STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re: ST. LUCIE RIVER AND ESTUARY BASIN MANAGEMENT ACTION PLAN
_____/

OGC Case No. 25-1035

FINAL ORDER ESTABLISHING THE ST. LUCIE RIVER AND ESTUARY BASIN MANAGEMENT ACTION PLAN

Pursuant to Sections 403.067(7), Florida Statutes, this Final Order adopts the attached Basin Management Action Plan ("BMAP") for certain surface waterbodies within the St. Lucie River and Estuary basin. The adopted BMAP, entitled " St. Lucie River and Estuary Basin Management Action Plan" (hereafter referred to as the "St. Lucie River and Estuary BMAP") and dated June 2025, is attached hereto and incorporated herein as Exhibit 1. The 2025 BMAP builds upon the previous BMAP and adds new management strategies and analyses that continue the restoration efforts to date. This updated BMAP (Exhibit 1) supersedes and replaces the previous BMAP in its entirety.

Surface waters in the St. Lucie River and Estuary basin are designated as Class III waters in accordance with Chapter 62-302, Florida Administrative Code ("F.A.C."). Water quality for Class III waters is meant to be suitable for recreational use and for the propagation and maintenance of a healthy, well-balanced population of fish and wildlife.

The St. Lucie River and Estuary watershed is located in Martin, Okeechobee and St. Lucie Counties. The Florida

Department of Environmental Protection ("department") established TMDLs for certain waters in the St. Lucie River and Estuary basin within Rule 62-304.705, F.A.C. Excessive nutrients are the primary pollutants contributing to the impairments. Section 1.1.1 in the attached Exhibit 1 identifies the applicable TMDLs addressed in this BMAP.

The department worked closely with the affected stakeholders, including local and state agencies, in updating the St. Lucie River and Estuary BMAP to achieve the associated TMDLs. Beyond direct work with the affected stakeholders, the department encouraged public participation to the greatest practicable extent by providing routine updates in technical meetings and requests for comment at technical meetings on the St. Lucie River and Estuary BMAP. The department held a noticed public meeting on April 8, 2025, to discuss the BMAP and receive comments.

The St. Lucie River and Estuary BMAP represents the collaborative effort of stakeholders to identify current and planned management actions to achieve the required pollutant load reductions. The adopted BMAP documents the projects and management actions that have been, or will be, undertaken by stakeholders to reduce discharge of pollutants in the watershed. The projects and management actions (completed, ongoing, and planned) identified in the BMAP address known sources of

pollutants, facilitate investigation of unknown sources, prevent new sources, and address future loads associated with growth and land use changes in the basin.

The specific pollutant reduction allocations, projects and management actions required of individual entities are set forth in Chapters 2 and 3 and Appendices C, D and E of the BMAP. Unless otherwise noted in the BMAP, all requirements of this BMAP are enforceable upon the effective date of this Order.

This Final Order and incorporated BMAP are enforceable pursuant to Sections 403.067, 403.121, 403.131, 403.141, 403.161, 373.119 and 373.129, Florida Statutes.

THEREFORE, IT IS ORDERED that the attached Exhibit 1 is hereby adopted as the St. Lucie River and Estuary Basin Management Action Plan.

NOTICE OF RIGHTS

The St. Lucie River and Estuary Basin Management Action Plan shall become final unless a timely petition for an administrative proceeding is filed pursuant to the provisions of Sections 120.569 and 120.57 of the Florida Statutes, before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the department's proposed agency action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the department's Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Petitions must be filed within 21 days of publication of the public notice or within 21 days of receipt of this order, whichever occurs first. Under Section 120.60(3), Florida Statutes, however, any person who asked the department for notice of agency action may file a petition within 21 days of receipt of such notice, regardless of the date of publication. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 of the Florida

Statutes, or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the department's action is based must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, any e-mail address, any facsimile number, and telephone number of the petitioner, if the petitioner is not represented by an attorney or a qualified representative; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

(g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts on which the department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

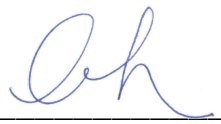
Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the department's final action may be different from the position taken by it in this order. Persons whose substantial interests will be affected by any such final decision of the department on the petition have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation is not available for this proceeding.

A party who is adversely affected by this order has the right to seek judicial review under Section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the department in the Office of the General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within thirty days after this order is filed with the clerk of the department.

DONE AND ORDERED this 27 day of June 2025, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



Alexis Lambert
Secretary

Marjorie Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

FILED ON THIS DATE PURSUANT TO § 120.52, FLORIDA STATUTES, WITH THE DESIGNATED DEPARTMENT CLERK, RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED.

CLERK

**06/27/2025**

DATE

# *Final*

# *St. Lucie River and Estuary Basin Management Action Plan*

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

with participation from the
**St. Lucie River and Estuary Stakeholders**

**June 2025**

**2600 Blair Stone Road**
**Tallahassee, FL 32399-2400**
**https://floridadep.gov/**

Exhibit 1

# Acknowledgments

This *2025 St. Lucie River and Estuary 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 St. Lucie River and Estuary stakeholders identified below.

**Florida Department of Environmental Protection**
Alexis A. Lambert, Secretary

| Type of Governmental or Private Entity | Participant |
|---|---|
| **Responsible Entities** | Agriculture<br>Martin County<br>Okeechobee County<br>St. Lucie County<br>City of Fort Pierce<br>City of Port St. Lucie<br>City of Stuart<br>Town of Sewall's Point<br>Village of Indiantown<br>Copper Creek Community Development District (CDD)<br>Creekside CDD<br>Portofino Isles CDD<br>River Place CDD<br>Southern Grove<br>St. Lucie West Service District<br>Tesoro CDD<br>Tradition CDD<br>Veranda CDD<br>Verano CDD<br>Villa Vizcaya CDD<br>Hobe St. Lucie Conservancy District<br>North St. Lucie River Water Control District<br>St. Lucie West Service District<br>Pal Mar Water Control District<br>Troup-Indiantown Water Control District |
| **Responsible Agencies** | County Health Departments<br>Florida Department of Agriculture and Consumer Services<br>Florida Department of Environmental Protection<br>Florida Department of Transportation District 4<br>Florida Department of Transportation District 1<br>Florida Turnpike Enterprise<br>South Florida Water Management District |

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

Florida Department of Environmental Protection
Water Quality Restoration Program
2600 Blair Stone Road, Mail Station 3565
Tallahassee, FL 32399-2400
Email: BMAPProgram@FloridaDEP.gov

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# List of Acronyms and Abbreviations

| | |
|---|---|
| ac-ft | Acre-Feet |
| ac-ft/yr | Acre-Feet per Year |
| ACE | Agricultural Cooperative Regional Water Quality Elements |
| ALG | Agricultural Lands |
| AWT | Advanced Waste Treatment |
| BMAP | Basin Management Action Plan |
| BMP | Best Management Practice |
| CAFO | Concentrated Animal Feeding Operations |
| CDD | Community Development District |
| CDS | Continuous Deflection Separation |
| CERP | Comprehensive Everglades Restoration Plan |
| CR | County Road |
| DEP | Florida Department of Environmental Protection |
| DO | Dissolved Oxygen |
| DWM | Dispersed Water Management |
| F.A.C. | Florida Administrative Code |
| FDACS | Florida Department of Agriculture and Consumer Services |
| FDOT | Florida Department of Transportation |
| FFS | Florida Forest Service |
| F.S. | Florida Statutes |
| FSAID | Florida Statewide Agricultural Irrigation Demand (geodatabase) |
| FWM | Flow Weighted Mean Concentration |
| FYN | Florida Yards and Neighborhoods |
| HSPF | Hydrological Simulation Program – FORTRAN (model) |
| HWTT | Hybrid Wetland Treatment Technology |
| IRL-S | Indian River Lagoon South |
| IV | Implementation Verification |
| lbs | Pounds |
| lbs/ac | Pounds Per Acre |
| lbs/yr | Pounds Per Year |
| L.O.F. | Laws of Florida |
| mgd | Million Gallons Per Day |
| mg/L | Milligrams Per Liter |
| MS4 | Municipal Separate Storm Sewer System |
| NA | Not Applicable |
| NMP | Nutrient Management Plan |
| NOI | Notice of Intent |
| NPDES | National Pollutant Discharge Elimination System |
| NSLRWCD | North St. Lucie River Water Control District |
| OAWP | Office of Agricultural Water Policy |
| OSTDS | Onsite Sewage Treatment and Disposal System |

| | |
|---|---|
| PSA | Public Service Announcement |
| PUD | Planned Unit Development |
| RAP | Reasonable Assurance Plan |
| RRLA | Rapid-Rate Land Application |
| SFWMD | South Florida Water Management District |
| SLWSD | St. Lucie West Services District |
| SR | State Road |
| SRLA | Slow-Rate Land Application |
| STA | Stormwater Treatment Area |
| SWMP | Stormwater Master Plan |
| 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 |
| WaSh | Watershed Water Quality Simulation (Model) |
| WBID | Waterbody Identification (number) |
| WCD | Water Control District |
| WCS | Water Control Structure |
| WMD | Water Management District |
| WWTF | Wastewater Treatment Facility |
| WY | Water Year |

# Executive Summary

## Background

The St. Lucie River and Estuary Watershed is located in southeast Florida in Martin, St. Lucie, and Okeechobee counties. It consists of 11 basins (see **Figure ES-1**). The St. Lucie Estuary is a major tributary to the Southern Indian River Lagoon.

The St. Lucie River and Estuary and its associated watershed have been subjected to hydrologic, land use, and other anthropogenic modifications over the past century that have degraded its water quality. To help address the nutrient impairment, the Florida Department of Environmental Protection (DEP) adopted total maximum daily loads (TMDLs) for total nitrogen (TN) and total phosphorus (TP) for the estuary. This BMAP represents the joint efforts of multiple stakeholders to identify where nutrients, both nitrogen and phosphorus, can be reduced through regulatory and non-regulatory programs, incentive-based programs, and implementation of projects that will ultimately achieve and maintain the TN and TP TMDLs in the estuary.

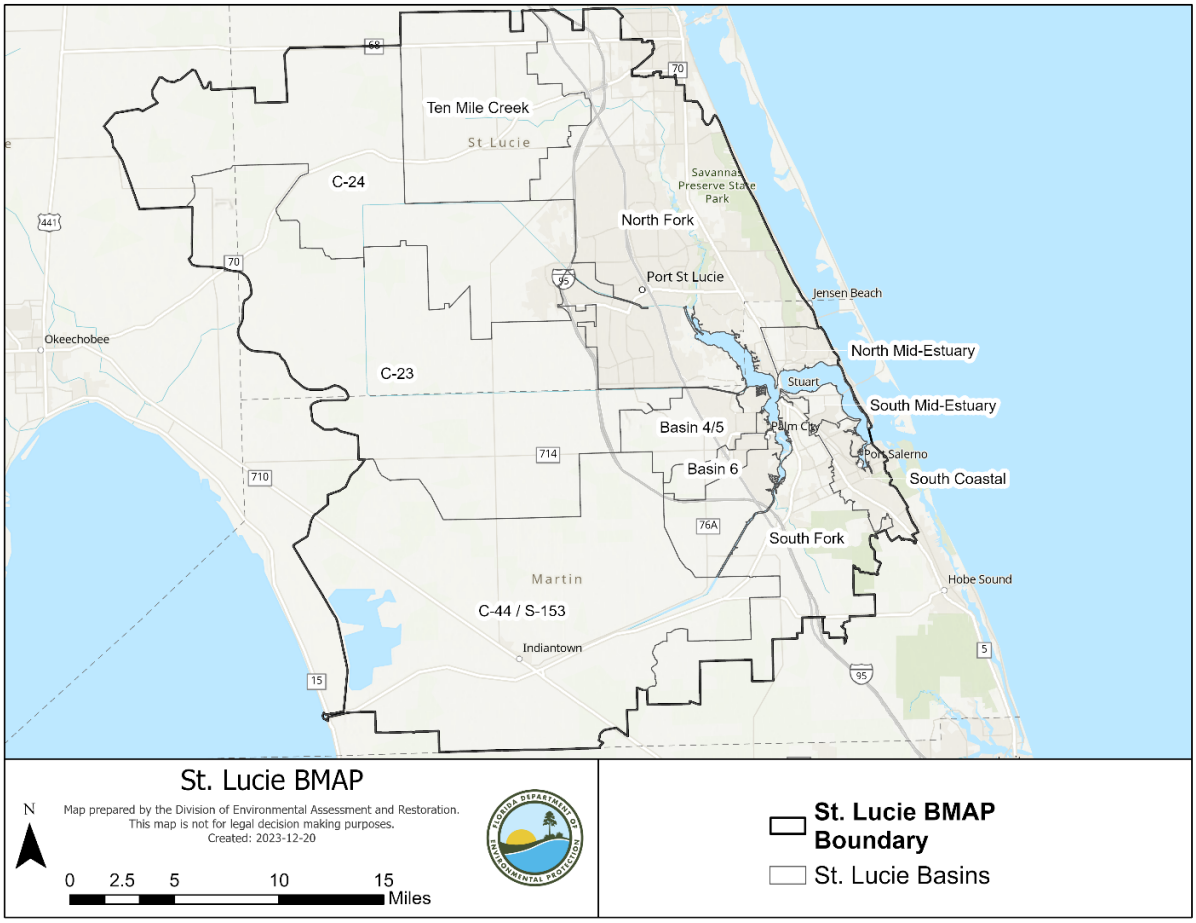


**Figure ES-1. St. Lucie River and Estuary BMAP area and basins**

## TMDLs

TMDLs are water quality targets designed to address verified impairments for specific pollutants, such as TN and TP. DEP identified the St. Lucie River and Estuary as impaired by nutrients (chlorophyll *a*) in 2004. In March 2009, DEP adopted TMDLs for TN and TP as targets for the restoration of the river and estuary. The TMDL proposed target concentrations in the St. Lucie Estuary of 0.72 milligrams per liter (mg/L) for TN and 0.081 mg/L for TP. The attainment of the TMDL is calculated using a 5-year rolling average (using the latest five water years, which span May 1 through April 30) of TN and TP concentration data from the Roosevelt Bridge (SE 03) compliance point.

## St. Lucie River and Estuary BMAP

DEP first adopted the St. Lucie River and Estuary BMAP in June 2013 to implement the TN and TP TMDLs in the St. Lucie River and Estuary watershed. BMAPs are designed to be implemented in a phased approach, and, at the end of each 5-year phase, a review is completed and submitted to the Legislature and Governor. The first 5-Year Review was completed in June 2018, and the BMAP was subsequently updated in 2020 following Executive Order 19-12 (Item C). The 2020 BMAP update included updates to the modeling, updated allocations of load reductions to the responsible stakeholders, management actions to achieve nutrient reductions, and a revised monitoring plan to continue to track trends in water quality. In June 2023, DEP and the local stakeholders completed the second 5-Year Review to evaluate implementation at the end of the first phase and make recommendations for future phases of the BMAP. The information gathered as part of the 5-Year Review was used to develop this updated BMAP for the St. Lucie River and Estuary.

This 2025 BMAP provides information on changes since the 2020 BMAP was adopted, including updated allocations of load reductions to the responsible stakeholders, specific 5-year milestones assigned to the responsible stakeholders, and updated management actions to achieve nutrient reductions. This update sets a goal for achieving load reductions no later than 2028. The 5-Year Review recommended adjusting the milestone to 20 years. However, the original 15-year timeline was kept for this BMAP update as DEP is working on a new Hydrological Simulation Program – FORTRAN (HSPF) watershed model to include more recent land use and water quality data. DEP anticipates this effort will be completed in 2027. The new model will be used in a future update, where entity allocations and milestones will be re-evaluated.

## 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 St. Lucie River and Estuary.

Management actions were required by the original BMAP to address nutrient loads to the estuary and had to meet several criteria to be considered eligible for credit.

Through November 15, 2024, 283 projects were completed or ongoing, and an additional 67 projects were underway or planned. Based on the load estimation shapefile developed from the Watershed Water Quality Simulation (WaSh) model, the completed activities in the watershed are estimated to achieve total reductions of 814,556 pounds per year (lbs/yr) of TN, which is 65% of the reductions needed to meet the TN TMDL. The activities completed to date are estimated to achieve total reductions of 176,192 lbs/yr of TP, which is 43% of the reductions needed to meet the TP TMDL. **Figure ES-2** shows progress towards the TN TMDL load reductions, and **Figure ES-3** shows progress towards the TP TMDL load reductions. These figures show reductions from projects reported 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 15 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 and determine the funding that will be necessary. Enhancements to programs addressing basinwide sources will also be required. Responsible entities must submit to DEP a sufficient list of creditable projects with estimated reductions which demonstrate how the entity is going to meet their milestone no later than January 14, 2026, to be compliant with the upcoming BMAP milestone or be subject to DEP enforcement. In addition, the legacy phosphorus contribution in the watershed must be addressed through further studies and targeted projects. The Coordinating Agencies will review additional information as it becomes available.

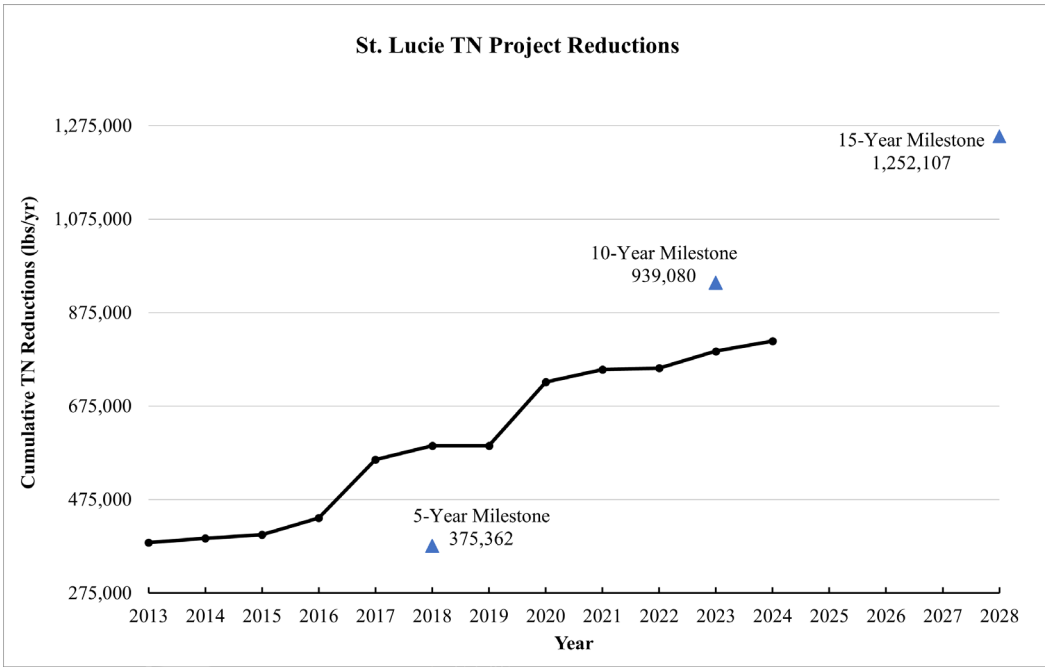

**Figure ES-2. Estimated progress towards meeting the TN TMDL allocated to the St. Lucie River and Estuary Watershed with projects completed through November 15, 2024**

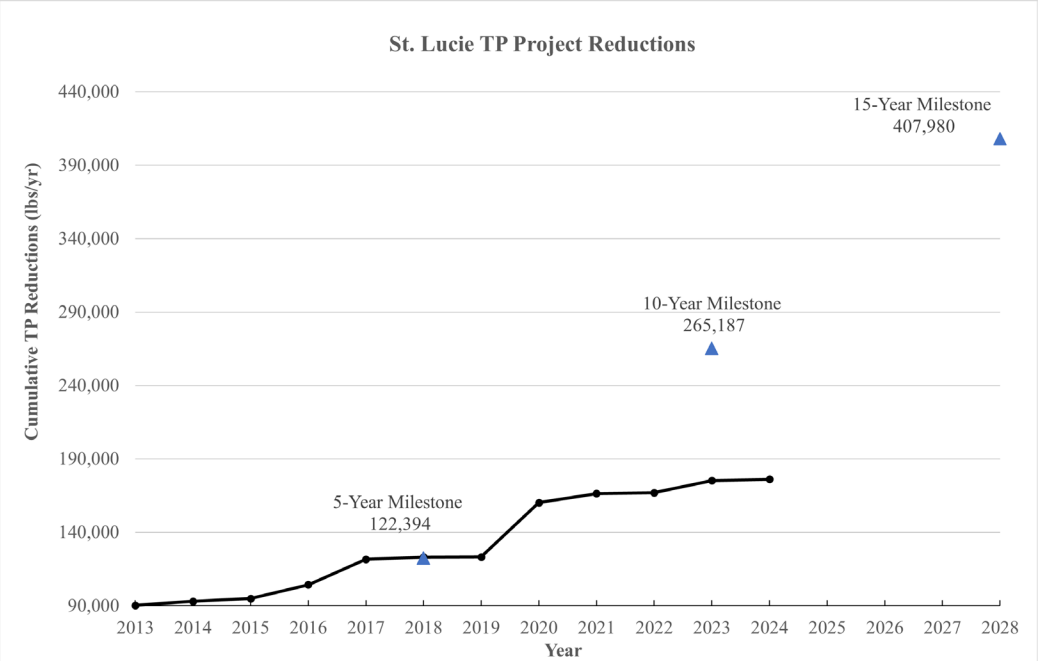


**Figure ES-3. Estimated progress towards meeting the TP TMDL allocated to the St. Lucie River and Estuary Watershed with projects completed through November 15, 2024**

## Source Requirements

Subparagraph 403.067(7)(a)9., Florida Statutes (F.S.), specifies that local governments (county governments and municipalities) within a BMAP must develop a wastewater treatment plan and/or an onsite sewage treatment and disposal system (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 St. Lucie River and Estuary BMAP met the 20% contribution and/or remediation of these sources is necessary to achieve the TMDL. A final order (23-0124) was issued to prescribe timelines for local governments to submit these plans. 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 E** are subject to the nitrogen and phosphorus limits set forth in section

403.086(1)(c)3., F.S. The facilities listed in **Appendix E** have 10 years from BMAP adoption to meet the applicable advanced waste treatment (AWT) standards. More information can be found in **Section 2.4.3**.

Agricultural nonpoint sources are the primary contributor of TN and TP loading to the St. Lucie River and Estuary. Attainment of the TMDLs is largely contingent upon addressing the agricultural loading to the river and estuary. The St. Lucie River and Estuary BMAP was originally adopted in June 2013, and many agricultural producers have been enrolled and are implementing BMPs. FDACS has focused efforts on improving enrollment, resulting in 87% 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 obligations by actively engaging agricultural nonpoint sources to enroll in BMPs and verifying BMP implementation.

FDACS is responsible for verifying that all eligible agricultural producers are enrolled in appropriate BMP programs. FDACS performs 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. Pursuant to subsection 373.4595(3), F.S., where water quality problems are demonstrated, 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 include DEP, the appropriate water management district (WMD), and other partners in the reevaluation.

Further reductions can 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 nutrient reductions and identify and implement additional projects and activities in priority targeted restoration areas (TRAs). Additional projects and activities are to be implemented in conjunction with the BMP Program, through which full enrollment with verification is needed to achieve BMAP goals.

Chapter 2023-169, Laws of Florida (L.O.F.), (403.067, F.S.) requires that BMAPs include milestones for implementation of TMDLs. Any responsible entity within the BMAP that has an assigned pollutant load reduction requirement must identify projects or strategies that such entity will undertake to meet their upcoming 5-year milestone. Each project must include a planning-level cost estimate and an estimated date of completion in the Statewide Annual Report.

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 updated St. Lucie River and Estuary BMAP monitoring network consists of 72 stations sampled by the City of Port St. Lucie and SFWMD.

The monitoring network is organized into tiers as follows: (1) Tier 1 stations are the primary/priority stations used in periodic water quality analysis to track BMAP progress and water quality trends over the long-term. If at any point it is necessary to reduce efforts in the basin, these stations should be the last stations impacted. (2) Tier 2 stations provide secondary information that can be used to help focus and adaptively manage implementation efforts. 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 Costs**

The project costs provided for the BMAP may include capital costs and 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, 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. When funding is available, 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 through the Water Quality Improvement Grant program. 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. Currently, most surface waters in Florida, including those in the St. Lucie River and Estuary, are categorized as Class III waters, meaning they must be suitable for recreation and must support fish consumption and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. **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 for the impairment 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 2004, DEP identified the St. Lucie River and Estuary as impaired for dissolved oxygen (DO) and nutrients.

### 1.1.1 St. Lucie River and Estuary TMDLs

A TMDL is the maximum amount of a specific pollutant that a waterbody can assimilate while maintaining its designated uses. The St. Lucie River and Estuary nutrient TMDL was adopted in 2009 for total nitrogen (TN) and total phosphorus (TP), which are linked to high chlorophyll-α concentrations in portions of the St. Lucie River and Estuary. The TMDLs include the segments with waterbody identification (WBID) numbers 3193 (St. Lucie Estuary), 3194 (North Fork St. Lucie River), 3194B (North Fork St. Lucie Estuary), 3197 (C-24 Canal), 3200 (C-23 Canal), 3210 (South Fork St. Lucie Estuary), 3210A (South Fork St. Lucie River), 3211 (Bessey Creek), and 3218 (C-44 Canal). WBID boundaries may have changed since the adoption of the initial BMAP. The most updated version of WBID boundaries can be found on the DEP Watershed

Assessment Section webpage. The TMDLs were used as the basis for the BMAP targets and allocation calculations. The attainment of the TMDL will be calculated using a 5-year rolling average (the latest five water years [WYs]) of TN and TP concentration data from the Roosevelt Bridge (SE 03) compliance point. Information about TMDL compliance can be found in **Section 4.3** of this document.

## 1.2. St. Lucie River and Estuary 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., Florida Statutes (F.S.) establishes an adaptive management process for BMAPs that continues until the TMDLs are 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 St. Lucie River and Estuary BMAP was adopted in June 2013, and the first 5-Year Update was completed in June 2018. (Section 373.4595, F.S., calls for a review of the BMAP to be completed and submitted to the Legislature and Governor every 5 years).

In January 2019, Executive Order 19-12 (Item C) included a requirement to update and secure all restoration plans, within one year, for waterbodies impacting south Florida communities, including the St. Lucie River and Estuary BMAP. The BMAP was subsequently updated in January 2020, and the second 5-Year Review was completed in June 2023.

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 June 2023 and to incorporate the Clean Waterways Act requirements. **Figure 1** shows the St. Lucie River and Estuary BMAP area and **Figure 2** shows the basins within the watershed.

**Figure 3** and **Figure 4** shows the estimated progress toward meeting the St. Lucie River and Estuary TN and TP TMDLs as of November 15, 2024. This date was chosen to allow adequate time to review project documentation and calculate reductions based on accepted methodologies and BMP efficiencies. Updated project information will be provided each year in the Statewide Annual Report and at an annual meeting.

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 their full required reductions within the period established by the BMAP. This BMAP update establishes a set of entity-specific milestones for the watershed based on the previously adopted milestones, with a goal of achieving the full load reductions in 2028, which is 15 years after the initial BMAP adoption. See **Section 2.3.2** for details on the established milestones by entity.

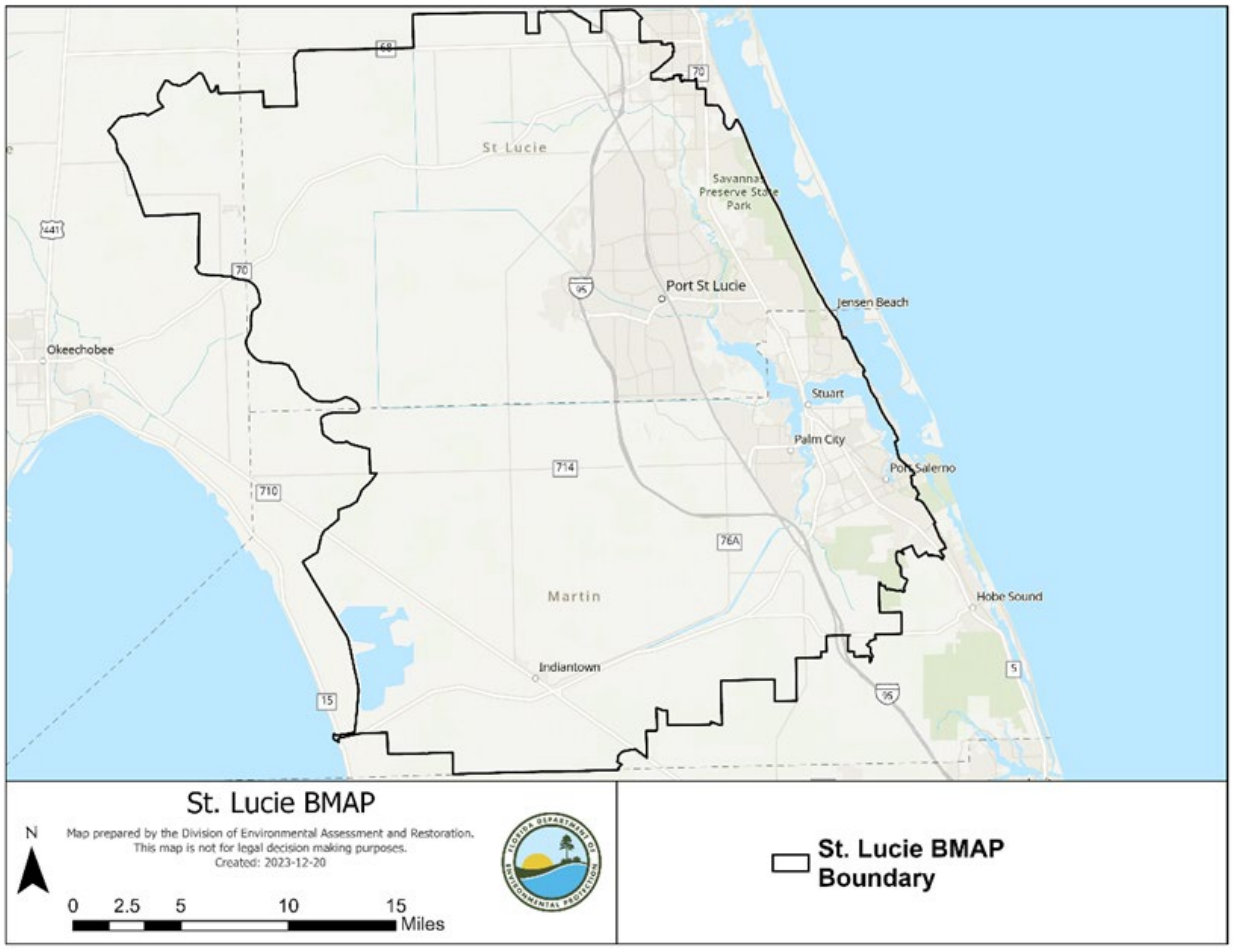


**Figure 1. St. Lucie River and Estuary BMAP area**

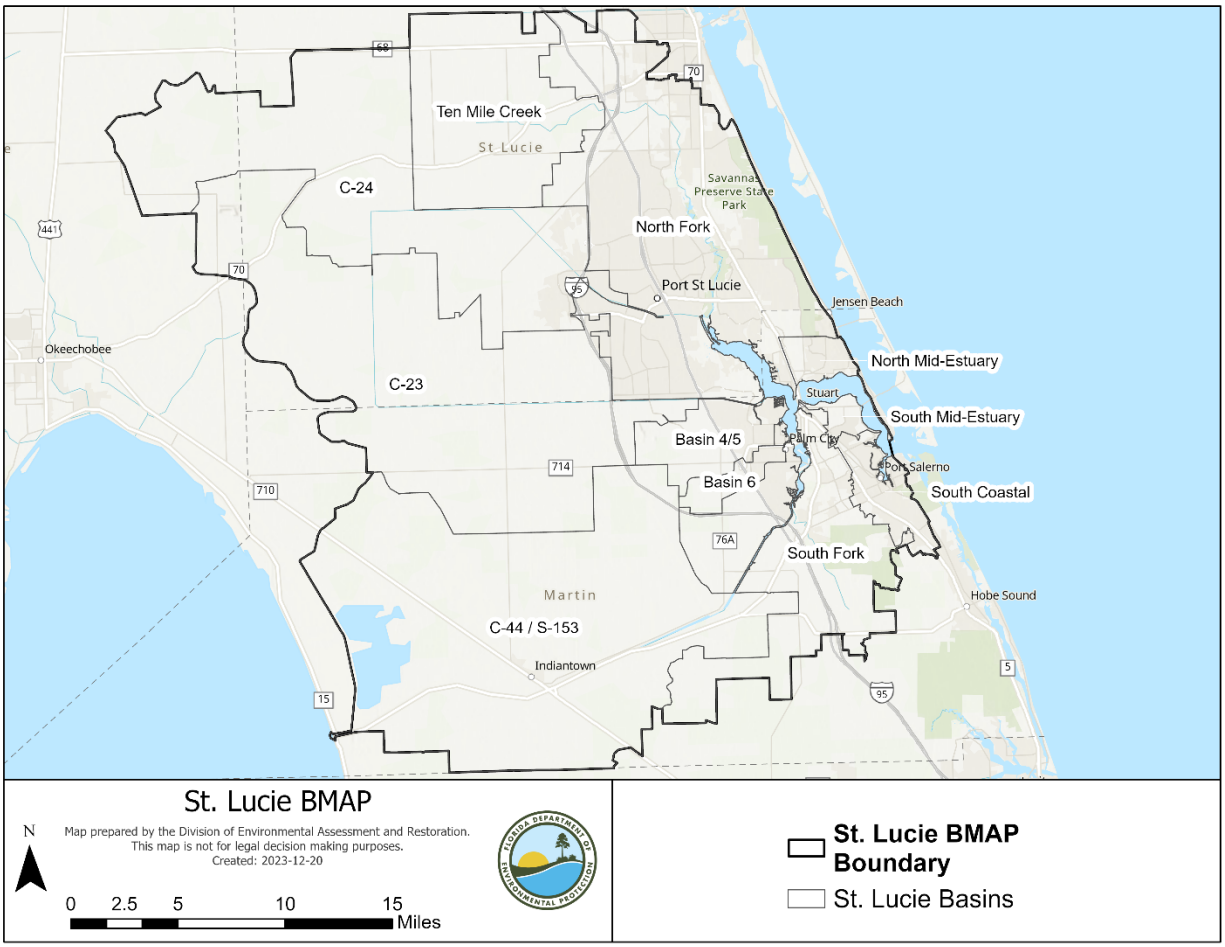


**Figure 2. BMAP area basin boundaries**

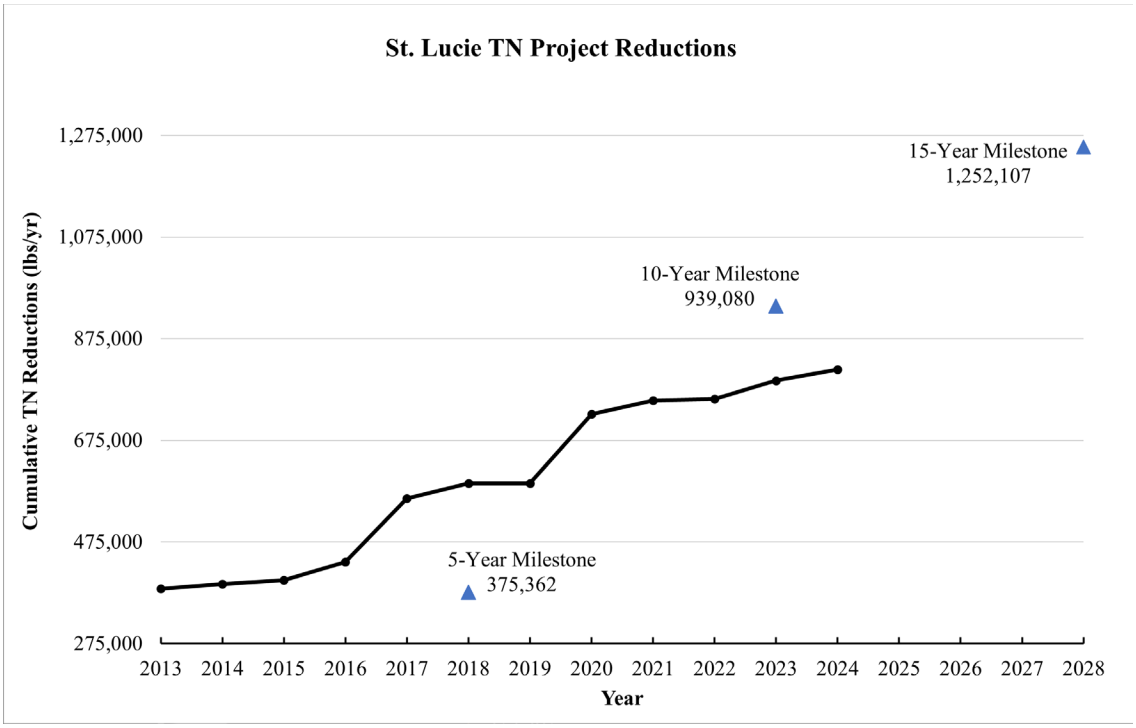


**Figure 3. Estimated progress towards meeting the TN TMDL allocated to the St. Lucie River and Estuary Watershed with projects completed through November 15, 2024**

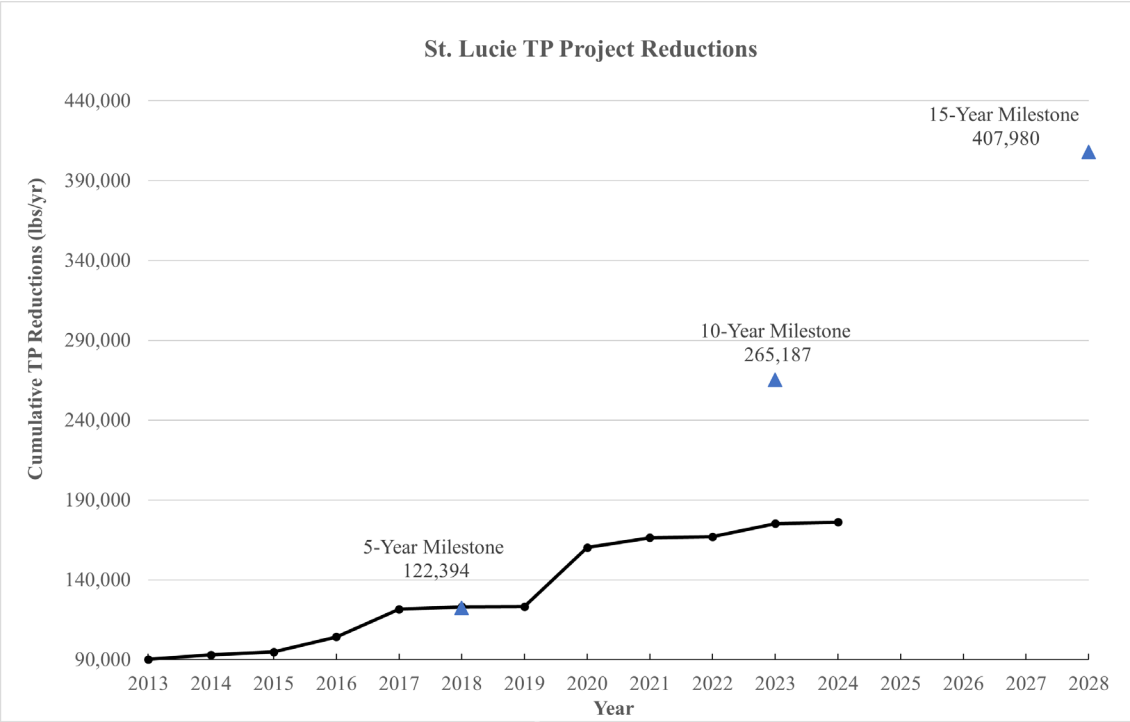


**Figure 4. Estimated progress towards meeting the TP TMDL allocated to the St. Lucie River and Estuary Watershed with projects completed through November 15, 2024**

### 1.2.1 5-Year Review

The second 5-Year Review, completed in June 2023, provided recommendations for improving the health of the St. Lucie River and Estuary, and these recommendations are included throughout this 2025 BMAP. The 5-Year Review also included a water quality trend analysis to track trends in TN and TP concentrations in the St. Lucie River and Estuary and its basins. The results of this trend analysis are used in the targeted restoration area (TRA) approach described in **Section 2.5**.

The 5-Year Review discussed the land use changes that have occurred since the Water Quality Simulation (WaSh) model was last revised and recommended that the new land use changes be incorporated. DEP is working on building a new Hydrological Simulation Program – FORTRAN (HSPF) watershed model to include more recent land use and water quality data. The new model will be used in a future update, where entity allocations will be re-evaluated.

### 1.2.2 Pollutant Sources

There are various sources of pollution in the St. Lucie River and Estuary Watershed. Nonpoint (i.e., diffuse) sources in the watershed contribute the majority of the TN and TP loads to the St. Lucie River and Estuary Watershed and include urban and agricultural stormwater runoff. Lake Okeechobee loading is being addressed through the Lake Okeechobee BMAP. Several reports, such as SFWMD's annual South Florida Environmental Report which includes St. Lucie River Watershed Protection Plan reviews and updates, document more detailed information regarding TN and TP inputs from the St. Lucie River and Estuary Watershed.

**Table 2** summarizes the percent contribution of TN and TP loads to the St. Lucie River and Estuary from each land use category in each basin, as determined by the 2012 land use coverage from the WaSh model and load estimation shapefile discussed in **Section 2.1**. The subsections below discuss the sources included in this BMAP in more detail.

**Table 2. Summary of TN and TP loads by WaSh land use category by basin**

| Basin | Land Use Category | TN Load (% Basin Total) | TP Load (% Basin Total) |
|---|---|---|---|
| **Basin 4/5** | Urban | 62 | 60 |
| **Basin 4/5** | Agriculture | 19 | 23 |
| **Basin 4/5** | Natural | 19 | 17 |
| **Basin 6** | Urban | 73 | 72 |
| **Basin 6** | Agriculture | 12 | 14 |
| **Basin 6** | Natural | 15 | 14 |
| **C-23** | Urban | 5 | 4 |
| **C-23** | Agriculture | 79 | 80 |
| **C-23** | Natural | 16 | 16 |
| **C-24** | Urban | 11 | 9 |
| **C-24** | Agriculture | 75 | 78 |
| **C-24** | Natural | 14 | 13 |
| **C-44/S-153** | Urban | 6 | 5 |
| **C-44/S-153** | Agriculture | 74 | 75 |

| Basin | Land Use Category | TN Load (% Basin Total) | TP Load (% Basin Total) |
|---|---|---|---|
| **C-44/S-153** | Natural | 21 | 20 |
| **North Fork** | Urban | 75 | 75 |
| **North Fork** | Agriculture | 6 | 7 |
| **North Fork** | Natural | 19 | 18 |
| **North Mid-Estuary** | Urban | 82 | 81 |
| **North Mid-Estuary** | Agriculture | 0 | 0 |
| **North Mid-Estuary** | Natural | 18 | 19 |
| **South Coastal** | Urban | 87 | 87 |
| **South Coastal** | Agriculture | 0 | 0 |
| **South Coastal** | Natural | 13 | 13 |
| **South Mid-Estuary** | Urban | 92 | 93 |
| **South Mid-Estuary** | Agriculture | 0 | 0 |
| **South Mid-Estuary** | Natural | 8 | 7 |
| **South Fork** | Urban | 35 | 32 |
| **South Fork** | Agriculture | 38 | 44 |
| **South Fork** | Natural | 26 | 24 |
| **Ten Mile Creek** | Urban | 16 | 15 |
| **Ten Mile Creek** | Agriculture | 76 | 78 |
| **Ten Mile Creek** | Natural | 8 | 7 |

#### 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. FSAID was not used in the WaSh model to estimate agricultural acreages and associated nutrient loads. The percentage of agricultural land use within the St. Lucie River and Estuary 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 281,481 acres. FDACS conducts an evaluation to determine if lands classified as agricultural have verified agricultural activity, and then adjusts the total agricultural acreage for enrollment accordingly, as described in **Appendix B**. 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 3** summarizes agricultural lands within the St. Lucie River and Estuary BMAP based on the FSAID 11 and the results of the FDACS unenrolled agricultural lands characterization.

As of April 30, 2024, there are 216,896 agricultural acres enrolled in the BMP program. **Table 4** summarizes the acres enrolled in the BMP Program by commodity. Currently, no producers are conducting water quality monitoring in lieu of implementing BMPs. FDACS is seeking the further enrollment of producers in the BMAP area.

**Appendix B** provides more information on agricultural activities in the St. Lucie River and Estuary Watershed.

**Table 3. Summary of agricultural land use acreage enrolled in the BMP Program in the St. Lucie River and Estuary BMAP area through April 30, 2024**

| Crediting Location | Agricultural Acres | Unenrolled - Unlikely Enrollable Acres | Agricultural Acres - Adjusted | Agricultural Acres Enrolled |
|---|---|---|---|---|
| **Basin 4/5** | 2,875 | 138 | 2,737 | 1,569 |
| **Basin 6** | 308 | 103 | 205 | 150 |
| **C-23** | 85,745 | 9,486 | 76,260 | 71,097 |
| **C-24** | 61,137 | 5,637 | 55,500 | 48,018 |
| **C-44/S-153** | 74,207 | 6,520 | 67,686 | 60,322 |
| **North Fork** | 5,977 | 2,564 | 3,413 | 1,897 |
| **North Mid-Estuary** | 2 | 0 | 2 | 0 |
| **South Coastal** | 28 | 28 | 0 | 0 |
| **South Fork** | 17,969 | 2,360 | 15,609 | 13,451 |
| **Ten Mile Creek** | 33,233 | 5,686 | 27,547 | 20,392 |
| **Total** | **281,481** | **32,522** | **248,959** | **216,896** |

**Table 4. Agricultural land use acreage enrolled in the BMP Program in the St. Lucie River and Estuary BMAP by commodity**

| Commodity | Agricultural Acres Enrolled |
|---|---|
| Citrus | 5,963 |
| Cow/Calf | 120,544 |
| Dairy | 616 |
| Equine | 706 |
| Fruit/Nut | 221 |
| Lake Okeechobee Protection Plan | 3 |
| Multiple Commodities | 73,160 |
| Nursery | 967 |
| Poultry | 42 |
| Row/Field Crop | 13,756 |
| Sod | 909 |
| Wildlife | 10 |
| **Total** | **216,897** |
| **Percentage of Agricultural Lands Enrolled in BMPs** | **87%** |

#### 1.2.2.2 Municipal Separate Storm Sewer Systems (MS4s)

Many of the municipalities in the watershed are regulated by the Florida National Pollutant Discharge Elimination System (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 basin 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.

There are no Phase I MS4s in the St. Lucie River and Estuary Watershed. **Table 5** Phase II lists the MS4s.

**Table 5. Entities in the St. Lucie River and Estuary Watershed designated as Phase II MS4s**

| Permittee | Permit Number |
|---|---|
| **Martin County** | FLR04E013 |
| **Okeechobee County** | FLR04E140 |
| **St. Lucie County** | FLR04E029 |
| **City of Fort Pierce** | FLR04E065 |
| **City of Stuart** | FLR04E031 |
| **City of Port St. Lucie** | FLR04E001 |
| **Florida Department of Transportation (FDOT) District 4** | FLR04E083 |
| **Florida Turnpike** | FLR04E049 |
| **Town of Sewall's Point** | FLR04E044 |

#### 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 (WMD) if they fail to implement their responsibilities under the BMAP. **Table 6** lists the nonpoint sources in the St. Lucie River and Estuary Watershed.

**Table 6. Urban nonpoint sources in the St. Lucie River and Estuary watershed**

| Type of Entity | Participant |
|---|---|
| **Government Entities and Special Districts** | Copper Creek Community Development District (CDD)<br>Hobe St. Lucie Conservancy District<br>North St. Lucie River Water Control District (NSLRWCD)<br>Pal Mar Water Control District (WCD)<br>Pal Mar WCD<br>Tradition CDD<br>Troup-Indiantown WCD<br>Verano CDD |

#### 1.2.2.4 Wastewater Treatment Facilities (WWTFs)

The TMDL identified 15 permitted NPDES WWTFs in the St. Lucie River and Estuary Watershed. All these facilities were only permitted to discharge during a 25-year, 72-hour storm event resulting in minimal and highly irregular impacts on nutrient discharges in the St. Lucie River and Estuary Watershed. Facilities with permitted discharges above this level are for cooling or dewatering, which effectively discharge ambient water. As of January 2025, there were 46 individually permitted industrial and domestic WWTFs in the St. Lucie River and Estuary Watershed (**Figure 5**). Of these, 16 (two domestic and 14 industrial) hold NPDES permits and therefore are authorized, within the limitations of their permits, to discharge directly to surface waters. The remaining 30 do not have authorization to discharge directly to surface waters.

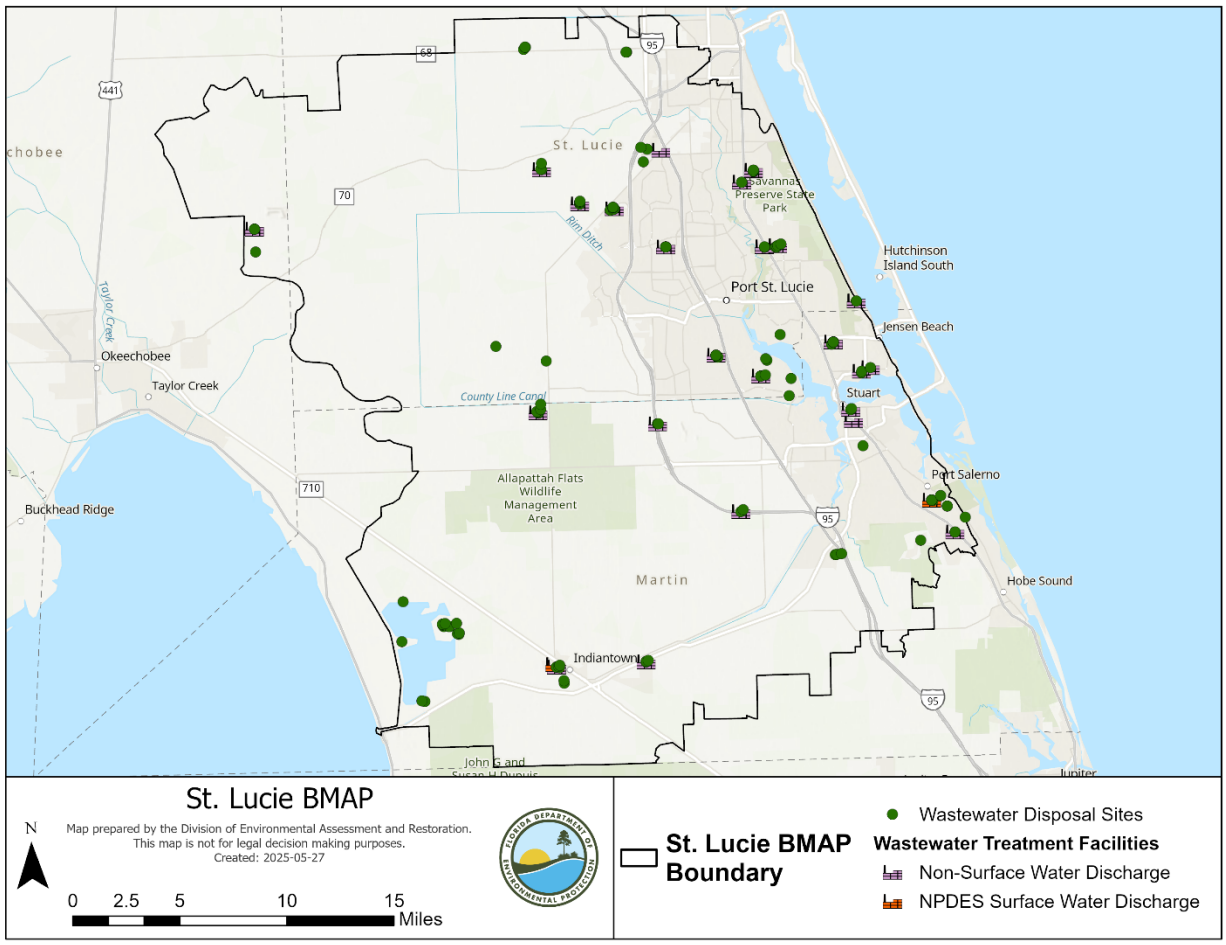


**Figure 5. Locations of WWTFs in the St. Lucie River and Estuary Watershed**

### 1.2.2.5 OSTDS

Based on the latest data from the Florida Department of Health, there are 43,497 known or likely OSTDS located throughout the St. Lucie River and Estuary Watershed (**Figure 6**). **Table 7** summarizes the number of OSTDS by basin.

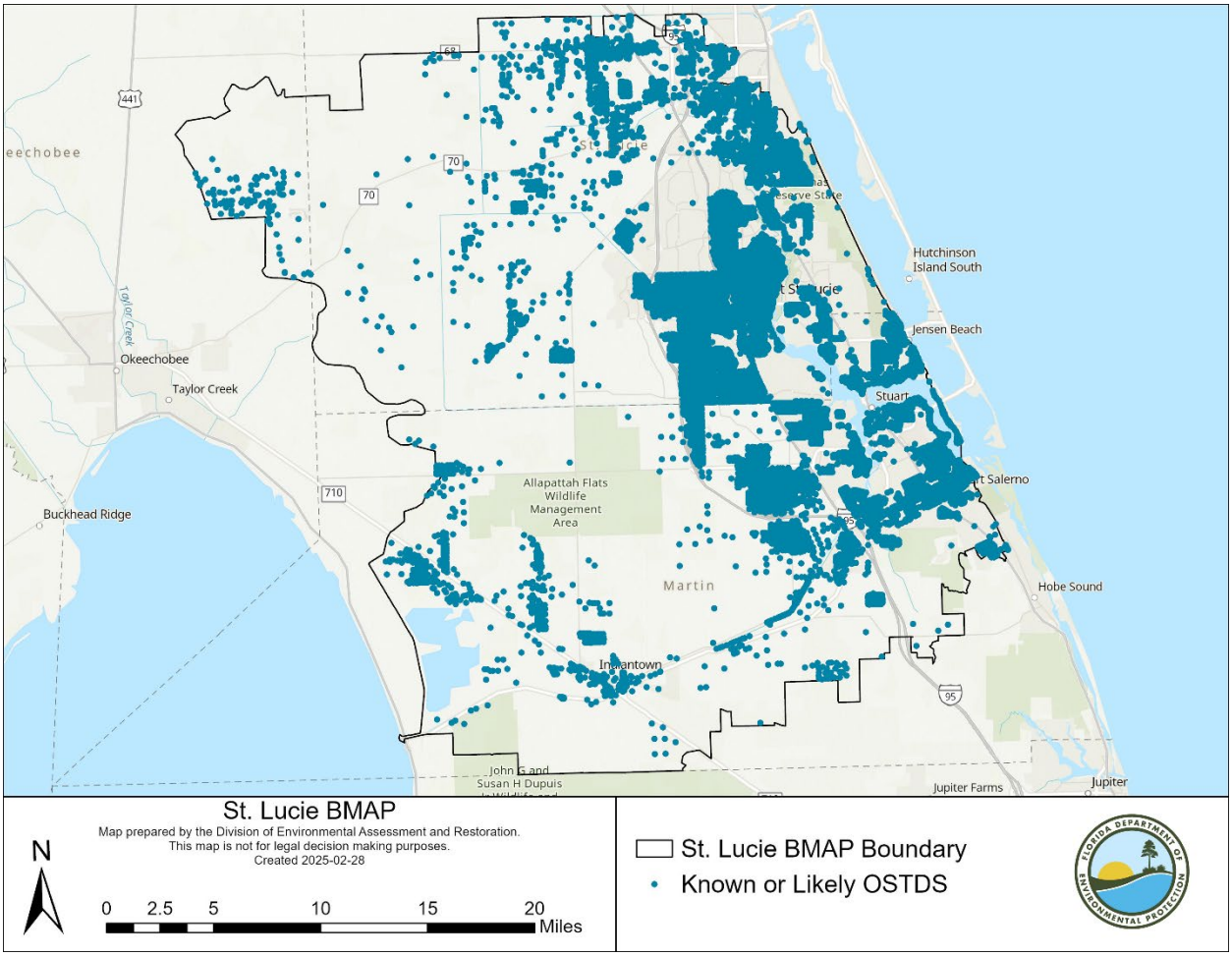


**Figure 6. Location of OSTDS in the St. Lucie River and Estuary Watershed**

**Table 7. OSTDS counts by basin**

| Basin | Number of OSTDS |
|---|---|
| **North Fork** | 26,121 |
| **Ten Mile Creek** | 908 |
| **C-24** | 1,341 |
| **C-23** | 653 |
| **C-44/S-153** | 743 |
| **Basin 4/5** | 1,699 |
| **Basin 6** | 600 |
| **South Fork** | 4,211 |
| **South Coastal** | 4,131 |
| **South Mid-Estuary** | 744 |
| **North Mid-Estuary** | 2,346 |
| **Total** | **43,457** |

#### 1.2.2.6 Biosolids

Section 373.4595(4)(c)6, F.S. prohibits the land application of biosolids in the St. Lucie River and Estuary Watershed unless the applicant for a site permit affirmatively demonstrates that the nitrogen and phosphorus in the biosolids will not add to nitrogen and phosphorus loadings in the watershed. This demonstration must be included in the site nutrient management plan. 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(4)(b)2., F.S. requires all entities disposing of septage within the St. Lucie River Watershed to develop and submit to an agricultural use plan that limits applications based on nutrient loading consistent with the St. Lucie River and Estuary BMAP.

## 1.3. Assumptions

The water quality impacts of BMAP implementation are based on several fundamental assumptions about the pollutants targeted by the TMDLs, 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 calculations, and reduction benefits may be adjusted, as necessary.
- Reductions in TN and TP loading to the St. Lucie River and Estuary will increase DO concentrations and reduce chlorophyll-α concentrations to improve the water quality conditions in these waterbodies.
- The allocations do not include required load reductions from areas identified as natural land use areas in the 2012 SFWMD land use coverage. These loads are considered uncontrollable, background sources, and the stakeholders are not required to make reductions on natural lands. The focus of the BMAP allocations is on urban and agricultural stormwater sources and OSTDS, and wastewater sources in the watershed.
- Achieving the St. Lucie River and Estuary TMDLs is contingent on reductions from the Lake Okeechobee Watershed, which are being addressed through a separate adopted BMAP. The Lake Okeechobee BMAP tracks estimated TN project reductions, in addition to the TP project reductions needed to address the Lake Okeechobee TMDL, to acknowledge the importance of TN loads for the estuaries. The allocations to the stakeholders in the St. Lucie River and Estuary BMAP are based only on loads from the St. Lucie River and Estuary Watershed. The total allowable loading from the TMDL is a

combination of loads from the St. Lucie River and Estuary Watershed and Lake Okeechobee.

## 1.4. Considerations

This BMAP requires stakeholders to implement their projects to achieve reductions within the specified 5-year milestone period. However, the full implementation of this 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, a number of 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 point in time, allowing the model to be validated and calibrated. The loading estimates for this BMAP iteration were based on 2012 land use data. While DEP acknowledges that land use has changed since 2012, this was the latest coverage available at the time the WaSh model was developed. An HSPF model is currently being developed using the latest available land use coverage and the refined loading from that model will be used in future BMAP updates. 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 -** The BMAP area is based on the WaSh model boundary. Basin boundaries are being updated as part of the current HSPF model development, 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 the SFWMD in the latest South Florida Environmental Report.
- **Jurisdictional Boundaries** – Entities may experience shifts in their jurisdictional boundaries over time that require allocation adjustments. Changes to the boundaries and/or allocations for these stakeholders may be made as necessary and reflected in future BMAP iterations. Basin boundaries for this iteration of the BMAP may not match information published by the SFWMD in the latest South Florida Environmental Report.
- **CDD Responsibilities** – CDDs were assigned allocations only if three criteria were met: (1) there is development—i.e., roads and infrastructure—in the CDD area; (2) the CDD discharges to an MS4; and (3) the CDD pays a stormwater fee and receives a refund of this fee. As further details are provided (e.g., discharge locations from these CDDs), revisions to the MS4 holder's allocations and boundaries will be made in future BMAP

iterations. Furthermore, some of the CDDs that did not receive an allocation in this BMAP iteration may receive allocations in future BMAP iterations.

- **WCDs** – The BMAP only assigns the canals and rights-of-way to the special districts, as the districts have control over these portions of their jurisdictions. The districts are required to implement specific canal and right-of-way BMPs to be compliant with the BMAP.
- **Complexity of Problem** – DEP acknowledges the complexity of the dynamics that affect the water quality of the St. Lucie River and Estuary 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 may be present in the St. Lucie River and Estuary and in the watershed as a result of past anthropogenic activities, and this watershed load has the potential to be transported to the St. Lucie River and Estuary. The Coordinating Agencies (DEP, FDACS, and SFWMD) and stakeholders will continue to identify projects and management strategies that will address the legacy load.
- **Previous Restoration Efforts** – DEP recognizes that stakeholders throughout the watershed have implemented stormwater management projects prior to the implementation of the TMDLs and that these efforts have benefited water quality. Projects completed in 2000 or later are considered for credits and inclusion in the BMAP.
- **Lake Okeechobee BMAP Overlap** – Portions of the Lake Okeechobee Watershed overlap with the St. Lucie River and Estuary Watershed. The projects in these overlap areas are included in both this BMAP and the Lake Okeechobee 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

The St. Lucie Estuary WaSh model was updated and revised as part of the 2020 BMAP update. DEP coordinated with SFWMD to revise, enhance, and update the model, first by simulating the baseline scenario. The baseline scenario period of record is 1994 to 2016, and the model uses 2004, 2008, and 2012 land use data. The model was calibrated using available SFWMD data from 2001 to 2006 and verified with available SFWMD data from 1995 to 2000. More detailed information about the setup, data, and assumptions used as well as the results of the revisions and scenarios are summarized in the modeling report (SFWMD et al. 2018).

Since the revisions to the WaSh model were completed, DEP has begun an effort to establish a new HSPF model for the watershed. DEP typically uses HSPF for watershed modeling and developed an HSPF model for the Caloosahatchee River and Estuary Watershed in 2017. DEP's goal is to use one consistent modeling platform across the Northern Everglades BMAPs, which is why the new St. Lucie River and Estuary Watershed model will be HSPF. This new model will use more current land uses and data to reflect more recent watershed conditions. Future BMAP updates will use this revised model information.

## 2.2. Allocations and Project Estimates

The WaSh model produces polygon outputs with loading data included. Through a series of processing steps, polygons were generated for each stakeholder to determine a starting load. The polygon output feature of the updated WaSh model could also be used to obtain load per acre values for each land use type on a basin basis. This information was linked with the 2012 land use shapefile to create a load estimation shapefile that could be manipulated to calculate updated baseloads from all existing project treatment areas in the BMAP.

## 2.3. Calculation of Starting Loads and Allocations

The allocation approach and assigned required reductions remained largely the same as the 2020 BMAP. For this 2025 BMAP update, there are two new CDDs, Southern Grove and Veranda (additional area), that were added, and the loads were removed from the City of Port St. Lucie. In addition, the Village of Indiantown was separated from Martin County in the allocations. The updated starting loads in pounds per year (lbs/yr) of TN and TP by entity are listed in **Table 8**.

**Table 8. Starting loads by entity (lbs/year)**

| Entity | TN Starting Loads by Entity (lbs/yr) | TP Starting Loads by Entity (lbs/yr) |
|---|---|---|
| **Agriculture** | 2,128,687 | 472,423 |
| **City of Fort Pierce** | 48,617 | 8,071 |
| **City of Port St. Lucie** | 397,343 | 67,422 |
| **City of Stuart** | 36,893 | 6,142 |

| Entity | TN Starting Loads by Entity (lbs/yr) | TP Starting Loads by Entity (lbs/yr) |
|---|---|---|
| **Copper Creek CDD** | 2,591 | 431 |
| **Creekside CDD** | 1,695 | 293 |
| **FDOT District 4** | 44,404 | 8,047 |
| **FDOT District 1** | 1,013 | 283 |
| **Martin County** | 388,638 | 66,501 |
| **Okeechobee County** | 13,635 | 2,629 |
| **Portofino Isles CDD** | 2,186 | 371 |
| **River Place CDD** | 1,166 | 195 |
| **Southern Grove CDD** | 2,107 | 424 |
| **St. Lucie County** | 180,521 | 32,612 |
| **St. Lucie West Service District** | 40,406 | 6,967 |
| **Tesoro CDD** | 7,756 | 1,271 |
| **Town of Sewall's Point** | 1,919 | 319 |
| **Tradition CDD** | 14,621 | 2,**562** |
| **Turnpike** | 13,839 | 2,281 |
| **Veranda CDD** | 3,037 | 407 |
| **Verano CDD** | 1,778 | 366 |
| **Villa Vizcaya CDD** | 357 | 60 |
| **Village of Indiantown** | 16,560 | 2,780 |
| **Total** | **3,349,769** | **682,857** |

### 2.3.1 Allocation of Load Reductions

The allocation boundary for each entity is divided into each basin where the entity is located, so that starting loads for each entity by basin can be calculated. If a stakeholder is located in more than one basin, the required load reductions by basin were summed to determine one total load reduction for TN and TP. The required load reduction needed to meet the TMDLs was calculated by multiplying the TN and TP starting loads for each entity in each basin by the percentage required reduction for TN and TP by basin. In addition, the WCDs and other special districts were not assigned a numeric allocation and instead committed to implementing specific BMPs as discussed in the 2020 BMAP and presented in the project tables in **Chapter 3**.

### 2.3.2 Milestones

Section 403.067, F.S., requires that BMAPs include 5-year milestones for the implementation of TMDLs. Any responsible entity within the BMAP that has an assigned pollutant load reduction requirement must identify projects or strategies to meet their 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.

**Table 9** summarizes the TN and TP required reduction milestones for the 15-year milestone of 100% reductions by 2028. The 5-Year Review recommended adjusting the milestone to 20 years. However, the original 15-year timeline was kept for this BMAP update as DEP is working on a new HSPF watershed model that will be used in a future update, where entity allocations and milestones will be re-evaluated. Revisions to 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 basin reduction assignments during the BMAP process.

**Table 9. Entity-specific TN and TP reduction milestones**

| Entity | 15-year (2028) TN Reduction Milestone (lbs/yr) | 15-year (2028) TP Reduction Milestone (lbs/yr) |
|---|---|---|
| **Agriculture** | 884,700 | 284,285 |
| **City of Fort Pierce** | 16,205 | 5,266 |
| **City of Port St. Lucie** | 138,187 | 44,277 |
| **City of Stuart** | 6,003 | 2,700 |
| **Copper Creek** | 1,500 | 306 |
| **Creekside CDD** | 475 | 175 |
| **FDOT District 1** | 594 | 218 |
| **FDOT District 4** | 15,907 | 4,801 |
| **FDOT Turnpike** | 4,163 | 1,402 |
| **Martin County** | 75,231 | 31,786 |
| **Okeechobee County** | 7,950 | 1,966 |
| **Portofino Isles CDD** | 1,271 | 285 |
| **River Place CDD** | 389 | 127 |
| **Southern Grove CDD** | 1,226 | 310 |
| **St. Lucie County** | 67,679 | 21,398 |
| **St. Lucie West Services District** | 13,469 | 4,545 |
| **Tesoro CDD** | 2,585 | 829 |
| **Town of Sewall's Point** | 417 | 174 |
| **Tradition CDD** | 8,396 | 1,815 |
| **Veranda CDD** | 1,012 | 266 |
| **Verano CDD** | 1,030 | 260 |
| **Village of Indiantown** | 3,600 | 751 |
| **Villa Vizcaya CDD** | 119 | 39 |
| **Total** | **1,252,108** | **407,981** |

Responsible entities must submit a sufficient list of creditable projects with estimated reductions which demonstrates how the entity is going to meet their milestone to DEP no later than January 14, 2026, to be compliant with the upcoming BMAP milestone or be subject to DEP enforcement.

If any lead entity is unable to submit a sufficient list of eligible management strategies to meet their next 5-year milestone reductions, 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 additional eligible management actions will be forthcoming and BMAP compliance will be achieved. Examples of project identification efforts are included in **Appendix C**. Only those entities that provide sufficient project identification efforts will be deemed as having a defined compliance schedule. Those entities without an adequate project list or a defined compliance schedule to meet their upcoming 5-year milestone may be subject to enforcement actions. After the St. Lucie River and Estuary 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, and 5-year milestones.

### 2.3.3 Project Progress

**Figure 7** and **Figure 8** summarize the progress towards the TN and TP milestones, respectively, for each entity. Total project reductions for each entity were compared to their respective 2028 milestones and are displayed as percentages in the bar graphs. The project reductions presented in this document are provisional and may be revised based on updates to the underlying project information. Agricultural reductions include reductions from projects completed by the coordinating agencies. **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.

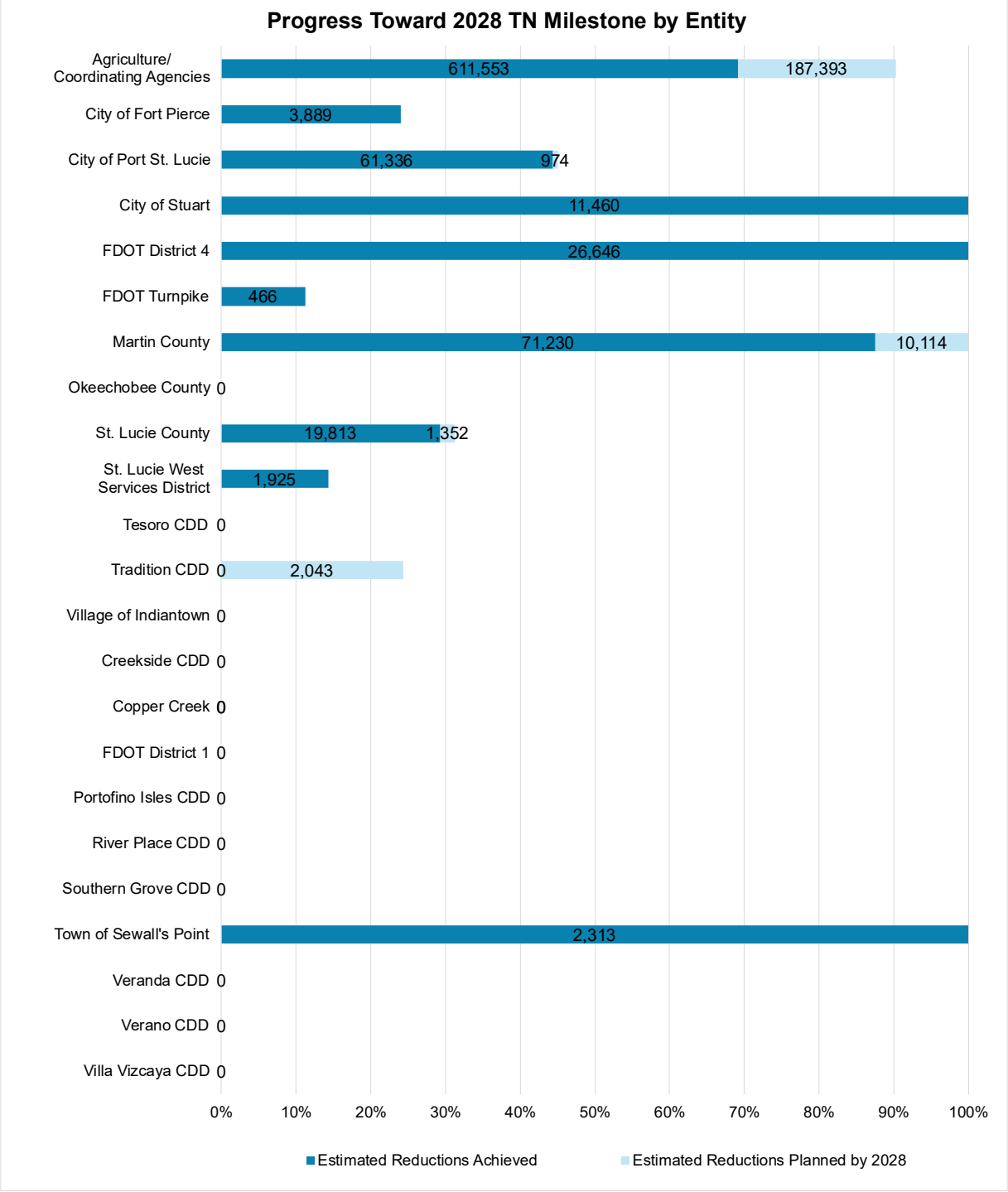


**Figure 7. TN milestone progress by entity in the St. Lucie River and Estuary**

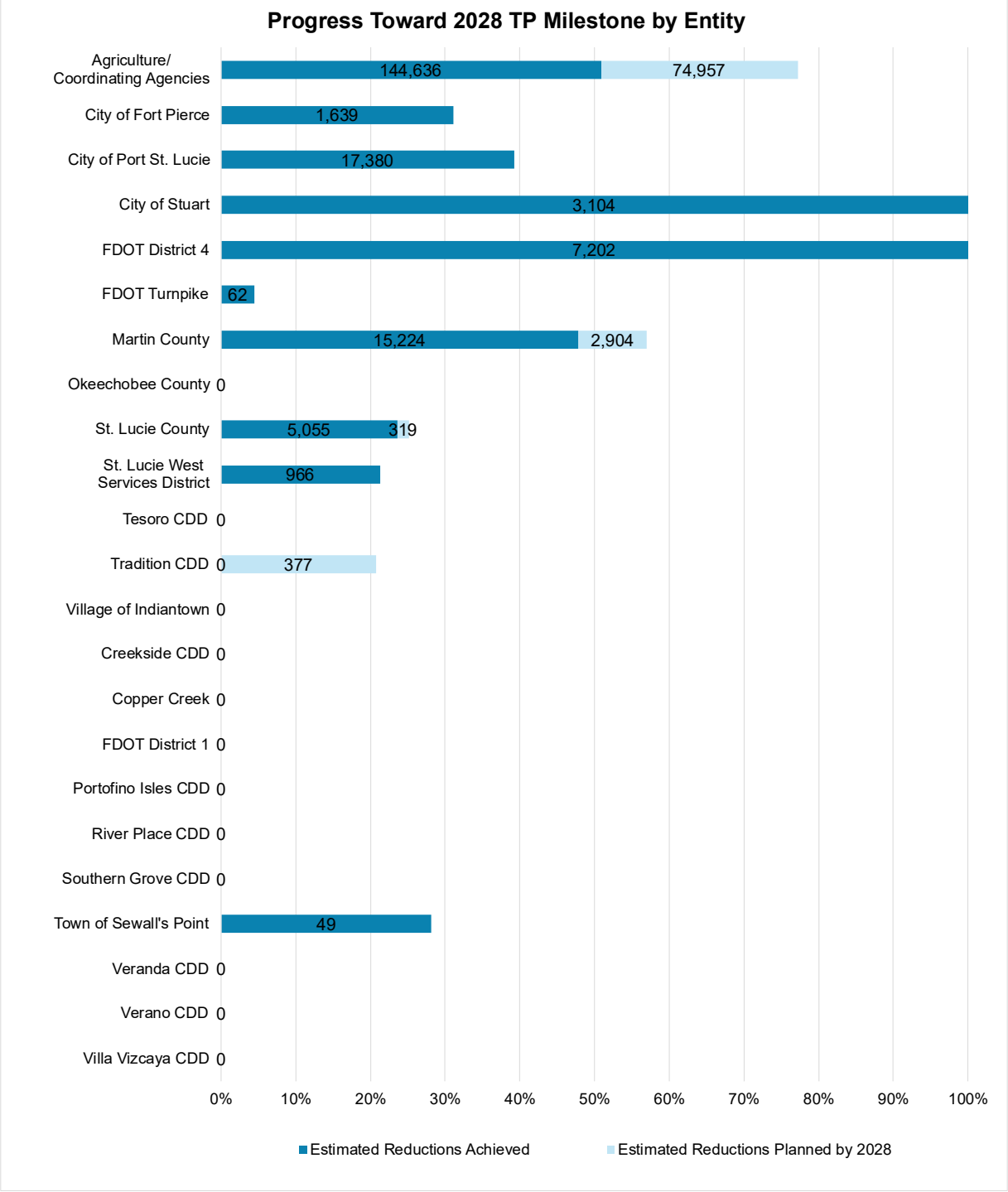


**Figure 8. TP milestone progress by entity in the St. Lucie River and Estuary**

## 2.4. Basinwide Sources Approach

### 2.4.1 Agriculture

#### 2.4.1.1 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 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.

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, through which full enrollment with verification is needed to achieve BMAP goals.

#### 2.4.1.2 Dairies and Other Concentrated Animal Feeding Operations (CAFOs)

Dairies and other CAFOs 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, if a dairy uses a clay liner or some other type of engineered waste storage pond system, within two years of the BMAP adoption, the dairy will submit to the DEP an evaluation identifying the environmental, technical and economic feasibility of upgrading to a concrete or geosynthetic liner. The evaluation may alternatively demonstrate that the existing liner/pond does not allow leaching that causes or contributes to water quality exceedances. Upon review of the evaluation, the DEP may identify required upgrades in a subsequent BMAP update.

Additionally, sampling for TN and TP 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.

#### 2.4.1.3 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.

#### 2.4.1.4 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.

#### 2.4.1.5 Silviculture

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

#### 2.4.1.6 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.

Addressing nutrient loading from agricultural sources requires partnership among key stakeholders, and 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, 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 ACE 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 64% of the TN and 69% of the TP nutrient sources in the St. Lucie River and Estuary BMAP. Pursuant to subparagraph 403.067(7)(e)1., F.S., an ACE is required in this BMAP.

Most agricultural lands are engaged row crop production. **Table 10** shows the three dominant crop types within the St. Lucie River and Estuary BMAP.

**Table 10. Three dominant crop types within the St. Lucie River and Estuary BMAP**

| Crop Type | Acres |
|---|---|
| **Row Crops** | 110,453 |
| **Grazing Land** | 87,426 |
| **Vegetables** | 9,735 |

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.

In the St. Lucie River and Estuary 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 TN and TP reductions.

FDACS will continue to work with key stakeholders in the St. Lucie River and Estuary 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**.

FDACS will continue to work with key stakeholders in the St. Lucie River and Estuary 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**.

#### 2.4.1.7 Description of BMPs Adopted by Rule

**Appendix B** provides detailed information on BMPs and agricultural practices in the BMAP area. **Table 11** identifies the adopted BMPs and BMP manuals relevant to this BMAP.

**Table 11. 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 |
| FDACS Division of Aquaculture | 5L-3 | Aquaculture Best Management Practices |
| FFS | 5I-6 | Best Management Practices for Silviculture |
| DEP | 62-330 | Environmental Resource Permitting |

### 2.4.2 Stormwater

Urban stormwater is a considerable source of nutrient loading to the St. Lucie River and Estuary, and many urban areas are already regulated under the MS4 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 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 TN, along with additional requirements for a 90% reduction for TP and 80% reduction for TN that would apply where a project discharges to Outstanding Florida Waters or impaired waters, including the St. Lucie River and Estuary. Additional permitting requirements to protect ground water can be found within the Applicant Handbook Volume I, Section 8.5.2.

#### 2.4.2.1 Urban BMPs and Eligibility

Management actions must reduce TN and/or TP loads and meet certain criteria to be considered eligible for credit in the BMAP. Urban structural projects completed since January 1, 2000, 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 St. Lucie River and Estuary model. Estimates of TN and TP 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 TN and TP removed.

#### 2.4.2.2 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 (University of Florida Institute of Food and Agricultural Sciences Research [UF-IFAS] Florida Golf Courses Best Management Practices Program) 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 golf courses located within a BMAP are required to submit a nutrient management plan (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 D**. 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.

### 2.4.3 WWTFs

#### 2.4.3.1 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, for any waterbody determined not to be attaining nutrient or nutrient-related standards after July 1, 2023, or subject to a nutrient or nutrient-related BMAP or adopted reasonable assurance plan (RAP) after July 1, 2023, sewage disposal facilities are prohibited from disposing any wastes into such waters without providing AWT as approved by DEP within 10 years after such determination or adoption.

The nitrogen and phosphorus effluent limits set forth in **Table 12** and **Table 13** will be applied as an annual average, taken at end of pipe before any land disposal, to all new and existing WWTFs with a DEP-permitted discharge or disposal area within this BMAP pursuant to sections 403.067(7)(b), 403.086(1)(c)1.c., 2., or (2), F.S., as applicable. DEP will evaluate the need for more stringent nutrient effluent limits as appropriate.

**Table 12. Nitrogen effluent limits for WWTFs**

mgd = Million gallons per day
mg/L = milligrams per liter
* Including rapid-rate land application systems permitted under Part V of Chapter 62-610, F.A.C.

| Facility Capacity (mgd) | Surface Water Discharges (mg/L) | WWTFs Listed in Appendix E (mg/L) | WWTFs Not Listed in Appendix E – Slow-Rate Land Application (SRLA) and Rapid-Rate Land Application (RRLA) Effluent Disposal Systems (mg/L) | WWTFs Not Listed in Appendix E – All Other Reuse or Effluent Disposal Methods, excluding SRLA and RRLA (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 13. Phosphorus effluent limits for WWTFs**

mgd = Million gallons per day
mg/L = milligrams per liter
* Including rapid-rate land application systems permitted under Part V of Chapter 62-610, F.A.C.

| Facility Capacity (mgd) | Surface Water Discharges (mg/L) | WWTFs Listed in Appendix E (mg/L) | WWTFs Not Listed in Appendix E –SRLA and RRLA Effluent Disposal Systems (mg/L) | WWTFs Not Listed in Appendix E – All Other Reuse of Effluent Disposal Methods, excluding SRLA and RRLA (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 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.

#### 2.4.3.2 Reclaimed Water Effluent Limits

In accordance with section 403.086(1)(c)3., F.S., 10 years after adoption of this, 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, if the department has determined in an applicable basin management action plan or reasonable assurance plan that the use of reclaimed water as described in this subparagraph is causing or contributing to the nutrient impairment being addressed in such plan. 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 E** and are subject to the nitrogen and phosphorus limits set forth in section 403.086(1)(c)3., F.S. The list of facilities does not include those facilities that are otherwise required to meet the advanced wastewater treatment limits for phosphorous and nitrogen pursuant to **Table 12** and **Table 13** above. The facilities listed in **Appendix E** 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(1)(c)3., F.S.

All new permitted facilities providing reclaimed water that will be used for commercial or residential irrigation or be otherwise land applied within the BMAP area are required to meet AWT standards for TN and TP in accordance with section 403.086(1)(c)3., F.S.

#### 2.4.3.3 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 23-0124 for each existing or proposed domestic wastewater facility in the local government's jurisdiction. The WWTF plans are incorporated into this BMAP through the related management actions listed in **Chapter 3**. Copies will be made available upon request subject to any public records requirements.

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.

#### 2.4.3.4 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 (as defined in 381.00655, F.S) but have not connected. For each identified property, include the date(s) which the utility provided written notice to the owners of the availability of sewer.

### 2.4.4 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 at least a 65% nitrogen reduction, or other wastewater system that achieves at least a 65% reduction.

#### 2.4.4.1 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 23-0124. 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. The OSTDS remediation plans are incorporated into this BMAP through the related management actions listed in **Chapter 3**. Copies will be made available upon request subject to any public records requirements.

#### 2.4.4.2 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.

## 2.5. TRA Approach

To better prioritize and focus resources to most efficiently achieve restoration in the St. Lucie River and Estuary Watershed, DEP developed the TRA approach. This approach uses measured data collected throughout the watershed to evaluate TN and TP concentrations in each of the St. Lucie River and Estuary Watershed basins. Flow data exist at the four structure stations; however, the TRA approach does not currently include an assessment of water quantity since a flow evaluation has not yet been completed. Once a complete flow evaluation is available, it will be reviewed for inclusion in future BMAP annual updates. 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 the St. Lucie River and Estuary Watershed. For each basin, a priority was assigned based on the TN concentration, TP concentration, and flows (where available). These priorities were set to help focus resources and projects in the basins most in 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 (**Figure 9**):

1. **Assess the 5-year average concentration at representative stations and compare with the TMDL benchmark:**
    a. Priority 1: Concentration is two times greater than the TMDL benchmark.
    b. Priority 2: Concentration is greater than the TMDL benchmark but less than two times the TMDL benchmark.
    c. Priority 3: Concentration is less than or equal to the TMDL benchmark.
2. **Assess the 5-year average flow weighted mean (FWM) concentration and compare with the TMDL 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 greater than twice TMDL benchmark.
    b. Priority 2: FWM concentration is greater than TMDL benchmark, but less than twice TMDL benchmark.
    c. Priority 3: FWM concentration is equal to or less than TMDL benchmark.
3. **Assess the unit area load (UAL), which is the average load per acre in each basin from the WaSh model. Compare with the basin UAL target calculated with loading data from the SFWMD 2025 *South Florida Environmental Report*. 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 basin target UAL.
    b. Priority decreases: UAL is less than the basin target UAL.
    c. Priority remains unchanged: UAL is above the basin target UAL, but less than 50%.
4. **Assess the water quality trends from the St. Lucie River Watershed Protection Plan for statistical significance (as described in the 5-Year**

**Review). This step is weighted above Step 3 where data are available; therefore, 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 detected.

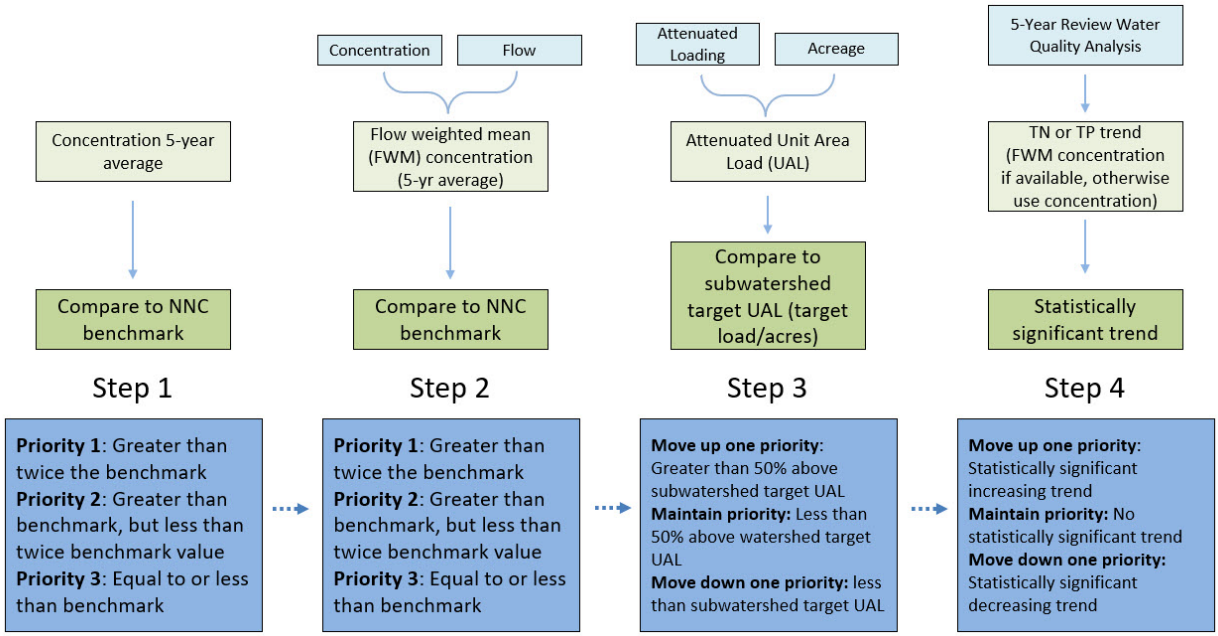


**Figure 9. Summary of the TRA prioritization process**

## 2.6. Hotspot Analysis

To better prioritize and focus resources to most efficiently achieve restoration in the St. Lucie River and Estuary 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 10**. 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 St. Lucie River and Estuary basin.

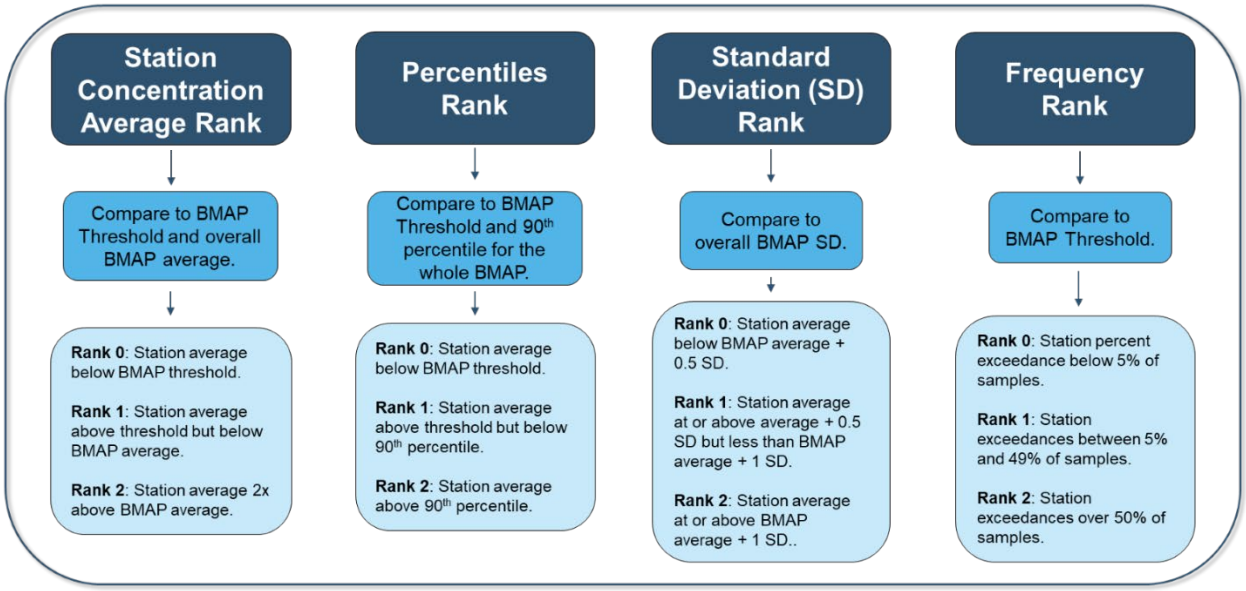


**Figure 10. Summary of hot spot analysis approach**

## 2.7. Water Quality Monitoring Plan

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

### 2.7.1 Objectives and Parameters

The St. Lucie River and Estuary 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 South Florida Environmental Report, published annually by SFWMD.

Focused objectives are critical for a monitoring strategy to provide the information needed to evaluate implementation success. The primary objective of the monitoring strategy for the St. Lucie River and Estuary Watershed, described below, is to evaluate the success of the BMAP, help interpret the data collected, and provide information for potential future BMAP refinements.

***Primary Objective***

- To track trends in TN and TP loads in the major canals and tributaries, and the St. Lucie River and Estuary.

To achieve this objective, the monitoring strategy focuses on the following parameters:

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

### 2.7.2 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 include both estuary and structure ambient monitoring stations. Several of these stations have autosamplers with more frequent data collection. Structure stations also have flow data, while the estuary stations do not collect flow data. If at any point it is necessary to reduce efforts in the basin, these stations should be the last stations impacted.

- **Tier 2** stations provide secondary information that can be used to help focus and adaptively manage implementation efforts.

**Figure 11** shows the stations included in each of these tiers. In addition to SFWMD and U.S. Geological Survey monitoring stations, various agencies also sample stations in the St. Lucie River and Estuary Watershed. **Chapter 3** includes additional information about the BMAP monitoring network and stations used in the TRA process.

### 2.7.3 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 the U.S. Geological Survey are available through its website, and some flow data are also available through the SFWMD corporate environmental database, DBHYDRO.

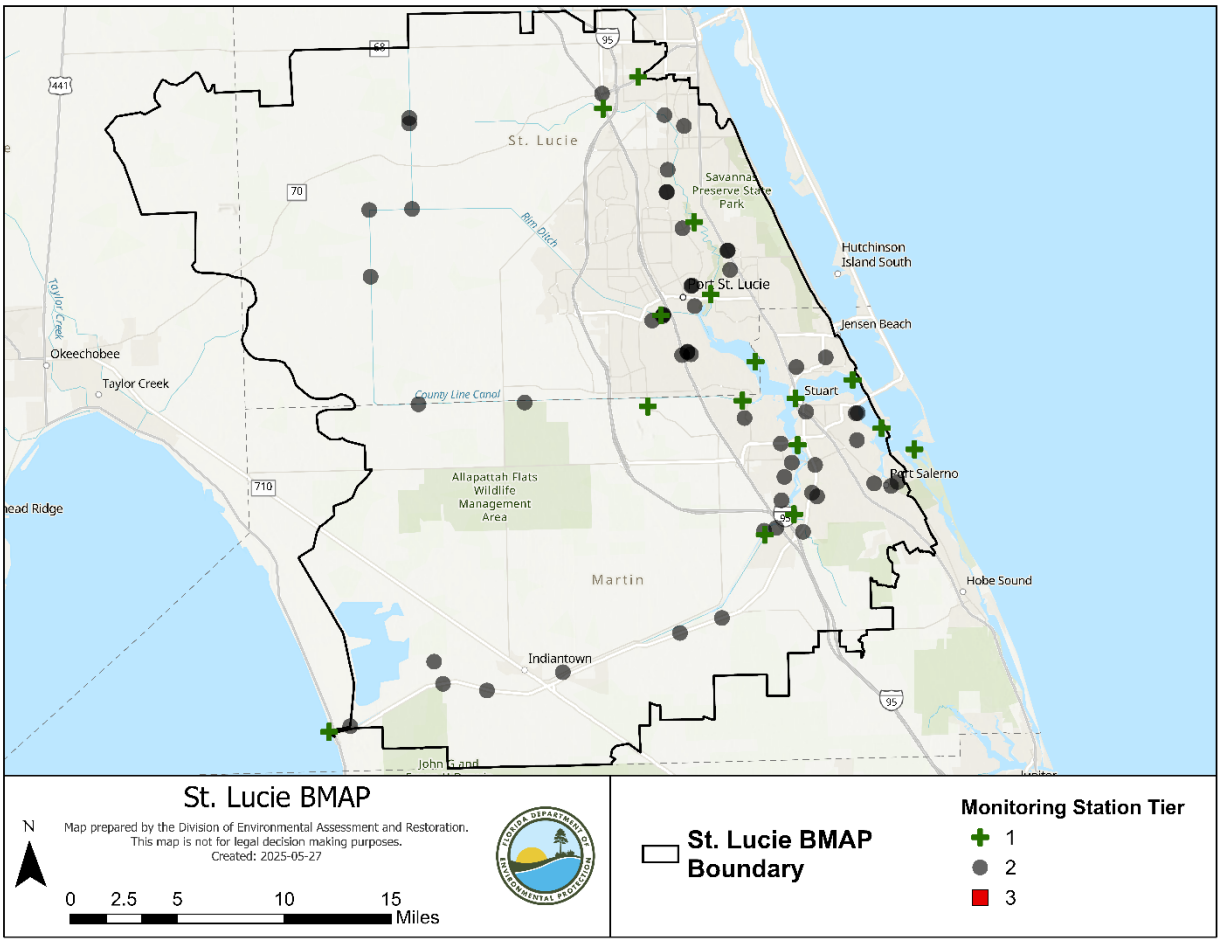


**Figure 11. St. Lucie River and Estuary BMAP monitoring stations**

# Chapter 3. Basins

**Section 3.1** through **Section 3.11** provide specific information on the 11 basins in the St. Lucie River and Estuary Watershed. The land use summaries are based on the 2012 land use in WaSh, and **Appendix B** provides additional details on agricultural land uses. Monitoring network stations in the basin are provided, along with designations for the basin where the station is located, monitoring entity, BMAP monitoring network tier, and whether the station is a representative site for the TRA approach discussed in **Section 2.5**. The TN and TP priority results of the TRA evaluation are provided for each basin.

Finally, all projects identified as part of this BMAP are listed by basin. For projects that treat lands in multiple basins (indicated in the "Basin" column), the nutrient reductions provided in the table are the total estimated for the project and not applicable to a specific basin. 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 achieve the remaining reductions needed; however, many of these projects are conceptual or 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. The project reductions presented in the tables are provisional and may be revised based upon information provided by the lead entity to verify project effectiveness. Some project types provide benefits to the watershed but are not eligible for nutrient reduction credit based on accepted crediting methodologies. A project's nutrient reductions may be listed as 'NA' due to the nature of the project or the absence of verifiable information required to assign reduction credit.

## 3.1. North Fork Basin

The North Fork Basin covers 89,902 acres of the St. Lucie River and Estuary Watershed. As shown in **Table 14**, the most common land uses in this basin are urban and built-up, followed by upland forests. Stakeholders in the basin include FDOT, City of Fort Pierce, Martin County, North St. Lucie River WCD, City of Stuart, and St. Lucie County.

**Table 14. Summary of land uses in the North Fork Basin**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 52,893 | 58.8 |
| **2000** | Agriculture | 6,502 | 7.2 |
| **3000** | Upland Nonforested | 3,485 | 3.9 |
| **4000** | Upland Forests | 10,743 | 11.9 |
| **5000** | Water | 4,164 | 4.6 |
| **6000** | Wetlands | 7,921 | 8.8 |
| **7000** | Barren Land | 257 | 0.3 |
| **8000** | Transportation, Communication, and Utilities | 3,937 | 4.4 |
| | **Total** | **89,902** | **100** |

### 3.1.1 Water Quality Monitoring

**Table 15** summarizes the water quality monitoring stations in the North Fork Basin, and **Figure 12** shows the station locations.

**Table 15. Water quality monitoring stations in the North Fork Basin**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **North Fork** | Yes | SFWMD | SLT-10A | 2 |
| **North Fork** | Yes | SFWMD | SLT-10B | 2 |
| **North Fork** | Yes | SFWMD | SLT-11 | 2 |
| **North Fork** | Yes | SFWMD | SLT-17 | 2 |
| **North Fork** | Yes | SFWMD | SLT-19 | 2 |
| **North Fork** | Yes | SFWMD | SLT-21 | 2 |
| **North Fork** | Yes | SFWMD | SLT-22A | 2 |
| **North Fork** | Yes | SFWMD | SLT-26 | 2 |
| **North Fork** | Yes | SFWMD | SLT-39 | 2 |
| **North Fork** | Yes | SFWMD | SLT-42B | 2 |
| **North Fork** | NA | SFWMD | SLT-41 | 2 |
| **North Fork** | No | SFWMD | SE-06 | 1 |
| **North Fork** | No | SFWMD | SE-12 | 1 |
| **North Fork** | No | SFWMD | HR1 | 1 |
| **North Fork** | No | Port St. Lucie | C-107 | 2 |
| **North Fork** | No | Port St. Lucie | E-8 | 2 |
| **North Fork** | No | Port St. Lucie | Elcam Spillway | 2 |
| **North Fork** | No | Port St. Lucie | Hogpen Slough | 2 |
| **North Fork** | No | Port St. Lucie | Horseshoe Canal | 2 |
| **North Fork** | No | Port St. Lucie | Kingsway WW | 2 |
| **North Fork** | No | Port St. Lucie | Monterey WW | 2 |
| **North Fork** | No | Port St. Lucie | Sagamore WW | 2 |
| **North Fork** | No | Port St. Lucie | Southbend Horseshoe | 2 |
| **North Fork** | No | Port St. Lucie | U16-D016 | 2 |
| **North Fork** | No | Port St. Lucie | H-16 | 2 |
| **North Fork** | No | Port St. Lucie | A18 | 2 |
| **North Fork** | No | Port St. Lucie | A-22 | 2 |

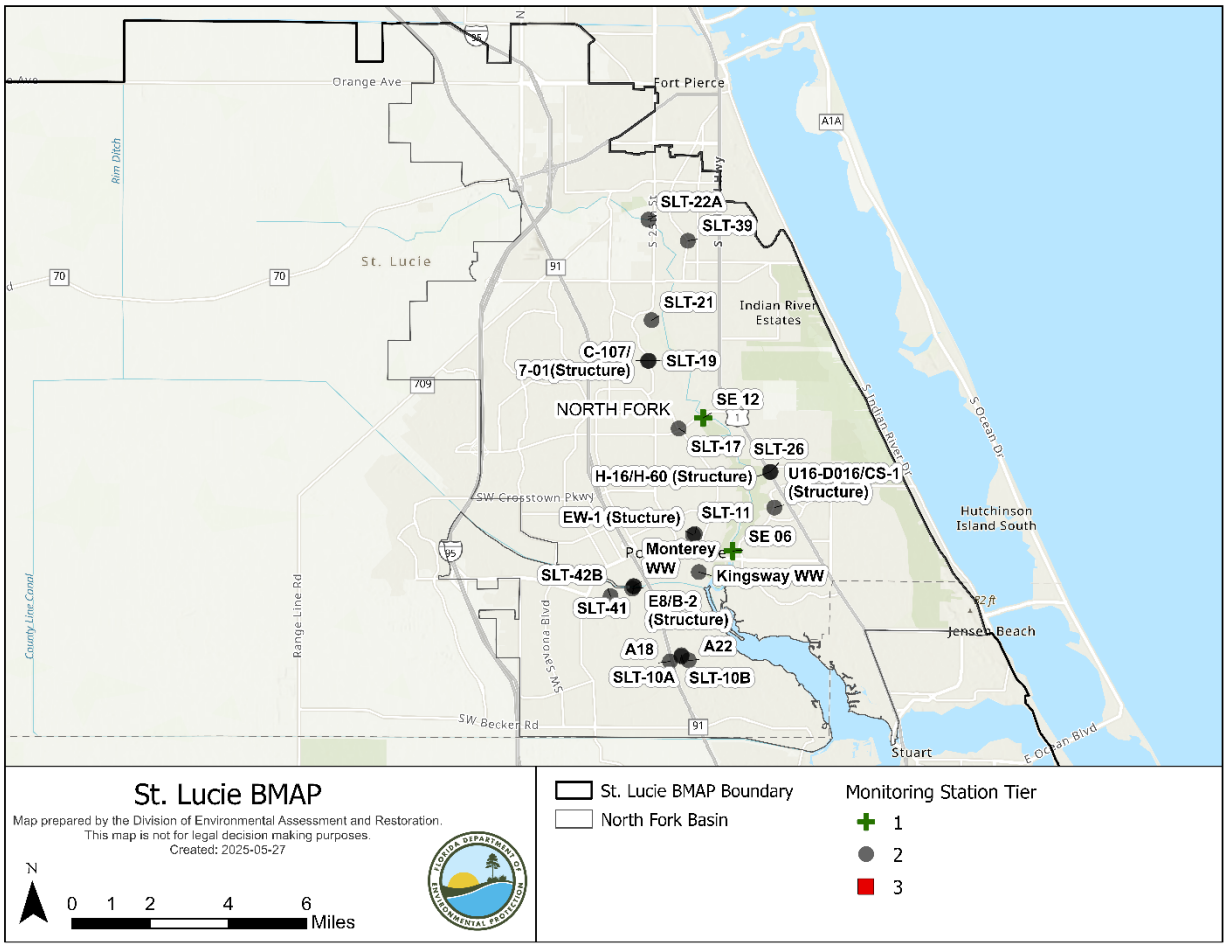


**Figure 12. North Fork Basin monitoring stations**

### 3.1.2 Basin Evaluation Results

#### 3.1.2.1 Targeted Restoration Area

**Table 16** summarizes the basin evaluation results based on data from WY2020–WY2024 for the North Fork Basin. The current TN concentration is 0.85 mg/L, which is above the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.098 mg/L, which is above the benchmark of 0.081 mg/L required to meet the TMDL. No significant trend was observed for TN, and a significant decreasing trend was observed TP.

The TRA prioritization results for the North Fork Basin are shown in **Table 17**, 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 18** 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 16. Basin evaluation results for the North Fork Basin**

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL, pounds per acre (lbs/ac)] | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | TP Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **1** | North Fork | 0.85 | NA | NA | No significant trend | 0.098 | NA | NA | Significant increasing trend |

**Table 17. TRA evaluation results for the North Fork Basin**

| Basin | Stations | TN Priority | TP Priority |
|---|---|---|---|
| **North Fork** | SLT-10A, SLT-10B, SLT-11, SLT-17, SLT-19, SLT-21, SLT-22A, SLT-26, SLT-39, SLT-42B | 2 | 3 |

**Table 18. Hot spot analysis results for the North Fork Basin**

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| SE-06 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SE-12 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| HR1 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-10A | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 1 |
| SLT-10B | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 1 |
| SLT-11 | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 1 |
| SLT-17 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-19 | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 1 |
| SLT-21 | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 |
| SLT-26 | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 1 |
| SLT-39 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-41 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-22A | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-42B | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 4 |

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| C-107 | 1 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 1 |
| E-8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| Elkcam Spillway | 1 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 1 |
| Hogpen Slough | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 |
| Horseshoe Canal | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 1 |
| Kingsway WW | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| Monterrey WW | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| Sagamore WW | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 1 |
| Southbend Horseshoe | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 1 |
| Veterans Memorial | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 |

### 3.1.3 Projects

**Table 19** summarizes the existing and planned for the North Fork Basin that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 19. Existing and planned projects in the North Fork Basin**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3297 | City of Fort Pierce | FP-03 | Street Sweeping | City removes cubic yards of debris by street sweeping activities. Removed 4,135 cubic yards of debris. | Street Sweeping | Ongoing | NA | 2,020 | 1,295 | To be determined (TBD) |
| 3296 | City of Fort Pierce | FP-04 | Inlet Cleaning | City cleans storm inlets citywide and disposes of waste. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 65 | 40 | TBD |
| 3295 | City of Fort Pierce | FP-05 | Education Program | City delivers educational programs to public through trade associations, homeowners' associations, or other means. Educates on hazards associated with illicit discharge, fertilizer use, the importance of water quality, and stormwater pollution protection. | Education Efforts | Ongoing | NA | 1,804 | 304 | TBD |
| 3325 | City of Fort Pierce | FP-11 | Indian Hills Recreation Area (Phase II) Stormwater Improvements | Reestablishment of wetlands and pervious paver parking areas. | Wetland Restoration | Completed | 2016 | TBD | TBD | $2,337,485.00 |
| 3393 | City of Port St. Lucie | PSL-01 | Woodstork Trail Design Districts 7, 8, and 9 | 4.6 acres of new filter marsh and 7.21 acres of new uplands. | BMP Treatment Train | Completed | 2007 | 12 | 10 | $1,626,929.00 |
| 3407 | City of Port St. Lucie | PSL-02 | Wood Stork Trail Design District 6 | 7.74-acre wet detention area and .62-acre stormwater treatment area (STA). | BMP Treatment Train | Completed | 2008 | 4 | 3 | $1,110,000.00 |
| 3406 | City of Port St. Lucie | PSL-03 | Eastern Watershed Improvement Project - Howard Creek, Cane Slough 1, Cane Slough 2 STAs | Construction of weir, 45-acre STA, littoral shelves, and new plantings. | BMP Treatment Train | Completed | 2010 | 1,266 | 439 | $6,889,079.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3405 | City of Port St. Lucie | PSL-04 | Eastern Watershed Improvement Project - Loutus, Patio, Mary, Leithgow and Bur Ponds | Flood control, water quality, environmental restoration project consisting of 27 acres of wet detention ponds, littoral shelves, and created wetlands. | BMP Treatment Train | Completed | 2011 | 1,378 | 795 | $4,977,736.00 |
| 3404 | City of Port St. Lucie | PSL-05 | B-1 and B-2 WCS | WCS B-1 and B-2 protected North Fork of St. Lucie River (NFSLR) from receiving uncontrolled E-8 Canal discharges. System will stage appropriate discharge levels based on volume, retaining maximum flows. | Control Structure | Completed | 2007 | 6,737 | 2,088 | $1,046,045.00 |
| 3403 | City of Port St. Lucie | PSL-06 | B-3 Water Control Structure (WCS) | B-3 protected North Fork St. Lucie River from receiving uncontrolled E-8 Canal discharges. System will stage appropriate discharge levels based on volume, retaining maximum flows. | Control Structure | Completed | 2007 | 7,027 | 2,177 | $257,235.00 |
| 3402 | City of Port St. Lucie | PSL-07 | E-8 Waterway Phase 1 Water Quality Retrofit | Control structure improvements, weirs, sediment removal, and construction of 2 STAs totaling 24.36 acres. Improvements will enhance stormwater drainage and flood protection capacity, improve water quality and restore native vegetation and habitat. | BMP Treatment Train | Completed | 2010 | 1,532 | 1,513 | $1,522,000.00 |
| 3356 | City of Port St. Lucie | PSL-08 | E-17 Canal WCS | New WCS added to retain maximum flows in emergencies only. | Control Structure | Completed | 2008 | NA | NA | $437,000.00 |
| 3357 | City of Port St. Lucie | PSL-09 | Water and Wastewater Expansion | Multiple phase-outs of septic tanks from 2013 to 2019. | OSTDS Phase Out | Underway | 2056 | TBD | NA | $91,075,666.00 |
| 3358 | City of Port St. Lucie | PSL-10 | Street Sweeping | Remove debris from streets with a street sweeper prior to it entering the St Lucie River. | Street Sweeping | Ongoing | NA | 2,358 | 1,283 | NA |
| 3359 | City of Port St. Lucie | PSL-11 | Swale Maintenance | Remove debris from swale liner prior to it entering the St Lucie River. | BMP Cleanout | Ongoing | NA | 8,992 | 2,798 | NA |
| 3360 | City of Port St. Lucie | PSL-12 | Catch Basin Cleaning | Remove debris from catch basins prior to it entering the St Lucie River. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 299 | 144 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3361 | City of Port St. Lucie | PSL-13 | Education Program | Florida Yards and Neighborhoods (FYN) Program; fertilizer, landscape, irrigation, and pet waste ordinances; public service announcements (PSAs); stormwater educational shows; website; outreach programs; Stencil Program; and stormwater pollution hotline. | Education Efforts | Ongoing | NA | 21,978 | 3,722 | NA |
| 3362 | City of Port St. Lucie | PSL-14 | Tiffany Channel | Landscape irrigation is drawn from stormwater in channel/pond/STA. | Stormwater Reuse | Completed | Prior to 2013 | 56 | 10 | NA |
| 3363 | City of Port St. Lucie | PSL-15 | Patio STA | Landscape irrigation is drawn from stormwater in channel/pond/STA. | Stormwater Reuse | Completed | Prior to 2013 | 19 | 3 | NA |
| 3364 | City of Port St. Lucie | PSL-16 | Mary STA | Landscape irrigation is drawn from stormwater in channel/pond/STA. | Stormwater Reuse | Completed | Prior to 2013 | 13 | 2 | NA |
| 3273 | City of Port St. Lucie | PSL-17 | Leithgow STA | Landscape irrigation is drawn from stormwater in channel/pond/STA. | Stormwater Reuse | Completed | Prior to 2013 | 13 | 2 | NA |
| 3274 | City of Port St. Lucie | PSL-18 | Cane Slough 1/ Elks STA | Landscape irrigation is drawn from stormwater in channel/pond/STA. | Stormwater Reuse | Completed | Prior to 2013 | 61 | 10 | NA |
| 3282 | City of Port St. Lucie | PSL-19 | Cane Slough 2/ Azzi STA | Landscape irrigation is drawn from stormwater in channel/pond/STA. | Stormwater Reuse | Completed | Prior to 2013 | 44 | 8 | NA |
| 3256 | City of Port St. Lucie | PSL-20 | Loutus STA | Landscape irrigation is drawn from stormwater in channel/pond/STA. | Stormwater Reuse | Completed | Prior to 2013 | 41 | 7 | NA |
| 3257 | City of Port St. Lucie | PSL-21 | Howard Creek STA | Landscape irrigation is drawn from stormwater in channel/pond/STA. | Stormwater Reuse | Completed | Prior to 2013 | 65 | 11 | NA |
| 3270 | City of Port St. Lucie | PSL-22 | Bur St. STA | Landscape irrigation is drawn from stormwater in channel/pond/STA. | Stormwater Reuse | Completed | Prior to 2013 | NA | NA | NA |
| 3262 | City of Port St. Lucie | PSL-25 | Atlantis Basin (D-13) | Installation of 2nd-generation baffle box. | Baffle Boxes-Second Generation | Completed | 2015 | 259 | 36 | $137,755.00 |
| 3251 | City of Port St. Lucie | PSL-26 | Evergreen Basin (D-11) | Installation of 2nd-generation baffle box. | Baffle Boxes-Second Generation | Completed | 2015 | 539 | 74 | $108,942.00 |
| 3269 | City of Port St. Lucie | PSL-27 | Lansdown Basin (D-14) | Installation of 2nd-generation baffle box. | Baffle Boxes-Second Generation | Completed | 2015 | 254 | 35 | $134,155.00 |
| 3268 | City of Port St. Lucie | PSL-28 | Streamlet/Manth Basin (D-21) | Installation of 2nd-generation baffle box. | Baffle Boxes-Second Generation | Completed | 2015 | 94 | 13 | $108,302.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3267 | City of Port St. Lucie | PSL-29 | Walters Basin (D-12) | Installation of 2nd-generation baffle box. | Baffle Boxes-Second Generation | Completed | 2015 | 404 | 56 | $138,934.00 |
| 3264 | City of Port St. Lucie | PSL-32 | Veterans Memorial Water Quality Retrofit, Project 1 and 2 | Installing control structures, digging ponds, and increasing storage. | BMP Treatment Train | Completed | 2018 | 5,087 | 1,556 | $3,834,193.00 |
| 5693 | City of Port St. Lucie | PSL-34 | Sagamore STAs East and West | Construction of two STAs (3.82 and 4.76 acres) in a treatment train. Including control structures and a diversion sheet piled weir with concrete cap and associated piping, landscaping and aquatic planting. | STAs | Completed | 2022 | 1,108 | 353 | $2,149,088.00 |
| 5694 | City of Port St. Lucie | PSL-35 | Kingsway Waterway 2nd Generation Baffle Box | Installation of 2nd-generation baffle box. | Baffle Boxes-Second Generation | Completed | 2022 | 1,696 | 232 | $672,472.00 |
| 6702 | City of Port St. Lucie | PSL-36 | Floresta Ph III Baffle Boxes | Port St. Lucie will install nutrient-separating baffle boxes in two locations along SE Floresta Drive within the D-8 Canal and the D-10 Canal. | Baffle Boxes-Second Generation | Underway | 2024 | 956 | 133 | $1,680,000.00 |
| 6700 | City of Port St. Lucie | PSL-37 | SWW-1 Rehabilitation | Port St. Lucie will rehabilitate the existing manually-operated SWW-1 structure and update its operation to include remote telemetry controls, to allow the transfer of stormwater between two basins which are currently served by separate pump stations. | Control Structure | Underway | 2024 | 18 | 4 | $750,000.00 |
| 7227 | City of Port St. Lucie | PSL-39 | SE Whitemore Drive Baffle Box | The City will install a nutrient separating baffle box at the D-19 canal crossing with SE Whitemore Drive. | Baffle Boxes-Second Generation | Underway | 2025 | 307 | 41 | $315,453.00 |
| 7386 | City of Port St. Lucie | PSL-40 | A-14 Drainage Control Structure Replacement | Replacement of the A-14 Drainage Control Structure with modifications to provide the ability to store additional runoff. | Control Structure | Underway | 2025 | 7,033 | 3,408 | $795,000.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 7492 | City of Port St. Lucie | PSL-42 | Septic To Sewer Conversion | The project provides incentive to residents to convert from septic to sewer in order to provide reduction of pollutants being released into the ground water and surface water. The reported number of OSTDS phased out is from beginning of BMAP 2013. | OSTDS Phase Out | Underway | 2050 | 47,402 | NA | NA |
| 3258 | City of Stuart | S-05 | Street Sweeping | Pavement cleaning by sweeping, vacuum, or washing. | Street Sweeping | Ongoing | NA | 275 | 176 | $33,000.00 |
| 3221 | City of Stuart | S-06 | Sediment Removal from Storm Systems | Removal and proper disposal of sediment captured by catch basin inserts. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 54 | 33 | NA |
| 3228 | City of Stuart | S-07 | Education Program | FYN Program. City ordinances for landscaping, irrigation, fertilizer, and pet waste management. City stormwater website. Stormwater calendars. Pollution prevention information posted on electronic billboards 365 days/year from 12 PM to 1 PM. | Education Efforts | Ongoing | NA | 2,202 | 370 | $30,150.00 |
| 3231 | City of Stuart | S-08 | North Point CRA Drainage Basin | There is 1 existing 1st-generation baffle box and street sweeping in basin, existing FDOT swale along basin's east boundary, and 2 FDOT retention/detention ponds near the Roosevelt Bridge. | Baffle Boxes- First Generation | Completed | 2002 | 4 | 3 | $1,339,000.00 |
| 3220 | City of Stuart | S-19 | Baffle Boxes (22) Throughout City | Concrete structures containing a series of sediment settling chambers separated by baffles. Boxes are vacuum cleaned base on sediment depth inspection by city stormwater staff. | Baffle Boxes- First Generation | Completed | 2014 | 27 | 21 | NA |
| 7530 | City of Stuart | S-26 | NW North River Drive Drainage Improvements | Drainage improvements NW North River Drive and NW Stuart Avenue. Existing 1st Generation Baffle Box at discharge on NW Fern Street to be replaced with 2nd Generation Baffle Box. Exfiltration added for water quality. | Baffle Boxes- Second Generation | Planned | 2029 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 7535 | City of Stuart | S-27 | NW Wright Boulevard Drainage and Water Quality Improvements | Drainage improvements to alleviate flooding on NW Wright Boulevard. Extension of NW Dixie Highway drainage system to route drainage to Haney Creek. Construct new STA / berm on north side of NW Wright Avenue in the Haney Creek Watershed Preservation Area. | STAs | Planned | 2029 | TBD | TBD | TBD |
| 7540 | City of Stuart | S-28 | NW Dixie Highway Ditch Restoration | Drainage improvements to restore ditch flow line to outfall, to alleviate upstream flooding. | Control Structure | Completed | 2024 | NA | NA | NA |
| 7542 | City of Stuart | S-30 | NW Fork Road Drainage Improvements | Drainage improvements on NW Fork Road. Route to Harbor Chase / FDOT Pond. | Exfiltration Trench | Planned | 2029 | NA | NA | NA |
| 6145 | FDACS | FDACS-09 | Cost-Share BMP Projects | TBD. | Agricultural BMPs | Completed | 2020 | 0 | 0 | NA |
| 6151 | FDACS | FDACS-15 | Credit for Changes in Land Use | TBD. | Land Use Change | Completed | 2020 | 5,383 | 2,162 | NA |
| 6891 | FDACS | FDACS-21 | BMP Implementation and Verification | Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WaSh model. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X. | Agricultural BMPs | Ongoing | NA | 1,474 | 229 | NA |
| TBD | FDACS | FDACS-22 | Cost-Share BMP Projects | Cost-share projects paid for by FDACS. Project treatment areas and reductions based on FDACS April 2024 Enrollment and WaSh model. | Agricultural BMPs | Completed | 2020 | 169 | 167 | TBD |
| 3410 | FDOT District 4 | FDOT-01 | FM# 230108-1 (Pond 3) | Widening and new late construction on State Road (SR) 68 from SR 9 to east of County Road (CR)-607A (40% credit, remaining 60% to Central Indian River Lagoon. | Wet Detention Pond | Completed | 2013 | 0 | 0 | TBD |
| 3414 | FDOT District 4 | FDOT-02 | FM# 230108-1 (Pond 4) | Combined with FDOT-01. | Wet Detention Pond | Completed | 2013 | 1 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3352 | FDOT District 4 | FDOT-07 | FM# 230295-1 | Road widening of SR 716 from Westmore-land Bridge to SR 5. | Dry Detention Pond | Completed | 2003 | 17 | 3 | TBD |
| 3365 | FDOT District 4 | FDOT-08 | SPN 99004-1585 | Road widening of SR 5 from Jensen Beach Blvd to Port St. Lucie Blvd. | Dry Detention Pond | Completed | 2003 | 30 | 5 | TBD |
| 3350 | FDOT District 4 | FDOT-09 | SPN 99004-1585 (Lake 3) | Road widening of SR A1A from Sewalls Point Rd. to west of MacArthur Blvd. | Wet Detention Pond | Completed | 2003 | 34 | 10 | TBD |
| 3343 | FDOT District 4 | FDOT-16 | FM# 230288-2 | Road widening of SR 5 from Rio Mar Dr. to Midway Rd. | Wet Detention Pond | Completed | 2009 | 123 | 38 | TBD |
| 3342 | FDOT District 4 | FDOT-17 | FM# 419890-1 | Construction of interchange at SR 9 and Becker Rd. | BMP Treatment Train | Completed | 2010 | 3 | 2 | TBD |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | TBD |
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | TBD |
| 3389 | FDOT District 4 | FDOT-22 | State Road 615 Midway Rd. to Edwards Rd. (Basin B-1) | Not provided. | Wet Detention Pond | Completed | 2009 | 15 | 4 | TBD |
| 3388 | FDOT District 4 | FDOT-23 | State Road 615 Midway Rd. to Edwards Rd. (Basin E) | Not provided. | Wet Detention Pond | Completed | 2009 | 20 | 6 | TBD |
| 3387 | FDOT District 4 | FDOT-24 | FM# 410717-1 SR 70 Widening Kings Highway (Hwy.) to Jenkins Rd. (West Basin) | Road widening on SR 70 from Kings Hwy. to Jenkins Rd. | Dry Detention Pond | Completed | 2012 | 6 | 1 | TBD |
| 3386 | FDOT District 4 | FDOT-25 | SR 713 (King's Hwy.) Turn Lanes | Not provided. | Grass swales without swale blocks or raised culverts | Completed | 2013 | 0 | 0 | TBD |
| 3368 | FDOT District 4 | FDOT-43 | FM# 413046-1 SR 9 Widening | Road widening on SR 9 from Okeechobee Rd. to south of Indrio Rd. | On-line Retention BMPs | Completed | 2015 | 145 | 24 | TBD |
| 3338 | FDOT District 4 | FDOT-44 | FM# 423022-1 CR 68 Orange Ave. | County to provide geographic information system (GIS) data for county road; proposed split of 25% to FDOT and 75% to St. Lucie County. | Dry Detention Pond | Completed | 2015 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3379 | FDOT District 4 | FDOT-45 | FM# 230108-1 SR 68 Orange Ave. (40% credit) | Combined with FDOT-1. | Wet Detention Pond | Completed | 2005 | NA | NA | TBD |
| 3341 | FDOT District 4 | FDOT-46 | 231440-2 Midway Rd. Widening, 25th St. to US 1 (Pond 1 and 2) | Road widening on Midway Rd. from SR 68 to SR 5. | Wet Detention Pond | Completed | 2021 | 1 | 1 | NA |
| 3312 | FDOT District 4 | FDOT-47 | 231440-2 Midway Rd. Widening, 25th St. to US 1 (Pond 3 and 4) | Road widening on Midway Rd. from SR 68 to SR 5. | Wet Detention Pond | Completed | 2021 | 1 | 5 | NA |
| 3311 | FDOT District 4 | FDOT-48 | 231440-2 Midway Rd. Widening, 25th St. to US 1 (Pond 5) | Road widening on Midway Rd. from SR 68 to SR 5. | Wet Detention Pond | Completed | 2021 | 1 | 2 | NA |
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | TBD |
| 4859 | FDOT District 4 | FDOT-61 | FM# 230256-6 | SR 713/Kings Highway roadway widening for a project known as Kings Highway Widening Phase I South. | Wet Detention Pond | Completed | 2023 | 0 | 0 | NA |
| 4860 | FDOT District 4 | FDOT-62 | FM# 230256-7 | SR 713/Kings Highway roadway widening for a project known as Kings Highway Widening Phase 2. | Wet Detention Pond | Completed | 2023 | 0 | 0 | NA |
| 5687 | Fort Pierce Utilities Authority | FPUA-01 | Fleetwood Acres Low Income Sewer Conversion | Sewer conversion for 50 low-income single-family units in low-lying neighborhood. | OSTDS Phase Out | Underway | 2024 | 1,217 | NA | $1,010,000.00 |
| 5688 | Fort Pierce Utilities Authority | FPUA-02 | LMI Sewer Infrastructure Reconstruction Downtown Ft Pierce | Line 22 miles of cracked sewer pipes in Service Area 1 serving 8,500 residents. | Sanitary Sewer and WWTF Maintenance | Underway | 2024 | NA | NA | $4,000,000.00 |
| 6462 | Fort Pierce Utilities Authority | FPUA-04 | Sewer Pipe Reconstruction Number Streets Downtown | Line 20 miles of cracked sewer pipes in Service Area 3 serving 3,500 residents. | Sanitary Sewer and WWTF Maintenance | Underway | 2024 | NA | NA | $3,500,000.00 |
| 6463 | Fort Pierce Utilities Authority | FPUA-05 | Expansion of Sewer Pipe Lining to Eliminate Sewage Leakage to Groundwater in Service Area Gaps | Complete outstanding lining for the 220 miles of cracked sewer pipes in Areas 1, 2, and 3 for 600 residents. | Sanitary Sewer and WWTF Maintenance | Planned | 2025 | NA | NA | $3,000,000.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 6464 | Fort Pierce Utilities Authority | FPUA-06 | Phases 1-3 WWTF Design, Sewer Infrastructure, and Construction | Purchase property, construct deep injection wells, complete design, WWTF and sewer infrastructure construction, and remove existing WWTF. Project will allow remaining properties in county and Fort Pierce to convert from septic to sewer. | WWTF Nutrient Reduction | Underway | 2025 | TBD | TBD | $32,900,000.00 |
| 3322 | Martin County | MC-13 | North River Shores Baffle Boxes | Installation of +20 Baffle Boxes. | Baffle Boxes- First Generation | Completed | 2002 | 11 | 9 | $1,310,000.00 |
| 3321 | Martin County | MC-14 | Palm Lake Park Water Quality Retrofit | 7.7 acre-ft of water quality treatment (1.16 inches). | BMP Treatment Train | Completed | 2003 | 387 | 117 | $1,741,098.00 |
| 3319 | Martin County | MC-16 | Septic to Central Sewer Conversions | 872 single-family and multifamily residential and commercial units in five neighborhoods. | OSTDS Phase Out | Completed | 2008 | 11,650 | 427 | $9,500,000.00 |
| 3317 | Martin County | MC-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 108 | 69 | TBD |
| 3400 | Martin County | MC-20 | Education Program | FYN; landscaping, irrigation, fertilizer, and pet waste ordinances; PSAs, pamphlets, website, illicit discharge program. | Education Efforts | Ongoing | NA | 16,644 | 2,831 | TBD |
| 3436 | Martin County | MC-33 | Hoke Library Rain Garden | Not provided. | Low Impact Development - Rain Gardens | Completed | 2015 | TBD | TBD | $4,372.00 |
| 3427 | Martin County | MC-42 | South Savannas Weir | Water control weir structure at Jensen Beach Blvd and Warner Creek to provide habitat restoration within Savannas Preserve State Park to reduce flooding downstream. This project impacts water quality through reduction of water flow. | Control Structure | Completed | 2022 | 376 | 37 | $623,717.00 |
| 5690 | Martin County | MC-46 | Septic to Central Sewer Conversions | 1,819 single-family, multi-family residential, and commercial units. | OSTDS Phase Out | Completed | 2018 | 24,302 | NA | $24,556,500.00 |
| 6466 | Martin County | MC-47 | Septic to Central Sewer Conversions | 1,630 septic conversions in multiple areas as described in the OSTD plan converted between 2019-2024 | OSTDS Phase Out | Completed | 2024 | 21,777 | 799 | $55,981,565.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 7420 | Martin County | MC-48 | Septic to Sewer Conversions | Approximately 2044 to be converted per OSTDS plan. Estimating 272 per year for next 8 years. This project will be updated next year for the actual conversions and a new underway project will have the remaining until complete. | OSTDS Phase Out | Underway | 2032 | TBD | NA | NA |
| 7421 | Martin County | MC-49 | Septic to Sewer Conversion | 4436 Septic Conversions planned per OSTDS plan (Port Salerno Peninsula, Beau Rivage, Port Salerno/New Monrovia, Coral Gardens, Old Palm City, Rocky Point, Windstone/Evergreen, Strafford Downs, Woodside). | OSTDS Enhancement | Planned | 2048 | TBD | TBD | $76,630,800.00 |
| 3435 | North St. Lucie River WCD | NSLRWCD-01 | SLRIT Grant 2000-2001: Vegetation Control & Bank Restoration | Installation of C-25 diversion structure which regulates flow from the North St. Lucie River Water Control District (NSLRWCD) C-44/ North Emergency Relief Canal to SFWMD C-25. In addition, installation of 3 risers with adjustable gates. | Control Structure | Completed | 2003 | 1,548 | 0 | $929,000.00 |
| 3449 | NSLRWCD | NSLRWCD-03 | Canals 23 and 28 Retrofit for Stormwater Treatment and Attenuation | Construction of ponds and installation of WCS for area retrofit. Inclusion of WMD canals into pond footprints. | Control Structure | Completed | 2009 | 22 | 0 | TBD |
| 5504 | SFWMD - Coordinating Agency | CA-01 | Ten Mile Creek Water Preserve Area | Control the quantity and timing of water delivery to the North Fork of the St. Lucie River by capturing and storing stormwater flows that originated in the Ten Mile Creek Basin. | Hydrologic Restoration | Completed | 2009 | TBD | 8,789 | $33,206,138.00 |
| 3214 | St. Lucie County | SLC-001a | Platt's Creek Stormwater Treatment Facility | Wet detention with alum injection. | Wet Detention Pond | Completed | 2008 | 1,655 | 537 | $3,539,475.00 |
| 3418 | St. Lucie County | SLC-001b | Platt's Creek Stormwater Treatment Facility | Wet detention with alum injection. | Wet Detention Pond | Completed | 2016 | 2,808 | 875 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3392 | St. Lucie County | SLC-002 | Indian River Estates Stormwater Improvements (Phases I and II) | Wet detention with alum injection. | Wet Detention Pond | Completed | 2009 | 100 | 14 | $4,471,114.00 |
| 3439 | St. Lucie County | SLC-003 | Prima Vista | Installation of baffle boxes for sediment and debris removal. | Baffle Boxes-Second Generation | Completed | 2006 | 218 | 30 | $323,483.00 |
| 3408 | St. Lucie County | SLC-004 | Bay Street | Installation of baffle boxes for sediment and debris removal. | Baffle Boxes-Second Generation | Completed | 2006 | 100 | 14 | NA |
| 3398 | St. Lucie County | SLC-005 | Education Program | FYN; pet waste, landscape, irrigation, and fertilizer ordinances; PSAs; website; Illicit Discharge Program, Eco-Center, Clean Stormwater-Clean River Program. St. Lucie Water Champions. | Education Efforts | Ongoing | NA | 2,597 | 454 | TBD |
| 3397 | St. Lucie County | SLC-006 | Street Sweeping | Materials are collected from road ways and the gutters using a street sweeper truck. | Street Sweeping | Ongoing | NA | 211 | 135 | $280,000.00 |
| 3396 | St. Lucie County | SLC-007 | Catch Basin Cleanout | Catch basins are cleaned out on a rotational basis using a vactruck. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 170 | 105 | TBD |
| 3395 | St. Lucie County | SLC-008 | Platt's Creek Sump Cleanout | Annually drain the Platt's Pump station sump and vac out excess sediments. | BMP Cleanout | Ongoing | NA | 1182 | 512 | TBD |
| 3394 | St. Lucie County | SLC-009 | White City - Citrus/Seager Stormwater Improvement | Wet detention with polyacrylamide logs. | Wet Detention Pond | Completed | 2016 | 180 | 56 | $1,862,859.00 |
| 3416 | St. Lucie County | SLC-010 | Education Program | FYN; pet waste, landscape, irrigation, and fertilizer ordinances; PSAs; website; Illicit Discharge Program, Eco-Center, Clean Stormwater-Clean River Program, St. Lucie Water Champions. | Education Efforts | Ongoing | NA | 8,821 | 1,594 | TBD |
| 3399 | St. Lucie County | SLC-011 | Street Sweeping | Materials are collected from road ways and the gutters using a street sweeper truck. | Street Sweeping | Ongoing | NA | 113 | 73 | TBD |
| 3401 | St. Lucie County | SLC-012 | Catch Basin Cleanout | Catch basins are cleaned out on a rotational basis using a vactruck. | BMP Cleanout | Ongoing | NA | 92 | 56 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3424 | St. Lucie County | SLC-013 | Platt's Creek Sump Cleanout | Annually drain the Platt's Pump station sump and vac out excess sediments. | BMP Cleanout | Ongoing | NA | 1,566 | 600 | TBD |
| 3423 | St. Lucie County | SLC-014 | Platt's Creek Compensatory Mitigation Project | Conversion of citrus to hydric hammock. | Hydrologic Restoration | Completed | 2015 | TBD | TBD | $2,600,000.00 |
| 3422 | St. Lucie County | SLC-015 | Indian River Lagoon IRL South (IRL-S) C23/C24 Comprehensive Everglades Restoration Plan (CERP) Buffer - Teague Preserve Re-watering Project | A 300-acre natural storage/ freshwater marsh restoration project. Project is adjacent to the future CERP C-23/C-24 IRL-S Southern Reservoir. | Hydrologic Restoration | Completed | 2022 | TBD | TBD | $400,000.00 |
| 3421 | St. Lucie County | SLC-016 | Melville Rd. Master Drainage Plan | Treatment train with wet and dry detention components. | BMP Treatment Train | Underway | 2024 | 787 | 145 | $5,000,000.00 |
| 4594 | St. Lucie County | SLC-017 | Swales Material Collection | Road side swale cleanout and retrofitting in MS4 area and non-MS4 area. | BMP Cleanout | Ongoing | NA | TBD | TBD | TBD |
| 4863 | St. Lucie County | SLC-019 | Becker Preserve Ten-Mile Creek Oxbow Reconnection | Oxbow reconnection with muck dredging. | Hydrologic Restoration | Completed | 2020 | TBD | TBD | $700,000.00 |
| 5516 | St. Lucie County | SLC-020 | St. Lucie County Stormwater Needs Assessment Study | Report that will provide information on identified project opportunities to reduce nutrients, estimated benefits, and costs. | Study | Underway | TBD | NA | NA | $142,380.00 |
| 6227 | St. Lucie County | SLC-021 | Melville Phase II | This is for stormwater management facility site to provide water treatment and abatement for approximately 133 acres of residential/residential-agriculture community. | Wet Detention Pond | Planned | 2025 | 565 | 174 | $1,500,000.00 |
| 6230 | St. Lucie County | SLC-022 | River Park West Baffle Boxes | River Park is an existing subdivision on aging septic systems. Installation of baffle boxes with nutrient removal Bold & Gold filtration media. With media this project has some TN and TP nutrient removal. | Baffle Boxes-Second Generation with Media | Planned | 2025 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 6975 | St. Lucie County | SLC-023 | Water Quality Improvement Project in the Petravice Preserve and White City Neighborhood | Design of a pond in the Petravice Preserve. Evaluate, and utilize two county owned parcels for bioswales and drainage improvements within the Palmetto Avenue right of way. | Hydrologic Restoration | Underway | 2025 | TBD | TBD | $199,935.00 |
| 6970 | St. Lucie County | SLC-024 | Walton Road Culvert Linings | Line the two sets of culverts with 48" reinforced concrete pipe and 72" reinforced concrete pipe. Located on Walton Road between SE Green River Parkway and S Indian River Drive. | Hydrologic Restoration | Underway | 2024 | NA | TBD | $542,028.00 |
| 6232 | St. Lucie County | SLC-025 | 10 Mile Creek Cleanout/Oxbow Restoration | Ten Mile Creek needs maintenance to allow for conveyance. Project includes dredge and removal of muck, spoil, and vegetation, restoring 2,000 linear feet. An historic oxbow will be restored, allowing for greater conveyance and water quality improvements. | Muck Removal/Restoration Dredging | Planned | 2026 | TBD | TBD | $1,400,000.00 |
| 6233 | St. Lucie County | SLC-026 | Ancient Oaks Preserve | The County owns a parcel on Oleander Avenue in Ancient Oak Preserve/Weldon B. Lewis Park. The southwest corner is reserved for stormwater treatment for the ditches prior to entering the North Fork. A retention pond has been identified for treatment. | Retention/Detention BMP with Nutrient Reducing Media | Planned | 2024 | TBD | TBD | $870,000.00 |
| 4864 | St. Lucie West Services District | SLWSD-01 | St. Lucie West Services District (SLWSD) Aquatic Harvesting | Mechanical removal of aquatic vegetation without the use of a herbicide. Removal of algae and invasive aquatic vegetation that may be oxygen depleting if treated chemically through the decomposition process. To date: 14,957 cubic yards removed. | Aquatic Vegetation Harvesting | Ongoing | NA | TBD | TBD | NA |
| 4865 | St. Lucie West Services District | SLWSD-02 | SLWSD Catch Basin Cleaning | Removal of pollutants/debris from catch basins prior to reaching waterways. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 3 | 2 | $185,600.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 4866 | St. Lucie West Services District | SLWSD-03 | SLWSD Water Management Improvement Project | Increase storage of existing wetland. | Wet Detention Pond | Completed | 2016 | 1,196 | 695 | $360,704.00 |
| 4867 | St. Lucie West Services District | SLWSD-04 | Lake Harvey | Construction of 4.41-acre wetland area and 2.25-acre flow-way to enhance water quality, storage, and hydraulic connectivity in SLWSD Basin 4E. | Hydrologic Restoration | Completed | 2017 | 726 | 269 | $534,000.00 |
| 6467 | St. Lucie West Services District | SLWSD-05 | Street Sweeping | SLWSD contracts street sweeping personnel. Consists of sweeping 7 square miles quarterly to remove pollutants/sediments from street prior to reaching waterways. | Street Sweeping | Ongoing | NA | 0 | 0 | $9,433.00 |
| 3278 | Turnpike Enterprise | T-01 | Project 420735-1 Port St. Lucie Interchange Pond A | Port St. Lucie Interchange ramp improvements, dry detention pond. | Dry Detention Pond | Completed | 2013 | 4 | 1 | $1,534,048.00 |
| 3279 | Turnpike Enterprise | T-02 | Project 420735-1 Port St. Lucie Interchange Pond B | Port St. Lucie Interchange ramp improvements , wet detention pond. | Wet Detention Pond | Completed | 2013 | 33 | 4 | $1,534,048.00 |
| 3281 | Turnpike Enterprise | T-04 | Education Program | No fertilizer on rights-of-way, educational signage, illicit discharge training. | Education Efforts | Ongoing | NA | 277 | 46 | NA |
| 3283 | Turnpike Enterprise | T-05 | Street Sweeping | Street Sweeping and Litter Control along SR 91 between MP 125.5 and 158 both NB/SB including ramps. | Street Sweeping | Ongoing | NA | 144 | 10 | NA |

## 3.2. Ten Mile Creek Basin

The Ten Mile Creek Basin covers 41,736 acres of the St. Lucie River and Estuary Watershed. As shown in **Table 20**, the predominant land use in this basin is agriculture, which accounts for 79% of land use. Stakeholders in the basin include FDOT, NSLRWCD, and St. Lucie County.

**Table 20. Summary of land uses in the Ten Mile Creek Basin**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 4,736 | 11.3 |
| **2000** | Agriculture | 32,966 | 79.0 |
| **3000** | Upland Nonforested | 1,533 | 3.7 |
| **4000** | Upland Forests | 528 | 1.3 |
| **5000** | Water | 525 | 1.3 |
| **6000** | Wetlands | 710 | 1.7 |
| **7000** | Barren Land | 210 | 0.5 |
| **8000** | Transportation, Communication, and Utilities | 528 | 1.3 |
| | **Total** | **41,736** | **100** |

### 3.2.1 Water Quality Monitoring

**Table 21** summarizes the water quality monitoring stations in the Ten Mile Creek Basin, and **Figure 13** shows the station locations.

**Table 21. Water quality monitoring stations in the Ten Mile Creek Basin**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **Ten Mile Creek** | Yes | SFWMD | Gordy | 1 |
| **Ten Mile Creek** | NA | SFWMD | TMCSR70 | 2 |
| **Ten Mile Creek** | NA | SFWMD | TMCMID | 2 |

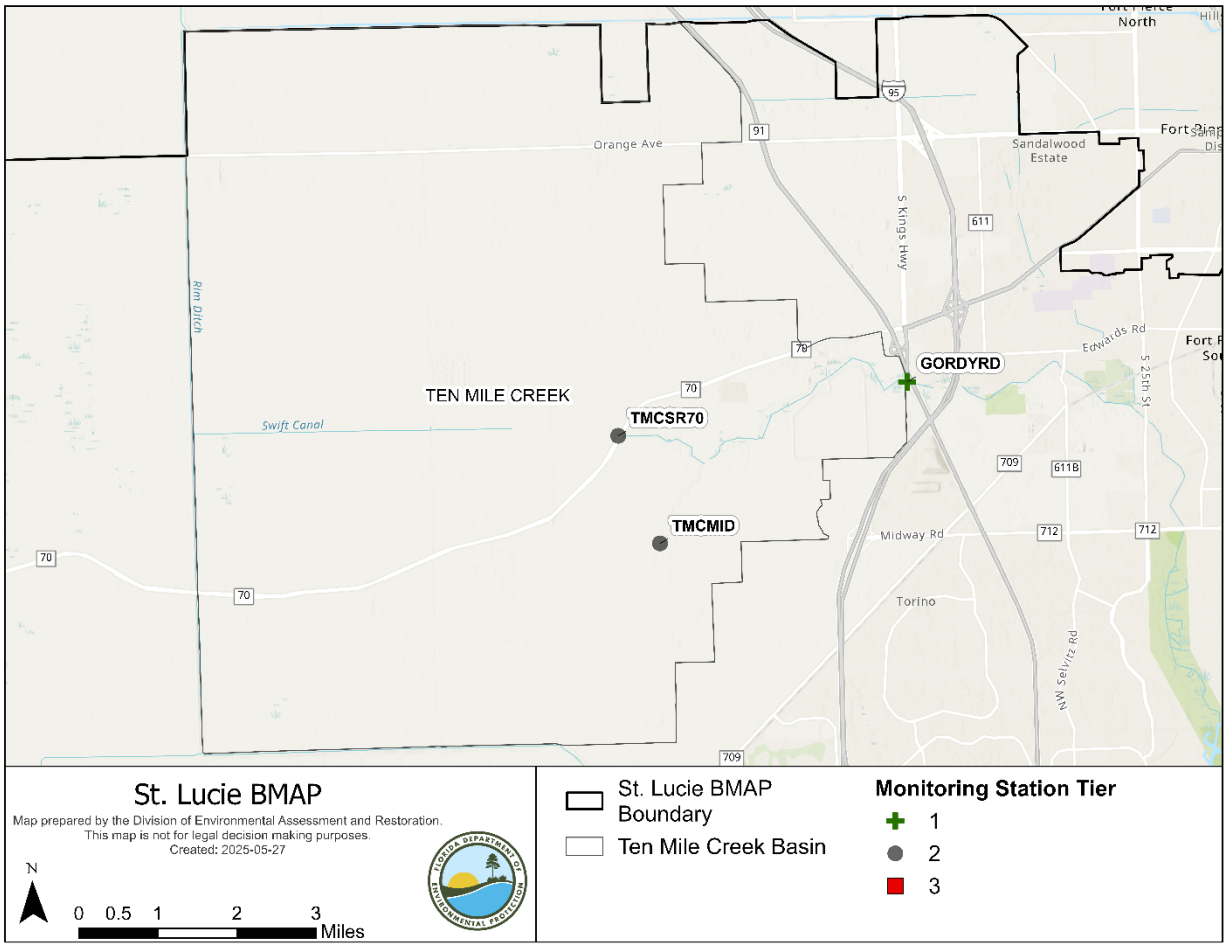


**Figure 13. Ten Mile Creek Basin monitoring stations**

### 3.2.2 Basin Evaluation Results

#### 3.2.2.1 Targeted Restoration Area

**Table 22** summarizes the basin evaluation results based on data from WY2020–WY2024 for the Ten Mile Creek Basin. The current TN concentration is 0.99 mg/L, which is above the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.251 mg/L, which is above the benchmark of 0.081 mg/L required to meet the TMDL.

For these assessments, FWM concentrations were used because flow data were available at the Gordy structure. The FWM concentrations are 0.99 mg/L and 0.25 mg/L for TN and TP, respectively. The TN UAL is 5.12 lbs/ac, which is 3% below the target UAL of 5.28 lbs/ac, and the TP UAL is 1.29 lbs/ac, which is 89% above the target UAL of 0.68 lbs/ac. Significant decreasing trends were observed for TN and TP.

The TRA prioritization results for the Ten Mile Creek Basin are shown in **Table 23**, 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 24** 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 22. Basin evaluation results for the Ten Mile Creek Basin**

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL (lbs/ac) | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | TP Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **2** | Ten Mile Creek | 0.99 | 0.99 | 5.12 | Significant decreasing trend | 0.251 | 0.25 | 1.29 | Significant decreasing trend |

**Table 23. TRA evaluation results for the Ten Mile Creek Basin**

| Basin | Station | TN Priority | TP Priority |
|---|---|---|---|
| **Ten Mile Creek** | Gordy | 3 | 2 |

**Table 24. Hot spot analysis results for the Ten Mile Creek Basin**

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| Ten Mile Creek | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |

### 3.2.3 Projects

**Table 25** summarizes the existing and planned for the Ten Mile Creek Basin that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 25. Existing and planned projects in the Ten Mile Creek Basin**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3411 | FDACS | FDACS-02 | BMP Implementation and Verification | Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WaSh model. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X. | Agricultural BMPs | Ongoing | NA | 14,180 | 2,610 | NA |
| 6146 | FDACS | FDACS-10 | Cost-Share BMP Projects | TBD. | Agricultural BMPs | Completed | 2020 | 3,415 | 717 | NA |
| 6152 | FDACS | FDACS-16 | Credit for Changes in Land Use | TBD. | Land Use Change | Completed | 2020 | TBD | TBD | NA |
| 3355 | FDOT District 4 | FDOT-03 | FM# 230262-4 | Road widening of SR 70 from west of Rim Ditch Canal to west of Header Canal. | Dry Detention Pond | Completed | 2008 | 77 | 15 | TBD |
| 3212 | FDOT District 4 | FDOT-04 | FM# 230262-5 | Road widening of SR 70 from Turnpike to Berman Rd. | Dry Detention Pond | Completed | 2010 | 92 | 18 | TBD |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | TBD |
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | TBD |
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3435 | North St. Lucie River WCD | NSLRWCD-01 | SLRIT Grant 2000-2001: Vegetation Control & Bank Restoration | Installation of C-25 diversion structure which regulates flow from the North St. Lucie River Water Control District (NSLRWCD) C-44/ North Emergency Relief Canal to SFWMD C-25. In addition, installation of 3 risers with adjustable gates. | Control Structure | Completed | 2003 | 1,548 | 0 | $929,000.00 |
| 3458 | North St. Lucie River WCD | NSLRWCD-02 | SLRIT Grant 2007-2008: WCS Retrofits | Installation of adjustable gates on WCS to improve efficiency of water levels and better manage sediment transport downstream. | Control Structure | Completed | 2010 | 1,558 | 0 | $77,000.00 |
| 3453 | North St. Lucie River WCD | NSLRWCD-08 | Ideal Grove Hybrid Wetland Treatment Technology (HWTT) | Not provided. | HWTT | Completed | 2013 | 433 | 132 | $217,929.00 |
| 3454 | NSLRWCD | NSLRWCD-09 | Structure 81-1-2 | Installation of new control structure as part of Okeechobee Rd. improvements project. | Control Structure | Completed | 2010 | 124 | 124 | TBD |
| 3455 | NSLRWCD | NSLRWCD-10 | Structure 82-2-2 | Installation of new control structure as part of Okeechobee Rd. improvements project. | Control Structure | Completed | 2010 | 23 | 23 | TBD |
| 3456 | NSLRWCD | NSLRWCD-11 | Structure 83-2-2 | Installation of new control structure as part of Okeechobee Rd. improvements project. | Control Structure | Completed | 2010 | 27 | 27 | TBD |
| 3459 | NSLRWCD | NSLRWCD-12 | Structure 85-1-2 | Installation of new control structure as part of Okeechobee Rd. improvements project. | Control Structure | Completed | 2010 | 64 | 64 | TBD |
| 5515 | NSLRWCD | NSLRWCD-13 | Structure 29-2 | Replacement of control structure in Canal 29 damaged in 2017. | Control Structure | Completed | 2019 | NA | NA | $359,680.20 |
| 5691 | North St. Lucie River WCD | NSLRWCD-14 | Ten Mile Creek Restoration | Removal of 1,400 cubic yards of spoil material downstream of Gordy Structure. | Muck Removal/Restoration Dredging | Completed | 2022 | TBD | TBD | $278,400.00 |
| 5692 | NSLRWCD | NSLRWCD-15 | Gordy Structure Retrofit project. | Split Gates 2 & 3 into clamshell gates to reduce sediment releases. | Control Structure | Completed | 2023 | NA | NA | $580,000.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 5504 | SFWMD - Coordinating Agency | CA-01 | Ten Mile Creek Water Preserve Area | Control the quantity and timing of water delivery to the North Fork of the St. Lucie River by capturing and storing stormwater flows that originated in the Ten Mile Creek Basin. | Hydrologic Restoration | Completed | 2009 | TBD | 8,789 | $33,206,138.00 |
| 5505 | SFWMD - Coordinating Agency | CA-02 | Indian River Lagoon-South - Phase 1 & 2 | Phase 1- C-44 Reservoir and STA, C-23 Estuary Discharge Diversion, C-23/24 N. and S. Reservoirs and STA, C-25 Reservoir and STA; Phase 2- 3 Natural Storage and Water Treatment Areas, North Fork Floodplain Restoration, Muck Remediation/Artificial Habitat. | Regional Stormwater Treatment | Underway | 2030 | 187,393 | 74,957 | $3,032,889,000.00 |
| 3397 | St. Lucie County | SLC-006 | Street Sweeping | Materials are collected from road ways and the gutters using a street sweeper truck. | Street Sweeping | Ongoing | NA | 211 | 135 | $280,000.00 |
| 3396 | St. Lucie County | SLC-007 | Catch Basin Cleanout | Catch basins are cleaned out on a rotational basis using a vactruck. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 170 | 105 | TBD |
| 3416 | St. Lucie County | SLC-010 | Education Program | FYN; pet waste, landscape, irrigation, and fertilizer ordinances; PSAs; website; Illicit Discharge Program, Eco-Center, Clean Stormwater-Clean River Program, St. Lucie Water Champions. | Education Efforts | Ongoing | NA | 8,821 | 1,594 | TBD |
| 3399 | St. Lucie County | SLC-011 | Street Sweeping | Materials are collected from road ways and the gutters using a street sweeper truck. | Street Sweeping | Ongoing | NA | 113 | 73 | TBD |
| 3401 | St. Lucie County | SLC-012 | Catch Basin Cleanout | Catch basins are cleaned out on a rotational basis using a vactruck. | BMP Cleanout | Ongoing | NA | 92 | 56 | TBD |
| 4594 | St. Lucie County | SLC-017 | Swales Material Collection | Road side swale cleanout and retrofitting in MS4 area and non-MS4 area. | BMP Cleanout | Ongoing | NA | TBD | TBD | TBD |

## 3.3. C-24 Basin

The C-24 Basin covers 83,300 acres of the St. Lucie River and Estuary Watershed. As shown in **Table 26**, agriculture is the primary land use, comprising 73.6% of the basin. Stakeholders in the basin include FDOT, NSLRWCD, Port St. Lucie, and St. Lucie County.

**Table 26. Summary of land uses in the C-24 Basin**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 6,253 | 7.5 |
| **2000** | Agriculture and 3300 (Rangeland) | 61,352 | 73.6 |
| **3000** | Upland Nonforested | 1,252 | 1.5 |
| **4000** | Upland Forests | 936 | 1.1 |
| **5000** | Water | 1,339 | 1.6 |
| **6000** | Wetlands | 11,062 | 13.3 |
| **7000** | Barren Land | 363 | 0.4 |
| **8000** | Transportation, Communication, and Utilities | 821 | 1.0 |
| | **Total** | **83,378** | **100** |

### 3.3.1 Water Quality Monitoring

**Table 27** summarizes the water quality monitoring stations in the C-24 Basin, and **Figure 14** shows the station locations.

**Table 27. Water quality monitoring stations in the C-24 Basin**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **C-24** | Yes | SFWMD | S-49 | 1 |
| **C-24** | NA | SFWMD | C24SR70 | 2 |
| **C-24** | NA | SFWMD | G79 | 2 |
| **C-24** | NA | SFWMD | PC38C24 | 2 |
| **C-24** | NA | SFWMD | PC39C24 | 2 |
| **C-24** | NA | SFWMD | PC54C23 | 2 |

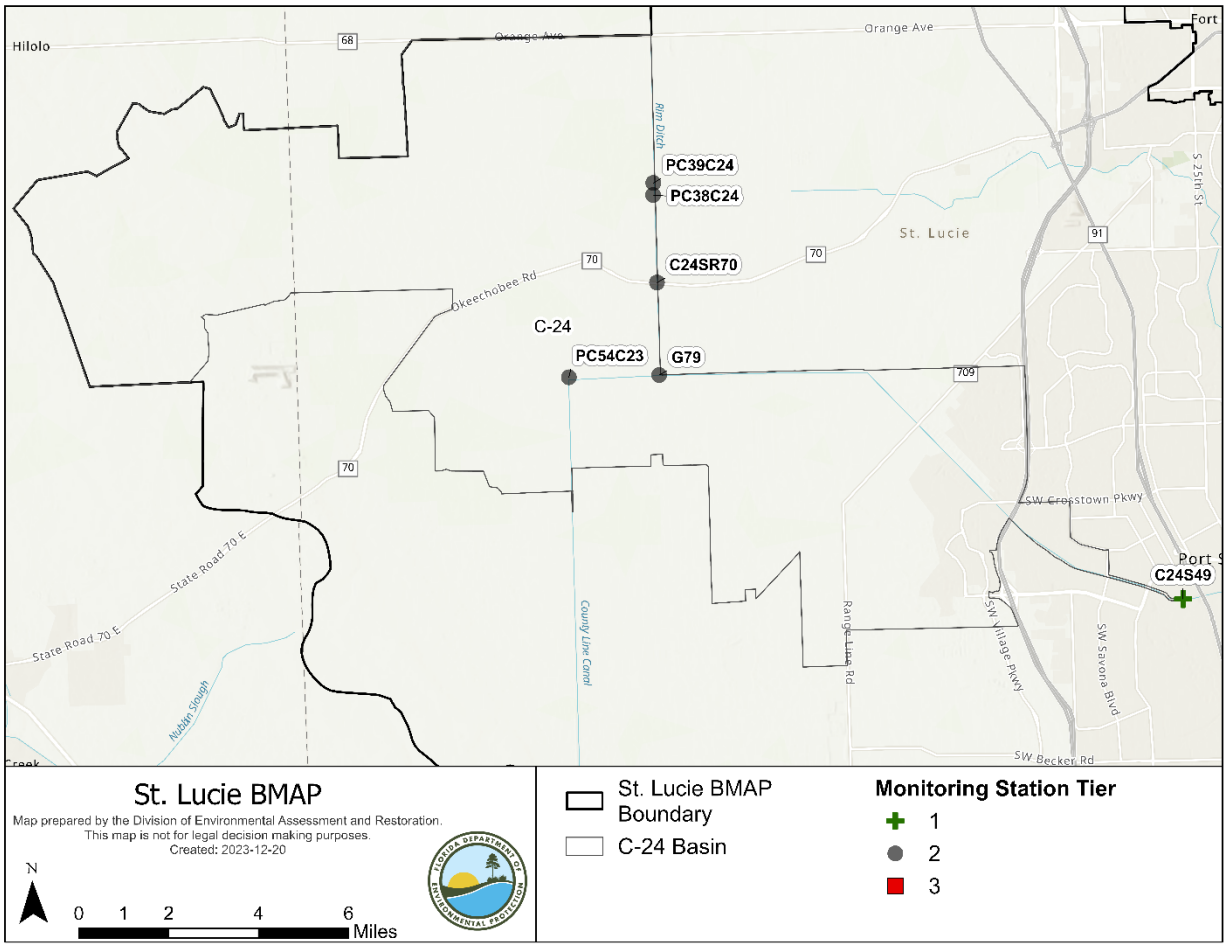


**Figure 14. C-24 Basin monitoring stations**

### 3.3.2 Basin Evaluation Results

#### 3.3.2.1 Targeted Restoration Area

**Table 28** summarizes the basin evaluation results based on data from WY2020–WY2024 for the C-24 Basin. The current TN concentration is 1.47 mg/L, which is above the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.265 mg/L, which is above the benchmark of 0.081 mg/L required to meet the TMDL. The FWM concentrations are 1.47 and 0.27 mg/L for TN and TP, respectively. For these assessments, FWM concentrations were used because flow data were available at the S-49 structure. The TN UAL is 5.35 lbs/ac, which is 28% above the target UAL of 4.19 lbs/ac, and the TP UAL is 1.00 lbs/ac, which is 45% above the target UAL of 0.69 lbs/ac. No significant trends was observed for TN, and a significant decreasing trend was observed for TP.

The TRA prioritization results for the C-24 Basin are shown in **Table 29**, 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 30** 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 28. Basin evaluation results for the C-24 Basin**

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL (lbs/ac) | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | TP Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **3** | C-24 | 1.47 | 1.47 | 5.35 | No significant trend | 0.265 | 0.27 | 1.00 | Significant decreasing trend |

**Table 29. TRA evaluation results for the C-24 Basin**

| Basin | Station | TN Priority | TP Priority |
|---|---|---|---|
| **C-24** | S-49 | 1 | 2 |

**Table 30. Hot spot analysis results for the C-24 Basin**

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| C24S49 | 1 | 1 | 1 | 2 | 5 | 1 | 1 | 0 | 2 | 4 |
| PC39C24 | 1 | 2 | 2 | 2 | 7 | 2 | 2 | 2 | 2 | 8 |
| G79 | 1 | 1 | 1 | 2 | 5 | 1 | 1 | 1 | 2 | 5 |
| PC38C24 | 1 | 2 | 2 | 2 | 7 | 1 | 1 | 0 | 2 | 4 |
| PC54C23 | 1 | 2 | 2 | 2 | 7 | 2 | 2 | 2 | 2 | 8 |

### 3.3.3 Projects

**Table 31** summarizes the existing and planned projects for the C-24 Basin that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 31. Existing and planned projects in the C-24 Basin**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 5686 | FDACS | FDACS-03 | BMP Implementation and Verification | Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WaSh model. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X. | Agricultural BMPs | Ongoing | NA | 48,258 | 7,620 | NA |
| 6147 | FDACS | FDACS-11 | Cost-Share BMP Projects | TBD. | Agricultural BMPs | Completed | 2020 | 20,226 | 4,908 | NA |
| 6153 | FDACS | FDACS-17 | Credit for Changes in Land Use | TBD. | Land Use Change | Completed | 2020 | TBD | TBD | NA |
| TBD | FDACS | FDACS-23 | Ideal Grove HWTT | Combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at the subbasin and parcel scales. | HWTT | Completed | 2024 | 1,740 | 369 | TBD |
| 3355 | FDOT District 4 | FDOT-03 | FM# 230262-4 | Road widening of SR 70 from west of Rim Ditch Canal to west of Header Canal. | Dry Detention Pond | Completed | 2008 | 77 | 15 | TBD |
| 3354 | FDOT District 4 | FDOT-05 | FM# 230262-3 | Road widening of SR 70 from Okeechobee County line, east 10.2 miles. | Dry Detention Pond | Completed | 2012 | 160 | 36 | TBD |
| 3340 | FDOT District 4 | FDOT-06 | FM# 230262-2 | Road widening of SR 70 from Okeechobee County line, east 10.2 miles. | Dry Detention Pond | Completed | 2015 | 317 | 91 | TBD |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | TBD |
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | TBD |
| 5505 | SFWMD - Coordinating Agency | CA-02 | Indian River Lagoon-South - Phase 1 & 2 | Phase 1- C-44 Reservoir and STA, C-23 Estuary Discharge Diversion, C-23/24 N. and S. Reservoirs and STA, C-25 Reservoir and STA; Phase 2- 3 Natural Storage and Water Treatment Areas, North Fork Floodplain Restoration, Muck Remediation/Artificial Habitat. | Regional Stormwater Treatment | Underway | 2030 | 187,393 | 74,957 | $3,032,889,000.00 |
| 5506 | SFWMD - Coordinating Agency | CA-03 | Adams-Russakis Ranch Water Management Area | 1,000-acre project area, which has an estimated water storage benefit of 508 acre-feet/year (ac-ft/yr). | Dispersed Water Management (DWM) | Completed | 2020 | NA | NA | $625,500.00 |
| 5507 | SFWMD - Coordinating Agency | CA-04 | C-23/24 Interim Storage Section C Water Farm | 297-acre project area, which has an estimated water storage benefit of 2,950 ac-ft/yr. | (DWM | Completed | 2017 | NA | NA | $3,055,367.95 |
| 5513 | SFWMD - Coordinating Agency | CA-10 | C-23/C-24 District Lands Hydrological Enhancements | This project will enhance water retention features, complete earthwork (e.g., plugging ditches), and construct new structures that will improve rainfall retention on C-23/C-24 District lands. | Hydrologic Restoration | Planned | 2026 | NA | NA | $2,040,816.00 |
| 3404 | City of Port St. Lucie | PSL-05 | B-1 and B-2 WCS | WCS B-1 and B-2 protected North Fork of St. Lucie River (NFSLR) from receiving uncontrolled E-8 Canal discharges. System will stage appropriate discharge levels based on volume, retaining maximum flows. | Control Structure | Completed | 2007 | 6,737 | 2,088 | $1,046,045.00 |
| 3357 | City of Port St. Lucie | PSL-09 | Water and Wastewater Expansion | Multiple phase-outs of septic tanks from 2013 to 2019. | OSTDS Phase Out | Underway | 2056 | TBD | NA | $91,075,666.00 |
| 3361 | City of Port St. Lucie | PSL-13 | Education Program | Florida Yards and Neighborhoods (FYN) Program; fertilizer, landscape, irrigation, and pet waste ordinances; PSAs; stormwater educational shows; website; outreach programs; Stencil Program; and stormwater pollution hotline. | Education Efforts | Ongoing | NA | 21,978 | 3,722 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3458 | North St. Lucie River WCD | NSLRWCD-02 | SLRIT Grant 2007-2008: WCS Retrofits | Installation of adjustable gates on WCS to improve efficiency of water levels and better manage sediment transport downstream. | Control Structure | Completed | 2010 | 1,558 | 0 | $77,000.00 |
| 3453 | North St. Lucie River WCD | NSLRWCD-08 | Ideal Grove HWTT | Not provided. | HWTT | Completed | 2013 | 433 | 132 | $217,929.00 |
| 3398 | St. Lucie County | SLC-005 | Education Program | FYN; pet waste, landscape, irrigation, and fertilizer ordinances; PSAs; website; Illicit Discharge Program, Eco-Center, Clean Stormwater-Clean River Program. St. Lucie Water Champions. | Education Efforts | Ongoing | NA | 2,597 | 454 | TBD |
| 3397 | St. Lucie County | SLC-006 | Street Sweeping | Materials are collected from road ways and the gutters using a street sweeper truck. | Street Sweeping | Ongoing | NA | 211 | 135 | $280,000.00 |
| 3416 | St. Lucie County | SLC-010 | Education Program | FYN; pet waste, landscape, irrigation, and fertilizer ordinances; PSAs; website; Illicit Discharge Program, Eco-Center, Clean Stormwater-Clean River Program, St. Lucie Water Champions. | Education Efforts | Ongoing | NA | 8,821 | 1,594 | TBD |
| 3399 | St. Lucie County | SLC-011 | Street Sweeping | Materials are collected from road ways and the gutters using a street sweeper truck. | Street Sweeping | Ongoing | NA | 113 | 73 | TBD |
| 3401 | St. Lucie County | SLC-012 | Catch Basin Cleanout | Catch basins are cleaned out on a rotational basis using a vactruck. | BMP Cleanout | Ongoing | NA | 92 | 56 | TBD |
| 3422 | St. Lucie County | SLC-015 | IRL-S C23/C24 CERP Buffer - Teague Preserve Re-watering Project | A 300-acre natural storage/ freshwater marsh restoration project. Project is adjacent to the future CERP C-23/C-24 IRL-S Southern Reservoir. | Hydrologic Restoration | Completed | 2022 | TBD | TBD | $400,000.00 |
| 7161 | Tradition CDD | TRA-02 | Lake Tradition Living Shoreline | Living shoreline along west bank to complement existing planted shoreline along east and south banks. | Shoreline Stabilization | Planned | 2025 | TBD | TBD | TBD |
| 7162 | Tradition CDD | TRA-03 | Tradition Stormwater Reuse | Utilize stormwater as supplemental source for irrigation supply. | Stormwater Reuse | Underway | 2030 | 2,043 | 377 | TBD |
| 7163 | Tradition CDD | TRA-04 | Southern Grove Stormwater Reuse | Utilize stormwater as supplemental source for irrigation supply. | Stormwater Reuse | Underway | 2030 | TBD | TBD | TBD |

## 3.4. C-23 Basin

The C-23 Basin covers 110,883 acres of the St. Lucie River and Estuary Watershed. As shown in **Table 32**, the most common land use is agriculture, which comprises 74.2% of the basin. Stakeholders in the basin include FDOT, Martin County, Port St. Lucie, and St. Lucie County.

**Table 32. Summary of land uses in the C-23 Basin**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 3,237 | 2.9 |
| **2000** | Agriculture | 82,273 | 74.2 |
| **3000** | Upland Nonforested | 2,157 | 1.9 |
| **4000** | Upland Forests | 2,710 | 2.4 |
| **5000** | Water | 1,554 | 1.4 |
| **6000** | Wetlands | 15,967 | 14.4 |
| **7000** | Barren Land | 1,201 | 1.1 |
| **8000** | Transportation, Communication, and Utilities | 1,784 | 1.6 |
| | **Total** | **110,883** | **100** |

### 3.4.1 Water Quality Monitoring

**Table 33** summarizes the water quality monitoring stations in the C-23 Basin, and **Figure 15** shows the station locations.

**Table 33. Water quality monitoring stations in the C-23 Basin**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **C-23** | Yes | SFWMD | S-48 | 1 |
| **C-23** | Yes | SFWMD | ACRA1 | 2 |
| **C-23** | Yes | SFWMD | PC32C23 | 2 |
| **C-23** | Yes | SFWMD | PC49C23 | 2 |

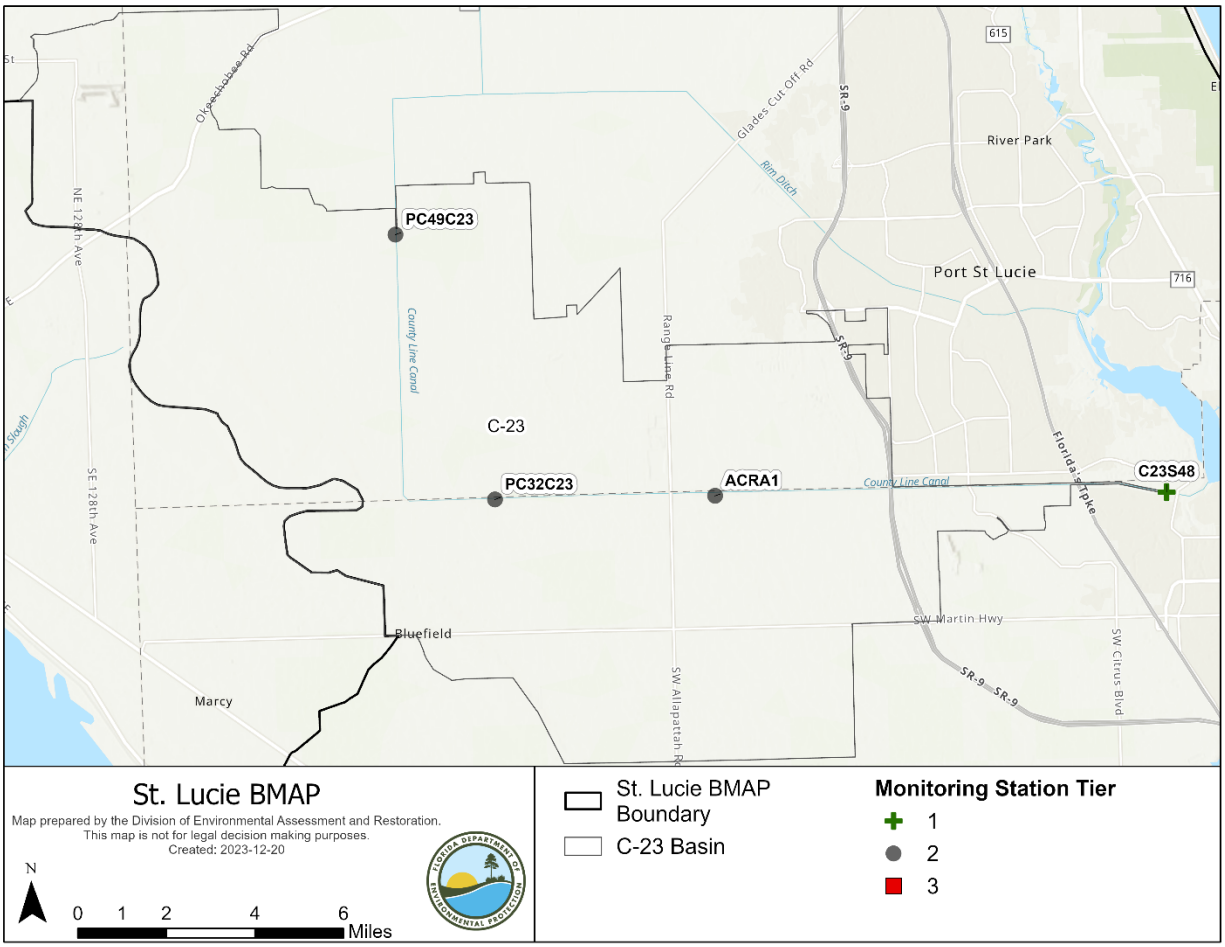


**Figure 15. C-23 Basin monitoring stations**

### 3.4.2 Basin Evaluation Results

#### 3.4.2.1 Targeted Restoration Area

**Table 34** summarizes the basin evaluation results based on data from WY2020–WY2024 for the C-23 Basin. The current TN concentration is 1.40 mg/L, which is above the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.272 mg/L, which is above the benchmark of 0.081 mg/L required to meet the TMDL. The FWM concentrations are 1.40 mg/L and 0.27 mg/L for TN and TP, respectively. For these assessments, FWM concentrations were used because flow data were available at the S-48 structure. The TN UAL is 3.47 lbs/ac, which is 12% below the target UAL of 3.96 lbs/ac, and the TP UAL is 0.71 lbs/ac, which is 9% below the target UAL of 0.79 lbs/ac. No significant trend was observed for TN, and a significant decreasing trend was observed for TP.

**Table 35** lists the TRA prioritization results for the C-23 Basin, 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 36** 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 34. Basin evaluation results for the C-23 Basin**

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL (lbs/ac) | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | TP Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **4** | C-23 | 1.40 | 1.40 | 3.47 | No significant trend | 0.272 | 0.27 | 0.71 | Significant decreasing trend |

**Table 35. TRA evaluation results for the C-23 Basin**

| Basin | Station | TN Priority | TP Priority |
|---|---|---|---|
| **C-23** | S-48 | 3 | 3 |

**Table 36. Hot spot analysis results for the C-23 Basin**

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| C23S48 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| PC49C23 | 2 | 2 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 8 |
| PC32C23 | 2 | 2 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 8 |

### 3.4.3 Projects

**Table 37** summarizes the existing and planned projects for the C-23 Basin that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 37. Existing and planned projects in the C-23 Basin**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 7106 | City of Port St. Lucie | PSL-38 | McCarty Ranch Extension Water Quality Restoration Project - Areas 1,2,3 & 4 | The project is a water quality restoration project that includes four above ground impoundment cells that retain excess water from the SFWMD C-23 canal that is taken in via pumps. | Regional Stormwater Treatment | Completed | 2023 | TBD | TBD | $10,199,226.00 |
| 7457 | City of Port St. Lucie | PSL-41 | McCarty Ranch Extension Water Quality Restoration Project - Area 5 | This is a water quality restoration project that includes one above ground impoundment cell that retains excess water from the SFWMD C-23 canal that is taken in via pumps. | Regional Stormwater Treatment | Completed | 2024 | TBD | TBD | $3,600,000.00 |
| 6148 | FDACS | FDACS-12 | Cost-Share BMP Projects | TBD. | Agricultural BMPs | Completed | 2020 | 65,713 | 22,890 | NA |
| 6154 | FDACS | FDACS-18 | Credit for Changes in Land Use | TBD. | Land Use Change | Completed | 2020 | TBD | TBD | NA |
| 6140 | FDACS | FDACS-04 | BMP Implementation and Verification | Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WaSh model. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X. | Agricultural BMPs | Ongoing | NA | 66,018 | 13,114 | NA |
| 3342 | FDOT District 4 | FDOT-17 | FM# 419890-1 | Construction of interchange at SR 9 and Becker Rd. | BMP Treatment Train | Completed | 2010 | 3 | 2 | TBD |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | TBD |
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | TBD |
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 6240 | FDOT District 4 | FDOT-63 | Gatlin Boulevard Park and Ride Lot (Pond 1 and 2) | Park and Ride lot designed to accommodate internal circulation and boarding of regional buses. System consists of two interconnected dry detention basins. | Dry Detention Pond | Completed | 2021 | 4 | 1 | NA |
| 5508 | SFWMD - Coordinating Agency | CA-05 | Bluefield Grove Water Farm | A public-private partnership project actively stores local stormwater runoff on 6,100 acres in the C-23 watershed in St. Lucie County. The project is estimated to provide a net annual average water storage benefit of 28,360 ac-ft/yr. | DWM | Completed | 2021 | 26,896 | 6,173 | $47,606,673.00 |
| 5509 | SFWMD - Coordinating Agency | CA-06 | Bull Hammock Ranch WMA | 608-acre project area, which has an estimated water storage benefit of 228 ac-ft/yr. | DWM | Completed | 2015 | NA | NA | $285,000.00 |
| 5510 | SFWMD - Coordinating Agency | CA-07 | Spur Land and Cattle | 210-acre project area, which has an estimated water storage benefit of 1,500 ac-ft/yr. | DWM | Completed | 2014 | NA | NA | $2,444,880.00 |
| 6278 | SFWMD - Coordinating Agency | CA-11 | Allapattah Flats Parcels A and B | Restoration of approximately 6,621 acres of wetlands to provide habitat for threatened and endangered species and other wildlife, as well as offer water quantity and quality benefits (13,312 ac-ft/yr). | Wetland Restoration | Completed | 2022 | NA | NA | $4,580,828.00 |
| 3404 | City of Port St. Lucie | PSL-05 | B-1 and B-2 WCS | WCS B-1 and B-2 protected North Fork of St. Lucie River (NFSLR) from receiving uncontrolled E-8 Canal discharges. System will stage appropriate discharge levels based on volume, retaining maximum flows. | Control Structure | Completed | 2007 | 6,737 | 2,088 | $1,046,045.00 |
| 3357 | City of Port St. Lucie | PSL-09 | Water and Wastewater Expansion | Multiple phase-outs of septic tanks from 2013 to 2019. | OSTDS Phase Out | Underway | 2056 | TBD | NA | $91,075,666.00 |
| 3361 | City of Port St. Lucie | PSL-13 | Education Program | Florida Yards and Neighborhoods (FYN) Program; fertilizer, landscape, irrigation, and pet waste ordinances; PSAs; stormwater educational shows; website; outreach programs; Stencil Program; and stormwater pollution hotline. | Education Efforts | Ongoing | NA | 21,978 | 3,722 | NA |
| 3265 | City of Port St. Lucie | PSL-31 | St. Lucie River/C-23 Water Quality Project Phases I - VI | Water Farming Project - Pumps water from SFWMD C-23 Canal onto property for storage and retains rainfall on multiple phases of project. | DWM | Completed | 2023 | 36,011 | 8,207 | $16,608,025.00 |
| 3317 | Martin County | MC-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 108 | 69 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | Martin County | MC-20 | Education Program | FYN; landscaping, irrigation, fertilizer, and pet waste ordinances; PSAs, pamphlets, website, illicit discharge program. | Education Efforts | Ongoing | NA | 16,644 | 2,831 | TBD |
| 5505 | SFWMD - Coordinating Agency | CA-02 | Indian River Lagoon-South - Phase 1 & 2 | Phase 1- C-44 Reservoir and STA, C-23 Estuary Discharge Diversion, C-23/24 N. and S. Reservoirs and STA, C-25 Reservoir and STA; Phase 2- 3 Natural Storage and Water Treatment Areas, North Fork Floodplain Restoration, Muck Remediation/Artificial Habitat. | Regional Stormwater Treatment | Underway | 2030 | 187,393 | 74,957 | $3,032,889,000.00 |
| 3398 | St. Lucie County | SLC-005 | Education Program | FYN; pet waste, landscape, irrigation, and fertilizer ordinances; PSAs; website; Illicit Discharge Program, Eco-Center, Clean Stormwater-Clean River Program. St. Lucie Water Champions. | Education Efforts | Ongoing | NA | 2,597 | 454 | TBD |
| 3397 | St. Lucie County | SLC-006 | Street Sweeping | Materials are collected from road ways and the gutters using a street sweeper truck. | Street Sweeping | Ongoing | NA | 211 | 135 | $280,000.00 |
| 3396 | St. Lucie County | SLC-007 | Catch Basin Cleanout | Catch basins are cleaned out on a rotational basis using a vactruck. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 170 | 105 | TBD |
| 3416 | St. Lucie County | SLC-010 | Education Program | FYN; pet waste, landscape, irrigation, and fertilizer ordinances; PSAs; website; Illicit Discharge Program, Eco-Center, Clean Stormwater-Clean River Program, St. Lucie Water Champions. | Education Efforts | Ongoing | NA | 8,821 | 1,594 | TBD |
| 3399 | St. Lucie County | SLC-011 | Street Sweeping | Materials are collected from road ways and the gutters using a street sweeper truck. | Street Sweeping | Ongoing | NA | 113 | 73 | TBD |
| 3401 | St. Lucie County | SLC-012 | Catch Basin Cleanout | Catch basins are cleaned out on a rotational basis using a vactruck. | BMP Cleanout | Ongoing | NA | 92 | 56 | TBD |
| 3422 | St. Lucie County | SLC-015 | IRL-S C23/C24 CERP Buffer - Teague Preserve Re-watering Project | A 300-acre natural storage/ freshwater marsh restoration project. Project is adjacent to the future CERP C-23/C-24 IRL-S Southern Reservoir. | Hydrologic Restoration | Completed | 2022 | TBD | TBD | $400,000.00 |
| 4594 | St. Lucie County | SLC-017 | Swales Material Collection | Road side swale cleanout and retrofitting in MS4 area and non-MS4 area. | BMP Cleanout | Ongoing | NA | TBD | TBD | TBD |

## 3.5. C-44/S-153 Basin

The C-44/S-153 Basin covers 129,301 acres of the St. Lucie River and Estuary Watershed. As shown in **Table 38**, agriculture is the primary land use, comprising 63.5% of the basin followed by wetlands (10.5%). Stakeholders in the basin include FDOT, Hobe St. Lucie Conservancy District, Martin County, Pal Mar WCD, and Troup-Indiantown WCD.

**Table 38. Summary of land uses in the C-44/S-153 Basin**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 4,001 | 3.1 |
| **2000** | Agriculture | 82,059 | 63.5 |
| **3000** | Upland Nonforested | 6,958 | 5.4 |
| **4000** | Upland Forests | 11,301 | 8.7 |
| **5000** | Water | 8,077 | 6.2 |
| **6000** | Wetlands | 13,538 | 10.5 |
| **7000** | Barren Land | 1,036 | 0.8 |
| **8000** | Transportation, Communication, and Utilities | 2,331 | 1.8 |
| | **Total** | **129,301** | **100** |

### 3.5.1 Water Quality Monitoring

**Table 39** summarizes the water quality monitoring stations in the C-44/S-153 Basin, and **Figure 16** shows the station locations.

**Table 39. Water quality monitoring stations in the C-44/S-153 Basin**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **C-44/S-153** | Yes | SFWMD | S-80 | 1 |
| **C-44/S-153** | NA | SFWMD | C44SC2 | 2 |
| **C-44/S-153** | NA | SFWMD | C44SC5 | 2 |
| **C-44/S-153** | NA | SFWMD | C44SC14 | 2 |
| **C-44/S-153** | NA | SFWMD | S-308C | 1 |
| **C-44/S-153** | NA | SFWMD | S-153 | 2 |
| **C-44/S-153** | NA | SFWMD | C44SC19 | 2 |
| **C-44/S-153** | NA | SFWMD | C44SC23 | 2 |
| **C-44/S-153** | NA | SFWMD | C44SC24 | 2 |

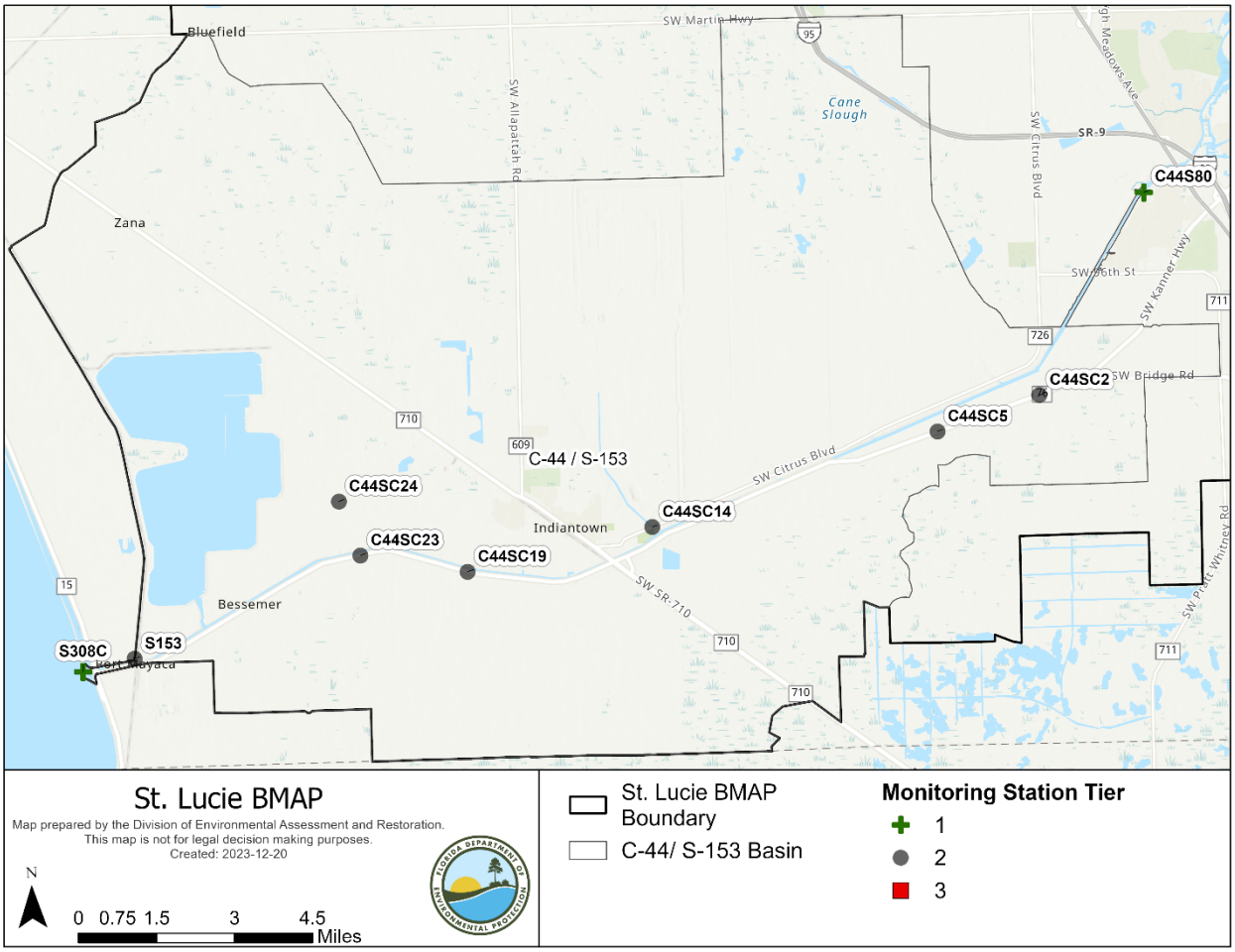


**Figure 16. C-44/S-153 Basin monitoring stations**

### 3.5.2 Basin Evaluation Results

#### 3.5.2.1 Targeted Restoration Area

**Table 40** summarizes the basin evaluation results based on data from WY2020–WY2024 for the C-44/S-153 Basin. The current TN concentration is 1.15 mg/L, which is above the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.175 mg/L, which is above the benchmark of 0.081 mg/L required to meet the TMDL. For these assessments, FWM concentrations were used because flow data were available at the S-80 structure. The FWM concentrations are 1.15 mg/L and 0.18 mg/L for TN and TP, respectively. The TN UAL is 1.32 lbs/ac, which is 79% below the target UAL of 6.14 lbs/ac, and the TP UAL is 0.24 lbs/ac, which is 78% below the target UAL of 1.07 lbs/ac. A significant decreasing trend was observed for TN, and no significant trend was observed for TP.

**Table 41** lists the TRA prioritization results for the C-44/S-153 Basin, 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 42** 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 40. Basin evaluation results for the C-44/S-153 Basin

**Note:** TN and TP loads from Lake Okeechobee are included as part of the evaluation for the C-44/S-153 basin.

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL (lbs/ac) | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | TP Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **5** | C-44/S-153 | 1.15 | 1.15 | 1.32 | Significant decreasing trend | 0.175 | 0.18 | 0.24 | No significant trend |

## Table 41. TRA evaluation results for the C-44/S-153 Basin

| Basin | Station | TN Priority | TP Priority |
|---|---|---|---|
| **C-44/S-153** | S-80 | 3 | 2 |

## Table 42. Hot spot analysis results for the C-44/S-153 Basin

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| 3500 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| C44S80 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| S-153 | 1 | 2 | 2 | 2 | 7 | 2 | 2 | 2 | 2 | 8 |
| S-308C | 1 | 2 | 2 | 2 | 7 | 1 | 1 | 1 | 2 | 5 |
| C44SC14 | 1 | 1 | 1 | 2 | 5 | 1 | 1 | 0 | 2 | 4 |
| C44SC2 | 1 | 1 | 1 | 2 | 5 | 1 | 1 | 0 | 2 | 4 |
| C44SC5 | 1 | 2 | 2 | 2 | 7 | 1 | 1 | 0 | 2 | 4 |
| C44SC19 | 1 | 1 | 1 | 2 | 5 | 2 | 2 | 2 | 2 | 8 |
| C44SC23 | 1 | 1 | 1 | 2 | 5 | 1 | 1 | 1 | 2 | 5 |
| C44SC24 | 1 | 1 | 1 | 2 | 5 | 1 | 1 | 1 | 2 | 5 |
| G1SE0050 | 1 | 1 | 1 | 2 | 5 | 1 | 1 | 0 | 2 | 4 |
| S1 | 1 | 1 | 1 | 2 | 5 | 2 | 2 | 2 | 2 | 8 |

### 3.5.3 Projects

**Table 43** summarizes the existing and planned projects for the C-44/S-153 Basin that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 43. Existing and planned projects in the C-44/S-153 Basin**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 6141 | FDACS | FDACS-05 | BMP Implementation and Verification | Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WaSh model. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X. | Agricultural BMPs | Ongoing | NA | 71,776 | 11,615 | NA |
| 6149 | FDACS | FDACS-13 | Cost-Share BMP Projects | TBD. | Agricultural BMPs | Completed | 2020 | 33,115 | 4,902 | NA |
| 6155 | FDACS | FDACS-19 | Credit for Changes in Land Use | TBD. | Land Use Change | Completed | 2020 | TBD | TBD | NA |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | TBD |
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | TBD |
| 3370 | FDOT District 4 | FDOT-41 | FM# 419250-2 SR 710 Bridge Replacement - 100A, 100B, and 200 | Big John Monahon Bridge replacement on SR 710 from SW Trail Dr. to east of SR 76 connector ramps. | Dry Detention Pond | Completed | 2015 | 8 | 1 | TBD |
| 3369 | FDOT District 4 | FDOT-42 | FM# 419250-2 SR 710 Bridge Replacement - 300 and 500 | Big John Monahon Bridge replacement on SR 710 from SW Trail Dr. to east of SR 76 connector ramps. | Dry Detention Pond | Completed | 2015 | 16 | 3 | TBD |
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3301 | FDOT District 4 | FDOT-58 | FM# 432705-1 (System 2) | Road widening of SR 710 from north of Indiantown Rd to just south of bridge over C-44 Canal. | Dry Detention Pond | Completed | 2019 | 8 | 0 | NA |
| 3313 | FDOT District 4 | FDOT-59 | FM# 432705-1 (System 3) | Road widening of SR 710 from north of Indiantown Rd to just south C-44 Canal bridge. | Dry Detention Pond | Completed | 2019 | 1 | 0 | NA |
| 3317 | Martin County | MC-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 108 | 69 | TBD |
| 3400 | Martin County | MC-20 | Education Program | FYN; landscaping, irrigation, fertilizer, and pet waste ordinances; PSAs, pamphlets, website, illicit discharge program. | Education Efforts | Ongoing | NA | 16,644 | 2,831 | TBD |
| 5514 | Martin County | MC-45 | C44 Reservoir | 16.2% stake in nutrient reductions from the C44 Reservoir. | BMP Treatment Train | Underway | 2024 | TBD | TBD | $800,000,000.00 |
| 5505 | SFWMD - Coordinating Agency | CA-02 | Indian River Lagoon-South - Phase 1 & 2 | Phase 1- C-44 Reservoir and STA, C-23 Estuary Discharge Diversion, C-23/24 N. and S. Reservoirs and STA, C-25 Reservoir and STA; Phase 2- 3 Natural Storage and Water Treatment Areas, North Fork Floodplain Restoration, Muck Remediation/Artificial Habitat. | Regional Stormwater Treatment | Underway | 2030 | 187,393 | 74,957 | $3,032,889,000.00 |
| 5511 | SFWMD - Coordinating Agency | CA-08 | Caulkins Water Farm | This project actively stores local stormwater runoff and water from Lake Okeechobee regulatory releases on 3,275 acres of private land along the C-44 Canal. Project is estimated to provide a net annual average water storage benefit of 27,490 ac-ft/yr. | DWM | Completed | 2017 | 123,238 | 16,755 | $62,446,180.00 |
| 3284 | Troup-Indiantown WCD | TI-01 | C-44 Conservation Area | Not provided. | STAs | Completed | 2013 | 23,199 | 7,497 | NA |
| 3261 | Troup-Indiantown WCD | TI-03 | Removal of Drainage Areas | Minute Maid Rd. drainage improvements. | 100% On-Site Retention | Completed | 2021 | TBD | TBD | $124,000.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3259 | Troup-Indiantown WCD | TI-04 | C-44 Reservoir Area | Converting from conservation area to reservoir. | Land Use Change | Completed | 2024 | NA | NA | NA |
| 3276 | Troup-Indiantown WCD | TI-05 | C-44 STA Area | Converting from conservation area to STA. | Land Use Change | Completed | 2024 | NA | NA | NA |
| 3281 | Turnpike Enterprise | T-04 | Education Program | No fertilizer on rights-of-way, educational signage, illicit discharge training. | Education Efforts | Ongoing | NA | 277 | 46 | NA |
| 3283 | Turnpike Enterprise | T-05 | Street Sweeping | Street Sweeping and Litter Control along SR 91 between MP 125.5 and 158 both NB/SB including ramps. | Street Sweeping | Ongoing | NA | 144 | 10 | NA |

## 3.6. Basin 4/5

Basin 4/5 covers 12,009 acres of the St. Lucie River and Estuary Watershed. As shown in **Table 44**, urban and built up land uses are the primary land use in the basin, comprising 48.6% of the land, followed by agriculture, which represents 18.2% of the basin. Stakeholders in the basin include FDOT, Martin County, and Florida Turnpike Authority.

**Table 44. Summary of land uses in Basin 4/5**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 5,834 | 48.6 |
| **2000** | Agriculture | 2,190 | 18.2 |
| **3000** | Upland Nonforested | 239 | 2.0 |
| **4000** | Upland Forests | 1,794 | 14.9 |
| **5000** | Water | 394 | 3.3 |
| **6000** | Wetlands | 1,066 | 8.9 |
| **7000** | Barren Land | 47 | 0.4% |
| **8000** | Transportation, Communication, and Utilities | 445 | 3.7 |
| | **Total** | **12,009** | **100** |

### 3.6.1 Water Quality Monitoring

**Table 45** summarizes the water quality monitoring stations in Basin 4/5, and **Figure 17** shows the station locations.

**Table 45. Water quality monitoring stations in Basin 4/5**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **Basin 4/5** | Yes | SFWMD | SLT-9 | 2 |

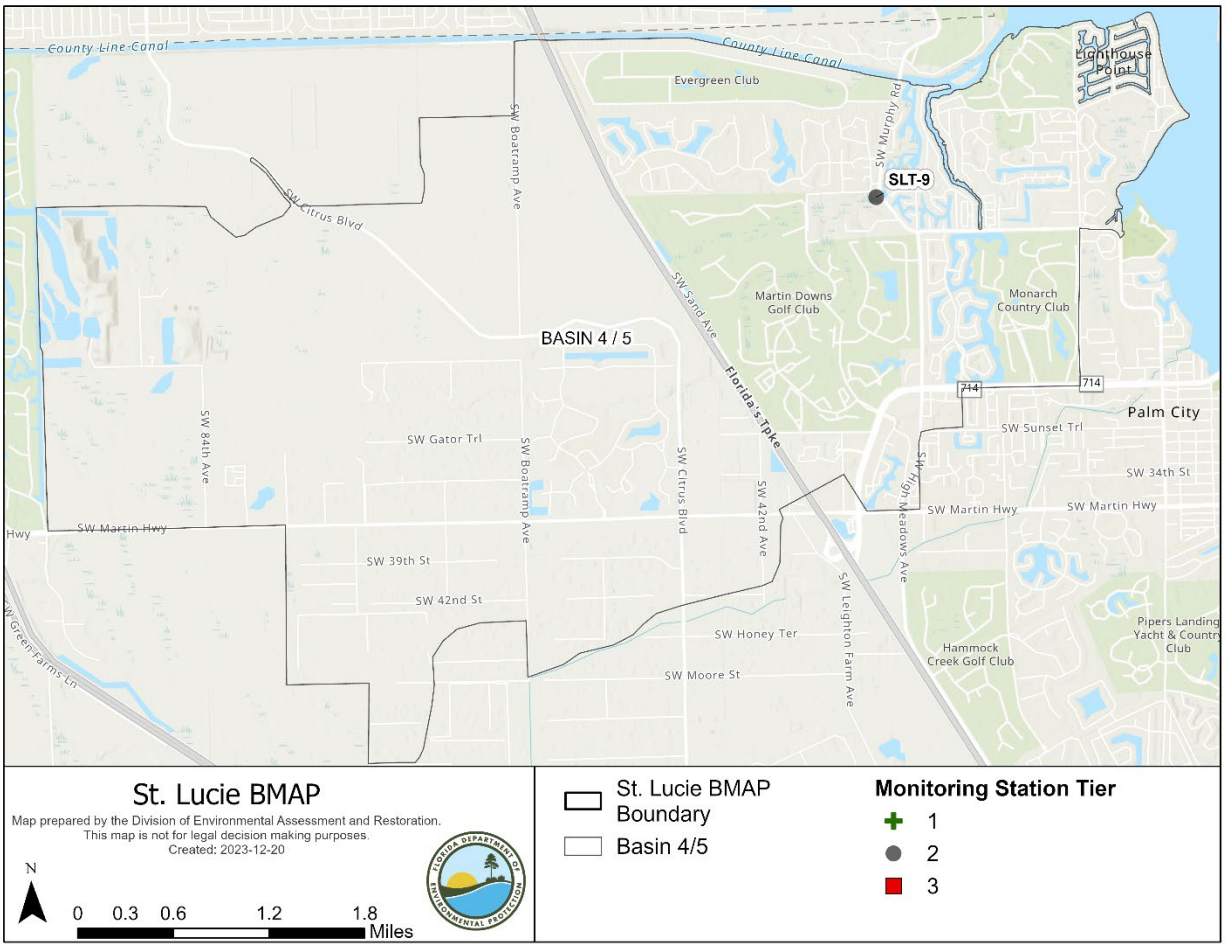


**Figure 17. Basin 4/5 monitoring stations**

### 3.6.2 Basin Evaluation Results

#### 3.6.2.1 Targeted Restoration Area

**Table 46** summarizes the basin evaluation results based on data from WY2020–WY2024 for Basin 4/5. The current TN concentration is 0.94 mg/L, which is above the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.149 mg/L, which is above the benchmark of 0.081 mg/L required to meet the TMDL. No FWM concentrations were calculated for this basin. No significant trend was detected for TN, and a significant decreasing trend was observed for TP. **Table 47** lists the TRA prioritization results for Basin 4/5, 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 48** 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 46. Basin evaluation results for Basin 4/5**

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL (lbs/ac) | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | TP Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **6** | Basin 4/5 | 0.94 | NA | NA | No significant trend | 0.149 | NA | NA | Significant decreasing trend |

**Table 47. TRA evaluation results for Basin 4/5**

| Basin | Station | TN Priority | TP Priority |
|---|---|---|---|
| **Basin 4/5** | SLT-9 | 2 | 3 |

**Table 48. Hot spot analysis results for Basin 4/5**

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| SLT-9 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |

### 3.6.3 Projects

**Table 49** summarizes the existing and planned for Basin 4/5 that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 49. Existing and planned projects in Basin 4/5**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 6142 | FDACS | FDACS-06 | BMP Implementation and Verification | Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WaSh model. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X. | Agricultural BMPs | Ongoing | NA | 1,854 | 333 | NA |
| 3346 | FDOT District 4 | FDOT-13 | FM# 228831-1 | Bridge replacement at SR 714 crossing over Florida's Turnpike. | Dry Detention Pond | Completed | 2000 | 7 | 1 | TBD |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | TBD |
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | TBD |
| 3310 | FDOT District 4 | FDOT-49 | 230978-2 CR 714 Martin Highway Widening - Danforth Basin | Road widening on CR 714 (Martin Hwy.) from east of Turnpike to just west of Mapp Rd. | Wet Detention Pond | Completed | 2016 | 15 | 5 | TBD |
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | TBD |
| 3319 | Martin County | MC-16 | Septic to Central Sewer Conversions | 872 single-family and multifamily residential and commercial units in five neighborhoods. | OSTDS Phase Out | Completed | 2008 | TBD | TBD | $9,500,000.00 |
| 3317 | Martin County | MC-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 108 | 69 | TBD |
| 3316 | Martin County | MC-19 | Baffle Box and Structure Cleanout | Not provided. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 397 | 161 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | Martin County | MC-20 | Education Program | FYN; landscaping, irrigation, fertilizer, and pet waste ordinances; PSAs, pamphlets, website, illicit discharge program. | Education Efforts | Ongoing | NA | 16,644 | 2,831 | TBD |
| 3438 | Martin County | MC-31 | Bessey Creek HWTT | 46-acre HWTT serving 2,675 acres within the Bessey Creek watershed. | HWTT | Completed | 2015 | 6,081 | 1,473 | $3,000,000.00 |
| 5690 | Martin County | MC-46 | Septic to Central Sewer Conversions | 1,819 single-family, multi-family residential, and commercial units. | OSTDS Phase Out | Completed | 2018 | 24,302 | NA | $24,556,500.00 |
| 6466 | Martin County | MC-47 | Septic to Central Sewer Conversions | 1,630 septic conversions in multiple areas as described in the OSTD plan converted between 2019-2024 | OSTDS Phase Out | Completed | 2024 | 21,777 | 799 | $55,981,565.00 |
| 7420 | Martin County | MC-48 | Septic to Sewer Conversions | Approximately 2044 to be converted per OSTDS plan. Estimating 272 per year for next 8 years. This project will be updated next year for the actual conversions and a new underway project will have the remaining until complete. | OSTDS Phase Out | Underway | 2032 | TBD | NA | NA |
| 7421 | Martin County | MC-49 | Septic to Sewer Conversion | 4436 Septic Conversions planned per OSTDS plan (Port Salerno Peninsula, Beau Rivage, Port Salerno/New Monrovia, Coral Gardens, Old Palm City, Rocky Point, Windstone/Evergreen, Strafford Downs, Woodside). | OSTDS Enhancement | Planned | 2048 | TBD | TBD | $76,630,800.00 |
| 3281 | Turnpike Enterprise | T-04 | Education Program | No fertilizer on rights-of-way, educational signage, illicit discharge training. | Education Efforts | Ongoing | NA | 277 | 46 | NA |
| 3283 | Turnpike Enterprise | T-05 | Street Sweeping | Street Sweeping and Litter Control along SR 91 between MP 125.5 and 158 both NB/SB including ramps. | Street Sweeping | Ongoing | NA | 144 | 10 | NA |

## 3.7. Basin 6

Basin 6 covers 3,927 acres of the St. Lucie River and Estuary Watershed. Most of the basin is urban and built-up land, followed by urban forest and agriculture. As shown in **Table 50**, urban and built-up land uses make up much of the acreage in the basin. Stakeholders in the basin include FDOT, Martin County, and Florida Turnpike Authority.

**Table 50. Summary of land uses in Basin 6**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 2,540 | 64.7 |
| **2000** | Agriculture | 456 | 11.6 |
| **3000** | Upland Nonforested | 47 | 1.2 |
| **4000** | Upland Forests | 512 | 13.0 |
| **5000** | Water | 34 | 0.9 |
| **6000** | Wetlands | 184 | 4.7 |
| **7000** | Barren Land | 12 | 0.3 |
| **8000** | Transportation, Communication, and Utilities | 142 | 3.6 |
| | **Total** | **3,927** | **100** |

### 3.7.1 Water Quality Monitoring

**Table 51** summarizes the water quality monitoring stations in Basin 6, and **Figure 18** shows the station locations.

**Table 51. Water quality monitoring stations in Basin 6**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **Basin 6** | Yes | SFWMD | SLT-7 | 2 |

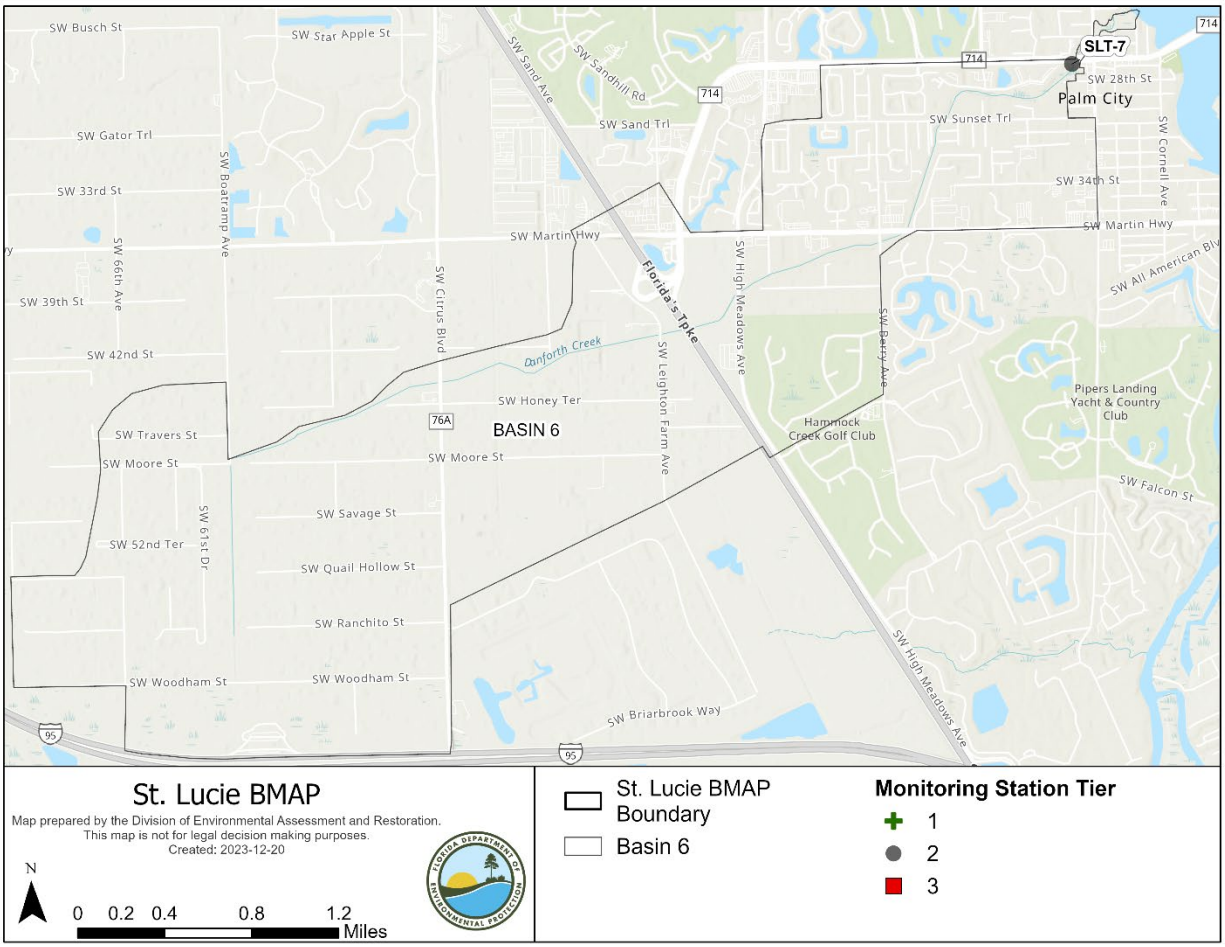


**Figure 18. Basin 6 monitoring stations**

### 3.7.2 Basin Evaluation Results

#### 3.7.2.1 Targeted Restoration Area

**Table 52** summarizes the basin evaluation results based on data from WY2020–WY2024 for Basin 6. The current TN concentration is 0.87 mg/L, which is above the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.095 mg/L, which is above the benchmark of 0.081 mg/L required to meet the TMDL. No FWM concentrations were calculated for this basin. Significant decreasing trends were detected for TN and TP. **Table 53** lists the TRA prioritization results for Basin 6, 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 54** 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 52. Basin evaluation results for Basin 6**

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL (lbs/ac) | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | TP Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **7** | Basin 6 | 0.87 | NA | NA | Significant decreasing trend | 0.095 | NA | NA | Significant decreasing trend |

**Table 53. TRA evaluation results for Basin 6**

| Basin | Station | TN Priority | TP Priority |
|---|---|---|---|
| **Basin 6** | SLT-7 | 3 | 3 |

**Table 54. Hot spot analysis results for Basin 6**

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| SLT-7 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 1 | 3 |

### 3.7.3 Projects

**Table 55** summarizes the existing and planned projects for Basin 6 that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 55. Existing and planned projects in Basin 6**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 6143 | FDACS | FDACS-06 | BMP Implementation and Verification | Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WaSh model. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X. | Agricultural BMPs | Ongoing | NA | 316 | 68 | NA |
| 3346 | FDOT District 4 | FDOT-13 | FM# 228831-1 | Bridge replacement at SR 714 crossing over Florida's Turnpike. | Dry Detention Pond | Completed | 2000 | 7 | 1 | TBD |
| 3344 | FDOT District 4 | FDOT-15 | FM# 405504-1 | SR 9 rest area improvements. | Dry Detention Pond | Completed | 2005 | 40 | 6 | TBD |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | TBD |
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | TBD |
| 3390 | FDOT District 4 | FDOT-21 | FM# 230978-1 Indian St. Bridge (Pond West) | New bridge crossing on CR 714 from west of Mapp Rd. to east of SR 76 on Indian St. | Wet Detention Pond | Completed | 2014 | 0 | 0 | TBD |
| 3310 | FDOT District 4 | FDOT-49 | 230978-2 CR 714 Martin Highway Widening - Danforth Basin | Road widening on CR 714 (Martin Hwy.) from east of Turnpike to just west of Mapp Rd. | Wet Detention Pond | Completed | 2016 | 15 | 5 | TBD |
| 3309 | FDOT District 4 | FDOT-50 | 230978-2 CR 714 Martin Hwy. Widening - Wetlands Basin | Road widening on CR 714 (Martin Hwy.) from east of Turnpike to just west of Mapp Rd. | Wet Detention Pond | Completed | 2016 | 9 | 3 | TBD |
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | TBD |
| 3318 | Martin County | MC-17 | Danforth Creek - Phase 1 | 8.1 acre wet detention pond with littoral plantings and control structure. | Regional Stormwater Treatment | Completed | 2014 | 6,132 | 2,266 | $1,869,255.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3317 | Martin County | MC-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 108 | 69 | TBD |
| 3316 | Martin County | MC-19 | Baffle Box and Structure Cleanout | Not provided. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 397 | 161 | TBD |
| 3400 | Martin County | MC-20 | Education Program | FYN; landscaping, irrigation, fertilizer, and pet waste ordinances; PSAs, pamphlets, website, illicit discharge program. | Education Efforts | Ongoing | NA | 16,644 | 2,831 | TBD |
| 3367 | Martin County | MC-22 | FM# 230978-1 Indian St. Bridge (Pond West) | A surface water management system serving 62.06 acres of roadway development. | Wet Detention Pond | Completed | 2014 | 108 | 33 | TBD |
| 3437 | Martin County | MC-32 | Danforth Creek HWTT | HWTT serving 2,522 upstream acres in the Danforth Creek watershed. | HWTT | Completed | 2016 | 5,312 | 1,287 | $3,000,000.00 |
| 3281 | Turnpike Enterprise | T-04 | Education Program | No fertilizer on rights-of-way, educational signage, illicit discharge training. | Education Efforts | Ongoing | NA | 277 | 46 | NA |
| 3283 | Turnpike Enterprise | T-05 | Street Sweeping | Street Sweeping and Litter Control along SR 91 between MP 125.5 and 158 both NB/SB including ramps. | Street Sweeping | Ongoing | NA | 144 | 10 | NA |

## 3.8. South Fork Basin

The South Fork Basin covers 48,155 acres of the St. Lucie River and Estuary Watershed. As shown in **Table 56**, most of the land use comprises urban and built-up, and agriculture. Stakeholders in the basin include FDOT, Hobe St. Lucie Conservancy District, Martin County, City of Stuart, and Florida Turnpike Authority.

**Table 56. Summary of land uses in the South Fork Basin**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 12,857 | 26.7 |
| **2000** | Agriculture | 16,826 | 34.9 |
| **3000** | Upland Nonforested | 2,003 | 4.2 |
| **4000** | Upland Forests | 7,550 | 15.7 |
| **5000** | Water | 1,333 | 2.8 |
| **6000** | Wetlands | 6,360 | 13.2 |
| **7000** | Barren Land | 153 | 0.3 |
| **8000** | Transportation, Communication, and Utilities | 1,073 | 2.2 |
| | **Total** | **48,155** | **100** |

### 3.8.1 Water Quality Monitoring

**Table 57** summarizes the water quality monitoring stations in the South Fork Basin, and **Figure 19** shows the station locations.

**Table 57. Water quality monitoring stations in the South Fork Basin**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **South Fork** | Yes | SFWMD | SLT-31 | 2 |
| **South Fork** | Yes | SFWMD | SLT-34A | 2 |
| **South Fork** | Yes | SFWMD | SLT-6 | 2 |
| **South Fork** | Yes | SFWMD | SLT-5 | 2 |
| **South Fork** | Yes | SFWMD | SLT-4 | 2 |
| **South Fork** | Yes | SFWMD | SLT-3 | 2 |
| **South Fork** | Yes | SFWMD | SLT-40A | 2 |
| **South Fork** | Yes | SFWMD | SLT-2A | 2 |
| **South Fork** | Yes | SFWMD | SLT-1 | 2 |
| **South Fork** | No | SFWMD | SE-08B | 1 |
| **South Fork** | No | SFWMD | SE-09 | 1 |

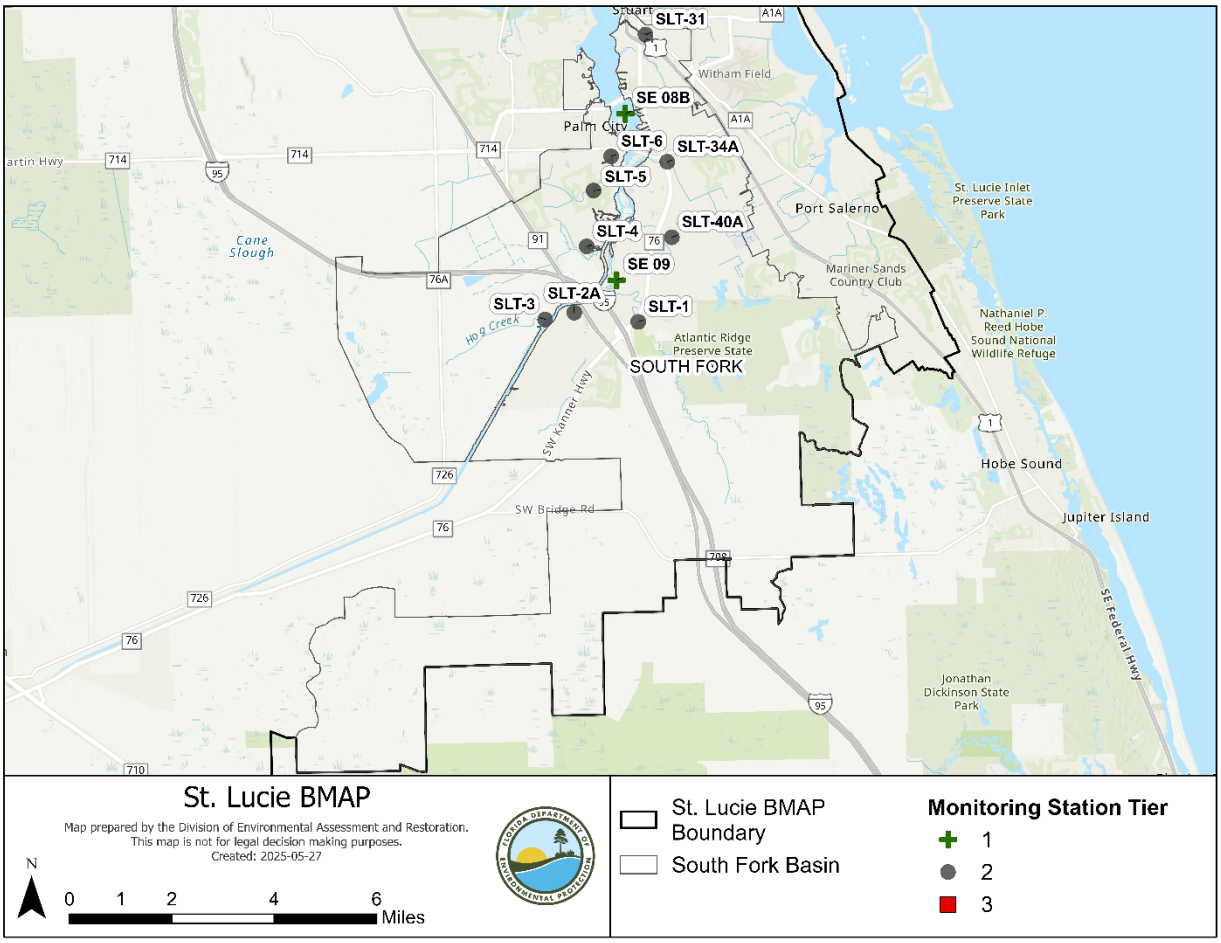


**Figure 19. South Fork Basin monitoring stations**

### 3.8.2 Basin Evaluation Results

#### 3.8.2.1 Targeted Restoration Area

**Table 58** summarizes the basin evaluation results based on data from WY2020–WY2024 for the South Fork Basin. The current TN concentration is 1.03 mg/L, which is above the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.137 mg/L, which is above the benchmark of 0.081 mg/L required to meet the TMDL. No FWM concentrations were calculated for this basin. No significant trends were detected for TN or TP concentration. **Table 59** lists the TRA prioritization results for the South Fork Basin, 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 60** 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 58. Basin evaluation results for the South Fork Basin

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL (lbs/ac) | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | TP Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **8** | South Fork | 1.03 | NA | NA | No significant trend | 0.137 | NA | NA | No significant trend |

## Table 59. TRA evaluation results for the South Fork Basin

| Basin | Stations | TN Priority | TP Priority |
|---|---|---|---|
| **South Fork** | SLT-1, SLT-2A, SLT-3, SLT-4, SLT-5, SLT-6, SLT-31, SLT-34A, SLT-40, SLT-40A | 2 | 2 |

## Table 60. Hot spot analysis results for the South Fork Basin

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| SE-09 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-1 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-3 | 1 | 1 | 0 | 2 | 4 | 2 | 2 | 2 | 2 | 8 |
| SLT-31 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-4 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-5 | 1 | 1 | 1 | 2 | 5 | 1 | 1 | 0 | 2 | 4 |
| SLT-6 | 1 | 1 | 2 | 2 | 6 | 2 | 2 | 2 | 2 | 8 |
| SLT-34A | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-40A | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 |
| SLT-2A | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 1 |
| Hogg Creek Sample 1 | 1 | 1 | 0 | 2 | 4 | 2 | 2 | 2 | 2 | 8 |
| Mapp Creek Outfall | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| S2 Canal Point | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| S3 Canal Point | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |

### 3.8.3 Projects

**Table 61** summarizes the existing and planned projects for the South Fork Basin that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 61. Existing and planned projects in the South Fork Basin**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3255 | City of Stuart | S-01 | Poppleton Creek - Phase II and III | Muck sediment removal, creation of 6.5-acre retention pond, and 160-foot weir. Habitat reconstruction; passive recreational improvements. 4 continuous deflective separation (CDS) baffle box units and street sweeping in basin. | BMP Treatment Train | Completed | 2008 | 2,184 | 748 | $4,371,250.00 |
| 3254 | City of Stuart | S-02 | Airport Ditch Project | Conversion of 2 uncontrolled drainage ditches to tide into retention/detention facilities controlled by "v" notch weirs. | On-line Retention BMPs | Completed | 2003 | 815 | 421 | $766,756.00 |
| 3253 | City of Stuart | S-03 | Crescent Basin Project | Stormwater retention through three first generation baffle boxes. | On-line Retention BMPs | Completed | 2003 | 502 | 83 | $180,000.00 |
| 3252 | City of Stuart | S-04 | Krueger Creek Project | Removal of "ooze" sediments and installation of 4 baffle boxes plus 2 CDS units in 2010. | Baffle Boxes- First Generation | Completed | 2001 | 18 | 14 | $33,000.00 |
| 3258 | City of Stuart | S-05 | Street Sweeping | Pavement cleaning by sweeping, vacuum, or washing. | Street Sweeping | Ongoing | NA | 275 | 176 | $33,000.00 |
| 3221 | City of Stuart | S-06 | Sediment Removal from Storm Systems | Removal and proper disposal of sediment captured by catch basin inserts. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 54 | 33 | NA |
| 3228 | City of Stuart | S-07 | Education Program | FYN Program. City ordinances for landscaping, irrigation, fertilizer, and pet waste management. City stormwater website. Stormwater calendars. Pollution prevention information posted on electronic billboards 365 days/year from 12 PM to 1 PM. | Education Efforts | Ongoing | NA | 2,202 | 370 | $30,150.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3232 | City of Stuart | S-09 | Anchorage Drainage Basin | There is 1 existing 1st-generation baffle box and 3 FDOT dry detention ponds in basin. Ponds receive runoff from roadways and portion of Roosevelt Bridge. Street swept in basin. | Baffle Boxes- First Generation | Completed | 2002 | 0 | 1 | $766,500.00 |
| 3233 | City of Stuart | S-10 | Downtown Drainage Basin | Drainage basin contains 4 1st-generation baffle boxes and 4 CDS units installed between 2000 and 2012; 3 catch basin filter baskets installed in 2010-11. Streets swept 12 times per month. | Baffle Boxes- First Generation | Completed | 2012 | 7 | 5 | $275,000.00 |
| 3248 | City of Stuart | S-12 | Landfill Basin | Landfill closed; ongoing groundwater monitoring, zero discharge. Closed basin with no outfall. | 100% On-site Retention | Completed | 2013 | 539 | 95 | $29,144.00 |
| 3227 | City of Stuart | S-13 | South Fork Drainage Basin | There are 2 1st-generation baffle boxes in northwest portion of basin and 1 unimproved ditch along south side of SE Ruhnkee St. that flows to wooded area on west side of basin boundary within city jurisdiction. | Baffle Boxes- First Generation | Completed | 2002 | 15 | 12 | TBD |
| 3226 | City of Stuart | S-14 | Neighborhood Initiated Sewer Expansion Program | Sewer expansion program to phase out septic tanks by expanding sewer service into areas of city using low pressure sewer system piping along road rights-of-way and individual residential grinder pump station at each home. | OSTDS Phase Out | Underway | TBD | 1,341 | NA | $3,200,000.00 |
| 3225 | City of Stuart | S-15 | Eldorado Heights | Area of land within the south-central area of Stuart city limits that does not discharge to surface waterbody or adjacent basin. | Non-contributing Basin | Completed | 2012 | 342 | 58 | $779,000.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3229 | City of Stuart | S-18 | Nondischarge Areas | Area within eastern city limits with no stormwater infrastructure and no outfalls discharging to adjacent basin. | Non-contributing Basin | Completed | 2014 | 2,386 | 412 | NA |
| 3220 | City of Stuart | S-19 | Baffle Boxes (22) Throughout City | Concrete structures containing a series of sediment settling chambers separated by baffles. Boxes are vacuum cleaned base on sediment depth inspection by city stormwater staff. | Baffle Boxes- First Generation | Completed | 2014 | 27 | 21 | NA |
| 3219 | City of Stuart | S-20 | CDS Units Throughout City | Hydrodynamic separators that capture, sediment, trap debris, and separate floating oils from runoff. CDS units are vacuum cleaned based on sediment depth inspections by city stormwater staff. | Hydrodynamic Separators | Completed | 2014 | 0 | 13 | NA |
| 3218 | City of Stuart | S-21 | SW South Carolina Dr. Drainage Project | Installation of a stormwater conveyance system and 1st-generation baffle box in a residential area to eliminate unrestricted sheet flow to St. Lucie River. | Baffle Boxes- First Generation | Completed | 2016 | 0 | 0 | $100,936.00 |
| 3217 | City of Stuart | S-22 | Poppleton Creek Tidal Wetlands Creation and Restoration | Construct tidal red mangrove wetlands on 4.3 acres of city-owned property south of and adjacent to Poppleton Creek east of Palm City Rd. Project will clear exotic vegetation and create tidal wetlands. | Wetland Restoration | Completed | 2018 | 152 | 0 | $270,200.00 |
| 3215 | City of Stuart | S-24 | Frazier Creek Pond | Construction of wet detention pond to eliminate unrestricted flow from ditch to tide. | Wet Detention Pond | Completed | 2002 | 898 | 377 | $1,702,000.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 6905 | City of Stuart | S-25 | Tressler Drive Baffle Box Project | Provide stormwater retention and treatment by installing 2nd generation baffle box for a 13.7 acre residential area along Tressler Drive. | Baffle Boxes-Second Generation | Completed | 2023 | 31 | 4 | $297,000.00 |
| 7546 | City of Stuart | S-32 | SW Dyer Drivee Drainage Improvements | Street and yard flooding. Route drainage to existing drainage system on SW Old Palm City Road. | Stormwater System Upgrade | Underway | 2024 | NA | NA | $225,000.00 |
| 7547 | City of Stuart | S-33 | SW Riverview Avenue Drainage and Water Quality Improvements | Install positive outfall at west end of SW Riverview Avenue. Install 2nd Generation Baffle Box for sediment removal and exfiltration for water quality treatment. | Baffle Boxes-Second Generation | Planned | 2030 | TBD | TBD | $389,000.00 |
| 7551 | City of Stuart | S-37 | SW Indian Grove Drive Drainage and Water Quality Improvements | Drainage improvements to alleviate road flooding and provide water quality treatment. Install inlets and route drainage to a new 2nd Generation Baffle Box and Bioswale before discharge to Poppleton Creek. | Bioswales | Planned | 2027 | TBD | TBD | $550,000.00 |
| 7552 | City of Stuart | S-38 | SE Central Parkway Drainage Improvements | Street flooding east of Solaris Healthcare due to high receiving ditch elevations. Improvements to regrade ditch to provide positive discharge to outfall. | Stormwater System Upgrade | Planned | 2025 | NA | NA | $89,000.00 |
| 7554 | City of Stuart | S-40 | SW 3rd Street Drainage Improvements | Low area at 518 SW 3rd Street floods during rainfall events at high tide. French drains are installed but have no discharge. Improvements include installing pervious pavement to alleviate flooding. | Pervious Pavement Systems | Planned | 2028 | TBD | TBD | $303,000.00 |
| 7555 | City of Stuart | S-41 | SW Anchorage Way Baffle Box | Baffle box not accessible for maintenance. Replace 1st Generation Baffle Box with 2nd Generation Baffle Box and relocate for accessibility. | Baffle Boxes-Second Generation | Planned | 2028 | TBD | TBD | $185,000.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 7556 | City of Stuart | S-42 | SE Georgia Avenue and SE Stypmann Blvd at Sailfish Park Drainage Improvements | Parking lot and street flooding. Improvements include installing new inlets and connecting to the existing drainage system. | Stormwater System Upgrade | Planned | 2030 | NA | NA | $85,000.00 |
| 7558 | City of Stuart | S-44 | Frazier Creek Tributary Ditch Drainage Improvements | Ditch not maintained and capacity reduced by development. Proposed improvements to include piping ditch. | Stormwater System Upgrade | Planned | 2025 | TBD | TBD | $465,000.00 |
| 7559 | City of Stuart | S-45 | SE Lincoln Avenue Drainage Improvements | Add inlets to capture ponding on SE Lincoln Avenue. Replace 1st Generation Baffle Boxes with 2nd Generation Baffle Boxes. Relocate inaccessible baffle box. | Baffle Boxes-Second Generation | Planned | 2026 | TBD | TBD | $365,000.00 |
| 7560 | City of Stuart | S-46 | SE Decker Avenue Drainage Improvements | Flooding east side of SE Decker Avenue. Provide outfall for SE Decker Avenue to connect to the US1 drainage system. | Exfiltration Trench | Planned | 2030 | TBD | TBD | $649,000.00 |
| 7562 | City of Stuart | S-48 | Poppleton Creek Water Quality Improvements | Create STA to treat US1 and SE Decker Avenue drainage before discharge to Poppleton Creek. | STAs | Planned | 2030 | TBD | TBD | $1,056,000.00 |
| 7564 | City of Stuart | S-50 | SW South Carolina Drive Drainage Improvements | River backing up into street during high tides. Install tidal check valve to prevent backflow. Install drainage pipe with exfiltration for treatment. | Exfiltration Trench | Planned | 2028 | TBD | TBD | $63,000.00 |
| 7565 | City of Stuart | S-51 | SE Ruhnke Street / SE Aster Lane Drainage Improvements | Street flooding. Install inlets and connect to existing drainage system on SE Ruhnke Street. Install exfiltration for water quality treatment. | Exfiltration Trench | Planned | 2030 | TBD | TBD | $520,000.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 6144 | FDACS | FDACS-08 | BMP Implementation and Verification | Enrollment and verification of BMPs by agricultural producers. Reductions based on FDACS OAWP December 2022 Enrollment and WaSh model. Acres treated based on FDACS OAWP December 2023 Enrollment and FSAID X. | Agricultural BMPs | Ongoing | NA | 20,633 | 3,400 | NA |
| 6150 | FDACS | FDACS-14 | Cost-Share BMP Projects | TBD. | Agricultural BMPs | Completed | 2020 | 2,784 | 669 | NA |
| 6156 | FDACS | FDACS-20 | Credit for Changes in Land Use | TBD. | Land Use Change | Completed | 2020 | TBD | TBD | NA |
| 3344 | FDOT District 4 | FDOT-15 | FM# 405504-1 | SR 9 rest area improvements. | Dry Detention Pond | Completed | 2005 | 40 | 6 | TBD |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | TBD |
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | TBD |
| 3353 | FDOT District 4 | FDOT-20 | FM# 230978-1 Indian St. Bridge (Pond East) | New bridge crossing on CR 714 from west of Mapp Rd. to east of SR 76 on Indian St. | Dry Detention Pond | Completed | 2014 | 4 | 1 | TBD |
| 3390 | FDOT District 4 | FDOT-21 | FM# 230978-1 Indian St. Bridge (Pond West) | New bridge crossing on CR 714 from west of Mapp Rd. to east of SR 76 on Indian St. | Wet Detention Pond | Completed | 2014 | 0 | 0 | TBD |
| 3385 | FDOT District 4 | FDOT-26 | Johnson Honda of Stuart Turn Lane (Basin A and B) | Not provided. | Exfiltration Trench | Completed | 2010 | 0 | 0 | TBD |
| 3384 | FDOT District 4 | FDOT-27 | FM# 228852-1 SR 76 Drainage Improvements at Cabana Point (Pond 9A) | SR 76 drainage improvements at Cabana Point. | Wet Detention Pond | Completed | 2006 | 14 | 4 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3383 | FDOT District 4 | FDOT-28 | FM# 228852-1 Osprey Ridge Planned Unit Development (PUD) - SR 76 Improvements | SR 76 Osprey Ridge PUD drainage improvements. | Exfiltration Trench | Completed | 2007 | 0 | 0 | TBD |
| 3382 | FDOT District 4 | FDOT-29 | FM# 228852-1 SR 76 Improvements - Kanner Professional Center. | SR 76 improvements - Kanner Professional Center. | Exfiltration Trench | Completed | 2009 | 0 | 0 | TBD |
| 3309 | FDOT District 4 | FDOT-50 | 230978-2 CR 714 Martin Hwy. Widening - Wetlands Basin | Road widening on CR 714 (Martin Hwy.) from east of Turnpike to just west of Mapp Rd. | Wet Detention Pond | Completed | 2016 | 9 | 3 | TBD |
| 3308 | FDOT District 4 | FDOT-51 | 422641-3 SR 76 Widening from I-95 to Monterey Rd. Pond 1 | Road widening on SR 76 from I-95 to Monterey Rd. | Dry Detention Pond | Completed | 2019 | 4 | 1 | TBD |
| 3307 | FDOT District 4 | FDOT-52 | 422641-3 SR 76 Widening from I-95 to Monterey Rd. Pond 2A | Road widening on SR 76 from I-95 to Monterey Rd. | Wet Detention Pond | Completed | 2019 | 4 | 1 | TBD |
| 3306 | FDOT District 4 | FDOT-53 | 422641-3 SR 76 Widening from I-95 to Monterey Rd. Pond 2B | Road widening on SR 76 from I-95 to Monterey Rd. | Wet Detention Pond | Completed | 2019 | 9 | 2 | TBD |
| 3305 | FDOT District 4 | FDOT-54 | 422641-3 SR 76 Widening from I-95 to Monterey Rd. Pond 3 | Road widening on SR 76 from I-95 to Monterey Rd. | Wet Detention Pond | Completed | 2019 | 16 | 4 | TBD |
| 3304 | FDOT District 4 | FDOT-55 | 422641-3 SR 76 Widening from I-95 to Monterey Rd. Pond 4 | Road widening on SR 76 from I-95 to Monterey Rd. | Wet Detention Pond | Completed | 2019 | 8 | 2 | TBD |
| 3303 | FDOT District 4 | FDOT-56 | 422641-3 SR 76 Widening from I-95 to Monterey Rd. Pond 8 | Road widening on SR 76 from I-95 to Monterey Rd. | Wet Detention Pond | Completed | 2019 | 8 | 2 | TBD |
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | TBD |
| 4858 | FDOT District 4 | FDOT-60 | FM# 422641-2 | Road widening of SR 76 from west of CR 711 to west of SW Locks Road. | Dry Detention Pond | Completed | 2021 | 1 | 0 | NA |
| 3337 | Hobe St. Lucie Conservancy District | HSL-01 | Hobe Sound Polo Club | Not provided. | BMP Treatment Train | Completed | 2013 | 2,915 | 718 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 6948 | Hobe St. Lucie Conservancy District | HSL-05 | Discovery PUD/Atlantic Ridge | Consist of a maximum of 317 residential units. The residential lots will be surrounded by lakes, an 18-hole Golf Course, and more than 144 acres of native wetland and upland habitat that will be restored adjacent to the Atlantic Ridge Preserve State Park. | Wet Detention Pond | Underway | 2028 | TBD | TBD | NA |
| 3339 | Martin County | MC-10 | Coral Gardens Water Quality Retrofit | 8.5 ac-ft of water quality treatment (0.05 inches). | BMP Treatment Train | Completed | 2005 | 2,512 | 1,725 | $2,321,860.00 |
| 3324 | Martin County | MC-11 | Fern Creek Water Quality Retrofit | 29.8 ac-ft of water quality treatment (0.81 inches). | BMP Treatment Train | Completed | 2005 | 1,828 | 590 | $2,660,200.00 |
| 3323 | Martin County | MC-12 | Old Palm City Water Quality Retrofit Phases I, II, and III | 8.1 ac-ft of water quality treatment (0.51 inches). | BMP Treatment Train | Completed | 2004 | 597 | 177 | $4,576,473.00 |
| 3320 | Martin County | MC-15 | Tropical Farms Water Quality Retrofit | 43.2 ac-ft of water quality treatment (1.11 inches). | BMP Treatment Train | Completed | 2010 | 2,845 | 826 | $4,047,219.00 |
| 3317 | Martin County | MC-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 108 | 69 | TBD |
| 3316 | Martin County | MC-19 | Baffle Box and Structure Cleanout | Not provided. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 397 | 161 | TBD |
| 3400 | Martin County | MC-20 | Education Program | FYN; landscaping, irrigation, fertilizer, and pet waste ordinances; PSAs, pamphlets, website, illicit discharge program. | Education Efforts | Ongoing | NA | 16,644 | 2,831 | TBD |
| 3300 | Martin County | MC-21 | FM# 230978-1 Indian St. Bridge (Pond East) | A surface water management system serving 62.06 acres of roadway development. | Dry Detention Pond | Completed | 2014 | 12 | 2 | TBD |
| 3367 | Martin County | MC-22 | FM# 230978-1 Indian St. Bridge (Pond West) | A surface water management system serving 62.06 acres of roadway development. | Wet Detention Pond | Completed | 2014 | 108 | 33 | TBD |
| 3448 | Martin County | MC-30 | Old Palm City Beemats | Floating wetlands that provide nutrient removal. | Floating Islands/ Managed Aquatic Plant Systems | Completed | 2013 | 282 | 24 | $21,996.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3447 | Martin County | MC-34 | Halpatiokee Park Rain Garden | Not provided. | Low Impact Development - Rain Gardens | Completed | 2015 | TBD0 | TBD | $1,500.00 |
| 3432 | Martin County | MC-37 | All American Ditch | Treatment train system with 15 ac-ft of water quality treatment over the 70 acre basin. | Regional Stormwater Treatment | Completed | 2017 | 980 | 298 | $5,165,376.00 |
| 3428 | Martin County | MC-41 | Old Palm City Phase IV (Ripple) | Treatment train system with 1.69 ac-ft water quality treatment over the 20.26 ac basin. | BMP Treatment Train | Completed | 2022 | TBD0 | 14 | $1,470,593.00 |
| 7436 | Martin County | MC-50 | Advanced Wastewater Treatment Pilot | Study of advanced wastewater treatment. | Sanitary Sewer and WWTF Maintenance | Planned | 2027 | NA | NA | $850,000.00 |
| 7437 | Martin County | MC-51 | Tropical Farms Wastewater Treatment Plant Improvements | Improvements to add a third clarifier, eliminate the sludge wet well, and add third waste activated sludge and return activated sludge. | Sanitary Sewer and WWTF Maintenance | Planned | 2025 | NA | NA | $6,529,000.00 |
| 3280 | Turnpike Enterprise | T-03 | Project 404135-2 Thomas B. Manuel Bridge North Pond | Thomas B. Manuel Bridge replacement design build, dry detention pond. | Dry Detention Pond | Completed | 2005 | 8 | 1 | $0.00 |

## 3.9. South Coastal Basin

The South Coastal Basin covers 7,992 acres of the St. Lucie River and Estuary Watershed. As shown in **Table 62**, the primary land use is urban and built-up. Stakeholders in the basin include FDOT, Martin County, and the City of Stuart.

**Table 62. Summary of land uses in the South Coastal Basin**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 6,053 | 75.7 |
| **2000** | Agriculture | 29 | 0.4 |
| **3000** | Upland Nonforested | 142 | 1.8 |
| **4000** | Upland Forests | 804 | 10.1 |
| **5000** | Water | 229 | 2.9 |
| **6000** | Wetlands | 273 | 3.4 |
| **7000** | Barren Land | 9 | 0.1 |
| **8000** | Transportation, Communication, and Utilities | 453 | 5.7 |
| | **Total** | **7,992** | **100** |

### 3.9.1 Water Quality Monitoring

**Table 63** summarizes the water quality monitoring stations in the South Coastal Basin, and **Figure 20** shows the station locations.

**Table 63. Water quality monitoring stations in the South Coastal Basin**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **South Coastal** | Yes | SFWMD | SLT-37A | 2 |
| **South Coastal** | Yes | SFWMD | SLT-44 | 2 |
| **South Coastal** | Yes | SFWMD | SLT-36 | 2 |
| **South Coastal** | Yes | SFWMD | SLT-35 | 2 |
| **South Coastal** | No | SFWMD | SE-11 | 1 |

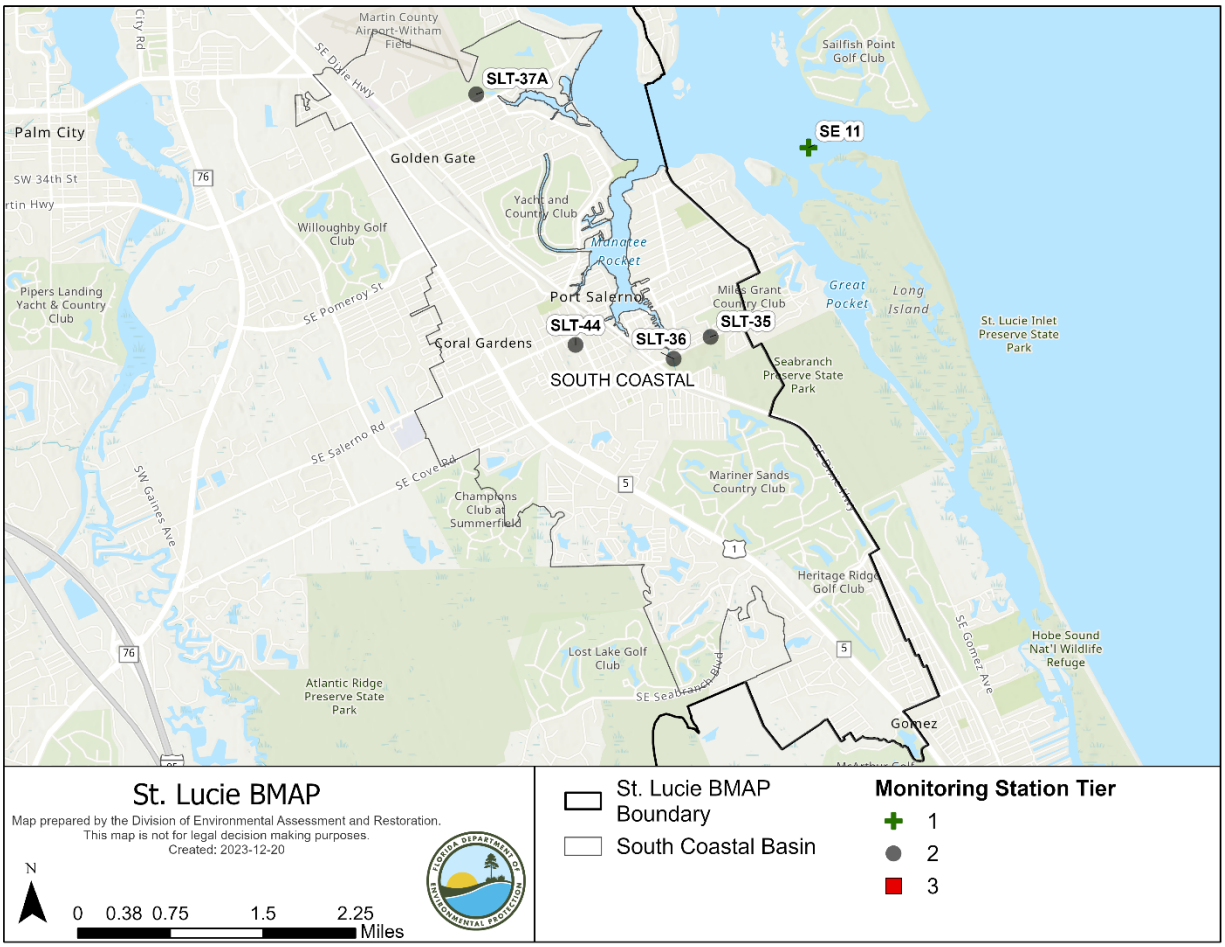


**Figure 20. South Coastal Basin monitoring stations**

### 3.9.2 Basin Evaluation Results

#### 3.9.2.1 Targeted Restoration Area

**Table 64** summarizes the basin evaluation results based on data from WY2020–WY2024 for the South Coastal Basin. The current TN concentration is 1.07 mg/L, which is above the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.100 mg/L, which is above the benchmark of 0.081 mg/L required to meet the TMDL. No FWM concentrations were calculated for this basin. A significant decreasing trend was detected for TN, and no significant trend was detected for TP. **Table 65** lists the TRA prioritization results for the South Coastal Basin, 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 66** 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 64. Basin evaluation results for the South Coastal Basin**

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL (lbs/ac) | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | TP Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **9** | South Coastal | 1.07 | NA | NA | Significant decreasing trend | 0.100 | NA | NA | No significant trend |

**Table 65. TRA evaluation results for the South Coastal Basin**

| Basin | Stations | TN Priority | TP Priority |
|---|---|---|---|
| **South Coastal** | SLT-37A, SLT-35, SLT-36, SLT-44 | 3 | 2 |

**Table 66. Hot spot analysis results for the South Coastal Basin**

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| SE-11 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| SLT-35 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 0 | 2 | 4 |
| SLT-37A | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| SLT-44 | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 1 |

### 3.9.3 Projects

**Table 67** summarizes the existing and planned projects for the South Coastal Basin that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 67. Existing and planned projects in the South Coastal Basin**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3255 | City of Stuart | S-01 | Poppleton Creek - Phase II and III | Muck sediment removal, creation of 6.5-acre retention pond, and 160-foot weir. Habitat reconstruction; passive recreational improvements. 4 CDS baffle box units and street sweeping in basin. | BMP Treatment Train | Completed | 2008 | 2,184 | 748 | $4,371,250.00 |
| 3258 | City of Stuart | S-05 | Street Sweeping | Pavement cleaning by sweeping, vacuum, or washing. | Street Sweeping | Ongoing | NA | 275 | 176 | $33,000.00 |
| 3221 | City of Stuart | S-06 | Sediment Removal from Storm Systems | Removal and proper disposal of sediment captured by catch basin inserts. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 54 | 33 | NA |
| 3228 | City of Stuart | S-07 | Education Program | FYN Program. City ordinances for landscaping, irrigation, fertilizer, and pet waste management. City stormwater website. Stormwater calendars. Pollution prevention information posted on electronic billboards 365 days/year from 12 PM to 1 PM. | Education Efforts | Ongoing | NA | 2,202 | 370 | $30,150.00 |
| 7553 | City of Stuart | S-39 | Stuart Business Park Drainage and Water Quality Improvements | Stuart Business Park experiences street and property flooding. Privately owned system with the exception of some publicly owned roads. Construct STA for treatment and storage prior to discharge. Joint Martin County / POA / City of Stuart Project. | Regional Stormwater Treatment | Planned | 2030 | TBD | TBD | $624,000.00 |
| 3345 | FDOT District 4 | FDOT-14 | FM# 228801-1 | Road widening of SR 5 from Seabranch Blvd to north of Salerno Rd. | Dry Detention Pond | Completed | 2003 | 2 | 0 | TBD |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | TBD |
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | TBD |
| 3329 | Martin County | MC-06 | Manatee Creek Water Quality Retrofit Phases I, II, and III | 30.4 ac-ft of water quality treatment (0.44 inches). | BMP Treatment Train | Completed | 2012 | 54 | 21 | $7,026,439.00 |
| 3326 | Martin County | MC-09 | Salerno Creek Water Quality Retrofit | 54.5 ac-ft of water quality treatment (1.03 inches). | BMP Treatment Train | Completed | 2003 | 1,110 | 338 | $4,715,074.00 |
| 3317 | Martin County | MC-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 108 | 69 | TBD |
| 3316 | Martin County | MC-19 | Baffle Box and Structure Cleanout | Not provided. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 397 | 161 | TBD |
| 3400 | Martin County | MC-20 | Education Program | FYN; landscaping, irrigation, fertilizer, and pet waste ordinances; PSAs, pamphlets, website, illicit discharge program. | Education Efforts | Ongoing | NA | 16,644 | 2,831 | TBD |
| 3446 | Martin County | MC-23 | Golden Gate Water Quality Retrofit Phases I, II | Treatment train system, baffle boxes, dry detention & 5.61 ac-ft of wet detention. | BMP Treatment Train | Completed | 2003 | 1,150 | 280 | $2,046,145.00 |
| 3445 | Martin County | MC-24 | Golden Gate Water Quality Retrofit Phase III | Treatment train system, baffle boxes, & 2.26 ac-ft of wet detention. | BMP Treatment Train | Completed | 2004 | 123 | 37 | $584,371.00 |
| 3444 | Martin County | MC-25 | Hibiscus Park Water Quality Retrofit Phases I and II | 1.24 ac-ft of Wet Detention volume. | Wet Detention Pond | Completed | 2007 | 24 | 7 | $1,390,574.00 |
| 3443 | Martin County | MC-26 | Poinciana Gardens Water Quality Retrofit Phases I and II | Treatment Train system, 87.36 ac-ft of wet detention and baffle box. | BMP Treatment Train | Completed | 2003 | 984 | 284 | $2,960,547.00 |
| 3442 | Martin County | MC-27 | Willoughby Creek Muck Dredging | Not provided. Deemed "not applicable" in 2019. | Muck Removal/ Restoration Dredging | Completed | 2012 | TBD | TBD | $13,200,000.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3441 | Martin County | MC-28 | Manatee Pocket Dredging | Not provided. | Muck Removal/ Restoration Dredging | Completed | 2012 | TBD | TBD | $1,000,000.00 |
| 3434 | Martin County | MC-35 | Manatee Pocket SW Prong Baffle Box | Nutrient-separating baffle box serving 90 acres within the Manatee Creek watershed. | Baffle Boxes-Second Generation | Completed | 2016 | 477 | 68 | $232,505.00 |
| 3433 | Martin County | MC-36 | Martin County Golf Course Water Quality | Not provided. | Wet Detention Pond | Completed | 2016 | 873 | 253 | $156,255.00 |
| 3430 | Martin County | MC-39 | Willoughby Creek STA | Treatment train system with 19.13 acre-feet of water quality treatment. | BMP Treatment Train | Completed | 2020 | 1,554 | 411 | $3,300,000.00 |
| 4861 | Martin County | MC-43 | East Fork Creek STA | 700-foot long STA and a 1500-foot long lake within an unopened right-of-way and FDOT Lateral Ditch to provide stormwater treatment. | Regional Stormwater Treatment | Underway | 2024 | 10,003 | 2,726 | $4,000,000.00 |
| 4682 | Martin County | MC-44 | Manatee Pocket SW Prong Retrofit | 5.5-acre lake and emergent marsh STA on 8-acres directly upstream of the Manatee Pocket; restoration and enhancement of existing tidal marsh. | Regional Stormwater Treatment | Underway | 2024 | 111 | 178 | $2,000,000.00 |

## 3.10. South Mid-Estuary

The South Mid-Estuary Basin covers 2,080 acres of the St. Lucie River and Estuary Watershed. As shown in **Table 68**, urban and built-up is the largest land use category in the basin. Stakeholders in the basin include FDOT, Martin County, and the City of Stuart.

**Table 68. Summary of land uses in the South Mid-Estuary Basin**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 1,417 | 68.1 |
| **2000** | Agriculture | - | - |
| **3000** | Upland Nonforested | 7 | 0.3 |
| **4000** | Upland Forests | 212 | 10.2 |
| **5000** | Water | 33 | 1.6 |
| **6000** | Wetlands | - | - |
| **7000** | Barren Land | - | - |
| **8000** | Transportation, Communication, and Utilities | 411 | 19.8 |
| | **Total** | **2,080** | **100** |

### 3.10.1 Water Quality Monitoring

**Table 69** summarizes the water quality monitoring stations in the South Mid-Estuary Basin, and **Figure 21** shows the station locations.

**Table 69. Water quality monitoring stations in the South Mid-Estuary Basin**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **South Mid-Estuary** | Yes | SFWMD | SLT-38A | 2 |
| **South Mid-Estuary** | No | SFWMD | SE-01 | 1 |

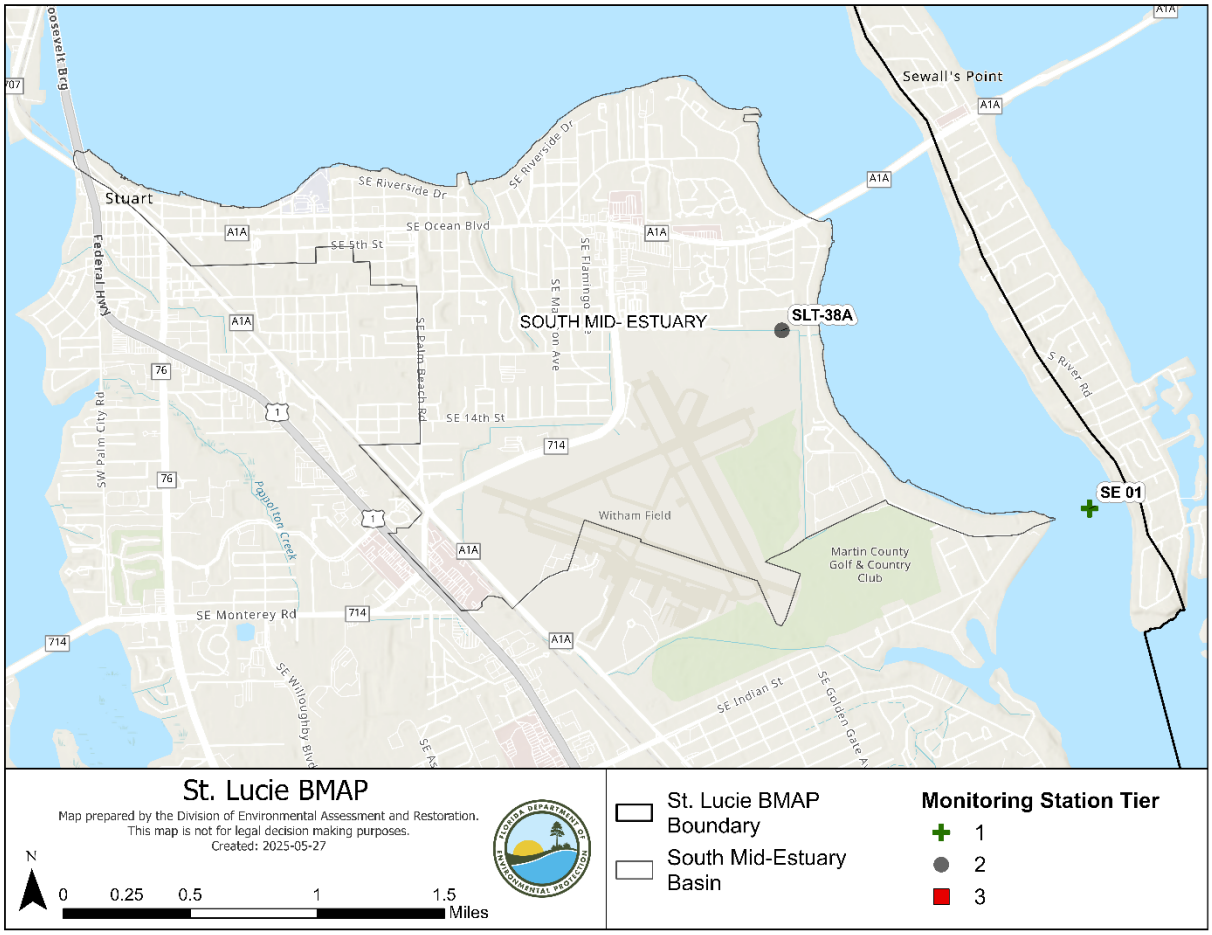


**Figure 21. South Mid-Estuary Basin monitoring stations**

### 3.10.2 Basin Evaluation Results

#### 3.10.2.1 Targeted Restoration Area

**Table 70** summarizes the basin evaluation results based on data from WY2014–WY2018 for the South Mid-Estuary Basin. The current TN concentration is 0.65 mg/L, which is below the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.037 mg/L, which is below the benchmark of 0.081 mg/L required to meet the TMDL. No FWM concentrations were calculated for this basin. Significant decreasing trends were detected for TN and TP concentration. **Table 71** lists the TRA prioritization results for the South Mid-Estuary Basin, with (1) the highest priority, (2) the next highest priority, and (3) a priority as resources allow.

#### 3.10.2.2 Hot Spot Analysis

**Table 72** 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 70. Basin evaluation results for the South Mid-Estuary Basin**

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL (lbs/ac) | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | TP Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **10** | South Mid-Estuary | 0.65 | NA | NA | Significant decreasing trend | 0.037 | NA | NA | Significant decreasing trend |

**Table 71. TRA evaluation results for the South Mid-Estuary Basin**

| Basin | Station | TN Priority | TP Priority |
|---|---|---|---|
| **South Mid-Estuary** | SLT-38, SLT-38A | 3 | 3 |

**Table 72. Hot spot analysis results for the South Mid-Estuary Basin**

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| SLT-38A | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |

### 3.10.3 Projects

**Table 73** summarizes the existing and planned projects for the South Mid-Estuary Basin that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 73. Existing and planned projects in the South Mid-Estuary Basin**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3255 | City of Stuart | S-01 | Poppleton Creek - Phase II and III | Muck sediment removal, creation of 6.5-acre retention pond, and 160-foot weir. Habitat reconstruction; passive recreational improvements. 4 CDS baffle box units and street sweeping in basin. | BMP Treatment Train | Completed | 2008 | 2,184 | 748 | $4,371,250.00 |
| 3254 | City of Stuart | S-02 | Airport Ditch Project | Conversion of 2 uncontrolled drainage ditches to tide into retention/detention facilities controlled by "v" notch weirs. | On-line Retention BMPs | Completed | 2003 | 815 | 421 | $766,756.00 |
| 3252 | City of Stuart | S-04 | Krueger Creek Project | Removal of "ooze" sediments and installation of 4 baffle boxes plus 2 CDS units in 2010. | Baffle Boxes- First Generation | Completed | 2001 | 18 | 14 | $432,000.00 |
| 3258 | City of Stuart | S-05 | Street Sweeping | Pavement cleaning by sweeping, vacuum, or washing. | Street Sweeping | Ongoing | NA | 275 | 176 | $33,000.00 |
| 3221 | City of Stuart | S-06 | Sediment Removal from Storm Systems | Removal and proper disposal of sediment captured by catch basin inserts. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 54 | 33 | NA |
| 3228 | City of Stuart | S-07 | Education Program | FYN Program. City ordinances for landscaping, irrigation, fertilizer, and pet waste management. City stormwater website. Stormwater calendars. Pollution prevention information posted on electronic billboards 365 days/year from 12 PM to 1 PM. | Education Efforts | Ongoing | NA | 2,202 | 370 | $30,150.00 |
| 3232 | City of Stuart | S-09 | Anchorage Drainage Basin | There is 1 existing 1st-generation baffle box and 3 FDOT dry detention ponds in basin. Ponds receive runoff from roadways and portion of Roosevelt Bridge. Street swept in basin. | Baffle Boxes- First Generation | Completed | 2002 | 0 | 1 | $766,500.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3233 | City of Stuart | S-10 | Downtown Drainage Basin | Drainage basin contains 4 1st-generation baffle boxes and 4 CDS units installed between 2000 and 2012; 3 catch basin filter baskets installed in 2010-11. Streets swept 12 times per month. | Baffle Boxes- First Generation | Completed | 2012 | 7 | 5 | $275,000.00 |
| 3234 | City of Stuart | S-11 | Hildebrad Basin | 1 Continuous deflection separation unit and 7 catch basin filter baskets installed in 2010-11; includes street sweeping in basin. | Hydrodynamic Separators | Completed | 2011 | 0 | 13 | $388,480.00 |
| 3226 | City of Stuart | S-14 | Neighborhood Initiated Sewer Expansion Program | Sewer expansion program to phase out septic tanks by expanding sewer service into areas of city using low pressure sewer system piping along road rights-of-way and individual residential grinder pump station at each home. | OSTDS Phase Out | Underway | TBD | 1,341 | NA | $3,200,000.00 |
| 3224 | City of Stuart | S-16 | Amerigo Avenue Drainage Improvements | Construction of dry retention areas to eliminate street flooding, provide water quality treatment, and TMDL reductions. | Dry Detention Pond | Completed | 2014 | 70 | 11 | $679,557.00 |
| 3229 | City of Stuart | S-18 | Nondischarge Areas | Area within eastern city limits with no stormwater infrastructure and no outfalls discharging to adjacent basin. | Non-contributing Basin | Completed | 2014 | 2,386 | 412 | NA |
| 3220 | City of Stuart | S-19 | Baffle Boxes (22) Throughout City | Concrete structures containing a series of sediment settling chambers separated by baffles. Boxes are vacuum cleaned base on sediment depth inspection by city stormwater staff. | Baffle Boxes- First Generation | Completed | 2014 | 27 | 21 | NA |
| 3219 | City of Stuart | S-20 | CDS Units Throughout City | Hydrodynamic separators that capture, sediment, trap debris, and separate floating oils from runoff. CDS units are vacuum cleaned based on sediment depth inspections by city stormwater staff. | Hydrodynamic Separators | Completed | 2014 | 0 | 13 | NA |
| 3215 | City of Stuart | S-24 | Frazier Creek Pond | Construction of wet detention pond to eliminate unrestricted flow from ditch to tide. | Wet Detention Pond | Completed | 2002 | 898 | 377 | $1,702,000.00 |
| 7545 | City of Stuart | S-31 | SE Mango Place / SE Riverside Drive Drainage and Water Quality | House and street flooding. Route drainage to new Bioswale and 2nd Generation Baffle Box prior to discharge to the St. Lucie River. | Baffle Boxes- Second Generation | Completed | 2024 | 4 | 1 | $372,623.72 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 7548 | City of Stuart | S-34 | SE Detroit Avenue and SE Florida Avenue Baffle Boxes | Upgrade existing 1st Generation Baffle Box to 2nd Generation Baffle Box, and relocate south for accessibility. Route East Ocean Drainage around existing building, and increase pipe sizes to Florida Street outfall for improved conveyance. | Baffle Boxes-Second Generation | Planned | 2030 | TBD | TBD | $567,000.00 |
| 7549 | City of Stuart | S-35 | Lake Charlotte Drainage Improvements | Drainage improvements to resolve structure, yard and street flooding. Proposed permanent pump with outfall north to existing inlet. | Stormwater System Upgrade | Planned | 2028 | NA | NA | $154,000.00 |
| 7550 | City of Stuart | S-36 | SE Flamingo Avenue at Flamingo Pond and SE Pelican Drive Drainage Improvements | Resolve street flooding on SE Flamingo Avenue and SE Pelican Drive. Install inlets and connect to existing drainage system on SE Ocean Boulevard. | Exfiltration Trench | Planned | 2028 | TBD | TBD | $281,000.00 |
| 7557 | City of Stuart | S-43 | St. Lucie Estates Drainage Improvements | SE Madison Avenue sidewalk flooding and intersection flooding at SE Flamingo Avenue/SE 8th Street, SE Dolphin Drive / SE 6th Street, and SE Dolphin Drive / SE 7th Street. Improvements include installation of inlets and connection to the existing drainage. | Exfiltration Trench | Planned | 2029 | TBD | TBD | $862,000.00 |
| 7561 | City of Stuart | S-47 | SE Ocean Avenue Drainage Improvements | SE Ocean Avenue flooding and adjacent property flooding. Improvements include new dry retention pond to treat runoff before discharge to the existing SE Monterey Road drainage system. Drainage easement needed. | Bioswales | Planned | 2030 | TBD | TBD | $190,000.00 |
| 7563 | City of Stuart | S-49 | SE Lonita Street / SE Villas Street Drainage Improvements | Flooding at SE Lonita Street / SE Casa Avenue intersection. Install inlets and connect to existing drainage system. | Stormwater System Upgrade | Underway | 2025 | NA | NA | $385,000.00 |
| 7566 | City of Stuart | S-52 | SE Illinois Avenue Living Shoreline | A living shoreline was installed to protect against erosion and to provide habitat for marine species and wading birds. A buffered shoreline was installed upland of the living shoreline. | Creating/ Enhancing Living Shoreline | Completed | 2023 | 19 | 3 | $207,472.22 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3348 | FDOT District 4 | FDOT-11 | FM# 228821-1 (West 1 A) | SR A1A Evans Crary Senior Bridge replacement. | Exfiltration Trench | Completed | 2001 | 11 | 2 | TBD |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | TBD |
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | TBD |
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | TBD |
| 3334 | Martin County | MC-01 | Cedar Point Water Quality Retrofit | 1.7 ac-ft of water quality treatment (0.36 inches). | BMP Treatment Train | Completed | 2004 | 106 | 39 | $398,027.00 |
| 3317 | Martin County | MC-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 108 | 69 | TBD |
| 3316 | Martin County | MC-19 | Baffle Box and Structure Cleanout | Not provided. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 397 | 161 | TBD |
| 3400 | Martin County | MC-20 | Education Program | FYN; landscaping, irrigation, fertilizer, and pet waste ordinances; PSAs, pamphlets, website, illicit discharge program. | Education Efforts | Ongoing | NA | 16,644 | 2,831 | TBD |
| 3433 | Martin County | MC-36 | Martin County Golf Course Water Quality | Not provided. | Wet Detention Pond | Completed | 2016 | 873 | 253 | $156,255.00 |

## 3.11.North Mid-Estuary Basin

The North Mid-Estuary Basin covers 3,957 acres of the St. Lucie River and Estuary Watershed. As shown in **Table 74**, the major land use is urban and built-up. Stakeholders in the basin include FDOT, Martin County, City of Stuart, and Town of Sewall's Point.

**Table 74. Summary of land uses in the North Mid-Estuary Basin**

| Level 1 Land Use Code | Land Use Description | Acres | % Total |
|---|---|---|---|
| **1000** | Urban and Built-Up | 2,861 | 72.3 |
| **2000** | Agriculture | - | - |
| **3000** | Upland Nonforested | 193 | 4.9 |
| **4000** | Upland Forests | 473 | 12.0 |
| **5000** | Water | 111 | 2.8 |
| **6000** | Wetlands | 249 | 6.3 |
| **7000** | Barren Land | - | - |
| **8000** | Transportation, Communication, and Utilities | 70 | 1.8 |
| | **Total** | **3,957** | **100** |

### 3.11.1 Water Quality Monitoring

**Table 75** summarizes the water quality monitoring stations in the North Mid-Estuary Basin, and **Figure 22** shows the station locations.

**Table 75. Water quality monitoring stations in the North Mid-Estuary Basin**

| Basin | Representative Site? | Entity | Station ID | Tier |
|---|---|---|---|---|
| **North Mid-Estuary** | Yes | SFWMD | SLT-30A | 2 |
| **North Mid-Estuary** | Yes | SFWMD | SLT-29 | 2 |
| **North Mid-Estuary** | No | SFWMD | SE-02 | 1 |

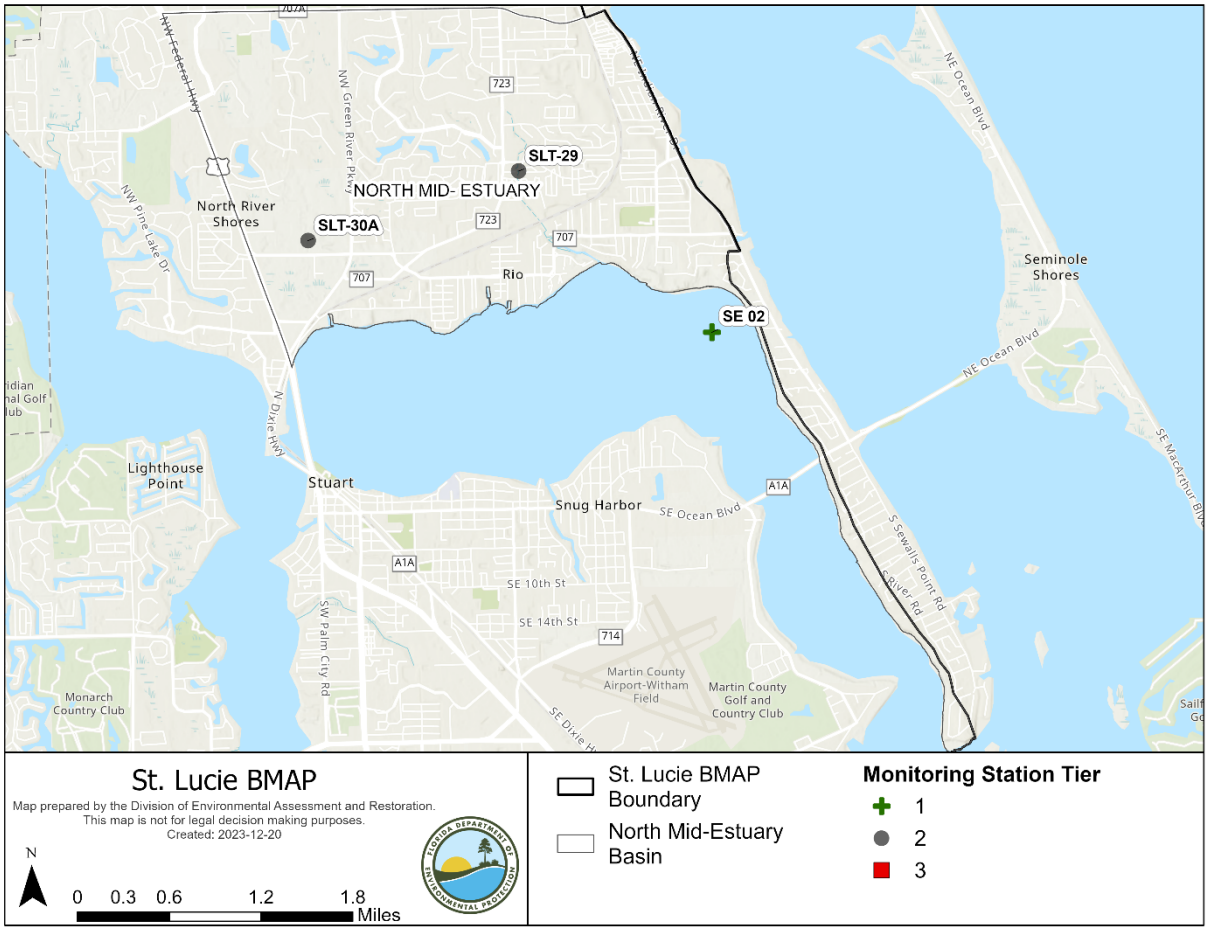


**Figure 22. North Mid-Estuary Basin monitoring stations**

## 3.11.2 Basin Evaluation Results

### 3.11.2.1 Targeted Restoration Area

**Table 76** summarizes the basin evaluation results based on data from WY2020–WY2024 for the North Mid-Estuary Basin. The current TN concentration is 0.91 mg/L, which is above the benchmark of 0.72 mg/L required to meet the TMDL. The current TP concentration is 0.023 mg/L, which is below the benchmark of 0.081 mg/L required to meet the TMDL. No FWM concentrations were calculated for this basin. No significant trends were detected for TN or TP. **Table 77** lists the TRA prioritization results for the North Mid-Estuary Basin, with (1) the highest priority, (2) the next highest priority, and (3) a priority as resources allow.

### 3.11.2.2 Hot Spot Analysis

**Table 78** 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 76. Basin evaluation results for the North Mid-Estuary Basin**

| TRA ID | Basin Name | TN (mg/L) (Benchmark – 0.72) | TN 5-year Average FWM Concentration (mg/L) | TN UAL (lbs/ac) | TN Trend Analysis | TP (mg/L) (Benchmark – 0.081) | TP 5-year Average FWM Concentration (mg/L) | TP UAL (lbs/ac) | Trend Analysis |
|---|---|---|---|---|---|---|---|---|---|
| **11** | North Mid-Estuary | 0.91 | NA | NA | No significant trend | 0.023 | NA | NA | No significant trend |

**Table 77. TRA evaluation results for the North Mid-Estuary Basin**

| Basin | Stations | TN Priority | TP Priority |
|---|---|---|---|
| **North Mid-Estuary** | SLT-29, SLT-30A | 2 | 3 |

**Table 78. Hot spot analysis results for the South Coastal Basin**

| Monitoring Location | TN Average Concentration Rank | TN Percentile Rank | TN Standard Deviation Rank | TN Frequency Rank | TN Total Rank | TP Average Concentration Rank | TP Percentile Rank | TP Standard Deviation Rank | TP Frequency Rank | TP Total Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| SLT-29 | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 |
| SLT-30A | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 |

### 3.11.3 Projects

**Table 79** summarizes the existing and planned projects for the North Mid-Estuary Basin that were provided for the BMAP update. The existing and planned projects are a BMAP requirement.

**Table 79. Existing and planned projects in the North Mid-Estuary Basin**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3258 | City of Stuart | S-05 | Street Sweeping | Pavement cleaning by sweeping, vacuum, or washing. | Street Sweeping | Ongoing | NA | 275 | 176 | $33,000.00 |
| 3221 | City of Stuart | S-06 | Sediment Removal from Storm Systems | Removal and proper disposal of sediment captured by catch basin inserts. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 54 | 33 | NA |
| 3228 | City of Stuart | S-07 | Education Program | FYN Program. City ordinances for landscaping, irrigation, fertilizer, and pet waste management. City stormwater website. Stormwater calendars. Pollution prevention information posted on electronic billboards 365 days/year from 12 PM to 1 PM. | Education Efforts | Ongoing | NA | 2,202 | 370 | $30,150.00 |
| 3231 | City of Stuart | S-08 | North Point CRA Drainage Basin | There is 1 existing 1st-generation baffle box and street sweeping in basin, existing FDOT swale along basin's east boundary, and 2 FDOT retention/detention ponds near the Roosevelt Bridge. | Baffle Boxes-First Generation | Completed | 2002 | 4 | 3 | $1,339,000.00 |
| 3222 | City of Stuart | S-17 | Haney Creek Project - Phase I - IV | Creation of flow-through marsh and multiple wetlands and control structures to address stormwater quality, environmental restoration and preservation, greenways, passive recreation, and environmental education. | Constructed Wetland Treatment | Completed | 2016 | 737 | 224 | $4,831,411.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3220 | City of Stuart | S-19 | Baffle Boxes (22) Throughout City | Concrete structures containing a series of sediment settling chambers separated by baffles. Boxes are vacuum cleaned base on sediment depth inspection by city stormwater staff. | Baffle Boxes-First Generation | Completed | 2014 | 27 | 21 | NA |
| 3216 | City of Stuart | S-23 | East Heart of Haney Creek Wetlands Restoration | Restore eastern third of Heart of Haney Creek to wetlands by creating system of berms and weirs within 6 acres of exotic cleared area. | Wetland Restoration | Completed | 2019 | 202 | 10 | $220,000.00 |
| 7541 | City of Stuart | S-29 | NW Dixie Highway Roadway Modification | Raise elevation of low section of road, currently experiencing groundwater up-flow through pavement. | Exfiltration Trench | Planned | 2031 | NA | NA | TBD |
| 3347 | FDOT District 4 | FDOT-12 | FM# 228821-1 (East) | SR A1A Evans Crary Senior Bridge replacement. | Exfiltration Trench | Completed | 2001 | 5 | 1 | TBD |
| 3377 | FDOT District 4 | FDOT-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 1,419 | 910 | TBD |
| 3351 | FDOT District 4 | FDOT-19 | Public Education | Pamphlets. | Education Efforts | Ongoing | NA | 109 | 20 | TBD |
| 3289 | FDOT District 4 | FDOT-57 | Fertilizer Application Cessation | No longer applying routine fertilizer. | Fertilizer Cessation | Completed | 2016 | 23,881 | 5,970 | TBD |
| 3333 | Martin County | MC-02 | Indian River Drive Baffle Boxes | Six second generation baffle boxes. | Baffle Boxes-Second Generation | Completed | 2010 | 77 | 11 | $741,827.00 |
| 3332 | Martin County | MC-03 | Warner Creek/Leilani Heights Water Quality Retrofit Phase I | 8.0 ac-ft of water quality treatment (0.14 inches). | BMP Treatment Train | Completed | 2011 | 539 | 90 | $541,854.00 |
| 3331 | Martin County | MC-04 | Warner Creek Phase II | 0.36 acre dry detention area with control structure. | Dry Detention Pond | Completed | 2012 | 16 | 3 | $1,750,338.00 |
| 3330 | Martin County | MC-05 | Warner Creek Phase III -Beacon 21 | 2.96 acre wet detention area with control structure weir. | Wet Detention Pond | Completed | 2012 | 3,103 | 1,218 | $2,122,935.00 |
| 3328 | Martin County | MC-07 | Rio/St. Lucie- Water Quality Retrofit - Phase 1 | 3.0 ac-ft of water quality treatment (0.35 inches). | BMP Treatment Train | Completed | 2006 | 71 | 12 | $354,161.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3314 | Martin County | MC-08 | Rio/St. Lucie- Water Quality Retrofit - Phase 2 | 5.1 ac-ft of additional water quality treatment and control structures on existing lakes (0.7 inches). | Wet Detention Pond | Completed | 2008 | 428 | 124 | $998,170.00 |
| 3319 | Martin County | MC-16 | Septic to Central Sewer Conversions | 872 single-family and multifamily residential and commercial units in five neighborhoods. | OSTDS Phase Out | Completed | 2008 | 11,650 | 427 | $9,500,000.00 |
| 3317 | Martin County | MC-18 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 108 | 69 | TBD |
| 3316 | Martin County | MC-19 | Baffle Box and Structure Cleanout | Not provided. | Catch Basin Inserts/Inlet Filter Cleanout | Ongoing | NA | 397 | 161 | TBD |
| 3400 | Martin County | MC-20 | Education Program | FYN; landscaping, irrigation, fertilizer, and pet waste ordinances; PSAs, pamphlets, website, illicit discharge program. | Education Efforts | Ongoing | NA | 16,644 | 2,831 | TBD |
| 3440 | Martin County | MC-29 | Rio Water Quality Retrofit | Exfiltration Trenches & Baffle Boxes. | BMP Treatment Train | Completed | 2014 | 420 | 69 | $696,800.00 |
| 3431 | Martin County | MC-38 | Hilltop Street Exfiltration Trench | 610 linear feet of exfiltration trenches along NE Hilltop Street in Jensen Beach. | Exfiltration Trench | Completed | 2018 | 123 | 20 | $264,774.00 |
| 3429 | Martin County | MC-40 | Savannah Road Exfiltration Trench | NA. | BMP Treatment Train | Planned | TBD | NA | NA | NA |
| 5690 | Martin County | MC-46 | Septic to Central Sewer Conversions | 1,819 single-family, multi-family residential, and commercial units. | OSTDS Phase Out | Completed | 2018 | 24,302 | NA | $24,556,500.00 |
| 6466 | Martin County | MC-47 | Septic to Central Sewer Conversions | 1,630 septic conversions in multiple areas as described in the OSTD plan converted between 2019-2024 | OSTDS Phase Out | Completed | 2024 | 21,777 | 799 | $55,981,565.00 |
| 7420 | Martin County | MC-48 | Septic to Sewer Conversions | Approximately 2044 to be converted per OSTDS plan. Estimating 272 per year for next 8 years. This project will be updated next year for the actual conversions and a new underway project will have the remaining until complete. | OSTDS Phase Out | Underway | 2032 | TBD | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 7421 | Martin County | MC-49 | Septic to Sewer Conversion | 4436 Septic Conversions planned per OSTDS plan (Port Salerno Peninsula, Beau Rivage, Port Salerno/New Monrovia, Coral Gardens, Old Palm City, Rocky Point, Windstone/Evergreen, Strafford Downs, Woodside). | OSTDS Enhancement | Planned | 2048 | TBD | TBD | $76,630,800.00 |
| 3420 | Town of Sewall's Point | SP-01 | Ridgeland Court Retrofit | Installation of exfiltration/baffle box. | Baffle Boxes-First Generation | Completed | 2002 | 0 | 0 | TBD |
| 3419 | Town of Sewall's Point | SP-02 | Palm Court/Knowles | Installation of baffle box. | Baffle Boxes-First Generation | Completed | 2000 | 0 | 0 | TBD |
| 3425 | Town of Sewall's Point | SP-05 | Heritage Park | Installation of stormwater retrofit area in developed subdivision. | Off-line Retention BMPs | Completed | 2000 | 0 | 0 | TBD |
| 3415 | Town of Sewall's Point | SP-07 | Rio Vista Park | Installation of baffle boxes/ erosion control for outfall to Indian River. | Baffle Boxes-First Generation | Completed | 2002 | 0 | 0 | TBD |
| 3315 | Town of Sewall's Point | SP-08 | India Lucie | Installation of retrofit of weir/ retention area with 2 baffle boxes in old subdivision without retention to directly discharge to Indian River. | Wet Detention Pond | Completed | 2003 | 4 | 2 | TBD |
| 3413 | Town of Sewall's Point | SP-09 | India Lucie | Installation of retrofit of weir/ retention area with 2 baffle boxes in old subdivision without retention to directly discharge to Indian River. | Baffle Boxes-First Generation | Completed | 2006 | 0 | 0 | TBD |
| 3412 | Town of Sewall's Point | SP-10 | Periwinkle | Installation of baffle box. | Baffle Boxes-First Generation | Completed | 2000 | 0 | 0 | TBD |
| 3238 | Town of Sewall's Point | SP-12 | Riverview | Installation of baffle box. | Baffle Boxes-First Generation | Completed | 2002 | 0 | 0 | TBD |
| 3240 | Town of Sewall's Point | SP-13 | Pineapple Lane | Installation of outfall exfiltration. | Exfiltration Trench | Completed | 2002 | 0 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3245 | Town of Sewall's Point | SP-17 | State Road A1A | Installation of outfall exfiltration. | Exfiltration Trench | Completed | 2012 | 102 | 15 | TBD |
| 3244 | Town of Sewall's Point | SP-18 | Education Program | Fertilizer ordinance. | Education Efforts | Ongoing | NA | 24 | 4 | NA |
| 3243 | Town of Sewall's Point | SP-19 | Street Sweeping | 19 cubic yards of debris collected through street sweeping. | Street Sweeping | Ongoing | NA | 25 | 16 | TBD |
| 3239 | Town of Sewall's Point | SP-23 | Highpoint West | Installation of baffle box. | Baffle Boxes-First Generation | Completed | 2000 | 0 | 0 | TBD |
| 3236 | Town of Sewall's Point | SP-26 | High Point Exfiltration | Installation of exfiltration/swales. | BMP Treatment Train | Completed | 2014 | 59 | 10 | TBD |
| 3286 | Town of Sewall's Point | SP-30 | Indialucie | Installation of exfiltration system in wet retention area. | Exfiltration Trench | Completed | 2014 | 11 | 2 | TBD |
| 3271 | Town of Sewall's Point | SP-32 | North Septic Tank Elimination - Phase I | Conversion of 224 existing septic tanks to sanitary sewer. | OSTDS Phase Out | Completed | 2020 | 2,087 | NA | $500,000.00 |
| 4596 | Town of Sewall's Point | SP-33 | North and South Outfall Control Structures (15 Outfalls) | Add control structures. | Control Structure | Underway | TBD | TBD | TBD | $1,125,000.00 |
| 4597 | Town of Sewall's Point | SP-34 | South Sewall's Point Road - Phase 2 | Installation of exfiltration system/baffle boxes and STA. | BMP Treatment Train | Planned | 2026 | 388 | 56 | TBD |
| 4598 | Town of Sewall's Point | SP-35 | South Sewall's Point Road - Phase 3 | Installation of exfiltration system/baffle boxes and STA. | BMP Treatment Train | Planned | 2025 | 234 | 47 | NA |
| 4599 | Town of Sewall's Point | SP-36 | South Sewall's Point Road - Phase 4 | Installation of exfiltration system/baffle boxes and STA. | BMP Treatment Train | Planned | TBD | TBD | TBD | TBD |
| 5517 | Town of Sewall's Point | SP-37 | South Septic Tank Elimination - Phase 2 | Conversion of 706 existing septic tanks to sanitary sewer. | OSTDS Phase Out | Underway | 2026 | 6,075 | NA | $25,000,000.00 |
| 7455 | Town of Sewall's Point | SP-38 | North Sewall's Point Road | Installation of exfiltration system/baffle boxes and STAs. | BMP Treatment Train | Planned | TBD | TBD | TBD | $4,000,000.00 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 5518 | Town of Sewall's Point | SP-38 | South Sewall's Point Road - Phase 1, Part 4 (River Road) | BMP treatment train to adjust the slopes on the roadway, construct exfiltration storage/treatment pipe inlets and direct flows into an existing STA/detention pond, exfiltration system, baffle boxes, littoral shelves and a weir at the outfall. | BMP Treatment Train | Planned | 2026 | TBD | TBD | TBD |
| 6468 | Town of Sewall's Point | SP-39 | Sewall's Point Commercial Area Septic Tank Elimination | Conversion of existing septic tanks to sanitary sewer. | OSTDS Phase Out | Completed | 2023 | NA | NA | TBD |

# Chapter 4. Summary

## 4.1 Basin Evaluation Results

### 4.1.1 TRA

**Table 80** summarizes the results of the TRA evaluation process presented by basin in **Chapter 3** for the basins in the St. Lucie River and Estuary Watershed. For each basin, a priority was assigned based on the TN and TP concentrations. The TRA evaluation does not currently include an assessment of water quantity since a flow evaluation has not yet been completed. Once a complete flow evaluation is available, it will be reviewed for inclusion in future BMAP reporting.

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 80. Summary of the TRA evaluation results**

*Used FWM concentration from the 2025 South Florida Environmental Report (Table 8-C-2, 5-Year Average)

| Basin | TN Priority | TP Priority |
|---|---|---|
| **North Fork** | 2 | 3 |
| **Ten Mile Creek*** | 3 | 2 |
| **C-24*** | 1 | 2 |
| **C-23*** | 3 | 3 |
| **C-44/S-153*** | 3 | 2 |
| **Basin 4/5** | 2 | 3 |
| **Basin 6** | 3 | 3 |
| **South Fork** | 2 | 2 |
| **South Coastal** | 3 | 2 |
| **South Mid-Estuary** | 3 | 3 |
| **North Mid-Estuary** | 2 | 3 |

### 4.1.2 Trend Analysis

**Table 81** summarizes the trend analysis results by basin. 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 12 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**. It should be noted that even if the analysis results in a statistically significant trend in water quality, the result may not be ecologically significant. For example, if a trend is found to be significantly decreasing, but the slope is near 0, then it may not be realistic to assume an improvement in water quality that may have a measurable ecological effect in any reasonable timeframe.

**Table 81. Trend analysis results by basin**

| Basin Name | TN Trend Analysis | TP Trend Analysis |
|---|---|---|
| Basin 4/5 | No Significant Trend | Significant Decreasing Trend |
| Basin 6 | Significant Decreasing Trend | Significant Decreasing Trend |
| C-23 | No Significant Trend | Significant Decreasing Trend |
| C-24 | No Significant Trend | Significant Decreasing Trend |
| C-44 | Significant Decreasing Trend | No Significant Trend |
| Compliance Station | No Significant Trend | No Significant Trend |
| North Fork | No Significant Trend | Significant Increasing Trend |
| North Mid-Estuary | No Significant Trend | No Significant Trend |
| South Coastal | Significant Decreasing Trend | No Significant Trend |
| South Fork | No Significant Trend | No Significant Trend |
| South Mid-Estuary | Significant Decreasing Trend | Significant Decreasing Trend |
| Ten Mile Creek | Significant Decreasing Trend | Significant Decreasing Trend |

### 4.1.3 Hotspot Analysis

**Figure 23** and **Figure 24** summarize the TN and TP hot spot analysis results, respectively, that were presented by subwatershed in **Chapter 3** for the subwatersheds in the St. Lucie River and Estuary Watershed. 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.

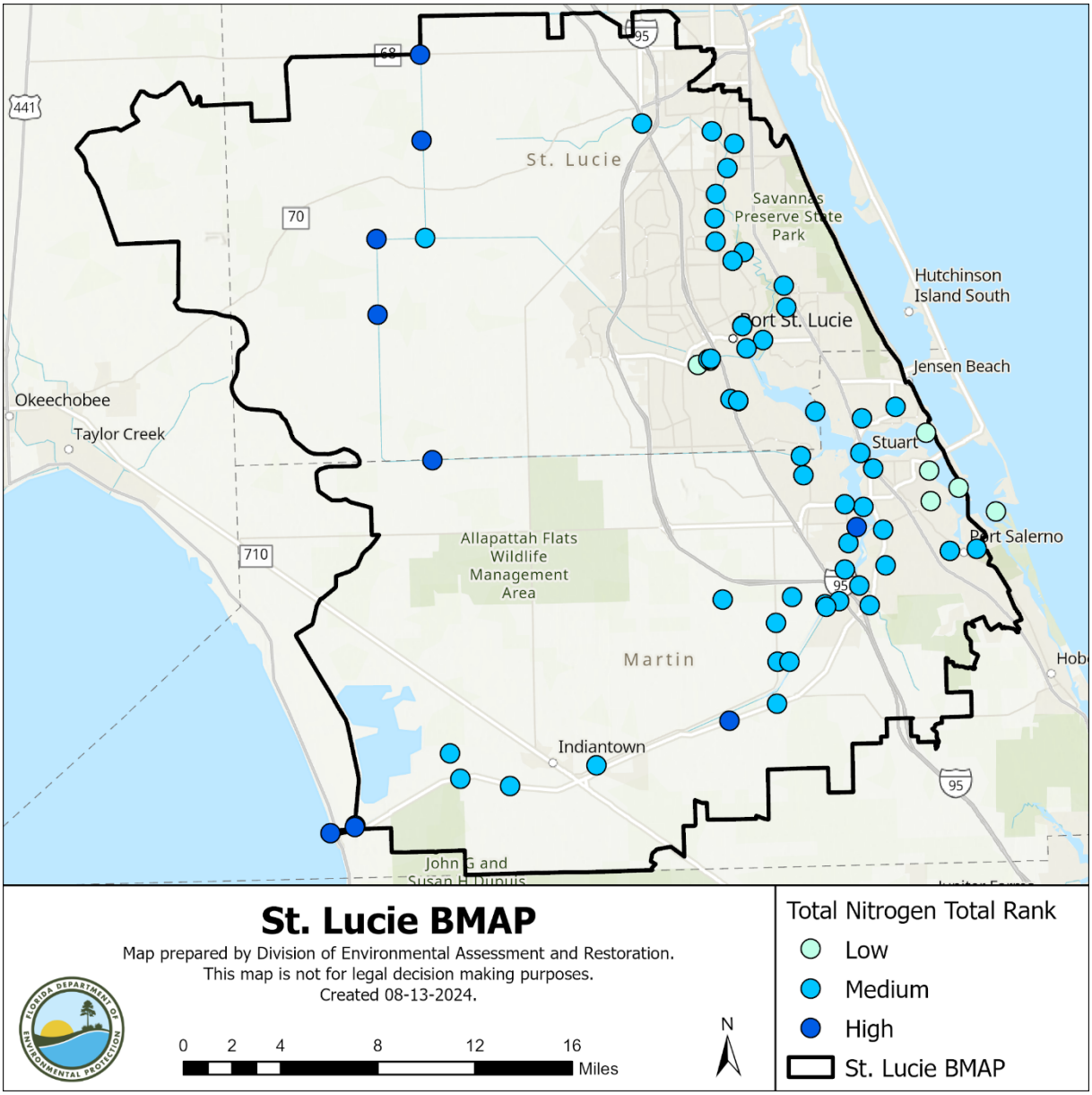


**Figure 23. TN hot spot analysis results**

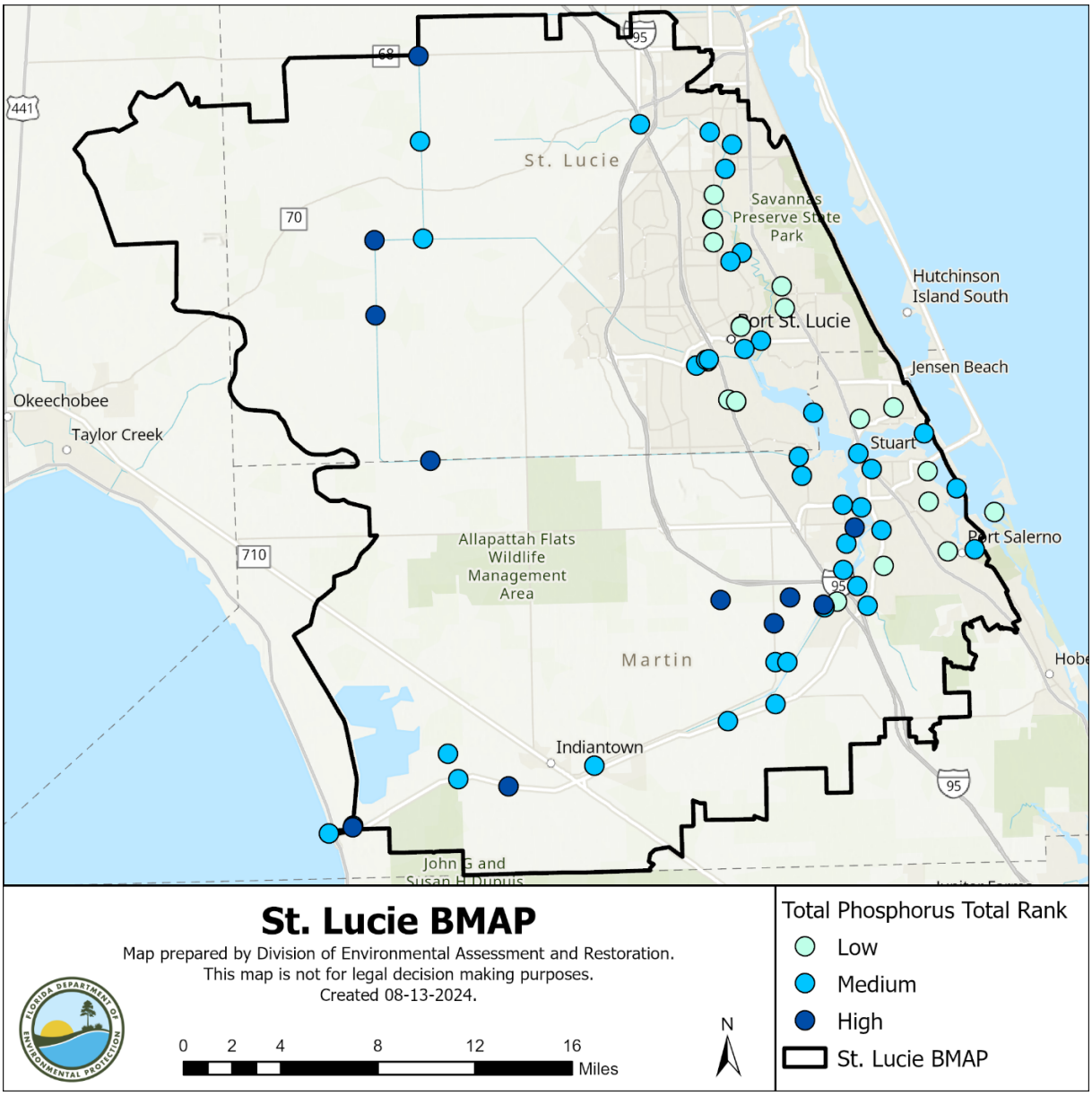


**Figure 24. TP hot spot analysis results**

## 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 new reduction requirements that will require additional restoration actions by the responsible entity to remediate impact.

### 4.2.1 Future Growth Analysis

An analysis was done 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 lakes and ponds identified in the National Hydrography Database and Florida Natural Areas Inventory conservation lands were not considered developable and were removed 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 coefficients 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.

**FDACS: 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 nitrogen loads as an example, **Table 82** 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 82. Estimated nitrogen load from development in the BMAP area.**

| Entity | Developable Land (acres) | 2040 Additional TN Loading Under Scenario 1 (2%) (lbs/yr) | 2040 Additional TN Loading Under Scenario 2 (10%) (lbs/yr) | 2040 Additional TN Loading Under Scenario 3 (17%) (lbs/yr) |
|---|---|---|---|---|
| Martin County | 168,968 | 178 | 890 | 1,512 |
| Indiantown | 8,825 | 9 | 46 | 79 |
| Sewall's Point | 788 | 1 | 4 | 7 |
| Stuart | 4,232 | 4 | 22 | 38 |
| Okeechobee County | 14,165 | 15 | 75 | 127 |
| St. Lucie County | 133,916 | 141 | 705 | 1,199 |

| Entity | Developable Land (acres) | 2040 Additional TN Loading Under Scenario 1 (2%) (lbs/yr) | 2040 Additional TN Loading Under Scenario 2 (10%) (lbs/yr) | 2040 Additional TN Loading Under Scenario 3 (17%) (lbs/yr) |
|---|---|---|---|---|
| Fort Pierce | 8,368 | 9 | 44 | 75 |
| Port St. Lucie | 71,931 | 76 | 379 | 644 |
| **Basin Totals** | **411,192** | **433** | **2,165** | **3,680** |

This broad analysis is not being used to determine allocated reductions for responsible entities but does help shed light on how loading in the basin 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 on 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 to 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 septic incentive programs in areas of urban expansion.

## 4.3. Compliance

The TMDL sets a TN concentration target of 0.72 mg/L and a TP concentration target of 0.081 mg/L, as measured at the Roosevelt Bridge (SE 03) compliance point. The TMDL also includes a biochemical oxygen demand target of 2.0 mg/L. The TMDL does not address a compliance calculation; however, for the purposes of this BMAP, compliance with the TMDL will be assessed by a 5-year rolling average of concentration values measured on a monthly basis at the

SE 03 monitoring station. The 5-year rolling average will use data from the latest five WYs. The TMDL is attained when the 5-year rolling average concentration at the SE 03 monitoring station is less than the TMDL target concentration. Revisions to 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 basin reduction assignments during the BMAP process.

# Chapter 5. References

Florida Department of Environmental Protection. 2008. TMDL report. *Nutrient and dissolved oxygen TMDL for the St. Lucie Basin.* Tallahassee, FL: Division of Water Resource Management, Bureau of Watershed Management.

Florida Department of Environmental Protection. 2021. Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses. Florida Golf Course Superintendents Association.

Harper, H. and Baker, D.M. 2007. Evaluation of Current Stormwater Design Criteria within the State of Florida Final Report. Prepared for the Florida Department of Environmental Protection. Contract No. SO108.

Sansalone John J., Berretta, Christian, and Raje, Saurabh. 2011. Quantifying Nutrient Loads Associated with Urban Particulate Matter (PM), and Biogenic/Litter Recovery through Current MS4 Source Control And Maintenance Practices (Maintenance Matters !) Final Report to Florida Stormwater Association Educational Foundation (FSAEF). University of Florida (UF) College of Engineering, Engineering School of Sustainable Infrastructure and Environment (ESSIE), Gainesville, Florida.

Parker, M., S. Webb, D. Taylor, and S. Ouly. 2025. Chapter 8C: St. Lucie River Watershed Protection Plan 2025 Update. In: 2025 South Florida Environmental Report – Volume I, South Florida Water Management District, West Palm Beach, FL.

# 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
- DEP Watershed Assessment Section WBID boundaries: https://floridadep.gov/dear/watershed-assessment-section/content/basin-411-0
- FDACS BMPs: https://www.freshfromflorida.com/Business-Services/Best-Management-Practices-BMPs/Agricultural-Best-Management-Practices
- FDACS BMP and Field Staff Contacts: http://www.freshfromflorida.com/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 Laboratory Environmental Accreditation Conference National Environmental Laboratory Accreditation Program: https://fldeploc.dep.state.fl.us/aams/index.asp
- South Florida Environmental Report: https://www.sfwmd.gov/science-data/scientific-publications-sfer
- UF-IFAS: http://research.ifas.ufl.edu/

# Appendix B. Agricultural Enrollment and Reductions

FDACS provided the following information for this appendix for each BMAP.

## 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.

## 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 the 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 an FDACS BMP Program*

To initially enroll in the FDACS BMP Program, agricultural landowners and producers must meet with an 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 DACS 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 St. Lucie River and Estuary BMAP, there are 11 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 the U.S. Geological Survey, 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.

**Figure B-1** shows the acres of agricultural land use within the St. Lucie River and Estuary 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.

| Category | Acres |
|---|---|
| **BMAP acres** | 539,742 |
| **Agricultural acres** | 248,958 |

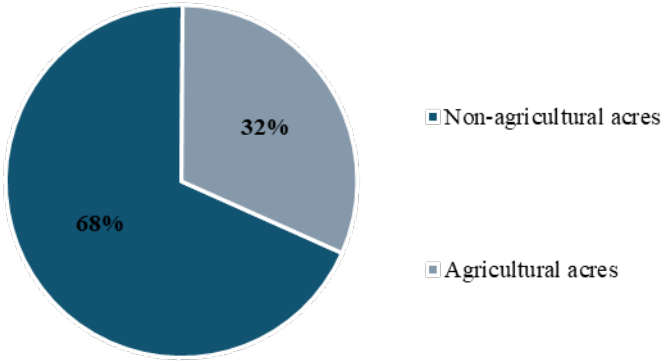


**Figure B-1. Acres in St. Lucie River and Estuary BMAP**

## FDACS BMP Program Metrics

*Enrollment Delineation and BMAP Metrics*

BMP enrollments are delineated in 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, 87% of the agricultural acres in the St. Lucie River and Estuary BMAP area are enrolled in FDACS BMP program. **Table B-1** 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-1. Agricultural lands enrolled in the St. Lucie River and Estuary BMAP by BMP Program Commodity**

| Commodity | Agricultural Acres Enrolled |
|---|---|
| Citrus | 5,963 |
| Cow/Calf | 120,544 |

| Commodity | Agricultural Acres Enrolled |
|---|---|
| Dairy | 616 |
| Equine | 706 |
| Fruit/Nut | 221 |
| Lake Okeechobee Protection Plan | 3 |
| Multiple Commodities | 73,160 |
| Nursery | 967 |
| Poultry | 42 |
| Row/Field Crop | 13,756 |
| Sod | 909 |
| Wildlife | 10 |
| **Total** | **216,897** |
| **Percent of Agricultural Lands Enrolled in BMPs** | **87%** |

## Table B-2. Agricultural acres enrolled by commodity and crediting location

| Commodity | Basin 4/5 | Basin 6 | C-23 | C-24 | C-44/S-153 | North Fork | South Fork | Ten Mile Creek |
|---|---|---|---|---|---|---|---|---|
| Citrus | 0 | 0 | 6 | 3,053 | 237 | 0 | 0 | 2,666 |
| Cow/Calf | 980 | 87 | 49,844 | 23,153 | 23,503 | 1,724 | 10,728 | 10,526 |
| Dairy | 0 | 0 | 616 | 0 | 0 | 0 | 0 | 0 |
| Equine | 6 | 3 | 14 | 6 | 394 | 5 | 268 | 11 |
| Fruit/Nut | 5 | 0 | 0 | 21 | 140 | 0 | 0 | 56 |
| Lake Okeechobee Protection Plan | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Multiple Commodities | 506 | 0 | 17,800 | 21,662 | 26,687 | 75 | 410 | 6,021 |
| Nursery | 68 | 60 | 139 | 0 | 115 | 93 | 110 | 380 |
| Poultry | 0 | 0 | 0 | 42 | 0 | 0 | 0 | 0 |
| Row/Field Crop | 5 | 0 | 2,347 | 72 | 8,665 | 0 | 1,935 | 733 |
| Sod | 0 | 0 | 328 | 0 | 581 | 0 | 0 | 0 |
| Wildlife | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 |
| **Total** | **1,569** | **150** | **71,097** | **48,018** | **60,322** | **1,897** | **13,451** | **20,392** |
| **Percent of Agricultural Lands Enrolled in BMPs** | **57%** | **73%** | **93%** | **87%** | **89%** | **56%** | **86%** | **74%** |

*Enrollment Map*

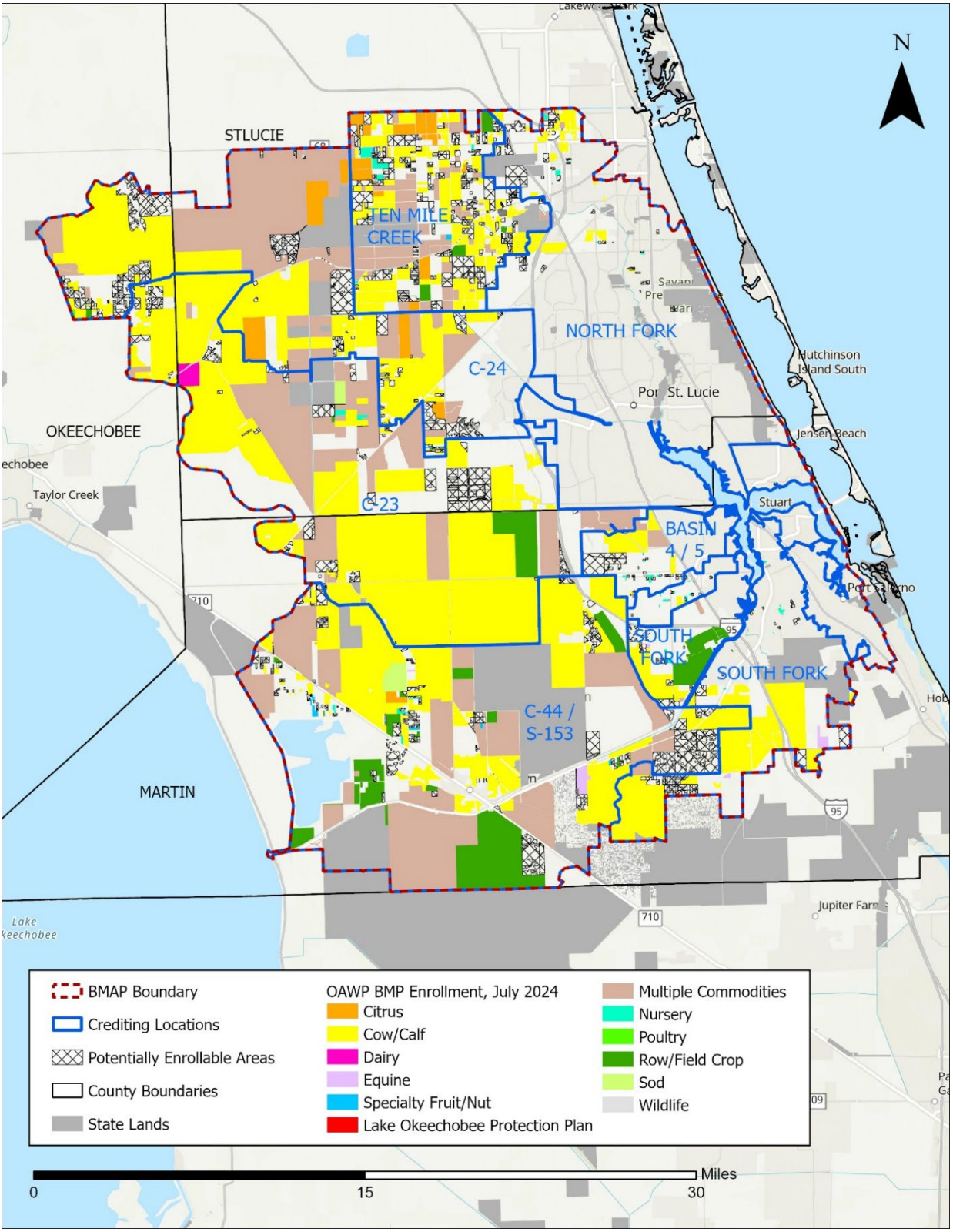


**Figure B-2. Agricultural BMP enrollment in the St. Lucie River and Estuary BMAP**

*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-3** shows the breakdown of agricultural lands within the St. Lucie River and Estuary BMAP by crediting location based on the FSAID 11 and the results of the FDACS unenrolled agricultural lands characterization.

**Table B-3. Agricultural Lands in St. Lucie River and Estuary BMAP by Crediting Location**

| Crediting Location | Agricultural Acres | Unenrolled - Unlikely Enrollable Acres | Agricultural Acres - Adjusted | Agricultural Acres Enrolled* |
|---|---|---|---|---|
| Basin 4 / 5 | 2,875 | 138 | 2,737 | 1,569 |
| Basin 6 | 308 | 103 | 205 | 150 |
| C-23 | 85,745 | 9,486 | 76,260 | 71,097 |
| C-24 | 61,137 | 5,637 | 55,500 | 48,018 |
| C-44 / S-153 | 74,207 | 6,520 | 67,686 | 60,322 |
| North Fork | 5,977 | 2,564 | 3,413 | 1,897 |
| North Mid-Estuary | 2 | 0 | 2 | 0 |
| South Coastal | 28 | 28 | 0 | 0 |
| South Fork | 17,969 | 2,360 | 15,609 | 13,451 |
| Ten Mile Creek | 33,233 | 5,686 | 27,547 | 20,392 |

* Enrollment information current as of April 30, 2024

*Potentially Enrollable Lands*

There are 32,116 acres of potentially enrollable lands within the St. Lucie River and Estuary BMAP based on the assessment of unenrolled agricultural lands performed by FDACS. **Table B-**

**4** shows the potentially enrollable acreages by crop type. **Figure B-3** shows the count of potentially enrollable parcels based on size classifications used by FDACS.

**Table B-4. Potentially Enrollable Acres by Crop Type**

| Crop Type | Acres |
|---|---|
| Citrus | 140 |
| Crops | 1,267 |
| Fallow | 11,032 |
| Fruit (Non-citrus) | 10 |
| Grazing Land | 16,719 |
| Hay | 1,499 |
| Livestock | 473 |
| Nursery | 479 |
| Open Lands | 94 |
| Sod | 397 |
| **Total** | **32,110** |

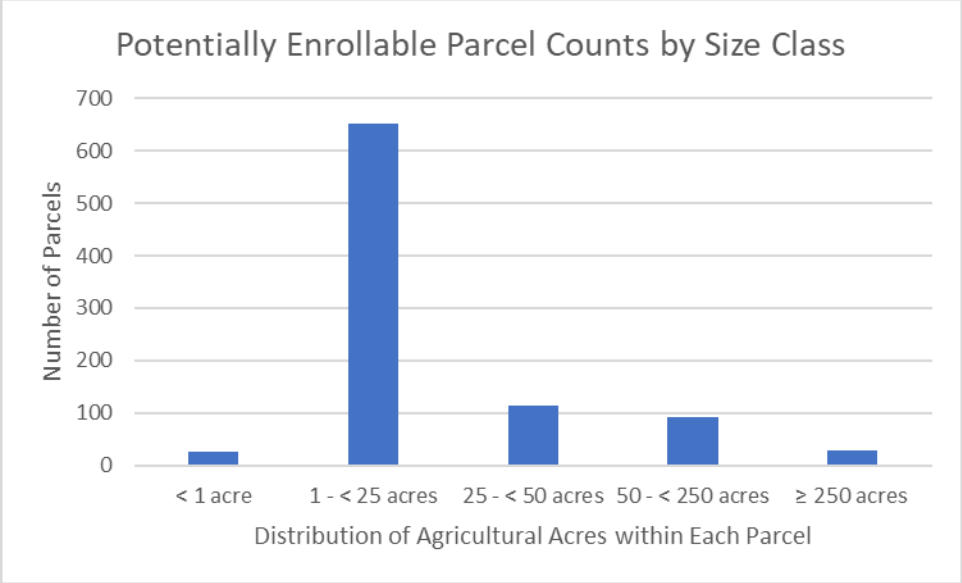


**Figure B-3. Count of potentially enrollable parcels by size class**

### 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 Natural Resources Conservation Service 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-5** identifies the number of agricultural technologies that received cost-share assistance in the St. Lucie River and Estuary BMAP area and the associated nutrient reductions[1]. 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-6**.

**Table B-5. Cost Share Project Counts and Estimated Nutrient Reduction Efficiencies**

| Project Type | Total Reductions (TN) | Total Reductions (TP) | Project Count |
|---|---|---|---|
| Fence | 10% | 10% | 18 |
| Irrigation improvements, automation | 20% | 20% | 22 |
| Weather station (if weather station is included in parcel with Irrigation improvements it will not be counted) | 20% | 5% | 8 |
| Chemigation/fertigation | 20% | 20% | 3 |
| Precision ag technology | 30% | 10% | 5 |
| Drainage improvements, mole drain, ditch cleaning | 10% | 15% | 9 |
| Well, pipeline, trough, pond, heavy use protection | 50% | 50% | 36 |
| Retention, detention, tailwater recovery, berms (Cow/Calf) | 25% | 18% | 9 |
| Retention, detention, tailwater recovery, berms (Vegetable and Agronomic Crops, Citrus) | 64% | 70% | 1 |
| Culvert (if culvert is included in parcel with structures for water control it will not be counted as a separate project) | 17% | 29% | 0 |
| Structure for Water Control | 17% | 29% | 42 |
| Composting and/or Storage Project | --- | --- | 0 |
| Crop Implements | --- | --- | 4 |
| Dairy Work | 50% | 50% | 0 |
| Engineering, surveying, planning, modeling | --- | --- | 11 |

**Table B-6. Estimated Nutrient Reductions from FDACS Cost Share**

| Crediting Location | Total Reductions (TN) | Total Reductions (TP) |
|---|---|---|
| C-23 | 65,713 | 22,890 |
| C-24 | 20,226 | 4,908 |

[1] Soil and Water Engineering Technology, Inc. (2016). Estimation of Total Phosphorous & Nitrogen Loads Reductions. Soil and Water Engineering Technology, Inc.

| Crediting Location | Total Reductions (TN) | Total Reductions (TP) |
|---|---|---|
| C-44 / S-153 | 33,115 | 4,902 |
| North Fork | 1,740 | 1,740 |
| South Fork | 2,784 | 2,784 |
| Ten Mile Creek | 3,415 | 717 |
| **Total** | **126,992** | **37,940** |

*Regional Projects*

FDACS works cooperatively with stakeholders to reduce nutrient loading from agricultural lands in the St. Lucie River and Estuary BMAP through the operation of 1 regional water treatment projects. Regional projects may include HWTT, floating aquatic vegetation treatment, and DWM projects. **Table B-7** lists the project name, technology type, and reductions achieved by the regional projects within the St. Lucie River and Estuary BMAP.

**Table B-7. Average Reductions Achieved by Regional Projects**

| Project Name | Project Type | Crediting Location | Total Reductions (TN) | Total Reductions (TP) |
|---|---|---|---|---|
| Ideal Grove HWTT | HWTT | C-24 | 220 | 220 |

## 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. Planning for Additional Management Strategies

Responsible entities must submit a sufficient list of creditable projects with estimated reductions which demonstrates how the entity is going to meet their milestone to DEP no later than January 14, 2026, to be compliant with the upcoming BMAP milestone or be subject to DEP enforcement.

If any lead entity is unable to submit a sufficient list of eligible management strategies to meet their next 5-year milestone reductions, 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 additional eligible management actions will be forthcoming and BMAP compliance will be achieved. Only those entities that provide sufficient project identification efforts will be deemed as having a defined compliance schedule. Those entities without an adequate project list or a defined compliance schedule to meet their upcoming 5-year milestone may be subject to enforcement actions.

Examples of project identification efforts include the following:

- Planning and identifying water quality projects and related costs and schedules in specific plans:
    - Feasibility studies (e.g., stormwater feasibility studies or wastewater feasibility studies).
    - Flood mitigation plans with nutrient management components.
    - Basinwide water quality management plans.
    - Nutrient management plans.
- Applying for external project funding.
- Developing interagency/interdepartmental agreements or memorandum of understanding for collaboration on nutrient reduction projects that cross jurisdictional or administrative boundaries.
- Updating future growth considerations in local comprehensive plans, land development reviews, and audits of relevant codes and ordinances.
- Updating existing remediation plans.
- Monitoring water quality in support of project planning and implementation.
- Researching innovative technologies.

# Appendix D. 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 of publicly owned golf courses 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, nutrient application records and management action updates (fertilizer, reuse, BMPs, 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 (**Table D-1**). 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.

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 D-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.

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**

**Sample fertilizer application table**

| 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 | | | | | |

| 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) |
|---|---|---|---|---|---|---|
| | Fairway | | | | | |
| | Roughs | | | | | |
| February | Tees | | | | | |
| | 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***

**Sample reclaimed water and fertilizer use table**

| 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. Current BMP implementation.***

Describe existing BMPs and other nutrient management actions here.

***d. 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 your planned soil sampling schedule. Provide information about how long you have been soil sampling and what part of the course you are prioritizing. If soil samples from areas of similar soil, fertilizer use and management are combined, describe the process and justify combining for 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.

***e. 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. Describe your planned water quality sampling schedule. Provide information about how long you have been doing water quality sampling and what part of the course you are prioritizing. 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.

***f. 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. 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.)

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

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

# Appendix E. 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(1)(c)3., F.S. The list of facilities provided below does not include those facilities that are otherwise required to meet the advanced wastewater treatment limits for phosphorous and nitrogen pursuant to **Table 12** and **Table 13**.

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(1)(c)3., F.S.

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

| Permit Number | Facility Name |
|---|---|
| FLA013881 | Martin Correctional Institute |
| FLA013958 | Savanna Club WWTF |