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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 – FORTTRAN (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) overlaid 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
<b>Total</b>	<b>281,481</b>	<b>32,522</b>	<b>248,959</b>	<b>216,896</b>

**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
<b>Total</b>	<b>216,897</b>
<b>Percentage of Agricultural Lands Enrolled in BMPs</b>	<b>87%</b>

### 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**

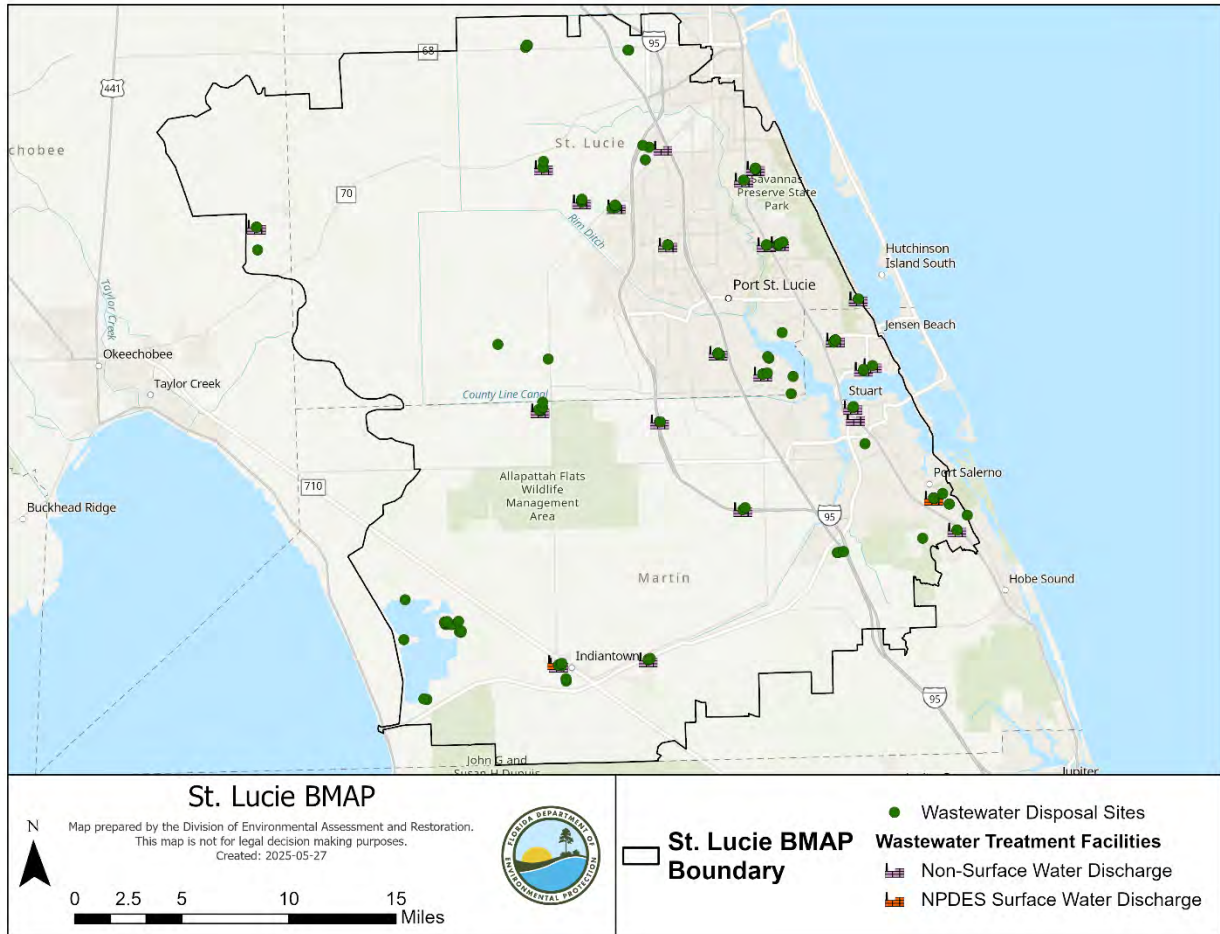
Subsubparagraph 403.067(7)(b)2.f., F.S., prescribes the pollutant reduction actions required for nonagricultural pollutant sources that are not subject to NPDES permitting. "Non-MS4 sources" must also implement the pollutant reduction requirements detailed in a BMAP and are subject to enforcement action 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
<p><b>Government Entities and Special Districts</b></p>	<p>Copper Creek Community Development District (CDD)                      Hobe St. Lucie Conservancy District                      North St. Lucie River Water Control District (NSLRWCD)                      Pal Mar Water Control District (WCD)                      Pal Mar WCD                      Tradition CDD                      Troup-Indiantown WCD                      Verano CDD</p>

**1.2.2.4 Wastewater Treatment Facilities (WWTFs)**

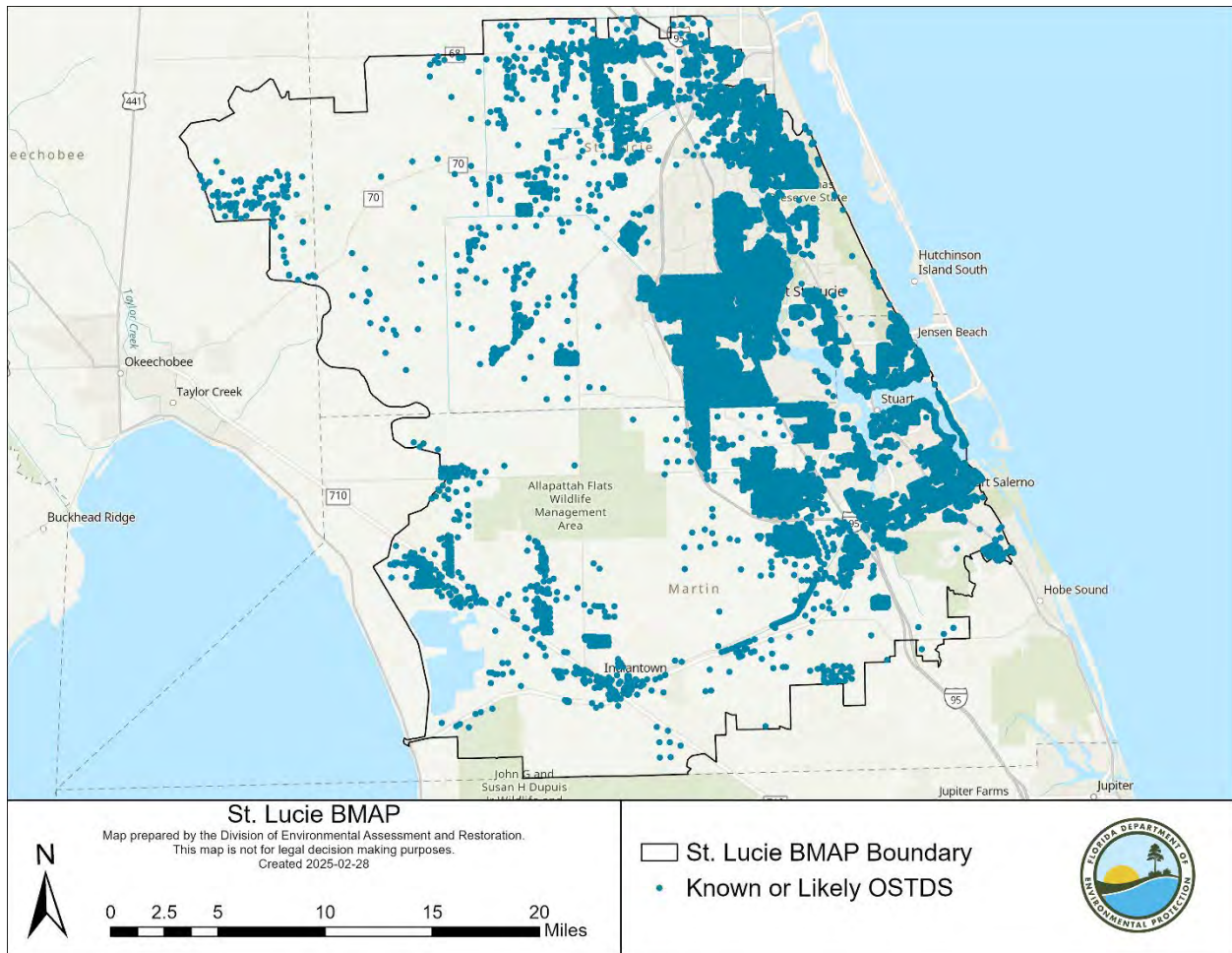
The TMDL identified 15 permitted NPDES WWTFs in the St. Lucie River and Estuary Watershed. All these facilities were only permitted to discharge during a 25-year, 72-hour storm event resulting in minimal and highly irregular impacts on nutrient discharges in the St. Lucie River and Estuary Watershed. 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
<b>Total</b>	<b>43,457</b>

### **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- $\alpha$  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
<b>Total</b>	<b>3,349,769</b>	<b>682,857</b>

### 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
<b>Total</b>	<b>1,252,108</b>	<b>407,981</b>

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.

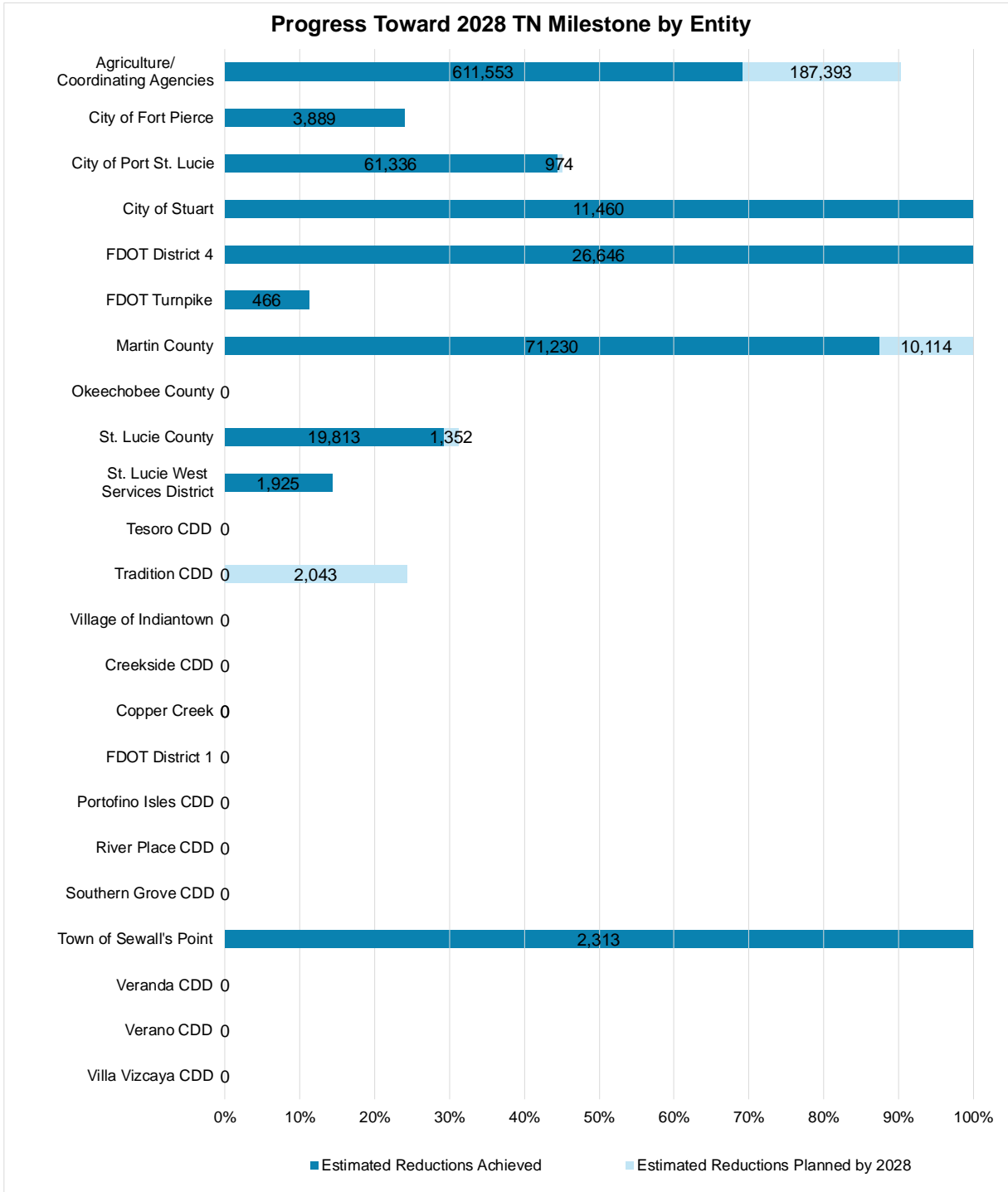
If any lead entity is unable to submit a sufficient list of eligible management strategies to meet their next 5-year milestone reductions, specific project identification efforts are required to be

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.

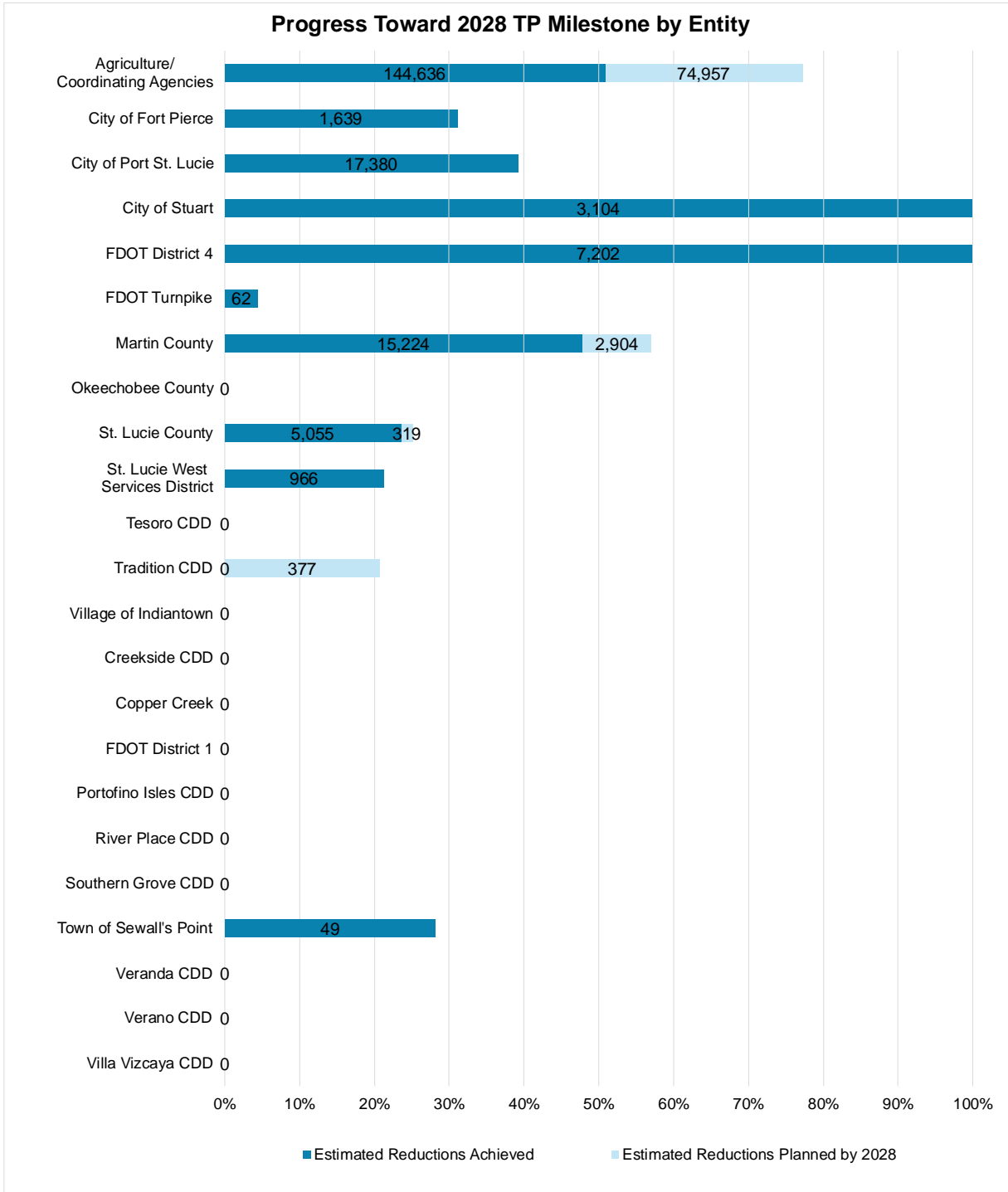
### **2.3.3 Project Progress**

**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.







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





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 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**

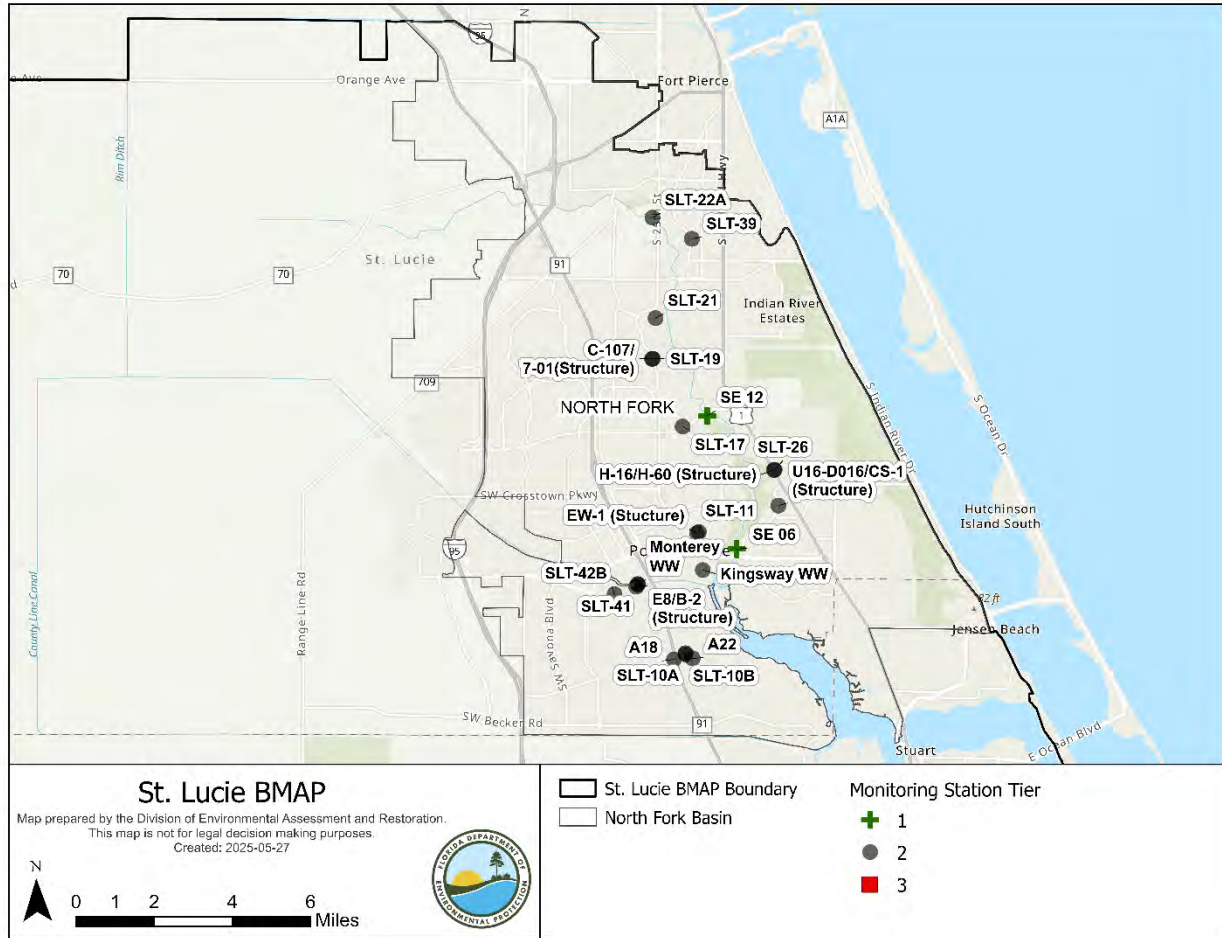
Level 1 Land Use Code	Land Use Description	Acres	% Total
1000	Urban and Built-Up	52,893	58.8
2000	Agriculture	6,502	7.2
3000	Upland Nonforested	3,485	3.9
4000	Upland Forests	10,743	11.9
5000	Water	4,164	4.6
6000	Wetlands	7,921	8.8
7000	Barren Land	257	0.3
8000	Transportation, Communication, and Utilities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

### 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 Whitmore Drive Baffle Box	The City will install a nutrient separating baffle box at the D-19 canal crossing with SE Whitmore 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
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
<b>Total</b>		<b>2,080</b>	<b>100</b>

#### 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

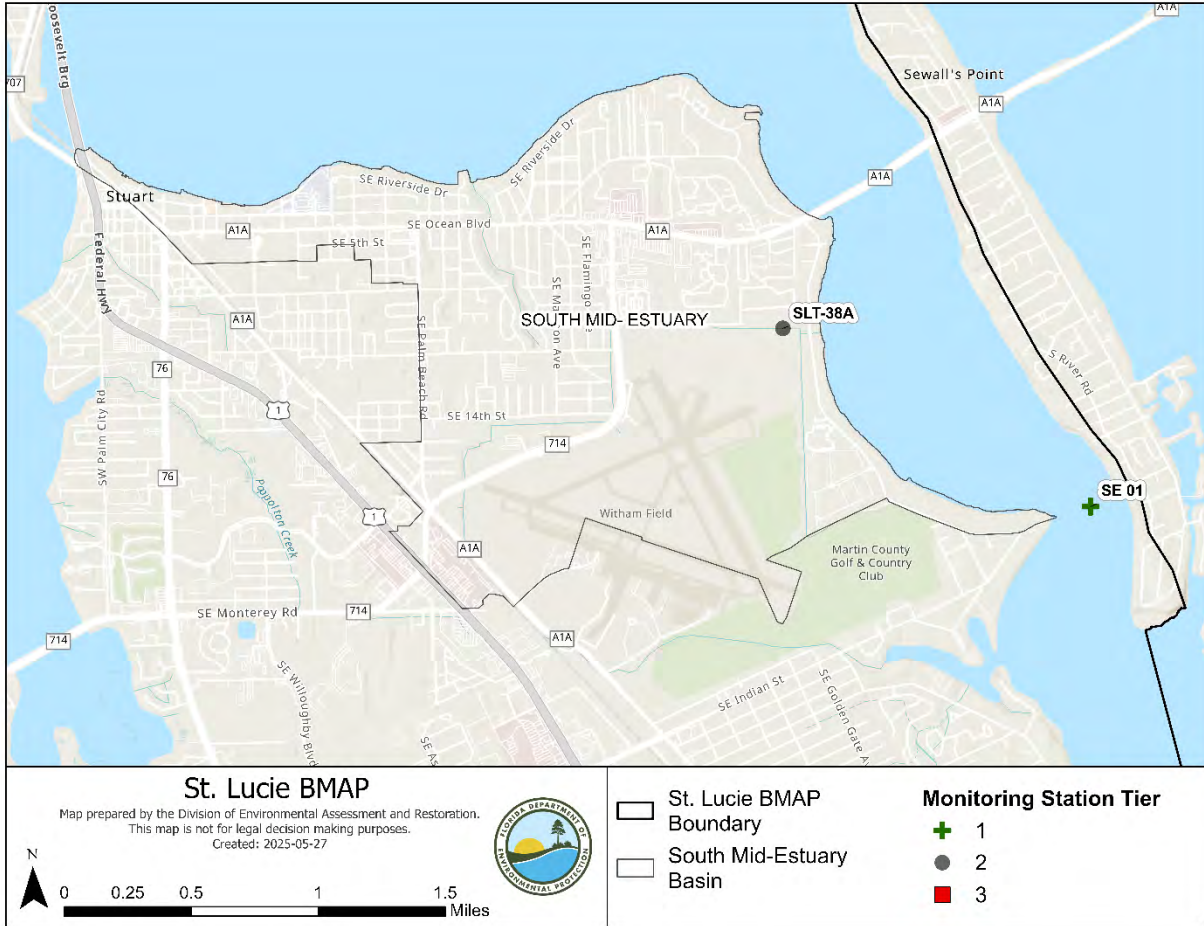


Figure 21. South Mid-Estuary Basin monitoring stations

### 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 based 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



### 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
	<b>Total</b>	<b>3,957</b>	<b>100</b>

#### 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







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.

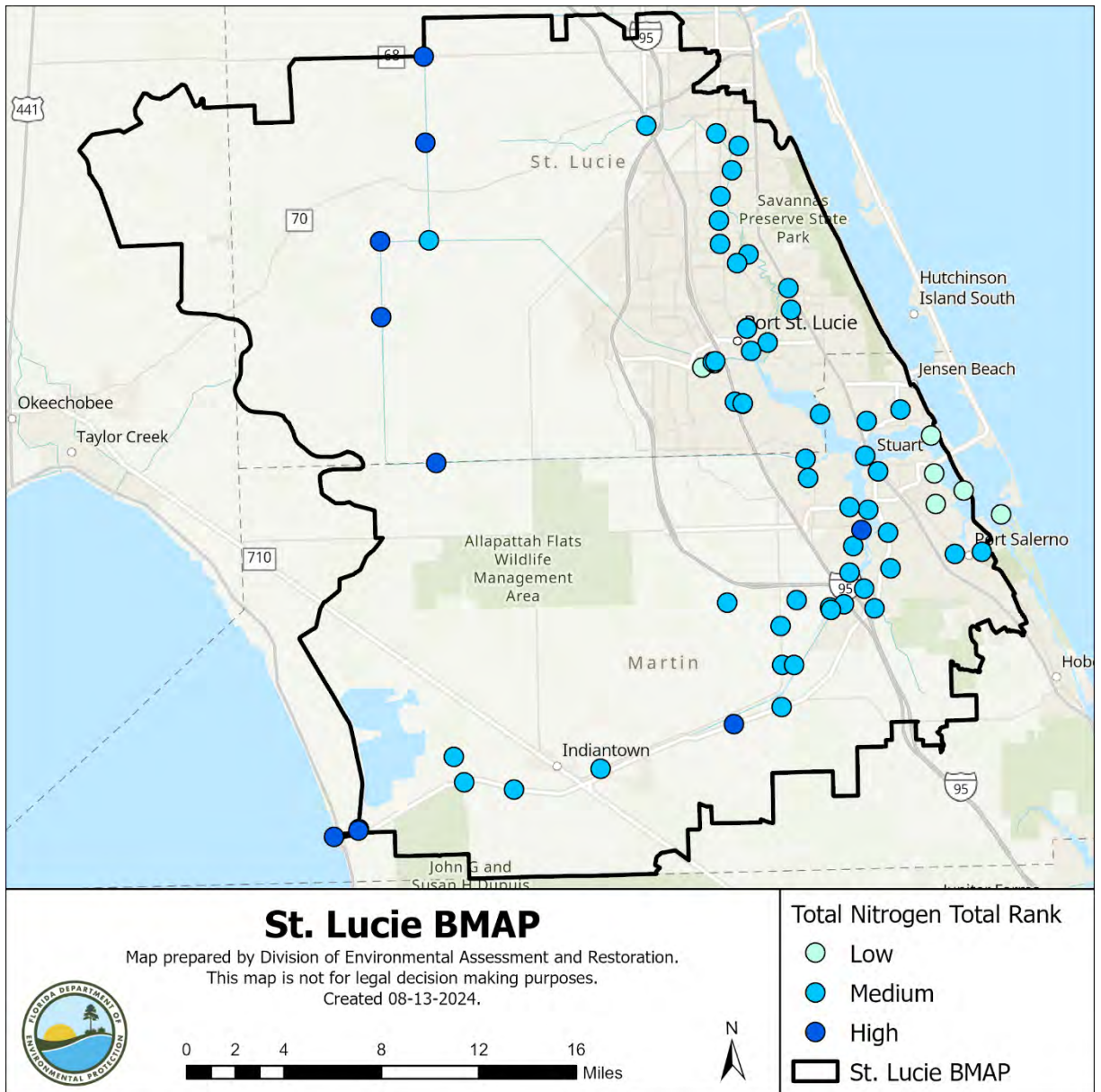
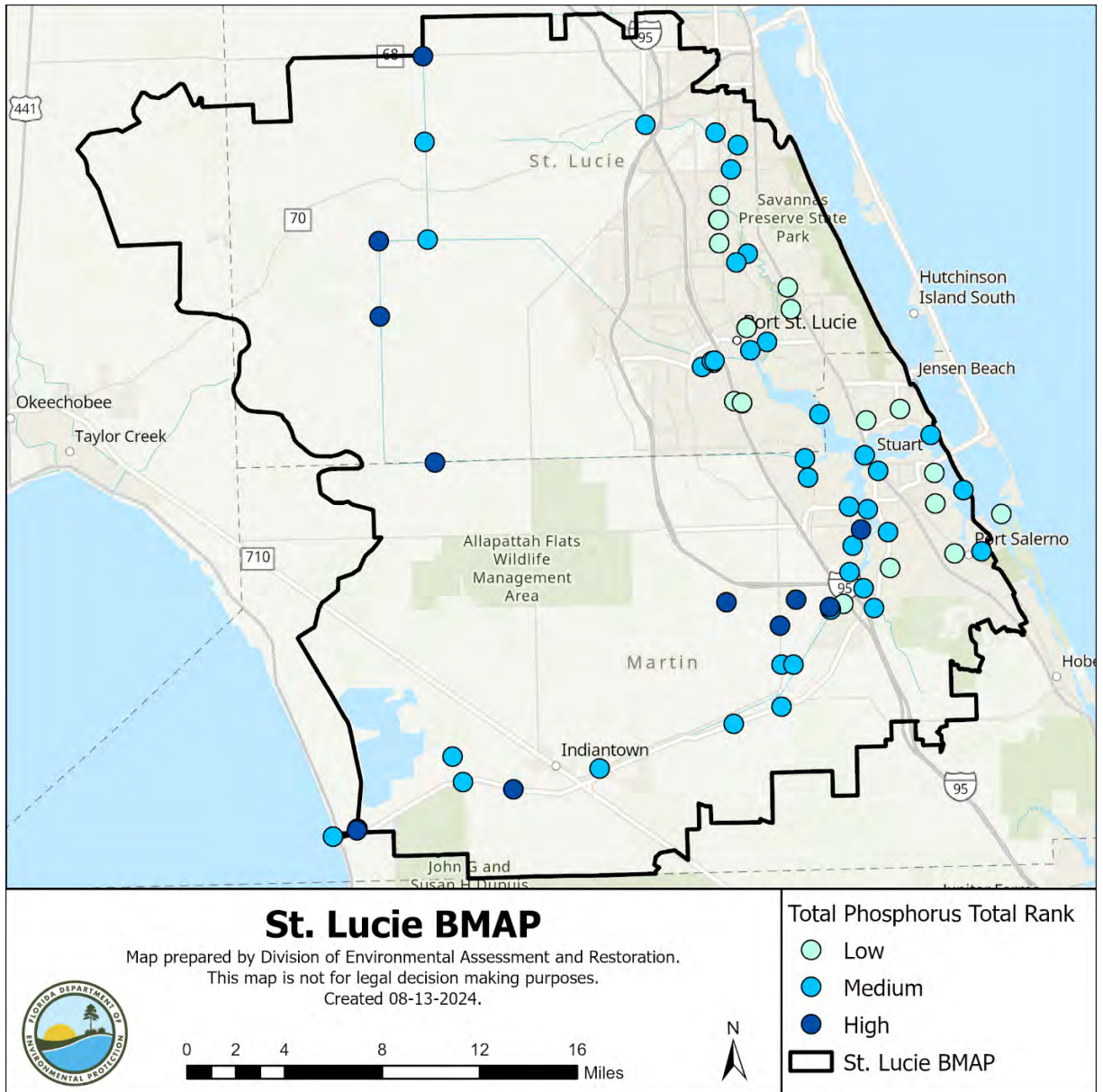


Figure 23. TN hot spot analysis results



**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
<b>Basin Totals</b>	<b>411,192</b>	<b>433</b>	<b>2,165</b>	<b>3,680</b>

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**

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- 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.
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- 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

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### 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](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://fldeplac.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

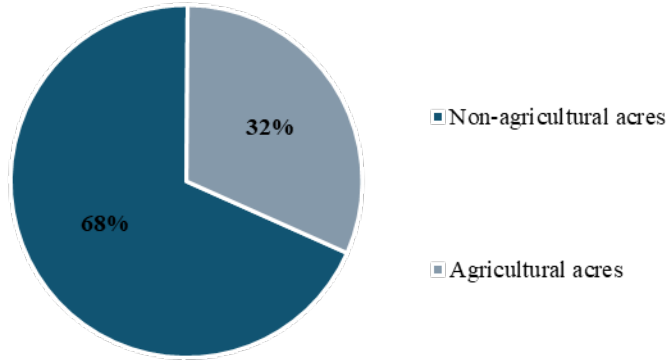
production ceases, among other reasons. Florida's recent population growth has also resulted in accelerated land use changes statewide, some of which include transitioning agricultural or fallow agricultural lands to developed land uses. The dynamic nature of Florida's agricultural industry creates challenges 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
<b>BMAP acres</b>	539,742
<b>Agricultural acres</b>	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

<b>Commodity</b>	<b>Agricultural Acres Enrolled</b>
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
<b>Total</b>	<b>216,897</b>
<b>Percent of Agricultural Lands Enrolled in BMPs</b>	<b>87%</b>

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

<b>Commodity</b>	<b>Basin 4/5</b>	<b>Basin 6</b>	<b>C-23</b>	<b>C-24</b>	<b>C-44/S-153</b>	<b>North Fork</b>	<b>South Fork</b>	<b>Ten Mile Creek</b>
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
<b>Total</b>	<b>1,569</b>	<b>150</b>	<b>71,097</b>	<b>48,018</b>	<b>60,322</b>	<b>1,897</b>	<b>13,451</b>	<b>20,392</b>
<b>Percent of Agricultural Lands Enrolled in BMPs</b>	<b>57%</b>	<b>73%</b>	<b>93%</b>	<b>87%</b>	<b>89%</b>	<b>56%</b>	<b>86%</b>	<b>74%</b>

Enrollment Map

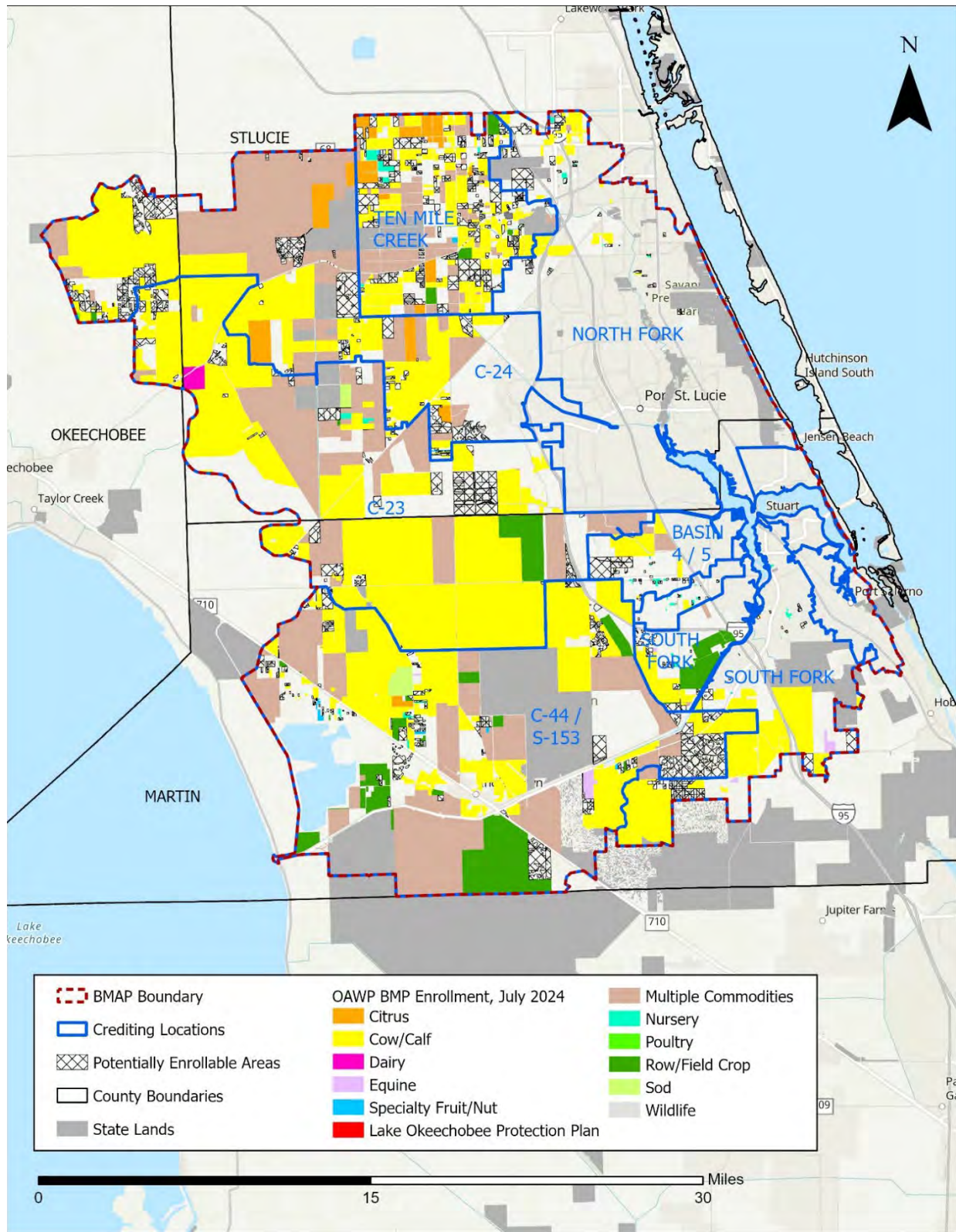


Figure B-2. Agricultural BMP enrollment in the St. Lucie River and Estuary BMAP

*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

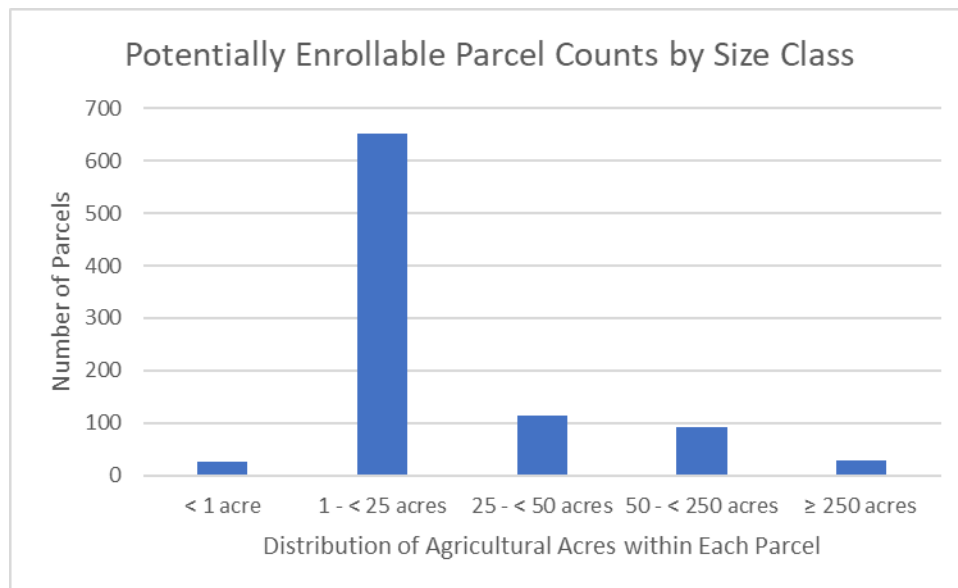
*Potentially Enrollable Lands*

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
<b>Total</b>	<b>32,110</b>



**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<sup>1</sup>. 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

<sup>1</sup> 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
<b>Total</b>	<b>126,992</b>	<b>37,940</b>

*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	0.30-0.60	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		
<b>Total</b>	-	

**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					
<b>Total</b>						

**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							
<b>Total</b>							

\*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