

# ***2016 Progress Report***

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

**prepared by the  
Division of Environmental Assessment and Restoration  
Water Quality Restoration Program  
Florida Department of Environmental Protection  
Tallahassee, FL 32399**

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

**January 2017**

## Acknowledgments

This 2016 Progress Report for the St. Lucie River and Estuary Basin Management Action Plan was prepared as part of a statewide watershed management approach to restore and protect Florida's water quality. It was prepared by the Florida Department of Environmental Protection in cooperation with the St. Lucie River and Estuary stakeholders.



North St. Lucie River Water Control District

*Hobe St. Lucie Conservancy District*  
*Pal Mar Water Control District*  
*Troup-Indiantown Water Control District*  
*Copper Creek Community Development District*  
*Tradition Community Development District*  
*Verano Community Development District*

For additional information on the watershed management approach in the St. Lucie River and Estuary Basin, contact:

David Glassner, Basin Coordinator  
Florida Department of Environmental Protection  
Water Quality Restoration Program, Watershed Planning and Coordination Section  
2600 Blair Stone Road, Mail Station 3565  
Tallahassee, FL 32399-2400  
Email: [David.Glassner@dep.state.fl.us](mailto:David.Glassner@dep.state.fl.us)  
Phone: (850) 245-8343

## Table of Contents

|  |           |
|--|-----------|
| <b>Acknowledgments .....</b>   | <b>2</b>  |
| <b>List of Acronyms and Abbreviations .....</b>                      | <b>7</b>  |
| <b>Section 1 : Introduction .....</b>                                | <b>8</b>  |
| <b>1.1 Purpose of the Report .....</b>                               | <b>8</b>  |
| <b>1.2 TMDLs for the St. Lucie Basin .....</b>                       | <b>8</b>  |
| <b>1.3 St. Lucie River and Estuary Basin .....</b>                   | <b>8</b>  |
| <b>Section 2 : Accomplishments During the Reporting Period .....</b> | <b>10</b> |
| <b>2.1 Activities by Entity .....</b>                                | <b>10</b> |
| 2.1.1 Agriculture .....  | 10        |
| 2.1.2 City of Fort Pierce .....                                      | 12        |
| 2.1.3 City of Port St. Lucie .....                                   | 14        |
| 2.1.4 City of Stuart .....   | 14        |
| 2.1.5 Florida Department of Transportation (FDOT) District 4 .....   | 14        |
| 2.1.6 Martin County .....  | 14        |
| 2.1.7 St. Lucie County .....   | 15        |
| 2.1.8 Town of Sewall’s Point .....                                   | 15        |
| 2.1.9 SFWMD .....  | 15        |
| <b>2.2 Summary of Accomplishments .....</b>                          | <b>16</b> |
| <b>Section 3 : Water Quality Evaluation .....</b>                    | <b>18</b> |
| <b>Section 4 : Compliance .....</b>                                  | <b>21</b> |
| <b>Appendices .....</b>  | <b>23</b> |
| <b>Appendix A: Projects To Achieve the TMDL .....</b>                | <b>23</b> |
| <b>Appendix B: Water Quality Data Evaluation Methodology .....</b>   | <b>42</b> |
| <b>Appendix C: Important Links .....</b>                             | <b>43</b> |

## List of Figures

|   |    |
|---|----|
| Figure 1: St. Lucie River and Estuary Basin.....  | 9  |
| Figure 2: Yearly average TN concentration at Roosevelt Bridge (Station SE 03), 1996–2016 .... | 18 |
| Figure 3: Yearly average TP concentration at Roosevelt Bridge (Station SE 03), 1996–2016..... | 20 |
| Figure 4: Progress towards the St. Lucie River and Estuary TN TMDL through June 30, 2016..    | 22 |
| Figure 5: Progress towards the St. Lucie River and Estuary TP TMDL through June 30, 2016..    | 22 |

## List of Tables

|  |    |
|--|----|
| Table 1: Agricultural acreage and BMP enrollment as of June 30, 2016, for the St. Lucie River and Estuary BMAP area..... | 13 |
| Table 2: Agricultural future enrollment goals for the St. Lucie River and Estuary BMAP area...                           | 13 |
| Table 3: Summary of projects completed during the reporting period.....  | 17 |
| Table 4: Summary of completed projects identified in the BMAP by entity .....  | 21 |
| Table 5: Summary of allocations and reduction status by entity .....   | 21 |
| Table A-1: City of Fort Pierce projects.....   | 24 |
| Table A-2: City of Fort Pierce summary of reductions .....   | 24 |
| Table A-3: City of Port St. Lucie MS4 projects .....   | 25 |
| Table A-4: City of Port St. Lucie summary of reductions.....   | 26 |
| Table A-5: City of Stuart projects.....  | 27 |
| Table A-6: City of Stuart summary of reductions .....  | 28 |
| Table A-7: FDOT District 4 projects .....  | 29 |
| Table A-8: FDOT District 4 summary of reductions.....  | 31 |
| Table A-9: Hobe St. Lucie Conservancy District projects .....  | 32 |
| Table A-10: Hobe St. Lucie Conservancy District summary of reductions .....  | 32 |
| Table A-11: Martin County projects.....  | 33 |
| Table A-12: Martin County summary of reductions.....   | 35 |
| Table A-13: North St. Lucie River WCD projects .....   | 35 |
| Table A-14: North St. Lucie River WCD summary of reductions .....  | 36 |
| Table A-15: Pal Mar WCD projects .....   | 36 |
| Table A-16: Pal Mar WCD summary of 4reductions .....   | 36 |
| Table A-17: St. Lucie County MS4 projects .....  | 37 |
| Table A-18: St. Lucie County MS4 summary of reductions .....   | 37 |
| Table A-19: St. Lucie County non-MS4 projects .....  | 38 |
| Table A-20: St. Lucie County non-MS4 summary of reductions.....  | 38 |
| Table A-21: Town of Sewall’s Point projects.....   | 39 |
| Table A-22: Town of Sewall’s Point summary of reductions .....   | 40 |
| Table A-23: Troup-Indiantown WCD projects.....   | 40 |
| Table A-24: Troup-Indiantown WCD summary of reductions.....  | 40 |

Table A-25: Turnpike Authority projects .....41  
Table A-26: Turnpike Authority summary of reductions .....41

## List of Acronyms and Abbreviations

---

|        |   |
|--------|---|
| BMAP   | Basin Management Action Plan                            |
| BMP    | Best Management Practice                                |
| BOD    | Biochemical Oxygen Demand                               |
| CDS    | Continuous Deflective Separation                        |
| CERP   | Comprehensive Everglades Restoration Plan               |
| DEP    | Florida Department of Environmental Protection          |
| DO     | Dissolved Oxygen  |
| EWIP   | Eastern Watershed Improvement Project                   |
| FDACS  | Florida Department of Agriculture and Consumer Services |
| FDOT   | Florida Department of Transportation                    |
| FYN    | Florida Yards and Neighborhoods                         |
| F.S.   | Florida Statutes  |
| HWTT   | Hybrid Wetland Treatment Technology                     |
| IRL-S  | Indian River Lagoon-South                               |
| IWR    | Impaired Surface Waters Rule                            |
| lbs    | Pounds  |
| lbs/yr | Pounds Per Year   |
| MDL    | Minimum Detection Limit                                 |
| mg/L   | Milligrams Per Liter                                    |
| MS4    | Municipal Separate Storm Sewer System                   |
| NE PPP | Northern Everglades Public-Private Partnership          |
| NOI    | Notice of Intent  |
| OAWP   | Office of Agricultural Water Policy                     |
| PQL    | Practical Quantitation Limit                            |
| PSA    | Public Service Announcement                             |
| PUD    | Planned Unit Development                                |
| QA/QC  | Quality Assurance/Quality Control                       |
| SFWMD  | South Florida Water Management District                 |
| SLRIT  | St. Lucie River Issues Team                             |
| SLWSD  | St. Lucie West Services District                        |
| SR     | State Road  |
| STA    | Stormwater Treatment Area                               |
| STORET | STORage and RETrieval                                   |
| TIERS  | Terrestrial Invasive Exotic Reporting System            |
| TMDL   | Total Maximum Daily Load                                |
| TKN    | Total Kjeldahl Nitrogen                                 |
| TN     | Total Nitrogen  |
| TP     | Total Phosphorus  |
| USACE  | U.S. Army Corps of Engineers                            |
| USGS   | U.S. Geological Survey                                  |
| WCD    | Water Control District                                  |
| WCS    | Water Control Structure                                 |

## Section 1: Introduction

---

### 1.1 Purpose of the Report

This is the third annual progress report for the St. Lucie River and Estuary Basin Management Action Plan (BMAP). The BMAP and this report focus on restoration efforts in the St. Lucie Basin, as the upstream loads from Lake Okeechobee are being addressed separately in the [Lake Okeechobee BMAP](#), adopted in December 2014. **Section 2** describes the accomplishments during the reporting period from July 1, 2015, through June 30, 2016. **Section 3** includes the water quality evaluation and discusses progress towards achieving the total maximum daily load (TMDL). **Section 4** summarizes compliance with the BMAP.

### 1.2 TMDLs for the St. Lucie Basin

The Florida Department of Environmental Protection (DEP) identified the St. Lucie River and Estuary as impaired due to excessive amounts of total phosphorus (TP), total nitrogen (TN), and biochemical oxygen demand (BOD). In March 2009, DEP adopted the nutrient and dissolved oxygen (DO) TMDL for the St. Lucie Basin. The TMDLs and pollutant load allocations adopted by rule for the watershed are available on [the DEP Final TMDL Documents web page](#). The targets are as follows:

- TN target: 0.72 milligrams per liter (mg/L).
- TP target: 0.081 mg/L.
- BOD target: 2.0 mg/L.

### 1.3 St. Lucie River and Estuary Basin

The St. Lucie River and Estuary Basin is located in southeast Florida in Martin, St. Lucie, and Okeechobee Counties (**Figure 1**). The St. Lucie Estuary is a major tributary to the southern Indian River Lagoon.



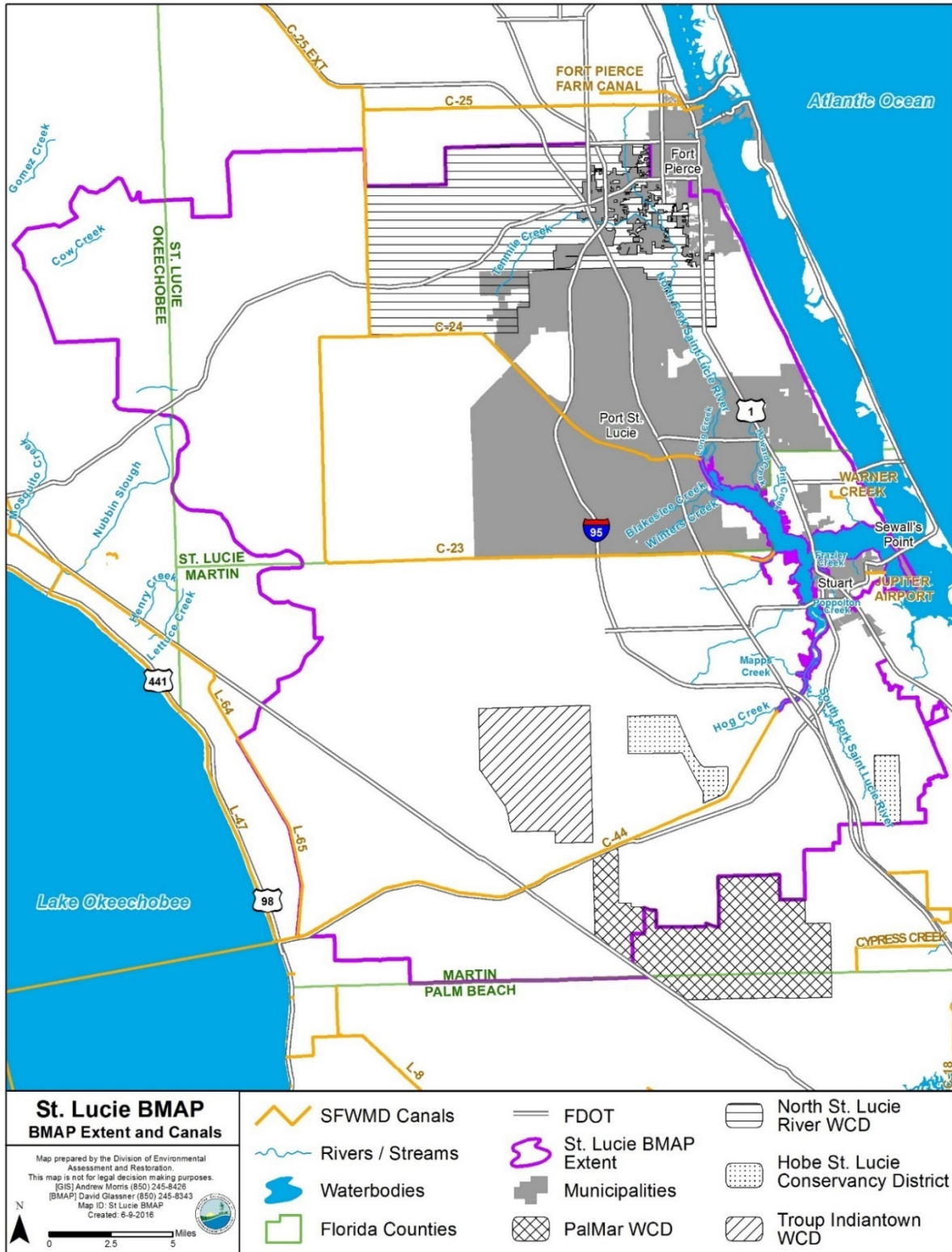


Figure 1: St. Lucie River and Estuary Basin

## **Section 2: Accomplishments During the Reporting Period**

---

**Section 2.1** and **Section 2.2** describe the accomplishments in the St. Lucie River and Estuary during the reporting year. New projects added to the individual project tables are described below, as are individual projects completed during the reporting period. Ongoing efforts such as street sweeping, ordinances, and public education efforts are not specifically described below but must continue each year for the project credit to remain effective. **Appendix A** contains the individual project tables.

The Florida Legislature directed DEP and the South Florida Water Management District (SFWMD) to implement projects on private agricultural lands to store and treat water in the Northern Everglades consistent with the legislative objectives in Sections 373.4595 and 373.4591, Florida Statutes (F.S.). DEP has identified six water quality improvement projects to implement these legislative objectives through the new Northern Everglades Public Private Partnership (NE PPP) Program. Three of these projects are within the St. Lucie River Basin.

Collectively, these projects will retain rainfall and store surface water from the regional system to help address nutrient loads in Lake Okeechobee and the Caloosahatchee and St. Lucie Rivers and Estuaries. As the lead agency of the Interagency Working Group, DEP selected the projects and tasked the SFWMD with developing and executing contracts for each of the NE PPP projects. The Florida Department of Agriculture and Consumer Services (FDACS) provided technical assistance and cost-share to the service provider during the planning, modeling, design, and permitting phases of the project as part of the Best Management Practice (BMP) Program with the intent of getting the projects ready for the construction phase. In 2016, the Florida Legislature appropriated funds for all six projects.

### **2.1 Activities by Entity**

#### **2.1.1 Agriculture**

FDACS currently has eight field staff and three technicians in the SFWMD region who work with producers on BMP enrollment and implementation. Field staff and technician activities include initial enrollment, follow-up to provide technical assistance, BMP cost-share, BMP implementation assurance visits, management of water quality– and water supply–related projects and contracts, and coordination with the SFWMD on agriculture-related permitting questions.

During the reporting period, the FDACS Office of Agricultural Water Policy (OAWP) adopted two BMP manuals. The 2005 manual for vegetable and row crops was revised and adopted in late 2015. It includes specific nutrient and irrigation management BMPs for plastic mulch, bare ground, sugarcane, hay/silage, and greenhouse production systems. A dairy manual was also adopted and became effective on January 10, 2016. The manual includes a flow chart that directs

producers how to achieve nutrient balance, based on whether nitrogen or phosphorus is the limiting nutrient based on an operation's geographic location in a basin and proximity to a lake or impaired water. In summer 2016, FDACS adopted a manual for poultry operations. To date, FDACS has BMP manuals adopted for cow/calf, sod, citrus, vegetable and agronomic crops, nurseries, equine, dairy, specialty fruit and nut, and poultry operations. Once a BMP manual is adopted, field staff and technicians work to enroll eligible producers in the FDACS BMP Program.

Landowners who sign notices of intent (NOIs) are agreeing to implement applicable BMPs on their enrolled properties. In the St. Lucie River and Estuary Basin, agriculture has a 5-year Phase I enrollment goal of 193,305 acres (90 % of the land assigned to agricultural land uses), which includes acreage in the agricultural areas of the Hobe St. Lucie Conservancy District, North St. Lucie River Water Control District (WCD), Pal Mar WCD, and Troup-Indiantown WCD.

As of June 30, 2016, producers throughout the basin had submitted 228 NOIs representing 158,602 acres, or 74 % of the adjusted agricultural acreage (**Table 1**). The implementation of these BMPs will result in an estimated reduction of 30,910 pounds per year (lbs/yr) of TP and 133,793 lbs/yr of TN. FDACS staff will work to enroll the remaining 34,703 acres in the next 2 years to meet the 90 % enrollment goal (**Table 2**).

However, errors in land use data, changes in land use over time from agriculture to urban, agricultural lands not in production, and other factors may affect enrollment acreage. For example, citrus enrollment in the basin decreased by 10,856 acres during the first year of BMAP implementation, due to the loss of citrus production acreage. In the second year of BMAP implementation, citrus enrollment decreased by 27,742 acres. An additional 15,168 acres were enrolled in the vegetable and agronomic crop manual from March 31, 2015, through March 31, 2016. The number of acres enrolled in the Lake Okeechobee Protection Program enrollment will likely decrease as these acres are re-enrolled under the appropriate BMP manuals (e.g., dairy manual), which had not been adopted at the time of the initial enrollments. As re-enrollment continues, acreages will shift from the Lake Okeechobee Protection Program category to commodity-specific BMP programs.

It is also important to note that more acres are enrolled in FDACS agricultural BMPs than are reported in this document. This difference is because a significant number of enrolled acres (about 20,000) are not classified as agricultural land uses in the 2004 land use coverage for the BMAP area, even though they are part of a parcel where agricultural operations occur (e.g., lands classified as wetlands that are part of a ranch). Only enrolled lands that fall within the mapped areas of agricultural land uses are included in the BMAP-enrolled acres. The land use coverage will be updated to the most recent available in the second phase of BMAP implementation.

During the reporting period, the hybrid wetland treatment technology (HWTT) sites were inactive from December 1, 2015, through May 31, 2016. The Danforth Creek HWTT came online, and construction was completed during the reporting period. This site will be operational during the next BMAP reporting period.

### **2.1.2 City of Fort Pierce**

Fort Pierce began the maintenance of the floating aquatic plant system at the Indian Hills (formerly Heathcote) Recreation Area (Project FP-01) in January 2016. Seven islands were harvested and replanted (1 island per month) at an annual cost of \$84,000. As a result of the harvesting, a total of 1,918 pounds (lbs) of nitrogen and 214 lbs of phosphorus were removed. This is an increase of 37 % and 120 %, respectively, over the estimated annual removal amount with 5 months of maintenance activities still remaining. The city also extended its street sweeping routes into newly annexed areas.

Phase II of the Indian Hills Recreation Area (Project FP-11) is under way and scheduled to be completed in August 2016. This project will hydrologically enhance 2.1 acres of wetlands and provide 2.5 acres of wetlands restoration.

The city is currently constructing 2 treatment trains to serve the Veteran's Memorial Park (Project FP-09) and associated drainage basin. The 44-acre drainage basin currently discharges untreated stormwater through 2 outfalls directly into the Indian River. The 2 treatment trains will consist of bioswales, flocc-log systems, pervious paver parking, and a 0.5-acre wet detention pond with aeration fountains. The city has also begun the construction of 3 wet detention ponds associated with the North 2nd Street roadway improvements (Project FP-10).

**Table 1: Agricultural acreage and BMP enrollment as of June 30, 2016, for the St. Lucie River and Estuary BMAP area**

N/A = Not applicable

<sup>1</sup> FDACS staff-adjusted acreage for the purposes of enrollment is based on a review of more recent aerial imagery in the basin and local staff observations.

| 2004 SFWMD Land Use         | 2004 Acres | FDACS-Adjusted Acres <sup>1</sup> | Related FDACS BMP Programs                    | Acreage Enrolled           | Related NOIs               |
|-----------------------------|------------|-----------------------------------|---|----------------------------|----------------------------|
| Pasture and Mixed Rangeland | 152,299.6  | 151,232.9                         | Cow/Calf; Vegetable and Agronomic Crops (Hay) | 83,037.6                   | 69                         |
| Row/Field/Mixed Crops       | 16,368.8   | 16,219.1                          | Vegetable/Agronomic Crops                     | 9,954.9                    | 13                         |
| Sod Farms                   | 294.1      | 294.1                             | Statewide Sod                                 | 54.0                       | 3                          |
| Horse Farm                  | 784.4      | 814.2                             | Equine  | 28.8                       | 2                          |
| Citrus                      | 113,672.8  | 43,694.6                          | Statewide Citrus                              | 64,884.4                   | 104                        |
| Fruit Orchards/Other Groves | 60.5       | 51.3                              | Specialty Fruit and Nut                       | 17.1                       | 1                          |
| Tree Nurseries              | 480.1      | 480.1                             | Statewide Nursery; Specialty Fruit and Nut    | 246.5                      | 34                         |
| Ornamentals                 | 1,252.1    | 1,251.7                           | Statewide Nursery                             | Captured in tree nurseries | Captured in tree nurseries |
| Specialty Farms             | 132.6      | 132.6                             | Conservation Plan Rule                        | 7.6                        | 1                          |
| Dairies                     | 404.5      | 404.5                             | Lake Okeechobee Protection Program            | 387.8                      | 1                          |
| Cattle Feeding Operations   | 100.9      | 100.9                             | Conservation Plan Rule                        | N/A                        | N/A                        |
| Poultry Feeding Operations  | 106.8      | 106.8                             | Conservation Plan Rule                        | N/A                        | N/A                        |

**Table 2: Agricultural future enrollment goals for the St. Lucie River and Estuary BMAP area**

<sup>1</sup> See the discussion on BMP enrollment goals in Section 2.1.1.

| Category  | Acres     |
|---|-----------|
| Total Adjusted Acres  | 214,783.8 |
| Five-Year Enrollment Goal (90 %)  | 193,305   |
| Acreage Enrolled (as of June 30, 2016)  | 158,602   |
| Remaining Acres to Enroll To Meet the Phase I Enrollment Goal (90 %) <sup>1</sup> | 34,703    |

### **2.1.3 City of Port St. Lucie**

Port St. Lucie completed the wet detention system (Project PSL-30) associated with the St. Lucie West Services District (SLWSD) in December 2015, and began water quality sampling pursuant to the DEP Section 319(h) grant. The city also phased out an additional 342 septic systems.

The city submitted its DEP Section 319(h) grant application for the McCarty Ranch Extension Water Farming and Rain Capture Project (Project PSL-31). This new project will pump and store water from the SFWMD C-23 Canal onsite, and it will capture rainfall from the ranch property to reduce runoff back into the canal.

The city initiated two other new projects—the Veteran’s Memorial Stormwater Retrofit Project (Project PSL-32) and Lake Harvey Retention System Project (Project PSL-33). Project PSL-32 will include the construction of several detention ponds and 3 control structures to treat stormwater from an older part of the city constructed prior to stormwater quality regulations. Project PSL-33 will include the construction of a 4.4-acre wetland area and 2.3-acre flow-way to enhance water quality, storage, and hydraulic connectivity in SLWSD Basin 4E.

### **2.1.4 City of Stuart**

Stuart obtained funding and completed the creation and restoration of the tidal wetlands associated with Poppleton Creek (Project S-22). Water quality monitoring for this project is expected to commence towards the end of 2016. City staff partnered with the Rivers Coalition RiverKidz to help with native vegetation planting along Poppleton Creek. The volunteers came out on June 18, 2016, and installed over 200 plants on an island that was later dedicated to the RiverKidz by the city.

The city also secured funding for the restoration of the East Heart of Haney Creek (Project S-23), and city staff are working on a partnership with the Terrestrial Invasive Exotic Reporting System (TIERS) Program to remove exotic vegetation from the West Heart of Haney Creek.

### **2.1.5 Florida Department of Transportation (FDOT) District 4**

FDOT completed the construction of the wet detention ponds associated with the widening of County Road 714 (Projects FDOT-49 and FDOT-50), began the construction of one dry and five wet detention ponds associated with the widening of I-95 (Projects FDOT-51 through FDOT-56), and has planned and secured funding for treatment ponds associated with the widening of Midway Road (Projects FDOT-46 through FDOT-48).

### **2.1.6 Martin County**

Martin County completed 2 projects in February 2016—the Manatee Pocket Southwest Prong Baffle Box Project (Project MC-35) and the Martin County Golf Course Project (MC-36). Project MC-35 included the installation of a baffle box within an existing 48-inch by 76-inch

storm pipe that serves a 200-acre basin of predominately multifamily residential and commercial properties prior to discharging into the Manatee Pocket. Project MC-36 included the installation of 3 weir plates with bleeders on existing flashboard riser outfall pipes for treatment within the existing golf course lakes. This project serves a 100-acre watershed and provides over 1 inch of treatment. Project MC-36 also included the desilting and reshaping of 1,850 linear feet of ditch and the renovation of an existing weir.

Martin County also completed the construction of the Danforth Creek HWTT Project (Project MC-32) in June 2016 in conjunction with FDACS, and funding for the operation of the project became available in July 2016.

The county is currently constructing the All American Ditch Stormwater Quality Retrofit Project (Project MC-37). The project includes the installation of water control structures and a pipe system that will capture and convey stormwater runoff from a 268-acre, predominately medium-density residential neighborhood, to a treatment train style facility that consists of a 3.9-acre lake and a 5.6-acre stormwater treatment area (STA). Construction commenced on August 1, 2016, and is scheduled to last for 15 months.

The Hilltop Street Improvement Project (MC-38) is currently under design. The project will consist of the installation of approximately 624 linear feet of a 4-foot by 6-foot exfiltration trench. The project will provide in excess of 1 inch of stormwater runoff treatment from a 15-acre, medium-density residential neighborhood.

### **2.1.7 St. Lucie County**

St. Lucie County completed the White City–Citrus/Seager Stormwater Improvement Project (Project SLC-09), which included the construction of a wet detention system with polyacrylamide logs. The county implemented the “Be Floridian” educational campaign to highlight ordinances banning phosphorus-bearing fertilizer during the rainy season, and is working on a pilot project for solar-powered polyacrylamide dosing. The county also has planned and received funding for the newly identified Melville Road Master Drainage Plan Project (Project SLC-16), which includes a wet detention system.

### **2.1.8 Town of Sewall’s Point**

Sewall’s Point completed the construction of an exfiltration system (treating 28.20 acres) and pervious pavers. The town has applied for grants for a dry detention stormwater retrofit in the Mandalay/Marguerita area (Project SP-28), and received a DEP grant for 50 % of the construction cost of installing baffle boxes along South Sewall’s Point Road (Project SP-29).

### **2.1.9 SFWMD**

While the SFWMD is not the lead agency on any specific projects identified in the BMAP (DEP May 2013), various restoration activities in the St. Lucie River Basin moved forward in the past

year. Regional projects with both water storage and water quality benefits also progressed. The following lists agency highlights for advancements made in key SFWMD-related projects in the St. Lucie River Basin during the BMAP reporting period. Further information on this past year's progress is also reported in the [2016 South Florida Environmental Report – Volume I, Chapter 10](#).

The Indian River Lagoon-South (IRL-S) authorized plan includes a variety of storage features (reservoirs, STAs, and natural land restoration) intended to capture water from the primary basins (C-23, C-24, C-25, and C-44) that discharge to the St. Lucie River and southern Indian River Lagoon. Consistent with the U.S. Army Corps of Engineers (USACE) integrated delivery schedule, and contingent on future funding, the design of the C-23/24 North Reservoir will begin in 2018, and the design of the South Reservoir will commence in 2019, while the design of the STA is scheduled to start in 2026. Design efforts are expected to be completed after three years, with the construction of the first component (North Reservoir) to begin in 2021. During the reporting period, the construction of the C-44 STA and inflow pump station commenced, with completion expected in 2017 and 2018, respectively. Additionally, the SFWMD completed the construction of the communications tower and the system discharge canal and spillway associated with the C-44 project.

In August 2014, the SFWMD requested that USACE deauthorize the Ten Mile Creek Project, terminate the project cooperation agreements, and subsequently the SFWMD would take full ownership and responsibility for rehabilitating the project to provide necessary storage and water treatment options. In the interim (2014–16), the SFWMD obtained the proper authorizations to use the facility for low-level storage during the 2015 wet season, and pumping into the facility began in July 2015. During the BMAP reporting period, the design of a remediation project to allow up to four feet of reservoir filling was completed. A construction contract for the remediation project was awarded in July 2016, with completion planned prior to the 2017 wet season.

## **2.2 Summary of Accomplishments**

**Table 3** summarizes the projects completed during this reporting period. The projects that were quantified resulted in an estimated reduction of 23,680 lbs/yr of TN and 5,886 lbs/yr of TP.



**Table 3: Summary of projects completed during the reporting period**

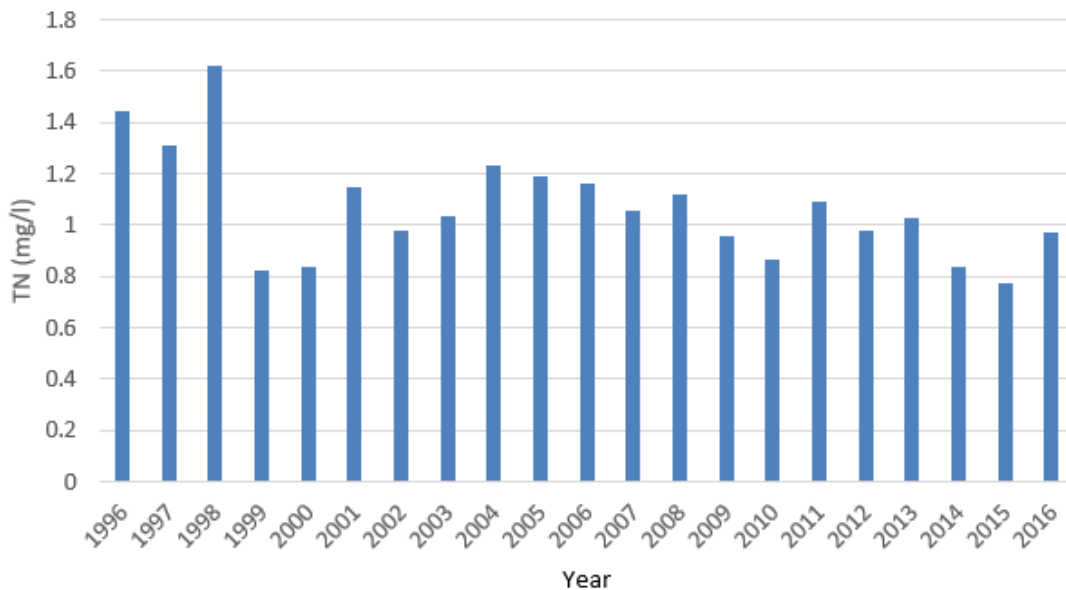
N/A = Not applicable  
 TBD = To be determined

| Entity  | Project Number | Project Name  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---|----------------|---|-----------------------|-----------------------|
| Agriculture   | N/A            | Agricultural BMP Enrollment through March 31, 2016                            | 22,642                | 5,327                 |
| City of Port St. Lucie  | PSL-09         | Water and Wastewater Expansion  | TBD                   | TBD                   |
| City of Port St. Lucie  | PSL-30         | St. Lucie West Services District (SLWSD) Water Management Improvement Project | 454                   | 326                   |
| City of Stuart  | S-17           | Haney Creek Project-Phase I   | 513                   | 207                   |
| City of Stuart  | S-21           | SW S. Carolina Dr. Drainage Project   | TBD                   | TBD                   |
| FDOT  | FDOT-49        | 230978-2 CR 714 Martin Highway Widening – Danforth Basin                      | TBD                   | TBD                   |
| FDOT  | FDOT-50        | 230978-2 CR 714 Martin Highway Widening – Wetlands Basin                      | TBD                   | TBD                   |
| Martin County   | MC-32          | Danforth Creek Hybrid Wetland Treatment Technology                            | TBD                   | TBD                   |
| Martin County   | MC-35          | Manatee Pocket SW Prong Baffle Box  | TBD                   | TBD                   |
| Martin County   | MC-36          | Martin County Golf Course WQ  | TBD                   | TBD                   |
| St. Lucie County Nonmunicipal Separate Storm Sewer System (MS4) | SLC-09         | White City – Citrus/Seager Stormwater Improvement                             | 71                    | 26                    |
| Town of Sewall's Point  | SP-27          | Extend Pedway/Greenway  | TBD                   | TBD                   |
| <b>Total Reductions in Reporting Period</b>                     |                |   | <b>23,680</b>         | <b>5,886</b>          |

## Section 3: Water Quality Evaluation

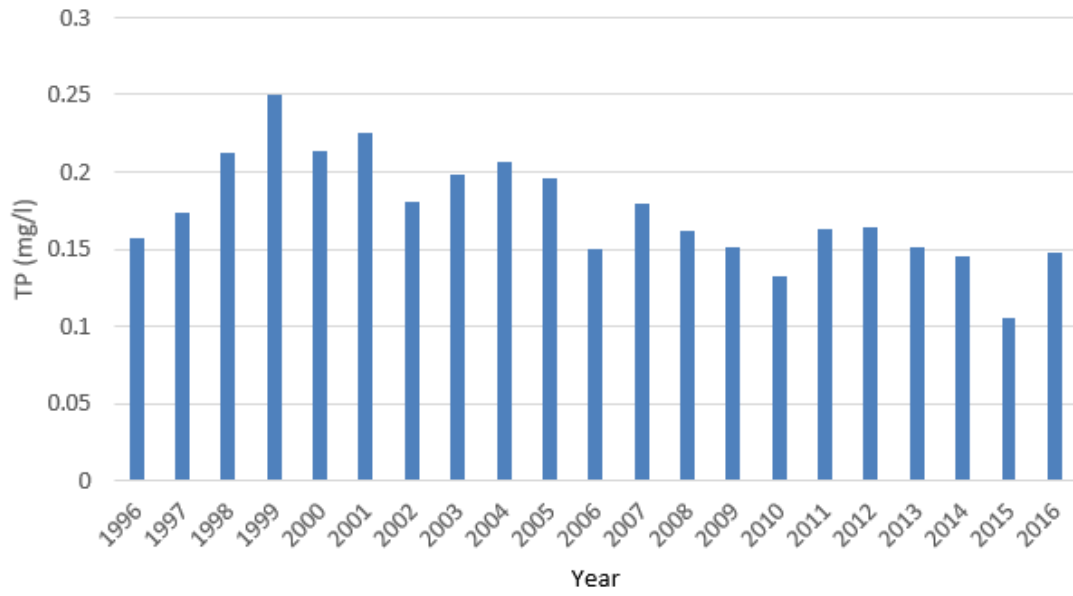
The SFWMD and numerous stakeholders monitor water quality throughout the St. Lucie River and Estuary Basin. The SFWMD monitors water quality data at Roosevelt Bridge (Station SE 03) for TN and TP. This is the compliance point for the TMDL. The adopted BMAP outlines the monitoring efforts (including the SE 03 station) from stakeholders such as Port St. Lucie, North St. Lucie River WCD, U.S. Geological Survey (USGS), and others. All nonfederal entities outlined in the BMAP monitoring network, with the exception of the SFWMD, are required to upload their data to DEP’s STORage and RETrieval (STORET) Database. The SFWMD uploads all data from its listed BMAP monitoring stations to its water quality database, DBHYDRO. The SFWMD provides data for its BMAP monitoring network stations routinely for inclusion in STORET.

**Figure 2** and **Figure 3** show the TN and TP water quality data from Station SE 03 for the beginning of the period of record for the TMDL (January 1996) to the most recent available monitoring event (August 2016). While the yearly averages for both TN and TP display some reductions, it should be noted that DEP is not using these data for compliance assessment at this time. A compliance methodology will be agreed on before the fourth annual update, in accordance with the timeline established in the BMAP. **Appendix B** contains additional information describing the methodology used for the data analysis discussed in this report. Beginning in December 2015, the SFWMD changed from monthly sampling at the SE 03 site to bimonthly due to staffing shortages. SFWMD resumed monthly sampling in August 2016.



**Figure 2: Yearly average TN concentration at Roosevelt Bridge (Station SE 03), January 1996– August 2016**





**Figure 3: Yearly average TP concentration at Roosevelt Bridge (Station SE 03), January 1996–August 2016**

## Section 4: Compliance

**Table 4** shows the number of projects that each entity committed to in the 2013 BMAP and the status of those projects. **Table 5** summarizes the allocations and reductions achieved to date by each entity in the BMAP.

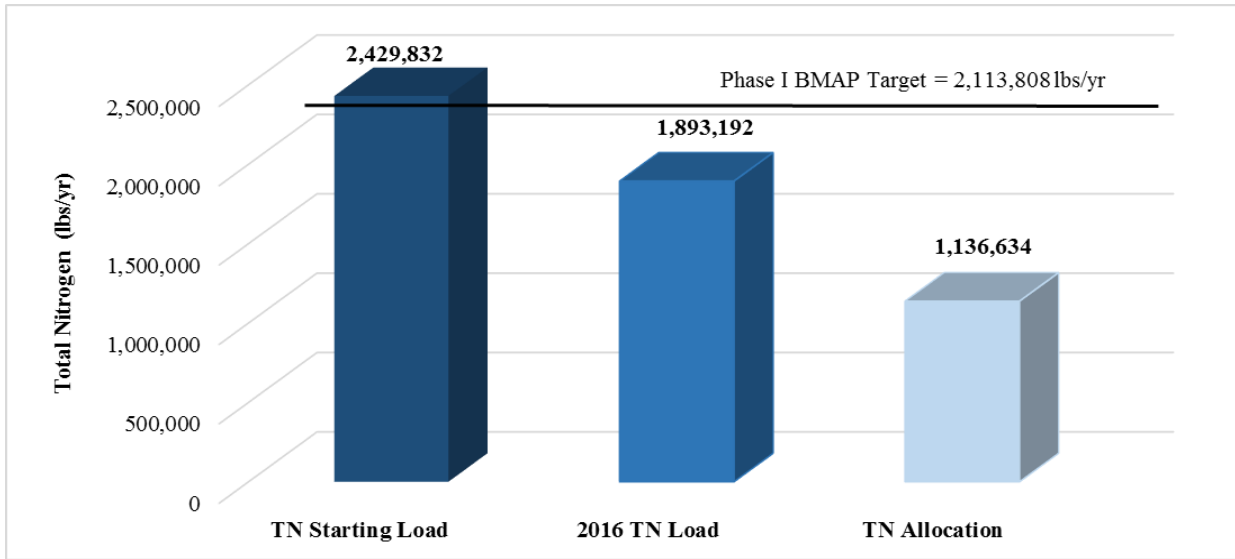
**Table 4: Summary of completed projects identified in the BMAP by entity**

| Entity                              | Projects Listed in 2013 BMAP | Completed  | Cancelled | Under Way |
|-------------------------------------|------------------------------|------------|-----------|-----------|
| City of Fort Pierce                 | 6                            | 6          |           |           |
| City of Port St. Lucie              | 26                           | 25         | 1         |           |
| City of Stuart                      | 15                           | 15         |           |           |
| FDOT                                | 40                           | 38         | 2         |           |
| Hobe St. Lucie Conservancy District | 3                            | 3          |           |           |
| Martin County                       | 28                           | 28         |           |           |
| North St. Lucie River WCD           | 8                            | 8          |           |           |
| Pal Mar WCD                         | 1                            | 1          |           |           |
| St. Lucie County MS4                | 8                            | 8          |           |           |
| St. Lucie County Non-MS4            | 6                            | 6          |           |           |
| Town of Sewall's Point              | 29                           | 27         |           | 2         |
| Troup-Indiantown WCD                | 2                            | 2          |           |           |
| Turnpike Authority                  | 3                            | 3          |           |           |
| <b>Total</b>                        | <b>179</b>                   | <b>174</b> | <b>3</b>  | <b>2</b>  |

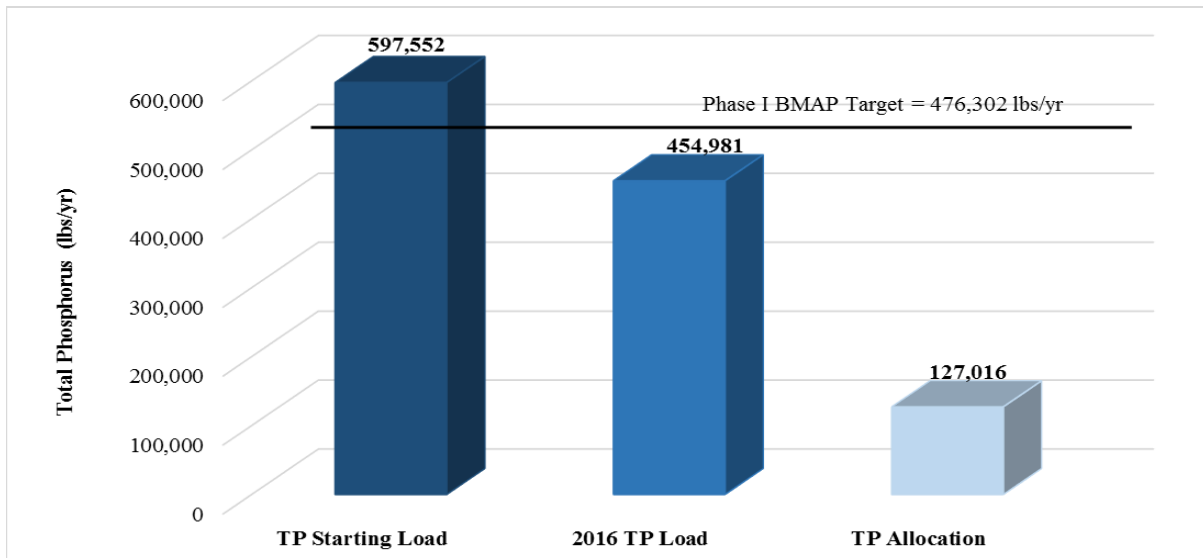
**Table 5: Summary of allocations and reduction status by entity**

| Entity                              | TN Allocation (lbs/yr) | Phase I TN Required Reduction (lbs/yr) | Current TN Reduction (lbs/yr) | TP Allocation (lbs/yr) | Phase I TP Required Reduction (lbs/yr) | Current TP Reduction (lbs/yr) |
|-------------------------------------|------------------------|--|-------------------------------|------------------------|--|-------------------------------|
| City of Fort Pierce                 | 10,562                 | 1,944                                  | 7,162                         | 1,186                  | 808                                    | 4,355                         |
| City of Port St. Lucie              | 103,380                | 15,930                                 | 63,675                        | 11,585                 | 7,029                                  | 9,329                         |
| City of Stuart                      | 9,238                  | 1,428                                  | 6,734                         | 1,044                  | 619                                    | 2,038                         |
| Agriculture                         | 750,198                | 243,877                                | 305,569                       | 83,253                 | 92,118                                 | 85,102                        |
| FDOT                                | 7,408                  | 1,532                                  | 2,108                         | 833                    | 513                                    | 1,087                         |
| Hobe St. Lucie Conservancy District | 14,731                 | 2,839                                  | 10,288                        | 1,732                  | 1,056                                  | 3,302                         |
| Martin County                       | 68,655                 | 9,647                                  | 36,258                        | 7,779                  | 4,377                                  | 6,646                         |
| North St. Lucie River WCD           | 109,557                | 26,354                                 | 69,128                        | 12,250                 | 10,090                                 | 19,088                        |
| Pal Mar WCD                         |                        |  | 926                           |                        |  | 92                            |
| St. Lucie County MS4                | 11,386                 | 2,018                                  | 5,277                         | 1,278                  | 855                                    | 2,032                         |
| St. Lucie County Non-MS4            | 14,394                 | 2,927                                  | 4,175                         | 1,572                  | 1,350                                  | 1,484                         |
| Town of Sewall's Point              |                        |  | 261                           |                        |  | 70                            |
| Troup-Indiantown WCD                | 37,125                 | 7,528                                  | 25,055                        | 4,504                  | 2,436                                  | 7,943                         |
| Turnpike Authority                  |                        |  | 23                            |                        |  | 3                             |
| <b>Total</b>                        | <b>1,136,634</b>       | <b>316,024</b>                         | <b>536,640</b>                | <b>127,016</b>         | <b>121,250</b>                         | <b>142,571</b>                |

**Figure 4** and **Figure 5** show the progress towards the TN and TP TMDLs load reductions. The first bar shows the starting load for urban and agricultural stormwater runoff. The second bar shows the current estimated loading based on those projects shown as completed in the BMAP, those completed as described in the 2014 and 2015 progress reports, and those listed in **Table 3**. The third bar shows the total allocation for stormwater runoff to meet the TMDL. The horizontal line shows the target (30 % of the total required reductions) for the first BMAP iteration. The TN and TP reductions from completed projects to date are 536,640 and 142,571 lbs/yr, respectively.



**Figure 4: Progress towards the St. Lucie River and Estuary TN TMDL through June 30, 2016**



**Figure 5: Progress towards the St. Lucie River and Estuary TP TMDL through June 30, 2016**

## Appendices

---

### **Appendix A: Projects To Achieve the TMDL**

The BMAP project tables below show the implementation status of the BMAP projects as of June 30, 2016. The tables provide information on the nutrient reduction attributed to each individual project, listed in lbs/yr. These projects were submitted to provide reasonable assurance to DEP that each entity has a plan on how to meet its allocation. The projects are meant to be flexible enough to allow for changes that may occur over time, provided that the reduction is still achieved within the specified period.

**Table A-1: City of Fort Pierce projects**

N/A = Not applicable  
 TBD = To be determined

| Project Number | Project Name  | Project Type           | Acres Treated | Project Cost | End Date | Status             | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|---|------------------------|---------------|--------------|----------|--------------------|-----------------------|-----------------------|
| FP-1           | Heathcote Botanical Gardens Treatment Train, also known as Indian Hills Recreation Area Stormwater Improvements               | Treatment train        | 1,242         | \$2,787,588  | 6/2015   | Completed          | 233                   | 99                    |
| FP-2           | Moore's Creek Retrofit – Phases 3 and 4   | Wet detention          | 71.9          | \$825,000    | 3/2008   | Completed          | 102                   | 39                    |
| FP-3           | Street Sweeping – 4,314 Cubic Yards   | Street sweeping        | N/A           | N/A          | Ongoing  | Ongoing            | 6,158                 | 3,949                 |
| FP-4           | Inlet Cleaning – 2,762 Cubic Yards  | Inlet cleaning         | N/A           | N/A          | Ongoing  | Ongoing            | 180                   | 111                   |
| FP-5           | Fertilizer Ordinance, Stormwater Education Shows, Pamphlets, Presentations, Storm Drain Stenciling, Illicit Discharge Program | Education and outreach | N/A           | N/A          | Ongoing  | Ongoing            | 255                   | 58                    |
| FP-6           | Virginia Avenue Outfall Canal   | Wet detention          | 161.4         | \$3,462,572  | 02/2008  | Completed          | 233                   | 99                    |
| FP-7           | Moore's Creek Retrofit Phase 2  | Baffle boxes           | 1,680.00      | \$1,480,437  | 2008     | Completed          | TBD                   | TBD                   |
| FP-8           | South Beach Baffle Boxes  | Baffle boxes           | 128.00        | \$557,003    | 2005     | Completed          | TBD                   | TBD                   |
| FP-9           | Veterans Park Stormwater Improvements   | Treatment train        | 44.10         | \$1,470,900  | 2016     | Under construction | TBD                   | TBD                   |
| FP-10          | North 2nd Street (Seaway Drive north to Taylor Creek Marina)  | Wet detention          | TBD           | \$1,909,176  | 2017     | Under construction | TBD                   | TBD                   |
| FP-11          | Indian Hills Recreation Area Stormwater Improvements Phase II   | Recreation of wetlands | 61.00         | \$2,240,705  | 2016     | Near completion    | TBD                   | TBD                   |

**Table A-2: City of Fort Pierce summary of reductions**

| Category                                  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---|-----------------------|-----------------------|
| <b>Total Completed Project Reductions</b> | 7,162                 | 4,355                 |
| <b>Total BMAP I Required Reductions</b>   | 1,944                 | 808                   |
| <b>Credit for Future BMAPs</b>            | 5,218                 | 3,547                 |



**Table A-3: City of Port St. Lucie MS4 projects**

N/A = Not applicable  
 TBD = To be determined

| Project Number | Project Name   | Project Type                | Acres Treated | Project Cost      | End Date | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|--|-----------------------------|---------------|-------------------|----------|-----------|-----------------------|-----------------------|
| PSL-1          | Wood Stork Trail Design Districts 7, 8, and 9  | First-generation baffle box | 228.8         | \$3,300,000       | 7/2007   | Completed | 3                     | 4                     |
| PSL-2          | Wood Stork Trail Design District 6   | First-generation baffle box | 81.0          | \$825,500         | 11/2008  | Completed | 2                     | 2                     |
| PSL-3          | Howard Creek STA   | Wet detention               | 435.8         | Included in PSL-4 | 12/2010  | Completed | 523                   | 212                   |
| PSL-4          | Eastern Watershed Improvement Project (EWIP)   | Wet detention ponds         | 849.5         | \$36,000,000      | 12/2011  | Completed | 618                   | 360                   |
| PSL-5          | B-1 and B-2 Water Control Structures (WCSs)  | Water control structure     | 1,747.5       | \$1,800,000       | 5/2007   | Completed | 2,526                 | 993                   |
| PSL-6          | B-3 WCS  | Water control structure     | 1,640.6       | Included in PSL-5 | 5/2007   | Completed | 2,372                 | 931                   |
| PSL-7          | E-8 Waterway Phase 1 Water Quality Retrofit  | Wet detention – STAs        | 1,610.2       | \$400,000         | 11/2010  | Completed | 763                   | 664                   |
| PSL-8          | E-17 Canal WCS   | Water control structure     | 983.6         | \$437,000         | 7/2008   | Completed | 181                   | 0                     |
| PSL-9          | Water and Wastewater Expansion   | Septic tank phaseout        | N/A           | \$91,075,666      | Varies   | Ongoing   | 37,698                | TBD                   |
| PSL-10         | Street Sweeping  | Street sweeping             | N/A           | N/A               | Ongoing  | Ongoing   | 676                   | 434                   |
| PSL-11         | Swale Maintenance  | Sediment removal            | N/A           | N/A               | Ongoing  | Ongoing   | 7,649                 | 3,097                 |
| PSL-12         | Catch Basin Cleaning   | Catch basin cleaning        | N/A           | N/A               | Ongoing  | Ongoing   | 21                    | 13                    |
| PSL-13         | Florida Yards and Neighborhoods (FYN); Fertilizer, Landscaping, Irrigation, and Pet Waste Ordinances; Public Service Announcements (PSAs), Stormwater Educational Shows, Website, Outreach Programs, Stencil Program, Stormwater Pollution Hotline | Education and outreach      | N/A           | N/A               | Ongoing  | Ongoing   | 9,388                 | 2,100                 |
| PSL-14         | Tiffany Channel  | Stormwater reuse            | N/A           | N/A               | Ongoing  | Ongoing   | 33                    | 7                     |
| PSL-15         | Patio STA  | Stormwater reuse            | N/A           | N/A               | Ongoing  | Ongoing   | 11                    | 2                     |
| PSL-16         | Mary STA   | Stormwater reuse            | N/A           | N/A               | Ongoing  | Ongoing   | 8                     | 2                     |
| PSL-17         | Leithgow STA   | Stormwater reuse            | N/A           | N/A               | Ongoing  | Ongoing   | 7                     | 2                     |
| PSL-18         | Cane Slough 1/Elks STA   | Stormwater reuse            | N/A           | N/A               | Ongoing  | Ongoing   | 33                    | 7                     |
| PSL-19         | Cane Slough 2/Azzi STA   | Stormwater reuse            | N/A           | N/A               | Ongoing  | Ongoing   | 24                    | 6                     |
| PSL-20         | Loutus STA   | Stormwater reuse            | N/A           | N/A               | Ongoing  | Ongoing   | 23                    | 5                     |
| PSL-21         | Howard Creek STA   | Stormwater reuse            | N/A           | N/A               | Ongoing  | Ongoing   | 34                    | 7                     |

| Project Number | Project Name                                  | Project Type                 | Acres Treated  | Project Cost            | End Date     | Status                             | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|---|------------------------------|----------------|-------------------------|--------------|------------------------------------|-----------------------|-----------------------|
| PSL-22         | Bur St. STA                                   | Stormwater reuse             | N/A            | N/A                     | Ongoing      | Ongoing                            | 1                     | 0                     |
| PSL-23         | SLWSD Aquatic Harvesting                      | Aquatic harvesting           | N/A            | \$669,600               | Discontinued | Discontinued                       | N/A                   | N/A                   |
| PSL-24         | SLWSD Catch Basin Cleaning                    | Catch basin cleaning         | N/A            | \$185,600               | Ongoing      | Ongoing                            | 84                    | 52                    |
| PSL-25         | Atlantis Basin                                | Second-generation baffle box | 115.8          | \$628,000               | 11/2014      | Completed                          | 91                    | 17                    |
| PSL-26         | Evergreen Basin                               | Second-generation baffle box | 241.4          | Included in PSL-25 cost | 11/2014      | Completed                          | 190                   | 35                    |
| PSL-27         | Lansdown Basin                                | Second-generation baffle box | 115.2          | Included in PSL-25 cost | 11/2014      | Completed                          | 90                    | 16                    |
| PSL-28         | Streamlet/Manth Basin                         | Second-generation baffle box | 41.7           | Included in PSL-25 cost | 11/2014      | Completed                          | 33                    | 6                     |
| PSL-29         | Walters Basin                                 | Second-generation baffle box | 179.5          | Included in PSL-25 cost | 11/2014      | Completed                          | 140                   | 25                    |
| PSL-30         | SLWSD Water Management Improvement Project    | Wet detention pond           | 140            | \$360,704               | 12/2015      | Completed                          | 454                   | 326                   |
| PSL-31         | McCarty Ranch Extension – Phases I through VI | Retention BMPs               | Not quantified | \$5,139,494             | TBD          | Started                            | TBD                   | TBD                   |
| PSL-32         | Veterans Memorial Water Quality Retrofit      | Dry detention                | 1065           | TBD                     | TBD          | Started                            | TBD                   | TBD                   |
| PSL-33         | Lake Harvey                                   | Retention BMPs               | 140            | Estimated \$585,000     | 2017         | Permitting package being assembled | TBD                   | TBD                   |

**Table A-4: City of Port St. Lucie summary of reductions**

| Category                                  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---|-----------------------|-----------------------|
| <b>Total Completed Project Reductions</b> | 63,675                | 9,329                 |
| <b>Total BMAP I Required Reductions</b>   | 15,930                | 7,029                 |
| <b>Credit for Future BMAPs</b>            | 47,744                | 2,300                 |

**Table A-5: City of Stuart projects**

N/A = Not applicable  
 TBD = To be determined

| Project Number | Project Name   | Project Type                                | Acres Treated | Project Cost   | End Date | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|--|---|---------------|--|----------|-----------|-----------------------|-----------------------|
| S-1            | Poppleton Creek – Phase II and III   | Wet detention pond                          | 629.1         | \$4,371,250  | 10/2008  | Completed | 1,299                 | 576                   |
| S-2            | Airport Ditch Project  | Retention/detention                         | 893.7         | \$766,756  | 8/2003   | Completed | 900                   | 532                   |
| S-3            | Crescent Basin Project   | Stormwater retention                        | 58.5          | \$180,000  | 3/2003   | Completed | 198                   | 42                    |
| S-4            | Krueger Creek Project  | First-generation baffle boxes               | 309.6         | \$432,000  | 11/2001  | Completed | 7                     | 7                     |
| S-5            | Street Sweeping – 105 tons/yr  | Street sweeping                             | N/A           | Not quantified   | Ongoing  | Ongoing   | 111                   | 71                    |
| S-6            | Sediment Removal from Storm Systems – 103 tons/year  | BMP cleanout                                | N/A           | Not quantified   | Ongoing  | Ongoing   | 111                   | 68                    |
| S-7            | FYN; Landscaping, Irrigation, Fertilizer, Pet Waste Ordinances; Brochure, Website, Information Inserts, City Calendar, Doggie Pot Stations, Neighborhood Cleanup Program | Education and outreach                      | N/A           | FYN agreement – \$17,028; city stormwater calendars – \$11,530 | Ongoing  | Ongoing   | 840                   | 186                   |
| S-8            | North Point CRA Drainage Basin   | First-generation baffle box                 | 1,083.8       | Not quantified   | 2002     | Completed | 24                    | 23                    |
| S-9            | Anchorage Drainage Basin   | First-generation baffle box                 | 21.3          | Not quantified   | 2002     | Completed | 1                     | 0                     |
| S-10           | Downtown Drainage Basin  | First-generation baffle boxes               | 116.6         | Not quantified   | 2002     | Completed | 2                     | 2                     |
| S-11           | Hildebrad Basin  | Continuous deflective separation (CDS) unit | 66.9          | Not quantified   | 2009     | Completed | 0                     | 6                     |
| S-12           | Landfill Basin   | Closed basin                                | 71.0          | Not quantified   | N/A      | Completed | 167                   | 26                    |
| S-13           | South Fork Drainage Basin  | First-generation baffle boxes               | 662.8         | Not quantified   | 2002     | Completed | 16                    | 16                    |
| S-14           | Neighborhood Initiated Sewer Expansion Program   | Removal of septic tanks                     | N/A           | \$3,200,000  | Ongoing  | Ongoing   | 1,339                 | TBD                   |
| S-15           | Eldorado Heights   | Retention/closed basin                      | 29.8          | \$779,000  | 12/2012  | Completed | 134                   | 27                    |
| S-16           | Amerigo Avenue Drainage Improvements   | Dry detention                               | 9.9           | \$772,000  | 4/2014   | Completed | 37                    | 7                     |
| S-17           | Haney Creek Project  | Flow-through marsh, wetlands                | 626.4         | \$4,831,411  | 2016     | Completed | 513                   | 207                   |
| S-18           | Nondischarge Areas   | Nondischarge (8 areas)                      | 217.6         | N/A  | 2014     | Completed | 1,038                 | 233                   |
| S-19           | Baffle Boxes Throughout City   | First-generation baffle boxes (22 total)    | 474.9         | Unknown  | 2014     | Completed | 11                    | 11                    |

| Project Number | Project Name   | Project Type                       | Acres Treated | Project Cost | End Date | Status             | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|--|------------------------------------|---------------|--------------|----------|--------------------|-----------------------|-----------------------|
| S-20           | CDS Units Throughout City  | CDS units (12 total)               | 65.9          | Unknown      | Various  | Completed          | 0                     | 6                     |
| S-21           | SW South Carolina Dr. Drainage Project                                   | Drainage improvement               | 2.8           | \$28,390     | 2016     | Completed          | TBD                   | TBD                   |
| S-22           | Poppleton Creek Tidal Wetlands Creation and Restoration Project-Phase IV | Tidal flow through mangrove forest | 525           | \$270,200    | 2018     | Started            | TBD                   | TBD                   |
| S-23           | East Heart of Haney Creek Wetlands Restoration                           | Upland flow through wetlands       | 395           | \$200,000    | 2019     | Planned and funded | TBD                   | TBD                   |

**Table A-6: City of Stuart summary of reductions**

| Category                                  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---|-----------------------|-----------------------|
| <b>Total Completed Project Reductions</b> | 6,735                 | 2,038                 |
| <b>Total BMAP I Required Reductions</b>   | 1,428                 | 619                   |
| <b>Credit for Future BMAPs</b>            | 5,307                 | 1,420                 |

**Table A-7: FDOT District 4 projects**

N/A = Not applicable

TBD = To be determined

<sup>1</sup> These projects are located in the South Coastal Subbasin, which is outside the current BMAP boundary. However, they will be considered for credit in the next BMAP iteration.

<sup>2</sup> These projects are located in the Mid Coastal Subbasin, which is outside the current BMAP boundary. However, they will be considered for credit in the next BMAP iteration.

<sup>3</sup> FDOT-44 is a joint project between St Lucie County and FDOT. This portion of 68 (west of Interstate 95) is actually a county road, not a state road. The county and FDOT District 4 have agreed to split the credits 25 % to FDOT and 75 % to the county.

<sup>4</sup> FDOT calculated the total credits using the St. Lucie River and Estuary model and then split the credits, 40 % to the St. Lucie River and Estuary Basin and 60 % to the Indian River Lagoon Basin, based on the area of each basin within the boundary of the project. These projects were previously FDOT-45, a project ID that will no longer be used or attributed in the future.

| Project Number      | Project Name  | Project Type          | Acres Treated | End Date | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---------------------|---|-----------------------|---------------|----------|-----------|-----------------------|-----------------------|
| FDOT-1 <sup>4</sup> | FM# 230108-1 (Pond 3)                                       | Wet detention         | N/A           | N/A      | Completed | 1                     | 0                     |
| FDOT-2 <sup>4</sup> | FM# 230108-1 (Pond 4)                                       | Wet detention         | N/A           | N/A      | Completed | 1                     | 0                     |
| FDOT-3              | FM# 230262-4  | Dry detention         | 102.0         | 7/2008   | Completed | 69                    | 18                    |
| FDOT-4              | FM# 230262-5  | Dry detention         | 123.7         | 4/2010   | Completed | 60                    | 15                    |
| FDOT-5              | FM# 230262-3  | Dry detention         | 195.1         | 5/2012   | Completed | 168                   | 38                    |
| FDOT-6              | FM# 230262-2  | Dry detention         | 238.4         | 6/2014   | Completed | 110                   | 36                    |
| FDOT-7              | FM# 230295-1  | Dry detention         | 17.1          | 3/2003   | Completed | 9                     | 2                     |
| FDOT-8              | SPN 99004-1585  | Dry detention         | 30.8          | 1/2003   | Completed | 16                    | 3                     |
| FDOT-9              | SPN 99004-1585 (Lake 3)                                     | Wet detention         | 13.1          | 1/2003   | Completed | 14                    | 5                     |
| FDOT-10             | FM# 228819-1 (Basin A and B)                                | Wet detention         | 2.0           | 5/2007   | Completed | 0                     | 0                     |
| FDOT-11             | FM# 228821-1 (West 1 A)                                     | Exfiltration trench   | 2.2           | 4/2001   | Completed | 5                     | 1                     |
| FDOT-12             | FM# 228821-1 (East)   | Exfiltration trench   | 1.0           | 4/2001   | Completed | 2                     | 0                     |
| FDOT-13             | FM# 228831-1  | Dry detention         | 9.1           | 3/2000   | Completed | 3                     | 1                     |
| FDOT-14             | FM# 228801-1  | Dry detention         | 2.0           | 11/2003  | Completed | 1                     | 0                     |
| FDOT-15             | FM# 405504-1  | Dry detention         | 53.6          | 2/2005   | Completed | 24                    | 5                     |
| FDOT-16             | FM# 230288-2  | Wet detention         | 44.4          | 5/2009   | Completed | 63                    | 22                    |
| FDOT-17             | FM# 419890-1  | Wet and dry detention | 42.0          | 1/2010   | Completed | 2                     | 2                     |
| FDOT-18             | Street Sweeping   | Street sweeping       | N/A           | Ongoing  | Ongoing   | 1,419                 | 910                   |
| FDOT-19             | Pamphlets   | Education             | N/A           | Ongoing  | Ongoing   | 31                    | 6                     |
| FDOT-20             | FM# 230978-1 Indian Street Bridge (Pond East)               | Dry detention         | 20.7          | 1/2014   | Completed | 2                     | 0                     |
| FDOT-21             | FM# 230978-1 Indian Street Bridge (Pond West)               | Wet detention         | 33.6          | 1/2014   | Completed | 0                     | 0                     |
| FDOT-22             | State Road (SR) 615 Midway Road to Edwards Road (Basin B-1) | Wet detention         | 7.8           | 10/2009  | Completed | 5                     | 2                     |
| FDOT-23             | SR 615 Midway Road to Edwards Road (Basin E)                | Wet detention         | 9.3           | 10/2009  | Completed | 6                     | 2                     |

2016 Progress Report St. Lucie River and Estuary Basin Management Action Plan – January 2017

| Project Number             | Project Name  | Project Type        | Acres Treated | End Date | Status             | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------------------|---|---------------------|---------------|----------|--------------------|-----------------------|-----------------------|
| <b>FDOT-24</b>             | FM# 410717-1 SR 70 Widening Kings Highway to Jenkins Road (West Basin)        | Dry detention       | 6.2           | 11/2012  | Completed          | 3                     | 1                     |
| <b>FDOT-25</b>             | SR 713 (King’s Highway) Turn Lanes  | Swales              | 0.6           | Unknown  | Completed          | 0                     | 0                     |
| <b>FDOT-26</b>             | Johnson Honda of Stuart Turn Lane (Basin A and B)                             | Exfiltration trench | 0.1           | 10/2010  | Completed          | 0                     | 0                     |
| <b>FDOT-27</b>             | FM# 228852-1 SR 76 Drainage Improvements at Cabana Point (Pond 9A)            | Wet detention       | 4.8           | 1/2006   | Completed          | 10                    | 3                     |
| <b>FDOT-28</b>             | FM# 228852-1 Osprey Ridge Planned Unit Development (PUD) – SR 76 Improvements | Exfiltration trench | 0.1           | 2/2007   | Completed          | 0                     | 0                     |
| <b>FDOT-29</b>             | FM# 228852-1 SR 76 Improvements – Kanner Professional Center                  | Exfiltration trench | 0.4           | 3/2009   | Completed          | 0                     | 0                     |
| <b>FDOT-30<sup>1</sup></b> | FM# 228851-1 (Basin A)  | Dry detention       | 14.12         | 11/2004  | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-31<sup>1</sup></b> | FM# 228851-1  | Dry detention       | 25.72         | 11/2004  | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-32<sup>2</sup></b> | FM# 230132-1 (System No. 1)   | Dry detention       | 2.8           | 5/2001   | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-33<sup>2</sup></b> | FM# 228758-1  | Dry detention       | 18.55         | 1/2006   | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-34<sup>2</sup></b> | FM# 228819-1 (Basin C)  | Dry detention       | 16.2          | 5/2007   | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-35<sup>2</sup></b> | FM# 228819-1 (Basin D)  | Exfiltration trench | 4.41          | 5/2007   | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-36<sup>2</sup></b> | FM# 228819-1 (Basin E)  | Exfiltration trench | 4.79          | 5/2007   | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-37<sup>2</sup></b> | FM# 405167-1  | Dry retention       | 30.07         | 4/2005   | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-38<sup>2</sup></b> | FM# 230296-1  | Dry swales          | 88.91         | 3/2009   | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-39<sup>2</sup></b> | FM# 230297-1 SR A1A Roadway Improvements Phase 3                              | Exfiltration trench | 6.38          | 8/2010   | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-40<sup>2</sup></b> | FM# 228758-1 SR 702 Jensen Beach Causeway                                     | Dry detention       | 33.60         | 1/2008   | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-41</b>             | FM# 419250-2 SR 710 Bridge Replacement – 100A, 100B, and 200                  | Dry detention       | 17.4          | 7/2014   | Completed          | 3                     | 0                     |
| <b>FDOT-42</b>             | FM# 419250-2 SR 710 Bridge Replacement – 300 and 500                          | Dry detention       | 28.4          | 7/2014   | Completed          | 7                     | 1                     |
| <b>FDOT-43</b>             | FM# 413046-1 SR 9 Widening  | Dry retention       | 152.0         | 10/2014  | Completed          | 75                    | 14                    |
| <b>FDOT-44<sup>3</sup></b> | FM# 423022-1 CR 68 Orange Avenue  | Dry detention       | 5.62          | 2/2015   | Completed          | Not quantified        | Not quantified        |
| <b>FDOT-46</b>             | 231440-2 Midway Rd Widening, 25th St. to US 1 (Pond 1 and 2)                  | Wet detention       | 17.08         | TBD      | Planned and funded | TBD                   | TBD                   |
| <b>FDOT-47</b>             | 231440-2 Midway Rd Widening, 25th St. to US 1 (Pond 3 and 4)                  | Wet detention       | 14.19         | TBD      | Planned and funded | TBD                   | TBD                   |
| <b>FDOT-48</b>             | 231440-2 Midway Rd Widening, 25th St. to US 1 (Pond 5)                        | Wet detention       | 11.01         | TBD      | Planned and funded | TBD                   | TBD                   |

| Project Number | Project Name   | Project Type         | Acres Treated | End Date | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|--|----------------------|---------------|----------|-----------|-----------------------|-----------------------|
| <b>FDOT-49</b> | 230978-2 CR 714 Martin Highway Widening – Danforth Basin | Wet detention        | 16.56         | 2016     | Completed | TBD                   | TBD                   |
| <b>FDOT-50</b> | 230978-2 CR 714 Martin Highway Widening – Wetlands Basin | Wet detention        | 12.11         | 2016     | Completed | TBD                   | TBD                   |
| <b>FDOT-51</b> | 422641-3 SR 76 Widening from I-95 to Monterey Rd Pond 1  | Dry detention        | 4.65          | 2018     | Started   | TBD                   | TBD                   |
| <b>FDOT-52</b> | 422641-3 SR 76 Widening from I-95 to Monterey Rd Pond 2A | Wet detention        | 7.22          | 2018     | Started   | TBD                   | TBD                   |
| <b>FDOT-53</b> | 422641-3 SR 76 Widening from I-95 to Monterey Rd Pond 2B | Wet detention        | 14.58         | 2018     | Started   | TBD                   | TBD                   |
| <b>FDOT-54</b> | 422641-3 SR 76 Widening from I-95 to Monterey Rd. Pond 3 | Wet detention        | 24.75         | 2018     | Started   | TBD                   | TBD                   |
| <b>FDOT-55</b> | 422641-3 SR 76 Widening from I-95 to Monterey Rd. Pond 4 | Wet detention        | 11.98         | 2018     | Started   | TBD                   | TBD                   |
| <b>FDOT-56</b> | 422641-3 SR 76 Widening from I-95 to Monterey Rd. Pond 8 | Wet detention        | 10.58         | 2018     | Started   | TBD                   | TBD                   |
| <b>FDOT-57</b> | Fertilizer Application Cessation                         | Fertilizer cessation |               | Ongoing  | Ongoing   | TBD                   | TBD                   |

**Table A-8: FDOT District 4 summary of reductions**

| Category                                  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---|-----------------------|-----------------------|
| <b>Total Completed Project Reductions</b> | 2,108                 | 1,088                 |
| <b>Total BMAP I Required Reductions</b>   | 1,532                 | 513                   |
| <b>Credit for Future BMAPs</b>            | 577                   | 575                   |

**Table A-9: Hobe St. Lucie Conservancy District projects**

N/A = Not applicable

| <b>Project Number</b> | <b>Project Name</b>                   | <b>Project Type</b>          | <b>Acres Treated</b> | <b>Status</b> | <b>TN Reduction (lbs/yr)</b> | <b>TP Reduction (lbs/yr)</b> |
|-----------------------|---------------------------------------|------------------------------|----------------------|---------------|------------------------------|------------------------------|
| <b>HSL-1</b>          | Hobe Sound Polo Club                  | Wet detention, dry detention | 1,736.3              | Completed     | 3,097                        | 1,013                        |
| <b>HSL-2</b>          | Changes in Agricultural Land Uses     | Land use change              | N/A                  | Completed     | 7,000                        | 2,258                        |
| <b>HSL-3</b>          | 90 % Implementation Agricultural BMPs | Agricultural BMPs            | N/A                  | Ongoing       | 191                          | 29                           |

**Table A-10: Hobe St. Lucie Conservancy District summary of reductions**

| <b>Category</b>                           | <b>TN Reduction (lbs/yr)</b> | <b>TP Reduction (lbs/yr)</b> |
|---|------------------------------|------------------------------|
| <b>Total Completed Project Reductions</b> | 10,288                       | 3,302                        |
| <b>Total BMAP I Required Reductions</b>   | 2,839                        | 1,056                        |
| <b>Credit for Future BMAPs</b>            | 7,450                        | 2,246                        |



**Table A-11: Martin County projects**

N/A = Not applicable

TBD = To be determined

\* These projects are located in the South Coastal Subbasin, which is outside the current BMAP boundary. However, they will be considered for credit in the next BMAP iteration.

| Project Number | Project Name  | Project Type                     | Acres Treated | Project Cost | End Date | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|---|----------------------------------|---------------|--------------|----------|-----------|-----------------------|-----------------------|
| MC-1           | Cedar Point Water Quality Retrofit  | Wet detention and swales         | 31.4          | \$398,027    | 10/2004  | Completed | 72                    | 34                    |
| MC-2           | Indian River Drive Baffle Boxes   | Second-generation baffle boxes   | 39.1          | \$741,827    | 5/2010   | Completed | 31                    | 6                     |
| MC-3           | Warner Creek/Leilani Heights Water Quality Retrofit Phase I   | Exfiltration trenches and swales | 69.8          | \$541,854    | 8/2011   | Completed | 230                   | 49                    |
| MC-4           | Warner Creek Phase II   | Dry detention                    | 15.1          | \$1,750,338  | 7/2012   | Completed | 6                     | 1                     |
| MC-5           | Warner Creek Phase III – Beacon 21  | Wet detention                    | 1,353.8       | \$2,122,935  | 7/2012   | Completed | 1,291                 | 597                   |
| MC-6           | Manatee Creek Water Quality Retrofit Phases I, II, and III  | Wet detention                    | 16.0          | \$419,948    | 7/2012   | Completed | 6                     | 4                     |
| MC-7           | Rio/St. Lucie Water Quality Retrofit – Phase 1  | Exfiltration trenches and swales | 8.1           | \$354,161    | 9/2006   | Completed | 41                    | 11                    |
| MC-8           | Rio/St. Lucie Water Quality Retrofit – Phase 2  | Wet detention                    | 119.8         | \$998,170    | 9/2008   | Completed | 190                   | 74                    |
| MC-9           | Salerno Creek Water Quality Retrofit  | Wet detention                    | 207.9         | \$4,715,074  | 6/2003   | Completed | 408                   | 134                   |
| MC-10          | Coral Gardens Water Quality Retrofit  | Wet detention                    | 2,008.0       | \$2,321,860  | 5/2005   | Completed | 1,376                 | 936                   |
| MC-11          | Fern Creek Water Quality Retrofit   | Wet detention                    | 607.1         | \$2,660,200  | 4/2005   | Completed | 685                   | 258                   |
| MC-12          | Old Palm City Water Quality Retrofit Phases I, II, and III  | Wet detention, swales            | 141.4         | \$1,544,600  | 3/2004   | Completed | 244                   | 96                    |
| MC-13          | North River Shores Baffle Boxes   | First-generation baffle boxes    | 187.3         | \$1,310,000  | 3/2002   | Completed | 4                     | 4                     |
| MC-14          | Palm Lake Park Water Quality Retrofit   | Wet detention                    | 80.1          | \$1,741,098  | 2/2003   | Completed | 108                   | 42                    |
| MC-15          | Tropical Farms Water Quality Retrofit   | Wet detention                    | 469.8         | \$4,045,470  | 12/2010  | Completed | 945                   | 309                   |
| MC-16          | Septic to Central Sewer Conversions   | Septic to sewer conversion       | N/A           | \$28,678,946 | Varies   | Completed | 15,369                | Not quantified        |
| MC-17          | Danforth Creek – Phase 1  | Wet detention                    | 2,459.3       | \$1,981,799  | 4/2013   | Completed | 2,434                 | 1,010                 |
| MC-18          | Street Sweeping   | Street sweeping                  | N/A           | N/A          | Ongoing  | Ongoing   | 108                   | 69                    |
| MC-19          | Baffle Box and Structure Cleanout   | Clean out                        | N/A           | N/A          | Ongoing  | Ongoing   | 397                   | 161                   |
| MC-20          | FYN; Landscaping, Irrigation, Fertilizer, and Pet Waste Ordinances; PSAs, Pamphlets, Website, Illicit Discharge Program | Education and outreach           | N/A           | N/A          | Ongoing  | Ongoing   | 6,049                 | 1,342                 |

| Project Number | Project Name   | Project Type                                     | Acres Treated | Project Cost | End Date | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|--|--|---------------|--------------|----------|-----------|-----------------------|-----------------------|
| MC-21          | FM# 230978-1 Indian Street Bridge (Pond East)            | Dry detention                                    | 20.7          | Unknown      | 1/2014   | Completed | 5                     | 1                     |
| MC-22          | FM# 230978-1 Indian Street Bridge (Pond West)            | Wet detention                                    | 33.6          | Unknown      | 1/2014   | Completed | 0                     | 0                     |
| MC-23*         | Golden Gate Water Quality Retrofit Phases I, II          | Dry detention                                    | 202           | \$2,046,145  | 10/2003  | Completed | Not quantified        | Not quantified        |
| MC-24*         | Golden Gate Water Quality Retrofit Phase III             | Second-generation baffle boxes and wet detention | 27            | \$584,371    | 3/2004   | Completed | Not quantified        | Not quantified        |
| MC-25*         | Hibiscus Park Water Quality Retrofit Phases I and II     | Wet detention                                    | 4.5           | \$757,085    | 7/2007   | Completed | Not quantified        | Not quantified        |
| MC-26*         | Poinciana Gardens Water Quality Retrofit Phases I and II | Wet detention                                    | 188           | \$2,960,547  | 7/2003   | Completed | Not quantified        | Not quantified        |
| MC-27*         | Willoughby Creek Muck Dredging                           | Muck removal                                     | N/A           | \$13,200,000 | 7/2012   | Completed | Not quantified        | Not quantified        |
| MC-28*         | Manatee Pocket Dredging                                  | Muck removal                                     | N/A           | \$1,000,000  | 7/2012   | Completed | Not quantified        | Not quantified        |
| MC-29          | Rio Water Quality Retrofit                               | Exfiltration and second-generation baffle boxes  | 45            | \$696,800    | 5/19/14  | Completed | 162                   | 36                    |
| MC-30          | Old Palm City Bee Mats                                   | Floating wetland vegetation islands              | N/A           | \$21,996     | 9/26/13  | Completed | Not quantified        | Not quantified        |
| MC-31          | Bessey Creek Hybrid Wetland Treatment Technology         | Stormwater treatment                             | 2,675         | \$3,000,000  | May 2015 | Completed | 6,081                 | 1,473                 |
| MC-32          | Danforth Creek Hybrid Wetland Treatment Technology       | Stormwater treatment                             | 2,419         | \$3,000,000  | 12/2015  | Completed | TBD                   | TBD                   |
| MC-33          | Hoke Library Rain Garden                                 | Rain garden                                      | N/A           | \$4,372      | 9/2014   | Completed | Not quantified        | Not quantified        |
| MC-34          | Halpatiokee Park Rain Garden                             | Rain garden                                      | N/A           | \$1,500      | 2/2015   | Completed | Not quantified        | Not quantified        |
| MC-35          | Manatee Pocket SW Prong Baffle Box                       | Second-generation baffle box                     | 207.3         | \$232,505    | 2016     | Completed | TBD                   | TBD                   |
| MC-36          | Martin County Golf Course WQ                             | Wet detention                                    | 206.7         | \$156,255    | 2016     | Completed | TBD                   | TBD                   |
| MC-37          | All American Ditch                                       | Wet detention                                    | 267.7         | \$4,160,500  | 2016     | Ongoing   | TBD                   | TBD                   |
| MC-38          | Hilltop Street Exfiltration Trench                       | Exfiltration trenches and swales                 | 15.4          | \$375,000    | 2016     | Ongoing   | TBD                   | TBD                   |

**Table A-12: Martin County summary of reductions**

| Category                                  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---|-----------------------|-----------------------|
| <b>Total Completed Project Reductions</b> | 36,258                | 6,646                 |
| <b>Total BMAP I Required Reductions</b>   | 9,647                 | 4,377                 |
| <b>Credit for Future BMAPs</b>            | 26,611                | 2,269                 |

**Table A-13: North St. Lucie River WCD projects**

N/A = Not applicable

| Project Number   | Project Name   | Project Type                 | Acres Treated | Project Cost | End Date | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|------------------|--|------------------------------|---------------|--------------|----------|-----------|-----------------------|-----------------------|
| <b>NSLRWCD-1</b> | St. Lucie River Issues Team (SLRIT) Grant 2000–01: Vegetation Control and Bank Restoration | Control structures           | 4,173         | \$929,000    | 05/2003  | Completed | 983                   | 0                     |
| <b>NSLRWCD-2</b> | SLRIT Grant 2007–08: Water Control Structure Retrofits                                     | Control structure            | 4,701         | \$77,000     | 03/2010  | Completed | 1,372                 | 0                     |
| <b>NSLRWCD-3</b> | Canals 23 and 28 Retrofit for Stormwater Treatment and Attenuation                         | Control structure            | 44            | Unknown      | 05/2009  | Completed | 11                    | 0                     |
| <b>NSLRWCD-4</b> | Canal Maintenance Program  | Vegetation harvesting        | 66,225        | \$4,200,000  | Ongoing  | Ongoing   | Not quantified        | Not quantified        |
| <b>NSLRWCD-5</b> | Changes in Agricultural Land Uses  | Land use change              | N/A           | N/A          | N/A      | Completed | 45,621                | 14,445                |
| <b>NSLRWCD-6</b> | 90 % Implementation Agricultural BMPs  | Agricultural BMPs            | N/A           | Unknown      | Ongoing  | Ongoing   | 19,972                | 4,308                 |
| <b>NSLRWCD-7</b> | Change from Agricultural to Urban  | Land use change              | N/A           | N/A          | N/A      | Completed | 839                   | 208                   |
| <b>NSLRWCD-8</b> | Ideal Grove HWTT   | Wetlands, chemical treatment | 238           | \$217,929    | Ongoing  | Ongoing   | 330                   | 127                   |

**Table A-14: North St. Lucie River WCD summary of reductions**

| Category                           | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|------------------------------------|-----------------------|-----------------------|
| Total Completed Project Reductions | 69,128                | 19,088                |
| Total BMAP I Required Reductions   | 26,354                | 10,090                |
| Credit for Future BMAPs            | 42,774                | 8,998                 |

**Table A-15: Pal Mar WCD projects**

| Project Number | Project Name                             | Project Type         | End Date | Status  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|--|----------------------|----------|---------|-----------------------|-----------------------|
| PM-1           | 90 % Implementation<br>Agricultural BMPs | Agricultural<br>BMPs | Ongoing  | Ongoing | 926                   | 92                    |

**Table A-16: Pal Mar WCD summary of reductions**

| Category                           | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|------------------------------------|-----------------------|-----------------------|
| Total Completed Project Reductions | 926                   | 92                    |
| Total BMAP I Required Reductions   | 0                     | 0                     |
| Credit for Future BMAPs            | 926                   | 92                    |

**Table A-17: St. Lucie County MS4 projects**

N/A = Not applicable

| Project Number | Project Name   | Project Type                      | Acres Treated | Project Cost      | End Date | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|--|-----------------------------------|---------------|-------------------|----------|-----------|-----------------------|-----------------------|
| SLC-1          | Platt's Creek Stormwater Treatment Facility  | Wet detention with alum injection | 311.0         | \$3,539,475       | 6/2008   | Completed | 676                   | 306                   |
| SLC-2          | Indian River Estates Stormwater Improvements (Phase I and II)  | Wet detention with alum injection | 1,004.4       | \$4,471,114       | 1/2009   | Completed | 1,841                 | 706                   |
| SLC-3          | Prima Vista  | Second-generation baffle box      | 96.8          | \$323,483         | 11/2006  | Completed | 76                    | 13                    |
| SLC-4          | Bay Street   | Second-generation baffle box      | 44.3          | Included in SLC-3 | 11/2006  | Completed | 34                    | 6                     |
| SLC-5          | FYN; Pet Waste, Landscape, Irrigation, and Fertilizer Ordinances; PSAs, Website, Illicit Discharge Program, Eco-Center, Clean Stormwater – Clean River Program | Education and outreach            | N/A           | N/A               | Ongoing  | Ongoing   | 1,086                 | 247                   |
| SLC-6          | Street Sweeping  | Street sweeping                   | N/A           | N/A               | Ongoing  | Ongoing   | 210                   | 135                   |
| SLC-7          | Catch Basin Cleanout   | Clean out                         | N/A           | N/A               | Ongoing  | Ongoing   | 170                   | 104                   |
| SLC-8          | Platt's Creek Sump Cleanout  | Clean out                         | N/A           | N/A               | Ongoing  | Ongoing   | 1,181                 | 511                   |
| SLC-14         | Platt's Creek Wetland Compensatory Project   | Floodplain restoration            | 311.0         | \$2,600,000       | 7/2015   | Completed | Not quantified        | Not quantified        |

**Table A-18: St. Lucie County MS4 summary of reductions**

| Category                                  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---|-----------------------|-----------------------|
| <b>Total Completed Project Reductions</b> | 5,277                 | 2,032                 |
| <b>Total BMAP I Required Reductions</b>   | 2,018                 | 855                   |
| <b>Credit for Future BMAPs</b>            | 3,259                 | 1,177                 |

**Table A-19: St. Lucie County non-MS4 projects**

N/A = Not applicable  
 TBD = To be determined

| Project Number | Project Name   | Project Type                           | Acres Treated | Project Cost          | End Date | Status             | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|--|--|---------------|-----------------------|----------|--------------------|-----------------------|-----------------------|
| SLC-1          | Platt’s Creek Stormwater Treatment Facility  | Wet detention with alum injection      | 563.5         | Included in MS4 table | 6/2008   | Completed          | 907                   | 365                   |
| SLC-9          | White City – Citrus/Seager Stormwater Improvement  | Wet detention with polyacrylamide logs | 38.9          | \$1,862,859           | 2016     | Completed          | 71                    | 26                    |
| SLC-10         | FYN; Pet Waste, Landscape, Irrigation, and Fertilizer Ordinances; PSAs, Website, Illicit Discharge Program, Eco-Center, Clean Stormwater–Clean River Program | Education and outreach                 | N/A           | N/A                   | Ongoing  | Ongoing            | 1,426                 | 364                   |
| SLC-11         | Street Sweeping  | Street sweeping                        | N/A           | N/A                   | Ongoing  | Ongoing            | 113                   | 73                    |
| SLC-12         | Catch Basin Cleanout   | Clean out                              | N/A           | N/A                   | Ongoing  | Ongoing            | 92                    | 56                    |
| SLC-13         | Platt’s Creek Sump Cleanout  | Clean out                              | N/A           | N/A                   | Ongoing  | Ongoing            | 1,566                 | 601                   |
| SLC-15         | Indian River Lagoon South C23/C24 Comprehensive Everglades Restoration Plan (CERP) Buffer – Teague Preserve Rewatering Project                               | Restoration                            | TBD           | \$400,000             | 4/2017   | Under way          | TBD                   | TBD                   |
| SLC-16         | Melville Rd. Master Drainage Plan  | Wet detention                          | 175           | TBD                   | 2019     | Planned and funded | TBD                   | TBD                   |

**Table A-20: St. Lucie County non-MS4 summary of reductions**

| Category                                  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---|-----------------------|-----------------------|
| <b>Total Completed Project Reductions</b> | 4,175                 | 1,484                 |
| <b>Total BMAP I Required Reductions</b>   | 2,927                 | 1,350                 |
| <b>Credit for Future BMAPs</b>            | 1,248                 | 134                   |

**Table A-21: Town of Sewall’s Point projects**

N/A = Not applicable

TBD = To be determined

\* These projects are located in the Mid Coastal Subbasin, which is outside the current BMAP boundary. However, they will be considered for credit in the next BMAP iteration.

| Project Number | Project Name                      | Project Type                | Acres Treated | End Date | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|-----------------------------------|-----------------------------|---------------|----------|-----------|-----------------------|-----------------------|
| SP-1           | Ridgeland Court Retrofit          | Baffle box                  | 5.9           | 10/2002  | Completed | 0                     | 0                     |
| SP-2           | Palm Court/Knowles                | Baffle box                  | 12.9          | 9/2000   | Completed | 0                     | 0                     |
| SP-3           | Captain Cove                      | Baffle box                  | 4.9           | 9/2000   | Completed | 0                     | 0                     |
| SP-4           | Quail Run Park                    | Dry detention               | 0.4           | 9/2000   | Completed | 0                     | 0                     |
| SP-5           | Heritage Park                     | Dry retention               | 5.2           | 9/2000   | Completed | 7                     | 2                     |
| SP-6           | Via Lucindia                      | Exfiltration                | 2.7           | 9/2000   | Completed | 8                     | 2                     |
| SP-7           | Rio Vista Park                    | Baffle box                  | 24.2          | 1/2002   | Completed | 1                     | 1                     |
| SP-8           | Indialucie                        | Wet retention               | 31.1          | 9/2003   | Completed | 44                    | 18                    |
| SP-9           | Indialucie                        | Baffle box                  | 5.6           | 9/2006   | Completed | 0                     | 0                     |
| SP-10          | Periwinkle                        | Baffle box                  | 15.7          | 9/2000   | Completed | 0                     | 0                     |
| SP-11          | Palm Road                         | Swales                      | 0.8           | 12/2008  | Completed | 1                     | 0                     |
| SP-12          | Riverview                         | Baffle box                  | 9.6           | 1/2002   | Completed | 0                     | 0                     |
| SP-13          | Pineapple Lane                    | Exfiltration                | 5.5           | 1/2002   | Completed | 0                     | 0                     |
| SP-14          | Copaire                           | Baffle box                  | 1.8           | 10/2002  | Completed | 0                     | 0                     |
| SP-15          | Homewood Park/Sewall’s Point Road | Retention                   | 13.9          | 6/2009   | Completed | 46                    | 10                    |
| SP-16          | Pedway/Greenway                   | Exfiltration/pervious paver | 1.6           | 6/2013   | Completed | 6                     | 1                     |
| SP-17          | SR A1A                            | Exfiltration                | 12.1          | 1/2012   | Completed | 52                    | 10                    |
| SP-18          | Fertilizer Ordinance              | Education                   | N/A           | Ongoing  | Ongoing   | 9                     | 2                     |
| SP-19          | Street Sweeping – 19 Cubic Yards  | Street sweeping             | N/A           | Ongoing  | Ongoing   | 25                    | 16                    |
| SP-20*         | Delano Lane                       | Exfiltration                | 1.2           | 8/2000   | Completed | Not quantified        | Not quantified        |
| SP-21*         | Town Commons Park                 | Dry detention               | 1.0           | 1/2002   | Completed | Not quantified        | Not quantified        |
| SP-22*         | Island Road                       | Baffle box                  | 4.9           | 1/2002   | Completed | Not quantified        | Not quantified        |
| SP-23*         | Highpoint West                    | Baffle box                  | 7.9           | 9/2000   | Completed | Not quantified        | Not quantified        |
| SP-24*         | Mandalay (Marguerita)             | Baffle box                  | 15.4          | 9/2000   | Completed | Not quantified        | Not quantified        |
| SP-25*         | Highpoint East                    | Baffle box                  | 15.6          | 9/2000   | Completed | Not quantified        | Not quantified        |
| SP-26*         | High Point Exfiltration           | Exfiltration/swales         | 6.4           | 4/2014   | Completed | Not quantified        | Not quantified        |
| SP-27*         | Extend Pedway/Greenway            | Exfiltration/pervious paver | 28.2          | 2016     | Completed | TBD                   | TBD                   |
| SP-28*         | Mandalay (Marguerita)             | Dry detention               | 15.4          | Unknown  | Under way | TBD                   | TBD                   |

| Project Number | Project Name          | Project Type                              | Acres Treated | End Date | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|-----------------------|---|---------------|----------|-----------|-----------------------|-----------------------|
| SP-29*         | Baffle Boxes          | First- and second-generation baffle boxes | 18.0          | Unknown  | Under way | TBD                   | TBD                   |
| SP-30          | Indialucie            | Exfiltration                              | 31.1          | 2014     | Completed | 62                    | 8                     |
| SP-31          | Quail Run Subdivision | Exfiltration and baffle box               | 3.5           | 4/2015   | Completed | Not quantified        | Not quantified        |

**Table A-22: Town of Sewall’s Point summary of reductions**

| Category                                  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---|-----------------------|-----------------------|
| <b>Total Completed Project Reductions</b> | 261                   | 70                    |
| <b>Total BMAP I Required Reductions</b>   | 0                     | 0                     |
| <b>Credit for Future BMAPs</b>            | 261                   | 70                    |

**Table A-23: Troup-Indiantown WCD projects**

N/A = Not applicable

| Project Number | Project Name                          | Project Type      | Acres Treated | Status    | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|----------------|---------------------------------------|-------------------|---------------|-----------|-----------------------|-----------------------|
| TI-1           | C-44 Conservation Area                | Conservation      | 9,135.1       | Completed | 23,199                | 7,496                 |
| TI-2           | 90 % Implementation Agricultural BMPs | Agricultural BMPs | N/A           | Ongoing   | 1,856                 | 445                   |

**Table A-24: Troup-Indiantown WCD summary of reductions**

| Category                                  | TN Reduction (lbs/yr) | TP Reduction (lbs/yr) |
|---|-----------------------|-----------------------|
| <b>Total Completed Project Reductions</b> | 25,055                | 7,943                 |
| <b>Total BMAP I Required Reductions</b>   | 7,528                 | 2,436                 |
| <b>Credit for Future BMAPs</b>            | 17,527                | 5,507                 |



**Table A-25: Turnpike Authority projects**

| <b>Project Number</b> | <b>Project Name</b>                                | <b>Project Type</b> | <b>Acres Treated</b> | <b>Status</b> | <b>TN Reduction (lbs/yr)</b> | <b>TP Reduction (lbs/yr)</b> |
|-----------------------|--|---------------------|----------------------|---------------|------------------------------|------------------------------|
| <b>T-1</b>            | Project 420735-1 Port St. Lucie Interchange Pond A | Dry detention       | 3.6                  | Completed     | 1                            | 0                            |
| <b>T-2</b>            | Project 420735-1 Port St. Lucie Interchange Pond B | Wet retention       | 20.6                 | Completed     | 16                           | 2                            |
| <b>T-3</b>            | Thomas B. Manuel Bridge North Pond                 | Dry detention       | 9.8                  | Completed     | 5                            | 1                            |

**Table A-26: Turnpike Authority summary of reductions**

| <b>Category</b>                           | <b>TN Reduction (lbs/yr)</b> | <b>TP Reduction (lbs/yr)</b> |
|---|------------------------------|------------------------------|
| <b>Total Completed Project Reductions</b> | 23                           | 3                            |
| <b>Total BMAP I Required Reductions</b>   | 0                            | 0                            |
| <b>Credit for Future BMAPs</b>            | 23                           | 3                            |

## Appendix B: Water Quality Data Evaluation Methodology

The following outlines the data evaluation methodology conducted for the SE 03 monitoring station. This methodology may be the basis for future monitoring data evaluations at other stations in the basin. A data request from DBHYDRO was initiated for Station SE 03 to cover the period from January 1996 to August 2016. The analyte parameters used from DBHYDRO were as follows:

- Total Kjeldahl nitrogen (TKN).
- Nitrite + nitrate-N.
- TN.
- TP.

The three parameters of nitrogen analyte are necessary to capture the available data through the time series needed. The most current method of nitrogen analysis stored in DBHYDRO is TN. For earlier data periods where TN values were not directly reported in DBHYDRO, TN was calculated by adding the concentrations of TKN and nitrite + nitrate. For water quality samples where TN, TKN, and/or nitrite + nitrate were all reported, the TN value was used to represent TN. For the TP analysis, all the available data used the same analysis method over the period of record, and therefore the reported TP concentration was used.

Data uploaded from stations to DBHYDRO are processed through a quality assurance and quality control (QA/QC) method before use by the SFWMD. The analyte-specific samples can be flagged with qualifiers to denote data that should be further examined before being used in the analysis. The list of qualifiers can be found on the [DBHYDRO web page](#). This data analysis method for Station SE 03 follows a similar method of dealing with these qualifiers as the SFWMD and DEP's Impaired Surface Waters Rule (IWR). Data with no qualifiers as well as data tagged with the following qualifiers were included in the analysis; !, A, D, PMF, PMR, T, and/or U. All other qualified data were excluded from this analysis.

The DBHYDRO qualifiers T and U denote that the measured analyte was below the laboratory method detection limit (MDL) or was analyzed for but not detected, respectively. For results that included these two qualifiers, the analysis used the MDL and practical quantitation limit (PQL) values provided by the SFWMD. MDL and PQL values were provided by the SFWMD historical lab records methodology. Using a method that is a widely accepted scientific practice for values below the MDL, DEP divided the values by 2 and used that value for this statistical analysis. Roughly 12 % of the TN data used in this analysis, and less than 1 % of the TP data had a T or U qualifier.

## **Appendix C: Important Links**

Lake Okeechobee BMAP:

<http://www.dep.state.fl.us/water/watersheds/docs/bmap/LakeOkeechobeeBMAP.pdf>

DEP Final TMDL Documents web page:

[http://www.dep.state.fl.us/water/tmdl/final\\_tmdl.htm](http://www.dep.state.fl.us/water/tmdl/final_tmdl.htm)

2016 South Florida Environmental Report:

<https://www.sfwmd.gov/science-data/sfer>

DBHYDRO web page:

[http://my.sfwmd.gov/dbhydroplsql/water\\_quality\\_data.show\\_flag\\_info](http://my.sfwmd.gov/dbhydroplsql/water_quality_data.show_flag_info)