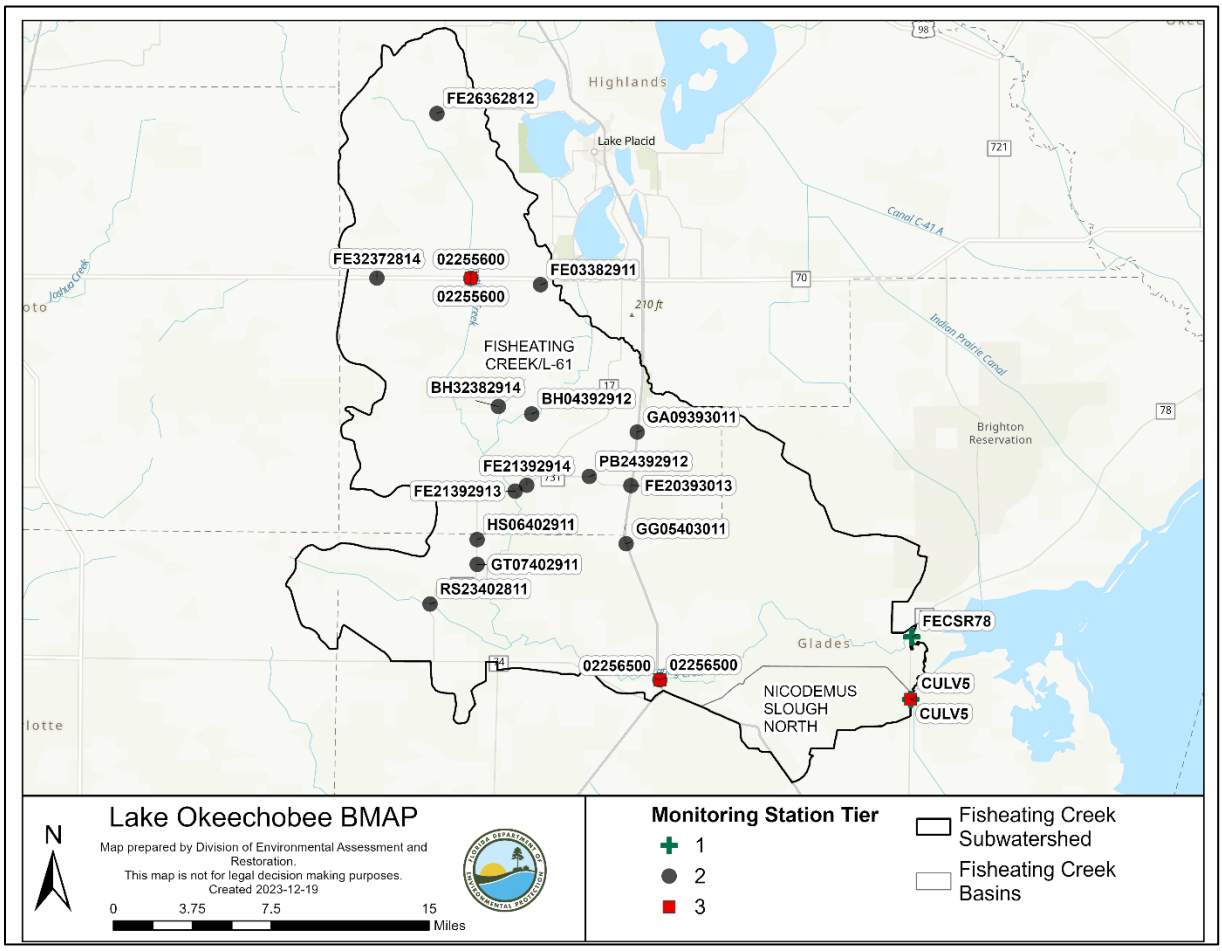

Figure 9. Locations of the water quality monitoring stations in the Fisheating Creek subwatershed

3.1.2. Basin Evaluation Results

3.1.2.1. TRA Evaluation

The current TP load based on data from WY2020–WY2024 for the Fisheating Creek subwatershed is 38.6 mt/yr. A reduction of 27.0 mt/yr is required to help achieve the TMDL and meet the subwatershed target of 11.6 mt/yr.

Table 18 summarizes the basin evaluation results for the Fisheating Creek subwatershed. Both basins in the subwatershed have TN concentrations greater than the benchmark. The Fisheating Creek/L-61 basin also has TP concentrations above the benchmark. **Table 19** lists the TRA prioritization results for the Fisheating Creek subwatershed, with 1 the highest priority, 2 the next highest priority, and 3 a priority as resources allow.

3.1.2.2. Hot Spot Analysis

Table 20 summarizes the hot spot analysis results using WY2019–WY2023 data. To be included in the analysis, each station must have at least four samples per year and at least two years of data. This analysis will be run, as needed, and the results will be shared at annual meetings.

Table 18. Basin evaluation results for the Fisheating Creek subwatershed

Insufficient data = Available data were not at the frequency needed for evaluation.

TRA ID	Basin Name	TN (mg/L) (Benchmark – 1.54)	TN 5-year Average FWM Concentration (mg/L)	TN UAL, pounds per acre (lbs/ac)	TN Trend Analysis	TP (mg/L) (Benchmark – 0.12)	TP 5-year Average FWM Concentration (mg/L)	TP UAL (lbs/ac)	TP Trend Analysis
3	Nicodemus Slough North	1.69	No flow	No flow	No Significant Trend	0.08	No flow	No flow	No Significant Trend
4	Fisheating Creek/L-61	1.70	1.76	2.94	No Significant Trend	0.13	0.17	0.29	No Significant Trend

Table 19. TRA evaluation results for the Fisheating Creek subwatershed

Basin	Station	TN Priority	TP Priority
Nicodemus Slough North	CULV5	2	3
Fisheating Creek/L-61	FECSR78	1	1

Table 20. Hot spot analysis results for the Fisheating Creek subwatershed

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
Fisheating Creek/L-61	PB24392912	2	1	1	2	6	0	0	0	1	1
Fisheating Creek/L-61	BH04392912	1	1	0	2	4	1	1	0	2	4
Fisheating Creek/L-61	2256500	1	1	0	2	4	1	1	0	2	4
Fisheating Creek/L-61	2255600	1	1	0	2	4	1	1	1	2	5
Fisheating Creek/L-61	HS06402911	1	1	0	2	4	1	1	0	2	4

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
Fisheating Creek/L-61	FE29403212	1	1	0	2	4	1	1	0	2	4
Fisheating Creek/L-61	FE03382911	2	2	2	2	8	1	2	2	2	7
Fisheating Creek/L-61	FE20393013	2	2	2	2	8	0	0	0	1	1
Fisheating Creek/L-61	FE21392913	1	1	0	2	4	1	1	0	2	4
Fisheating Creek/L-61	FE21392914	1	1	1	2	5	1	1	0	1	3
Fisheating Creek/L-61	FE26362812	1	1	0	2	4	1	1	0	2	4
Fisheating Creek/L-61	FE32372814	1	1	0	2	4	1	1	0	2	4
Fisheating Creek/L-61	FECSR78	1	1	0	2	4	1	1	0	2	4
Fisheating Creek/L-61	GA09393011	2	2	1	2	7	0	0	0	1	1
Fisheating Creek/L-61	GG05403011	2	2	2	2	8	1	2	2	2	7
Nicodemus Slough North	CULV5	1	1	0	2	4	1	1	0	2	4

3.1.3. Projects

Table 21 summarizes the existing and planned projects for the Fisheating Creek subwatershed that were provided for the BMAP. The existing and planned projects are a BMAP requirement.

Table 21. Existing and planned projects in the Fisheating Creek subwatershed

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3637	FDACS	FDACS-04	Fisheating Creek	Floating aquatic vegetation treatment (FAVT).	Floating Islands/ Managed Aquatic Plant Systems (MAPS)	Completed	2016	10,243	1,982	$3,311,070.00
3500	FDACS	FDACS-07	BMP Implementation and Verification	Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WAM. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X.	Agricultural BMPs	Ongoing	NA	75,009	8,064	NA
4882	FDACS	FDACS-16	Cost-Share BMP Projects	Cost-share projects paid for by FDACS. Acres treated based on FDACS OAWP June 2019 Enrollment. Reductions estimated by DEP using 2019 BMAP LET.	Agricultural BMPs	Ongoing	NA	41,710	6,868	To be determined (TBD)
3665	FDACS - Coordinating Agency	CA-06	Legislative Cost-Share Appropriation Program (Dairy Projects)	There are no Legislative Cost-Share Appropriation Program Dairy Projects to date in Fisheating Creek.	Agricultural BMPs	Planned	TBD	NA	NA	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
5406	FDOT District 1	FDOT1-04	Street Sweeping	Street sweeping.	Street Sweeping	Ongoing	NA	154	174	TBD
3683	Glades County	GC-01	Education and Outreach	Florida Yards and Neighborhoods (FYN); landscaping, irrigation, and fertilizer ordinances; public service announcements (PSAs), pamphlets, website, and illicit discharge program.	Education Efforts	Ongoing	NA	362	16	TBD
3685	Highlands County	HC-01	Education and Outreach	FYN, landscaping and irrigation ordinances, PSAs, and pamphlets.	Education Efforts	Ongoing	NA	2,056	50	NA
3586	SFWMD	SFWMD-18	XL Ranch (Lightsey)	A 765-acre water storage area through above ground impoundment and pasture; estimated annual storage is 1,642 acre-feet (ac-ft).	Dispersed Water Management (DWM)	Completed	2012	NA	278	$2,945,500.00
3588	SFWMD	SFWMD-20	Llano Ranches (formerly La Hamaca & Blue Head Ranch)	A 3,507-acre project area of water storage through pasture; estimated annual storage is 2,671 ac-ft.	DWM	Completed	2017	NA	1,868	$3,655,722.00
3589	SFWMD	SFWMD-21	Nicodemus Slough	Public-private partnership project that pumps water from Lake Okeechobee and provides an estimated 24,600 ac-ft of storage in above ground impoundments and pasture.	DWM	Completed	2015	24,736	19,674	$64,514,150.59

3.2. Indian Prairie Subwatershed

The Indian Prairie subwatershed covers more than 276,500 acres of the LOW and is made up of 11 basins. As shown in **Table 22**, agriculture makes up the largest portion of the subwatershed, with 79.9% of the area, followed by wetlands with 12.1%. Stakeholders in the Indian Prairie subwatershed are Glades County, Highlands County, and IMWID.

Table 22. Summary of land uses in the Indian Prairie subwatershed

Level 1 Land Use Code	Land Use Description	Acres	% Total
1000	Urban and Built-Up	5,201	1.9
2000	Agriculture	220,921	79.9
3000	Upland Nonforested	5,677	2.1
4000	Upland Forests	3,776	1.4
5000	Water	3,588	1.3
6000	Wetlands	33,602	12.1
7000	Barren Land	3,663	1.3
8000	Transportation, Communication, and Utilities	150	0.1
-	**Total**	**276,578**	**100.0**

3.2.1. Water Quality Monitoring

In the Indian Prairie subwatershed, the BMAP monitoring network includes water quality stations in all 11 of the basins. **Table 23** summarizes the water quality monitoring stations in the subwatershed, and **Figure 10** shows the station locations. **Table 23** also includes indications of which stations have recently been added as part of SFWMD expanded monitoring and recommendations to change the location, frequency, or parameters sampled for the station to better align with the BMAP.

Table 23. Water quality monitoring stations in the Indian Prairie subwatershed

[1] Water quality data are collected by SFWMD and flow data are collected by USGS at these stations

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
C-40	Yes	SFWMD	S72	1	Sufficient TN and TP data
C-41	Yes	SFWMD	S71	1	Sufficient TN and TP data
C-41A	Yes	SFWMD	S84	1	Sufficient TN and TP data
L-48	Yes	SFWMD	S127	1	Sufficient TN and TP data
L-49	Yes	SFWMD	S129	1	Sufficient TN and TP data
L-59E	No	SFWMD	C38W	1	NA
L-59E	Yes	SFWMD	L59E	1	Sufficient TN and TP data
L-59W	No	SFWMD	G208	1	NA
L-59W	Yes	SFWMD	L59W	1	Sufficient TN and TP data
L-60E	Yes	SFWMD	L60E	1	Sufficient TN and TP data
L-60W	Yes	SFWMD	L60W	1	Sufficient TN and TP data
L-61E	Yes	SFWMD	L61E	1	Sufficient TN and TP data
S-131	Yes	SFWMD	S131	1	Sufficient TN and TP data
In canal to lake	No	SFWMD	G207	1	NA
C-40	No	SFWMD	IP09383232	2	NA
C-40	No	SFWMD	IP24383214	2	NA
C-40	No	SFWMD	IP29383313	2	NA

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
C-41	No	SFWMD	HP06393242	2	NA
C-41	No	SFWMD	HP11373132	2	NA
C-41	No	SFWMD	HP15373112	2	NA
C-41	No	SFWMD	HP22373112	2	NA
C-41	No	SFWMD	HP23373111	2	Only 4 samples in last 5 years; suggest moving to inactive HP16383121.
C-41	No	SFWMD	HP24373013	2	NA
C-41	No	SFWMD	HP25373013	2	NA
C-41	No	SFWMD	HP34373124	2	Only 1 sample in last 5 years; propose relocation to inactive station HP16383123.
C-41	No	SFWMD	HP35373113	2	Only 3 samples collected in last 5 years; propose moving to PC 49 with proposed station name HPPC49.
C-41	No	SFWMD	HP36373013	2	NA
C-41	No	SFWMD	02273230[1]	2	NA
C-41	No	SFWMD	HP09383151	2	NA
C-41	No	SFWMD	HP10383112	2	NA
C-41	No	SFWMD	HP21383121	2	NA
C-41	No	SFWMD	HP27383124	2	NA
C-41	No	SFWMD	HP28383112	2	NA
C-41	No	SFWMD	HP36383112	2	NA
C-41	No	SFWMD	IP01383122	2	NA
C-41A	No	SFWMD	SD28373312	2	NA
C-41A	No	SFWMD	SD33373314	2	NA
C-41A	No	SFWMD	SD34373313	2	NA
C-41A	No	SFWMD	SD13373111	2	NA
C-40	No	USGS	02258800	3	NA
C-40	No	USGS	02259100	3	NA
C-41	No	USGS	02257750	3	NA
C-41	No	USGS	02257790	3	NA
C-41	No	USGS	02273230	3	NA

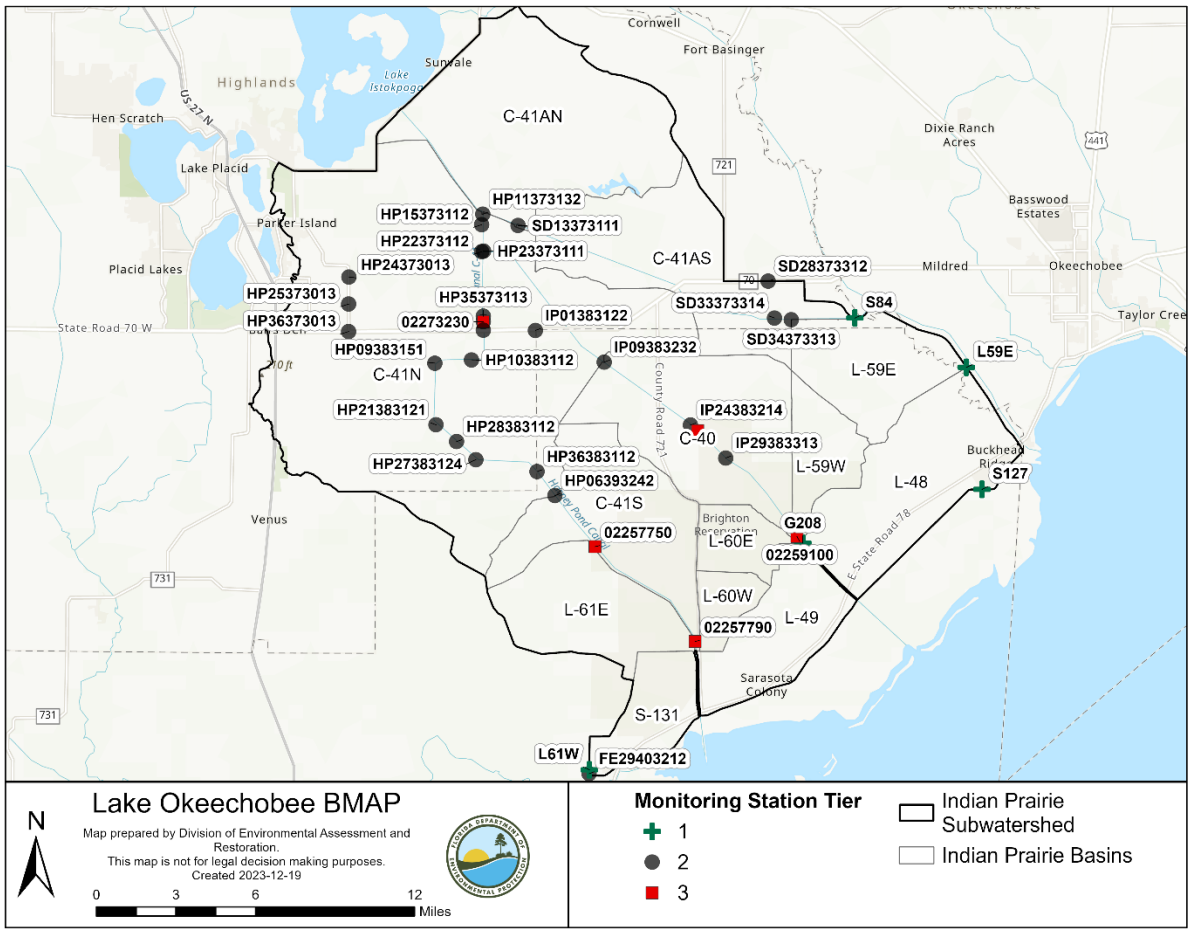

Figure 10. Locations of the water quality monitoring stations in the Indian Prairie subwatershed

3.2.2. Basin Evaluation Results

3.2.2.1. TRA Evaluation

The current TP load based on data from WY2020–WY2024 for the Indian Prairie subwatershed is 50.7 mt/yr. A reduction of 35.4 mt/yr is required to help achieve the TMDL and meet the subwatershed target of 15.3 mt/yr.

Table 24 summarizes the basin evaluation results for the subwatershed. The TN concentrations in basins C-40, C-41, L-48, L-59E, L-59W, L-60E, L-60W, and L-61E are greater than the benchmark, as are the TP concentrations in Basins C-40, C-41, L-48, L-59W, L-60E, and L-61E. **Table 25** lists the TRA prioritization results for the Indian Prairie Subwatershed, with 1 the highest priority, 2 the next highest priority, and 3 a priority as resources allow.

3.2.2.2. Hot Spot Analysis

Table 26 summarizes the hot spot analysis results using WY2019–WY2023 data. To be included in the analysis, each station must have at least four samples per year and at least two years of data. This analysis will be run, as needed, and the results will be shared at annual meetings.

Table 24. Basin evaluation results for the Indian Prairie subwatershed

Insufficient data = Available data were not at the frequency needed for evaluation.

TRA ID	Basin Name	TN (mg/L) (Benchmark – 1.54)	TN 5-year Average FWM Concentration (mg/L)	TN UAL (lbs/ac)	TN Trend Analysis	TP (mg/L) (Benchmark – 0.12)	TP 5-year Average FWM Concentration (mg/L)	TP UAL (lbs/ac)	TP Trend Analysis
5	L-60W	1.87	1.95	4.31	No Significant Trend	0.12	0.11	0.24	No Significant Trend
6	L-60E	1.70	2.04	4.30	No Significant Trend	0.14	0.21	0.44	Significant Decreasing
7	L-59W	1.69	1.90	3.63	No Significant Trend	0.14	0.17	0.33	Significant Decreasing
8	C-40	1.82	1.74	5.51	No Significant Trend	0.14	0.19	0.60	Significant Decreasing
9	S-131	1.45	1.42	3.87	No Significant Trend	0.10	0.10	0.27	No Significant Trend
10	L-49	1.43	1.47	3.27	No Significant Trend	0.05	0.04	0.09	No Significant Trend
11	L-48	1.93	2.01	2.95	No Significant Trend	0.14	0.15	0.22	No Significant Trend
12	L-61E	2.01	Unknown	2.1	No Significant Trend	0.14	Unknown	0.43	No Significant Trend
13	C-41A	1.40	1.80	8.78	No Significant Trend	0.08	0.36	0.71	No Significant Trend
14	C-41	2.47	2.52	2.28	No Significant Trend	0.19	0.36	0.32	No Significant Trend
15	L-59E	1.83	2.62	1.63	Significant Decreasing	0.10	0.23	0.14	Significant Decreasing

Table 25. TRA evaluation results for the Indian Prairie subwatershed

Basin	Station	TN Priority	TP Priority
C-40	S72	1	2
C-41	S71	1	1
C-41A	S84	1	1
L-48	S127	1	1
L-49	S129	2	3
L-59E	L59E	2	3
L-59W	L59W	1	2
L-60E	L60E	1	2
L-60W	L60W	1	2
L-61E	L61E	1	1
S-131	S131	2	2

Table 26. Hot spot analysis results for the Indian Prairie subwatershed

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
C-40	S72	1	1	0	2	4	1	1	0	2	4
C-40	IP09383232	1	1	0	2	4	1	1	0	2	4
C-40	IP29383313	1	1	0	2	4	1	1	0	2	4
C-41	S71	1	1	0	2	4	1	1	1	2	5
C-41	HP06393242	1	1	0	2	4	1	2	2	2	7
C-41	HP24373013	2	2	2	2	8	0	0	0	1	1
C-41	HP25373013	1	1	0	2	4	0	0	0	1	1
C-41	HP11373132	1	1	0	2	4	0	0	0	1	1
C-41	2273230	1	1	0	2	4	1	1	1	2	5
C-41	HP27383134	1	1	0	2	4	1	2	2	2	7
C-41	HP09383151	1	1	0	2	4	1	2	2	2	7
C-41	HP10383112	1	1	0	2	4	1	2	2	2	7
C-41	HP15373112	1	1	0	2	4	1	2	2	2	7
C-41	HP21383121	2	1	1	2	6	2	2	2	2	8
C-41	HP22373112	1	1	0	2	4	1	1	0	2	4
C-41	HP27383124	1	1	0	2	4	2	2	2	2	8
C-41	HP28383112	1	1	0	2	4	1	2	2	2	7
C-41	IP01383122	1	1	0	2	4	1	1	0	2	4

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
C-41A	S84	1	1	0	2	4	0	0	0	1	1
C-41A	SD13373111	1	1	0	2	4	1	1	0	2	4
C-41A	SD28373312	2	2	1	2	7	1	1	1	2	5
C-41A	SD33373314	1	1	0	2	4	1	1	0	2	4
In canal to lake	G207	1	1	0	2	4	1	1	0	2	4
L-48	S127	1	1	0	2	4	1	1	0	2	4
L-49	S129	0	0	0	1	1	0	0	0	1	1
L-59E	L59E	1	1	0	2	4	1	1	0	2	4
L-59E	C38W	1	1	0	2	4	1	1	0	1	3
L-59W	L59W	1	1	0	2	4	1	1	0	2	4
L-59W	G208	1	1	0	2	4	1	1	0	2	4
L-60E	L60E	1	1	0	2	4	1	1	0	2	4
L-60W	L60W	1	1	0	2	4	1	1	0	2	4
L-61E	L61E	1	1	0	2	4	1	1	0	2	4

3.2.3. Projects

Table 27 summarizes the existing and planned projects for the Indian Prairie subwatershed that were provided for the BMAP. The existing and planned projects are a BMAP requirement.

Table 27. Existing and planned projects in the Indian Prairie subwatershed

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3522	FDACS	FDACS-08	BMP Implementation and Verification	Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WAM. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X.	Agricultural BMPs	Ongoing	NA	110,251	22,327	NA
4883	FDACS	FDACS-17	Cost-Share BMP Projects	Cost-share projects paid for by FDACS. Acres treated based on FDACS OAWP June 2019 Enrollment. Reductions estimated by DEP using 2019 BMAP LET.	Agricultural BMPs	Ongoing	NA	62,322	15,842	TBD
TBD	FDACS	FDACS-27	Turkey Branch	Dispersed water management project to store and treat water.	DWM	Planned	TBD	5,278	617	TBD
3673	FDACS - Coordinating Agency	CA-03	Inactive Dairies - Lagoon Remediation	There are no Lagoon Remediation projects to date in Indian Prairie.	Dairy Remediation	Planned	TBD	NA	NA	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3666	FDACS - Coordinating Agency	CA-07	Legislative Cost-Share Appropriation Program (Dairy Projects)	There are no Legislative Cost-Share Appropriation Program Dairy Projects to date in Indian Prairie.	Agricultural BMPs	Planned	TBD	NA	NA	NA
5407	FDOT District 1	FDOT1-05	Street Sweeping	Street sweeping.	Street Sweeping	Ongoing	NA	180	150	TBD
6267	FDOT District 1	FDOT1-09	State Road (SR) 25 (US 27) from S of SR 70 to N of SR 70 (439827-1)	Intersection improvements providing extra nutrient removal through treatment swales.	Grass swales with swale blocks or raised culverts	Completed	2024	13	0	TBD
3675	Glades County	GC-02	Education and Outreach	FYN; landscaping, irrigation, and fertilizer ordinances; PSAs, pamphlets, website, and illicit discharge program.	Education Efforts	Ongoing	NA	4,301	41	TBD
3677	Highlands County	HC-02	Education and Outreach	FYN, landscaping and irrigation ordinances, PSAs, and pamphlets.	Education Efforts	Ongoing	NA	1,980	68	NA
3684	IMWID	IMWID-01	IMWID Phase I (DWM Project in Two Phases)	Construct above ground impoundment with storage capacity of 950 acre-feet/year.	DWM	Completed	2020	NA	1,818	$15,437,146.00
3674	IMWID	IMWID-02	IMWID Phase II (DWM Project in Two Phases)	Construct above ground impoundment with storage capacity of 1,200 acre-feet/year.	DWM	Underway	2023	NA	2,459	$4,530,000.00
3630	SFWMD	SFWMD-10	West Waterhole	Project pumps excess water from the C-40 Canal for phosphorus removal via uptake in wetlands and associated marshes before discharge towards Lake Okeechobee.	DWM	Completed	2009	33,334	11,334	$12,324,693.99

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3591	SFWMD	SFWMD-12	Buck Island Ranch	Project comprises Buck Island Ranch, Water Management Area (WMA) Component 1, and WMA Component 2 (combined area of 1,573 acres); estimated annual storage is 2,193 ac-ft through pasture.	DWM	Completed	2015	NA	4,901	$8,112,079.00
3605	SFWMD	SFWMD-23	Buck Island Ranch WMA (NE PES-2)	See SFWMD-12.	DWM	Completed	2015	NA	NA	NA
3496	SFWMD - Coordinating Agency	CA-01	Brighton Valley DWM	This project pumps water from the C-41A Canal and treats an estimated 39,765 ac-ft of water per year via a flow-through system.	DWM	Completed	2020	37,917	6,843	$42,000,000.00

3.3. Lake Istokpoga Subwatershed

The Lake Istokpoga subwatershed covers more than 394,000 acres of the LOW and is made up of 4 basins. As shown in **Table 28**, agriculture covers 33.1% of the area, followed by urban and built-up with 16.5%. Stakeholders in the subwatershed are the City of Avon Park, City of Frostproof, City of Sebring, Highlands County, Polk County, SLID, Town of Hillcrest Heights, Town of Lake Placid, and Village of Highland Park.

Table 28. Summary of land uses in the Lake Istokpoga subwatershed

Level 1 Land Use Code	Land Use Description	Acres	% Total
1000	Urban and Built-Up	64,880	16.5
2000	Agriculture	130,399	33.1
3000	Upland Nonforested	27,597	7.0
4000	Upland Forests	44,330	11.2
5000	Water	58,141	14.7
6000	Wetlands	63,824	16.2
7000	Barren Land	563	0.1
8000	Transportation, Communication, and Utilities	4,472	1.1
-	**Total**	**394,206**	**100.0**

3.3.1. Water Quality Monitoring

In the Lake Istokpoga subwatershed, the BMAP monitoring network includes water quality stations in all four of the basins. **Table 29** summarizes the water quality monitoring stations in the subwatershed, and **Figure 11** shows the station locations. **Table 29** also includes indications of which stations have recently been added as part of SFWMD expanded monitoring and recommendations to change the location, frequency, or parameters sampled for the station to better align with the BMAP.

Table 29. Water quality monitoring stations in the Lake Istokpoga subwatershed

[1] Water quality data are collected by SFWMD and flow data are collected by the USGS at these stations

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
Lake Istokpoga	No	SFWMD	S68	1	NA
Arbuckle Creek	Yes	SFWMD	02270500 (30854)[1]	2	Sufficient TN and TP data
Arbuckle Creek	No	SFWMD	AB27343014	2	NA
Arbuckle Creek	No	SFWMD	AR06333013	2	NA
Arbuckle Creek	No	SFWMD	AR18343012	2	NA
Arbuckle Creek	No	SFWMD	AR21343013	2	NA
Arbuckle Creek	No	SFWMD	BN03332911	2	NA
Arbuckle Creek	No	SFWMD	BN08332912	2	NA
Lake Arbuckle	Yes	DEP Southwest Regional Operations Center (ROC)	274119812344	2	Sufficient TN and TP data
Lake Arbuckle	Yes	Polk County Natural Resources Division	Arbuckle1	2	Sufficient TN and TP data
Lake Arbuckle	No	SFWMD	LV14322813	2	NA
Lake Arbuckle	No	SFWMD	RD01322813	2	NA
Lake Arbuckle	No	SFWMD	RD08322913[1]	2	NA

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
Lake Istokpoga	Yes	SFWMD	02273198 (30853)	2	Sufficient TN and TP data
Josephine Creek	No	SFWMD	JO33352914	2	NA
Josephine Creek	No	SFWMD	JO16362914	2	NA
Josephine Creek	Yes	SFWMD	LI02362923[1]	2	NA
Josephine Creek	No	SFWMD	PL01382911	2	NA
Arbuckle Creek	No	USGS	02270000	3	NA
Arbuckle Creek	No	USGS/SFWMD	02270500/ARBUCK[1]	3	NA
Lake Arbuckle	No	USGS/SFWMD	02269520[1]	3	NA
Lake Istokpoga	No	USGS	S68	3	NA
Josephine Creek	No	USGS/SFWMD	02271500[1]	3	NA

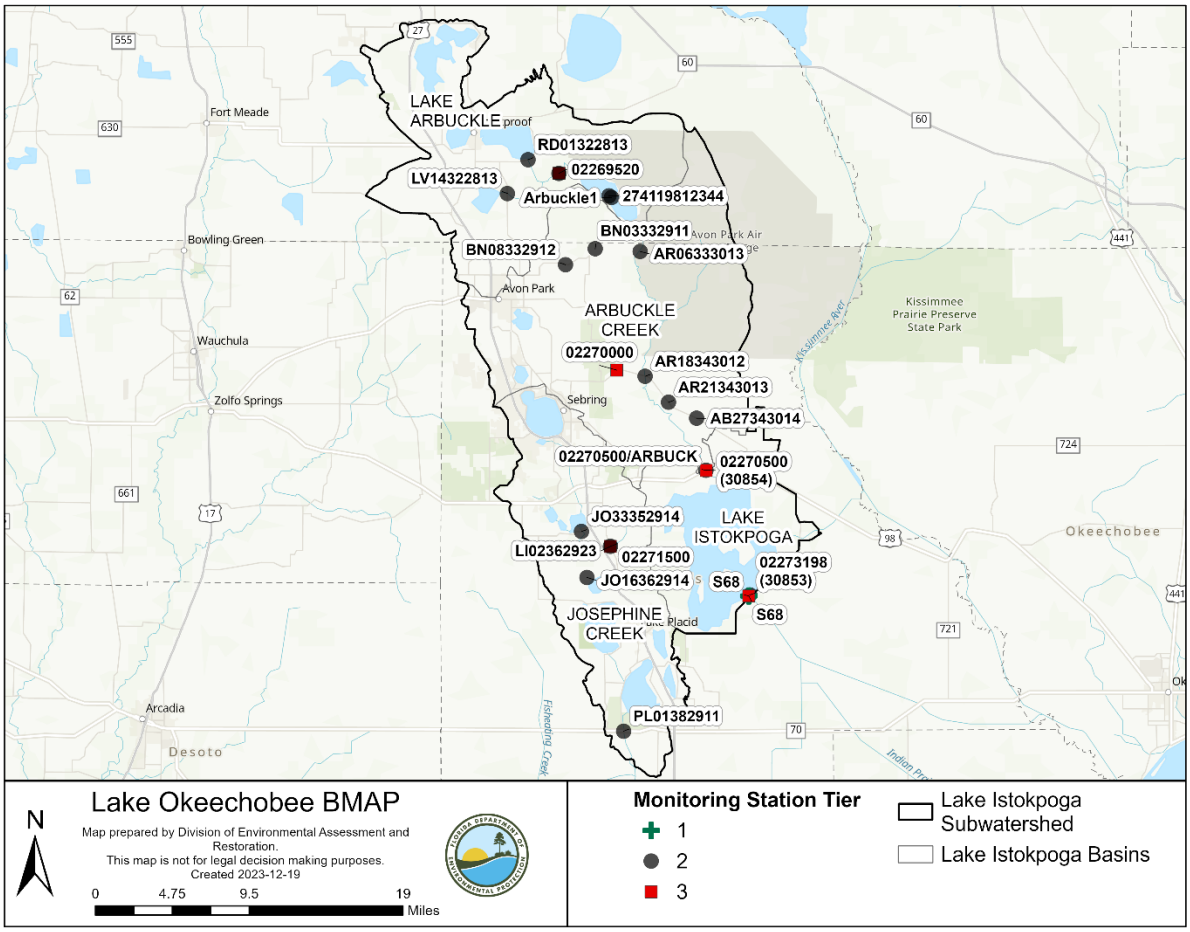

Figure 11. Locations of the water quality monitoring stations in the Lake Istokpoga subwatershed

3.3.2. Basin Evaluation Results

3.3.2.1. TRA Evaluation

The current TP load based on data from WY2020–WY2024 for the Lake Istokpoga subwatershed is 34.6 mt/yr. A reduction of 24.2 mt/yr is required to help achieve the TMDL and meet the subwatershed target of 10.4 mt/yr.

Table 30 summarizes the basin evaluation results for the subwatershed. The Lake Istokpoga basin TN concentrations are greater than the benchmark, and none of the TP concentrations are higher than the benchmark. **Table 31** lists the TRA prioritization results for the Lake Istokpoga subwatershed, with 1 the highest priority, 2 the next highest priority, and 3 a priority as resources allow.

3.3.2.2. Hot Spot Analysis

Table 32 summarizes the hot spot analysis results using WY2019–WY2023 data. To be included in the analysis, each station must have at least four samples per year and at least two years of data. This analysis will be run, as needed, and the results will be shared at annual meetings.

Table 30. Basin evaluation results for the Lake Istokpoga subwatershed

Insufficient data = Available data were not at the frequency needed for evaluation.

TRA ID	Basin Name	TN (mg/L) (Benchmark – 1.54)	TN 5-year Average FWM Concentration (mg/L)	TN UAL (lbs/ac)	TN Trend Analysis	TP (mg/L) (Benchmark – 0.12)	TP 5-year Average FWM Concentration (mg/L)	TP UAL (lbs/ac)	TP Trend Analysis
16	Lake Istokpoga	1.78	1.95	3.85	Significant Increasing	0.10	0.10	0.19	No Significant Trend
17	Josephine Creek	1.14	Insufficient Data	Insufficient Data	No Significant Trend	0.07	Insufficient Data	Insufficient Data	Significant Decreasing
18	Arbuckle Creek	1.34	Insufficient Data	Insufficient Data	No Significant Trend	0.11	Insufficient Data	Insufficient Data	No Significant Trend
19	Lake Arbuckle	1.06	Insufficient Data	Insufficient Data	No Significant Trend	0.07	Insufficient Data	Insufficient Data	No Significant Trend

Table 31. TRA evaluation results for the Lake Istokpoga subwatershed

Basin	Station	TN Priority	TP Priority
Arbuckle Creek	30854	2	3
Josephine Creek	LI02362923	3	3
Lake Arbuckle	ARBUCKLE1-274119812344	3	3
Lake Istokpoga	30853	1	2

Table 32. Hot spot analysis results for the Lake Istokpoga subwatershed

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
Arbuckle Creek	AB27343014	1	1	0	2	4	1	1	0	2	4
Arbuckle Creek	AR06333013	1	1	0	2	4	0	0	0	0	0

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
Arbuckle Creek	AR18343012	1	1	0	2	4	0	0	0	1	1
Arbuckle Creek	AR21343013	1	1	0	2	4	1	1	0	2	4
Arbuckle Creek	BN03332911	2	2	2	2	8	0	0	0	1	1
Arbuckle Creek	BN08332912	2	2	2	2	8	2	2	2	2	8
Arbuckle Creek	02270500 (30854)	1	1	0	2	4	0	0	0	1	1
Josephine Creek	JO33352914	1	1	0	2	4	0	0	0	0	0
Josephine Creek	JO16362914	0	0	0	0	0	0	0	0	0	0
Josephine Creek	PL01382911	2	2	2	2	8	1	1	0	2	4
Josephine Creek	LI02362923	1	1	0	2	4	0	0	0	1	1
Josephine Creek	2271500	1	1	0	2	4	0	0	0	1	1
Lake Arbuckle	LV14322813	1	1	0	2	4	0	0	0	0	0
Lake Arbuckle	RD01322813	0	0	0	1	1	1	1	0	2	4
Lake Arbuckle	2269520	1	1	0	2	4	0	0	0	1	1
Lake Arbuckle	RD08322913	1	1	0	2	4	0	0	0	1	1
Lake Arbuckle	Arbuckle1	1	1	0	2	4	0	0	0	0	0
Lake Istokpoga	02273198 (30853)	1	1	0	2	4	1	1	0	2	4
Lake Istokpoga	S68	1	1	0	2	4	1	1	0	2	4

3.3.3. Projects

Table 33 summarizes the existing and planned projects for the Lake Istokpoga subwatershed that were provided for the BMAP. The existing and planned projects are a BMAP requirement.

Table 33. Existing and planned projects in the Lake Istokpoga subwatershed

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3526	City of Avon Park	AP-01	Avon Park Street Sweeping	Street sweeping.	Street Sweeping	Ongoing	NA	TBD	TBD	NA
3519	City of Avon Park	AP-02	Lake Tulane Stormwater Improvement Project	Runoff will be captured in a series of swales that will allow the runoff to percolate into the sandy soils, preventing further degradation of Lake Tulane.	Grass swales without swale blocks or raised culverts	Completed	NA	35	47	NA
3498	City of Avon Park	AP-03	Lake Isis Stormwater Improvement Project	Runoff will be captured in a lakeside swale and a redesigned pond that will allow the runoff to percolate into the sandy soils, preventing further degradation of Lake Isis.	Wet Detention Pond	Completed	Prior to 2014	0	0	TBD
7604	City of Avon Park	AP-04	East Orange OSTDS	Septic-to-sewer conversion project for East Orange.	OSTDS Conversion to Distributed Wastewater System	Planned	2028	TBD	TBD	$8,700,000.00
7605	City of Avon Park	AP-05	South Hart OSTDS	Septic-to-sewer conversion project for South Hart.	OSTDS Conversion to Distributed Wastewater System	Planned	2028	TBD	TBD	$1,177,000.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
7606	City of Avon Park	AP-06	Lake Damon Twin Lakes Point OSTDS	Septic-to-sewer conversion project for Lake Damon Twin Lakes Point.	OSTDS Conversion to Distributed Wastewater System	Planned	2028	TBD	TBD	$3,100,000.00
7607	City of Avon Park	AP-07	North Hart OSTDS	Septic-to-sewer conversion project for North Hart.	OSTDS Conversion to Distributed Wastewater System	Planned	2028	TBD	TBD	$3,500,000.00
7608	City of Avon Park	AP-08	Lake Denton OSTDS	Septic-to-sewer conversion project for Lake Denton.	OSTDS Conversion to Distributed Wastewater System	Planned	2028	TBD	TBD	$4,500,000.00
3621	City of Sebring	SEB-01	Little Lake Jackson Off-line Alum Injection Stormwater Treatment	Stormwater diverted through underground culvert, alum injected and the water settles for seven days in a detention pond. Treated water is released to Little Lake Jackson.	Stormwater - Alum Injection System	Completed	2011	TBD	TBD	$231,494.00
3622	City of Sebring	SEB-02	Street Sweeping	Street sweeping to collect material. In 2021, 463,640 pounds of material was collected.	Street Sweeping	Ongoing	NA	122	68	TBD
3517	FDACS	FDACS-09	BMP Implementation and Verification	Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WAM. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X.	Agricultural BMPs	Ongoing	NA	61,935	1,862	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
4884	FDACS	FDACS-18	Cost-Share BMP Projects	Cost-share projects paid for by FDACS. Acres treated based on FDACS OAWP June 2019 Enrollment. Reductions estimated by DEP using 2019 BMAP LET.	Agricultural BMPs	Ongoing	NA	38,830	941	TBD
TBD	FDACS	FDACS-26	Arbuckle Creek	FAVT.	Floating Islands/ MAPS	Planned	TBD	2,625	2,909	TBD
3667	FDACS - Coordinating Agency	CA-08	Legislative Cost-Share Appropriation Program (Dairy Projects)	FDACS conducted several rounds of solicitations for dairy project proposals. In fall 2014, one project was funded in Lake Istokpoga.	Agricultural BMPs	Completed	2015	TBD	TBD	$472,685.00
5408	FDOT District 1	FDOT1-06	Street Sweeping	Street sweeping.	Street Sweeping	Ongoing	NA	262	123	TBD
7139	FDOT District 1	FDOT1-10	SR 17 from 5th Ave. to Crooked Lane Drive (FM 444313-1)	SR 17 resurfacing that includes reducing impervious area and pollutant loads; relocating, recontouring, widening, and reconstruction of existing highway drainage ditches; and addition of storm drain and outfall improvements.	Grass swales without swale blocks or raised culverts	Planned	2026	0	0	NA
3702	Highlands County	HC-03	Education and Outreach	FYN, landscaping and irrigation ordinances, PSAs, and pamphlets.	Education Efforts	Ongoing	NA	11,712	2,368	NA
3679	Highlands County	HC-05	Lake June Stormwater Project	Installation of 450 feet of 24-inch French drain in four contributing basins.	On-line Retention BMPs	Completed	2018	127	93	$530,000.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3676	Highlands County	HC-06	Lake Clay Stormwater Project	600 feet of 24-inch on-line French drain for parking lot subbasin; 300 feet of 24-inch on-line French drain will treat the street subbasin.	On-line Retention BMPs	Completed	2013	259	20	$330,000.00
3694	Highlands County	HC-07	Lake McCoy Stormwater Project	Replacement of 420 feet of concrete sluiceway with grassy swales, ditch blocks and a drop box.	On-line Retention BMPs	Completed	2018	30	10	$134,479.00
3510	Polk County	PC-01	Education and Outreach	FYN, fertilizer ordinance, PSAs, pamphlets, website, and Illicit Discharge Program.	Education Efforts	Ongoing	NA	824	186	NA
3593	SFWMD	SFWMD-11	Rafter T Ranch	A 2,602-acre project area with storage through above ground impoundment and pasture; estimated annual storage is 1,298 ac-ft.	DWM	Completed	2014	NA	770	$2,439,426.00
7082	SFWMD - Coordinating Agency	CA-26	Aguaculture – Lake Istokpoga	Project includes mechanical harvesting of unconsolidated muck from Lake Istokpoga to be applied as a nutrient and retained on privately owned land.	Muck Removal/Restoration Dredging	Planned	2024	NA	TBD	$6,000,000.00
3592	SLID	SLID-01	SLID Improvements Phases 1-3	Treatment of runoff through a STA.	Stormwater Treatment Areas (STAs)	Completed	2016	427	140	$3,671,712.00
6749	Town of Lake Placid	LP-01	Lake Placid Septic to AWT Sewer	This project is to construct an advanced waste treatment plant and add wastewater collection lines to serve approximately 2,800 homes currently on septic systems.	OSTDS Phase Out	Underway	2026	TBD	TBD	$40,000,000.00

3.4. Lower Kissimmee Subwatershed

The Lower Kissimmee subwatershed covers more than 429,000 acres of the LOW and is made up of 3 basins. As shown in **Table 34**, agriculture is the largest portion of the subwatershed with 51.3% of the area, followed by wetlands with 21.0%. Stakeholders in the subwatershed are Highlands County, Osceola County, and Polk County.

Table 34. Summary of land uses in the Lower Kissimmee subwatershed

Level 1 Land Use Code	Land Use Description	Acres	% Total
1000	Urban and Built-Up	11,061	2.6
2000	Agriculture	220,226	51.3
3000	Upland Nonforested	77,511	18.1
4000	Upland Forests	25,065	5.8
5000	Water	3,432	0.8
6000	Wetlands	90,035	21.0
7000	Barren Land	1,583	0.4
8000	Transportation, Communication, and Utilities	277	0.1
-	**Total**	**429,190**	**100.0**

3.4.1. Water Quality Monitoring

In the Lower Kissimmee subwatershed, the BMAP monitoring network includes water quality stations in all three of the basins. **Table 35** summarizes the water quality monitoring stations in the subwatershed, and **Figure 12** shows the station locations. **Table 35** also includes indications of which stations have recently been added as part of SFWMD expanded monitoring and recommendations to change the location, frequency, or parameters sampled for the station to better align with the BMAP.

Table 35. Water quality monitoring stations in the Lower Kissimmee subwatershed

[1] Water quality data are collected by SFWMD and flow data are collected by USGS at these stations

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
S-65E	Yes	SFWMD	18130 (S65E)	1	Sufficient TN and TP data
Kissimmee River	No	SFWMD	02272676[1]	2	NA
Kissimmee River	No	SFWMD	CY05353444	2	NA
Kissimmee River	No	SFWMD	CY06363411	2	NA
Kissimmee River	No	SFWMD	CY17353413	2	NA
Kissimmee River	No	SFWMD	KR24353114	2	NA
Kissimmee River	No	SFWMD	KR29353334	2	NA
Kissimmee River	No	SFWMD	KR30353214	2	NA
Kissimmee River	No	SFWMD	KR30353312	2	NA
Kissimmee River	No	SFWMD	KR32343214	2	NA
Kissimmee River	No	SFWMD	KREA 01[1]	2	NA
Kissimmee River	No	SFWMD	KREA 04	2	NA
Kissimmee River	No	SFWMD	KREA 22	2	NA
Kissimmee River	No	SFWMD	KREA 23	2	NA
Kissimmee River	No	SFWMD	KREA 93	2	NA
Kissimmee River	No	SFWMD	KREA 94	2	NA
Kissimmee River	No	SFWMD	KREA 98	2	NA
Kissimmee River	No	SFWMD	KREA 100	2	NA
Kissimmee River	No	SFWMD	OK09353212	2	NA

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
Kissimmee River	Yes	SFWMD	S65D	2	Sufficient TN and TP data
Kissimmee River	No	SFWMD	SM21333314	2	NA
S-65A	Yes	SFWMD	18085 (S65A)	2	Sufficient TN and TP data
S-65A	No	SFWMD	AM22323213	2	NA
S-65A	No	SFWMD	AM27323211	2	NA
S-65A	No	SFWMD	BB16313214	2	NA
S-65A	No	SFWMD	BM15313111	2	NA
S-65A	No	SFWMD	IC35313112	2	NA
S-65A	No	SFWMD	KR23313113	2	NA
S-65A	No	SFWMD	KREA 91	2	NA
S-65A	No	SFWMD	KREA 92	2	NA
S-65A	No	SFWMD	KREA 97	2	NA
S-65E	No	SFWMD	KR05373311	2	NA
S-65E	No	SFWMD	KR36363312	2	NA
S-65E	No	SFWMD	KREA 14	2	NA
S-65E	No	SFWMD	KREA 17A	2	NA
S-65E	No	SFWMD	KREA 41A	2	NA
Kissimmee River	No	USGS	02272650[1]	3	NA
Kissimmee River	No	USGS	02272676[1]	3	NA
Kissimmee River	No	SFWMD	S65_S	3	NA
Kissimmee River	No	SFWMD	S-65D	3	NA
S-65A	No	SFWMD	S65A_S	3	NA

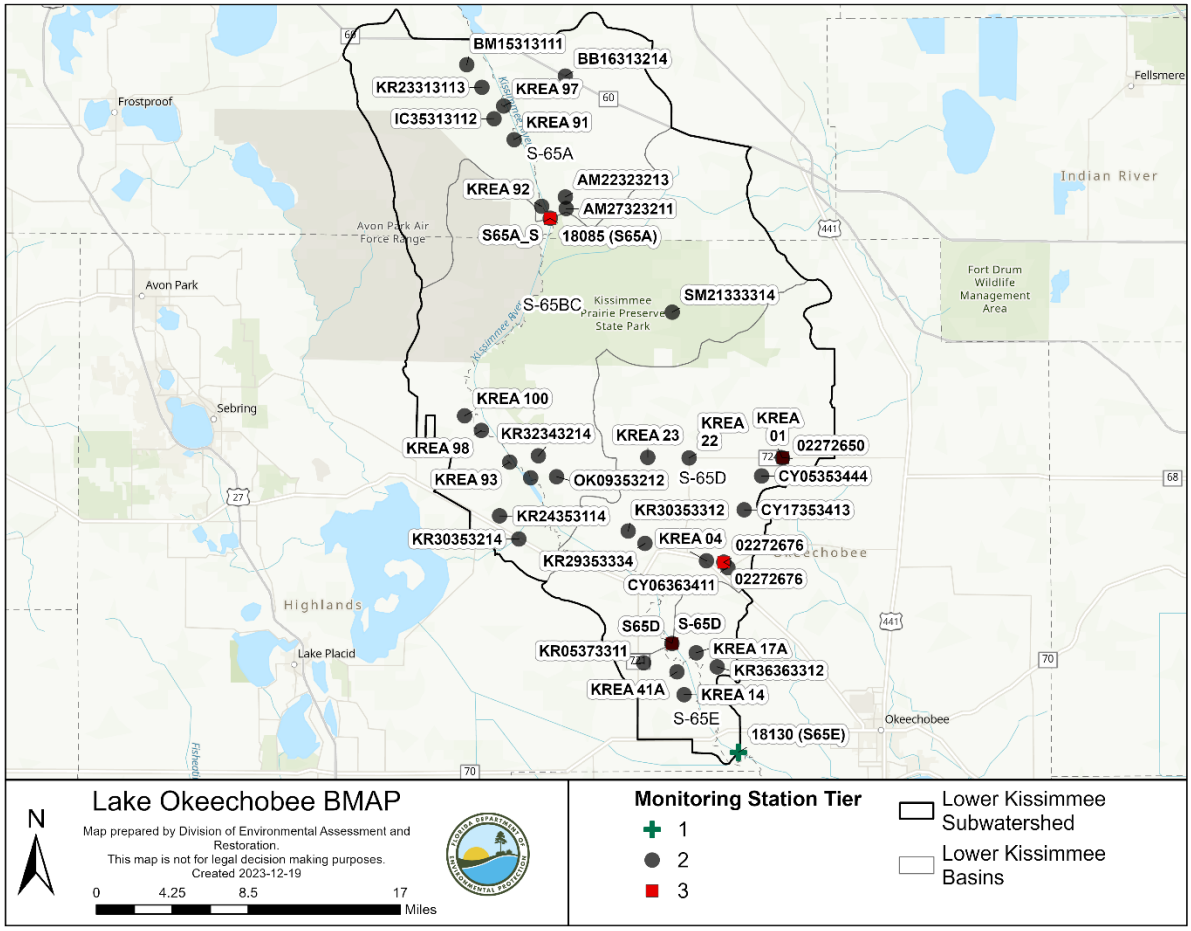

Figure 12. Locations of the water quality monitoring stations in the Lower Kissimmee subwatershed

3.4.2. Basin Evaluation Results

3.4.2.1. TRA Evaluation

The current TP load based on data from WY2020–WY2024 for the Lower Kissimmee subwatershed is 81.6 mt/yr. A reduction of 57.0 mt/yr is required to help achieve the TMDL and meet the subwatershed target of 24.6 mt/yr.

Table 36 summarizes the basin evaluation results for the subwatershed. None of basins in the subwatershed have TN or TP concentrations greater than the benchmark. **Table 37** lists the TRA prioritization results for the Lower Kissimmee subwatershed, with 1 the highest priority, 2 the next highest priority, and 3 a priority as resources allow.

3.4.2.2. Hot Spot Analysis

Table 38 summarizes the hot spot analysis results using WY2019–WY2023 data. To be included in the analysis, each station must have at least four samples per year and at least two years of data. This analysis will be run, as needed, and the results will be shared at annual meetings.

Table 36. Basin evaluation results for the Lower Kissimmee subwatershed

Insufficient data = Available data were not at the frequency needed for evaluation.

TRA ID	Basin Name	TN (mg/L) (Benchmark – 1.54)	TN 5-year Average FWM Concentration (mg/L)	TN UAL (lbs/ac)	TN Trend Analysis	TP (mg/L) (Benchmark – 0.12)	TP 5-year Average FWM Concentration (mg/L)	TP UAL (lbs/ac)	TP Trend Analysis
20	S-65E	1.30	1.14	2.12	Significant Increasing	0.09	0.23	0.42	No Significant Trend
21	Kissimmee River	1.29	Insufficient Data	Insufficient Data	No Significant Trend	0.11	Insufficient Data	Insufficient Data	Significant Decreasing
22	S-65A	1.30	Insufficient Data	Insufficient Data	No Significant Trend	0.08	Insufficient Data	Insufficient Data	No Significant Trend

Table 37. TRA evaluation results for the Lower Kissimmee subwatershed

Basin	Station	TN Priority	TP Priority
Kissimmee River	S65D	3	3
S-65A	18085	3	3
S-65E	S65E	1	1

Table 38. Hot spot analysis results for the Lower Kissimmee subwatershed

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
Kissimmee River	KR24353114	1	1	0	2	4	1	1	0	2	4
Kissimmee River	KR30353214	1	1	0	2	4	0	0	0	1	1
Kissimmee River	KR30353312	1	1	0	2	4	NA	NA	NA	NA	NA
Kissimmee River	KR32343214	1	1	0	2	4	1	1	0	2	4

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
Kissimmee River	KREA 01	1	1	0	2	4	1	1	0	1	3
Kissimmee River	KREA 04	1	1	0	2	4	0	0	0	1	1
Kissimmee River	KREA 100	0	0	0	1	1	1	1	1	2	5
Kissimmee River	KREA 22	1	1	0	2	4	0	0	0	1	1
Kissimmee River	KREA 23	1	1	0	2	4	0	0	0	1	1
Kissimmee River	KREA 93	1	1	0	2	4	0	0	0	1	1
Kissimmee River	KREA 94	1	1	0	2	4	0	0	0	1	1
Kissimmee River	KREA 98	1	1	0	2	4	0	0	0	1	1
Kissimmee River	OK09353212	1	1	0	2	4	1	1	0	2	4
Kissimmee River	S65D	1	1	0	2	4	0	0	0	1	1
Kissimmee River	SM21333314	0	0	0	1	1	1	1	0	1	3
Kissimmee River	CY05353444	1	1	0	2	4	1	1	0	2	4
Kissimmee River	CY06363411	2	2	1	2	7	1	1	1	2	5
Kissimmee River	CY17353413	2	2	2	2	8	2	2	2	2	8
S-65A	KREA 91	1	1	0	2	4	0	0	0	1	1
S-65A	KREA 92	1	1	0	2	4	0	0	0	0	0
S-65A	KREA 97	1	1	0	2	4	0	0	0	1	1
S-65A	18085 (S65A)	1	1	0	2	4	0	0	0	1	1
S-65A	AM22323213	1	1	0	1	3	0	0	0	1	1
S-65A	BM15313111	0	0	0	1	1	0	0	0	1	1
S-65A	IC35313112	1	1	0	2	4	0	0	0	0	0

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
S-65A	BB16313214	1	1	0	2	4	1	1	0	2	4
S-65E	KR05373311	2	2	1	2	7	1	1	1	2	5
S-65E	KR36363312	2	1	1	2	6	1	1	0	2	4
S-65E	KREA 14	2	2	1	2	7	1	1	0	2	4
S-65E	KREA 17A	1	1	0	2	4	1	1	0	2	4
S-65E	KREA 41A	2	2	2	2	8	1	2	2	2	7
S-65E	18130 (S65E)	1	1	0	2	4	0	0	0	1	1

3.4.3. Projects

Table 39 summarizes the existing and planned projects for the Lower Kissimmee subwatershed that were provided for the BMAP. The existing and planned projects are a BMAP requirement.

Table 39. Existing and planned projects in the Lower Kissimmee subwatershed

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
4868	Avon Park Air Force Range	AFR-01	Cancellation of Cattle Lease	Land use change from agriculture to natural.	Land Use Change	Completed	2018	1,903	606	NA
3523	FDACS	FDACS-10	BMP Implementation and Verification	Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WAM. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X.	Agricultural BMPs	Ongoing	NA	88,235	10,461	NA
4885	FDACS	FDACS-19	Cost-Share BMP Projects	Cost-share projects paid for by FDACS. Acres treated based on FDACS OAWP June 2019 Enrollment. Reductions estimated by DEP using 2019 BMAP LET.	Agricultural BMPs	Ongoing	NA	55,336	12,035	TBD

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3668	FDACS - Coordinating Agency	CA-09	Legislative Cost-Share Appropriation Program (Dairy Projects)	FDACS conducted several rounds of solicitations for dairy project proposals. Within Lower Kissimmee one project was funded in fall 2017 and a second project was funded in fall 2018.	Agricultural BMPs	Completed	2021	TBD	TBD	$919,416.00
5409	FDOT District 1	FDOT1-07	Street Sweeping	Street sweeping.	Street Sweeping	Ongoing	NA	37	40	TBD
3678	Highlands County	HC-04	Education and Outreach	FYN, landscaping and irrigation ordinances, PSAs, and pamphlets.	Education Efforts	Ongoing	NA	771	86	NA
3601	Osceola County	OSC-11	Education and Outreach	FYN; landscaping, irrigation, fertilizer, and pet waste management ordinances; PSAs; pamphlets; website; and illicit discharge program.	Education Efforts	Ongoing	NA	13	4	TBD
3520	Polk County	PC-02	Education and Outreach	FYN, fertilizer ordinance, PSAs, pamphlets, website, and Illicit Discharge Program.	Education Efforts	Ongoing	NA	918	32	NA
3654	SFWMD	SFWMD-04	Otter Slough Restoration	Completed project included 5 ditch plugs and removal of 2 berms to help attenuate regional stormwater runoff, as well as provide nutrient reductions due to plant uptake from overland flows.	Hydrologic Restoration	Completed	2009	NA	11	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3625	SFWMD	SFWMD -05	Kissimmee River Restoration	Restore ecological integrity by restoring 40 miles of meandering river and more than 12,000 acres of wetlands through the design and construction of physical project features coupled with application of optimized hydrologic conditions.	Hydrologic Restoration	Completed	2021	47,286	15,337	$816,646,000.00
3617	SFWMD	SFWMD -13	Dixie West	See SFWMD-14.	DWM	Completed	2012	NA	451	NA
3582	SFWMD	SFWMD -14	Dixie Ranch	A 5,266-acre project area through pasture comprised of Dixie West and Dixie Ranch; named Dixie Ranch under one contract. The estimated annual ac-ft of storage is 1,171 ac-ft.	DWM	Completed	2012	NA	262	$4,035,500.00
3585	SFWMD	SFWMD -17	Willaway Cattle and Sod	A 69-acre project through an above ground impoundment; estimated annual storage is 229 ac-ft.	DWM	Completed	2013	NA	154	$344,279.00
3587	SFWMD	SFWMD -19	Abington Ranch (Formerly Triple A Ranch)	A 106-acre project area with water storage through an above ground impoundment; estimated annual storage is 397 ac-ft.	DWM	Completed	2015	NA	154	$607,186.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3653	SFWMD - Coordinating Agency	CA-05	El Maximo Ranch DWM (formerly Latt Maxcy)	This project will detain water from the Kissimmee River and Blanket Bay Slough before discharging to the Kissimmee River downstream of S-65.	DWM	Underway	2022	4,938	3,280	$49,212,438.00
4870	SFWMD - Coordinating Agency	CA-17	Alternative Water Supply Projects - Joe Hall, Raulerson & Sons Ranch	Stormwater recycling project.	Stormwater Reuse	Completed	2010	NA	45	TBD
4871	SFWMD - Coordinating Agency	CA-18	Alternative Water Supply Projects - David H. Williams Sod & Cattle	Stormwater irrigation project.	Stormwater Reuse	Completed	2010	NA	20	TBD
4872	SFWMD - Coordinating Agency	CA-19	Alternative Water Supply Projects - Four K Ranch, Inc., Lippincott Farm	Stormwater recycling project.	Stormwater Reuse	Completed	2010	NA	4	TBD
4873	SFWMD - Coordinating Agency	CA-20	Alternative Water Supply Projects - Haynes & Susan Williams, 101 Ranch	17.2-acre reservoir and 44-acre reservoir.	Stormwater Reuse	Completed	2010	NA	4	TBD
7089	SFWMD - Coordinating Agency	CA-29	Basinger Dairy Legacy Phosphorus Removal	As a public-private partnership, this 5-year research project targets legacy phosphorus on a 950-acre former dairy farm.	Study	Planned	2028	NA	NA	$12,137,000.00

3.5. Taylor Creek/Nubbin Slough Subwatershed

The Taylor Creek/Nubbin Slough subwatershed covers almost 198,000 acres of the LOW and is made up of 5 basins. As shown in **Table 40**, agriculture is the predominate land use with 71.6% of the area, followed by urban and built-up with 9.2%. Stakeholders in the subwatershed are the City of Okeechobee, Coquina Water Management District, FDOT District 1, FDOT District 4, Martin County, and Okeechobee County.

Table 40. Summary of land uses in the Taylor Creek/Nubbin Slough subwatershed

Level 1 Land Use Code	Land Use Description	Acres	% Total
1000	Urban and Built-Up	18,126	9.2
2000	Agriculture	141,605	71.6
3000	Upland Nonforested	2,699	1.4
4000	Upland Forests	4,519	2.3
5000	Water	2,401	1.2
6000	Wetlands	17,486	8.8
7000	Barren Land	1,545	0.8
8000	Transportation, Communication, and Utilities	813	0.4
9000	Inactive Dairy	8,602	4.3
-	**Total**	**197,796**	**100.0**

3.5.1. Water Quality Monitoring

In the Taylor Creek/Nubbin Slough subwatershed, the BMAP monitoring network includes water quality stations in all five of the basins. **Table 41** summarizes the water quality monitoring stations in the subwatershed, and **Figure 13** shows the station locations. **Table 41** also includes indications of which stations have recently been added as part of SFWMD expanded monitoring and recommendations to change the location, frequency, or parameters sampled for the station to better align with the BMAP.

Table 41. Water quality monitoring stations in the Taylor Creek/Nubbin Slough subwatershed

[1] Water quality data are collected by SFWMD and flow data are collected by USGS at these stations.

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
S-133	Yes	SFWMD	S133	1	Sufficient TN and TP data
S-135	Yes	SFWMD	S135	1	Sufficient TN and TP data
S-154	Yes	SFWMD	S154	1	Sufficient TN and TP data
S-154C	Yes	SFWMD	S154C	1	Sufficient TN and TP data
S191	Yes	SFWMD	S191	1	Sufficient TN and TP data
S-133	No	SFWMD	LM29373514	2	NA
S-133	No	SFWMD	TC09373513	2	NA
S-154	No	SFWMD	KR16373414	2	NA
S-154	No	SFWMD	KR17373513	2	NA
S-154	No	SFWMD	KREA 20	2	NA
S-154	No	SFWMD	KREA 25	2	NA
S-154	No	SFWMD	KREA 28	2	NA
S-154	No	SFWMD	KREA 30 A	2	NA
S-154	No	SFWMD	TS26363411	2	NA

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
S-154	No	SFWMD	TS36363411	2	No samples since October 2021; suggest relocating to inactive station TC15373513.
S-154C	No	SFWMD	KR20373413	2	Only 1 sample WY2025; site of future STA; move to near S65E on SFWMD right-of-way; suggested station name KRSW128.
S191	No	SFWMD	02275197[1]	2	NA
S191	No	SFWMD	LB29353513	2	NA
S191	No	SFWMD	MS05373613	2	NA
S191	No	SFWMD	MS08373611	2	NA
S191	No	SFWMD	MS08373624	2	NA
S191	No	SFWMD	OT29353514	2	NA
S191	No	SFWMD	OT32353511	2	NA
S191	No	SFWMD	OT34353513	2	NA
S191	No	SFWMD	TC03373511	2	NA
S191	No	SFWMD	TC27353413	2	NA
S191	No	SFWMD	TCNS 201	2	NA
S191	No	SFWMD	TCNS 204	2	NA
S191	No	SFWMD	TCNS 207	2	NA
S191	No	SFWMD	TCNS 209	2	NA
S191	No	SFWMD	TCNS 213	2	NA
S191	No	SFWMD	TCNS 214	2	NA
S191	No	SFWMD	TCNS 217	2	NA
S191	No	SFWMD	TCNS 220	2	NA
S191	No	SFWMD	TCNS 222	2	NA
S191	No	SFWMD	TCNS 228	2	3 samples in WY2025; only capturing water when STA is discharging; suggest relocating to inactive station LO04383512.
S191	No	SFWMD	TCNS 230	2	NA
S191	No	SFWMD	TCNS 233	2	NA
S191	No	SFWMD	TCNS 249	2	NA
S-154	No	USGS	02273630	3	NA
S191	No	USGS	02274005	3	NA
S191	No	USGS	02274010[1]	3	NA
S191	No	USGS	02274325	3	NA
S191	No	USGS	02274490[1]	3	NA
S191	No	USGS	02274505[1]	3	NA
S191	No	USGS	02275197[1]	3	NA

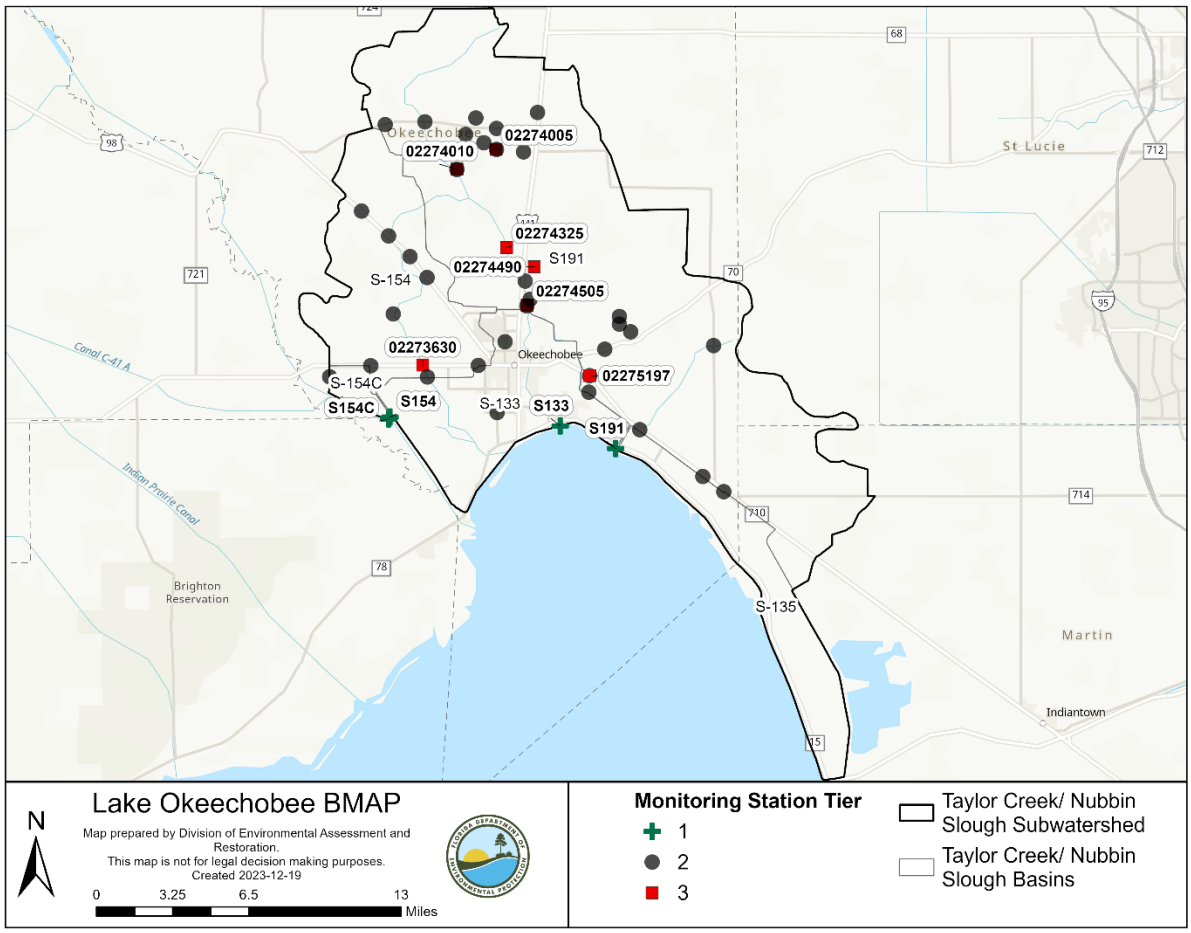

Figure 13. Locations of the water quality monitoring stations in the Taylor Creek/ Nubbin Slough subwatershed

3.5.2. Basin Evaluation Results

3.5.2.1. TRA Evaluation

The current TP load based on data from WY2020–WY2024 for the Taylor Creek/Nubbin Slough subwatershed is 53.1 mt/yr. A reduction of 37.1 mt/yr is required to help achieve the TMDL and meet the subwatershed target of 16.0 mt/yr.

Table 42 summarizes the basin evaluation results for the Taylor Creek/Nubbin Slough subwatershed. All basins but S-135 have TN and TP concentrations higher than the benchmark. **Table 43** lists the TRA prioritization results for the Taylor Creek/Nubbin Slough subwatershed, with 1 the highest priority, 2 the next highest priority, and 3 a priority as resources allow.

3.5.2.2. Hot Spot Analysis

Table 44 summarizes the hot spot analysis results using WY2019–WY2023 data. To be included in the analysis, each station must have at least four samples per year and at least two years of data. This analysis will be run, as needed, and the results will be shared at annual meetings.

Table 42. Basin evaluation results for the Taylor Creek/Nubbin Slough subwatershed

TRA ID	Basin Name	TN (mg/L) (Benchmark – 1.54)	TN 5-year Average FWM Concentration (mg/L)	TN UAL (lbs/ac)	TN Trend Analysis	TP (mg/L) (Benchmark – 0.12)	TP 5-year Average FWM Concentration (mg/L)	TP UAL (lbs/ac)	TP Trend Analysis
32	S-154C	2.01	2.78	2.18	No Significant Trend	0.35	0.68	0.53	Significant Decreasing
33	S-154	1.86	2.13	2.96	No Significant Trend	0.28	0.44	0.61	No Significant Trend
34	S-133	1.73	1.78	4.72	Significant Decreasing	0.16	0.21	0.56	No Significant Trend
35	S-135	1.50	1.52	7.82	No Significant Trend	0.10	0.13	0.64	No Significant Trend
36	S191	1.71	1.89	2.13	No Significant Trend	0.31	0.51	0.57	No Significant Trend

Table 43. TRA evaluation results for the Taylor Creek/Nubbin Slough subwatershed

Basin	Station	TN Priority	TP Priority
S-133	S133	2	1
S-135	S135	2	1
S-154	S154	1	1
S-154C	S154C	1	1
S191	S191	1	1

Table 44. Hot spot analysis results for the Taylor Creek/Nubbin Slough subwatershed

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
S-133	LM29373514	1	1	0	2	4	0	0	0	1	1
S-133	S133	1	1	0	2	4	1	1	0	2	4
S-133	TC09373513	1	1	0	2	4	1	1	0	1	3
S-135	S135	1	1	0	2	4	0	0	0	1	1
S-154	KR16373414	1	1	0	2	4	1	1	1	2	5
S-154	KREA 20	2	2	1	2	7	1	2	2	2	7

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
S-154	S154	1	1	0	2	4	1	1	0	2	4
S-154	TS36363411	2	2	2	2	8	2	2	2	2	8
S-154	KR17373513	1	1	0	2	4	0	0	0	1	1
S-154C	S154C	2	2	1	2	7	1	1	0	2	4
S191	LB29353513	2	2	2	2	8	1	1	1	2	5
S191	MS05373613	2	2	2	2	8	2	2	2	2	8
S191	MS08373611	2	2	2	2	8	2	2	2	2	8
S191	OT32353511	2	2	2	2	8	2	2	2	2	8
S191	OT34353513	1	1	0	2	4	1	1	1	2	5
S191	S191	1	1	0	2	4	1	1	0	2	4
S191	TC03373511	2	2	1	2	7	1	1	0	2	4
S191	TC27353413	1	1	0	2	4	1	2	2	2	7
S191	TCNS 201	1	1	0	2	4	1	1	0	2	4
S191	TCNS 204	2	2	2	2	8	2	2	2	2	8
S191	TCNS 207	2	2	2	2	8	2	2	2	2	8
S191	TCNS 209	2	2	2	2	8	2	2	2	2	8
S191	TCNS 213	2	2	2	2	8	1	1	1	2	5
S191	TCNS 214	2	2	1	2	7	1	1	0	2	4
S191	TCNS 217	1	1	0	2	4	0	0	0	2	2
S191	TCNS 220	2	2	2	2	8	1	1	1	2	5
S191	TCNS 222	2	2	1	2	7	1	1	1	2	5
S191	TCNS 233	2	2	1	2	7	1	1	0	2	4
S191	TCNS 249	1	1	0	2	4	1	1	0	1	3
S191	2275197	2	2	2	2	8	1	1	1	2	5

3.5.3. Projects

Table 45 summarizes the existing and planned projects for the Taylor Creek/Nubbin Slough subwatershed that were provided for the BMAP. The existing and planned projects are a BMAP requirement.

Table 45. Existing and planned projects in the Taylor Creek/Nubbin Slough subwatershed

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3691	City of Okeechobee	CO-01	Centennial Park Stormwater Drainage Construction	Upgrade stormwater infrastructure by constructing a nutrient separating baffle box, bioswale, and removal and replacement of pipe.	Baffle Boxes-First Generation	Completed	2018	2	0	$786,665.00
4874	City of Okeechobee	CO-02	South 4th Street Stormwater Drainage Construction	Upgrade stormwater infrastructure by constructing a nutrient separating baffle box, bioswale, and removal and replacement of pipe.	Baffle Boxes-First Generation	Completed	2023	275	10	$333,100.00
4875	City of Okeechobee	CO-03	SE 8th Stormwater Drainage Construction	Upgrade stormwater infrastructure by constructing a nutrient separating baffle box, bioswale, and removal and replacement of pipe.	Baffle Boxes-First Generation	Completed	2021	18	1	$219,000.00
4876	City of Okeechobee	CO-04	Citywide Street Sweeping	Removal of turbidity and excess nutrients from runoff.	Street Sweeping	Ongoing	NA	TBD	TBD	$75,000.00
6339	City of Okeechobee	CO-05	Commerce Center Stormwater Upgrades	Construct dry detention areas.	Dry Detention Pond	Underway	2024	NA	NA	$560,594.97
6533	City of Okeechobee	CO-06	City of Okeechobee BMP Cleanout	Cleanout of stormwater infrastructure including baffle boxes and catch basins throughout the City of Okeechobee.	BMP Cleanout	Ongoing	NA	TBD	TBD	TBD

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
6666	City of Okeechobee	CO-07	Okeechobee Stormwater Public Education	Implement a public education program to distribute materials to the community or conduct equivalent outreach about the impacts of stormwater discharges on waterbodies and steps they can take to reduce pollutants. Implement an illicit discharge ordinance.	Education Efforts	Ongoing	NA	TBD	TBD	NA
6532	City of Okeechobee	CO-09	City of Okeechobee Taylor Creek SE 8th Avenue Stormwater Conveyance PH II	Upgrade stormwater infrastructure by constructing additional stormwater inlets and piping to add additional drainage area to the water quality baffle box installed in the City of Okeechobee Taylor Creek SE 8th Avenue Stormwater Conveyance Phase I project.	Baffle Boxes-First Generation	Underway	2024	TBD	TBD	$240,000.00
3664	FDACS	FDACS-01	Lemkin Creek	Hybrid wetland treatment technology (HWTT) is a combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at the subbasin and parcel scales.	HWTT	Completed	2009	806	490	$635,970.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3635	FDACS	FDACS-02	Wolff Ditch	HWTT is a combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at the subbasin and parcel scales.	HWTT	Completed	2009	1,421	1,044	$1,036,070.00
3636	FDACS	FDACS-03	Grassy Island	HWTT is a combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at the subbasin and parcel scales.	HWTT	Completed	2010	9,891	4,171	$5,041,338.00
3638	FDACS	FDACS-05	Nubbin Slough	HWTT is a combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at the subbasin and parcel scales.	HWTT	Completed	2014	1,129	1,160	$900,260.00
3639	FDACS	FDACS-06	Mosquito Creek	HWTT is a combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at the subbasin and parcel scales.	HWTT	Completed	2014	2,639	1,318	$1,263,920.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3524	FDACS	FDACS-11	BMP Implementation and Verification	Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WAM. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X.	Agricultural BMPs	Ongoing	NA	76,356	15,321	NA
4886	FDACS	FDACS-20	Cost-Share BMP Projects	Cost-share projects paid for by FDACS. Acres treated based on FDACS OAWP June 2019 Enrollment. Reductions estimated by DEP using 2019 BMAP LET.	Agricultural BMPs	Ongoing	NA	53,519	20,646	TBD
3661	FDACS - Coordinating Agency	CA-02	Inactive Dairies - Lagoon Remediation	Lagoon remediation funded in 2014 and 2019. Soil spread on the field for crops, stormwater routed to remediated pond and reused to minimize discharges and groundwater withdrawals. Outfall cleaned and stacked with water control structures to waterbody.	Dairy Remediation	Completed	2020	TBD	TBD	$1,375,358.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3669	FDACS - Coordinating Agency	CA-10	Legislative Cost-Share Appropriation Program (Dairy Projects)	FDACS conducted several rounds of solicitations for dairy project proposals. Within TCNS four projects were funded in fall 2014, two projects were funded in fall 2015, four projects were funded in fall 2016, and one project was funded in 2019.	Agricultural BMPs	Completed	2021	TBD	TBD	$7,393,347.89
3640	FDOT District 1	FDOT1-01	State Road 70 from 34th Avenue to 80th Avenue	Six wet detention ponds.	Wet Detention Pond	Completed	2018	36	37	TBD
3652	FDOT District 1	FDOT1-02	State Road 70 from 80th Avenue to St. Lucie County Line	Three wet detention ponds and three dry retention swales.	Wet Detention Pond	Completed	2018	24	10	TBD
3642	FDOT District 1	FDOT1-03	Street Sweeping	Street sweeping.	Street Sweeping	Ongoing	NA	144	120	TBD
7399	FDOT District 1	FDOT1-11	439032-1: SR 15 (US 98) from SW 23rd Street to SW 14th Street	Adding wet detention pond with greater hydraulic detention time than minimum required for ERP where previously there was no treatment.	Wet Detention Pond	Underway	2028	TBD	TBD	NA
4891	FDOT District 4	FDOT4-04	Public Education	Pamphlets.	Education Efforts	Ongoing	NA	1	0	TBD
3549	Okeechobee County	OK-01B	Douglas Park South	Addition of dry detention area to serve 73.5 acres of original 150-acre drainage area.	Dry Detention Pond	Completed	2009	38	5	$643,593.00
3550	Okeechobee County	OK-02	Oak Park	Roadside swales with raised inlets and two hydrodynamic separators.	Grass swales with swale blocks or raised culverts	Completed	2016	47	6	$1,112,005.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3551	Okeechobee County	OK-03	Southwest 21st Street	Dry detention roadside swales with raised inlets and one hydrodynamic separator.	Grass swales with swale blocks or raised culverts	Completed	2013	1	0	$481,718.23
3581	Okeechobee County	OK-04	Southwest Drainage Area Improvements	Dry detention roadside swales with raised inlets and two hydrodynamic separators.	Grass swales with swale blocks or raised culverts	Completed	2011	1	0	$2,146,504.00
3529	Okeechobee County	OK-05	Okeechobee County 2008 Disaster Recovery Community Development Block Grant	Culvert upgrades and dry detention area to improve water quality and alleviate funding.	Dry Detention Pond	Completed	2014	6	1	$786,665.00
3603	Okeechobee County	OK-06	Southwest Drainage Area Improvements Whidden Ditch (Phase III)	Ditch and culvert upgrades to improve stormwater conveyance to Rim Canal.	Stormwater System Rehabilitation	Completed	2017	NA	NA	$749,410.00
3656	Okeechobee County	OK-07	Lock 7 Bypass Culvert System	Installation of parallel culvert system along the Rim Canal to improve conveyance.	Stormwater System Rehabilitation	Completed	2016	NA	NA	$157,143.00
5423	Okeechobee County	OK-08	Oak Lakes Estates	Drainage improvement to reconstruct the swales along the road to provide better treatment.	Grass swales without swale blocks or raised culverts	Completed	2021	TBD	TBD	$814,460.00
7474	Okeechobee County	OK-09	Okeechobee County Berman Road & Nubbin Slough Drainage Area	The project will consist of the construction of a 7,200 linear foot drainage canal to provide stormwater runoff from the Berman Road area to the Nubbin Slough STA.	Regional Stormwater Treatment	Planned	2026	TBD	TBD	$1,557,522.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
7475	Okeechobee County	OK-10	Okeechobee County Four Seasons Stormwater Improvements	To connect the Four Seasons residential community to the Nubbin Slough STA with an approximate 12,000 linear foot canal system	Stormwater System Upgrade	Planned	2026	TBD	TBD	TBD
7476	Okeechobee County	OK-11	Okeechobee County Spot in the Sun Stormwater Improvements	To connect the Spot in the Sun residential community to the Nubbin Slough STA using approximately 18,200 linear feet of canal.	Stormwater System Upgrade	Planned	2026	TBD	TBD	TBD
7448	Okeechobee Utility Authority	OAU-05	SW 5th Avenue Septic to Sewer Project	Elimination of approximately 110 OSTDS.	OSTDS Phase Out	Planned	2026	TBD	TBD	$7,480,000.00
6554	Okeechobee Utility Authority	OUA-01	Pine Ridge Park Septic to Sewer	Elimination of approximately 110 OSTDS.	OSTDS Phase Out	Underway	2024	832	NA	$5,143,000.00
6555	Okeechobee Utility Authority	OUA-02	Southwest Wastewater Service Area	Elimination of approximately 500 OSTDS.	OSTDS Phase Out	Underway	2025	9,010	NA	$13,950,000.00
6556	Okeechobee Utility Authority	OUA-03	Treasure Island Septic to Sewer	Elimination of approximately 2,400 OSTDS.	OSTDS Phase Out	Planned	2026	43,800	NA	$56,215,000.00
3623	SFWMD	SFWMD -01	Taylor Creek	The Taylor Creek STA is a two-celled STA.	Stormwater Treatment Areas (STAs)	Completed	2009	NA	3,483	$6,681,212.00
3619	SFWMD	SFWMD -02	Nubbin Slough	The Nubbin Slough STA is the larger of the two pilot STAs constructed north of the lake; 2-celled enclosure.	Stormwater Treatment Areas (STAs)	Completed	2015	NA	9,231	$21,826,314.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3624	SFWMD	SFWMD -03	Lakeside Ranch Phases I and II	Phase I is a northern STA and pump station (S-650), which began operating in 2012. Phase II is a southern STA and pump station (S-191), known as Phase III in 2018 Ops Plan, to manage rim canal levels during high flow and recirculate lake water to STA.	STAs	Completed	2012	NA	29,608	$46,683,944.00
3583	SFWMD	SFWMD -15	Dixie Ranch	See SFWMD-14.	DWM	Completed	2012	NA	514	NA
3663	SFWMD - Coordinating Agency	CA-04	Lakeside Ranch Phase II	See SFWMD-03.	STAs	Completed	2021	TBD	TBD	$85,528,514.00
3643	SFWMD - Coordinating Agency	CA-14	SR 710 Regional Project	The feasibility study was completed. FDOT is reviewing several conceptual designs. The Coordinating Agencies are also reviewing to determine whether multiple program initiatives can be aligned for a greater project impact.	Study	Completed	2017	NA	NA	$1,485,917.00
5400	SFWMD - Coordinating Agency	CA-21	Brady Ranch Flow Equalization Basin (FEB) and Aquifer Storage and Recovery (ASR)	Planned FEB and ASR to detain excess stormwater, reduce nutrient loading to Lake Okeechobee, and provide operational flexibility to the Lakeside Ranch STA.	Hydrologic Restoration	Planned	2028	NA	NA	$118,888,993.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
5401	SFWMD - Coordinating Agency	CA-22	Grassy Island FEB and ASR	Planned FEB and ASR to detain excess stormwater, reduce nutrient loading to Lake Okeechobee, and provide operational flexibility to the adjacent Taylor Creek STA.	Hydrologic Restoration	Planned	2026	NA	NA	$79,593,383.00
6282	SFWMD - Coordinating Agency	CA-24	Lower Kissimmee Basin Stormwater Treatment Area	The planned hybrid STA is intended to remove phosphorus from the S-154C and S-154 Basins in the Taylor Creek/Nubbin Slough watershed, Indian Prairie C-41A Canal, and Lower Kissimmee River Basin/C-38 Canal.	STAs	Planned	2027	NA	NA	$300,000,000.00
6274	SFWMD - Coordinating Agency	CA-25	Lake Okeechobee S-191 Basin Surface Runoff Phosphorus Removal Using Innovative Technologies	This project will use an innovative technology that will remove phosphorus from the C-59 Canal water column.	Study	Underway	2024	NA	NA	$6,000,000.00
7088	SFWMD - Coordinating Agency	CA-28	TCNS 214 Storage and Treatment	Project will pump excess stormwater from Williamson Ditch into a shallow water storage and treatment feature before discharging to Taylor Creek.	DWM	Planned	2026	TBD	TBD	$6,700,000.00

3.6. Upper Kissimmee Subwatershed

The Upper Kissimmee subwatershed covers more than 1,000,000 acres of the LOW and is made up of 25 basins. As shown in **Table 46**, wetlands cover 34.6% of the subwatershed, followed by agriculture at 26.1%. Stakeholders in the subwatershed are Avon Park Air Force Range, City of Belle Isle, City of Davenport, City of Edgewood, City of Haines City, City of Kissimmee, City of Lake Wales, City of Orlando, City of St. Cloud, FDOT District 5, Turnpike Enterprise, Orange County, Osceola County, Polk County, Central Florida Tourism Oversight District, Town of Dundee, Town of Windermere, and Valencia WCD.

Table 46. Summary of land uses in the Upper Kissimmee subwatershed

Level 1 Land Use Code	Land Use Description	Acres	% Total
1000	Urban and Built-Up	216,916	21.1
2000	Agriculture	268,628	26.1
3000	Upland Nonforested	59,930	5.8
4000	Upland Forests	71,457	6.9
5000	Water	25,743	2.5
6000	Wetlands	355,682	34.6
7000	Barren Land	5,235	0.5
8000	Transportation, Communication, and Utilities	24,834	2.4
-	**Total**	**1,028,425**	**100.0**

3.6.1. Water Quality Monitoring

In the Upper Kissimmee subwatershed, the BMAP monitoring network includes water quality stations in 23 of the 25 basins. **Table 47** summarizes the water quality monitoring stations in the subwatershed, and **Figure 14** shows the station locations. **Table 47** also includes indications of which stations have recently been added as part of SFWMD or Central Florida Tourism Oversight District expanded monitoring and recommendations to change the location, frequency, or parameters sampled for the stations to better align with the BMAP. New monitoring stations will be needed in two basins where no representative site exists.

Table 47. Water quality monitoring stations in the Upper Kissimmee subwatershed

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
Lake Kissimmee	Yes	SFWMD	S65	1	Sufficient TN and TP data
Alligator Lake	No	SFWMD	AL11263113	2	NA
Alligator Lake	No	SFWMD	AL24263113	2	NA
Alligator Lake	No	SFWMD	AL34263113	2	NA
Alligator Lake	No	SFWMD	CO35253112	2	NA
Alligator Lake	Yes	SFWMD	LG32263124	2	Sufficient TN and TP data
Boggy Creek	Yes	SFWMD	ABOGGN	2	Sufficient TN and TP data
Boggy Creek	No	Orange County	Boggy Creek A (Tradeport)	2	NA
Boggy Creek	No	Orlando/Orange County	Boggy Creek B (SR 527A)	2	Lake Tohopekaliga NRP station

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
Boggy Creek	No	Orlando/Orange County	Boggy Creek @ 527A City of Orlando Site (bcb)	2	Lake Tohopekaliga NRP station
Boggy Creek	No	City of Orlando	Lake Fran	2	Lake Tohopekaliga NRP station
Boggy Creek	No	City of Orlando	Lake Mare Prairie	2	Lake Tohopekaliga NRP station
Boggy Creek	No	City of Orlando	Mud Lake	2	Lake Tohopekaliga NRP station
Catfish Creek	Yes	SFWMD	34008 (ROMCUT)	2	Sufficient TN and TP data
East Lake Tohopekaliga	Yes	SFWMD	BS-59	2	Sufficient TN and TP data
East Lake Tohopekaliga	No	SFWMD	ET05253114	2	NA
East Lake Tohopekaliga	No	Osceola County	ET05253114	2	Lake Tohopekaliga NRP station
East Lake Tohopekaliga	No	SFWMD	ET06253113	2	NA
Horse Creek	Yes	Polk County Natural Resources Division	Horse Crk2	2	NA
Lake Conlin	NA	NA	NA	2	No site available
Lake Cypress	Yes	SFWMD	4002 (C03)	2	Sufficient TN and TP data
Lake Gentry	No	SFWMD	CL19273123	2	NA
Lake Gentry	Yes	SFWMD	GENTRYDTCH	2	Sufficient TN and TP data
Lake Hart	No	SFWMD	AJ33243122	2	NA
Lake Hart	No	City of Orlando	Buck Lake	2	Lake Tohopekaliga NRP station
Lake Hart	No	Orange County	HART: Lake Hart Outflow at S-62 (Clap Sims Duda)	2	NA
Lake Hart	Yes	SFWMD	MJ01253123	2	Sufficient TN and TP data
Lake Hatchinea	Yes	SFWMD	EC-37	2	Sufficient TN and TP data
Lake Hatchinea	No	SFWMD	HL08283014	2	NA
Lake Jackson	Yes	SFWMD	LJACKDSCH	2	Sufficient TN and TP data
Lake Kissimmee	No	SFWMD	LK04313114	2	NA
Lake Kissimmee	No	SFWMD	PA10313112	2	NA
Lake Marian	No	SFWMD	ML22303311	2	NA
Lake Marian	Yes	SFWMD	ML22303313	2	Sufficient TN and TP data
Lake Marion	Yes	DEP Watershed Monitoring Section	51242	2	NA
Lake Myrtle	NA	NA	NA	2	No site available
Lake Pierce	Yes	Polk County Natural Resources Division	Pierce1	2	NA
Lake Rosalie	Yes	SFWMD	KUB009	2	Sufficient TN and TP data
Lake Tohopekaliga	No	City of Kissimmee	Bass Slough at Boggy Creek	2	Lake Tohopekaliga NRP station

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
Lake Tohopekaliga	No	City of Kissimmee	Bass Slough at Timothy Lane	2	Lake Tohopekaliga NRP station
Lake Tohopekaliga	No	SFWMD	BNSHINGLE	2	NA
Lake Tohopekaliga	Yes	SFWMD	CL18273011	2	Sufficient TN and TP data
Lake Tohopekaliga	No	City of Kissimmee	East City Ditch Outfall	2	Lake Tohopekaliga NRP station
Lake Tohopekaliga	No	Osceola County	JUDGES_DCH	2	Lake Tohopekaliga NRP station
Lake Tohopekaliga	No	SFWMD	LT32263013	2	No longer have access; propose moving to Canoe Creek Road.; suggested station name LTCCR
Lake Tohopekaliga	No	City of Kissimmee	Mill Slough at Mill Run Blvd.	2	Lake Tohopekaliga NRP station
Lake Tohopekaliga	No	City of Kissimmee	Mill Slough Outfall	2	Lake Tohopekaliga NRP station
Lake Tohopekaliga	No	Osceola County	PARTIN_CNL	2	Lake Tohopekaliga NRP station
Lake Tohopekaliga	No	Osceola County	RUNNYMEDE	2	Lake Tohopekaliga NRP station
Lake Tohopekaliga	No	City of Kissimmee	Shingle Creek at John Young Pkwy.	2	Lake Tohopekaliga NRP station
Lake Tohopekaliga	No	City of Kissimmee	West City Ditch at Hacienda Circle	2	Lake Tohopekaliga NRP station
Lake Weohyakapka	No	SFWMD	LR14302912	2	NA
Lake Weohyakapka	Yes	Polk County Natural Resources Division	Weohyakapka1	2	NA
Lower Reedy Creek	Yes	SFWMD	CREEDYBR	2	Sufficient TN and TP data
Marion Creek	Yes	SFWMD	DLMARNCR	2	NA
Marion Creek	Yes	SFWMD	DLONDNCR	2	Sufficient TP data; SFWMD will add TN in expanded monitoring
S63A	No	SFWMD	CL06283112	2	NA
S63A	Yes	SFWMD	CL06283111	2	Sufficient TN and TP data
Shingle Creek	Yes	Orange County Environmental Protection Division	SCD	2	Sufficient TN and TP data
Shingle Creek	No	Orange County	Shingle Creek (Central FL Pkwy.)	2	NA
Shingle Creek	No	City of Kissimmee	Shingle Creek at Town Center Blvd.	2	Lake Tohopekaliga NRP station
Shingle Creek	No	City of Kissimmee	Shingle Creek at Yates Rd.	2	Lake Tohopekaliga NRP station
Shingle Creek	No	Orlando/Orange County	Shingle Creek City of Orlando	2	Lake Tohopekaliga NRP station
Shingle Creek	No	City of Orlando	Turkey Lake (North)	2	Lake Tohopekaliga NRP station
Shingle Creek	No	City of Orlando	Turkey Lake (South)	2	Lake Tohopekaliga NRP station

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
Tiger Lake	Yes	DEP Central ROC	G4CE0070 (Tiger1-G4CE0070)	2	Sufficient TN and TP data
Tiger Lake	Yes	Polk County Natural Resources Division	Tiger1 (Tiger1-G4CE0070)	2	Sufficient TN and TP data
Upper Reedy Creek	No	Central Florida Tourism Oversight District	C-12E (C-12E-RC-13H)	2	NA
Upper Reedy Creek	No	Central Florida Tourism Oversight District	RC-13H (C-12E-RC-13H)	2	NA
Upper Reedy Creek	Yes	Central Florida Tourism Oversight District	RC-13L	2	NA
Boggy Creek	No	USGS	02262900	3	NA
Lake Kissimmee	No	SFWMD	S65_S	3	NA
Lake Tohopekaliga	No	SFWMD	S61_S	3	NA
Lake Weohyakapka	No	USGS	02268390	3	NA
Shingle Creek	No	USGS	02263800	3	NA
Shingle Creek	No	USGS	02264495	3	NA
Upper Reedy Creek	No	USGS	02263869	3	NA
Upper Reedy Creek	No	USGS	02264000	3	NA
Upper Reedy Creek	No	USGS	02264003	3	NA
Upper Reedy Creek	No	USGS	02264030	3	NA
Upper Reedy Creek	No	USGS	02264051	3	NA
Upper Reedy Creek	No	USGS	02264060	3	NA
Upper Reedy Creek	No	USGS	02264100	3	NA
Upper Reedy Creek	No	USGS	02266025	3	NA
Upper Reedy Creek	No	USGS	02266200	3	NA
Upper Reedy Creek	No	USGS	02266205	3	NA
Upper Reedy Creek	No	USGS	02266291	3	NA
Upper Reedy Creek	No	USGS	02266293	3	NA
Upper Reedy Creek	No	USGS	02266295	3	NA
Upper Reedy Creek	No	USGS	02266300	3	NA
Upper Reedy Creek	No	USGS	02266480	3	NA
Upper Reedy Creek	No	USGS	02266496	3	NA
Upper Reedy Creek	No	USGS	02266500	3	NA

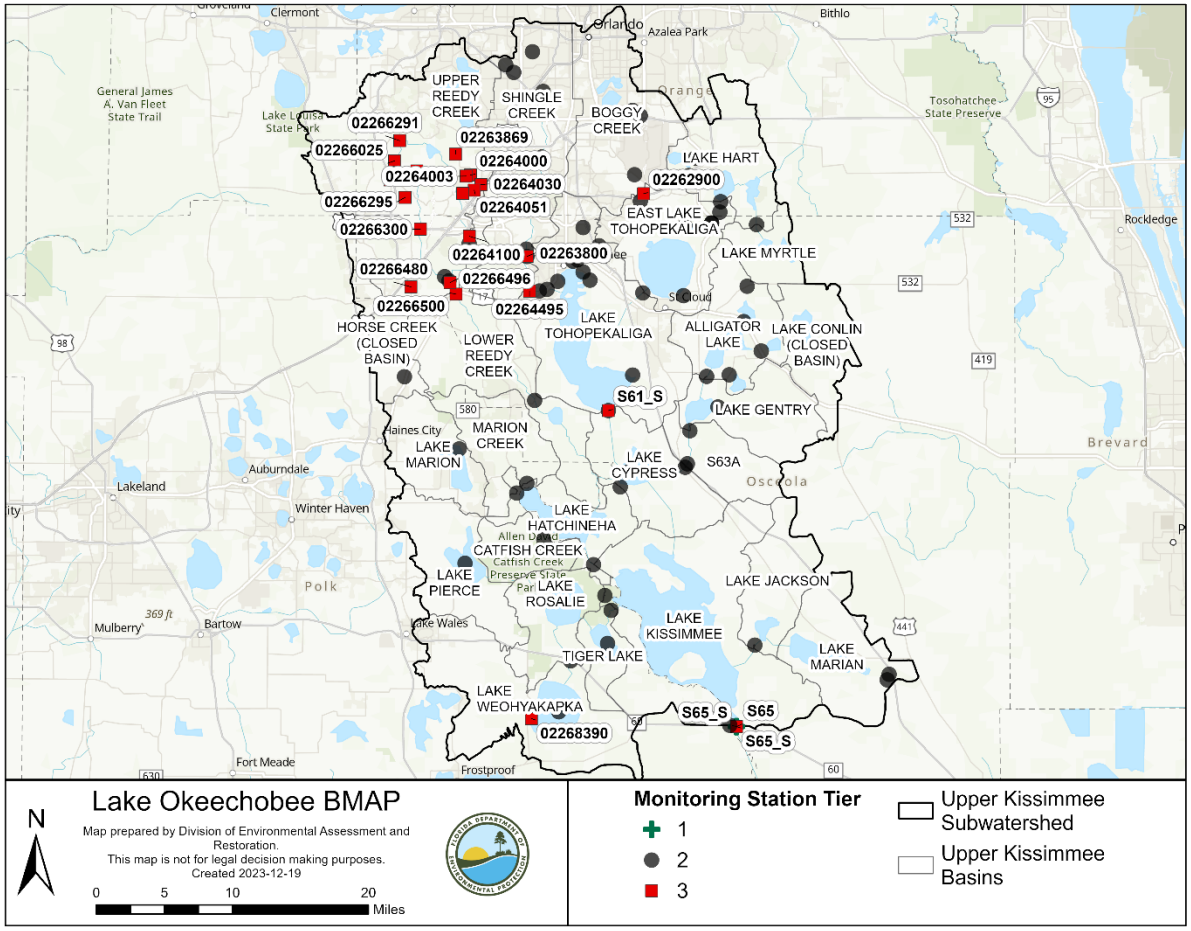

Figure 14. Locations of the water quality monitoring stations in the Upper Kissimmee subwatershed

3.6.2. Basin Evaluation Results

3.6.2.1. TRA Evaluation

The current TP load, based on data from WY2020–WY2024 for the Upper Kissimmee subwatershed, is 72.5 mt/yr. A reduction of 50.7 mt/yr is required to help achieve the TMDL and meet the subwatershed target of 21.8 mt/yr.

Table 48 summarizes the basin evaluation results for the Upper Kissimmee subwatershed. For the basins with sufficient data, Catfish Creek, Lake Pierce, and Tiger Lake have TN concentrations greater than the benchmark, and Lake Marian and Tiger Lake have TP concentrations greater than the benchmark. The TRA prioritization results for the Upper Kissimmee subwatershed are listed in **Table 49**, with 1 the highest priority, 2 the next highest priority, and 3 a priority as resources allow.

3.6.2.2. Hot Spot Analysis

Table 50 summarizes the hot spot analysis results using WY2019–WY2023 data. To be included in the analysis, each station must have at least four samples per year and at least two years of data. This analysis will be run, as needed, and the results will be shared at annual meetings.

Table 48. Basin evaluation results for the Upper Kissimmee subwatershed

Insufficient data = Available data were not at the frequency needed for evaluation.

TRA ID	Basin Name	TN (mg/L) (Benchmark – 1.54)	TN 5-year Average FWM Concentration (mg/L)	TN UAL (lbs/ac)	TN Trend Analysis	TP (mg/L) (Benchmark – 0.12)	TP 5-year Average FWM Concentration (mg/L)	TP UAL (lbs/ac)	TP Trend Analysis
37	Lake Kissimmee	1.37	1.36	2.97	No Significant Trend	0.09	0.09	0.07	No Significant Trend
38	Lake Tohopekaliga	1.01	Insufficient Data	Insufficient Data	No Significant Trend	0.07	Insufficient Data	Insufficient Data	Significant Decreasing
39	Lake Myrtle	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data
40	Alligator Lake	Insufficient Data	Insufficient Data	Insufficient Data	No Significant Trend	Insufficient Data	Insufficient Data	Insufficient Data	No Significant Trend
41	Lake Jackson	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data
42	S63A	Insufficient Data	Insufficient Data	Insufficient Data	No Significant Trend	Insufficient Data	Insufficient Data	Insufficient Data	No Significant Trend
43	Catfish Creek	1.82	Insufficient Data	Insufficient Data	No Significant Trend	0.08	Insufficient Data	Insufficient Data	Significant Decreasing
44	Lake Conlin (closed basin)	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data
45	Upper Reedy Creek	1.05	Insufficient Data	Insufficient Data	No Significant Trend	0.06	Insufficient Data	Insufficient Data	No Significant Trend
46	Lake Rosalie	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data
47	Horse Creek (closed basin)	1.15	Insufficient Data	Insufficient Data	Insufficient Data	0.06	Insufficient Data	Insufficient Data	Insufficient Data
48	Lake Hart	Insufficient Data	Insufficient Data	Insufficient Data	No Significant Trend	Insufficient Data	Insufficient Data	Insufficient Data	No Significant Trend
49	Lake Marian	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	1.00	Insufficient Data	Insufficient Data	No Significant Trend

TRA ID	Basin Name	TN (mg/L) (Benchmark – 1.54)	TN 5-year Average FWM Concentration (mg/L)	TN UAL (lbs/ac)	TN Trend Analysis	TP (mg/L) (Benchmark – 0.12)	TP 5-year Average FWM Concentration (mg/L)	TP UAL (lbs/ac)	TP Trend Analysis
50	Lake Pierce	1.96	Insufficient Data	Insufficient Data	Insufficient Data	0.05	Insufficient Data	Insufficient Data	Insufficient Data
51	Lower Reedy Creek	1.46	Insufficient Data	Insufficient Data	No Significant Trend	0.06	Insufficient Data	Insufficient Data	Significant Deceasing
52	Marion Creek	1.00	Insufficient Data	Insufficient Data	Significant Decreasing	0.07	Insufficient Data	Insufficient Data	Significant Decreasing
53	Lake Marion	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data
54	Tiger Lake	2.05	Insufficient Data	Insufficient Data	Insufficient Data	0.24	Insufficient Data	Insufficient Data	Insufficient Data
55	Lake Gentry	0.97	Insufficient Data	Insufficient Data	No Significant Trend	0.07	Insufficient Data	Insufficient Data	Significant Decreasing
56	Lake Cypress	1.06	Insufficient Data	Insufficient Data	Insufficient Data	0.05	Insufficient Data	Insufficient Data	Insufficient Data
57	East Lake Tohopekaliga	0.65	Insufficient Data	Insufficient Data	No Significant Trend	0.04	Insufficient Data	Insufficient Data	No Significant Trend
58	Shingle Creek	Insufficient data	Insufficient Data	Insufficient Data	No Significant Trend	0.04	Insufficient Data	Insufficient Data	No Significant Trend
59	Lake Hatchineha	1.18	Insufficient Data	Insufficient Data	No Significant Trend	0.07	Insufficient Data	Insufficient Data	Significant Decreasing
60	Lake Weohyakapka	0.82	Insufficient Data	Insufficient Data	No Significant Trend	0.04	Insufficient Data	Insufficient Data	No Significant Trend
61	Boggy Creek	0.47	Insufficient Data	Insufficient Data	Significant Decreasing	0.05	Insufficient Data	Insufficient Data	Significant Decreasing

Table 49. TRA evaluation results for the Upper Kissimmee subwatershed

Insufficient data = Available data were not at the frequency needed for evaluation.

Basin	Station	TN Priority	TP Priority
Alligator Lake	S60	Insufficient Data	Insufficient Data
Boggy Creek	ABOGGN	3	3
Catfish Creek	34008	2	3
East Lake Tohopekaliga	BS-59	3	3
Horse Creek (closed basin)	Horse Crk2	3	3
Lake Conlin (closed basin)		Insufficient Data	Insufficient Data
Lake Cypress	4002	3	3
Lake Gentry	GENTRYDTCH	3	3
Lake Hart	MJ01253123	Insufficient Data	Insufficient Data
Lake Hatchineha	EC-37	3	3
Lake Jackson	LJACKDSCH	Insufficient Data	Insufficient Data
Lake Kissimmee	S65	2	2
Lake Marian	ML22303313	Insufficient Data	1
Lake Marion	51242	Insufficient Data	Insufficient Data
Lake Myrtle		Insufficient Data	Insufficient Data
Lake Pierce	Pierce1	2	3
Lake Rosalie	KUB009	Insufficient Data	Insufficient Data
Lake Tohopekaliga	CL18273011	3	3
Lake Weohyakapka	Weohyakapka1	3	3
Lower Reedy Creek	CREEDYBR	3	3
Marion Creek	DLMARNCR-DLONDNCR	3	3
S63A	S63A	Insufficient Data	Insufficient Data
Shingle Creek	SCD	Insufficient Data	3
Tiger Lake	Tiger1-G4CE0070	2	1
Upper Reedy Creek	C-12E-RC-13H	3	3

Table 50. Hot spot analysis results for the Upper Kissimmee subwatershed

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
Alligator Lake	AL34263113	0	0	0	0	0	0	0	0	0	0
Alligator Lake	AL24263113	0	0	0	0	0	0	0	0	0	0
Alligator Lake	AL11263113	0	0	0	0	0	0	0	0	0	0
Alligator Lake	CO35253112	1	1	0	2	4	0	0	0	1	1
Alligator Lake	LG32263124	0	0	0	0	0	0	0	0	0	0
Boggy Creek	ABOGGN	0	0	0	1	1	0	0	0	0	0
Boggy Creek	Lake Fran	1	1	0	2	4	0	0	0	0	0
Boggy Creek	Lake Mare Prairie	0	0	0	1	1	0	0	0	0	0
Catfish Creek	34008 (ROMCUT)	1	1	0	2	4	1	1	0	2	4
East Lake Tohopekaliga	ET05253114	0	0	0	1	1	0	0	0	0	0
East Lake Tohopekaliga	ET06253113	1	1	0	2	4	0	0	0	0	0
East Lake Tohopekaliga	BS-59	0	0	0	0	0	0	0	0	0	0
Horse Creek	Horse Crk2	1	1	0	2	4	0	0	0	1	1
Lake Cypress	4002 (C03)	1	1	0	1	3	0	0	0	1	1
Lake Gentry	CL19273123	0	0	0	1	1	0	0	0	0	0
Lake Gentry	GENTRYDTCH	1	1	0	2	4	0	0	0	0	0
Lake Hart	MJ01253123	0	0	0	1	1	0	0	0	0	0
Lake Hart	AJ33243122	0	0	0	1	1	0	0	0	0	0
Lake Hart	Buck Lake	0	0	0	0	0	0	0	0	0	0
Lake Hatchinea	HL08283014	1	1	0	1	3	0	0	0	0	0
Lake Hatchinea	EC-37	1	1	0	2	4	0	0	0	0	0

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
Lake Jackson	LJACKDSCH	1	1	0	2	4	0	0	0	1	1
Lake Kissimmee	S65	1	1	0	2	4	0	0	0	1	1
Lake Kissimmee	S65A	1	1	0	2	4	0	0	0	1	1
Lake Kissimmee	PA10313112	1	1	0	2	4	0	0	0	1	1
Lake Kissimmee	LK04313114	1	1	0	2	4	0	0	0	1	1
Lake Marian	ML22303313	2	2	2	2	8	1	1	1	2	5
Lake Pierce	Pierce1	1	1	0	2	4	1	1	0	2	4
Lake Rosalie	KUB009	1	1	0	2	4	NA	NA	NA	NA	NA
Lake Tohopekaliga	BNSHINGLE	1	1	0	2	4	0	0	0	0	0
Lake Tohopekaliga	LT32263013	1	1	0	2	4	0	0	0	0	0
Lake Tohopekaliga	CL18273011	0	0	0	1	1	0	0	0	0	0
Lake Tohopekaliga	East City Ditch Outfall	1	1	0	2	4	0	0	0	0	0
Lake Tohopekaliga	Mill Slough Outfall	1	1	0	2	4	0	0	0	0	0
Lake Tohopekaliga	Bass Slough at Boggy Creek	1	1	0	2	4	0	0	0	1	1
Lake Tohopekaliga	Bass Slough at Timothy Lane	1	1	0	1	3	0	0	0	1	1
Lake Tohopekaliga	Mill Slough at Mill Run Blvd.	1	1	0	1	3	0	0	0	1	1
Lake Tohopekaliga	West City Ditch at Hacienda Circle	1	1	0	2	4	0	0	0	1	1

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
Lake Tohopekaliga	Shingle Creek at John Young Pkwy.	1	1	0	2	4	0	0	0	1	1
Lake Weohyakapka	LR14302912	0	0	0	1	1	0	0	0	0	0
Lake Weohyakapka	Weohyakapka 1	1	1	0	1	3	0	0	0	0	0
Lower Reedy Creek	CREEDYBR	1	1	0	1	3	0	0	0	1	1
Marion Creek	DLMARNCR	1	1	0	2	4	0	0	0	0	0
Marion Creek	DLONDNCR	1	1	0	2	4	0	0	0	1	1
S63A	CL06283111	1	1	0	2	4	0	0	0	0	0
Shingle Creek	Shingle Creek at Town Center Blvd.	1	1	0	2	4	0	0	0	1	1
Shingle Creek	Shingle Creek at Yates Rd.	1	1	0	2	4	0	0	0	0	0
Shingle Creek	Shingle Creek (Central FL Pkwy.)	1	1	0	2	4	0	0	0	0	0
Shingle Creek	SCD	1	1	0	1	3	0	0	0	0	0
Shingle Creek	Turkey Lake (North)	0	0	0	0	0	0	0	0	0	0
Shingle Creek	Turkey Lake (South)	0	0	0	0	0	0	0	0	0	0
Tiger Lake	Tiger1 (Tiger1-G4CE0070)	1	1	0	2	4	1	1	0	2	4
Upper Reedy Creek	C-12E	0	0	0	1	1	0	0	0	0	0
Upper Reedy Creek	RC-13H	1	1	0	2	4	0	0	0	0	0
Upper Reedy Creek	RC-13L	1	1	0	2	4	0	0	0	0	0

3.6.3. Projects

Table 51 summarizes the existing and planned projects for the Upper Kissimmee subwatershed that were provided for the BMAP. The existing and planned projects are a BMAP requirement.

Table 51. Existing and planned projects in the Upper Kissimmee subwatershed

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
4469	Central Florida Tourism Oversight District	RCID-01	Education and Outreach	Landscaping, irrigation, and fertilizer ordinances; PSAs, pamphlets, website, Illicit Discharge Program, inspection program; equivalent FYN program to address needs of visitors, employees, and neighboring property owners.	Education Efforts	Ongoing	NA	884	164	TBD
4470	Central Florida Tourism Oversight District	RCID-02	Property Wide Street Sweeping	Street sweeping of approximately 220,000 lane miles annually.	Street Sweeping	Ongoing	NA	405	417	TBD
5685	Central Florida Tourism Oversight District	RCID-03	Inlet Baskets	Maintenance of pollution control boxes/catch inlet basins cleaned 4 times annually.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	3	3	TBD

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3634	City of Edgewood	EW-01	Water Quality Awareness Program	Water quality education and awareness articles in the city quarterly newsletter. Water quality-related informational brochures, fliers and other publications displayed at city hall for the public.	Education Efforts	Ongoing	NA	32	18	NA
4877	City of Edgewood	EW-02	Street Sweeping	Orange County performs weekly sweeping of approximately 15.6 miles of streets within the City limits.	Street Sweeping	Ongoing	NA	18	19	NA
4878	City of Edgewood	EW-03	Catch Basin Inlet Cleaning	Orange County performs monthly cleaning of storm inlet baskets for debris removal.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	2	2	NA
3686	City of Kissimmee	KS-01	Education and Outreach	PSAs, pamphlets, website, and Illicit Discharge Program.	Education Efforts	Ongoing	NA	253	93	$65,000.00
3687	City of Kissimmee	KS-02	Street Sweeping	Complete 6,573 miles of street sweeping and collect approximately 3,100 cubic yards of debris.	Street Sweeping	Ongoing	NA	1,320	1,360	$50,000.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3688	City of Kissimmee	KS-03	Lake Tivoli	Treatment for older existing development as well as future online development; treatment provides 2.5 times the proposed percent impervious area.	On-line Retention BMPs	Planned	TBD	TBD	TBD	$300,000.00
3680	City of Kissimmee	KS-04	Lakefront Park Redevelopment - Swales/ Rain Gardens	Swale/rain garden system with 2.07 acres of dry detention.	Grass swales without swale blocks or raised culverts	Completed	2015	2	0	$500,000.00
3682	City of Kissimmee	KS-05	Lakefront Park Redevelopment Baffle Boxes	Three nutrient separating baffle boxes and 3 filter boxes within the lakefront park area. will install up to additional two baffle boxes in the next 5 years.	Baffle Boxes-Second Generation	Completed	2015	4	0	$394,267.00
3604	City of Kissimmee	KS-06	Martin Luther King Boulevard Phase III from Thacker Avenue to Dyer Boulevard	Construction of dry detention with SPECIFIC standards (side slopes, littoral zones) per the Federal Aviation Administration for reduction of bird strikes.	Grass swales without swale blocks or raised culverts	Completed	2015	1	0	$1,500,000.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3681	City of Kissimmee	KS-07	Emory Avenue Stormwater Management Pond	An off-line stormwater pond to provide extra storage to alleviate flooding. The pond shall also catch the first flush during rain events to help provide water quality treatment to the West City Ditch.	Wet Detention Pond	Completed	2017	0	0	$500,000.00
4465	City of Kissimmee	KS-08	Mill Slough Restoration	Mill Slough restored eroded banks and removed excess silt that was washed from the bank along with removal of down trees.	Shoreline Stabilization	Completed	2019	NA	NA	$4,568,383.80
4466	City of Kissimmee	KS-09	Woodside Drainage Improvement	The project would reduce flooding and improve the water quality that goes into Shingle Creek basin.	Stormwater System Upgrade	Planned	2029	NA	NA	$4,150,000.00
3655	City of Orlando	ORL-01	18th Street/Parramore Ave Baffle Box	Baffle box installed to remove gross pollutants, including organic debris, sediment and litter. 67.5 cubic feet of material collected.	Baffle Boxes-Second Generation	Completed	2009	3	0	$578,138.00
3657	City of Orlando	ORL-02	19th Street/Parramore Avenue Baffle Box	Baffle box installed to remove gross pollutants, including organic debris, sediment and litter. 54 cubic feet of material collected.	Baffle Boxes-Second Generation	Completed	2009	8	0	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3658	City of Orlando	ORL-03	Pine Street/Orange Blossom Trail Corridor Stormwater Improvements	Installation of 1,800 linear feet of stormwater pipe from Pine Street to Lake Lorna Doone, which includes a baffle box.	Baffle Boxes-Second Generation	Completed	2010	2	1	$942,710.00
3659	City of Orlando	ORL-04	Lake Holden Terrace/Albert Shores Sanitary Components	Sanitary infrastructure installed for septic tank conversions. 11 of 77 homes converted.	OSTDS Phase Out	Completed	2012	320	NA	$3,522,911.00
3660	City of Orlando	ORL-05	Lake Holden Terrace/Albert Shores Stormwater Components	Two baffle boxes and one Storm Flo unit installed within stormwater infrastructure for capturing organic debris, sediment and litter; stormwater infrastructure added to alleviate flooding. 20.5 cubic yards/yr of material collected.	Baffle Boxes-Second Generation	Completed	2012	1,587	98	NA
3495	City of Orlando	ORL-06	Lake Angel Drainage Improvements	Expand the permanent pool volume of Lake Angel and install three baffle boxes in the main inflow pipes.	Wet Detention Pond	Completed	2015	22	1	$1,239,249.00
3497	City of Orlando	ORL-08	Lake Pineloch Basin Inlet Baskets	32 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter. 1,282.5 cubic feet/year of material collected.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	14	14	$40,480.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3509	City of Orlando	ORL-09	Clear Lake Basin Inlet Baskets	29 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter. 594 cubic feet of material collected.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	17	16	$8,550.00
3499	City of Orlando	ORL-10	Lake Lorna Doone Basin Inlet Baskets	16 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter. 729 cubic feet of material collected.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	16	16	$17,755.00
3494	City of Orlando	ORL-11	Lake Mann Basin Inlet Baskets	44 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter. 864 cubic feet of material collected.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	27	27	$48,826.00
3501	City of Orlando	ORL-13	Rock Lake Basin Inlet Baskets	Ten inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter. 358 cubic feet of material collected.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	10	10	$8,550.00
3502	City of Orlando	ORL-14	Lake Sunset Basin Inlet Baskets	Eight inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter. 574 cubic feet of material collected.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	19	18	$8,550.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3503	City of Orlando	ORL-15	Walker Lagoon Basin Inlet Baskets	16 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter. 736 cubic feet of material collected.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	16	16	$17,755.00
3504	City of Orlando	ORL-16	Street Sweeping	Street sweeping within all public roads in City limits. 419, 478 cubic feet of material collected.	Street Sweeping	Ongoing	NA	212	219	TBD
3505	City of Orlando	ORL-17	Education and Outreach	FYN; landscaping, irrigation, fertilizer, and pet waste management ordinances; PSAs; pamphlets; website; and illicit discharge program.	Education Efforts	Ongoing	NA	2,852	1,312	$51,500.00
4467	City of Orlando	ORL-18	Lizzie Rogers Park Baffle Box	Relocation of drainage outfall into Lake Sunset with addition of baffle box.	Baffle Boxes-Second Generation	Completed	2021	5	0	TBD
5684	City of Orlando	ORL-19	BMP Cleanout	17,442 cubic feet per year of material collected from storm lines and BMP structures.	BMP Cleanout	Ongoing	NA	214	139	TBD
6842	City of Orlando	ORL-20	President Barack Obama Parkway Extension - Phase II, Segment 4	Alum station being installed to accommodate roadway expansion and treat water from upstream.	In Waterbody - Alum Injection System	Planned	2038	TBD	TBD	$2,500,000.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
7123	City of Orlando	ORL-22	Water Reclamation Lift Station Emergency Generators	Install emergency generators in 4 lift stations throughout City to prevent sanitary overflows during power outages, including tropical systems; all located within Lake Okeechobee BMAP.	WWTF Upgrade	Completed	2024	NA	NA	TBD
7423	City of Orlando	ORL-23	Lake Beardall Water Quality Project - Nanobubbler	Innovative Technology - Installation of two (2) nanobubbler generators to improve lake water quality, clarity, and maintain healthy aquatic life.	In Waterbody - Biological/ Bacteria Treatment	Planned	TBD	192	54	$95,000.00
7424	City of Orlando	ORL-24	East Lake Arnold Permeable Pavement Project	Installation of two types of pervious pavement as 5 feet ribbons along Strathmore Drive (960-1107) and Dove Street, between Strathmore Drive and Berwyn Road. Biosorption activated media (BAM) to be used for N and P reductions in low-density residential community.	BAM	Planned	2026	TBD	TBD	TBD

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
7425	City of Orlando	ORL-25	Water Conserv I Water Reclamation Facility (WRF) Improvements (Capital Improvement Plan Project Nos. 1-5)	Improve the biosolids processing, tertiary filtration system, electrical systems, treatment plant infrastructure, and power generation infrastructure at Conserv I WRF.	WWTF Upgrade	Planned	2028	TBD	TBD	$145,820,000.00
7458	City of Orlando	ORL-30	Clear Lake (Barker Park) - Aquatic Vegetation Harvesting & Trash Removal	Special equipment (Weedoo) to mechanically remove aquatic vegetation and trash from waterbody on routine basis. Predominant plant species are : Ludwigia, Alternanthera philoxeroides, Nuphar, Nymphaea odorata, Lemna.	Aquatic Vegetation Harvesting	Underway	2034	TBD	TBD	NA
7465	City of Orlando	ORL-31	Lake Rabama - Macroalgal Harvesting	Special equipment (Weedoo) to mechanically remove algae from surface of waterbody on routine basis.	Macroalgal Harvesting	Underway	2034	NA	NA	NA
7466	City of Orlando	ORL-32	Lake Rabama - Aquatic Vegetation Harvesting & Trash Removal	Special equipment (Weedoo) to mechanically remove aquatic vegetation and trash from waterbody on routine basis. Predominant plant species are : Hydrilla, Lemna.	Aquatic Vegetation Harvesting	Underway	2034	TBD	TBD	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
7468	City of Orlando	ORL-33	Lake Fran - Aquatic Vegetation Harvesting & Trash Removal	Special equipment (Weedoo) to mechanically remove aquatic vegetation and trash from waterbody on routine basis. Predominant plant species are : Ludwigia, Alternanthera philoxeroides, Nuphar.	Aquatic Vegetation Harvesting	Underway	2034	TBD	TBD	NA
7470	City of Orlando	ORL-34	Lake Kozart - Aquatic Vegetation Harvesting & Trash Removal	Special equipment (Weedoo) to mechanically remove aquatic vegetation and trash from water body on routine basis. Predominant plant species are : Ludwigia, Alternanthera philoxeroides, Nuphar, Panicum repens.	Aquatic Vegetation Harvesting	Underway	2034	TBD	TBD	NA
3525	FDACS	FDACS-12	BMP Implementation and Verification	Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WAM. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X.	Agricultural BMPs	Ongoing	NA	85,515	6,234	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
4887	FDACS	FDACS-21	Cost-Share BMP Projects	Cost-share projects paid for by FDACS. Acres treated based on FDACS OAWP June 2019 Enrollment. Reductions estimated by DEP using 2019 BMAP LET.	Agricultural BMPs	Ongoing	NA	37,316	2,321	TBD
3670	FDACS - Coordinating Agency	CA-11	Legislative Cost-Share Appropriation Program (Dairy Projects)	There are no Legislative Cost-Share Appropriation Program Dairy Projects to date in Upper Kissimmee.	Agricultural BMPs	Planned	TBD	NA	NA	NA
5410	FDOT District 1	FDOT1-08	Street Sweeping	Street sweeping.	Street Sweeping	Ongoing	NA	61	53	TBD
3632	FDOT District 5	FDOT5-01	239266-B State Road 15 (Hoffner Road) From North of Lee Vista Boulevard to West of State Road 436 (Pond 2)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2018	0	0	TBD
3644	FDOT District 5	FDOT5-02	239266-A State Road 15 Hoffner Ave from east of State Road 436 to Conway Road (Pond 1)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2018	1	0	TBD
3645	FDOT District 5	FDOT5-03	239266-C State Road 15 Hoffner Avenue from West of State 436 to Conway Road (Pond 3)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2018	6	1	TBD

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3646	FDOT District 5	FDOT5-04	239266-D State Road 15 Hoffner Avenue From West of State Road 436 to Conway Road (Pond 4)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2018	12	2	TBD
3647	FDOT District 5	FDOT5-05	239535-F State Road 50 from Good Homes Road to Pine Hills Road (Pond 4)	Add lanes and reconstruct.	Dry Detention Pond	Completed	2014	40	15	TBD
3648	FDOT District 5	FDOT5-06	416518-A Interstate (I) 4 Braided Ramp from US 192 Interchange to Osceola Parkway Interchange (Pond SE-1)	New road construction.	Wet Detention Pond	Completed	2014	6	1	TBD
3649	FDOT District 5	FDOT5-07	416518-B Interstate-4 Braided Ramp from US 192 Interchange to Osceola Parkway Interchange (Pond SE-2)	New road construction.	Wet Detention Pond	Completed	2014	2	0	TBD
3650	FDOT District 5	FDOT5-08	239682-A State Road 500 (US 17-92) from Aeronautical Drive to Budinger Avenue (Pond 1)	Add lanes and rehabilitate pavement.	Wet Detention Pond	Completed	2019	11	2	TBD
3651	FDOT District 5	FDOT5-09	239682-B State Road 500 (US 17-92) from Aeronautical Drive to Budinger Avenue (Pond 2)	Add lanes and rehabilitate pavement.	Wet Detention Pond	Completed	2019	21	2	TBD

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3633	FDOT District 5	FDOT5-10	239682-C State Road 500 (US 17-92) from Aeronautical Drive to Budinger Avenue (Pond 3)	Add lanes and rehabilitate pavement.	Wet Detention Pond	Completed	2019	10	2	TBD
3690	FDOT District 5	FDOT5-11	239682-D State Road 500 (US 17-92) from Aeronautical Drive to Budinger Avenue (Pond 4)	Add lanes and rehabilitate pavement.	Wet Detention Pond	Completed	2019	13	5	TBD
3696	FDOT District 5	FDOT5-12	418403-A, B State Road 600 (US 17/92) John Young Parkway (JYP) from South of Portage Street to North of Vine Street (US192) (Pond 2)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2019	3	1	TBD
3697	FDOT District 5	FDOT5-13	239454-A Widening of SR 436 from SR 528 to SR 552 (Pond A)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2010	2	1	TBD
3698	FDOT District 5	FDOT5-14	239635-A New Bridge State Road 500 at Reedy Creek (Pond 1)	New bridge.	Dry Detention Pond	Completed	2010	1	0	TBD
3699	FDOT District 5	FDOT5-15	239635-B New Bridge State Road 500 at Reedy Creek (Pond 2)	New bridge.	Wet Detention Pond	Completed	2010	3	0	TBD
3700	FDOT District 5	FDOT5-16	239663-A Widening of State Road 530 from State Road 535 to Hoagland Boulevard (Pond A)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2019	3	0	TBD

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3701	FDOT District 5	FDOT5-17	239663-B Widening of State Road 530 from State Road 535 to Hoagland Boulevard (Pond B)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2010	7	1	TBD
3714	FDOT District 5	FDOT5-18	239663-C Widening of State Road 530 from State Road 535 to Hoagland Boulevard (Pond 3)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2010	17	4	TBD
3703	FDOT District 5	FDOT5-19	239663-D Widening of State Road 530 from State Road 535 to Hoagland Boulevard (Pond D)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2010	4	2	TBD
3695	FDOT District 5	FDOT5-20	242436-A State Road 400 Ramps at Gore Avenue Retention Pits (Ponds 1 and 2)	Ramps.	Dry Detention Pond	Completed	2010	3	0	TBD
3705	FDOT District 5	FDOT5-21	242484-A Widening of State Road 400 from Universal Boulevard to South Street (Pond 4)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2010	3	1	TBD
3713	FDOT District 5	FDOT5-22	405515-A and B State Road 400 Wet Detention Pond (Ponds 1 and 2)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2010	0	1	TBD
3707	FDOT District 5	FDOT5-23	410732-B State Road 400 Swales	Add lanes and reconstruct.	Grass swales without swale blocks or raised culverts	Completed	2010	1	0	TBD
3708	FDOT District 5	FDOT5-24	Street Sweeping	Monthly street sweeping.	Street Sweeping	Ongoing	NA	421	368	TBD

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3709	FDOT District 5	FDOT5-25	Education and Outreach	Funding for Orange County Water Atlas website, and illicit discharge inspection and training program.	Education Efforts	Ongoing	NA	68	20	TBD
3710	FDOT District 5	FDOT5-26	2396831 Pond 6 (SR 500 Widening From Eastern Ave. to Nova Road)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2017	66	12	TBD
3711	FDOT District 5	FDOT5-27	2396831 Pond 7 (SR 500 Widening From Eastern Ave. to Nova Road)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2017	79	7	TBD
3706	FDOT District 5	FDOT5-28	407143-4 Ponds WDA 2A and 2B (From West of International Dr. to Universal Blvd.)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2021	16	4	TBD
3712	FDOT District 5	FDOT5-29	407143-5 Pond WDA 3 (From Universal Blvd. to West of John Young Parkway)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2021	8	2	TBD
3704	FDOT District 5	FDOT5-30	407143-5 Pond WDA 4 (SR 482 Widening from West of Turkey Lake Road to East of Universal Blvd.)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2021	18	7	TBD
4463	FDOT District 5	FDOT5-31	407143-6 State Road 482 (Sand Lake Rd) at John Young Parkway - Overpass over Sand Lake	Overpass over Sand Lake at John Young Parkway (2 wet detention ponds for FM 407143-1).	Wet Detention Pond	Completed	2021	4	2	TBD

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4894	FDOT District 5	FDOT5-32	239714-SR 600 from West of Poinciana to County Road (CR) 535 (Pond 1)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2022	2	1	TBD
4895	FDOT District 5	FDOT5-33	239714-SR 600 from West of Poinciana to CR 535 (Pond 2)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2022	1	1	TBD
4896	FDOT District 5	FDOT5-34	239714-SR 600 from West of Poinciana to CR 535 (Pond 3)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2022	0	0	TBD
4897	FDOT District 5	FDOT5-35	239304-SR 530 From Lake Centerline to East of Secret Lake Drive (Pond 1)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2014	1	0	TBD
4898	FDOT District 5	FDOT5-36	239304-SR 530 from Lake Centerline to East of Secret Lake Drive (Pond 5)	Add lanes and reconstruct.	Wet Detention Pond	Completed	2014	1	0	TBD
6288	FDOT District 5	FDOT5-37	FM: 444187-1	Pond 101A, B, C (Diverging Diamond Interchange).	Wet Detention Pond	Completed	2023	8	0	TBD
3521	Orange County	OC-01	Education and Outreach	FYN; landscaping, irrigation, fertilizer, and pet waste management ordinances; PSAs; pamphlets; Water Atlas website; and illicit discharge program.	Education Efforts	Ongoing	NA	14,785	9,192	$225,000.00

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3689	Orange County	OC-02	Lake Conway Street Sweeping	Street sweeping of 5,039 curb miles annually.	Street Sweeping	Ongoing	NA	213	158	$150,666.00
3693	Orange County	OC-03	Lake Holden Street Sweeping	Street sweeping of 829 curb miles annually.	Street Sweeping	Ongoing	NA	35	26	$15,587.00
3692	Orange County	OC-04	Lake Jessamine Street Sweeping	Street sweeping of 734 curb miles annually.	Street Sweeping	Ongoing	NA	31	23	$13,801.00
3715	Orange County	OC-05	Shingle/Boggy/Hart Basin Street Sweeping	Countywide street sweeping (about 13,000 curb miles). Multiple locations.	Street Sweeping	Ongoing	NA	176	130	$404,000.00
3662	Orange County	OC-07	Lake Conway Curb Inlet Basket (CIB) Existing	Curb or grate inlet filter baskets (116) to collect 16,169 lbs/yr of material.	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2015	4	4	$112,000.00
3552	Orange County	OC-09	Lake Pineloch CIB	Curb or grate inlet filter baskets (23) to collect 4,158 lbs/yr of material.	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2008	1	1	$18,000.00
7621	Orange County	OC-100	Update Chapter 37 Wastewater Code	Increased sewer connection requirements in priority focus area: <2 equivalent residential unit fronting gravity or force main, >2 equivalent residential unit connect within 600 feet of main enhanced septic (65% N Reduction) in lots one acre or less septic <150' from waterbody must be enhanced.	Regulations, Ordinances, and Guidelines	Underway	2025	TBD	TBD	NA

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7629	Orange County	OC-101	Lake Buchanan Alum Dosing and Application	Alum dosing study and in-lake alum surface application to sequester TP release from sediments.	In Waterbody - Alum Injection System	Planned	2027	TBD	TBD	$350,000.00
7630	Orange County	OC-102	Lake Okeechobee BMAP BMP Assessment	BMAP scale assessment of nutrient sources and sinks. Study produces a ranked list of water quality improvement projects.	Study	Planned	2027	NA	NA	$200,000.00
7631	Orange County	OC-103	Lake Condel Lead Assessment	Lead source assessment and remediation, abatement recommendations.	Study	Planned	2027	NA	NA	$200,000.00
7632	Orange County	OC-104	Lake Hart Lead Assessment	Lead source assessment and remediation, abatement recommendations.	Study	Planned	2027	NA	NA	$225,000.00
7633	Orange County	OC-105	Lake Mary Jane Lead Assessment	Lead source assessment and remediation, abatement recommendations.	Study	Underway	2026	NA	NA	$200,731.80
7634	Orange County	OC-106	Bass Lake 4e Sediment Design	Alum dosing study and in-lake alum surface application to sequester TP release from sediments.	In Waterbody - Alum Injection System	Underway	2024	TBD	TBD	$215,610.00
7635	Orange County	OC-107	Boggy Creek Bacteria BMP Feasibility Study	Conduct assessment to determine possible bacteria sources.	Study	Underway	2024	NA	NA	$179,000.21

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7636	Orange County	OC-108	Bass Lake 4e BMP Bass Lake Boulevard Bioretention Swales Design	Bioretention system with BAM along Bass Lake Boulevard.	Retention/Detention BMP Retrofit with Nutrient Reducing Media	Planned	2027	TBD	TBD	$175,000.00
7637	Orange County	OC-109	Bass Lake 4e BMP Pond (#7102) Construction	Retrofit existing Pond 7102 with a BAM sidebank filter.	Retention/Detention BMP Retrofit with Nutrient Reducing Media	Planned	2026	TBD	TBD	TBD
3556	Orange County	OC-11	Lake Holden CIB	Curb or grate inlet filter baskets (115) to collect 27,602 lbs/yr of material.	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2008	6	6	$41,000.00
7638	Orange County	OC-110	Bass Lake 4E BMP Bioretention Sites 1-4 Design	Develop construction plans and obtain permitting for 4 bioswales as pre-treatment to Bass Lake.	Bioswales	Planned	2026	TBD	TBD	$150,000.00
7639	Orange County	OC-111	Lake Condel Nutrient-Separating Baffle Box (NSBB) Design	Develop construction plans and obtain permitting for 2 NSBBs with media to be included with proposed drainage improvements at Lake Condel.	Baffle Boxes-Second Generation with Media	Planned	2025	TBD	TBD	$100,000.00
7640	Orange County	OC-112	Lake Condel Feasibility Study	Evaluate feasibility of design/permitting/construction of 2 NSBB with media, 4 TBIs, and pet waste stations.	Study	Underway	2024	NA	NA	$126,347.72

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7641	Orange County	OC-113	Lake Condel Hydro-Nutrient Assessment	Develop a basin evaluation for Lake Condel, estimate pollutant loading from stormwater, and provide recommendations for BMPs.	Study	Completed	2012	NA	NA	$65,061.56
3557	Orange County	OC-12	Lake Jessamine CIB	Curb or grate inlet filter baskets (92) to collect 13,025 lbs/yr of material.	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2008	3	3	$110,000.00
3558	Orange County	OC-13	Lake Floy CIB	Curb or grate inlet filter baskets (10) to collect 4,835 lbs/yr of material.	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2008	1	1	$10,000.00
3559	Orange County	OC-14	Lake Cane CIB	Curb or grate inlet filter baskets (14) to collect 3,845 lbs/yr of material.	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2008	1	1	$14,000.00
3560	Orange County	OC-15	Lake Odell CIB	Curb or grate inlet filter baskets (3) to collect 904 lbs/yr of material.	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2008	0	0	$3,000.00
3561	Orange County	OC-16	Lake Tyler CIB	Curb or grate inlet filter baskets (10).	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2008	1	1	$11,000.00
3562	Orange County	OC-17	Lake Down/Windermere CIB	Curb or grate inlet filter baskets (51) to collect 16,934 lbs/yr of material.	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2014	4	4	$56,000.00
3563	Orange County	OC-18	Lake Tibet CIB	Curb or grate inlet filter baskets (92) to collect 13,494 lbs/yr of material.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	3	3	$31,000.00

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3564	Orange County	OC-19	Lisa Waterway Continuous Deflective Separation (CDS) Unit	Treats runoff from Orange Avenue.	Hydrodynamic Separators	Completed	2013	3	2	$225,000.00
3579	Orange County	OC-20	Randolph Avenue CDS Unit	Treats runoff from Randolph Avenue.	Hydrodynamic Separators	Completed	2013	0	0	TBD
3566	Orange County	OC-21	Randolph Avenue Stormceptor™	Stormceptor™.	Hydrodynamic Separators	Completed	2013	0	0	TBD
3554	Orange County	OC-22	Randolph (Hansel) Avenue Pond	Retrofit of wet detention pond - increased residence time, pond depth.	Wet Detention Pond	Completed	2019	0	0	TBD
3568	Orange County	OC-23	Lake Mary Jess Pond	Wet retention pond created from canal.	Wet Detention Pond	Completed	2013	9	11	$534,795.00
3569	Orange County	OC-24	Lake Odell Sediment Sump	Small sump collects sediment from roadway, with an estimate of 12,000 lbs/yr of material.	Control Structure	Completed	2014	2	2	$33,300.00
3570	Orange County	OC-25	Lake Jennie Jewel NSBB Fitted with Bioactivated Media	Construct second generation NSBB containing media. Improve headwall and fore bay prior to discharge to the lake off Summerlin Avenue.	Baffle Boxes-Second Generation with Media	Completed	2019	104	1	$319,546.00
3571	Orange County	OC-26	Lake Anderson Alum Treatment System	Storm pond enhancement with alum.	Stormwater - Alum Injection System	Completed	2017	782	13	$345,166.00
3572	Orange County	OC-27	Lake Jessamine Surface Alum	Whole-lake alum treatment.	In Waterbody - Alum Injection System	Completed	2013	108	14	$246,000.00

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3573	Orange County	OC-28	Lake Down Alum Treatment Facility	Installation of offline alum injection facility on the upstream portion of the Butler Chain of Lakes to address phosphorus loading to the chain and downstream.	In Waterbody - Alum Injection System	Completed	2016	318	36	$2,000,000.00
3574	Orange County	OC-29	Lake Conway Hydrologic and Nutrient Study	Identify nutrient sources.	Study	Completed	2021	NA	NA	NA
3575	Orange County	OC-30	Lake Jennie Jewel CIB Installation	Install baskets in stormwater inlets.	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2015	2	2	$9,360.00
3577	Orange County	OC-32	Lake Gem Mary Nutrient Loading Assessment	Identify impairment sources and provide BMP recommendations.	Study	Completed	2019	NA	NA	$162,517.00
3578	Orange County	OC-33	Lake Conway Old Dominion Road NSBB	Treat stormwater from Lake Conway Woods.	Baffle Boxes-Second Generation with Media	Completed	2015	TBD	TBD	$173,513.00
3541	Orange County	OC-34	Lake Conway Pershing CDS	Treat stormwater from Pershing Avenue.	Hydrodynamic Separators	Completed	2010	TBD	TBD	TBD
3539	Orange County	OC-35	Lake Conway Cullen Lakeshore CDS	Treat stormwater from Cullen Lakeshore.	Hydrodynamic Separators	Completed	2013	TBD	TBD	TBD
3565	Orange County	OC-36	Lake Jessamine 608 Viscaya NSB1	Treat stormwater from Viscaya Avenue.	Baffle Boxes-Second Generation with Media	Completed	2015	TBD	TBD	TBD
3530	Orange County	OC-37	Lake Jessamine 616 Viscaya NSB1	Treat stormwater from Viscaya Avenue.	Baffle Boxes-Second Generation with Media	Completed	2015	TBD	TBD	TBD

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3531	Orange County	OC-38	Lake Jessamine Silvera Avenue NSBB	Treat stormwater from Silvera Avenue.	Baffle Boxes-Second Generation with Media	Completed	2015	TBD	TBD	TBD
3532	Orange County	OC-39	Lake Tyler Apts. 8 CDS	Treat stormwater from Lake Tyler Apts.	Hydrodynamic Separators	Completed	2008	TBD	TBD	TBD
3533	Orange County	OC-40	Lake Tyler Apts. 9 CDS	Treat stormwater from Lake Tyler Apts.	Hydrodynamic Separators	Completed	2008	TBD	TBD	TBD
3534	Orange County	OC-41	Hidden Cove Apts. 7 CDS	Treat stormwater from Hidden Cove Apts.	Hydrodynamic Separators	Completed	2008	TBD	TBD	TBD
3535	Orange County	OC-42	Lake Tibet Houston Pl. NSBB	Treat stormwater from Houston Place.	Baffle Boxes-Second Generation with Media	Completed	2017	TBD	TBD	TBD
3536	Orange County	OC-43	Lake Down Subbasin 9 NSBB	Treat stormwater from subbasin 9 in Lake Down.	Baffle Boxes-Second Generation	Completed	2017	165	7	$390,000.00
3537	Orange County	OC-44	Lake Jessamine Hydrologic Nutrient Budget Study	Hydrologic and nutrient budget study.	Study	Completed	2012	NA	NA	$105,886.00
3553	Orange County	OC-46	Bass Lake CIB	Collect 1,572 lbs/yr of material in 6 CIBs.	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	1	1	$5,430.00
3540	Orange County	OC-47	Lake Jennie Jewel Surface Water & Sediment Alum Treatment	In-lake application of alum and buffer.	In Waterbody - Alum Injection System	Completed	2020	0	657	$143,349.00
3528	Orange County	OC-48	LaGrange CIB	Collect 2,290 lbs/yr of material.	Catch Basin Inserts/Inlet Filter Cleanout	Completed	2014	2	1	$7,200.00
3542	Orange County	OC-49	Lake Christie NSBB	Install nutrient separating baffle box fitted with bioactivated media.	Baffle Boxes-Second Generation with Media	Completed	2018	114	2	$151,500.00

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3543	Orange County	OC-50	Lake Pineloch NSBB-Upflow Filter	Construct a treatment train consisting of an on-line nutrient separating baffle box and off-line upflow filter fitted with reducing media.	BMP Treatment Train	Completed	2021	358	57	$817,200.00
3544	Orange County	OC-51	Shingle Creek Hydro/ Nutrient Assessment	Conduct a nutrient/hydro assessment producing a ranked list of BMPs.	Study	Completed	2020	NA	NA	$134,958.00
3545	Orange County	OC-52	Boggy Creek B-14 Pipeline (Segment B)	Replace structures and failing 60-inch corrugated metal pipe.	Stormwater System Rehabilitation	Completed	2016	NA	NA	$172,840.00
3546	Orange County	OC-53	Bonnie Brook Erosion Control	Removed failing fabriform revetment and install new reinforced concrete channel lining and riprap within segments of the Lake Ellenor Outfall Canal and Westridge Outfall Canal.	Shoreline Stabilization	Completed	2017	TBD	TBD	$387,412.00
3547	Orange County	OC-54	B-14 Wheatberry Court	Repair existing slope failure areas and install turf reinforcement mat to stabilize slope.	Shoreline Stabilization	Completed	2019	TBD	TBD	$60,000.00
3548	Orange County	OC-55	Boggy Creek B-14 Pipeline (Segments A, C, and D)	Replace 4,500 LF of failing 60-inch corrugated metal pipe.	Stormwater System Rehabilitation	Underway	2026	NA	NA	$2,800,000.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
4900	Orange County	OC-56	Lake Hickorynut Hydro/Nutrient Source Assessment and Feasibility Study	Assess hydrological and nutrient pollutant sources, allocate source loading, produce a ranked list of BMPs for consideration. Evaluate feasibility of pond modification with media.	Study	Completed	2023	NA	NA	$298,870.36
4901	Orange County	OC-57	Lake Gem Mary Alum Treatment Design	Assess alum dose necessary to suppress internal recycling of sediment TP pollutants.	In Waterbody - Alum Injection System	Completed	2019	NA	NA	$63,671.64
4902	Orange County	OC-58	Lake Gem Mary Alum Treatment	Whole-lake surface water and sediment inactivation alum treatment.	In Waterbody - Alum Injection System	Completed	2020	543	12	$109,055.00
4903	Orange County	OC-59	Shingle Creek Feasibility Study	Determine constructability of BMPs intended to improve water quality and/or impound water.	Study	Completed	2021	NA	NA	$197,354.17
4904	Orange County	OC-60	Holden Heights Community Improvements Phase IV	Project includes new gravity sewer to replace aging septic tank systems.	OSTDS Phase Out	Completed	2020	495	0	TBD

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
4905	Orange County	OC-61	Hamlin WRF	Project consists of the design and construction of new physical, biological and chemical treatment facilities for raw sewage with an capacity of 5 mgd. Designed to meet the effluent goals of an advanced WRF.	WWTF Nutrient Reduction	Completed	2023	TBD	TBD	TBD
5414	Orange County	OC-62	Lake Pineloch Surface Water and Sediment Alum Treatment	Whole-lake surface water and sediment inactivation alum treatment.	In Waterbody - Alum Injection System	Completed	2021	NA	118	$281,434.69
5415	Orange County	OC-63	Lake Jennie Jewel Interconnect BMP Feasibility Study	Assess the feasibility of constructing a BMP in the interconnect between Lake Jennie Jewel and Lake Gatlin.	Study	Completed	2019	NA	NA	$56,937.63
5416	Orange County	OC-64	Lake Jennie Jewel NSBB Design	Design a second generation NSBB for construction on Summerlin Avenue.	Study	Completed	2018	NA	NA	$64,979.47
5417	Orange County	OC-65	Lake Jennie Jewel NSBB Performance Monitoring	Determine in-situ nutrient removal efficiencies and load reductions.	Study	Completed	2021	NA	NA	$139,370.00
5418	Orange County	OC-66	Lake Holden Surface Alum	Whole-lake alum treatment.	In Waterbody - Alum Injection System	Completed	2012	TBD	TBD	$130,000.00
5419	Orange County	OC-67	Lake Holden 43rd Street Pond Improvements	Outfall control elevation raised to increase permanent pool storage.	Wet Detention Pond	Completed	2019	TBD	TBD	$11,097.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
5420	Orange County	OC-68	Lake Pineloch Keystone Drive BMP Feasibility Study	Determine the constructability of a BMP treatment train.	Study	Completed	2019	NA	NA	$78,830.88
5421	Orange County	OC-69	Stormwater Harvesting	Stormwater harvesting and exfiltration with real time control to demonstrate the feasibility of the system at reducing stormwater runoff from the site, decreasing potable water usage by jetter and spray trucks, and increasing groundwater recharge.	Stormwater Reuse	Completed	2019	TBD	TBD	TBD
5422	Orange County	OC-70	Skylake Canal Bank Stabilization	Regrading 500 feet of canal bank, placement of 2,376 square feet of sheet pile, and turf reinforcement.	Shoreline Stabilization	Completed	2021	TBD	TBD	$1,060,000.00
5670	Orange County	OC-71	Keystone Drive NSBB-UFF Performance Monitoring (Year 1)	In-situ measurement and reporting of BMP TP and TP load reductions.	Baffle Boxes-Second Generation with Media	Completed	2023	TBD	TBD	$122,463.37
5671	Orange County	OC-72	Lake Buchanan Assessment	Assessment of sources and sinks of nutrient pollutants in the watershed which informs a lake water quality management plan.	Study	Completed	2024	NA	NA	$159,855.38
5672	Orange County	OC-73	Boggy Creek Assessment	Conduct a nutrient/hydro assessment producing a ranked list of BMPs.	Study	Completed	2024	NA	NA	$183,896.06

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
5673	Orange County	OC-74	Bass Lake Assessment/Feasibility Study	Conduct a nutrient/hydro assessment producing a ranked list of BMPs.	Study	Completed	2023	NA	NA	$283,728.90
5674	Orange County	OC-75	Bumby-Tyner Assessment	Conduct a nutrient/hydro assessment producing a ranked list of BMPs.	Study	Underway	2024	NA	NA	$157,416.44
5675	Orange County	OC-76	Shingle Creek Design Pond 6459	Design Pond Modification to include expansion/ baffle/ media filter/ canal treatment.	BMP Treatment Train	Underway	2025	NA	NA	$166,561.04
5676	Orange County	OC-77	Bonnie Brook Pump Station Upgrade (PS-029)	Replacement of 30 hp electric motors with 40 hp motors, upgrade of wet well and pump intake bells, and electrical panel upgrades.	Stormwater System Upgrade	Completed	2020	TBD	TBD	$206,745.00
5677	Orange County	OC-78	Wheatberry Ct B-14 Bank Stabilization	Bank stabilization along B-14 canal through installation of geotextile fabric for slope stabilization.	Stormwater System Upgrade	Completed	2020	TBD	TBD	$73,286.00
5678	Orange County	OC-79	Shingle Creek S-02 Canal Stabilization	Bank stabilization along S-02 canal through installation of geotextile fabric for slope stabilization.	Stormwater System Upgrade	Completed	2020	TBD	TBD	$369,000.00
5679	Orange County	OC-80	Lake Gatlin Sediment Inactivation	In-lake alum surface application to sequester TP release from sediments.	In Waterbody - Alum Injection System	Completed	2022	NA	65	$122,480.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
5680	Orange County	OC-81	Lake Jessamine Evaluation of Current Sediment Impacts Study	Evaluation of current sediment characteristics and potential impacts on water quality.	Study	Completed	2021	NA	NA	$36,130.00
5681	Orange County	OC-82	Lake Jessamine Surface Water and Sediment Alum Treatment	Whole-lake surface water and sediment inactivation alum treatment.	In Waterbody - Alum Injection System	Underway	2025	TBD	TBD	$616,940.00
5683	Orange County	OC-84	Groundwater Vulnerability Study	Countywide assessment of the risk and vulnerability of groundwater and surface water to contamination from septic systems.	Study	Completed	2024	NA	NA	$274,444.00
6341	Orange County	OC-85	Keystone Drive NSBB-UFF Performance Monitoring (Year 2)	In-situ measurement and reporting of BMP load reduction for gen 2 baffle box and off-line upflow filter.	Baffle Boxes-Second Generation with Media	Underway	2026	TBD	NA	$101,169.21
6342	Orange County	OC-86	Big Sand Lake Lead Assessment	Lead source assessment and remediation/abatement recommendations (and supplemental assessment).	Study	Underway	2025	NA	NA	$335,630.15
6706	Orange County	OC-87	Shingle Creek Design Pond 6010	Pond modification to increase flow through system and retention time.	Stormwater System Upgrade	Underway	2025	TBD	TBD	$88,419.46
6993	Orange County	OC-89	Bass Lake 4e BMP Feasibility Study	Feasibility assessment to determine constructability of several water quality BMPs	Retention/ Detention BMP Retrofit with Nutrient Reducing Media	Completed	2023	NA	NA	$113,755.08

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
6994	Orange County	OC-90	Bass Lake 4e BMP Design (Pond #7102) BMP #1	Design BAM sidebank filters to treat nutrients in an existing stormwater.	Retention/ Detention BMP Retrofit with Nutrient Reducing Media	Underway	2025	TBD	TBD	$121,497.40
6990	Orange County	OC-91	Lake Buchannan Pond 6244 Downflow Filter FS	Determine the constructability of a BMP treatment train for Orange County stormwater pond #6244.	BMP Treatment Train	Underway	2024	NA	NA	$119,448.99
6992	Orange County	OC-92	Lake Bumby-Tyner Sediment Inactivation - Dose Testing	Project to determine the safe dose of buffered alum needed to scrub TP from the water column and sequester TP released from benthic muck sediments and groundwater flow into the lake bottom.	In Waterbody - Alum Injection System	Underway	2024	TBD	TBD	$265,477.00
6997	Orange County	OC-93	Bass Lake 4E BMP Bioretention Sites 1-4 FS	Feasibility study to determine the constructability of bioswales in several different locations. Coordinates provide are roughly in the middle of the project swales.	Bioswales	Underway	2024	TBD	TBD	$112,482.54

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
7005	Orange County	OC-94	Lake Conway CON0270 Alsace Ct Feasibility Study/Design	Feasibility study to determine if a gen 2 NSBB / BAM upflow-filter can be permitted and constructed. Design of 3 CIBs when determined infeasible.	Study	Completed	2023	NA	NA	$86,821.00
7007	Orange County	OC-95	Lake Conway CON0270 Alsace Ct Curb Inlet Baskets	Install 3 CIBs in lieu of baffle box due to surcharged pipe condition.	Catch Basin Inserts/Inlet Filter Cleanout	Planned	2025	TBD	TBD	$11,000.00
7008	Orange County	OC-96	Lake Conway CON0290 Trentwood Feasibility Study/Design	Feasibility Study and Design of a baffle box with an up-flow filter using BAM.	Study	Underway	2024	NA	NA	$191,518.21
7009	Orange County	OC-97	Lake Conway CON0460 Wallace St Feasibility Study/Design	Feasibility study and design of an up-flow filter using BAM.	Study	Underway	2024	NA	NA	$190,099.63
7110	Orange County	OC-98	Hamlin WRF Phase 2 Expansion to 10 mgd AADF	Expansion of Hamlin WRF from 5 mgd to 10 mgd.	WWTF Upgrade	Underway	2030	NA	NA	$67,000,000.00
7111	Orange County	OC-99	S. WRF Advanced Waste Treatment Improvements	Conversion of S. WRF to an advanced wastewater treatment plant.	WWTF Upgrade	Underway	2028	TBD	TBD	$120,000,000.00
3506	Osceola County	OSC-01	Narcoossee Road IB Ponds 2 and 3	Roadway widening.	Wet Detention Pond	Completed	2011	9	1	TBD
3507	Osceola County	OSC-02	Narcoossee Road III Ponds C3A & C3B	Roadway widening.	Wet Detention Pond	Completed	2012	3	1	TBD
3508	Osceola County	OSC-03	Narcoossee Road III Pond D3	Roadway widening.	Wet Detention Pond	Completed	2012	9	1	TBD

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3511	Osceola County	OSC-04	Narcoossee Road III Pond E1	Roadway widening.	Wet Detention Pond	Completed	2012	5	0	TBD
3595	Osceola County	OSC-05	Neptune Road I - Ponds 100, 200, and 300	Road improvement.	Wet Detention Pond	Completed	2010	1,334	1	TBD
3596	Osceola County	OSC-06	Old Wilson Road Pond D002-P	Road improvement.	On-line Retention BMPs	Completed	2012	17	0	TBD
3597	Osceola County	OSC-07	Old Wilson Road Pond D004-P	Road improvement.	On-line Retention BMPs	Completed	2012	19	0	TBD
3598	Osceola County	OSC-08	Old Wilson Road Pond E002-P	Road improvement.	On-line Retention BMPs	Completed	2012	16	1	TBD
3599	Osceola County	OSC-09	Stewart Street Regional Pond Retrofit	Regional pond retrofit.	Wet Detention Pond	Completed	2009	2,835	337	TBD
3600	Osceola County	OSC-10	Education and Outreach	FYN; landscaping, irrigation, fertilizer, and pet waste management ordinances; PSAs; pamphlets; website; and illicit discharge program.	Education Efforts	Ongoing	NA	18,018	8,940	TBD
3602	Osceola County	OSC-12	East Lake Reserve Stormwater Reuse	Stormwater reuse for landscape irrigation from pond A1 (9.1A).	Stormwater Reuse	Completed	Prior to 2014	439	18	TBD
3567	Osceola County	OSC-13	Neptune Rd. Stormwater Reuse	Stormwater reuse for landscape irrigation from Ponds 100/101 and 300.	Stormwater Reuse	Completed	Prior to 2014	125	6	$640,690.00
3607	Osceola County	OSC-14	Bellalago and Isles of Bellalago Stormwater Reuse	Stormwater reuse for landscape irrigation (197A).	Stormwater Reuse	Completed	Prior to 2014	2,222	118	TBD

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3608	Osceola County	OSC-15	Poinciana Commerce Center Reuse	Stormwater reuse for landscape irrigation from Pond 1.	Stormwater Reuse	Completed	Prior to 2014	8	0	TBD
3609	Osceola County	OSC-16	Kissimmee Bay Reuse	Stormwater reuse; 20-year duration for 84.5 acres of golf course and five-year duration for 45.5 acres of landscape irrigation.	Stormwater Reuse	Completed	Prior to 2014	442	31	TBD
3610	Osceola County	OSC-17	Remington Reuse	Stormwater reuse for golf course irrigation from Ponds 12, 13, 14A, and 14B.	Stormwater Reuse	Completed	Prior to 2014	205	11	TBD
3611	Osceola County	OSC-18	Eagle Lake Reuse	Stormwater reuse for turf irrigation.	Stormwater Reuse	Completed	Prior to 2014	892	49	TBD
3612	Osceola County	OSC-19	La Quinta Inn Reuse	Stormwater reuse for turf irrigation.	Stormwater Reuse	Completed	Prior to 2014	49	2	TBD
3613	Osceola County	OSC-20	Lake Toho Regional Water Storage Facility (Judge Farms)	Construction of a regional stormwater pond and an alternative water supply reservoir.	Stormwater Treatment Areas (STAs)	Completed	2022	20,415	748	TBD
3614	Osceola County	OSC-21	Street Sweeping	Monthly street sweeping.	Street Sweeping	Ongoing	NA	38	39	TBD
3615	Osceola County	OSC-22	Buenaventura Lakes Golf Course Ponds	Two new lakes at golf course.	Wet Detention Pond	Completed	Prior to 2014	5	4	TBD
3616	Osceola County	OSC-23	Slaman	Conservation areas.	Land Use Change	Completed	Prior to 2014	18	3	TBD
3631	Osceola County	OSC-24	Jim Yates	Conservation areas.	Land Use Change	Completed	2009	488	45	TBD
3618	Osceola County	OSC-25	Udstad	Conservation areas.	Land Use Change	Completed	Prior to 2014	12	2	TBD
3512	Osceola County	OSC-26	Proctor	Conservation areas.	Land Use Change	Completed	2009	138	14	TBD

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3513	Osceola County	OSC-27	Twin Oaks	Conservation areas.	Land Use Change	Completed	2009	4	0	TBD
3514	Osceola County	OSC-28	Cherokee Point	Conservation areas.	Land Use Change	Completed	Prior to 2014	2,468	290	TBD
3515	Osceola County	OSC-29	Encatada Resort	Stormwater reuse for landscape irrigation from pond.	Stormwater Reuse	Completed	Prior to 2014	56	2	TBD
3516	Osceola County	OSC-30	Cypress Palms Condos	Stormwater reuse for landscape irrigation from pond.	Stormwater Reuse	Completed	Prior to 2014	13	1	TBD
3527	Osceola County	OSC-31	Lake Pointe	Stormwater reuse for landscape irrigation from pond.	Stormwater Reuse	Completed	Prior to 2014	281	41	TBD
3518	Osceola County	OSC-32	Traditions at Westside	Stormwater reuse for landscape irrigation from pond.	Stormwater Reuse	Completed	Prior to 2014	10	1	TBD
4468	Osceola County	OSC-33	Hoagland Blvd Phase III	Road Widening.	Hydrodynamic Separators	Completed	2021	0	0	$16,000.00
3606	Polk County	PC-03	Education and Outreach	FYN, fertilizer ordinance, PSAs, pamphlets, website, and Illicit Discharge Program.	Education Efforts	Ongoing	NA	7,601	4,770	NA
3620	Polk County	PC-04	Sumica Preserve Water Storage/Hydrologic Restoration	Construction of a gravel berm to store water onsite for wetland restoration.	Wetland Restoration	Completed	2010	465	32	$42,850.00
3626	SFWMD	SFWMD -06	Phase I Rolling Meadows	Restore historic Lake Hatchineha floodplain wetlands and habitat within the Rolling Meadows property, which was purchased jointly with DEP.	Wetland Restoration	Completed	2017	NA	350	$5,843,173.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3627	SFWMD	SFWMD -07	Gardner-Cobb Marsh	Project includes various activities (ditch plugs, berm removal, exotic veg. treatment, and culvert replacement) to help attenuate regional stormwater runoff. May provide ancillary water quality benefits due to nutrient plant uptake from overland flows in marsh.	Hydrologic Restoration	Completed	2021	NA	331	TBD
3628	SFWMD	SFWMD -08	Rough Island	Completed project included various activities (e.g., ditch plugs, ditch filling, exotic removal) to help attenuate regional stormwater runoff and provide incidental nutrient reductions due to plant uptake from overland flows.	Hydrologic Restoration	Completed	2009	NA	3	NA
3629	SFWMD	SFWMD -09	Oasis Marsh Restoration	Completed project included filling 4 ditches, totaling 2.4 ac in size, with 3,144 cubic yards of sediments from an adjacent levee to restore floodplain function of 77 acres of wetlands and reconnect them to the littoral zone of Lake Kissimmee.	Wetland Restoration	Completed	2010	NA	1,052	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
3584	SFWMD	SFWMD -16	Eagle Haven Ranch (formerly Lost Oak Ranch)	A 730-acre project area with water storage through pasture; estimated annual storage is 374 ac-ft.	DWM	Completed	2013	NA	151	$1,229,073.00
3590	SFWMD	SFWMD -22	Kissimmee River Headwaters Revitalization	Increase stages and change operating schedule of three headwaters lakes to provide appropriate flow patterns to the restored Kissimmee River and floodplain. This is also expected to improve the quantity and quality of littoral habitat in headwater lakes.	Hydrologic Restoration	Planned	2027	NA	3,050	NA
3672	SFWMD - Coordinating Agency	CA-13	Rolling Meadows Wetland Restoration Phase II	Land has been acquired and a conceptual plan has been recommended. Implementation of Phase II is contingent upon the success of Phase I and future legislative funding. If approved and funded, project completion is anticipated in 2 to 3 years.	Wetland Restoration	Planned	TBD	TBD	11	TBD
4869	SFWMD - Coordinating Agency	CA-16	Sumica DWM	Dispersed water management.	DWM	Completed	2014	NA	37	$33,350.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
7086	SFWMD - Coordinating Agency	CA-27	Partin Family Ranch	As a public-private partnership, this 3,050-acre project area near Lake Gentry retains direct rainfall and stormwater runoff within two large detention areas to reduce excess discharges to Lake Okeechobee.	DWM	Planned	2024	TBD	TBD	$2,040,000.00
3594	Town of Windermere	TW-01	First Avenue and Forest Street Drainage Improvements	Construction of vegetated swales, exfiltration trench systems, and oil/grit separation units to treat stormwater runoff into Wauseon Bay, which is directly connected to Lake Butler, an Outstanding Florida Water.	BMP Treatment Train	Completed	2018	TBD	TBD	$566,889.00
7006	Turnpike Enterprise	T-01	Street Sweeping Zone 2 MP 206 - 237	Street sweeping and litter pick up along SR 91 between miles 206.5 and 237.5 North bound/south bound including ramps.	Street Sweeping	Ongoing	NA	32	29	NA
4906	Valencia WCD	VWCD-01	Water Quality Awareness Program	Water quality education and awareness articles posted on the Orange County website.	Education Efforts	Ongoing	NA	24	10	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
4907	Valencia WCD	VWCD-02	C-4 Outfall	Replacement of existing outfall draining to C-4 canal. Reline existing storm pipes at outfall. Provide flow calming weir in C-4 Canal.	Control Structure	Completed	2020	0	0	$490,000.00

3.7. East Lake Okeechobee Subwatershed

The East Lake Okeechobee subwatershed covers more than 239,000 acres of the LOW and is made up of 2 basins. As shown in **Table 52**, agriculture is the largest portion of the subwatershed with 42.9% of the area, followed by wetlands with 23.6%. Stakeholders in the subwatershed are FDOT District 4, Hendry County, Indian Trail Improvement District, Martin County, Palm Beach County, and Village of Indiantown.

Table 52. Summary of land uses in the East Lake Okeechobee subwatershed

Level 1 Land Use Code	Land Use Description	Acres	% Total
1000	Urban and Built-Up	23,846	10.0
2000	Agriculture	102,425	42.9
3000	Upland Nonforested	8,978	3.8
4000	Upland Forests	32,277	13.5
5000	Water	9,560	4.0
6000	Wetlands	56,481	23.6
7000	Barren Land	1,978	0.8
8000	Transportation, Communication, and Utilities	3,468	1.5
-	**Total**	**239,013**	**100.0**

3.7.1. Water Quality Monitoring

In the East Lake Okeechobee subwatershed, the BMAP monitoring network includes water quality stations in both of the basins. **Table 53** summarizes the water quality monitoring stations in the subwatershed, and **Figure 15** shows the station locations. **Table 53** also includes indications of which stations have recently been added as part of SFWMD expanded monitoring and recommendations to change the location, frequency, or parameters sampled for the station to better align with the BMAP.

Table 53. Water quality monitoring stations in the East Lake Okeechobee subwatershed

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
C-44/Basin 8/S-153	Yes	SFWMD	S308C	1	Sufficient TN and TP data; only consider when flowing to lake
C-44/Basin 8/S-153	No	SFWMD	C44SC2	2	NA
C-44/Basin 8/S-153	No	SFWMD	C44SC5	2	NA
C-44/Basin 8/S-153	No	SFWMD	C44SC14	2	NA
C-44/Basin 8/S-153	No	SFWMD	C44SC19	2	NA
C-44/Basin 8/S-153	No	SFWMD	C44SC23	2	NA
C-44/Basin 8/S-153	No	SFWMD	C44SC24	2	NA
C-44/Basin 8/S-153	No	SFWMD	S153	2	NA
L-8	Yes	SFWMD	5147 (C10A)	2	Biweekly sampling only if flowing; otherwise monthly
C-44/Basin 8/S-153	No	USGS	02276877	3	NA
L-8	No	USGS	265501080364900	3	NA

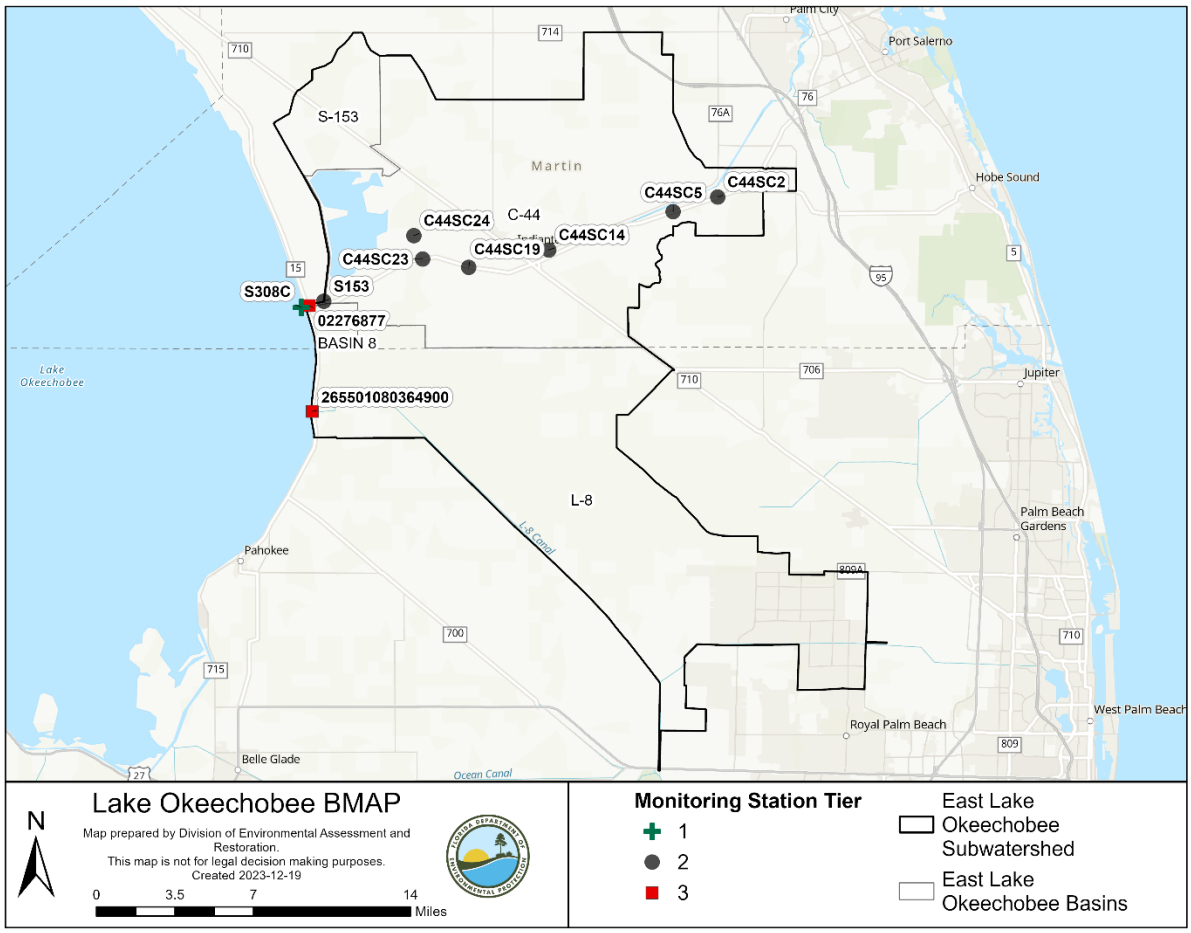


Figure 15. Locations of the water quality monitoring stations in the East Lake Okeechobee subwatershed

3.7.2. Basin Evaluation Results

3.7.2.1. TRA Evaluation

The current TP load based on data from WY2020–WY2024 for the East Lake Okeechobee subwatershed is 13.7 mt/yr. A reduction of 9.6 mt/yr is required to help achieve the TMDL and meet the subwatershed target of 4.1 mt/yr.

Table 54 summarizes the basin evaluation results for the East Lake Okeechobee subwatershed. The TN and TP concentrations in the L-8 basin are greater than the benchmarks. **Table 55** lists the TRA prioritization results for the subwatershed, with 1 the highest priority, 2 the next highest priority, and 3 a priority as resources allow.

3.7.2.2. Hot Spot Analysis

Table 59 summarizes the hot spot analysis results using WY2019–WY2023 data. To be included in the analysis, each station must have at least four samples per year and at least two years of data. This analysis will be run, as needed, and the results will be shared at annual meetings.

Table 54. Basin evaluation results for the East Lake Okeechobee subwatershed

Variable = Flows to the lake in this area are inconsistent and the concentrations are variable.
Insufficient data = Available data were not at the frequency needed for evaluation.

TRA ID	Basin Name	TN (mg/L) (Benchmark – 1.54)	TN 5-year Average FWM Concentration (mg/L)	TN UAL (lbs/ac)	TN Trend Analysis	TP (mg/L) (Benchmark – 0.12)	TP 5-year Average FWM Concentration (mg/L)	TP UAL (lbs/ac)	TP Trend Analysis
1	L-8	2.04	2.13	2.10	No Significant Trend	0.15	0.11	0.11	No Significant Trend
2	C-44/Basin 8/S-153	Insufficient Data	1.48	0.99	No Significant Trend	Insufficient Data	0.22	0.15	No Significant Trend

Table 55. TRA evaluation results for the East Lake Okeechobee subwatershed

Basin	Station	TN Priority	TP Priority
C-44/Basin 8/S-153	S308C	2	1
L-8	5147	1	1

Table 56. Hot spot analysis results for the East Lake Okeechobee subwatershed

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
C-44/Basin 8/S-153	S153	1	1	1	2	5	1	1	0	2	4
C-44/Basin 8/S-153	S308C	1	1	0	2	4	1	1	0	1	3
C-44/Basin 8/S-153	C44SC14	1	1	0	2	4	0	0	0	1	1
C-44/Basin 8/S-153	C44SC2	1	1	0	2	4	0	0	0	1	1
C-44/Basin 8/S-153	C44SC5	1	1	0	2	4	0	0	0	2	2

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
C-44/Basin 8/S-153	C44SC19	1	1	0	2	4	0	0	0	1	1
C-44/Basin 8/S-153	C44SC23	1	1	0	2	4	0	0	0	1	1
C-44/Basin 8/S-153	C44SC24	1	1	0	2	4	0	0	0	1	1
L-8	5147 (C10A)	1	1	0	2	4	1	1	0	2	4

3.7.3. Projects

Table 57 summarizes the existing and planned projects for the East Lake Okeechobee subwatershed that were provided for the BMAP. The existing and planned projects are a BMAP requirement.

Table 57. Existing and planned projects in the East Lake Okeechobee subwatershed

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
4879	FDACS	FDACS-13	BMP Implementation and Verification	Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WAM. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X.	Agricultural BMPs	Ongoing	NA	53,786	4,793	NA
5402	FDACS	FDACS-22	Cost-Share BMP Projects	Cost-share projects paid for by FDACS. Acres treated based on FDACS OAWP June 2019 Enrollment. Reductions estimated by DEP using 2019 BMAP LET.	Agricultural BMPs	Ongoing	NA	10,804	368	TBD
4888	FDOT District 4	FDOT4-01	FM# 432705-1 / SR 710	SR-710/Beeline Highway widening from two to four lanes.	Grass swales without swale blocks or raised culverts	Completed	2019	24	2	TBD
4889	FDOT District 4	FDOT4-02	Public Education	Pamphlets.	Education Efforts	Ongoing	NA	3	0	TBD
4892	FDOT District 4	FDOT4-05	Street Sweeping	Continued sweeping.	Street Sweeping	Ongoing	NA	542	283	TBD
4893	FDOT District 4	FDOT4-06	Catch Basin Clean-out	Continued cleanout.	BMP Cleanout	Ongoing	NA	TBD	TBD	TBD
5667	Martin County	MC-01	C-44 Reservoir	16.2% stake in nutrient reductions from C-44 Reservoir.	BMP Treatment Train	Underway	2024	TBD	TBD	NA

3.8. South Lake Okeechobee Subwatershed

The South Lake Okeechobee subwatershed covers more than 363,000 acres of the LOW and is made up of 9 basins. As shown in **Table 58**, the predominate land use is agriculture with 92.5% of the subwatershed, followed by urban and built-up with 3.7%. Stakeholders in the subwatershed are the City of Belle Glade, City of Clewiston, City of Pahokee, City of South Bay, FDOT District 4, Hendry County, Palm Beach County, East Beach WCD, East Hendry County Drainage District, East Shore WCD, Highlands Glades Drainage District, Northern Palm Beach County Improvement District, Pahokee Drainage District, Pelican Lake WCD, Ritta Drainage District, South Shore Drainage District, and South Florida Conservancy District.

Table 58. Summary of land uses in the South Lake Okeechobee subwatershed

Level 1 Land Use Code	Land Use Description	Acres	% Total
1000	Urban and Built-Up	13,432	3.7
2000	Agriculture	335,878	92.5
3000	Upland Nonforested	1,369	0.4
4000	Upland Forests	150	0.0
5000	Water	3,645	1.0
6000	Wetlands	2,331	0.6
7000	Barren Land	3,346	0.9
8000	Transportation, Communication, and Utilities	2,992	0.8
-	**Total**	**363,143**	**100.0**

3.8.1. Water Quality Monitoring

In the South Lake Okeechobee subwatershed, the BMAP monitoring network includes water quality stations in all nine of the basins. **Table 59** summarizes the water quality monitoring stations in the subwatershed, and **Figure 16** shows the station locations.

Table 59. Water quality monitoring stations in the South Lake Okeechobee subwatershed

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
715 Farms (Culv 12A)	Yes	Sugar Farms Co-Op	S274 (C12A)	1	Only TP collected when flowing to lake
East Beach WCD (Culv 10)	Yes	East Beach WCD	S273 (C-10)	1	Only TP collected when flowing to lake
S2	Yes	SFWMD	S2	1	TP and TN collected when flowing to lake
S2	No	SFWMD	S351	1	NA
S-3	Yes	SFWMD	S3	1	Sufficient TN and TP data
S-3	No	SFWMD	S354	1	NA
S-4	No	SFWMD	INDUSCAN	1	NA
S-4	No	SFWMD	S169	1	NA
S-4	Yes	SFWMD	S4	1	Sufficient TN and TP data
S-5A Basin (S-352-West Palm Beach [WPB] Canal)	Yes	SFWMD	S352	1	Sufficient TN and TP data
South Florida Conservancy District (S-236)	Yes	South Florida Conservancy District/SFWMD	S-236	1	Sufficient TN and TP data

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
South Shore Drainage District (Culv 4A)	Yes	South Shore Drainage District	C-4A	1	Only TP collected when flowing to lake
East Shore WCD (Culv 12)	Yes	East Shore WCD	S275 (C-12)	2	Only TP collected when flowing to lake
S2	No	USGS	02280500	3	NA
S2	No	USGS	02283500	3	NA
S-3	No	USGS	02286400	3	NA
S-4	No	USGS	264514080550700	3	NA

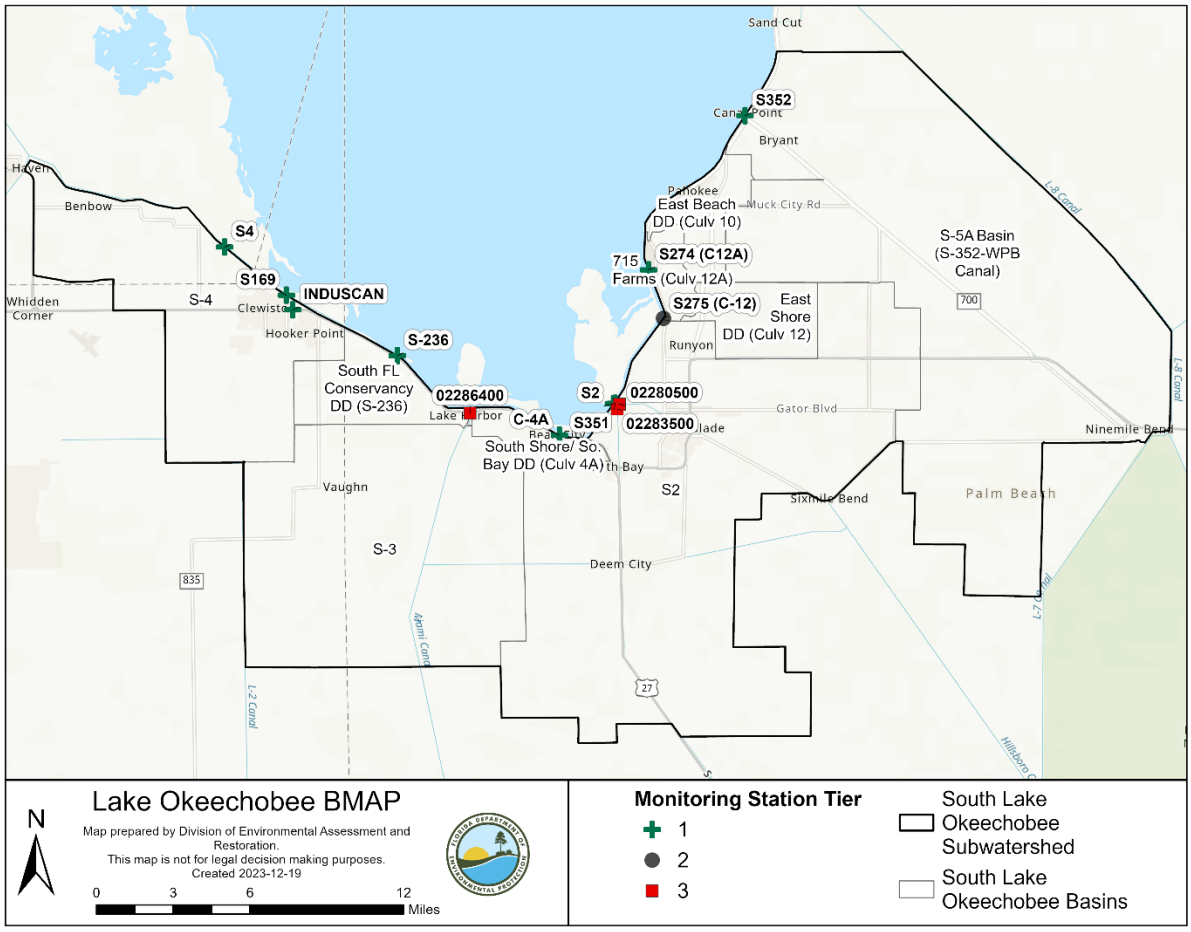


Figure 16. Locations of the water quality monitoring stations in the South Lake Okeechobee subwatershed

3.8.2. Basin Evaluation Results

3.8.2.1. TRA Evaluation

The current TP load based on data from WY2020–WY2024 for the South Lake Okeechobee subwatershed is 3.6 mt/yr. A reduction of 2.5 mt/yr is required to help achieve the TMDL and meet the subwatershed target of 1.1 mt/yr.

Table 60 summarizes the basin evaluation results for the South Lake Okeechobee subwatershed. For the basins with flow, S2, S-3, S-4, and S-5A Basin (S-352-WPB Canal) have TN concentrations greater than the benchmark. S2, S-3, and S-4 also have TP concentrations greater than the benchmark. **Table 61** lists the TRA prioritization results for the South Lake Okeechobee subwatershed, with 1 the highest priority, 2 the next highest priority, and 3 a priority as resources allow.

3.8.2.2. Hot Spot Analysis

Table 62 summarizes the hot spot analysis results using WY2019–WY2023 data. To be included in the analysis, each station must have at least four samples per year and at least two years of data. This analysis will be run, as needed, and the results will be shared at annual meetings.

Table 60. Basin evaluation results for the South Lake Okeechobee subwatershed

Variable = Flows to the lake in this area are inconsistent and the concentrations are variable.
Insufficient data = Available data were not at the frequency needed for evaluation.

TRA ID	Basin Name	TN (mg/L) (Benchmark – 1.54)	TN 5-year Average FWM Concentration (mg/L)	TN UAL (lbs/ac)	TN Trend Analysis	TP (mg/L) (Benchmark – 0.12)	TP 5-year Average FWM Concentration (mg/L)	TP UAL (lbs/ac)	TP Trend Analysis
23	S-4	1.99	2.26	1.12	No Significant Trend	0.26	0.33	0.16	No Significant Trend
24	South FL Conservancy Drainage District (S-236)	Insufficient Data	No flow	Insufficient Data	Insufficient Data	Insufficient Data	No flow	0.00	Insufficient Data
25	S-3	1.95	4.20	0.50	Significant Decreasing	0.12	0.17	0.02	Significant Decreasing
26	South Shore/ So. Bay Drainage District (Culv 4A)	Insufficient Data	No flow	Insufficient Data	Insufficient Data	Insufficient Data	No flow	0.00	Insufficient Data
27	S-5A Basin (S-352-WPB Canal)	1.76	No flow	Insufficient Data	No Significant Trend	Insufficient Data	No flow	0.00	No Significant Trend
28	East Beach Drainage District (Culv 10)	Insufficient Data	3.88	Insufficient Data	Insufficient Data	Insufficient Data	0.23	0.00	Insufficient Data
29	S2	2.42	4.19	0.36	No Significant Trend	0.12	0.17	0.01	No Significant Trend
30	715 Farms (Culv 12A)	Insufficient Data	No flow	Insufficient Data	Insufficient Data	Insufficient Data	No flow	0.00	Insufficient Data
31	East Shore Drainage District (Culv 12)	Insufficient Data	No flow	Insufficient Data	Insufficient Data	Insufficient Data	No flow	0.00	Insufficient Data

Table 61. TRA evaluation results for the South Lake Okeechobee subwatershed

Insufficient data = Available data were not at the frequency needed for evaluation.

Basin	Station	TN Priority	TP Priority
715 Farms (Culv 12A)	S274 (C12A)	Insufficient Data	Insufficient Data
East Beach Drainage District (Culv 10)	S273	1	3
East Shore Drainage District (Culv 12)	S275	Insufficient Data	Insufficient Data
S2	S2	1	3
S-3	S3	2	3
S-4	S4	1	1
S-5A Basin (S-352-WPB Canal)	S352	2	Insufficient Data
South Florida Conservancy Drainage District (S-236)	S236	Insufficient Data	Insufficient Data
South Shore/ So. Bay Drainage District (Culv 4A)	C4A	Insufficient Data	Insufficient Data

Table 62. Hot spot analysis results for the South Lake Okeechobee subwatershed

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
S2	S2	1	1	0	2	4	1	1	1	2	5
S2	S351	1	1	0	2	4	1	1	0	1	3
S-3	S3	1	1	0	2	4	1	1	0	2	4
S-3	S354	1	1	0	2	4	1	1	0	1	3
S-4	S169	1	1	0	2	4	1	1	0	1	3
S-4	S4	1	1	0	2	4	1	1	0	2	4
S-4	INDUSCAN	1	1	0	2	4	1	1	0	1	3
S-5A Basin (S-352- WPB Canal)	S352	1	1	0	2	4	1	1	0	2	4
South Florida Conservancy District (S-236)	S-236	1	1	0	2	4	1	2	2	2	7

3.8.3. Projects

Table 63 summarizes the existing and planned projects for the South Lake Okeechobee subwatershed that were provided for the BMAP. The existing and planned projects are a BMAP requirement.

Table 63. Existing and planned projects in the South Lake Okeechobee subwatershed

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
5660	City of Clewiston	CL-01	Education	Landscaping, irrigation, fertilizer, pet waste, and stormwater ordinances; PSAs; pamphlets; website; illicit discharge program.	Education Efforts	Ongoing	NA	378	21	$10,000.00
5661	City of Clewiston	CL-02	Street Sweeping	529 miles swept. at 86.39 tons of debris	Street Sweeping	Ongoing	NA	40	5	NA
5662	City of Clewiston	CL-03	Inlet Maintenance	43 inlets cleaned at 6.7 tons of debris	Catch Basin Inserts/Inlet Filter Cleanout	Ongoing	NA	20	3	NA
5663	City of Clewiston	CL-04	Reverse Osmosis Water Treatment Plant Dry Pond	Dry detention pond (volume required = 0.23 ac-ft, provided = 1.12 ac-ft).	Dry Detention Pond	Completed	2010	3	0	NA
5664	City of Clewiston	CL-06	East Ventura Water Quality	Constructed wetlands to treat runoff.	STAs	Completed	2023	68	6	$461,000.00
7668	City of Clewiston	CL-07	Septic Removal	Removal of septic systems within the City Limits which were included in the BMAP model.	OSTDS Phase Out	Completed	2024	TBD	NA	NA
4880	FDACS	FDACS-14	BMP Implementation and Verification	Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WAM. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X.	Agricultural BMPs	Ongoing	NA	113,760	6,614	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
5403	FDACS	FDACS-23	Cost-Share BMP Projects	Cost-share projects paid for by FDACS. Acres treated based on FDACS OAWP June 2019 Enrollment. Reductions estimated by DEP using 2019 BMAP LET.	Agricultural BMPs	Ongoing	NA	610	51	TBD
4890	FDOT District 4	FDOT4-03	Public Education	Pamphlets.	Education Efforts	Ongoing	NA	32	1	TBD
5666	Hendry County	HE-01	Phase 1A & 1B of a Force Main Extension from Airglades Airport to the City of Clewiston	Construct the first and second section (Phase 1A & 1B) of a wastewater transmission system to convey raw wastewater from the Airglades Airport WWTF to the City of Clewiston WWTF.	WWTF Upgrade	Underway	2024	NA	NA	$1,874,925.00
6779	Hendry County	HE-02	Phase 1C of a Force Main Extension from Airglades Airport to the City of Clewiston	Construct the third section (Phase 1C) of a wastewater transmission system to convey raw wastewater from the Airglades Airport WWTF to the City of Clewiston WWTF.	WWTF Upgrade	Planned	2025	NA	NA	$911,073.00
6780	Hendry County	HE-03	Phase 1D of a Force Main Extension from Airglades Airport to the City of Clewiston	Construct the fourth section (Phase 1D) of a wastewater transmission system to convey raw wastewater from the Airglades Airport WWTF to the City of Clewiston WWTF.	WWTF Upgrade	Planned	2026	NA	NA	$1,795,686.00

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
7116	Hendry County	HE-04	Hendry County Wastewater Collection System - Hookers Point	To expand wastewater service and eliminate onsite sewage treatment and disposal systems and convert to central sewer facilities. This project is an important part of Hendry County's efforts to reduce nutrients coming from wastewater within the BMAP area.	OSTDS Phase Out	Planned	2028	TBD	TBD	$3,500,000.00

3.9. West Lake Okeechobee Subwatershed

The West Lake Okeechobee subwatershed covers more than 204,000 acres of the LOW and is made up of 3 basins. As shown in **Table 64**, the predominate land use is agriculture with 66.2% of the subwatershed, followed by wetlands with 14.4%. Stakeholders in the subwatershed are the City of Moore Haven, Glades County, Barron WCD, Clewiston Drainage District, Collins Slough WCD, Devils Garden WCD, Disston Island Conservancy District, Flaghole Drainage District, Henry Hillard WCD, and Sugarland Drainage District.

Table 64. Summary of land uses in the West Lake Okeechobee subwatershed

Level 1 Land Use Code	Land Use Description	Acres	% Total
1000	Urban and Built-Up	7,457	3.7
2000	Agriculture	135,032	66.2
3000	Upland Nonforested	5,894	2.9
4000	Upland Forests	20,659	10.1
5000	Water	2,166	1.1
6000	Wetlands	29,317	14.4
7000	Barren Land	2,084	1.0
8000	Transportation, Communication, and Utilities	1,485	0.7
-	**Total**	**204,094**	**100.0**

3.9.1. Water Quality Monitoring

In the West Lake Okeechobee subwatershed, the BMAP monitoring network includes water quality stations in all three of the basins. **Table 65** summarizes the water quality monitoring stations in the subwatershed, and **Figure 17** shows the station locations. **Table 65** also includes indications of which stations have recently been added as part of SFWMD expanded monitoring and recommendations to change the location, frequency, or parameters sampled for the station to better align with the BMAP.

Table 65. Water quality monitoring stations in the West Lake Okeechobee subwatershed

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
East Caloosahatchee	Yes	SFWMD	S77	1	Sufficient TN and TP data
East Caloosahatchee	No	SFWMD	CRFW01	2	NA
East Caloosahatchee	No	SFWMD	CRFW02	2	NA
East Caloosahatchee	No	SFWMD	CRFW03	2	NA
East Caloosahatchee	No	SFWMD	CRFW05	2	NA
East Caloosahatchee	No	SFWMD	CRFW30	2	NA
East Caloosahatchee	No	SFWMD	S-47D (CRFW33)	2	NA
Hicpochee North	Yes	DEP South ROC	G3SD0087	2	Increase collection frequency for TN and TP

Basin	Representative Site?	Entity	Station ID	Tier	Data Needs
Nicodemus Slough North	Yes	SFWMD	5158 (C5A)	2	Increase collection frequency for TN and TP – biweekly sampling when flowing
East Caloosahatchee	No	USGS	02292010	3	NA

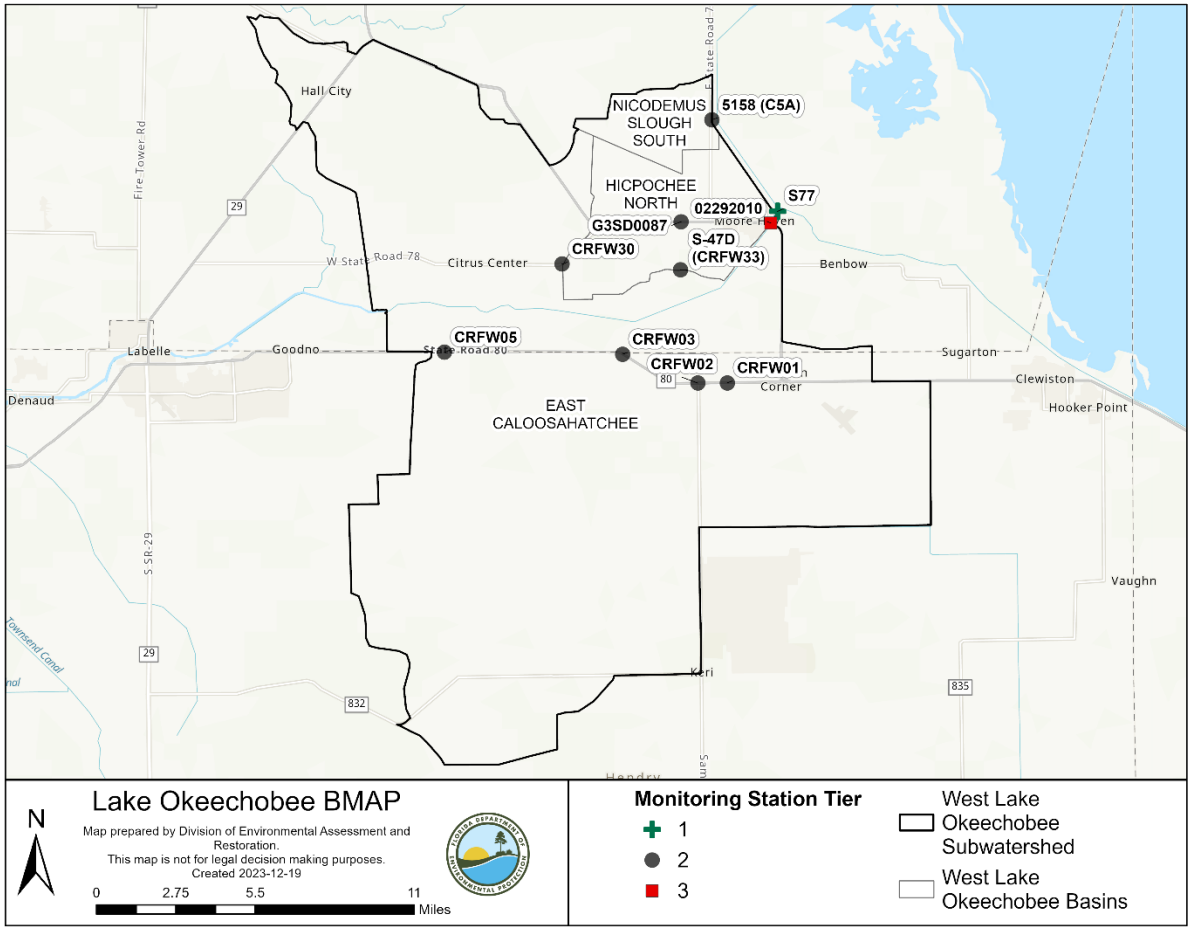


Figure 17. Locations of the water quality monitoring stations in the West Lake Okeechobee subwatershed

3.9.2. Basin Evaluation Results

3.9.2.1. TRA Evaluation

The current TP load based on data from WY2020–WY2024 for the West Lake Okeechobee subwatershed is 0 mt/yr. Therefore, reductions are not required to help achieve the TMDL.

Table 66 summarizes the basin evaluation results for the subwatershed. For the basins with flow, the TN concentration in the East Caloosahatchee basin is above the benchmark and none of the TP concentrations are above the benchmark. **Table 67** lists the TRA prioritization results for the

subwatershed, with 1 the highest priority, 2 the next highest priority, and 3 a priority as resources allow.

3.9.2.2. Hot Spot Analysis

Table 68 summarizes the hot spot analysis results using WY2019–WY2023 data. To be included in the analysis, each station must have at least four samples per year and at least two years of data. This analysis will be run, as needed, and the results will be shared at annual meetings.

Table 66. Basin evaluation results for the West Lake Okeechobee subwatershed

Variable = Flows to the lake in this area are inconsistent and the concentrations are variable.
Insufficient data = Available data were not at the frequency needed for evaluation.

TRA ID	Basin Name	TN (mg/L) (Benchmark – 1.54)	TN 5-year Average FWM Concentration (mg/L)	TN UAL (lbs/ac)	TN Trend Analysis	TP (mg/L) (Benchmark – 0.12)	TP 5-year Average FWM Concentration (mg/L)	TP UAL (lbs/ac)	TP Trend Analysis
62	East Caloosahatchee	1.62	1.94	0.01	No Significant Trend	0.11	0.09	0.00	No Significant Trend
63	Hicpochee North	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data
64	Nicodemus Slough South	Insufficient Data	No flow	0.00	Significant Increasing	Insufficient Data	No flow	No flow	Significant Increasing

Table 67. TRA evaluation results for the West Lake Okeechobee subwatershed

Insufficient data = Available data were not at the frequency needed for evaluation.

Basin	Station	TN Priority	TP Priority
East Caloosahatchee	S77	1	3
Hicpochee North	G3SD0087	Insufficient Data	Insufficient Data
Nicodemus Slough South	C5A	Insufficient Data	Insufficient Data

Table 68. Hot spot analysis results for the West Lake Okeechobee subwatershed

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
East Caloosahatchee	S-47D (CRFW33)	1	1	0	2	4	1	1	1	2	5
East Caloosahatchee	S77	1	1	0	2	4	1	1	0	1	3
East Caloosahatchee	CRFW01	1	1	0	2	4	1	1	0	2	4
East Caloosahatchee	CRFW02	1	1	0	2	4	0	0	0	1	1

Basin	Monitoring Location	TP Average Concentration Rank	TP Percentile Rank	TP Standard Deviation Rank	TP Frequency Rank	TP Total Rank	TN Average Concentration Rank	TN Percentile Rank	TN Standard Deviation Rank	TN Frequency Rank	TN Total Rank
East Caloosahatchee	CRFW03	1	1	0	2	4	1	1	0	2	4
East Caloosahatchee	CRFW05	1	1	0	2	4	0	0	0	1	1
East Caloosahatchee	CRFW30	1	1	0	2	4	1	1	0	2	4
Hicpochee North	G3SD0087	1	1	0	2	4	1	1	1	2	5
Nicodemus Slough South	5158 (C5A)	1	1	0	2	4	1	1	0	2	4

3.9.3. Projects

Table 69 summarizes the existing and planned projects for the West Lake Okeechobee subwatershed that were provided for the BMAP. The existing and planned projects are a BMAP requirement.

Table 69. Existing and planned projects in the West Lake Okeechobee subwatershed

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
5668	City of Moore Haven	MH-01	Glades County Caloosahatchee River and Estuary Area Wastewater Grant	Elimination of aging and/or failing existing septic systems in City of Moore Haven. Project also provides for additional conveyance capacity for additional homes and businesses.	OSTDS Phase Out	Planned	2021	126	0	$994,420.00
5669	City of Moore Haven	MH-02	Sanitary Sewer Hook-Up Project	Hook-up 14 residential housing units on Railroad Ave, Avenue F and 7th street currently on septic systems to central sewer	OSTDS Phase Out	Completed	2020	18	0	$694,400.00
4881	FDACS	FDACS-15	BMP Implementation and Verification	Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WAM. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X.	Agricultural BMPs	Ongoing	NA	12,311	781	NA

Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
5404	FDACS	FDACS-24	Cost-Share BMP Projects	Cost-share projects paid for by FDACS. Acres treated based on FDACS OAWP June 2019 Enrollment. Reductions estimated by DEP using 2019 BMAP LET.	Agricultural BMPs	Ongoing	NA	8,089	330	TBD
5405	FDACS	FDACS-25	Caloosahatchee	FAVT.	Floating Islands/ MAPS	Completed	2014	4,509	427	$3,000,000.00
5665	FDACS - Coordinating Agency	CA-23	Legislative Cost-Share Appropriation Program (Dairy Projects)	FDACS conducted several rounds of solicitations for dairy project proposals. In fall 2015, one project was funded in West Lake Okeechobee.	Agricultural BMPs	Completed	2017	TBD	TBD	$1,561,162.00
4464	Glades County	GC-03	Glades County Caloosahatchee River & Estuary Area Wastewater Grant	Elimination of aging and/or failing existing septic systems in the City of Moore Haven. The Project also provides for additional conveyance capacity for additional homes and businesses.	OSTDS Phase Out	Underway	2024	126	0	$891,848.00
4899	Glades County	GC-04	Glades County Business Park Wetlands	Wetland Maintenance and Planting Agreement.	Wetland Restoration	Completed	2021	0	0	$42,395.00
5411	Glades County	GC-05	Wastewater Sewer Expansion	Engineering design and construction services on the Washington Park sanitary sewer improvements - force main, lift station, and gravity collection system project. Remove septic systems through connection to sewer.	OSTDS Phase Out	Underway	2023	397	NA	$560,000.00

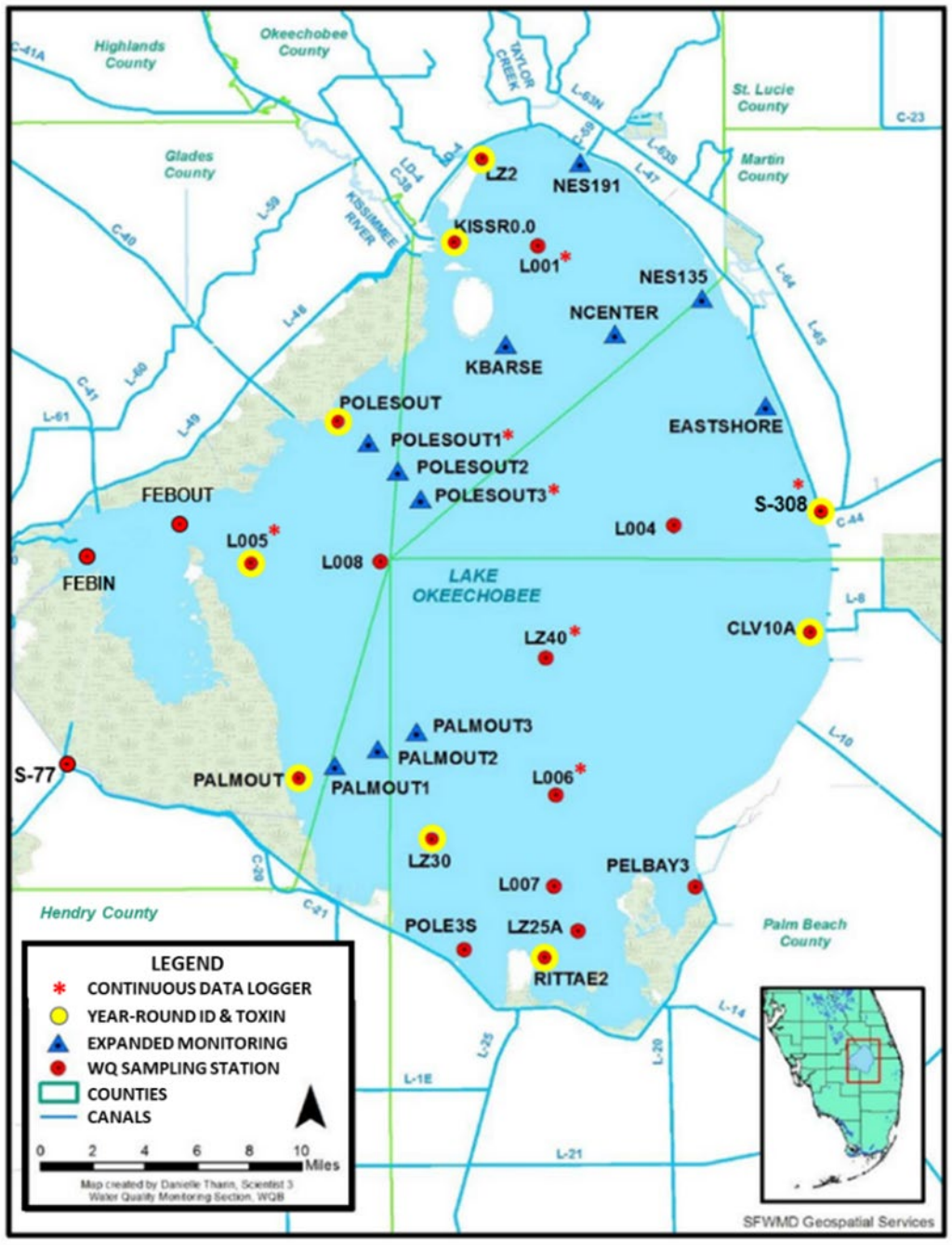
Project ID	Lead Entity	Project Number	Project Name	Project Description	Project Type	Project Status	Estimated Completion Date	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate
5412	Glades County	GC-06	Glades County-Moore Haven Canal Dredge/Moonshine Marsh Park	Moonshine Marsh Overlook Park will be developed along 6.8 miles of the eastern berm of Moore Haven Canal, which will also serve as a permanent disposal site for all suitable dredge/spoil materials from the project.	Muck Removal/Restoration Dredging	Completed	2019	TBD	TBD	TBD
5413	Glades County	GC-07	Moore Haven Canal Project - Plantings at Moonshine Marsh Overlook Park	Planting over 16,000 littoral plants at Moonshine Overlook Park, which is only accessible by boat.	Creating/ Enhancing Living Shoreline	Completed	2019	TBD	TBD	$16,818.20
6340	Glades County	GC-08	US 27 Utility Corridor Wastewater Infrastructure	Install wastewater infrastructure across the Caloosahatchee River to connect to existing force main at 8th St and U.S. 27 and to Sportsman Village RV package plant.	OSTDS Phase Out	Underway	2024	TBD	TBD	TBD

3.10. In-Lake Strategies

The Lake Okeechobee BMAP is established to address phosphorus loads from the LOW, while the treatment of legacy phosphorus loads in the lake is also important for restoration. This section documents in-lake treatment strategies and water quality monitoring. These are not management strategies within the context of Section 403.067, F.S., but are provided for informational purposes only. Additional information on SFWMD's research and water quality efforts in Lake Okeechobee can be found in the latest SFER, published annually on the SFWMD website.

3.10.1. Water Quality Monitoring

Figure 18 shows the locations of the in-lake monitoring stations. These stations are not part of the BMAP monitoring network but are monitored to evaluate in-lake water quality. Additional information on in-lake monitoring is reported annually in the SFER.



Note: Map provided by SFWMD. Locations of the original (red dot) and expanded (blue triangle) routine phytoplankton and water quality monitoring stations in Lake Okeechobee. Yellow circles indicate 9 year-round phytoplankton taxa and toxin stations. Red asterisks/underline show stations with real-time in-situ data sondes installed. Sondes at POLESOUT1 and POLESOUT3 are mounted on moored buoys.

Figure 18. Locations of the water quality monitoring stations in Lake Okeechobee

3.10.2. Projects

3.10.2.1. Existing and Planned Projects

Pursuant to the Northern Everglades and Estuaries Protection Program (NEEPP) (Section 373.4595, F.S.), the Lake Okeechobee Internal Phosphorus Management Program is a component of the LOWPP. In accordance with Paragraph 373.4595(3)(d), F.S., this legislation requires SFWMD, in cooperation with the Coordinating Agencies and interested parties, to evaluate the feasibility of Lake Okeechobee internal phosphorus load removal projects. The evaluation must be based on technical feasibility, as well as economic considerations, and consider all reasonable methods of phosphorus removal. Relevant information resulting from the Lake Okeechobee Internal Phosphorus Management Program is covered in the LOWPP 2020 Update in the final 2020 SFER – Volume I, Appendix 8A-1 (Betts et al. 2020) and the final 2025 SFER – Volume I, Chapter 8B and supporting appendices, with a brief overview provided below.

Rocky Reef Modeling – Internal phosphorus loading from sediments in Lake Okeechobee is primarily affected by two factors: (1) the depth of resuspendable sediment, and (2) the distribution of that sediment once entrained in the water column. Prior studies have focused on the plausibility of reducing resuspension, both through the capping and removal of sediment (SFWMD 2003) and through reducing the lateral transport of suspended sediment with changes in underwater topography (Applied Environmental Engineering 2020). The general concept of the effort was to reduce the connectivity between turbid water in the central portion of the lake from the southern portion, by adding height to a natural rock barrier that stretches from east to west in the south end of the lake (also known as Rocky Reef). The modeling effort looked at different height and horizontal widths, including elevations of roughly 7 to 12 feet National Geodetic Vertical Datum of 1929 (NGVD29), and covering just the higher western portion of the reef or extending across to the east. Results suggested that, depending on the circulation pattern and location of the raised reef, some scenarios could result in higher volumes of sediment accumulation in the southern region over time, while others could substantially reduce it. For example, when predominant lake circulation is clockwise and only the western portion of the reef is raised, sediment would be less impeded flowing into the southern region from the east but could then be deposited instead of flowing back out over the western portion. However, reductions in sediment loading were found to be likely if the reef height were increased on the central and eastern side, even if maximum heights were on the order of just 7ft NGVD29. Overall, higher resolution modeling, more data collection, and refined scenarios of where to increase reef height would be needed prior to launching such an effort.

Turbidity Curtains – Another in-lake project aimed at affecting lateral transport of suspended (and nutrient-laden) sediment into the nearshore zone was implemented in fiscal year 2024. Two locations along the outside edge of the Indian Prairie (northwest) shoreline were selected for a project aimed at temporarily reducing turbidity through deployment of floating barriers. Submerged aquatic vegetation (SAV) has been impacted by hurricanes and subsequent high-water events (Hurricanes Ian and Milton), and regrowth is limited to periods of high light penetration, like those that occur at lower lake stage. Rather than reducing lake levels, SFWMD

deployed 1,200 feet of floating turbidity barriers (i.e., silt screen or curtains) along two sections of shoreline to attempt improving water clarity where SAV had recently occurred. While the project is ongoing, to date it has been found that even semi-permeable fabric stretched over the majority of the water column only has a minimal effect on turbidity and/or water clarity and appears to be unlikely to improve light penetration sufficient to increase germination or regrowth SAV compared to areas without the barriers. The results of this project should help inform future renditions of similar turbidity reduction or storm barrier projects (see **Section 3.10.2.2**).

Sediment Mapping – The properties of in-lake sediments (e.g., composition, mud depth, nutrient content) have been comprehensively mapped on four occasions: 1988, 1998, 2006, and 2020 (Osbourne et al. 2021). During these periods, considerable shifts in the depth and distribution of mud sediments occurred, especially between 1998 and 2006, when three major hurricanes (Frances and Jeanne in 2004 and Wilma in 2005) impacted the lake, spreading the deeper mud sediment throughout the lake and increasing the depth of unconsolidated sediment layer (Jin et al. 2011). Long-term water quality monitoring in the lake suggests that almost two decades later the depth of easily resuspended sediments—and subsequently, water column turbidity—remains elevated, and is possibly affecting the burial rates of phosphorus, soil/water interface properties, light penetration, and other factors. The 2020 sediment mapping study (Osbourne et al. 2021) found that mud depths in the center of the lake were higher than for any of the previous studies, suggesting that the sediments relocated by the 2004-2005 hurricanes and subsequent storms had settled back in the central deep zone of the lake, but much of it was still easily resuspended.

3.10.2.2. Future Projects

Wave Attenuation Devices – Due to the expense associated with muck removal, dredging, or otherwise remediating nutrient-laden sediments in the lake, conversations have shifted to alternative ways to improve water clarity in areas of the nearshore zone that are important to fish and other wildlife. In addition to the Rocky Reef and turbidity barrier projects listed above, SFWMD and the Florida Fish and Wildlife Conservation Commission are analyzing whether to deploy large, concrete pyramid structures to reduce wave energy and/or improve water clarity and preserve/regrow SAV in certain in-lake areas. Similar projects have been implemented by the Florida Fish and Wildlife Conservation Commission in Florida coastal areas (e.g., St. Petersburg), which consist of large, hollow, concrete structures that function to both reduce water movement and provide underwater habitat. When deployed in a staggered formation of two rows, they can substantially reduce wave damage during intense storm events and may also improve water clarity if coupled with other measures (planting SAV or emergent species behind them, deploying temporary turbidity barriers with them, etc.). Such a project would likely be more effective at protecting SAV communities once established rather than significantly contributing to their recovery, but it could dramatically improve resilience of this habitat and improve nutrient uptake in the nearshore region.

Long-Term Sediment Monitoring Sites – The four lake-wide sediment mapping studies yield vital information but are relatively costly to undertake. Designating sentinel sites to visit between the major sampling efforts will allow more frequent updating of sediment depth and distribution

maps. It will also help improve lake circulation models by further reducing uncertainties and allowing better predictions of the effects of any mitigation strategies, such as future dredging or mud isolation projects.

Chapter 4. Summary

4.1. Basin Evaluation Results

4.1.1. TRA

Table 70 summarizes the results of the TRA evaluation process that were presented by subwatershed in **Chapter 3** for the basins in the LOW. For each basin, a priority was assigned based on the TP and TN concentrations and flows. These priorities were set to help focus resources and projects in the basins that are in most need of improvement. Priorities were set with 1 the highest priority, 2 the next highest priority, and 3 a priority as resources allow.

Table 70. Summary of the TRA evaluation results

Insufficient data = Available data were not at the frequency needed for evaluation.

Subwatershed	Basin	Station	TN Priority	TP Priority
Fisheating Creek	Fisheating Creek/L-61	FECSR78	1	1
Fisheating Creek	Nicodemus Slough North	CULV5	2	3
Indian Prairie	C-40	S72	1	2
Indian Prairie	C-41	S71	1	1
Indian Prairie	C-41A	S84	1	1
Indian Prairie	L-48	S127	1	1
Indian Prairie	L-49	S129	2	3
Indian Prairie	L-59E	L59E	2	3
Indian Prairie	L-59W	L59W	1	2
Indian Prairie	L-60E	L60E	1	2
Indian Prairie	L-60W	L60W	1	2
Indian Prairie	L-61E	L61E	1	1
Indian Prairie	S-131	S131	2	2
Lake Istokpoga	Arbuckle Creek	30854	2	3
Lake Istokpoga	Josephine Creek	LI02362923	3	3
Lake Istokpoga	Lake Arbuckle	ARBUCKLE1-274119812344	3	3
Lake Istokpoga	Lake Istokpoga	30853	1	2
Lower Kissimmee	Kissimmee River	S65D	3	3
Lower Kissimmee	S-65A	18085	3	3
Lower Kissimmee	S-65E	18130 (S65E)	1	1
Taylor Creek/ Nubbin Slough	S-133	S133	2	1
Taylor Creek/ Nubbin Slough	S-135	S135	2	1
Taylor Creek/ Nubbin Slough	S-154	S154	1	1
Taylor Creek/ Nubbin Slough	S-154C	S154C	1	1
Taylor Creek/ Nubbin Slough	S191	S191	1	1
Upper Kissimmee	Alligator Lake	S60	Insufficient Data	Insufficient Data
Upper Kissimmee	Boggy Creek	ABOGGN	3	3
Upper Kissimmee	Catfish Creek	34008	2	3
Upper Kissimmee	East Lake Tohopekaliga	BS-59	3	3
Upper Kissimmee	Horse Creek (closed basin)	Horse Crk2	3	3

Subwatershed	Basin	Station	TN Priority	TP Priority
Upper Kissimmee	Lake Conlin (closed basin)	None	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Cypress	4002	3	3
Upper Kissimmee	Lake Gentry	GENTRYDTCH	3	3
Upper Kissimmee	Lake Hart	MJ01253123	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Hatchineha	EC-37	3	3
Upper Kissimmee	Lake Jackson	LJACKDSCH	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Kissimmee	S65	2	2
Upper Kissimmee	Lake Marian	ML22303313	Insufficient Data	1
Upper Kissimmee	Lake Marion	51242	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Myrtle	None	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Pierce	Pierce1	2	3
Upper Kissimmee	Lake Rosalie	KUB009	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Tohopekaliga	CL18273011	3	3
Upper Kissimmee	Lake Weohyakapka	Weohyakapka1	3	3
Upper Kissimmee	Lower Reedy Creek	CREEDYBR	3	3
Upper Kissimmee	Marion Creek	DLMARNCR-DLONDNCR	3	3
Upper Kissimmee	S63A	S63A	Insufficient Data	Insufficient Data
Upper Kissimmee	Shingle Creek	SCD	Insufficient Data	3
Upper Kissimmee	Tiger Lake	Tiger1 (Tiger1-G4CE0070)	2	1
Upper Kissimmee	Upper Reedy Creek	C-12E (C-12E-RC-13H)	3	3
East Lake Okeechobee	C-44/Basin 8/S-153	S308C	2	1
East Lake Okeechobee	L-8	5147 (C10A)	1	1
West Lake Okeechobee	East Caloosahatchee	S77	1	3
West Lake Okeechobee	Hicpochee North	G3SD0087	Insufficient Data	Insufficient Data
West Lake Okeechobee	Nicodemus Slough South	5158 (C5A)	Insufficient Data	Insufficient Data
South Lake Okeechobee	715 Farms (Culv 12A)	S274 (C12A)	Insufficient Data	Insufficient Data
South Lake Okeechobee	East Beach Drainage District (Culv 10)	S273 (C10)	1	3
South Lake Okeechobee	East Shore Drainage District (Culv 12)	S275	Insufficient Data	Insufficient Data
South Lake Okeechobee	S2	S2	1	3
South Lake Okeechobee	S-3	S3	2	3
South Lake Okeechobee	S-4	S4	1	1
South Lake Okeechobee	S-5A Basin (S-352-WPB Canal)	S352	2	Insufficient Data
South Lake Okeechobee	South Florida Conservancy Drainage District (S-236)	S236	Insufficient Data	Insufficient Data
South Lake Okeechobee	South Shore/ So. Bay Drainage District (Culv 4A)	C4A	Insufficient Data	Insufficient Data

4.1.2. Trend Analysis

Table 71 summarizes the trend analysis results by basin in each subwatershed. The trend analysis from the second 5-Year Review was updated to add data through WY2024. The latest analysis uses data from five water years before BMAP adoption and 10 years after adoption for a period of record extending from May 1, 2008 through April 30, 2024. The results of the trend analysis are used in the TRA evaluation presented in **Chapter 3**.

Table 71. Trend analysis results by subwatershed and basin

Subwatershed	Basin Name	TN Trend Analysis	TP Trend Analysis
East Lake Okeechobee	C-44/Basin 8/S-153	No Significant Trend	No Significant Trend
East Lake Okeechobee	L-8	No Significant Trend	No Significant Trend
Fisheating Creek	Fisheating Creek/L-61	No Significant Trend	No Significant Trend
Fisheating Creek	Nicodemus Slough North	No Significant Trend	No Significant Trend
Indian Prairie	C-40	No Significant Trend	Significant Decreasing Trend
Indian Prairie	C-41	No Significant Trend	No Significant Trend
Indian Prairie	C-41A	No Significant Trend	No Significant Trend
Indian Prairie	In canal to lake	No Significant Trend	Significant Increasing Trend
Indian Prairie	L-48	No Significant Trend	No Significant Trend
Indian Prairie	L-49	No Significant Trend	No Significant Trend
Indian Prairie	L-59E	Significant Decreasing Trend	Significant Decreasing Trend
Indian Prairie	L-59W	No Significant Trend	Significant Decreasing Trend
Indian Prairie	L-60E	No Significant Trend	Significant Decreasing Trend
Indian Prairie	L-60W	No Significant Trend	No Significant Trend
Indian Prairie	L-61E	No Significant Trend	No Significant Trend
Indian Prairie	S-131	No Significant Trend	No Significant Trend
Lake Istokpoga	Arbuckle Creek	No Significant Trend	No Significant Trend
Lake Istokpoga	Josephine Creek	No Significant Trend	Significant Decreasing Trend
Lake Istokpoga	Lake Arbuckle	No Significant Trend	No Significant Trend
Lake Istokpoga	Lake Istokpoga	Significant Increasing Trend	No Significant Trend
Lower Kissimmee	Kissimmee River	No Significant Trend	Significant Decreasing Trend
Lower Kissimmee	S-65A	No Significant Trend	No Significant Trend
Lower Kissimmee	S-65E	Significant Increasing Trend	No Significant Trend
South Lake Okeechobee	East Shore WCD (Culv 12)	Insufficient Data	Insufficient Data
South Lake Okeechobee	S2	No Significant Trend	No Significant Trend
South Lake Okeechobee	S-3	Significant Decreasing Trend	Significant Decreasing Trend
South Lake Okeechobee	S-4	No Significant Trend	No Significant Trend
South Lake Okeechobee	S-5A Basin (S-352-West Palm Beach [WPB] Canal)	No Significant Trend	No Significant Trend
South Lake Okeechobee	South Florida Conservancy District (S-236)	Insufficient Data	Insufficient Data
Taylor Creek/Nubbins Slough	S-133	Significant Decreasing Trend	No Significant Trend
Taylor Creek/Nubbins Slough	S-135	No Significant Trend	No Significant Trend
Taylor Creek/Nubbins Slough	S-154	No Significant Trend	No Significant Trend
Taylor Creek/Nubbins Slough	S-154C	No Significant Trend	Significant Decreasing Trend

Subwatershed	Basin Name	TN Trend Analysis	TP Trend Analysis
Taylor Creek/Nubbins Slough	S191	No Significant Trend	No Significant Trend
Upper Kissimmee	Alligator Lake	No Significant Trend	No Significant Trend
Upper Kissimmee	Boggy Creek	Significant Decreasing Trend	Significant Decreasing Trend
Upper Kissimmee	Catfish Creek	No Significant Trend	Significant Decreasing Trend
Upper Kissimmee	East Lake Tohopekaliga	No Significant Trend	No Significant Trend
Upper Kissimmee	Horse Creek	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Cypress	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Gentry	No Significant Trend	Significant Decreasing Trend
Upper Kissimmee	Lake Hart	No Significant Trend	No Significant Trend
Upper Kissimmee	Lake Hatchinea	No Significant Trend	Significant Decreasing Trend
Upper Kissimmee	Lake Jackson	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Kissimmee	No Significant Trend	No Significant Trend
Upper Kissimmee	Lake Marian	Insufficient Data	No Significant Trend
Upper Kissimmee	Lake Marion	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Pierce	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Rosalie	Insufficient Data	Insufficient Data
Upper Kissimmee	Lake Tohopekaliga	No Significant Trend	Significant Decreasing Trend
Upper Kissimmee	Lake Weohyakapka	No Significant Trend	No Significant Trend
Upper Kissimmee	Lower Reedy Creek	No Significant Trend	Significant Decreasing Trend
Upper Kissimmee	Marion Creek	Significant Decreasing Trend	Significant Decreasing Trend
Upper Kissimmee	S63A	No Significant Trend	No Significant Trend
Upper Kissimmee	Shingle Creek	No Significant Trend	No Significant Trend
Upper Kissimmee	Tiger Lake	Insufficient Data	Insufficient Data
Upper Kissimmee	Upper Reedy Creek	No Significant Trend	No Significant Trend
West Lake Okeechobee	East Caloosahatchee	No Significant Trend	No Significant Trend
West Lake Okeechobee	Hicpochee North	Insufficient Data	Insufficient Data
West Lake Okeechobee	Nicodemus Slough South	Significant Increasing Trend	Significant Increasing Trend

4.1.3. Hot Spot Analysis

Figure 19 and **Figure 20** summarize the TN and TP hot spot analysis results, respectively, that were presented by subwatershed in **Chapter 3** for the subwatersheds in the LOW. For each basin, a rank was assigned to help focus resources and projects in the basins that are in most need of improvement. Ranks were set for high, medium, and low resource needs.

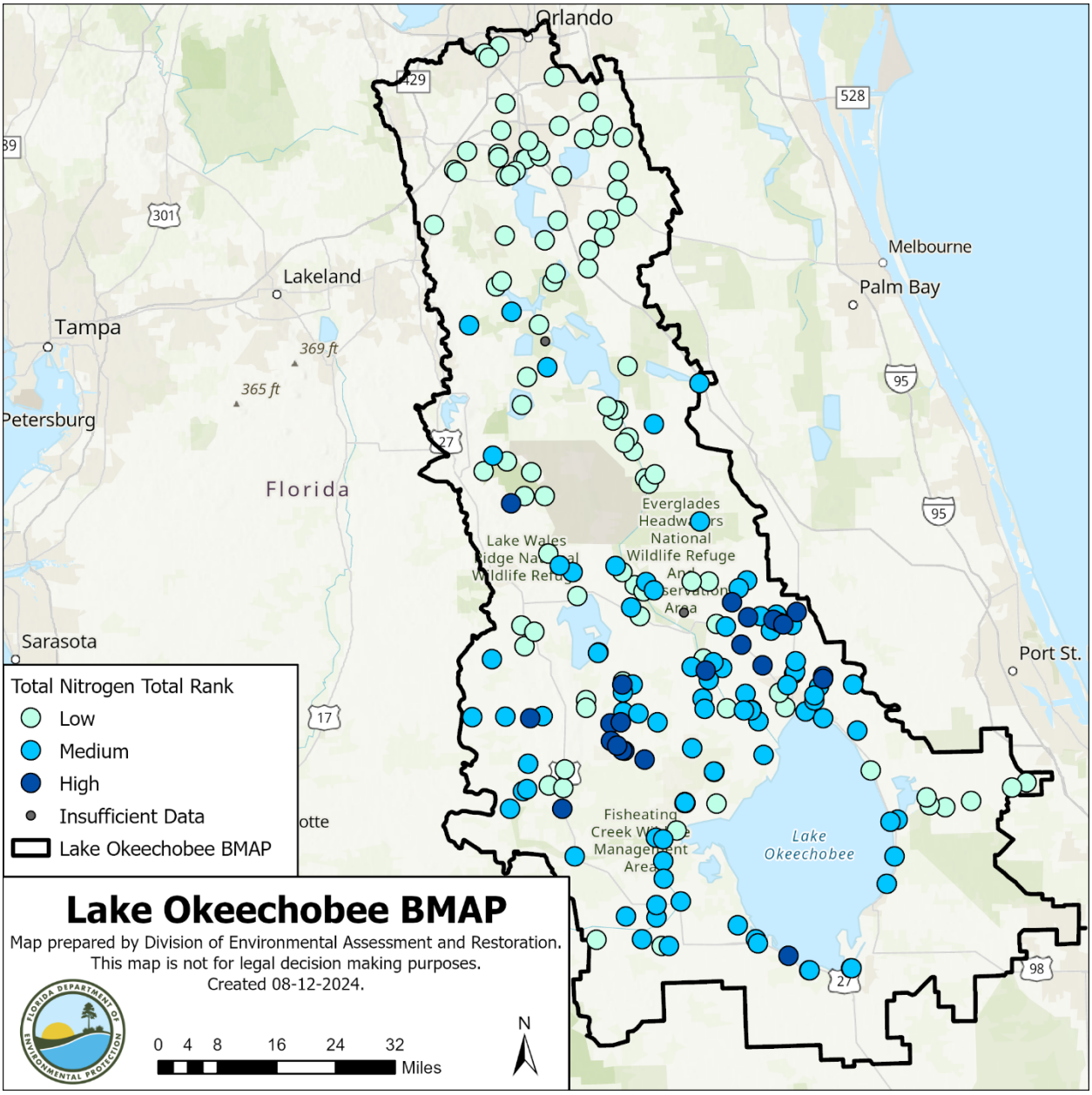


Figure 19. TN hotspot analysis results

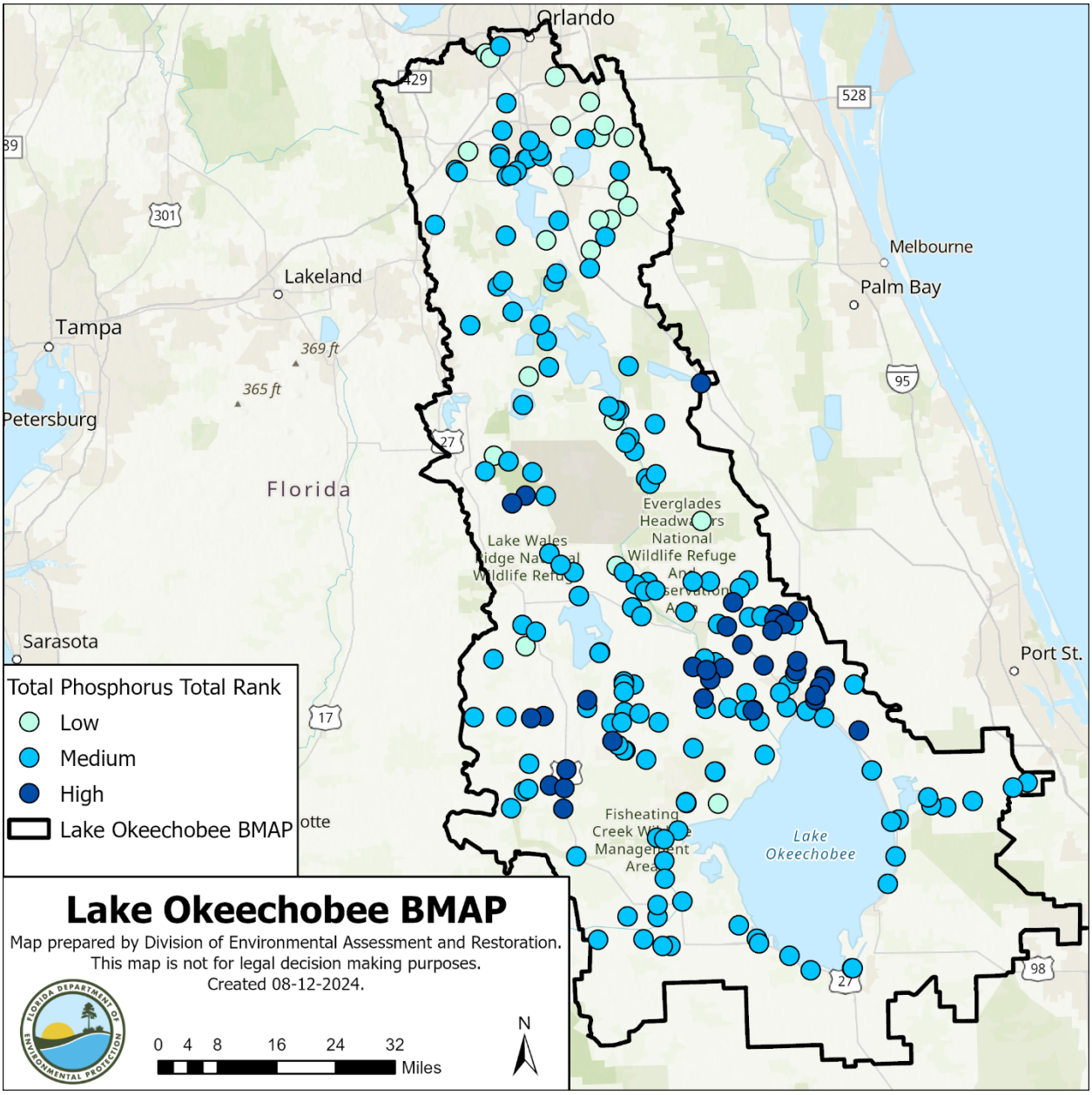


Figure 20. TP hotspot analysis results

4.2. Future Growth

Nutrient impacts from new development are addressed through a variety of mechanisms outlined in this BMAP, as well as provisions of Florida law. While most of the restoration projects and management strategies listed in this BMAP address current nutrient loading, there is a need to plan and implement sound management strategies to address loading associated with population growth. DEP has included in this BMAP specific elements to address current and future WWTF effluent, OSTDS and stormwater sources. Broader requirements—such as local land development regulations, comprehensive plans, ordinances, incentives, environmental resource permit requirements, and consumptive use permit requirements—all provide additional

mechanisms and avenues to protect water resources and reduce the impact of new development and other land use changes as they occur.

Further strengthening of comprehensive plans is required under section 163.3177 F.S., which required local governments to amend their comprehensive plans with the following considerations:

- Identify and prioritize projects to meet the TMDLs.
- Update the wastewater section to include plans for treatment updates, not just capacity, and AWT must be prioritized.
- In developments with more than 50 lots with more than one OSTDS per acre, the plan must consider the feasibility of providing sanitary sewer within a 10-year planning horizon and identify the facility that could receive the flows. The plan must review the capacity of the facility and any associated transmission facilities; projected wastewater flow at that facility for the next 20 years, including expected future new construction and connections of OSTDS to sanitary sewer; and timeline for the construction of the sanitary sewer system. The plan was required to be updated by July 1, 2024.
- Comprehensive plans must contain capital improvements element to consider the need for and the location of public facilities.
    - Construction, extension, or increase in capacity of public facilities as well as principals for correcting existing public facility deficiencies. Components must cover at least a 5-year period.
    - Costs, timeline, general location and projected revenue sources to fund the facilities.
    - Standards to meet acceptable level of service.
    - Schedule of capital improvements, which may include privately funded projects.
    - Must include a list of projects necessary to achieve the pollutant load reductions attributable to the local government, as established in a BMAP.
    - The plan must include a general sanitary sewer, solid waste, drainage, potable water, and natural groundwater aquifer recharge element correlated to principals and guidelines for future land use.
    - The element must address coordinating the extension of, increase in the capacity of, or upgrade in treatment of facilities to meet future needs; prioritizing AWT while maximizing the use of existing facilities and discouraging urban sprawl; conserving potable water resources; and protecting the functions of natural groundwater recharge areas and natural drainage features.

Through this array of laws and the requirements in this BMAP, new development must undertake nutrient-reduction measures before the development is complete. DEP recommends that all local governments revise their planning and land use ordinance(s) to adequately address future growth and the associated environmental impact. Maintaining land at lower intensity uses through land purchases or easements for conservation and recreational use is one strategy that can help reduce water quality impacts in the basin. Any additional nutrient loading from land use intensification will be evaluated during future BMAP review efforts. If an increase in loading

occurs an entity may receive additional reduction requirements that will require additional restoration actions by the responsible entity to remediate impact.

4.2.1. Future Growth Analysis

An analysis was conducted to consider the impacts of future land use changes on nutrient loading in the basin. First, a spatial analysis determined the proportion of developable land area attributed to each entity within the county. Areas where there are permanent waterbodies or which have been set aside for conservation are unlikely to see future development or increased population so the National Hydrography Database for lake and ponds and the Florida Natural Areas Inventory conservation lands were used to remove lands from the analysis. The remaining land ("developable land") attributed to each entity was used as a starting point for per acre loading calculations, which were used to estimate future loads from increased stormwater runoff as a result of development under different planning scenarios, described below. Loading projections were based on DEP's statewide event mean concentrations and runoff concentrations for low density residential, with a generalized rainfall for Central Florida from Harper 2007. Finally, a generalized attenuation rate of 70% for urban runoff was applied to loading calculations to derive the estimated future load to the basin.

Scenario 1 represents a conservative growth future where 2% of developable land is converted from natural or undeveloped land uses to low density residential.

Scenario 2 represents a moderate growth future where 10% of developable land is converted to low density residential.

Scenario 3 represents an extreme growth future where 17% of developable land is converted to low density residential.

Based on the methodology above, using phosphorus loads as an example, **Table 72** shows the estimated future nutrient loads from stormwater runoff that may be assigned to local governments if growth continues as projected under the three planning scenarios. DEP encourages local governments to consider these additional nutrient loads when authorizing new development or changes in land uses, and when developing local plans for wastewater infrastructure expansion and maintenance, to ensure that the TMDL target is achieved and maintained.

Table 72. Estimated TP load from development in the BMAP area

Entity	Developable Land (acres)	2040 Additional TP Loading under Scenario 1 (2%) (lbs/yr)	2040 Additional TP Loading under Scenario 2 (10%) (lbs/yr)	2040 Additional TP Loading under Scenario 3 (17%) (lbs/yr)
Glades County	294,104	106	529	899
Moore Haven	682	0	1	2
Hendry County	138,543	50	249	424
Clewiston	2,887	1	5	9
Highlands County	361,375	130	650	1,105
Avon Park	6,274	2	11	19

Entity	Developable Land (acres)	2040 Additional TP Loading under Scenario 1 (2%) (lbs/yr)	2040 Additional TP Loading under Scenario 2 (10%) (lbs/yr)	2040 Additional TP Loading under Scenario 3 (17%) (lbs/yr)
Lake Placid	2,976	1	5	9
Sebring	6,166	2	11	19
Martin County	108,946	39	196	333
Indiantown	8,825	3	16	27
Okeechobee County	235,821	85	424	721
Okeechobee	2,656	1	5	8
Orange County	105,084	38	189	321
Bay Lake	8,622	3	16	26
Belle Isle	1,561	1	3	5
Edgewood	795	0	1	2
Lake Buena Vista	1,913	1	3	6
Orlando	49,841	18	90	152
Windermere	1,230	0	2	4
Osceola County	302,699	109	544	926
Kissimmee	12,772	5	23	39
St. Cloud	15,180	5	27	46
Palm Beach County	292,954	105	527	896
Belle Glade	4,391	2	8	13
Pahokee	3,337	1	6	10
South Bay	1,420	1	3	4
Polk County	203,939	73	367	624
Davenport	2,183	1	4	7
Dundee	3,762	1	7	12
Frostproof	6,459	2	12	20
Haines City	5,916	2	11	18
Highland Park	258	0	0	1
Hillcrest Heights	208	0	0	1
Lake Wales	3,609	1	6	11
Basin Totals	**2,197,387**	**791**	**3,953**	**6,720**

This broad analysis is not being used to determine allocated reductions for responsible entities, but does help shed light on how loading might change in the coming decades without comprehensive local and regional planning. Future development will likely result in an increase in loading from stormwater and wastewater sources. These changes are difficult to model because much of it is dependent upon the type and location of development, enforcement of local ordinances, future home values, and future social attitudes towards lawn maintenance and waste management. There are also complex dynamics associated with new urban development in which loading from human activities is compounded by potential removal or conversion of forest lands or green spaces, which had previously provided natural remediation of atmospheric and soil nutrients. This analysis did not capture all local considerations or complexities of mixed land use.

While it is unlikely that additional nutrient loading from future populations can be entirely avoided, the results of this analysis provide local governments information on how they can mitigate future nutrient loading by pursuing planning scenarios which prioritize preserving low intensity land uses. In addition to stormwater BMPs, strengthening and enforcing fertilizer

ordinances, working with homeowners' associations or neighborhood groups to reduce fertilizer use on community landscaping, or incentivizing Florida Friendly development practices could reduce the overall impact of additional nutrients associated with urban stormwater runoff.

Other mechanisms discussed above in **Section 4.2** are available to local governments to further mitigate future nutrient loading from waste sources. For example, the expansion of centralized sewer services that meet or exceed AWT standards for wastewater effluent, the use of enhanced nutrient-reducing OSTDS certified with higher nitrogen treatment efficiencies, or other wastewater treatment systems with higher treatment levels.

DEP encourages local governments to incorporate water quality considerations when developing and implementing local ordinances, comprehensive plans, stormwater planning, and OSTS incentive programs in areas of urban expansion.

4.3. Compliance

The TMDL sets an annual TP load to Lake Okeechobee of 140 mt/yr (308,647 lbs/yr), of which 35 mt/yr (77,162 lbs/yr) is estimated to fall directly on the lake through atmospheric deposition. The remaining 105 mt/yr (231,485 lbs/yr) of TP are allocated to the entire LOW. The attainment of the TMDL is calculated based on a 5-year rolling average using the monthly loads calculated from measured flow and concentration values.

In addition to overall compliance with the TMDL (i.e., 140 and 105 mt/yr of TP for the lake and entire watershed, respectively), DEP will be monitoring and working to achieve the subwatershed targets identified in **Table 73**. DEP will use this information to identify problem areas and sources that are not meeting the target, acknowledge them through annual reporting and public engagement, and focus resources (regulatory programs through permitting decisions, compliance and enforcement, and nutrient reduction projects) accordingly. This is a key component to the ultimate strategy for restoring the lake.

The *2025 SFER – Volume I, Chapter 8B* prepared by SFWMD, reports the 5-year average (based on data from WY2020–WY2024 [May 1, 2019–April 30, 2014]) annual TP load from the watershed as 348.4 mt/yr (768,083 lbs/yr). Therefore, to achieve the allowable TMDL load of 105 mt/yr, the TP required reductions are 243.4 mt/yr (536,600 lbs/yr). The TP required reductions were assigned to each subwatershed based on the contribution of the total load from that subwatershed (**Table 73**), and **Table 74** lists the progress towards those reductions with projects completed through November 15, 2024.

DEP providing revised starting loads and allocations is an expected part of the iterative BMAP process where loading estimates are reassessed as land uses and other loading sources change over time as. Responsible entities and agencies should expect periodic adjustments to the subwatershed reduction assignments during the BMAP process. DEP will refer to the 5-year average TP load reported annually in the SFER to update the estimated load reductions needed to achieve the TMDL and to track progress towards the TMDL.

Table 73. Load reductions and targets by subwatershed

Subwatershed	WY2020–WY2024 TP Load (mt/yr)	% Contribution of Load	TP Load Required Reduction (mt/yr)	TP Target (mt/yr)
Fisheating Creek	38.6	11.1	27.0	11.6
Indian Prairie	50.7	14.6	35.4	15.3
Lake Istokpoga	34.6	9.9	24.2	10.4
Lower Kissimmee	81.6	23.4	57.0	24.6
Taylor Creek/Nubbin Slough	53.1	15.2	37.1	16.0
Upper Kissimmee	72.5	20.8	50.7	21.8
East Lake Okeechobee	13.7	3.9	9.6	4.1
South Lake Okeechobee	3.6	1.0	2.5	1.1
West Lake Okeechobee	0.0	0.0	0.0	0.0
Total	**348.4**	**100.00**	**243.4**	**105.0**

Table 74. Load reductions achieved through November 15, 2024, by subwatershed

Subwatershed	TP Load Required Reduction (mt/yr)	TP Reductions Achieved Through November 15, 2024 (mt/yr)	TP Reductions Achieved Through November 15, 2024 (%)
Fisheating Creek	27.0	17.7	66%
Indian Prairie	35.4	28.7	81%
Lake Istokpoga	24.2	3.0	12%
Lower Kissimmee	57.0	18.0	32%
Taylor Creek/Nubbin Slough	37.1	39.5	106%
Upper Kissimmee	50.7	18.6	37%
East Lake Okeechobee	9.6	2.5	26%
South Lake Okeechobee	2.5	3.0	119%
West Lake Okeechobee	0.0	0.7	100%
Total	**243.4**	**131.7**	**54%**

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Appendices

Appendix A. Important Links

The links below were correct at the time of document preparation. Over time, the locations may change and the links may no longer be accurate. None of these linked materials are adopted into this BMAP.

- DEP Website: http://www.floridadep.gov
- DEP Map Direct Webpage: https://ca.dep.state.fl.us/mapdirect/
- Florida Statutes: http://www.leg.state.fl.us/statutes:
    a. Florida Watershed Restoration Act (Section 403.067, F.S.)
- DEP Model Ordinances: http://fyn.ifas.ufl.edu/fert_ordinances.html
- DEP Standard Operating Procedures for Water Quality Samples: https://floridadep.gov/dear/quality-assurance/content/dep-sops
- FDACS BMPs: https://www.fdacs.gov/Agriculture-Industry/Best-Management-Practices-BMPs
- FDACS BMP and Field Staff Contacts: https://www.fdacs.gov/Divisions-Offices/Agricultural-Water-Policy
- Florida Administrative Code (Florida Rules): https://www.flrules.org/
- Florida Stormwater Rule: https://floridadep.gov/water/engineering-hydrology-geology/content/erp-stormwater-resource-center
- National Environmental Laboratories Accreditation Conference National Environmental Laboratory Accreditation Program: https://floridadep.gov/dear/florida-dep-laboratory/content/nelap-certified-laboratory-search
- South Florida Environmental Report: https://www.sfwmd.gov/science-data/scientific-publications-sfer
- University of Florida Institute of Food and Agricultural Sciences (UF-IFAS) Research: http://research.ifas.ufl.edu/

Appendix B. Agricultural Enrollment and Reductions

FDACS provides the information for this appendix for each BMAP. The information in this appendix does not represent DEP's position.

Agricultural Landowner Requirements

Section 403.067, F.S., requires agricultural producers and landowners located within BMAP areas to either enroll in the FDACS BMP Program and properly implement BMPs applicable to their property and operation or to conduct water quality monitoring activities as required by Rule Chapter 62-307, F.A.C. Producers or agricultural landowners who are enrolled in the FDACS BMP Program and are properly implementing the applicable BMPs identified on the BMP Checklist, or who are in compliance with the Equivalent Program requirements of Rule Chapter 5M-1, F.A.C., are entitled to a presumption of compliance with state water quality standards per section 403.067(7)(c)3., F.S.

FDACS OAWP BMP Program

BMPs Definition

For the purposes of the OAWP BMP Program, the term "best management practice" means a practice or combination of practices determined based on research, field-testing, and expert review, to be the most effective and practicable on-location means, including economic and technological considerations, for improving water quality in agricultural discharges. Section 403.067, F.S., requires that BMPs reflect a balance between water quality improvements and agricultural productivity. FDACS works closely with DEP, WMDs, industry experts, and academic institutions to understand the environmental and agronomic effects addressed by BMPs.

Section 403.067, F.S., authorizes and directs FDACS to develop and adopt by rule BMPs that will help Florida's agricultural industry achieve the pollution reductions allocated in BMAPs. To date, FDACS OAWP has adopted 11 commodity specific BMP manuals by rule, covering cattle, citrus, equine, dairy, nurseries, poultry, sod, small farms and specialty livestock, specialty fruit and nut, vegetable and agronomic crops, and wildlife operations. All OAWP BMP manuals are periodically revised, updated, and subsequently reviewed and preliminarily verified by DEP before re-adoption. BMPs serve as part of a multidisciplinary approach to water resource restoration and protection that includes public/private partnerships, landowner agreements and regional treatment technologies, which together form the comprehensive strategy needed to meet the goals established in BMAPs.

Enrolling in a FDACS BMP Program

To initially enroll in the FDACS BMP Program, agricultural landowners and producers must meet with a FDACS representative on site to determine the appropriate practices that are applicable to their operation(s) and to document the BMPs on the NOI and BMP Checklist. FDACS representatives consider site-specific factors when determining the applicability of

BMPs including commodity type, topography, geology, location of production, soil type, field size, and type and sensitivity of the ecological resources in the surrounding areas. Producers collaborate with the FDACS representative to complete an NOI to implement the BMPs and the BMP Checklist from the applicable BMP manual.

Once the NOI and Checklist are completed, signed, and submitted to OAWP, the producer is formally enrolled in the BMP Program. Because many agricultural operations are diverse and are engaged in the production of multiple commodities, a landowner may sign multiple NOIs for a single parcel. Producers must properly implement all applicable BMPs as soon as practicable, but no later than 18 months after completion and execution of the NOI and associated BMP Checklist.

Enrollment Prioritization

To address the greatest resource concerns, OAWP utilizes a phased approach based on commodity type, irrigation, and agricultural acreages, while ensuring that all entities identified as agriculture will be notified. Enrollment efforts have previously focused on enrolling parcels that are most impactful to water quality including parcels containing many agricultural acres, irrigated acres, or more intense agricultural land uses.

Implementation Verification

Section 403.067, F.S., requires FDACS to conduct an Implementation Verification (IV) site visit at least every two years to ensure that agricultural landowners and producers are properly implementing the applicable BMPs identified in the BMP Checklist. An IV site visit includes: review and collection of nutrient application records that producers must maintain to demonstrate compliance with the BMP Program; verification that all other applicable BMPs are being properly implemented; verification that any cost shared practices are being properly implemented; and identification of potential cost share practices, projects or other applicable BMPs not identified during enrollment. During the IV site visit, FDACS representatives also identify opportunities for achieving greater nutrient, irrigation, or water resource management efficiencies, including opportunities for water conservation. Procedures used to verify the implementation of agricultural BMPs are outlined in Rule 5M-1.008, F.A.C.

Nutrient Application Records

Enrolled landowners and producers are required to keep records on the total pounds of nitrogen and phosphorus fertilizer from all sources that are applied to their operations to comply with BMP program requirements, including AA biosolids. Nutrient records from Class A or B biosolids applied in accordance with Chapter 62-640, F.A.C. are collected through the DEP permitting process as described in 5M-1.008(5). FDACS will collect information pertaining to these records for a two-year period identified when an IV site visit is scheduled. OAWP adopted a Nutrient Application Record Form (FDACS-04005, rev. 06/24, incorporated in 5M-1.008(4), F.A.C.), to help simplify the record keeping requirement. The form is available under Program

Resources at https://www.fdacs.gov/Agriculture-Industry/Water/Agricultural-Best-Management-Practices. As these records relate to processes or methods of production, costs of production, profits, other financial information, fertilizer application information collected during an IV site visit is considered confidential and may be exempt from public records under Chapters 812 and 815, F.S., and section 403.067, F.S. In accordance with subsection 403.067(7)(c)5., F.S., FDACS is required to provide DEP the nutrient application records.

Compliance Enforcement

If multiple efforts to contact agricultural landowners and producers within BMAPs about enrollment in the BMP Program are unsuccessful or if the landowner or producer chooses not to enroll in the BMP Program FDACS refers them to DEP for enforcement action per section 403.067(7)(b), F.S.

If a producer is enrolled in the FDACS BMP program and the producer chooses not to properly implement the applicable BMPs, FDACS representatives provide the landowner or producer with a list of corrective measures and the timeframes within which they must be implemented. If a landowner or producer does not cooperate with FDACS to identify or implement corrective or remedial measures, or refuses an IV site visit, FDACS refers them to DEP for enforcement action after attempts at corrective and remedial action are exhausted. Chapter 5M-1, F.A.C. outlines the process to ensure compliance with the BMP Program requirements.

Equivalent Programs

Enrollees operating under one of the Equivalent Programs listed in Rule 5M-1.001(7), F.A.C., are required to complete an NOI and meet the other requirements for Equivalent Programs specified in Rule Chapter 5M-1, F.A.C. Compliance with BMPs on the area(s) of the NOI property subject to the Equivalent Program instrument is demonstrated by fulfilling the requirements of Rule 5M-1.008(8), F.A.C. An Enrollee under an Equivalent Program listed in Rule 5M-1.001(7)(a)-(b), F.A.C., that is not required to complete a BMP Checklist is not subject to IV site visits. For Enrollees under an Equivalent Program listed in Rule 5M-1.001(7)(a)-(b), F.A.C., implementation verification shall be undertaken by the agency that issued the permit pursuant to its statutory and/or rule authority.

Other FDACS BMP Programs

FDACS implements other regulatory programs that help minimize nonpoint source pollution from agricultural activities.

Aquaculture

The FDACS Division of Aquaculture develops and enforces regulations governing the commercial aquaculture industry in Florida. Chapter 597, F.S., Florida Aquaculture Policy Act, requires Floridians who engage in commercial aquaculture to annually acquire an Aquaculture Certificate of Registration and implement all applicable Aquaculture Best Management Practices

listed in Rule Chapter 5L-3.004, F.A.C. Facilities with certain production and discharge rates also require an NPDES permit from DEP. The Aquaculture BMPs were last updated by rule in November 2023.

FDACS Division of Aquaculture conducts annual site visits at certified facilities to confirm compliance with BMPs. These include management practices in areas of construction, containment, shrimp culture, sturgeon culture, shellfish culture, live rock culture, aquatic plants, including fertilizer application, and health management. For more information about FDACS Division of Aquaculture and Aquaculture BMPs go to https://www.fdacs.gov/Divisions-Offices/Aquaculture.

Within the Lake Okeechobee BMAP, there are 40 aquaculture facilities under certification with the FDACS Division of Aquaculture as of November 2024. As with agricultural land use in Florida, aquaculture facilities are frequently in and out of production. The facilities being provided may no longer be in operation and/or there may be new companies in different parts of the basin by the next BMAP iteration.

Forestry

The FDACS FFS develops, implements (through education and training), and monitors Silviculture BMPs in Florida. Silviculture BMPs are applicable to bona-fide ongoing silviculture operations and are not intended for use during tree removal or land clearing operations that are associated with a land-use change to a non-forestry objective. The FFS Silviculture BMP Manual is adopted under Chapter 5I-6.002 F.A.C. and was last updated in 2008. FFS is currently in the process of updating the manual with guidance from the FDACS Silviculture BMP Technical Advisory Council. The current manual is composed of fourteen BMP categories covering many aspects of silviculture operations including timber harvesting, site preparation, forest roads, stream and wetland crossings, and forest fertilization. The primary objectives of Silviculture BMPs are to minimize the risks to Florida's water resources from silviculture-related sources of nonpoint source pollution and maintain overall ecosystem integrity. Section 403.067, F.S., provides silviculture practitioners implementing Silviculture BMPs a presumption of compliance with state water quality standards for the pollutants addressed by the BMPs.

The FFS Silviculture BMP implementation monitoring program was initiated in 1981 and follows the criteria which have been established for state forest agencies in the southeastern United States by the Southern Group of State Foresters. Monitoring surveys are conducted biennially on a random sample of recently conducted silviculture operations throughout Florida with the goal of determining the level of implementation and compliance with Silviculture BMPs. For the period of record (1981 to 2023), Florida's statewide Silviculture BMP compliance rates range from 84% (1985) to 99.7% (2019) and have shown an overall average compliance rate above 98% since 2005. For more information about Silviculture BMPs and to download a copy of the latest FFS Silviculture BMP Implementation Survey Report go to https://www.fdacs.gov/bmps.

Agricultural Land Use

Agricultural Land Use in BMAPs

Land use data are helpful as a starting point for estimating agricultural acreage, determining agricultural nonpoint source loads, and developing strategies to reduce those loads in a BMAP area, but there are inherent limitations in the available data. Agriculture acreages fluctuate when volatile economic markets for certain agricultural commodities provide incentive for crops to change at a fast pace, properties are sold, leases are terminated, production areas decrease, or production ceases, among other reasons. Florida's recent population growth has also resulted in accelerated land use changes statewide, some of which include transitioning agricultural or fallow agricultural lands to developed land uses. The dynamic nature of Florida's agricultural industry creates challenges with comparing agricultural acres from year to year.

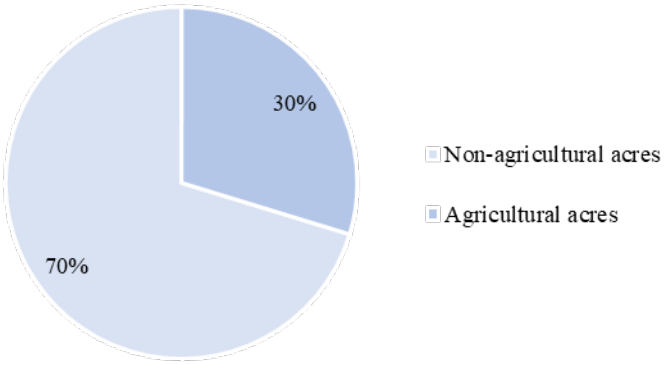
When developing a BMAP, agricultural nonpoint source loading is estimated using a broad methodology based on statewide land use data. Oftentimes, this results in properties being designated as agricultural nonpoint pollution sources and creates an obligation for these properties to enroll in the FDACS BMP Program when they may be better addressed under other programs more applicable to the practices occurring on those properties. Examples of these properties include: rural residential/homesteads, ranchettes, or single-family homes with accessory structures for livestock or groves that serve the needs of those living on the property. Continued identification of these properties as agricultural nonpoint sources limits the ability to reliably direct programmatic resources to meet water quality restoration goals.

FDACS uses the parcel-level polygon ALG data that are part of the FSAID Geodatabase to estimate agricultural acreages statewide. FSAID provides acreages and specific types of irrigated and non-irrigated agricultural lands statewide. FSAID is updated annually based on WMD land use data, county property appraiser data, OAWP BMP enrollment data, U.S. Department of Agriculture data for agriculture, such as the Cropland Data Layer and Census of Agriculture, FDACS Division of Plant Industry citrus data, as well as field verification performed by USGS, WMDs, and OAWP. As the FSAID is detailed and updated on an annual basis, it provides a reliable characterization of agricultural land uses that accounts for the fast-growing population and resultant land use changes taking place statewide. The FSAID also provides FDACS a clearer picture of agriculture's impact on the landscape and consistent method to better track, direct, and assess BMP implementation, cost share projects, and regional projects.

Table B-1 shows the percentage of agricultural land use within the Lake Okeechobee BMAP, determined by comparing the FSAID 11 ALG and total acreage of the BMAP boundary. Understanding what proportion of a BMAP is comprised of agriculture provides insight as to the potential contribution of agricultural nonpoint sources.

Table B-1. Acres in the Lake Okeechobee BMAP

Category	Acres
BMAP acres	3,898,178
Agricultural acres	1,646,661



FDACS BMP Program Metrics

Enrollment Delineation and BMAP Metrics

BMP enrollments are delineated in geographic information systems (GIS) using county property appraiser parcels. In terms of NOIs, enrolled acreage fluctuates when parcels are sold, when leases end or change hands, or when production areas downsize or production ceases, among other reasons. Nonproduction areas such as forest, roads, urban structures, and water features are often included within the parcel boundaries. Conversely, agricultural lands in the FSAID ALG only include areas identified as agriculture. To estimate the agricultural acres enrolled in the BMP program, OAWP overlays the FSAID ALG and BMP enrollment data within GIS to calculate the acres of agricultural land in an enrolled parcel.

Summary Tables

As of April 30, 2024, 92% of the agricultural acres in the Lake Okeechobee BMAP area are enrolled in FDACS BMP program. **Table B-2** shows the acreages enrolled in the BMP Program by commodity. It is important to note that producers often undertake the production of multiple commodities on their operations, resulting in the requirement to implement the applicable BMPs from more than one BMP manual. When this occurs, the acres enrolled under more than one BMP manual are classified as "multiple commodity" and not included in the individual commodity totals to prevent duplication.

Table B-2. Agricultural lands enrolled in the Lake Okeechobee BMAP by BMP Program Commodity

Commodity	Agricultural Acres Enrolled
Citrus	85,820
Conservation Plan	159,828
Cow/Calf	520,714
Dairy	1,949
Equine	792
Fruit/Nut	782
Lake Okeechobee Protection Plan	1,139

Commodity	Agricultural Acres Enrolled
Multiple Commodities	337,234
Nursery	3,988
Poultry	135
Row/Field Crops	399,741
Sod	10,263
Total	**1,522,384**
Percent of Agricultural Lands Enrolled in BMPs	**92%**

Table B-3. Agricultural land uses enrolled by commodity and crediting location

Commodity	East Lake Okeechobee	Fisheating Creek	Indian Prairie	Lake Istokpoga	Lower Kissimmee	South Lake Okeechobee	Taylor Creek/ Nubbin Slough	Upper Kissimmee	West Lake Okeechobee
Citrus	237	4,282	8,371	36,520	6,935	0	0	23,009	6,468
Conservation Plan	23,658	60,607	75,170	1,630	10,018	0	0	0	12,402
Cow/Calf	0	90,630	57,329	42,840	106,091	1,248	51,557	110,169	37,192
Dairy	0	0	0	565	1,297	0	87	0	0
Equine	449	0	0	54	0	0	255	34	0
Fruit/Nut	151	74	0	233	0	4	0	215	105
Lake Okeechobee Protection Plan	0	0	0	0	465	0	674	0	0
Multiple Commodities	28,766	41,777	34,520	15,983	76,164	4,159	66,948	44,017	24,902
Nursery	360	199	146	332	201	308	2,166	225	51
Poultry	0	0	0	0	0	0	38	40	56
Row/Field Crop	19,367	1,655	2,949	375	5,093	312,849	3,872	2,257	51,325
Sod	581	0	4,911	2,347	377	200	138	966	743
Total	**73,568**	**199,224**	**183,395**	**100,878**	**206,640**	**318,767**	**125,735**	**180,932**	**133,244**
Percent of Agricultural Lands Enrolled in BMPs	**89%**	**97%**	**92%**	**87%**	**90%**	**99%**	**91%**	**84%**	**95%**

Enrollment Map

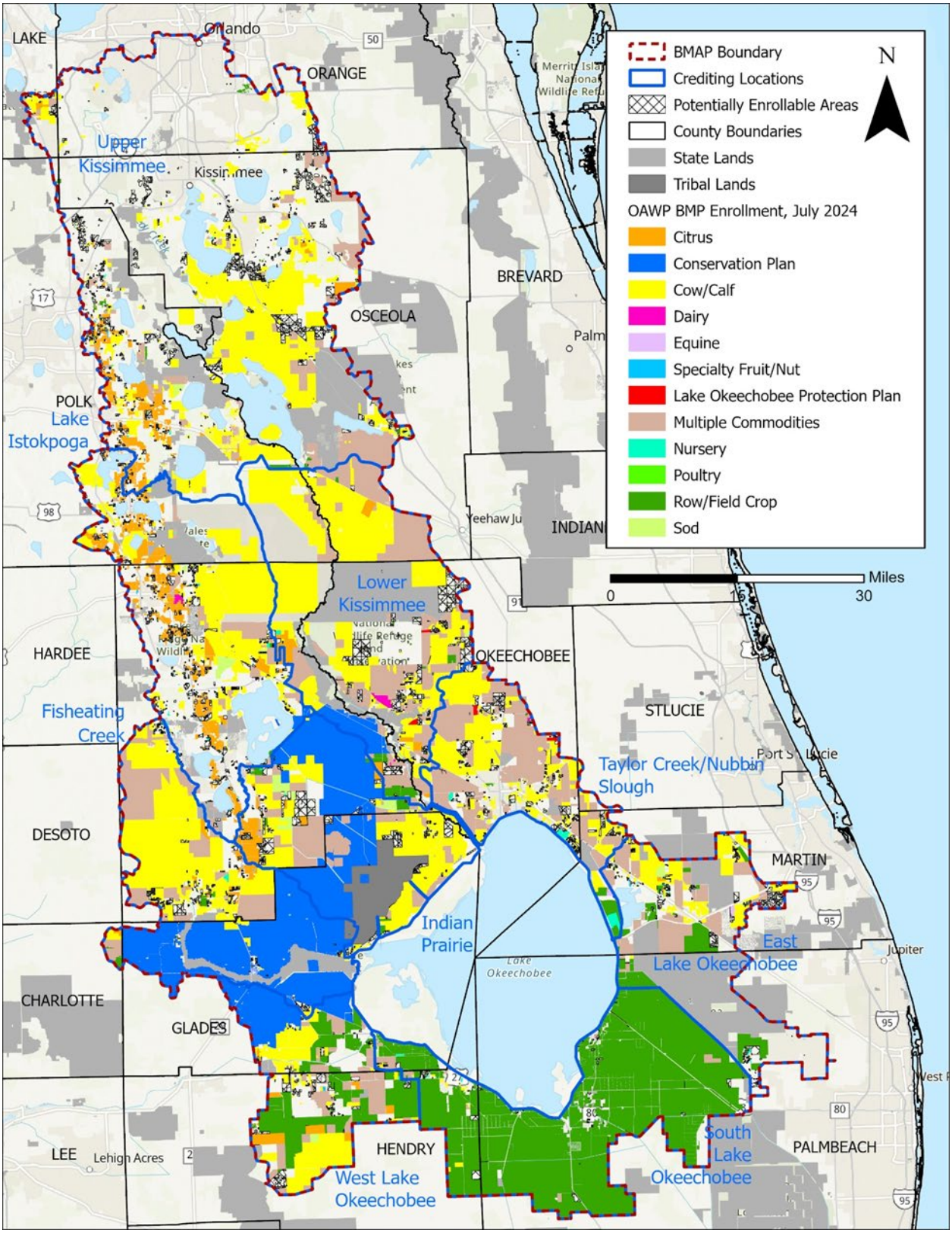


Figure B-1. Agricultural BMP enrollment in the Lake Okeechobee BMAP

Unenrolled Agricultural Lands

Oftentimes, there are lands initially identified as agriculture which, upon closer evaluation, raise questions as to whether there is agricultural activity and whether it is enrollable within the purview of OAWP. FDACS characterizes lands classified as agriculture in the FSAID ALG, but not currently enrolled in the FDACS BMP Program using property appraiser data such as parcel owner information, agricultural tax valuation for exemption purposes, other parcel land use details to determine whether the remaining lands are potentially enrollable. More information about the "Unenrolled agricultural lands" characterization analyses is available in FDACS Annual Status of Implementation of BMPs Report.

The assessment of unenrolled agricultural lands at a more granular scale provides an indication of which areas are more likely (or unlikely) to have enrollable agricultural activities occurring on them. It also provides an estimate of the number of parcels and the associated agricultural acres deemed to be enrollable. The number of parcels is a useful proxy for the level of resource dedication needed to enroll the associated agricultural acres and where best to focus finite resources and staffing needs. It is often the case that much of the potentially enrollable acreage is encompassed within many smaller parcels which may require additional resources to enroll and require further evaluation, such as those that have agricultural activity intended solely for personal use ancillary to a residence, those that do not have an agricultural land use per the property appraiser, as well as parcels where there is no current activity to enroll.

Table B-4 shows the breakdown of agricultural lands within the Lake Okeechobee BMAP by crediting location based on the FSAID 11 and the results of the FDACS unenrolled agricultural lands characterization.

Table B-4. Agricultural lands in the Lake Okeechobee BMAP by crediting location

Crediting Location	Agricultural Acres	Unenrolled - Unlikely Enrollable Acres	Agricultural Acres Adjusted	Agricultural Acres Enrolled*
Fisheating Creek	213,477	8,260	205,217	199,224
Indian Prairie	230,095	31,447	198,648	183,395
Lake Istokpoga	128,211	12,087	116,124	100,878
Lower Kissimmee	263,119	34,376	228,743	206,640
Taylor Creek/Nubbin Slough	148,107	10,228	137,879	125,735
Upper Kissimmee	268,960	53,935	215,026	180,932
East Lake Okeechobee	93,242	10,819	82,422	73,568
South Lake Okeechobee	327,062	5,079	321,983	318,767
West Lake Okeechobee	150,059	9,440	140,619	133,244

* Enrollment information current as of April 30, 2024

Potentially Enrollable Lands

There are 126,686 acres of potentially enrollable lands within the Lake Okeechobee BMAP based on the assessment of unenrolled agricultural lands performed by FDACS. **Table B-5** shows the potentially enrollable acreages by crop type. **Figure B-2** shows the count of potentially enrollable parcels based on size classifications used by FDACS.

Table B-5. Potentially enrollable acres by crop type

Commodity	Acres
Citrus	10,504
Cropland and/or Pastureland	124
Crops	3,388
Fallow	22,625
Fruit (Non-citrus)	566
Grazing Land	75,058
Hay	1,866
Livestock	1,165
Nursery	1,812
Open Lands	1,680
Sod	3,844
Sugarcane	4,056
Total	**126,686**

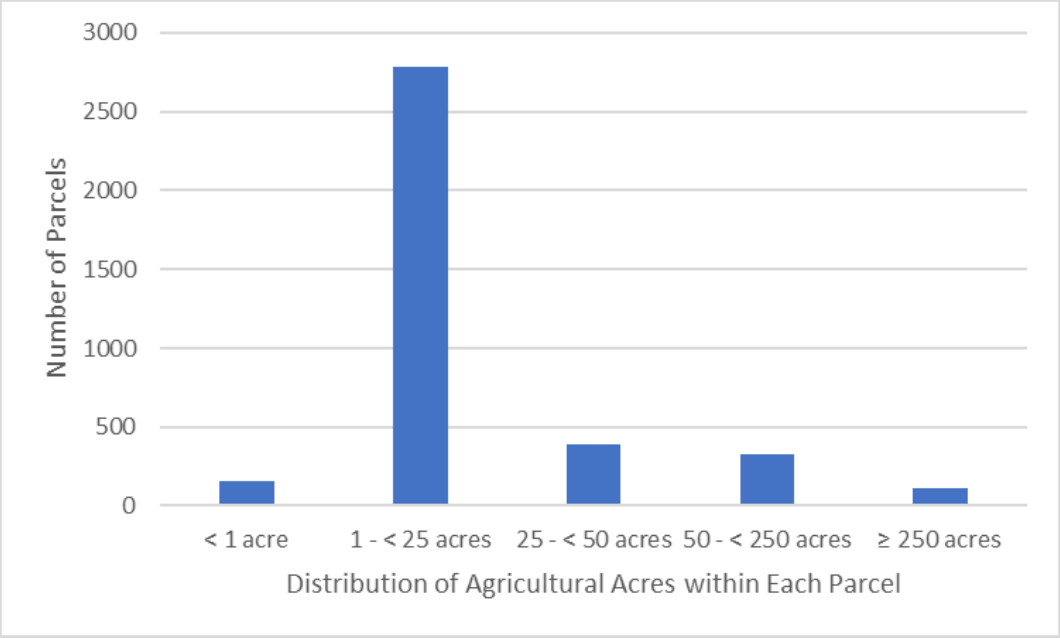


Figure B-2. Count of potentially enrollable parcels by class size

FDACS Cost Share

Enrollment in and proper implementation of BMPs makes a producer eligible for cost share for certain BMPs, other practices, and projects. The availability of cost share funds depends on

annual appropriations by the Florida Legislature, and therefore, the amount available can vary each year. Cost share applications may be submitted once a producer has enrolled in the BMP Program and has been assigned an NOI number. Cost share practices are categorized as nutrient management, irrigation management, or water resource protection. BMPs, other practices, and projects eligible for cost share funding may include precision agriculture technologies, variable rate irrigation methods, water control structures, and tailwater recovery systems. OAWP seeks to leverage its cost share funding with other cost share programs offered by FDACS and other state and federal agencies. The United States Department of Agriculture NRCS offers funding through its Environmental Quality Incentives Program, and certain WMDs have agricultural cost share programs. Applicants are encouraged to use OAWP cost share in conjunction with other available conservation programs although funding cannot be duplicative.

Table B-6 identifies the number of agricultural technologies that received cost-share assistance in the Lake Okeechobee BMAP area and the associated nutrient reductions. The nutrient reductions were used to develop a methodology to estimate nutrient reductions for NOIs that have received cost-share funding. The NOI boundary, based on property appraiser parcel data, was considered the area treated by the cost-shared agricultural technology or project. For parcels with more than one cost-share project, OAWP identified the order of treatment to determine the reductions for the multiple projects based on each cost-shared agricultural technology. Estimated nutrient reductions from FDACS cost share are shown in **Table B-7**.

Table B-6. Cost share project counts and estimated nutrient reduction efficiencies

Project Type	Total Reductions (TN)	Total Reductions (TP)	Project Count
Fence	10%	10%	151
Irrigation improvements, automation	20%	20%	399
Weather station	20%	5%	29
Chemigation/fertigation	20%	20%	211
Precision ag technology	30%	10%	61
Drainage improvements, mole drain, ditch cleaning	10%	15%	49
Well, pipeline, trough, pond, heavy use protection	50%	50%	169
Retention, detention, tailwater recovery, berms (Cow/Calf)	25%	18%	3
Retention, detention, tailwater recovery, berms (Vegetable and Agronomic Crops, Citrus)	64%	70%	17
Culvert	17%	29%	0
Structure for Water Control	17%	29%	194
Composting and/or Storage Project	---	---	4
Crop Implements	---	---	27
Dairy Work	50%	50%	53
Engineering, surveying, planning, modeling	---	---	105

Table B-7. Estimated nutrient reductions from FDACS cost share

Crediting Location	Total Reductions (TN)	Total Reductions (TP)
East Lake Okeechobee	10,804	368
Fisheating Creek	41,710	6,868
Indian Prairie	62,322	15,842
Lake Istokpoga	38,830	941

Crediting Location	Total Reductions (TN)	Total Reductions (TP)
Lower Kissimmee	55,336	12,035
South Lake Okeechobee	610	51
Taylor Creek/Nubbin Slough	53,519	20,646
Upper Kissimmee	37,316	2,321
West Lake Okeechobee	8,089	330
Total	**308,535**	**59,402**

Regional Projects

FDACS works cooperatively with stakeholders to reduce nutrient loading from agricultural lands in the Lake Okeechobee BMAP through the operation of nine regional water treatment projects. Regional projects may include HWTT, FAVT, and DWM projects. **Table B-8** lists the project name, technology type, and reductions achieved by the regional projects within the Lake Okeechobee BMAP.

Table B-8. Average reductions achieved by regional projects

*Planned

Project Name	Project Type	Crediting Location	Total Reductions (TN)	Total Reductions (TP)
Fisheating Creek FAVT	FAVT	Fisheating Creek	28,660	4,409
Lemkin Creek HWTT	HWTT	Taylor Creek/ Nubbin Slough	1,543	441
Wolff Ditch HWTT	HWTT	Taylor Creek/ Nubbin Slough	2,205	661
Grassy Island HWTT	HWTT	Taylor Creek/ Nubbin Slough	15,432	5,291
Nubbin Slough HWTT	HWTT	Taylor Creek/ Nubbin Slough	2,646	1,323
Mosquito Creek HWTT	HWTT	Taylor Creek/ Nubbin Slough	4,630	1,764
Caloosahatchee FAVT	FAVT	West Lake Okeechobee	37,699	5,952
Turkey Branch DWM	DWM	Indian Prairie	8,377	882
Arbuckle Creek FAVT*	FAVT	Lake Istokpoga	7,291	9,385

Future Efforts

Outreach

To address resource concerns, FDACS continues enhancing coordination with producers, agencies, and stakeholders to increase enrollment in the BMP program. OAWP is sending correspondence to agricultural landowners within BMAPs that are not currently enrolled in the BMP program to increase enrollment rates and verify land uses where additional focus may be required to achieve resource protection. This effort is utilizing a phased approach and targeting priority land uses, and then evaluating the amount of agricultural acreage for the remaining unenrolled lands, while ensuring that all entities identified as agriculture will be notified. Additionally, OAWP continues to coordinate with industry groups and outreach partners to educate and inform agricultural producers about the BMP program.

Legacy Loads

Legacy loading can present an additional challenge to measuring progress in many areas of Florida with adopted BMAPs. Based on research, initial verification by DEP, and long-term

trends in water quality in the BMAP area, it is expected that current efforts, such as BMP implementation, will continue to provide improvements in overall water quality despite the impacts from legacy loads.

While the implementation of BMPs will improve the water quality in the basin, it is not reasonable to assume that BMP implementation alone can overcome the issues of legacy loads, conversion to more urban environments, and the effects of intense weather events. BMP implementation is one of several complex and integrated components in managing the water resources of a watershed.

Collaboration between DEP, FDACS, WMDs, and other state agencies, as well as local governments, federal partners, and agricultural producers, is critical in identifying projects and programs, as well as locating funding opportunities to achieve allocations provided for under this BMAP. To improve water quality while retaining the benefits that agricultural production provides to local communities, wildlife enhancement, and the preservation of natural areas requires a commitment from all stakeholders to implementing protective measures in a way that maintains the viability of agricultural operations.

Appendix C. Golf Course NMPs

The fertilizers used to maintain golf courses can be significant sources of nutrients in certain watersheds that are impaired for nitrogen and/or phosphorous. To achieve the TMDL targets, all nutrient sources need to reduce their nutrient loading. Similar to other sources, golf courses are required to implement management strategies to mitigate their nutrient loading and be in compliance with the BMAP. Florida BMAPs are adopted by Secretarial Order and therefore legally enforceable by DEP. Requirements for golf courses located in BMAPs are below.

1. Golf Course BMP Certification, Implementation, and Reporting.

a. In areas with an adopted BMAP, all golf courses must implement the BMPs described in DEP's golf course BMP manual, *Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses* (DEP, 2021).

b. At minimum, the superintendent for each publicly owned golf course must obtain and maintain certification through the UF-IFAS Florida Golf Courses Best Management Practices Program. It is highly recommended that course managers and landscape maintenance staff also participate in the certification program to ensure proper BMP implementation and understanding of nutrient-related water quality issues and the role of golf courses in water quality restoration and protection. By no later than January 14, 2026, the golf course superintendents must confirm to DEP whether they have completed the certification. Certification must be completed by December 31, 2026. This certification must be renewed every four years.

c. Beginning in 2026 a nutrient application record (fertilizer, reuse, etc.) must be submitted each year during the BMAP statewide annual reporting process.

d. Fertilizer rates should be no greater than the UF-IFAS recommendations to help prevent leaching. This includes nutrients from reuse or any other source applied. If a facility uses fertilizer rates greater than those in the BMP manual they are required to conduct water quality monitoring prescribed by DEP or WMD that demonstrates compliance with water quality standards (**Table C-1**).

e. Example golf course BMPs applicable to protecting water quality are listed below.

- Use slow release fertilizer to prevent volatilization.
- Use of lined media in stormwater features.
- Use of denitrification walls.
- Use of rain gardens.
- Use of tree boxes.
- Use of bioswales.

Table C-1. Nutrient ranges for warm season turfgrass species

Note: For more information refer to the Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses (DEP, 2021).

Nutrient	Bermudagrass (%)	St. Augustinegrass (%)	Seashore Paspalum (%)	Centipedegrass (%)	Zoysia (%)
Nitrogen	1.95-4.63	1.53-2.41	2.80-3.50	1.5-2.9	2.04-2.36
Phosphorus	0.15-0.43	0.30-0.55	0.30-60	0.18-0.26	0.19-0.22
Potassium	0.43-1.28	1.1-2.25	2.00-4.00	1.12-2.50	1.05-1.27
Calcium	0.15-0.63	0.24-0.54	0.25-1.50	0.50-1.15	0.44-0.56
Magnesium	0.04-0.10	0.20-0.46	0.25-0.60	0.12-0.21	0.13-0.15
Sulfur	0.07-0.02	0.15-0.48	0.20-0.60	0.20-0.38	0.32-0.37
Sodium	0.05-0.17	0.00-0.17	-	-	-

2. All golf courses located within a BMAP are required to submit a NMP that is designed to, while maintaining even plant growth, prevent nutrient losses to the Floridan aquifer and surrounding surface waters. A draft NMP must be submitted to DEP within one year of BMAP adoption and a final document is due two years after adoption. The NMP must include the following:

a. ***A brief description of the goals of the NMP.***

(This should be a paragraph that describes the goals of your NMP. Talk about how you are managing for high quality turf and water quality. Remember your goal is to protect water quality while maintaining the golf course in premium condition.)

b. ***Identification of areas where nutrient applications will be made including greens, tees, fairways and roughs.***

(Discuss the areas of the course where you plan to use fertilizer, and why. Also discuss the areas that do not need or get any fertilizer applications. Include a GIS shapefile identifying all of these areas. Complete the table(s) detailing your nutrient application practices.)

Turf Details

Turf Type	Turf Species	Acreage
Tees		
Greens		
Fairways		
Roughs		
Total	-	

Fertilizer Application

Month	Turf Type	TN Application Rate (lbs/acre)	TP Application Rate (lbs/acre)	Number of Applications	Total TN Applied (lbs/acre)	Total TP Applied (lbs/acre)
January	Tees					
	Greens					
	Fairway					
	Roughs					
February	Tees					

Month	Turf Type	TN Application Rate (lbs/acre)	TP Application Rate (lbs/acre)	Number of Applications	Total TN Applied (lbs/acre)	Total TP Applied (lbs/acre)
	Greens					
	Fairway					
	Roughs					
March	Tees					
	Greens					
	Fairway					
	Roughs					
April	Tees					
	Greens					
	Fairway					
	Roughs					
May	Tees					
	Greens					
	Fairway					
	Roughs					
June	Tees					
	Greens					
	Fairway					
	Roughs					
July	Tees					
	Greens					
	Fairway					
	Roughs					
August	Tees					
	Greens					
	Fairway					
	Roughs					
September	Tees					
	Greens					
	Fairway					
	Roughs					
October	Tees					
	Greens					
	Fairway					
	Roughs					
November	Tees					
	Greens					
	Fairway					
	Roughs					
December	Tees					
	Greens					
	Fairway					
	Roughs					
Total						

Amount of Reuse/Effluent Applied*

Month	Quantity (gallons)	Monthly Average TN (mg/L)	Monthly Average TP (mg/L)	Quantity of TN Applied (lbs)	Running Total of TN Applied (lbs/acre)	Quantity of TP Applied (lbs)	Running Total of TP Applied (lbs/acre)
January							
February							
March							
April							
May							
June							
July							
August							
September							
October							
November							
December							
Total							

*If applicable.

Are any other sources of nutrients (i.e. manure, etc.) applied to the grounds? If so, please detail in a table similar to the reuse and fertilizer tables.

c. ***Soil sampling methods and results for each area receiving fertilizer applications. Areas receiving fertilizer applications shall be sampled once every three years. Soil samples shall be collected and analyzed according to UF-IFAS/DEP recommendations or standard industry practice. Soil samples shall be analyzed, at minimum, for:***

1. Nitrogen.
2. Phosphorus.

(Describe existing soil sampling here. Describe what your planned soil sampling schedule looks like. Have you been soil testing for years already? If you are just getting started with soil testing the course, you can discuss that. What parts of the course are priority? If soil samples from areas of similar soil, fertilizer use and management are combined, then describe that process and justify why you feel they are similar enough to combine into a "representative" sample. Keep all soil test results (or copies of them) in this file as part of your nutrient management plan. Please do not send them in to DEP individually. If you have been soil testing for years, remember to add copies of all those past results to your NMP file.)

d. ***Water quality sampling methods and results. Water quality sampling and analysis should be conducted in accordance with DEP's Standard Operating Procedures. Water quality samples shall be analyzed, at minimum, for:***

1. Nitrogen.
2. Phosphorus.

(If applicable, Describe existing water quality sampling here. Describe what your planned water quality sampling schedule looks like. Have you been sampling for years already? If you are just getting started with soil testing the course, you can discuss that. What parts of the course are priority? Keep all water quality test results (or copies of them) in this file as part of your nutrient management plan. Please do not send them in to DEP individually. If you have been testing for years, remember to add copies of all those past results to your NMP file.)

e. ***Tissue sampling methods and results. Tissue samples shall be collected and analyzed according to UF-IFAS/DEP recommendations or standard industry practice.*** (Describe existing tissue sampling plan here. Keep all test results (or copies of them) in this file as part of your nutrient management plan. Please do not send them in to DEP individually. If you have been testing for years, remember to add copies of all those past results to your NMP file.)

f. ***Soil, tissue and water quality sample results shall be maintained for a minimum of 5 years. Please provide records.***

g. ***When developing new (or expanding) golf courses, pre and post monitoring should be implemented in accordance with UF-IFAS/DEP recommendations.***

Appendix D. Wastewater Treatment Facilities

DEP has determined that certain WWTFs providing reclaimed water for the purpose of commercial or residential irrigation or that is otherwise being land applied within this BMAP area are causing or contributing to the nutrient impairments being addressed in this BMAP. Based on DEP's determination, the facilities listed below are subject to the nitrogen and phosphorus limits set forth in section 403.086, F.S. These facilities have 10 years from BMAP adoption to meet the applicable AWT standards. This requirement does not prevent the department from requiring an alternative treatment standard, if the department determines the alternative standard is necessary to achieve the TMDL(s) or applicable water quality criteria.

For facilities that did not have adequate information to complete an evaluation or where a change occurs to the facility's application of reclaimed water after the initial evaluation (e.g., an increase in facility capacity or change in location of reclaimed water application), the department will evaluate the land application of reclaimed water as more information becomes available pursuant to section 403.086, F.S.

Table D-1. Wastewater facilities subject to the nitrogen and phosphorus limits set forth in section 403.086, F.S.

Facility Name	Permit Number
FL0036862	Tampa Water Authority-Walnut Drive WRF
FL0040665	City of Clewiston WWTF
FL0A00002	Polk County - Northeast Regional WWTF
FLA010630	Lake Groves WWTF
FLA010814	Orlando/Conserv II WRF
FLA010816	Orlando/Water Conserv - I WRF
FLA010818	Apopka WRF - Project Arrow
FLA010957	Tampa Water Authority - South Bermuda
FLA010958	Tampa Water Authority - Sandhill Road WWTF
FLA010960	Tampa Water Authority / Parkway WWTF
FLA010962	Tampa Water Authority Southside WRF
FLA010979	Tampa Water Authority -Lake Marion
FLA010983	Camelot WRF
FLA012977	City of Haines City
FLA013888	Cemetery Road WWTF
FLA014311	City of Sebring Cemetery Road WWTF
FLA014313	City of Avon Park - WWTF
FLA014389	Sun'N Lake of Sebring Unit 23 WWTF
FLA027740	Palm Beach Co Water Utilities Dept Western Region WWTF
FLA029939	Indiantown Company WWTF
FLA041360	East Central Regional WWTF
FLA107972	Orange County Utilities Department/South WRF
FLA108219	Central Florida Tourism Oversight District
FLA109843	Tampa Water Authority / Cypress West
FLA129844	City of Lake Wales
FLA136778	Palm Beach Co Water Utilities Dept Western Region North WWTF
FLA267872	Tampa Water Authority - Harmony Community Development District WWTF
FLA377392	City of Davenport - WWTF
FLA016891	Glades County Correctional