FINAL 2015 PROGRESS REPORT

for the Lake Okeechobee Basin Management Action Plan

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

with participation from the
Lake Okeechobee Stakeholders

July 2016

2600 Blair Stone Road
Mail Station 3575
Tallahassee, FL 32399-2400

ACKNOWLEDGMENTS

This *2015 Final Progress Report for the Lake Okeechobee Basin Management Action Plan* was prepared as part of a statewide watershed management approach to restore and protect Florida's water quality. It was prepared by the Florida Department of Environmental Protection with participation from the Lake Okeechobee stakeholders, listed in the table on the next page.

For additional information on the watershed management approach in the Lake Okeechobee Basin, contact:

Sara Davis, Basin Coordinator
Florida Department of Environmental Protection
Watershed Restoration Program, Watershed Planning and Coordination Section
2600 Blair Stone Road, Mail Station 3565
Tallahassee, FL 32399-2400
Email: sara.c.davis@dep.state.fl.us
Phone: (850) 245–8825

List of Lake Okeechobee Basin Management Action Plan participants

Type of Governmental or Private Entity	Participant
Counties	Glades Highlands Martin Okeechobee Orange Osceola Polk
Municipalities	City of Avon Park City of Kissimmee City of Edgewood City of Okeechobee City of Orlando City of Sebring
Special Districts	Okeechobee Utility Authority Istokpoga Marsh Watershed Improvement District Reedy Creek Improvement District Spring Lake Improvement District
Agencies	Florida Department of Agriculture and Consumer Services Florida Department of Environmental Protection South Florida Water Management District Southwest Florida Water Management District St. Johns River Water Management District Florida Department of Transportation District 1 Florida Department of Transportation District 4 Florida Department of Transportation District 5
Other Interested Parties	Agriculture Archbold Biological Station Audubon of Florida Conservancy of Southwest Florida Everglades Foundation Florida Fruit and Vegetable Association Florida Farm Bureau Lee County Board of County Commissioners Lykes Ranch U.S. Department of Agriculture Natural Resources Conservation Service One Florida Foundation Soil Water Engineering Technology, Inc. Southeast Milk, Inc. Sugar Cane Growers Cooperative of Florida

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS 7
SECTION 1 : INTRODUCTION 11
1.1 Purpose of the Report 11
1.2 Total Maximum Daily Load (TMDL) for the Lake Okeechobee Basin 11
1.3 Responsible Parties and Key Stakeholders 11
1.4 Assumptions and Considerations Regarding TMDL Implementation 12
1.4.1 Assumptions 12
1.4.2 Considerations 12
SECTION 2 : ACTIVITIES DURING THE REPORTING YEAR 14
2.1 Coordinating Agency Projects and Initiatives 14
2.2 SFWMD Activities 18
2.2.1 Taylor Creek/Nubbin Slough Sub-watershed Projects 19
2.2.2 Upper and Lower Kissimmee Sub-watershed Projects 19
2.2.3 Dispersed Water Management (DWM) Program 20
2.2.4 Other Restoration Strategies 20
2.3 Florida Department of Transportation (FDOT) Activities 21
2.3.1 District 1 21
2.3.2 District 5 21
2.4 Agricultural Activities 22
2.4.1 Project Updates 22
2.4.2 WAM Updates 22
2.4.3 Land Use Updates 23
2.4.4 Agricultural BMPs/BMP Enrollment 23
2.4.5 BMP Compliance Assistance 24
2.5 City, County, and Special District Activities 32
2.5.1 City of Kissimmee 32
2.5.2 City of Orlando 32
2.5.3 Orange County 32
2.5.4 Spring Lake Improvement District (SLID) 32
2.6 Summary of Accomplishments 33
SECTION 3 : WATER QUALITY MONITORING 34
3.1 Water Quality Monitoring 34
3.1.1 Monitoring Objectives 34
3.1.2 Data Management and Assessment 34
3.1.3 Water Quality Analyses 35
SECTION 4 : OTHER EFFORTS 36
4.1 Lake Tohopekaliga Nutrient Reduction Plan (NRP) 36
4.1.1 Background 36

4.1.2 NRP Development....38
4.1.3 NRP Elements....39
4.2 Management Strategies for the Southern Sub-watersheds....40
APPENDICES....42
Appendix A: Projects To Achieve the TMDL....42
Appendix B: BMAP Monitoring Network....78
Appendix C. Website References....87

LIST OF FIGURES

Figure ES-1. Lake Okeechobee Sub-watersheds....10
Figure 1. BMP enrollment in the Lake Okeechobee Watershed as of December 31, 2015....31
Figure 2. Lake Tohopekaliga Watershed....37
Figure B-1. Water quality monitoring network for the Lake Okeechobee Watershed....86

LIST OF TABLES

Table 1. Coordinating Agency initiatives....14
Table 2. Projects under development with the Coordinating Agencies....16
Table 3a. Agricultural acreage and BMP enrollment for the Fisheating Creek Sub-watershed....25
Table 3b. BMP enrollment and future enrollment requirements for the Fisheating Creek Sub-watershed....25
Table 4a. Agricultural acreage and BMP enrollment for the Indian Prairie Sub-watershed....26
Table 4b. BMP enrollment and future enrollment requirements for the Indian Prairie Sub-watershed....26
Table 5a. Agricultural acreage and BMP enrollment for the Lake Istokpoga Sub-watershed....27
Table 5b. BMP enrollment and future enrollment requirements for the Lake Istokpoga Sub-watershed....27
Table 6a. Agricultural acreage and BMP enrollment for the Lower Kissimmee Sub-watershed..28
Table 6b. BMP enrollment and future enrollment requirements for the Lower Kissimmee Sub-watershed....28
Table 7a. Agricultural acreage and BMP enrollment for the Taylor Creek/Nubbin Slough Sub-watershed....29
Table 7b. BMP enrollment and future enrollment requirements for the Taylor Creek/Nubbin Slough Sub-watershed....29
Table 8a. Agricultural acreage and BMP enrollment for the Upper Kissimmee Sub-watershed..30
Table 8b. BMP enrollment and future enrollment requirements for the Upper Kissimmee Sub-watershed....30
Table A-1. Projects in the Fisheating Creek Sub-watershed....43
Table A-2. Projects in the Indian Prairie Sub-watershed....44

Table A-3. Projects in the Lake Istokpoga Sub-watershed.....45
Table A-4. Projects in the Lower Kissimmee Sub-watershed.....47
Table A-5. Projects in the Taylor Creek/Nubbin Slough Sub-watershed.....50
Table A-6. Projects in the Upper Kissimmee Sub-watershed.....53
Table A-7. Projects under development with the Coordinating Agencies.....73
Table A-8. Other initiatives.....76
Table B-1. BMAP monitoring network.....79

LIST OF ACRONYMS AND ABBREVIATIONS

ACF	Autosampler Flow-Corrected
ac-ft	Acre-Feet
ACT	Autosampler Composite Time Proportional
BCC	Board of County Commissioners
BMAP	Basin Management Action Plan
BMP	Best Management Practice
CBIR	Community Budget Issue Request
CDS	Continuous Deflective Separation (Unit)
CERP	Comprehensive Everglades Restoration Plan
cfs	Cubic Feet Per Second
CIB	Curb Inlet Basket
C&SF	Central and South Florida
CY	Calendar Year
DEP	Florida Department of Environmental Protection
DWM	Dispersed Water Management
EAA	Everglades Agricultural Area
EAAPD	Everglades Agricultural Area Protection District
ERP	Environmental Resource Permit
F.A.C.	Florida Administrative Code
FAVT	Floating Aquatic Vegetation Treatment
FDACS	Florida Department of Agriculture and Consumer Services
FDOT	Florida Department of Transportation
FRESP	Florida Ranchlands Environmental Services Project
FWCC	Florida Fish and Wildlife Conservation Commission
FY	Fiscal Year
FYN	Florida Yards and Neighborhoods
GIS	Geographic Information System
HSPF	Hydrologic Simulation Program – FORTRAN
HWTT	Hybrid Wetland Treatment Technologies
IDS	Integrated Delivery Schedule
kg/yr	Kilograms Per Year
KRRP	Kissimmee River Restoration Project
lbs/yr	Pounds Per Year
LOPA	Lake Okeechobee Protection Act
LOPP	Lake Okeechobee Protection Plan
LOW	Lake Okeechobee Watershed
LOWCP-P2TP	Lake Okeechobee Watershed Construction Project Phase II Technical Plan
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
MSTU	Municipal Services Taxing Unit
mt	Metric Tons
mt/yr	Metric Tons Per Year
NEEPP	Northern Everglades and Estuaries Protection Program
NE PES	Northern Everglades Payment for Environmental Services

NNC	Numeric Nutrient Criteria
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRP	Nutrient Reduction Plan
NSBB	Nutrient Separating Baffle Box
OAWP	Office of Agricultural Water Policy
PES	Payment for Environmental Services
POR	Period of Record
PSA	Public Service Announcement
QA/QC	Quality Assurance/Quality Control
RCID	Reedy Creek Improvement District
SFER	South Florida Environmental Report
SFWMD	South Florida Water Management District
SLID	Spring Lake Improvement District
SR	State Road
SRF	State Revolving Fund
STA	Stormwater Treatment Area
STORET	Storage and Retrieval (Database)
SWET	Soil and Water Engineering Technology, Inc.
SWFWMD	Southwest Florida Water Management District
TBD	To Be Determined
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TSI	Trophic State Index
TSS	Total Suspended Solids
UF–IFAS	University of Florida Institute of Food and Agricultural Sciences
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WAM	Watershed Assessment Model
WBID	Waterbody Identification (Number)
WCD	Water Control District
WMA	Water Management Alternative
WY	Water Year

SUMMARY

TOTAL MAXIMUM DAILY LOADS (TMDLS)

In 2001, the Florida Department of Environmental Protection (DEP) adopted the total phosphorus (TP) TMDL for Lake Okeechobee after nine segments in Lake Okeechobee were identified as impaired by TP. The TMDL is a total annual phosphorus load to Lake Okeechobee of 140 metric tons per year (mt/yr), of which 35 mt/yr are estimated to fall directly on the lake through atmospheric deposition. The remaining 105 mt/yr of TP are allocated to the entire Lake Okeechobee Watershed (LOW), which consists of nine sub-watersheds (**Figure ES-1**). The attainment of the TMDL will be calculated using a five-year rolling average of the monthly loads calculated from measured flow and concentration values. As DEP refines its load estimation model, sub-watershed expectations may be developed for future basin management action plan (BMAP) iterations.

ACTIVITIES DURING THE REPORTING PERIOD

During the year following BMAP adoption, numerous efforts to improve water quality in the LOW have progressed. In addition to site-specific projects, the Coordinating Agencies—DEP, the South Florida Water Management District (SFWMD), and the Florida Department of Agriculture and Consumer Services (FDACS)—have continued work on other initiatives that will achieve nutrient reductions in the LOW.

SUMMARY OF LOAD REDUCTIONS

Phase I of the Lake Okeechobee BMAP will be carried out over a period of ten years. As this report reflects activities only one year into the ten-year phase, reductions beyond those included in the BMAP are not quantified or included in this report. Much of the progress tracked over the first year of BMAP implementation has been on larger-scale initiatives and projects.

During the reporting period, the Florida Department of Transportation (FDOT) began construction on 6 projects and added 2 new projects in the LOW. The City of Orlando completed 1 project, Orange County added 4 new projects, and the Spring Lake Improvement District (SLID) added 1 project to its plan during the reporting period. Counties, municipalities, and other stakeholders continued to plan and implement water quality projects and management strategies in the watershed.

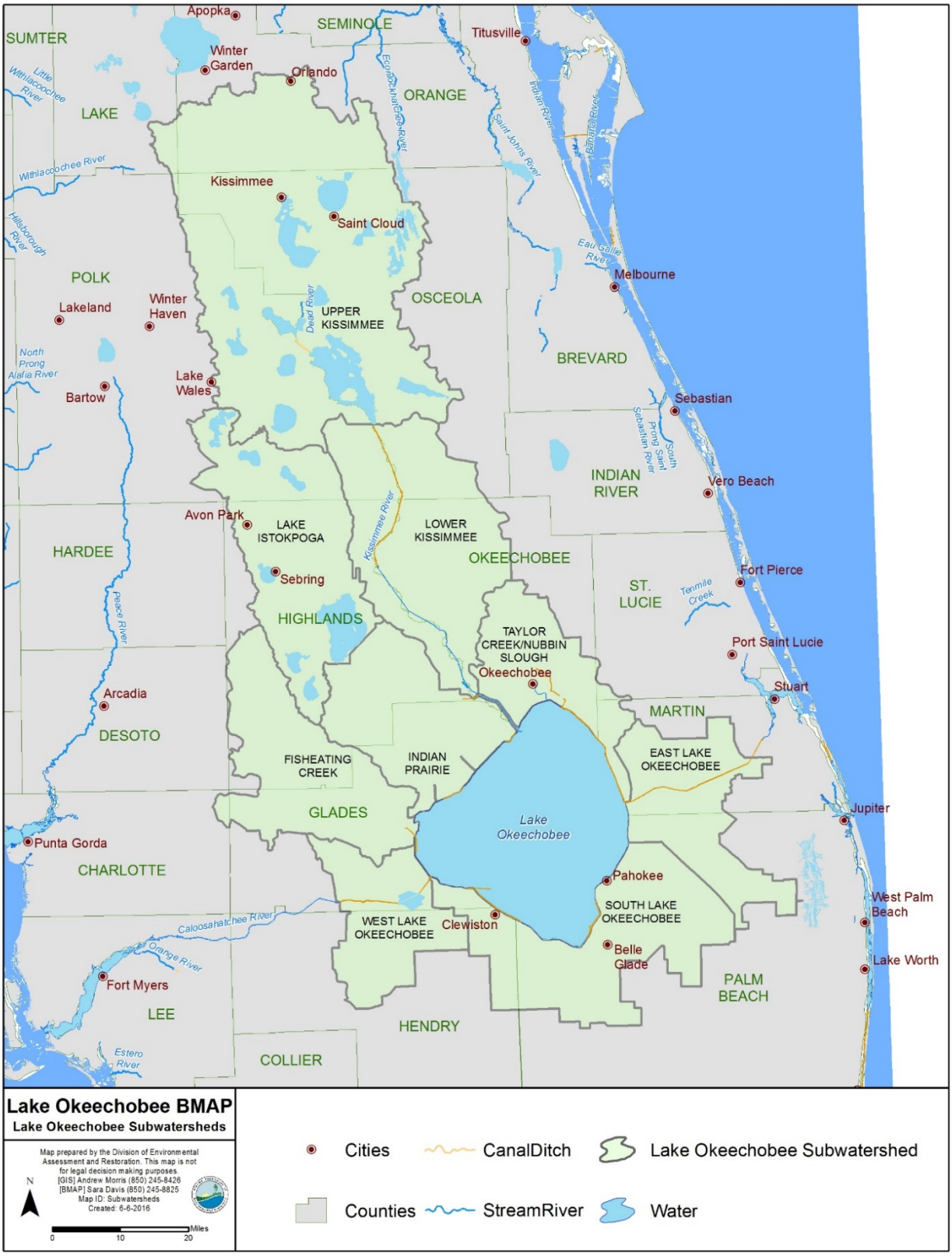

Figure ES-1. Lake Okeechobee Sub-watersheds

Section 1: INTRODUCTION

1.1 PURPOSE OF THE REPORT

This is the first annual Progress Report for the Lake Okeechobee Basin Management Action Plan (BMAP). **Section 2** describes the activities that occurred during the period from January 1, 2015, through December 31, 2015. **Section 3** describes the water quality monitoring that occurred during the reporting period. **Section 4** describes other initiatives and projects in the Lake Okeechobee Watershed (LOW) that aim to reduce nutrient loading to the lake.

1.2 TOTAL MAXIMUM DAILY LOAD (TMDL) FOR THE LAKE OKEECHOBEE BASIN

The Florida Department of Environmental Protection (DEP) adopted the total phosphorus (TP) TMDL for Lake Okeechobee in 2001, after nine segments with waterbody identification (WBID) numbers in Lake Okeechobee were identified as impaired by TP: WBIDs 3212A, 3212B, 3212C, 3212D, 3212E, 3212F, 3212G, 3212H, and 3212I. The TMDL is a total annual phosphorus load to Lake Okeechobee of 140 metric tons per year (mt/yr), of which 35 mt/yr are estimated to fall directly on the lake through atmospheric deposition. The remaining 105 mt/yr of TP are allocated to the entire LOW, which consists of nine sub-watersheds (**Figure ES-1**). The attainment of the TMDL will be calculated using a 5-year rolling average of the monthly loads calculated from measured flow and concentration values. As DEP refines its load estimation model, sub-watershed expectations may be developed for future BMAP iterations.

1.3 RESPONSIBLE PARTIES AND KEY STAKEHOLDERS

The BMAP process engages local stakeholders and promotes coordination and collaboration to address the reductions for TP. In February 2013, DEP initiated the BMAP development process and held a series of technical meetings involving stakeholders and the general public. DEP requested that stakeholders provide information on activities and projects that would reduce nutrient loading. For this first BMAP phase, the reductions are spread over approximately a ten-year period in order for the Coordinating Agencies—DEP, the South Florida Water Management District (SFWMD), and the Florida Department of Agriculture and Consumer Services (FDACS)— to develop additional projects to help meet the TMDL. Periodic updates to the BMAP will be conducted during the ten-year time frame, as necessary and appropriate.

This report includes projects in the six northern sub-watersheds that were completed, planned, or ongoing since 2009. However, DEP recognizes that stakeholders throughout the watershed have implemented stormwater management projects as well as statutorily mandated diversions away from Lake Okeechobee prior to 2009 and that these efforts have benefitted water quality. Additional reductions will be included in future BMAP updates, as DEP continues to work with stakeholders to identify new projects. **Appendix A** lists projects that will be implemented under this first phase of the BMAP.

1.4 Assumptions and Considerations Regarding TMDL Implementation

The water quality impacts of BMAP implementation are based on several fundamental assumptions about the pollutants targeted by the TMDLs, modeling approaches, waterbody response, and natural processes. In addition, there are important considerations about the nature of the BMAP and its long-term implementation. These assumptions and considerations are listed below, and more details can be found in the Lake Okeechobee BMAP.

1.4.1 Assumptions

The following assumptions were used during the BMAP process:

- For calendar years (CY) 2001–12, the six northern sub-watersheds contributed 89.1 % of the TP load and 88.3 % of the discharge to Lake Okeechobee (SFWMD 2014). Therefore, DEP decided to focus on these sub-watersheds during this initial BMAP iteration.

- Certain best management practices (BMPs) were assigned provisional nutrient reduction benefits for load reductions in this BMAP iteration while additional research is conducted to quantify their effectiveness. These estimated reductions may change in future BMAP iterations, as additional research results become available.

- Nutrient reduction benefits (shown in **Appendix A**) of the stakeholders' projects were calculated using the best available methodologies. Project-specific monitoring, where available, will be used to verify DEP's calculations, and reduction benefits may be adjusted as necessary.

1.4.2 Considerations

This BMAP requires stakeholders to implement their projects to achieve reductions within the specified period. However, the full implementation of this BMAP will be a long-term, adaptively managed process. While some of the projects and activities contained in the BMAP were recently completed or are currently ongoing, several projects require more time to design, secure funding, and construct.

Since BMAP implementation is a long-term process, the TMDL established for this basin is not likely to be achieved in the first ten-year iteration. It is understood that waterbodies may respond differently to the implementation of BMPs, and thus regular follow-up and continued coordination and communication by stakeholders will be essential to ensure the implementation of management strategies and assessment of incremental effects.

During the BMAP process, several items were identified that should be addressed in future watershed management cycles to ensure that future BMAPs use the most accurate information. The following items are discussed in more detail in the BMAP:

- Land uses.
- Watershed boundaries.
- The Watershed Assessment Model (WAM)/load estimation tool.
- The complexity of the problem.
- Legacy phosphorus.
- Downstream attenuation factors.
- Attenuation factors.
- Elevated TP identification.
- Upstream TMDLs and Kissimmee Chain of Lakes TMDLs.
- Total nitrogen (TN).
- Previous restoration efforts.

Section 2: ACTIVITIES DURING THE REPORTING YEAR

Sections 2.1 through **2.5** describe the accomplishments over the past year. Many of the activities that occurred during this first annual reporting period focused on projects and initiatives listed in the BMAP. In each annual report, newly identified projects are added to the project tables. Several individual projects have been added since BMAP adoption, and stakeholders and the Coordinating Agencies continue work on the individual projects shown in the tables in **Appendix A**.

2.1 COORDINATING AGENCY PROJECTS AND INITIATIVES

During the reporting period, a host of restoration work in the LOW moved forward. In addition to site-specific projects, the Coordinating Agencies continued work on other initiatives to achieve nutrient reductions in the LOW. **Table 1** provides updates on those initiatives listed in the Lake Okeechobee BMAP.

Table 1. Coordinating Agency initiatives

Initiative	Explanation	Start Date	Update
Comprehensive Everglades Restoration Plan (CERP) planning	The SFWMD will consider reinitiating the formulation of storage components of LOW project. However, this requires concurrence from the U.S. Army Corps of Engineers (USACE) (Federal Partner).	Summer 2016	The LOW Project is a component of the CERP that will identify regional-scale features north of Lake Okeechobee to improve the quantity, quality, timing, and distribution of flows to better manage lake water levels and reduce undesirable discharges to downstream estuaries. Since the Lake Okeechobee BMAP was adopted, the LOW Project Implementation Report has been identified as one of the next CERP studies to be conducted as identified in the USACE Integrated Delivery Schedule (IDS). It is anticipated that work by the USACE and SFWMD on this planning effort will begin in summer 2016. The initial stage of the planning effort will include developing the overall scope for the plan. The planning process is anticipated to take approximately three years to complete. The LOW Construction Project Phase II Technical Plan relies heavily on the LOW Project to help achieve the plan goals of maintaining the lake within an ecologically desirable range and minimizing undesirable discharges to the Northern Estuaries.
Owner-implemented BMP verification	FDACS and DEP are developing a plan for BMP verification.	Spring 2015	FDACS is currently working with DEP to identify possible sites that have implemented owner-implemented and cost-shared BMPs. FDACS has reviewed the historical data for these sites, and the two agencies will work to select the most appropriate sites and begin monitoring in 2016.

Initiative	Explanation	Start Date	Update
Cost-share BMP effectiveness verification	FDACS and DEP are developing an approach to evaluate the effectiveness of various types of cost-share projects.	Fall 2015	In late 2015, FDACS contracted with Soil and Water Engineering Technology, Inc. (SWET) to assess the treatment efficiencies (TP and TN reductions in concentration and loads) as well as the storage capacities of various common cost-share BMPs in the LOW. The TP and TN reductions for the evaluated cost-share BMPs will be provided to DEP, so revised nutrient-reduction benefits can be attributed to cost-share BMPs included in this BMAP. FDACS will also use the TP and TN reductions and storage capacities to review future cost-share applications and maximize the nutrient reduction potential that can be achieved with the available cost-share dollars.
WAM revisions	The Coordinating Agencies are developing a contract to revise WAM to complete model domain setup for northern region and 3 southern sub-watersheds of LOW. Estimated completion date is a year after adoption of BMAP. DEP will work to develop targets based on this information.	Fall 2014	In early 2015, FDACS contracted with SWET to revise the WAM, which was used as the basis for the BMAP load estimation tool. This effort was jointly funded by the SFWMD and DEP. Under this contract, SWET updated the model datasets and extended the WAM simulation period through 2013 for all six sub-watersheds north of Lake Okeechobee. A literature review and draft work plan for the sensitivity and uncertainty analyses were also developed as well as a work plan for the expansion of the WAM to include the three southern sub-watersheds. In late 2015, the contract was amended to allow SWET to complete model validation and a final sensitivity analysis and uncertainty analysis. The model will then be recalibrated for the six northern sub-watersheds. In addition to the work in the northern sub-watersheds, DEP and FDACS are funding the expansion of the WAM to include the East, South, and West Lake Okeechobee Sub-watersheds. The WAM revisions are expected to be completed in fall 2016. DEP will use the revisions to refine the load estimation tool and to incorporate the East, South, and West Lake Okeechobee Sub-watersheds into the tool.
Water quality monitoring	As DEP develops a monitoring plan for the BMAP, consideration is being given to areas with on-the-ground projects/BMPs to evaluate water quality improvements.	In progress	BMAP monitoring plan stations have been verified, with data providers and locations confirmed, and appropriate updates made to the revised monitoring network in **Appendix B**. DEP is working with additional potential data providers to evaluate the possible inclusion of new monitoring sites. During the reporting period, DEP confirmed and mapped the locations of projects and BMPs to optimize monitoring efforts.
Alternative BMP nutrient reduction projects	North of Lake Okeechobee	Winter 2014/2015	The Coordinating Agencies have begun building a team to identify possible new strategies. The first quarterly meeting is expected to occur in summer 2016.

Initiative	Explanation	Start Date	Update
In-lake strategies: muck scraping and tilling	In Lake Okeechobee	Fall 2014	Potential for inclusion as BMAP project(s) during low lake levels if drought conditions occur and if project logistics (e.g., planning, permitting, contracting) are able to be implemented timely for work to be conducted. The SFWMD Low Water Level Habitat Enhancement Plan drafted for the lake in November 2015 may inform this initiative. The SFWMD draft plan (November 2015) was submitted to DEP in March 2016 (see **Section 2.2.4**).

Table 2 lists projects under development with the Coordinating Agencies. The projects are in various stages of planning, but the Coordinating Agencies will continue to work to gather details and implement these projects during the first BMAP phase.

Table 2. Projects under development with the Coordinating Agencies

Note: These attenuated project reductions are calculated specifically to estimate the reductions at the inflow to Lake Okeechobee.

Project Name	Sub-watershed	Status	Schedule
Istokpoga Marsh Watershed Improvement District – Phase II	Indian Prairie	A Memorandum of Understanding (MOU) exists for this project between FDACS, SFWMD, Istokpoga Marsh Watershed Improvement District, and Highlands County for the project. FDACS has identified funds to cover Phase II of the project.	Work will begin in 2016.
Lakeside Ranch Stormwater Treatment Area (STA) Phase II	Taylor Creek/ Nubbin Slough	This phase includes a southern STA and a second pump station (S-191A) to manage rim canal levels during periods of high water flow and potentially to recirculate lake water back to the STA for additional TP removal. Under Phase II, the construction of the southern STA is under way; however, the construction of the S-191A pump station is contingent on future funding.	The southern STA is anticipated to be completed by 2018. Once funded, the pump station is estimated to be completed in three years.
MacArthur Agro-Ecology Research Center "Buck Island" Ranch/Rafter T Realty, Inc.	Lake Istokpoga	Both Northern Everglades–Payment for Environmental Services (NE PES-2) contracts were executed in December 2014. Both Rafter T Ranch (SFWMD-11) and Buck Island Ranch (SFWMD-23) are in the operational phase.	Under NE PES-2, Rafter T Ranch became operational in December 2014, and Buck Island Ranch became operational in December 2015.
Brighton Valley – Lykes	Indian Prairie	FDACS is currently funding the engineering of the Brighton Valley project, located in the Indian Prairie Sub-watershed. The design is in its final stages as changes had to be incorporated to address archaeological issues.	Construction will begin in 2016; completion is expected in 2017.

Project Name	Sub-watershed	Status	Schedule
Rolling Meadows Wetland Restoration – Phase II	Upper Kissimmee	Land has been acquired and planning started. Phase II of this project, which involves the further restoration of approximately 580 acres of wetlands, is contingent on future funding.	Once funded, project work is estimated to be completed in two to three years.
Inactive Dairies – Lagoon Remediation	Taylor Creek/ Nubbin Slough and Indian Prairie	FDACS worked with a dairy in the LOW to partially remediate its lagoon. The soil was spread on the field for crops to use the nutrients from the excavated soil. The stormwater is routed back to the remediated pond to minimize discharges and is reused to reduce ground water withdrawals. In the future, the dairy will finish the excavation and remediation of the entire site.	1. Identify areas that need remediation activities/talk to landowners. (Winter 2014/2015–Summer 2015) 2. Procure contractors/ conduct work. (Winter 2015/2016–Spring 2016) 3. Analyze data. (yearly)
PL-566 Funded/ Fisheating Creek Structure	Indian Prairie	The USACE is working with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) to develop various alternatives. FDACS has set aside up to $1 million to fund this effort. The NRCS, FDACS, and USACE are working with landowner groups to determine the type of structure that will be used to replace the existing structure and the elevation of the new structure.	1. NRCS plans to reapply for different funding. (Fall 2014) 2. If funding is obtained, work will be conducted. (To be determined) 3. Water quality benefit calculations will be done. (To be determined)
S.R. 710 Regional Project	Taylor Creek/ Nubbin Slough and Indian Prairie	The feasibility study was completed. The Coordinating Agencies are reviewing the study to determine the best project design.	1. The final feasibility study was completed on October 22, 2014. 2. Work will be implemented. (To be determined)

Project Name	Sub-watershed	Status	Schedule
Legislative Cost-Share Appropriation Program ($10 million annually for 7 years)	All	FDACS has conducted two rounds of solicitations for dairy project proposals. The first solicitation occurred in fall 2014. Eight projects were selected for cost-share, and the cost-share funding allocated for these projects totaled $3,710,801.25. These 8 projects consist of 3 stormwater improvement projects, the construction of waste management systems for 4 new free stall barns, and 1 project that involved installing a seepage interceptor system adjacent to a ditch that drained off-site. The second solicitation for dairy projects occurred in fall 2015. Four projects were selected for cost-share, and the cost-share funding allocated for these projects totaled $2,750,451.89. These 4 projects consist of 1 stormwater improvement project, the construction of the waste management systems for 7 new free stall barns, and 1 project that involves constructing a sand lane for a dairy's waste management system. Another 6 projects have been identified as potential candidates for cost-share funding. FDACS is currently negotiating with the producers that submitted these 6 projects to determine if cost-share funding is suitable for these projects. FDACS has also worked with DEP to develop a methodology for calculating the nutrient reduction benefits associated with these projects. Once all necessary information is obtained from the dairies, FDACS will provide the nutrient reduction benefits to DEP for inclusion in the BMAP.	1. Develop plan and present to DEP annually. 2. Implement projects once funds are available. 3. Conduct the same exercise annually.

2.2 SFWMD ACTIVITIES

During the reporting period, the SFWMD was involved in numerous restoration activities in the LOW. Regional projects with both water storage and water quality benefits also progressed. The following sections describe highlights and advancements made in key SFWMD-led projects in the LOW during the reporting period. Further information on progress in the LOW is also reported in the 2016 South Florida Environmental Report (SFER) – Volume I, Chapter 8, and Volume III, Appendix 4-1.

2.2.1 Taylor Creek/Nubbin Slough Sub-watershed Projects

Lakeside Ranch STA (LR-STA). Expedited under the Northern Everglades and Estuaries Protection Program (NEEPP), this project is a 2,700-acre STA in western Martin County on lands adjacent to Lake Okeechobee. The LR-STA Project is designed in two phases. Phase I (SFWMD-03) included a northern STA and an inflow pump station, which began operating in 2012. Phase II includes a southern STA and a second pump station (S-191A) to manage rim canal levels during high water flow periods and potentially to recirculate lake water back to the STA for additional TP removal. Under Phase II, the construction of the Southern STA is currently under way. However, the construction of the S-191A pump station is contingent on future funding. During CY 2015, LR-STA Phase I removed 12.5 mt of TP, or 70 % of the total load received, exceeding its designed removal rate of 9 mt/yr.

Taylor Creek STA (TC-STA). This STA (SFWMD-01) is located on the SFWMD-owned Grassy Island Ranch along the banks of Taylor Creek. As part of the Lake Okeechobee Critical Restoration Projects, the purpose of the TC-STA is to remove TP loads from the Taylor Creek drainage basin. The TC-STA facility was constructed in 2006, and flow-through operation began in 2008. In CY 2015, the STA retained 1.5 mt of TP, or almost 60 % of the load received.

Nubbin Slough STA (NS-STA). This STA (SFWMD-02) is located on SFWMD-owned lands at the New Palm Dairy site along the banks of Nubbin Slough. As part of the Lake Okeechobee Critical Restoration Projects, the purpose of the NS-STA is to remove TP loads from the Nubbin Slough drainage basin. NS-STA construction was completed in 2006, but this STA remained inoperable until needed construction modifications and repairs were more recently completed. In March 2015, the USACE transferred the STA to the SFWMD. Start-up monitoring is currently under way. Once the start-up monitoring requirement for TP reduction is achieved, then flow-through operation will begin.

2.2.2 Upper and Lower Kissimmee Sub-watershed Projects

Kissimmee River Restoration and Kissimmee River Headwaters Revitalization. The main goal of the Kissimmee River Restoration Project (KRRP) (SFWMD-05) is to restore ecological integrity to approximately one-third of the river and its floodplain that existed before the Kissimmee River was channelized in the 1960s. The project involves acquiring more than 102,000 acres of land in the river's floodplain and headwaters, backfilling 22 miles of the C-38 Canal, reconnecting remnant sections of the original river channel, removing 2 water control structures, modifying portions of the river's headwaters, and implementing the Headwaters Regulation Schedule to meet the project hydrologic criteria needed to meet the KRRP ecological goals. The first three construction phases of restoration were completed between 2001 and 2009. Reach 3 backfilling was awarded in fiscal year (FY) 2015 and is currently in progress. All project construction is scheduled for completion in 2020.

During 2015, real estate acquisition for the Kissimmee River Headwaters Revitalization Project (SFWMD-22) also progressed. This project is a major component of the overall KRRP restoration effort. The project will increase regulatory stages and change the operating schedule on three major waterbodies in the Kissimmee Chain of Lakes. It is designed to increase storage in the headwater lakes to provide appropriate flow patterns to the restored Kissimmee River floodplain upon completion of restoration construction and land acquisition (expected date 2020), and the increased storage is also expected to improve the quantity and quality of littoral habitat in the headwater lakes. Further details on Kissimmee River Restoration efforts are available in the 2016 SFER – Volume I, Chapter 9.

Rolling Meadows – Phases I and II. The purpose of this project is to restore the historical Lake Hatchineha floodplain wetlands and habitat in the Rolling Meadows property, which was purchased jointly by the SFWMD and DEP as part of the Kissimmee Headwaters Revitalization Project. The project will also provide ancillary water quality, timing, and distribution benefits. In 2015, Phase I (SFWMD-06) design and permitting was finalized. Construction began in November 2015, with expected completion by December 2016. Project construction includes the installation of water control structures throughout the Rolling Meadows property. These structures will facilitate the hydration and restoration of approximately 1,900 acres of previously impacted floodplain on Lake Hatchineha. Phase II of this project, which involves the further restoration of approximately 580 acres of wetlands, is contingent on future funding.

2.2.3 Dispersed Water Management (DWM) Program

During the reporting period, efforts continued to expand opportunities for DWM in the Northern Everglades watersheds, in which private landowners manage water on parts of their property to aid in water retention/storage or nutrient load reduction. There is 1 DWM project in construction and 12 operational DWM projects in the Lake Okeechobee BMAP. As a notable example, Nicodemus Slough (SFWMD-21) became operational in 2015. Currently, this DWM project has the largest estimated annual storage benefit (33,860 acre-feet per year [ac-ft/yr]) of any single DWM project in the Lake Okeechobee BMAP. Further information on individual Lake Okeechobee BMAP DWM projects is available in **Appendix A** and on the SFWMD website.

2.2.4 Other Restoration Strategies

CERP LOW Project. CERP provides a framework and guide to restore, protect, and preserve the water resources of central and southern Florida, including the Everglades. The USACE is the Federal Partner, and the SFWMD is the Local Sponsor. The LOW Project is a component of CERP that will identify regional-scale features north of Lake Okeechobee to improve the quantity, quality, timing, and distribution of flows to better manage lake water levels and reduce undesirable discharges to downstream estuaries.

Since the Lake Okeechobee BMAP was adopted, the LOW Project Implementation Report has been identified as one of the next CERP studies to be conducted as identified in the USACE IDS.

It is anticipated that work by the USACE and SFWMD on this planning effort will begin in summer 2016. The initial stage of the planning effort will include developing the overall scope for the plan, and the planning process will take approximately three years to complete. The Lake Okeechobee Watershed Construction Project Phase II Technical Plan relies heavily on the LOW Project to help achieve the plan goals of maintaining the lake within an ecologically desirable range and minimizing undesirable discharges to the Northern Estuaries.

Lake Okeechobee Low Water Level Habitat Enhancement Plan. Consistent with the final Lake Okeechobee BMAP, the SFWMD finalized the Low Water Level Habitat Enhancement Plan for the lake in November 2015. The intent of the plan is to provide information to help guide the future formulation of event-specific (times when drought conditions result in low lake levels) habitat enhancement project plans. This plan is not a phosphorus reduction project required by DEP's BMAP for Lake Okeechobee, and no loading reductions have been assigned to the potential ecological restoration activities described in the plan. The report identifies and describes potential habitat enhancement projects, lake stage triggers required to commence work, potential project partners, estimated costs, and requisite permits. This planning approach incorporates lessons learned from previous work for consideration into the development of new projects to help maximize benefits to aquatic habitat. While the focus of the plan and the potential projects within are not water quality improvements, their implementation will benefit the overall ecological health of Lake Okeechobee. The SFWMD reserves the option to propose the projects as identified as in the Low Lake Level Plan as potential mitigation for low lake levels, if needed. The SFWMD draft plan (November 2015) was submitted to DEP in March 2016.

2.3 FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) ACTIVITIES

2.3.1 District 1

FDOT District 1 began construction on the State Road (SR) 70 roadway improvement projects (FDOT1-01 and FDOT1-02). A total of nine wet detention ponds and three dry retention ponds are anticipated to be constructed. Construction is expected to be completed in spring 2017. FDOT District 1 continues to implement its street sweeping program on sections of curb and gutter roadways located in the LOW. **Appendix A** includes updated street sweeping calculations for 2015.

2.3.2 District 5

FDOT District 5 began construction on Projects FDOT5-1, FDOT5-2, FDOT5-3, FDOT5-4, and FDOT5-12 during the reporting period. These include the construction of 4 wet detention ponds along SR 15 (Hoffner Road/Avenue) and 1 wet detention pond along SR 600 (U.S. Highway 17-92). In addition, the construction of 2 wet detention ponds associated with the widening of SR 500 from Eastern Avenue to Nova Road began in fall 2015. Both projects (FDOT5-26 and

FDOT5-27) are projected to be completed in fall 2017, and FDOT estimates these ponds will reduce a total of 0.016 mt/yr (15.91 kilograms per year [kg/yr]) of TP.

2.4 AGRICULTURAL ACTIVITIES

FDACS currently has seven field staff who work with producers on BMP notice of intent (NOI) enrollment and implementation in the SFWMD region. Some FDACS activities include initial NOI enrollment, follow-up technical assistance, BMP cost-share, BMP implementation assurance visits, the management of water quality and water supply projects and contracts, and coordination with the SFWMD on agriculture-related permitting questions. These staff also participate in the development of various BMAPs in the SFWMD region.

2.4.1 Project Updates

FDACS provided updates on water quality and water supply projects with which it is involved in contract or project management. **Table A-1** through **Table A-7** and **Section 2** include some project-specific updates, and additional updates are provided below.

Hybrid Wetland Treatment Technology (HWTT). This water treatment technology comprises both biological and chemical processes to remove nutrients such as TP and TN, as well as other chemical constituents, from the water. There are 5 existing HWTT facilities in the LOW. During the reporting period, operations at one of the facilities (Grassy Island) were increased to 30 cubic feet per second (cfs). The TP load reductions at the five HWTT facilities in the LOW ranged from 60 % to 92 % during the 2015 reporting period.

Floating Aquatic Vegetation Tilling (FAVT). FAVT is a water treatment technology that uses biological processes to remove nutrients. Shallow wetland systems are created and are stocked with native floating aquatic vegetation. Nutrients are removed as the plants grow, and further reduction takes place in submerged aquatic vegetation cells. A location in the Fisheating Creek Sub-watershed has been identified for a FAVT project, and permitting of the facility is under way.

BMP Verification. FDACS is currently working with DEP to identify possible sites that have implemented owner-implemented and cost-shared BMPs. FDACS has reviewed the historical data for these sites, and the two agencies will work to select the most appropriate sites and begin monitoring in 2016.

2.4.2 WAM Updates

In early 2015, FDACS contracted with SWET to revise the WAM, which was used as the basis for the BMAP load estimation tool. This effort was jointly funded by the SFWMD and DEP. Under this contract, SWET updated the model datasets and extended the WAM simulation period through 2013 for all six sub-watersheds north of Lake Okeechobee. A literature review

and draft work plan for the sensitivity and uncertainty analyses were also developed, as well as a work plan for the expansion of the WAM to include the three southern sub-watersheds.

In late 2015, the contract was amended to include the completion of model validation and a final sensitivity analysis and uncertainty analysis. Following the validation and sensitivity and uncertainty analyses, the model is being recalibrated for the six northern sub-watersheds. In addition to the work in the northern sub-watersheds, DEP and FDACS are funding the expansion of the WAM domain to include the three southern sub-watersheds: East, South, and West Lake Okeechobee.

The WAM revisions are expected to be completed in fall 2016. DEP will use the revisions to refine the load estimation tool and to incorporate the East, South, and West Lake Okeechobee Sub-watersheds into the tool.

2.4.3 Land Use Updates

The existing BMAP load estimation tool uses the SFWMD 2008–09 land use coverage that was modified in 2013 to include local expert knowledge of dairy operations. Due to the constantly evolving nature of agriculture, FDACS has began conducting an assessment of the agricultural land uses in the 2008–09 SFWMD geodatabase. To date, FDACS has completed ground-truthing exercises for the Taylor Creek/Nubbin Slough, Indian Prairie, and Fisheating Creek Sub-watersheds. It has begun efforts to ground-truth agricultural land uses in the Lake Istokpoga Sub-watershed and will continue this exercise for both the Lower Kissimmee and Upper Kissimmee Sub-watersheds, as well as the three sub-watersheds south of Lake Okeechobee.

2.4.4 Agricultural BMPs/BMP Enrollment

Landowners who sign NOIs are agreeing to implement applicable BMPs on their enrolled properties. For purposes of estimating nutrient reductions from agriculture, all agricultural lands are assumed to be enrolled in the FDACS BMP Program, excluding properties enrolled in FDACS BMPs prior to 2009. The NOIs will document the estimated total number of acres on which applicable BMPs are implemented, not the entire parcel acreage. This is because some parcels contain nonproduction acres (such as buildings, parking lots, and fallow acres) that will not be counted on the NOIs submitted to FDACS. In addition, FDACS BMPs are not targeted toward noncommercial agricultural activities.

In the LOW, FDACS has 1,789,771.5 acres enrolled in BMP programs for citrus, cow/calf, dairy, equine, fruit/nut, nursery, row/field crop, and sod. Of this acreage, 909,650 acres are enrolled on lands classified as agriculture, according to the 2008–09 land use data used by DEP to develop the load estimation tool. **Table 3a** and **Table 3b** through **Table 8a** and **Table 8b** summarize the land use data figures for agriculture in the six northern sub-watersheds, the acreage associated with commodity types addressed by BMP manuals, the acres enrolled in BMP programs, and the additional acreage necessary to meet 100 % enrollment in the LOW. **Figure 1**

shows the acres in the Lake Okeechobee BMAP area enrolled in the FDACS BMP Program as of December 31, 2015.

2.4.5 BMP Compliance Assistance

In spring 2015, DEP and FDACS agreed to commence the compliance assistance effort for the Lake Okeechobee BMAP to ensure that agricultural landowners are aware of their statutory responsibility to implement BMPs in the BMAP area. While all agricultural operations in the BMAP areas for which FDACS has adopted a BMP manual are required by statute to enroll or monitor, this joint compliance assistance effort is concentrated where it will be most effective.

FDACS began the Lake Okeechobee compliance assistance effort in the Taylor Creek/Nubbin Slough Sub-watershed. The Florida Department of Revenue parcel data were used to generate a list of unenrolled properties that had a greenbelt exemption, that were 50 acres or greater in area (except nurseries, which were included regardless of acreage due to their generally smaller size), and that were known to be commercial agriculture (greater than $1,000 per year in gross sales).

FDACS sent a compliance assistance letter to 124 property owners in May 2015, and responses were received from 114 owners (a 92 % response rate). These responses resulted in an additional 33,394 acres of enrollment under 59 new NOIs (these enrolled acres may include land not classified as agriculture according to the 2008–09 SFWMD land use coverage).

In 2016, FDACS sent a second letter to the nonresponders. Information on landowners who failed to respond to the second letter was provided to DEP, and an initial compliance assistance letter was mailed from DEP in April 2016.

In August 2015, FDACS commenced the compliance assistance effort in the Indian Prairie Sub-watershed. Letters were sent to 94 property owners. As of January 2016, 35 responses (a 37 % response rate) were received. These responses resulted in an additional 14 new NOIs that cover 14,900 acres.

A second letter was sent to the nonresponders, and this compliance assistance process will continue in the Indian Prairie Sub-watershed and the remaining northern sub-watersheds. FDACS plans to begin the compliance assistance efforts in the Fisheating Creek Sub-watershed in summer 2016.

Table 3a. Agricultural acreage and BMP enrollment for the Fisheating Creek Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.

2009 SFWMD Land Use	2009 Acres	Related FDACS BMP Programs	Acreage Enrolled as of December 31, 2008[1]	Acreage Enrolled January 1, 2009–December 31, 2015[1]	Related NOIs
Citrus	7,877.50	Ridge Citrus; Flatwoods Citrus	470.71	5,104.64	35
Dairies	26.70	Conservation Plan Rule/Dairies	25.50	0.00	0
Fruit Orchards/Other Groves	45.70	Specialty Fruit and Nut		0.17	2
Ornamentals	391.20	Container Nursery	15.24	229.83	4
Improved Pasture	102,611.70	Cow/Calf; Vegetable/ Agronomic Crops (hay/forage)	20,658.10	66,304.23	47
Unimproved Pasture	36,919.80		1,789.81	29,693.65	
Woodland Pasture	24,973.20		3,220.68	15,999.75	
Mixed Rangeland	3.70		0.00	2.86	
Poultry Feeding Operations	5.20	Conservation Plan Rule	0.00	0.00	0
Row Crops	18.80	Vegetable/Agronomic Crops	0.00	0.37	0
Field Crops	793.00		127.27	645.30	
Sugar Cane	20.30		0.00	19.67	
Sod Farms	737.40	Statewide Sod	0.00	735.28	1
Tree Nurseries	123.60	Statewide Nursery; Specialty Fruit and Nut	0.00	29.05	0
Total	**174,547.80**		**26,307.32**	**118,764.80**	**89**

Table 3b. BMP enrollment and future enrollment requirements for the Fisheating Creek Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.

Category	Acres
Total 2009 Acres	174,547.80
Acreage Enrolled as of December 31, 2008[1]	26,307.32
Acreage Enrolled January 1, 2009–December 31, 2015[1]	118,764.80
Total Acreage Enrolled (as of December 31, 2015)	145,072.12
Remaining Acres To Enroll	29,475.68

Table 4a. Agricultural acreage and BMP enrollment for the Indian Prairie Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.
[2] Sod farms are enrolled in an additional eight NOIs under the statewide Sod BMP Program.

2009 SFWMD Land Use	2009 Acres	Related FDACS BMP Programs	Acreage Enrolled as of December 31, 2008[1]	Acreage Enrolled January 1, 2009–December 31, 2015[1]	Related NOIs
Citrus	30,232.7	Ridge Citrus; Flatwoods Citrus	452.4	27,340.4	64
Dairies	177.0	Conservation Plan Rule/Dairies	174.6	2.4	3
Other Groves	125.9	Specialty Fruit and Nut	0.0	56.1	6
Horse Farms	25.4	Equine	0.0	0.3	0
Ornamentals	54.7	Container Nursery	0.0	23.3	2
Improved Pasture	120,984.5	Cow/Calf; Vegetable/ Agronomic Crops (hay/forage)	3,121.9	84,923.2	70
Unimproved Pasture	24,193.4		586.0	19,485.2	
Woodland Pasture	21,389.5		236.1	11,461.4	
Poultry Feeding Op	40.2	Conservation Plan Rule	0.0	0.2	0
Field Crops	393.4	Vegetable/Agronomic Crops	80.7	311.1	17
Row Crops	1,167.9		298.1	255.2	
Sugar Cane	19,207.3		3,150.5	10,623.2	
Tree Nurseries	178.2	Statewide Nursery; Specialty Fruit and Nut	0.0	80.3	0
Total	**218,170.3**		**8,100.4**	**154,562.1**	**162[2]**

Table 4b. BMP enrollment and future enrollment requirements for the Indian Prairie Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.

Category	Acres
Total 2009 Acres	218,170.3
Acreage Enrolled as of December 31, 20081	8,100.4
Acreage Enrolled January 1, 2009-December 31, 20151	154,562.1
Total Acreage Enrolled (as of December 31, 2015)	162,662.5
Remaining Acres To Enroll	55,507.8

Table 5a. Agricultural acreage and BMP enrollment for the Lake Istokpoga Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.

2009 SFWMD Land Use	2009 Acres	Related FDACS BMP Programs	Acreage Enrolled as of December 31, 2008[1]	Acreage Enrolled January 1, 2009–December 31, 2015[1]	Related NOIs
Cattle Feeding Operations	5.6	Conservation Plan Rule	0.0	5.6	0
Citrus	51,536.8	Ridge Citrus; Flatwoods Citrus	1,274.1	40,813.3	759
Dairies	3,157.9	Conservation Plan Rule/Dairies	2,899.7	207.2	3
Fruit Orchards/Other Groves	436.4	Specialty Fruit and Nut	0.0	172.4	4
Horse Farm	17.1	Equine	0.0	0.0	0
Ornamentals	245.8	Container Nursery	47.8	28.2	6
Improved Pasture	39,743.2	Cow/Calf; Vegetable/ Agronomic Crops (hay/forage)	8,620.2	20,733.5	60
Unimproved Pasture	13,546.1		10,931.8	514.8	
Woodland Pasture	3,669.2		439.4	1,351.6	
Rural Land in Transition	8,397.6		506.5	3,014.2	
Scrub and Brushland	4,968.2		8.9	1,490.7	
Row Crops	554.8	Vegetable/Agronomic Crops	0.2	232.7	6
Field Crops	410.6		0.0	404.1	
Sugar Cane	2,381.9		0.0	2,000.3	
Sod Farms	180.2	Statewide Sod	0.0	172.3	3
Tree Nurseries	1,262.0	Statewide Nursery; Specialty Fruit and Nut	408.5	165.1	0
Total	**130,577.2**		**25,137.1**	**71,306.2**	**841**

Table 5b. BMP enrollment and future enrollment requirements for the Lake Istokpoga Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.

Category	Acres
Total 2009 Acres	130,577.2
Acreage Enrolled as of December 31, 2008[1]	25,137.1
Acreage Enrolled January 1, 2009-December 31, 2015[1]	71,306.2
Total Acreage Enrolled (as of December 31, 2015)	96,443.3
Remaining Acres To Enroll	34,069.5

Table 6a. Agricultural acreage and BMP enrollment for the Lower Kissimmee Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.
[2] Sod farms are enrolled in one additional NOI under the statewide Sod BMP Program.

2009 SFWMD Land Use	2009 Acres	Related FDACS BMP Programs	Acreage Enrolled as of December 31, 2008[1]	Acreage Enrolled January 1, 2009–December 31, 2015[1]	Related NOIs
Cattle Feeding Operations	44.7	Conservation Plan Rule	8.7	3.2	0
Citrus	10,511.4	Ridge Citrus; Flatwoods Citrus	2,233.5	8,028.1	15
Dairies	6,479.6	Conservation Plan Rule/Dairies	5,515.4	609.6	9
Fruit Orchards/Other Groves	607.0	Specialty Fruit and Nut	8.5	586.2	0
Horse Farm	264.9	Equine	17.2	185.4	0
Ornamentals	17.1	Container Nursery	0.0	0.1	2
Improved Pasture	130,041.4	Cow/Calf; Vegetable/ Agronomic Crops (hay/forage)	46,141.7	55,190.4	125
Unimproved Pasture	44,505.7		17,163.8	8,889.1	
Woodland Pasture	10,931.0		4,031.4	2,749.7	
Row Crops	4,613.5	Vegetable/Agronomic Crops	2,961.3	1,367.2	12
Field Crops	8,233.7		2,406.9	5,253.0	
Tree Nurseries	9.3	Statewide Nursery; Specialty Fruit and Nut	0.0	0.0	0
Total	**216,259.1**		**80,488.2**	**82,862.0**	**164[2]**

Table 6b. BMP enrollment and future enrollment requirements for the Lower Kissimmee Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.

Category	Acres
Total 2009 Acres	216,259.1
Acreage Enrolled as of December 31, 2008[1]	80,488.2
Acreage Enrolled January 1, 2009-December 31, 2015[1]	82,862.0
Total Acreage Enrolled (as of December 31, 2015)	163,350.2
Remaining Acres To Enroll	52,908.9

Table 7a. Agricultural acreage and BMP enrollment for the Taylor Creek/Nubbin Slough Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.

2009 SFWMD Land Use	2009 Acres	Related FDACS BMP Programs	Acreage Enrolled as of December 31, 2008[1]	Acreage Enrolled January 1, 2009–December 31, 2015[1]	Related NOIs
Cattle Feeding Operations	387.1	Conservation Plan Rule	44.4	297.1	0
Citrus	3,481.4	Ridge Citrus; Flatwoods Citrus	1,910.2	1,207.8	8
Dairies	10,222.1	Conservation Plan Rule/Dairies	2,419.6	7,577.0	8
Fruit Orchards/Other Groves	361.1	Specialty Fruit and Nut	229.6	37.5	1
Horse Farm	491.7	Equine	118.9	215.9	5
Ornamentals	66.5	Container Nursery	4.8	30.5	6
Improved Pasture	91,432.1	Cow/Calf; Vegetable/ Agronomic Crops (hay/forage)	32,979.3	39,028.6	142
Unimproved Pasture	10,043.9		3,193.3	3,393.7	
Woodland Pasture	13,509.1		4,298.8	6,220.6	
Poultry Feeding Operations	72.3	Conservation Plan Rule	0.0	34.8	0
Row Crops	314.9	Vegetable/Agronomic Crops	0.3	279.6	11
Field Crops	1,371.7		601.8	536.8	
Sugar Cane	5,217.4		0.0	4,407.0	
Sod Farms	1,521.3	Statewide Sod	0.0	1,519.5	1
Tree Nurseries	2,413.7	Statewide Nursery; Specialty Fruit and Nut	231.8	1,835.9	0
Total	**140,906.5**		**46,032.6**	**66,622.3**	**182**

Table 7b. BMP enrollment and future enrollment requirements for the Taylor Creek/Nubbin Slough Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.

Category	Acres
Total 2009 Acres	140,906.5
Acreage Enrolled as of December 31, 2008[1]	46,032.6
Acreage Enrolled January 1, 2009-December 31, 2015[1]	66,622.3
Total Acreage Enrolled (as of December 31, 2015)	112,655.0
Remaining Acres To Enroll	28,251.5

Table 8a. Agricultural acreage and BMP enrollment for the Upper Kissimmee Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.

2009 SFWMD Land Use	2009 Acres	Related FDACS BMP Programs	Acreage Enrolled as of December 31, 2008[1]	Acreage Enrolled January 1, 2009–December 31, 2015[1]	Related NOIs
Cattle Feeding Operations	18.9	Conservation Plan Rule	0.0	5.0	0
Citrus	47,326.5	Ridge Citrus; Flatwoods Citrus	82.4	27,955.5	555
Dairies	52.7	Conservation Plan Rule/Dairies	0.0	39.0	0
Fruit Orchards/Other Groves	1,593.0	Specialty Fruit and Nut	0.0	375.2	22
Horse Farm	220.3	Equine	0.0	3.0	1
Ornamentals	469.6	Container Nursery	5.5	107.1	25
Cropland and Pastureland	4,900.0	Cow/Calf; Vegetable/ Agronomic Crops (hay/forage)	0.0	1,148.8	65
Improved Pastures	128,003.5		8,109.1	48,520.7	
Unimproved Pastures	38,534.8		4,735.3	10,603.0	
Woodland Pastures	36,755.2		1,087.6	10,565.9	
Other Open Land	3,908.4		0.0	1,147.3	
Poultry Feeding Operations	102.3	Conservation Plan Rule	10.2	0.4	0
Row Crops	1,119.7	Vegetable/Agronomic Crops	0.9	1,067.9	3
Field Crops	8,022.7		0.0	4,805.8	
Sod Farms	3,537.4	Statewide Sod	0.0	1,918.0	2
Tree Nurseries	445.4	Statewide Nursery; Specialty Fruit and Nut	0.0	50.1	0
Total	**275,010.4**		**14,031.0**	**108,312.7**	**673**

Table 8b. BMP enrollment and future enrollment requirements for the Upper Kissimmee Sub-watershed

[1] The acreage enrolled includes the total acres with natural areas that fall within enrolled areas. Overlapping records are not duplicated. Estimated acreage is based on the lesser of the enrolled NOI acres or the calculated clipped parcel acres, to determine an approximate percentage of land mass enrolled in each of the sub-watersheds.

Category	Acres
Total 2009 Acres	275,010.4
Acreage Enrolled as of December 31, 2008[1]	14,031.0
Acreage Enrolled January 1, 2009-December 31, 2015[1]	108,312.7
Total Acreage Enrolled (as of December 31, 2015)	122,343.7
Remaining Acres To Enroll	152,666.7

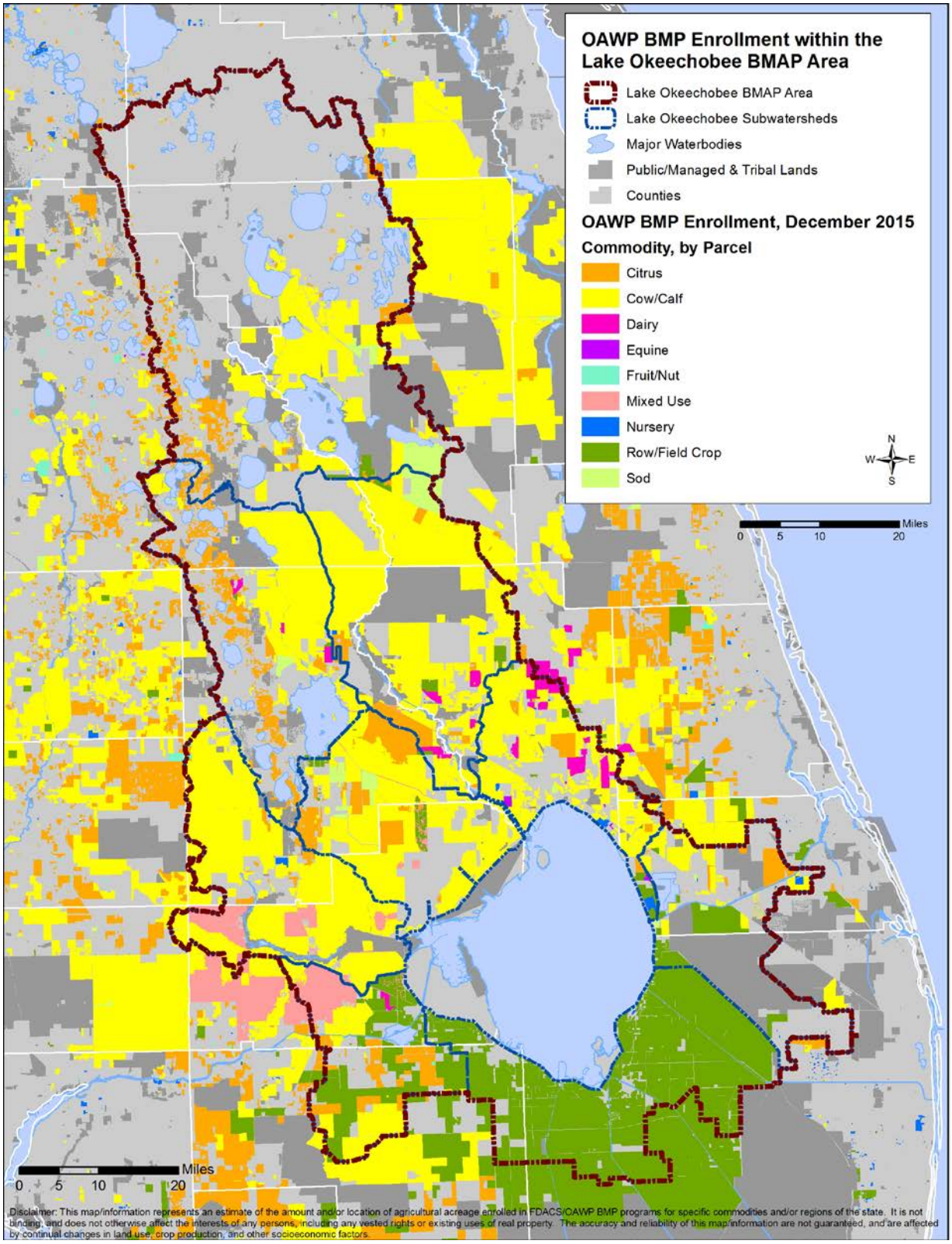

Figure 1. BMP enrollment in the Lake Okeechobee Watershed as of December 31, 2015

2.5 CITY, COUNTY, AND SPECIAL DISTRICT ACTIVITIES

2.5.1 City of Kissimmee

Kissimmee provides outreach and education to private and public groups, such as citizens, students, and businesses. The Public Education Coordinator visited several elementary schools to display the Enviroscape Model to show the overall effect of different types of pollution that enter waterbodies and ground water through stormwater conveyance. City staff also attended local college Earth Day events with display tables set up to focus on recycling and stormwater education. Other events included speaking/participating at different summer camps, City of Kissimmee's School of Government, Public Works Week, and Great Outdoors Day. Each event included presentations and giveaways tailored to the audience.

2.5.2 City of Orlando

During the reporting period, Orlando completed the Lake Angel Drainage Improvement project (ORL-6) in September 2015. This project expanded the permanent pool volume of Lake Angel and included the installation of three baffle boxes in the main inflow pipes. Calculation errors were also discovered in the BMAP tables for Orlando's TP/TN reductions, and these reduction estimates have been corrected in the project tables in **Appendix A**.

2.5.3 Orange County

Orange County has identified multiple new projects for water quality improvements, including four (OC-29 through OC-32) added to the BMAP. During the reporting period, construction on some BMPs began.

2.5.4 Spring Lake Improvement District (SLID)

The original STA project (SLID-1) in the northern SLID stormwater management system was broken out into three phases. Phase 1 includes design, surveying, permitting, site preparation, and partial construction of the overall project, and DEP Agreement No. G0377 awarded a grant of $624,000 for this phase. The excavation of the wet detention area and a portion of the northeast shallow marsh area have been completed as part of Phase 1. Completion is anticipated by September 30, 2016. SLID has acquired additional funding, and project change orders have been issued for Phases 2 and 3. The additional funding to complete the original three phases was obtained via legislative appropriation and the State Revolving Fund (SRF) Loan Program. The total cost for Phases 1 through 3 is $3,126,265.

SLID has proposed the Phase 4 expansion (SLID-2) of the existing STA within an additional 60 acres of unimproved contiguous lands. The expansion will include the construction of a wetland marsh system as part of the STA and will work to optimize treatment capabilities. The expanded STA will provide additional water quality treatment benefits (for total suspended solids [TSS], TN, and TP) prior to discharge into Arbuckle Creek. Phase 4 includes surveying, engineering

design, permitting, bidding, construction, engineering services during construction, and project administration, and will cost $2,586,358.

2.6 SUMMARY OF ACCOMPLISHMENTS

During the reporting period, FDOT District 5 began construction on five projects (FDOT5-1, FDOT5-2, FDOT5-3, FDOT5-4, FDOT5-12) and added two new projects (FDOT5-26 and FDOT5-27) in the LOW. FDOT District 1 began construction on two projects (FDOT1-01 and FDOT1-02), and continued to implement street sweeping on sections of curb and gutter roadways in the LOW. Orange County added four new projects (OC-29 through OC-32) to its plan. During the reporting period, SFWMD-led BMAP projects and other restoration initiatives progressed (see **Section 2.2**). Additionally, under the DWM Program SFWMD added one new project, Buck Island Ranch Water Management Alternative (WMA) (NE PES-2) (SFWMD-23). Orlando completed one project (ORL-6), and SLID added one project (SLID-2) to its plan during the reporting period. In addition, the reduction potential for agricultural BMP program enrollment of 100 % of eligible acres was updated based on the December 2015 enrollment information provided by FDACS.

Table A-1 through **Table A-6** include the status of the Lake Okeechobee BMAP projects that have been completed and are under way. Efforts on the projects and initiatives in **Table A-7** and **Table A-8** will continue to follow the schedules set out in the BMAP, and project details will be updated as information becomes available.

Section 3: WATER QUALITY MONITORING

The Lake Okeechobee BMAP monitoring plan was designed to enhance the understanding of basin loads, identify areas with high nutrient concentrations, and track water quality trends. The information gathered through the monitoring plan will measure progress towards achieving the TMDL and provide a better understanding of watershed loading. The BMAP monitoring plan is designed to be flexible enough to account for new information as it becomes available, and efforts are under way to make improvements to the monitoring plan according to the following schedule:

- Identify areas with regional projects already in place. (Complete)
- Evaluate areas where additional water quality data are needed. (Once WAM complete.)
- Identify lead entity for monitoring efforts. (Spring 2017–Summer 2017)
- Finalize monitoring plan. (During BMAP Phase I, Fall 2018)

Efforts are also under way to incorporate additional stations not already included in the monitoring network, and to update existing monitoring network station names and locations where necessary. **Appendix B** provides an updated BMAP monitoring plan.

3.1 WATER QUALITY MONITORING

3.1.1 Monitoring Objectives

The primary objective of the monitoring strategy for the LOW is to continue to track trends in TP loads and concentrations by sub-watershed. Secondary objectives are tracking trends in TN loads and concentrations by sub-watershed, identifying areas in the watershed with elevated TP loading to better focus management efforts, and measuring the effectiveness of individual or collective projects in reaching TMDL target-pollutant loadings. The stations included in the BMAP monitoring network are not specifically BMAP stations—i.e., the data they generate are also used for other purposes—but the data collected at these sites will be used to monitor the effectiveness of the BMAP.

3.1.2 Data Management and Assessment

The Florida Storage and Retrieval (STORET) Database serves as the primary repository of ambient water quality data for the state. DEP impaired waters evaluations are based on water quality data from STORET. Ambient water quality data collected as part of the BMAP will be uploaded into STORET for long-term storage and availability. All BMAP data providers have agreed to upload ambient water quality data to STORET at least once every six months, upon completion of the appropriate quality assurance/quality control (QA/QC) checks. The SFWMD

will input its data into STORET at least once per year. **Table B-1** shows the latest sample date within the reporting period with available phosphorus data in STORET. U.S. Geological Survey (USGS) stations are included in the monitoring network for available flow data, and the most recent flow data within the reporting period are shown for USGS stations.

3.1.3 Water Quality Analyses

After each year of BMAP implementation, the water quality data will be analyzed to complement other analyses already under way in the LOW. The selection of an appropriate data analysis method depends on the frequency, spatial distribution, and period of record (POR) available from existing data. Specific statistical analyses were not identified during BMAP development, and thus commonly accepted methods of data analysis will be used that are consistent with the TMDL model.

As required by NEEPP, the SFWMD monitors water quality and flow (inflows to and outflows from Lake Okeechobee) at SFWMD-operated control structures and maintains a long-term water quality monitoring network in the LOW. The SFWMD continued its water quality sampling program throughout the watershed during the 2015 reporting period.

Further information on the monitoring and data results from the Lake Okeechobee Watershed Protection Program are reported in the 2016 SFER – Volume I, Chapter 8. The 2016 SFER includes various water quality analyses in the Lake Okeechobee BMAP area. However, these analysis are based on a water year (WY) (WY2015 is May 1, 2014, through April 30, 2015) rather than the BMAP reporting period (January 1, 2015, through December 31, 2015). Some of these analyses relate to the primary and secondary objectives of the LOW monitoring strategy, and some analyses are consistent with the method for calculating the attainment of the TMDL (a five-year rolling average).

Section 4: OTHER EFFORTS

4.1 LAKE TOHOPEKALIGA NUTRIENT REDUCTION PLAN (NRP)

Within the Lake Okeechobee BMAP boundary, restoration efforts have been ongoing under the Lake Tohopekaliga NRP. This plan, accepted by DEP in December 2011, includes many efforts that parallel those in the Lake Okeechobee BMAP, and some that benefit Lake Okeechobee in addition to benefitting Lake Tohopekaliga. This section includes some general information on the Lake Tohopekaliga NRP.

4.1.1 Background

Lake Tohopekaliga is a 22,000-acre lake located in Osceola County in central Florida. It has a long history of management activities that have altered the lake's natural hydrology and water quality over time. In the 2010 list of impaired waters, DEP listed Lake Tohopekaliga (**Figure 2**) as impaired for nutrients based on an increasing trend in the Trophic State Index (TSI), which is representative of a total measure of algal biomass in the lake.

Following discussions between Osceola County, Kissimmee, and DEP, it was the county and city's opinion that an algal-based analysis such as the TSI was not the most appropriate tool for assessing the lake's impairment. Based on additional information gathered by DEP in reviewing the city and county's concerns, DEP determined that the cause of impairment for the lake is an imbalance of flora, based on the presence of abundant hydrilla. At that time, the Florida Water Quality Standards (Chapter 62-302, Florida Administrative Code [F.A.C.]) provided a narrative nutrient criterion (Subsection 62-302.530[47], F.A.C.), which was applied to impaired waters assessments using Rule 62-303.350, F.A.C.

DEP's decision to rely on the narrative nutrient criterion is due to the abundant growth of hydrilla present in the lake, as determined from hydrilla biocover data collected by the Florida Fish and Wildlife Conservation Commission (FWCC) since 2001. Florida has since developed and implemented numeric nutrient criteria (NNC) for lakes.

Although not the focus of the impairment listing, East Lake Tohopekaliga, which is hydraulically connected to Lake Tohopekaliga, was also impaired for nutrients based on the TSI. East Lake Tohopekaliga, however, does not have an overabundance of hydrilla.

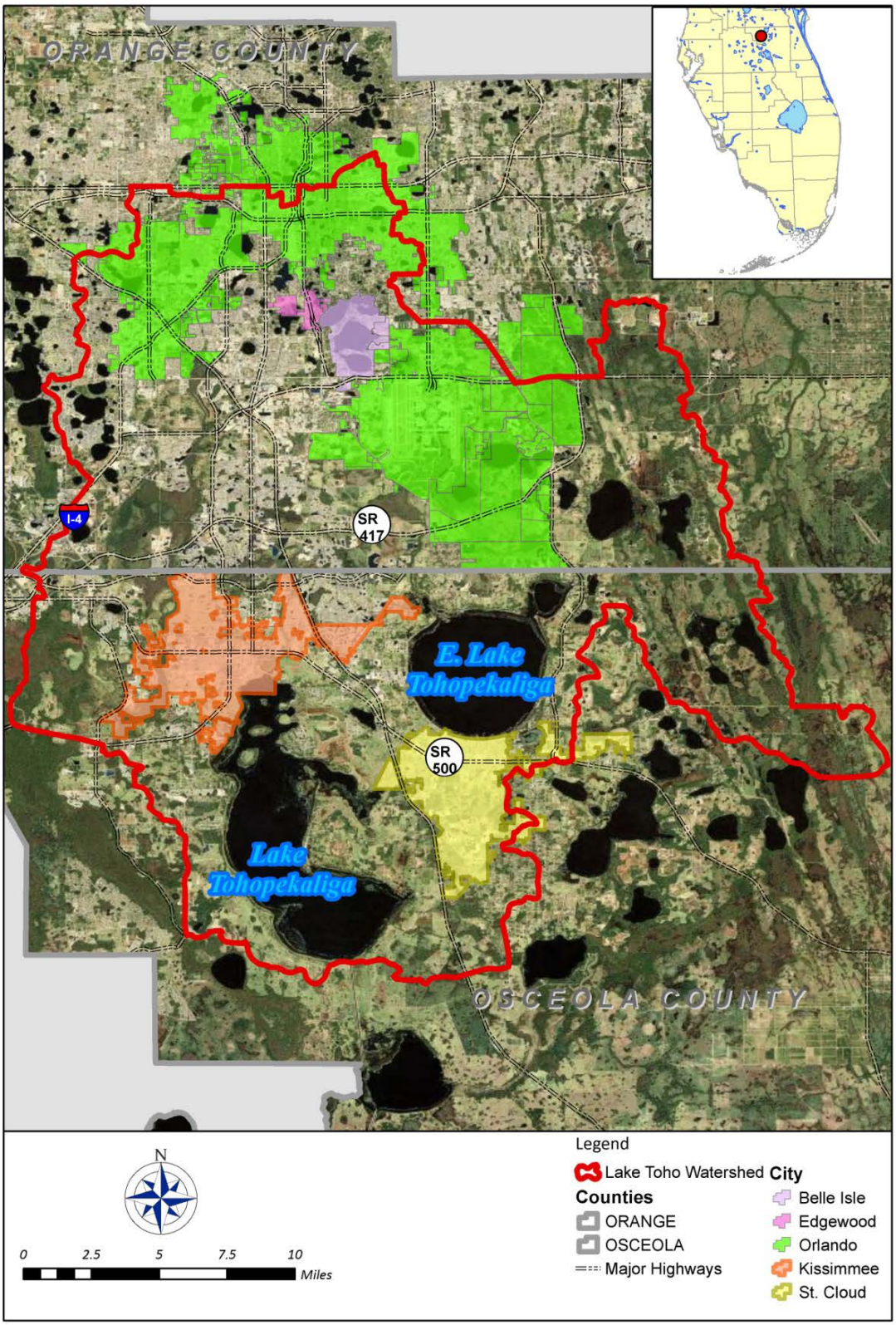

Figure 2. Lake Tohopekaliga Watershed

Lake Tohopekaliga has been highly managed since the 1960s, and local stakeholders thought that an appropriate measure of impairment for the lake should take into account the long-term management activities. Stakeholders contended that a TMDL based on the TSI would not accurately set appropriate water quality targets for the lake due to the complex interactions between ambient water quality, hydrilla, and management activities that still are not completely understood. It was also believed that past lake management (i.e., lake level control, hydrilla coverage) may have contributed to the decline in water quality over time. Currently one of the primary functions of hydrilla in Lake Tohopekaliga is to support the endangered snail kite population, and the FWCC is managing the hydrilla for that purpose.

4.1.2 NRP Development

During negotiations, DEP agreed that more research and a better understanding of lake nutrient dynamics were needed before appropriate water quality targets could be set for the lake. In addition to modifying the cause for impairment, DEP would also consider modifying the lake's assessment status from Category 5 (i.e., water quality standards are not attained and a TMDL is required) to Category 4e (i.e., impaired, but recently completed or ongoing restoration activities are under way to restore the designated uses of the waterbody) if assurance was provided that measures were being put in place to reduce nutrient loading to the lake.

As a result of this decision, local stakeholders embarked on the development of an NRP for Lake Tohopekaliga to address DEP's requirements to facilitate the change in assessment category (i.e., Category 5 to Category 4e). Stakeholders included Osceola County, Kissimmee, St. Cloud, Orlando, Orange County, and FDOT District 5. Several agency partners participated in the development of the NRP and provided technical support, including DEP, SFWMD, FWCC, FDACS, Florida Farm Bureau, Reedy Creek Improvement District (RCID), and University of Florida Institute of Food and Agricultural Sciences (UF–IFAS).

The purposes of the Lake Tohopekaliga NRP were to document local efforts to achieve nutrient reductions and to provide additional time to assess the complex relationships in the lake, including the relationships among nutrients, TSI, macrophytes, and other factors. The NRP does the following:

- Defines baseline nutrient loading to the lake (by entity).
- Documents projects and activities identified since 2009 that result in overall nutrient reduction to Lake Tohopekaliga.
- Identifies research needs to improve the understanding of nutrient dynamics in the lake, with an emphasis on how the overgrowth and management of aquatic plants have affected nutrient concentrations and interactions.

Stakeholders regulate stormwater discharges through the enforcement of National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system (MS4) permits. These permits contain many elements, some of which include the identification of illicit discharges, public outreach and education, and local ordinances. Federal and state agencies are authorized and/or mandated to cooperatively manage hydrology, aquatic plants, and fisheries habitat in the lake in consultation with local stakeholders. It is a goal of the NRP that state agencies and local stakeholders continue to collaborate to determine how nonpoint source pollution, lake level control, aquatic plant management, and fisheries habitat improvement interact, and the overall combined effect on the lake's water quality.

4.1.3 NRP Elements

To satisfy DEP requirements, the Lake Tohopekaliga NRP contained the following elements:

- **Pollutant Load Analysis** – This was done using geographic information system (GIS) tools and an existing Hydrologic Simulation Program – FORTRAN (HSPF) Model previously developed by DEP for TMDL modeling in the Upper Kissimmee River Basin. The purpose of this task was to identify the relative pollutant load contributions by stakeholder in the basin.

- **Identification of Management Actions To Reduce Pollutant Loading** – The stakeholders in the watershed provided information on projects and programs that were already in place or will be implemented in the future to reduce nutrients to the lake in the first five years of the NRP. These management actions are in one of two major categories: (1) projects completed since 2009 (baseline condition); and (2) planned projects and programs.

- **Establishment of Research Priorities** – During the formulation of the NRP, it was evident that more research was needed to set appropriate water quality targets for Lake Tohopekaliga and to define the balanced condition for the lake. Knowledge gaps were identified and research questions were formulated that were revisited by stakeholders once an extensive literature search on hydrilla–nutrient interactions was completed.

- **Water Quality Monitoring Plan** – A monitoring plan was designed to enhance the understanding of basin pollutant loading, identify areas with high nutrient concentrations, and track water quality trends. Stakeholders cooperatively and routinely sample throughout the watershed at strategic locations defined by a monitoring network.

- **Stakeholder Coordination** – Extensive stakeholder coordination was required throughout the development of the plan. Due to regulatory deadlines, the plan had to be developed over a period of a few months, and stakeholder coordination was key to the plan's successful endorsement. Including DEP as a stakeholder in the process was also integral to the plan's acceptance and success.

DEP accepted the Lake Tohopekaliga NRP in December 2011. It was the first plan of its kind to be developed in the state. Subsequent to the plan's acceptance, the assessment category for both Lake Tohopekaliga and East Lake Tohopekaliga was modified from Category 5 (i.e., water quality standards are not attained and a TMDL is required) to Category 4e (i.e., impaired, but recently completed or ongoing restoration activities are under way to restore the designated uses of the waterbody). As part of the ongoing implementation of the NRP, stakeholders and technical support partners have done the following:

- Initiated and executed the monitoring plan.
- Met periodically to discuss the implementation of management actions.
- Revisited and further refined research priorities.
- Provided biennial progress reports to DEP.

4.2 MANAGEMENT STRATEGIES FOR THE SOUTHERN SUB-WATERSHEDS

Although this phase of the BMAP focuses on the northern sub-watersheds, the three southern sub-watersheds are included in the BMAP. The latter contribute a comparatively smaller percentage of overall loadings to Lake Okeechobee, and their flow into the lake is largely diverted in directions other than towards the lake. The three southern sub-watersheds have implemented BMPs in the BMAP area, and other management strategies have been implemented and will continue under this BMAP. Once the WAM is refined to incorporate the three southern sub-watersheds, the BMAP will take into account the specific benefits of pollutant load reductions achieved by these BMPs and management strategies.

Entities in the three southern sub-watersheds are implementing various urban BMPs. The Cities of Clewiston, Belle Glade, South Bay, and Pahokee, as well as Hendry and Palm Beach Counties (and other entities such as FDOT and the Northern Palm Beach County Improvement District) are in compliance with the the NPDES MS4 Stormwater Program.

Agricultural producers in the southern sub-watersheds are required to participate in the SFWMD program under Chapter 40E-63, F.A.C. Under this program, BMPs have been implemented and routinely verified since the early 1990s. **Figure 1** identifies these early implementation areas that

subsequently enrolled in an FDACS BMP program, along with other lands enrolled in a FDACS BMP program in the southern sub-watersheds.

Furthermore, the Everglades Agricultural Area Protection District (EAAPD), in coordination with UF–IFAS, special districts, and the SFWMD, continued to provide regularly scheduled producer-specific educational programs in the southern sub-watersheds for the implementation of agricultural BMPs. During the reporting period, the EAAPD hosted programs on February 27, 2015 (Sugarcane Grower Nutritional Workshop); April 23, 2015 (Everglades Agricultural Area [EAA] Phosphorus BMP Training in Spanish); and May 1, 2015 (Controlled Release Fertilizer as a BMP on Vegetable Production in South Florida).

The Sediment Removal/Canal Cleaning cost-share pilot project with the SFWMD has been completed since BMAP adoption. The original project scope envisioned cleaning 11.3 miles of canals in the East Beach Water Control District (WCD). At the end of the 3-year period, the scope was exceeded by 58 %. Sediments were removed from 14.1 miles of canals and floating aquatic vegetation removed from 3.7 miles of canals, for a total of 17.8 miles of operations. In August 2015, the SFWMD approved the construction of the Bolles Cross Canal Improvements to enhance flexibility for moving stormwater from the EAA into the STAs to improve the quality of water before it reaches the Everglades. The SFWMD is nearing the completion of the first segment of the Bolles Canal conveyance improvement project and has completed the design for the next phase. The state is cost-sharing with private landowners to replace a bridge that has been a major impediment to conveying water to the east and west. This project will provide water managers with flexibility in optimizing the use of the new A-1 Flow Equalization Basin, including reducing the potential need for emergency pumping of stormwater into the lake.

APPENDICES

APPENDIX A: PROJECTS TO ACHIEVE THE TMDL

The tables below set forth the required projects and time frames for implementation in this BMAP. Additional reductions will be necessary in future BMAP updates to meet the TMDL. The tables provide information on the attenuated nutrient reductions attributed to each individual project, shown in mt/yr and kg/yr. These projects and activities were submitted to DEP with the understanding that they would be included in the BMAP, thus setting the expectation for each entity to implement the proposed projects and activities to achieve the assigned load reduction estimates in the specified time frames. Any change in listed projects and activities, or the deadline to complete these actions, must first be approved by DEP. Substituted projects must result in equivalent or greater nutrient reductions than expected from the original projects.

Table A-1. Projects in the Fisheating Creek Sub-watershed

Note: These attenuated project reductions are calculated specifically to estimate the reductions at the inflow to Lake Okeechobee.
TBD = To be determined
[1] For operational projects, Start Date reflects the beginning date for start of operations.
[2] Anticipated Operational Completion Dates are contingent on annual appropriations.
[3] For projects under construction, Operational Start and Completion Dates are estimated.

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mt/yr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
FDACS-04	Fisheating Creek	FDACS	FAVT	FAVT				FDACS		In progress	TBD	TBD	8.59	8,594.90	29.17	29,174.30
GC-01	Education and Outreach	Glades County	Public education	Florida Yards and Neighborhoods (FYN) Program; landscaping, irrigation, and fertilizer ordinances; PSAs, pamphlets, website, illicit discharge program	N/A			Glades County		Ongoing	Unknown	Ongoing	0.01	13.70	0.08	79.10
HC-01	Education and Outreach	Highlands County	Public education	FYN, landscaping and irrigation ordinances, PSAs, pamphlets.	N/A			Highlands County		Ongoing	Unknown	Ongoing	0.03	29.50	0.36	362.30
SFWMD-18	XL Ranch (Lightsey)	SFWMD	DWM	Storage of 887 ac-ft of water through above-ground impoundment and pasture.		$52,415.00	$130,150.00	SFWMD		Operational	2012[1]	2022[2]	0.07	70.90		
SFWMD-20	Blue Head Ranch	SFWMD	DWM	Storage of 3,462 ac-ft of water through pasture.		$193,750.00	$361,200.00	SFWMD		Under construction	2016[3]	2026[3]	0.72	724.20		
SFWMD-21	Nicodemus Slough	SFWMD	DWM	Storage of 33,860 ac-ft of water through above-ground impoundment and pasture.		$4,900,000.00	$2,968,328.00	SFWMD		Operational	3/31/2015[1]	2025[2]	3.25	3,248.50		
Agricul-tural BMPs	Agricultural BMPs	FDACS	N/A	See **Section 2.4.4**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.02	6,023.87	59.14	59,136.37

Table A-2. Projects in the Indian Prairie Sub-watershed

Note: These attenuated project reductions are calculated specifically to estimate the reductions at the inflow to Lake Okeechobee.
TBD = To be determined
[1] For operational projects, Start Date reflects the beginning date for start of operations.
[2] Anticipated Operational Completion Dates are contingent on annual appropriations.
[3] For projects under construction, Operational Start and Completion Dates are estimated.

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mt/yr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
GC-02	Education and Outreach	Glades County	Public education	FYN; landscaping, irrigation, and fertilizer ordinances; PSAs, pamphlets, website, illicit discharge program	N/A			Glades County		Ongoing	Unknown	Ongoing	0.04	38.50	0.4	413.90
HC-02	Education and Outreach	Highlands County	Public education	FYN, landscaping and irrigation ordinances, PSAs, pamphlets.	N/A			Highlands County		Ongoing	Unknown	Ongoing	0.03	29.60	0.4	415.20
IMWID-01	Istokpoga Marsh Watershed Improvement District	Istokpoga Marsh Watershed Improvement District/ Highlands County, Southwest Florida Water Management District (SWFWMD), DEP, FDACS	STA	STA	711			Unknown		Planned and funded	TBD	TBD	0.7	698.00		
SFWMD-10	West Waterhole Marsh	SFWMD	DWM	Storage of 4,848 ac-ft of water through above-ground impoundment.		$50,000.00	$493,750.00	Florida Ranch-lands Environ-mental Services Project (FRESP)		Operational	6/30/2006[1]	2016[2]	4.17	4,166.40	20.6	20,619.50
SFWMD-12	Buck Island Ranch (NE PES-1)	SFWMD	DWM	Storage of 1,573 ac-ft of water through pasture.		$1,928.00	$173,600.00	SFWMD		Operational	5/4/2012[1]	2022[2]	1.09	1,087.20	Not quanti-fied	Not quantified
SFWMD-23	Buck Island Ranch WMA (NE PES-2)	SFWMD	DWM	Storage of 620 ac-ft of water through pasture.				SFWMD		Operational	12/31/2015[1]	2026[2]	0.71	710	Not quanti-fied	Not quantified
Agricul-tural BMPs	Agricultural BMPs	FDACS	N/A	See **Section 2.4.4**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.72	6,720.28	121.27	121,273.68

Table A-3. Projects in the Lake Istokpoga Sub-watershed

Note: These attenuated project reductions are calculated specifically to estimate the reductions at the inflow to Lake Okeechobee.
TBD = To be determined
[1] For operational projects, Start Date reflects the beginning date for start of operations.
[2] Anticipated Operational Completion Dates are contingent on annual appropriations.

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mt/yr)	TP Reduction (kg/yr)	TN Reduction (mtyr)	TN Reduction (kg/yr)
AP-01	Avon Park Street Sweeping	City of Avon Park	Street sweeping	Street sweeping.	N/A			City of Avon Park		Ongoing	Unknown	Ongoing	0.0	4.50	0.01	11.20
AP-02	Lake Tulane Stormwater Improvement Project	City of Avon Park/ SWFWMD	Swales	Runoff will be captured in series of swales that will allow runoff to percolate into sandy soils, preventing further degradation of Lake Tulane.	32.1			City of Avon Park/ SWFWMD		Envisioned, not funded	TBD	TBD	0.0	1.70	0.02	16.20
AP-03	Lake Isis Stormwater Improvement Project	City of Avon Park/ SWFWMD	Wet detention pond	Runoff will be captured in lakeside swale and r-designed pond that will allow runoff to percolate into sandy soils, preventing further degradation of Lake Isis.	37.1			City of Avon Park/ SWFWMD		Envisioned, not funded	TBD	TBD	0.0	0.50	0.0	4.90
HC-03	Education and Outreach	Highlands County	Public education	FYN, landscaping and irrigation ordinances, PSAs, pamphlets.	N/A			Highlands County		Ongoing	Unknown	Ongoing	0.16	155.20	6.58	6,580.70
HC-05	Lake June Stormwater Project	Highlands County/ SWFWMD	Online retention	Conceptual plan includes installation of 450 feet of 24-inch French drain in four contributing basins.	43.3	$440,000.00		SWFWMD and Highlands County		Planned and funded	TBD	TBD	Not quantified	Not quantified	Not quantified	Not quantified
HC-06	Lake Clay Stormwater Project	Highlands County/ SWFWMD	Online retention	600 feet of 24-inch on-line French drain for parking lot subbasin; 300 feet of 24-inch on-line French drain will treat street subbasin.	26.60	$330,000.00	$1,973.00	SWFWMD and Highlands County		Completed	Unknown	2013	0.00	1.30	0.02	24.10

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mt/yr)	TP Reduction (kg/yr)	TN Reduction (mtyr)	TN Reduction (kg/yr)
PC-01	Education and Outreach	Polk County	Public education	FYN, fertilizer ordinance, PSAs, pamphlets, website, illicit discharge inspection program.	N/A			Polk County		Ongoing	Unknown	Ongoing	0.04	38.80	1.09	1,086.90
SEB-01	Little Lake Jackson Off-line Alum Injection Stormwater Treatment	City of Sebring/ Highlands County	Alum injection	Stormwater is diverted through underground culvert, alum is injected and water settles for 7 days in detention pond. Treated water is released to Little Lake Jackson.	0.00	$231,494.00	$18,500.00	DEP 319 grant, SWFWMD, City of Sebring, and Highlands County Board of County Commis-sioners		Ongoing	Unknown	2011	Not quantified	Not quantified	Not quantified	Not quantified
SEB-02	Street Sweeping	City of Sebring	Street sweeping	Street sweeping to collect 602,940 lbs/yr of material.	N/A		$35,000.00	City of Sebring		Ongoing	Unknown	Ongoing	0.05	50.90	0.12	118.40
SFWMD-11	Rafter T Ranch	SFWMD	DWM	Storage of 1,298 ac-ft of water through above-ground impoundment and pasture.		$431,524.00	$92,490.00	FRESP		Operational	12/12/2014[1]	2024[2]	0.09	89.80	Not quantified	Not quantified
SLID-01	SLID Improve-ments Phases 1-3	SLID	STA	Treatment of runoff through STA.	3016	$3,126,265.00	$60,000.00	SLID and DEP Section 319 Grant	G0377	Planned and funded	Unknown	Unknown	0.00	4.5	0.03	32.9
SLID-02	SLID Improve-ments Phase 4	SLID	STA	Expansion of existing STA (Project SLID-1) to include wetland marsh system. Expanded STA will provide additional water quality treatment benefits prior to discharge into Arbuckle Creek.	2308	$2,586,357.95		SFWMD Local Cooperative Funding Program and SRF		Planned	Unknown	Unknown	Not quantified	Not quantified	Not quantified	Not quantified
Agricultural BMPs	Agricultural BMPs	FDACS	N/A	See **Section 2.4.4**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.56	1,557.10	114.13	114,133.47

Table A-4. Projects in the Lower Kissimmee Sub-watershed

Note: These attenuated project reductions are calculated specifically to estimate the reductions at the inflow to Lake Okeechobee.

[1] For operational projects, Start Date reflects the beginning date for start of operations.

[2] Anticipated Operational Completion Dates are contingent on annual appropriations.

[3] Combined cost is shown for both Kissimmee River Restoration Project (SFWMD-05) and Kissimmee River Headwaters Revitalization Project (SFWMD-22).

[4] Dixie Ranch is also listed as SFWMD-15 (Table A-5, Taylor Creek/Nubbin Slough Sub-watershed), as it extends over both sub-watersheds.

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
HC-04	Education and Outreach	Highlands County	Public education	FYN, landscaping and irrigation ordinances, PSAs, pamphlets.	N/A			Highlands County		Ongoing	Unknown	Ongoing	0.14	136.00	0.54	538.60
OSC-11	Education	Osceola County	Public education	FYN; landscaping, irrigation, fertilizer, and pet waste management ordinances; PSAs; pamphlets; website; illicit discharge program.	N/A			Unknown		Ongoing	Unknown	Ongoing	0.00	2.50	0.02	24.40
PC-02	Education and Outreach	Polk County	Public education	FYN, fertilizer ordinance, PSAs, pamphlets, website, illicit discharge inspection program.	N/A			Polk County		Ongoing	Unknown	Ongoing	0.02	22.70	0.41	408.90

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
SFWMD-04	Otter Slough Restoration	SFWMD	Restoration	This project included five ditch plugs and removal of two berms. It helps attenuate regional stormwater runoff, as well as providing nutrient reductions due to plant uptake from overland flows. In 2011 LOPP, it was estimated to create 71 ac-ft of storage.	500			SFWMD		Completed	2008	2009	0.01	5.60	Not quantified	Not quantified
SFWMD-05	Kissimmee River Restoration	SFWMD	Restoration	Restore ecological integrity by restoring 40 miles of meandering river and more than 12,000 miles of wetlands through design and construction of physical project features coupled with application of optimized hydrologic conditions.	25,000	$780,000,000.00[3]		SFWMD and USACE		Under Construction	1999	2020	17.75	17,748.00	Not quantified	Not quantified
SFWMD-13	Dixie West	SFWMD	DWM	Storage of 315 ac-ft of water through pasture.		$7,228.00	$51,500.00	SFWMD		Operational	8/6/2012[1]	2022[2]	0.23	230.50	Not quantified	Not quantified
SFWMD-14	Dixie Ranch[4]	SFWMD	DWM	Storage of 856 ac-ft of water through pasture.		$17,015.00	$146,500.00	SFWMD		Operational	8/6/2012[1]	2022[2]	0.13	133.70	Not quantified	Not quantified
SFWMD-17	Willaway Cattle & Sod	SFWMD	DWM	Storage of 229 ac-ft of water through above-ground impoundment.		$325,494.00	$1,879.00	SFWMD		Operational	6/28/2013[1]	2023[2]	0.11	114.40	Not quantified	Not quantified

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mt/yr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
SFWMD-19	Triple A Ranch	SFWMD	DWM	Storage of 397 ac-ft of water through above-ground impoundment.		$322,186.00	$28,500.00	SFWMD		Operational	5/21/2015[1]	2025[2]	0.08	78.60	Not quantified	Not quantified
Agricul-tural BMPs	Agricul-tural BMPs	FDACS	N/A	See **Section 2.4.4**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.68	5,683.42	78.85	78,851.78

Table A-5. Projects in the Taylor Creek/Nubbin Slough Sub-watershed

Note: These attenuated project reductions are calculated specifically to estimate the reductions at the inflow to Lake Okeechobee.
TBD = To be determined
[1] For operational projects, Start Date reflects the beginning date for start of operations.
[2] Anticipated Operational Completion Dates are contingent on annual appropriations.
[3] For projects under construction, Operational Start and Completion Dates are shown as "TBD."
[4] Original construction completed in 2006; construction modifications and repairs done from 2012-2015.
[5] Dixie Ranch is also listed as SFWMD-14 (Table A-4, Lower Kissimee Sub-watershed), as it extends over both sub-watersheds.

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mt/yr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
FDACS-01	Lemkin Creek	FDACS	HWTT	HWTT is combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at subbasin and parcel scales.	1,522.00			FDACS		Operational	Unknown	2009	0.15	151.60	0.65	652.10
FDACS-02	Wolff Ditch	FDACS	HWTT	HWTT is combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at subbasin and parcel scales.	1,930.00			FDACS		Operational	Unknown	2009	0.85	845.50	1.72	1,722.00
FDACS-03	Grassy Island	FDACS	HWTT	HWTT is combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at subbasin and parcel scales.	37,802.00			FDACS		Completed	Unknown	2010	5.55	5,547.30	8.37	8,373.10

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mt/yr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
FDACS-05	Nubbin Slough	FDACS	HWTT	HWTT is combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at subbasin and parcel scales.				FDACS		Completed	Unknown	Unknown	0.55	554.60	0.37	370.90
FDACS-06	Mosquito Creek	FDACS	HWTT	HWTT is combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at subbasin and parcel scales.				FDACS		Completed	Unknown	Unknown	0.48	475.60	0.60	602.10
FDOT1-01	SR 70 from 34th Avenue to 80th Avenue	FDOT District 1	Wet detention pond	Six wet detention ponds.	57.40			FDOT		Under construction	10/6/2014	TBD	0.02	22.60	0.04	42.60
FDOT1-02	State Road 70 from 80th Avenue to St. Lucie County Line	FDOT District 1	Wet detention pond	Three wet detention ponds and three dry retention swales.	31.40			FDOT		Under construction	10/6/2014	TBD	0.02	17.50	0.04	39.40
FDOT1-03	Street Sweeping	FDOT District 1	Street sweeping	Street sweeping.	N/A			FDOT		Ongoing	Unknown	Ongoing	0.11	108.9	0.07	69.65
O-01	Douglas Park North	Okee-chobee County	Dry detention and continuous deflective separation (CDS) unit	New roadside swales and addition of three vortex separators to existing swales for water quality improvement.	66.3			Unknown		Unknown	TBD	TBD	0.00	2.70	0.02	15.20
OK-02	Oak Park	Okee-chobee County	Dry detention and CDS unit	Roadside swales with raised inlets and two vortex separators.	56.4			Unknown		Unknown	TBD	TBD	0.00	2.20	0.01	14.40

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mt/yr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
OK-03	Southwest 21st Street	Okee-chobee County	Dry detention	Dry detention roadside swales with raised inlets.	2.1			Unknown		Unknown	TBD	TBD	0.00	0.10	0.00	0.50
OK-04	Southwest Drainage Area Improvements	Okee-chobee County	Baffle box	Installation of sediment control boxes.	32.2			Unknown		Unknown	TBD	TBD	0.00	0.40	0.00	0.30
OK-05	Okeechobee County 2008 Disaster Recovery Community Development Block Grant	Okee-chobee County	Dry detention	Dry detention area to improve water quality and alleviate flooding.	17.2			Unknown		Unknown	TBD	TBD	0.00	0.20	0.00	4.20
SFWMD-01	Taylor Creek	SFWMD	STA	Taylor Creek STA is two-celled STA.	118.00	$26,900,000.00	$50,000.00	SFWMD and USACE		Operational	2004	2006	1.80	1,802.50	Not quantified	Not quantified
SFWMD-02	Nubbin Slough	SFWMD	STA	Nubbin Slough STA is larger of two pilot STAs constructed north of lake. It is two-celled enclosure.	773	Included in SFWMD-1	$100,000.00	SFWMD and USACE		Completed, in operational testing	2004	2015[4]	6.19	6,193.60	Not quantified	Not quantified
SFWMD-03	Lakeside Ranch Phase I	SFWMD	STA	Phase I included construction of 1,200-acre STA, canal improvements, and installation of S-650 pump station.		$22,800,000.00	$341,000.00	SFWMD		Operational	2009	2012	13.98	13.98	Not quantified	Not quantified
SFWMD-15	Dixie Ranch[5]	SFWMD	DWM	Storage of 856 ac-ft of water through pasture.		$17,015.00	$146,500.00	SFWMD		Operational	8/6/2012[1]	2022[2]	0.21	205.90	Not quantified	Not quantified
Agricul-tural BMPs	Agricultural BMPs	FDACS	N/A	See **Section 2.4.4**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.69	7,689.79	50.19	50,185.85

Table A-6. Projects in the Upper Kissimmee Sub-watershed

Note: These attenuated project reductions are calculated specifically to estimate the reductions at the inflow to Lake Okeechobee.
TBD = To be determined
[1] For operational projects, Start Date reflects the beginning date for start of operations.
[2] Anticipated Operational Completion Dates are contingent on annual appropriations.
[3] For projects under construction, Start and Completion Dates are shown as "TBD."
[4] Combined cost is shown for both Kissimmee River Restoration Project (SFWMD-05) and Kissimmee River Headwaters Revitalization Project (SFWMD-22).
[5] Start date is shown for construction activities (widening/dredging C-35, C-36 and C-37, adding two gates to S-65, and breaching several local levees).
[6] Implementation of new Headwaters Regulation Schedule is contingent upon completion of all restoration construction and land acquisition.

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
EW-01	Water Quality Awareness Program	City of Edgewood	Public education	Water quality education and awareness articles in city's quarterly newsletter. Various water quality–related informational brochures, fliers, and other publications displayed at city hall for public.	N/A		$1,000.00	City of Edgewater		Ongoing	N/A	Ongoing	0.00	0.60	0.02	17.30
FDOT5-01	239266-B SR 15 (Hoffner Road) From North of Lee Vista Boulevard to West of SR 436 (Pond 2)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	4.80			Florida Legislature		Construction started 8/10/15	Estimated start – Summer 2015	2019	0.00	0.10	0.00	0.30
FDOT5-02	239266-A SR 15 Hoffner Avenue from West of SR 436 to Conway Road (Pond 1)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	3.60			Florida Legislature		Constructed started 8/10/2015	Estimated start – Summer 2015	2019	0.00	0.10	0.00	0.90

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
FDOT5-03	239266-C SR 15 Hoffner Avenue from West of SR 436 to Conway Road (Pond 3)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	11.9			Florida Legislature		Construction started 8/10/15	Estimated start – Summer 2015	2019	0.00	0.50	0.01	6.70
FDOT5-04	239266-D SR 15 Hoffner Avenue from West of SR 436 to Conway Road (Pond 4)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	11.4			Florida Legislature		Construction started 8/10/15	Estimated start – Summer 2015	2019	0.00	0.40	0.01	10.40
FDOT5-05	239535-F SR 50 from Good Homes Road to Pine Hills Road (Pond 4)	FDOT District 5	Dry retention	Add lanes and reconstruct.	16.4			Florida Legislature		Completed	Unknown	Unknown	0.00	0.70	0.00	3.90
FDOT5-06	416518-A Interstate-4 Braided Ramp from U.S. 192 Interchange to Osceola Parkway Interchange (Pond SE-1)	FDOT District 5	Wet detention pond	New road construction.	13.8			Florida Legislature		Completed	Unknown	Unknown	0.00	0.50	0.00	2.30
FDOT5-07	416518-B Interstate-4 Braided Ramp from U.S. 192 Interchange to Osceola Parkway Interchange (Pond SE-2)	FDOT District 5	Wet detention pond	New road construction.	6.1			Florida Legislature		Completed	Unknown	Unknown	0.00	0.20	0.00	0.70

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
FDOT5-08	239682-A SR 500 (U.S. 17-92) from Aeronau-tical Drive to Budinger Avenue (Pond 1)	FDOT District 5	Wet detention pond	Add lanes and rehabilitate pavement.	26.5			Florida Legislature		Planned and funded – Est. start date Spring 2016	Estimated start – Summer 2015	2018	0.00	0.90	0.01	6.10
FDOT5-09	239682-B SR 500 (U.S. 17-92) From Aeronautical Drive to Budinger Avenue (Pond 2)	FDOT District 5	Wet detention pond	Add lanes and rehabilitate pavement.	13.4			Florida Legislature		Planned and funded – Est. start date Spring 2016	Estimated start – Summer 2015	2018	0.00	0.50	0.00	3.50
FDOT5-10	239682-C SR 500 (U.S. 17-92) From Aeronautical Drive to Budinger Avenue (Pond 3)	FDOT District 5	Wet detention pond	Add lanes and rehabilitate pavement.	15.80			Florida Legislature		Planned and funded – Est. start date Spring 2016	Estimated start – Summer 2015	2018	0.00	0.60	0.00	3.40
FDOT5-11	239682-D SR 500 (U.S. 17-92) From Aeronautical Drive to Budinger Avenue (Pond 4)	FDOT District 5	Wet detention pond	Add lanes and rehabilitate pavement.	33.70			Florida Legislature		Planned and funded – Est. start date Spring 2016	Estimated start – Summer 2015	2018	0.00	1.10	0.01	6.70
FDOT5-12	418403-A, B SR 600 (U.S. 17-92) JYP from South of Portage Street to North of Vine Street (U.S. 192) (Ponds East and West)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	14.20			Florida Legislature		Construction started 11/16/2015	Estimated start – Summer 2015	2018	0.00	0.50	0.00	3.40
FDOT5-13	239454-A Widening of SR 436 from SR 528 to SR 552 (Pond A)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	38.80			Florida Legislature		Completed	Unknown	2010	0.00	0.30	0.00	0.90

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
FDOT5-14	239635-A New Bridge SR 500 at Reedy Creek (Pond 1)	FDOT District 5	Dry retention	New bridge.	4.10			Florida Legislature		Completed	Unknown	2010	0.00	0.00	0.00	0.60
FDOT5-15	239635-B New Bridge SR 500 at Reedy Creek (Pond 2)	FDOT District 5	Wet detention pond	New bridge.	7.60			Florida Legislature		Completed	Unknown	2010	0.00	0.20	0.00	3.40
FDOT5-16	239663-A Widening of SR 530 from SR 535 to Hoagland Boulevard (Pond 1)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	14.60			Florida Legislature		Completed	Unknown	2010	0.00	0.60	0.00	2.10
FDOT5-17	239663-B Widening of SR 530 from SR 535 to Hoagland Boulevard (Pond 2)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	17.90			Florida Legislature		Completed	Unknown	2010	0.00	0.70	0.00	2.60
FDOT5-18	239663-C Widening of SR 530 from SR 535 to Hoagland Boulevard (Pond 3)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	16.90			Florida Legislature		Completed	Unknown	2010	0.00	0.70	0.00	2.30
FDOT5-19	239663-D Widening of SR 530 from SR 535 to Hoagland Boulevard (Pond 4)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	12.60			Florida Legislature		Completed	Unknown	2010	0.00	0.50	0.00	2.20
FDOT5-20	242436-A SR 400 Ramps at Gore Avenue Retention Pits (Pond 1 and 2)	FDOT District 5	Online dry retention	Ramps.	9.80			Florida Legislature		Completed	Unknown	2011	0.00	0.20	0.00	2.60

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
FDOT5-21	242484-A Widening of SR 400 from Universal Boulevard to South Street (Pond 4)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	21.8			Florida Legislature		Completed	Unknown	2011	0.00	0.60	0.00	3.10
FDOT5-22	405515-A and B SR 400 Wet Detention Pond (Pond 1 and 2)	FDOT District 5	Wet retention	Add lanes and reconstruct.	14.8			Florida Legislature		Completed	Unknown	2011	0.00	0.20	0.00	1.20
FDOT5-23	410732-B SR 400 Swales	FDOT District 5	Dry detention	Add lanes and reconstruct.	32.2			Florida Legislature		Completed	Unknown	2010	0.00	0.20	0.00	1.30
FDOT5-24	Street Sweeping	FDOT District 5	Street sweeping	Street sweeping to collect 1,507,453 lbs/yr of material.	N/A			Florida Legislature		Ongoing	Unknown	Ongoing	0.05	50.30	0.14	144.80
FDOT5-25	Education and Outreach	FDOT District 5	Public education	Funding for Orange County Water Atlas website, and illicit discharge inspection and training program.	N/A			Florida Legislature		Ongoing	Unknown	Ongoing	0.00	1.70	0.02	19.80
FDOT5-26	2396831 Pond 6 (SR 500 widening from Eastern Ave. to Nova Road)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	19.13			Florida Legislature		Construction started fall 2015	2015	2017	0.01	9.98		
FDOT5-27	2396831 Pond 7 (SR 500 widening from Eastern Ave. to Nova Road)	FDOT District 5	Wet detention pond	Add lanes and reconstruct.	23.19			Florida Legislature		Construction started fall 2015	2015	2017	0.01	5.93		
KS-01	Education and Outreach	City of Kissimmee	Public education	PSAs, pamphlets, website, illicit discharge inspection program.	N/A	$65,000.00		City of Kissimmee Stormwater Utility Fund		Ongoing	Unknown	Unknown	0.01	8.30	0.28	199.90

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
KS-02	Street Sweeping	City of Kissimmee	Street sweeping	Sweeping over 8,500 miles per year. Material is not currently weighed, but city is currently developing program to weigh material.	N/A	$50,000.00		City of Kissimmee Stormwater Utility Fund		Ongoing	Unknown	Unknown	0.10	100.40	0.00	277.60
KS-03	Lake Tivoli	City of Kissimmee	Wet detention pond	Treatment for older existing development as well as future on-line development; treatment provides 2.5 times proposed percent impervious area	132.8	$300,000.00		Unknown		Envisioned, not funded	TBD	TBD	0.00	0.00	0.01	0.00
KS-04	Lakefront Park Redevelop-ment – Swales/ Rain Gardens	City of Kissimmee	Dry detention	Swale/rain garden system with 2.07 acres of dry detention	14.2	$500,000.00		City of Kissimmee General Fund		Started	Unknown	2015	0.00	0.20	0.01	5.70
KS-05	Lakefront Park Redevelop-ment – Baffle Boxes	City of Kissimmee	2nd generation baffle box	3 nutrient-separating baffle boxes and 3 filter boxes in lakefront park area. Intend to install up to and additional 2 baffle boxes in next 5 years.	14.2	$394,267 completed; additional $50,000 for future boxes		City of Kissimmee General Fund		Started	Unknown	2015	0.00	0.20	0.00	9.80
KS-06	Martin Luther King Boulevard Phase III from Thacker Avenue to Dyer Boulevard	City of Kissimmee	Dry detention	Construction of dry detention with particular standards (side slopes, littoral zones) per Federal Aviation Administration for reduction of bird strikes	5.5	$1,500,000.00		City of Kissimmee General Fund		Started	Unknown	2015	0.00	0.10	0.28	1.20

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
OC-01	Education and Outreach	Orange County	Public education	FYN; landscaping, irrigation, fertilizer, and pet waste management ordinances; PSAs; pamphlets; Water Atlas website; illicit discharge program.	N/A			Orange Count		Ongoing	Unknown	Ongoing	0.59	586.10	13.25	13,247.40
OC-02	Lake Conway Street Sweeping	Orange County	Street sweeping	Street sweeping of 3,827 curb miles annually	N/A		$44,015.00	Lake Conway Taxing District (Municipal Services Taxing Unit [MSTU])		Ongoing	Unknown	Ongoing	0.01	9.30	0.03	26.70
OC-03	Lake Holden Street Sweeping	Orange County	Street sweeping	Street sweeping of 942 curb miles annually	N/A		$15,198.00	Lake Holden Taxing District (MSTU)		Ongoing	Unknown	Ongoing	0.00	2.30	0.01	6.60
OC-04	Lake Jessamine Street Sweeping	Orange County	Street sweeping	Street sweeping of 692 curb miles annually	N/A		$11,003.00	Lake Jessamine Taxing District (MSTU)		Ongoing	Unknown	Ongoing	0.00	1.70	0.00	4.80
OC-05	Shingle/ Boggy/Hart Basin Street Sweeping	Orange County	Street sweeping	Countywide street sweeping	N/A			Orange County		Ongoing	Unknown	Ongoing	0.00	0.70	0.00	2.10
OC-06	Lake Odell Curb Inlet Basket (CIB)	Orange County	CIB	Curb or grate inlet filter baskets to collect 902 lbs/yr of material		$3,000.00	$666.00	Orange County		Ongoing	Unknown	Ongoing	0.00	0.00	0.00	0.10
OC-07	Lake Conway CIB Existing	Orange County	CIB	Curb or grate inlet filter baskets to collect 16,169 lbs/yr of material		$50,000.00	$11,000.00	Lake Conway Taxing District (MSTU)		Ongoing	Unknown	Ongoing	0.00	0.40	0.00	2.00

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
OC-08	Lake Conway CIB New	Orange County	CIB	Curb or grate inlet filter baskets to collect 16,872 lbs/yr of material		$37,000.00	$5,328.00	Lake Conway Taxing District (MSTU)		Planned and funded	TBD	TBD	0.00	0.50	0.00	2.00
OC-09	Lake Pineloch CIB	Orange County	CIB	Curb or grate inlet filter baskets to collect 4,158 lbs/yr of material		$18,000.00	$2,592.00	Orange County General Fund		Ongoing	Unknown	Ongoing	0.00	0.10	0.00	0.50
OC-10	Lake Anderson CIB	Orange County	CIB	Curb or grate inlet filter baskets to collect 3,364 lbs/yr of material		$10,000.00	$1,440.00	Lake Anderson MSTU		Ongoing	Unknown	Ongoing	0.00	0.10	0.00	0.40
OC-11	Lake Holden CIB	Orange County	CIB	Curb or grate inlet filter baskets to collect 27,602 lbs/yr of material		$41,000.00	$9,102.00	Lake Holden Taxing District (MSTU)		Ongoing	Unknown	Ongoing	0.00	0.70	0.00	3.30
OC-12	Lake Jessamine CIB	Orange County	CIB	Curb or grate inlet filter baskets to collect 13,025 lbs/yr of material		$110,000.00	$24,420.00	Lake Jessamine Taxing District (MSTU)		Ongoing	Unknown	Ongoing	0.00	0.30	0.00	1.60
OC-13	Lake Floy CIB	Orange County	CIB	Curb or grate inlet filter baskets to collect 4,835 lbs/yr of material		$10,000.00	$1,440.00	Lake Floy MSTU		Ongoing	Unknown	Ongoing	0.00	0.10	0.00	0.60
OC-14	Lake Cane CIB	Orange County	CIB	Curb or grate inlet filter baskets to collect 3,845 lbs/yr of material		$14,000.00	$2,016.00	Orange County General Fund		Ongoing	Unknown	Ongoing	0.00	0.10	0.00	0.50
OC-15	Lake Odell CIB	Orange County	CIB	Curb or grate inlet filter baskets to collect 904 lbs/yr of material		$3,000.00	$432.00	Orange County General Fund		Ongoing	Unknown	Ongoing	0.00	0.00	0.00	0.10

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
OC-16	Lake Tyler CIB	Orange County	CIB	Curb or grate inlet filter baskets		$11,000.00	$1,440.00	Unknown		Ongoing	Unknown	Ongoing	0.00	0.00	0.00	0.00
OC-17	Lake Down CIB	Orange County	CIB	Curb or grate inlet filter baskets to collect 16,934 lbs/yr of material		$56,000.00		Windermere Water and Navigation Control District (MSTU)		Planned and funded	2013	Unknown	0.00	0.50	0.00	2.00
OC-18	Lake Tibet CIB	Orange County	CIB	Curb or grate inlet filter baskets to collect 13,494 lbs/yr of material		$31,000.00		Windermere Water and Navigation Control District (MSTU)		Planned and funded	2013	Unknown	0.00	0.40	0.00	1.60
OC-19	Lisa Waterway CDS	Orange County	CDS unit	Treats runoff from Orange Avenue		$225,000.00	$5,362.00	Lake Conway Taxing District (MSTU)		Ongoing	Unknown	Ongoing	0.00	0.30	0.00	1.50
OC-20	Randolph Avenue CDS Unit	Orange County	CDS unit	Treats runoff from Randolph Avenue	0.00			Unknown		Completed	Unknown	Completed	0.00	0.00	0.00	0.00
OC-21	Randolph Avenue Stormceptor	Orange County	Stormceptor	Stormceptor	0.00			Unknown		Completed	Unknown	Prior to 2014	0.00	0.00	0.00	0.10
OC-22	Randolph Avenue Pond	Orange County	Dry detention	Dry detention pond	0.00			Unknown		Completed	Unknown	Prior to 2014	0.00	0.00	0.00	0.40
OC-23	Lake Mary Jess Pond	Orange County/ FDOT District 5, City of Edgewood, DEP	Wet detention pond	Wet retention pond created from canal	31.20	$534,795.00	$8,000.00	FDOT District 5, City of Edgewood		Completed	Unknown	2013	0.00	2.90	0.01	13.10
OC-24	Lake Odell Sediment Sump	Orange County	Retention BMPs	Small sump that collects sediment from roadway, with estimated 12,000 lbs/yr of material		$33,300.00	$1,500.00	Orange County General Fund		Completed	2013	2014	0.00	0.40	0.00	1.20
OC-25	Lake Jennie Jewell Nutrient Separating Baffle Box (NSBB)	Orange County	NSBB	Construct NSBB-containing media	9.1	$145,000.00	$2,500.00	Orange County Board of County Commis-sioners (BCC)		60 % Design	2015	2017	0.00	4.10	0.02	20.40

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
OC-26	Lake Anderson Mobile Alum Injection	Orange County	Alum injection	Storm pond enhancement with alum	0.00	$75,000.00	$11,000.00	Orange County General Fund		Planned and funded	2014	2016	0.01	12.20	0.26	257.60
OC-27	Lake Jessamine Surface Alum	Orange County	Alum injection	Whole-lake alum treatment	0.00	$246,000.00		Lake Jessamine Taxing District (MSTU)		Completed	Unknown	2013	0.00	4.50	0.07	71.70
OC-28	Lake Down Alum Treatment Facility	Orange County	Alum injection	Alum injection into canal entering Lake Down	378.80	$2,000,000	15,000	Windermere Water and Navigation Control District (MSTU) and DEP Grant		Completed	2014	2016	0.02	21.30	0.56	555.10
OC-29	Lake Conway Hydrologic and Nutrient study	Orange County	Assessment	ID nutrient sources		$172,000.00		Orange County – MSTU		Ongoing	2015	TBD	Not quantified	Not quanti-fied	Not quan-tified	Not quantified
OC-30	Lake Jennie Jewel inlet CIB Installation	Orange County	CIB	Install baskets in stormwater inlets	35	$9,360.00	$1.10	Orange County BCC		Installed	Unknown	2015	0.0	0.20	0.0	0.33
OC-31	Jewell-Gatlin NSBB	Orange County	NSBB	Construct NSBB containing media	70.4	$165,000.00	$2,500.00	Orange County BCC		In planning	TBD	TBD	Not quantified	Not quanti-fied	Not quan-tified	Not quantified
OC-32	Lake Gem Mary	Orange County	Assessment/ Source ID	ID Impairment Sources and provide BMP recommenda-tions				Orange County BCC		Ongoing	Unknown	2016	Not quantified	Not quanti-fied	Not quantified	Not quantified
ORL-01	18th Street/ Parramore Ave Baffle Box	City of Orlando	2nd generation baffle box	Baffle box installed to remove gross pollutants, including organic debris, sediment, and litter.	4.60	$578,138.00		City of Orlando Stormwater Utility + 50 % cost funded from SFWMD grant		Completed	Unknown	2009	0.00	0.00	0.00	3.30

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
ORL-02	19th Street/ Parramore Avenue Baffle Box	City of Orlando	2nd generation baffle box	Baffle box installed to remove gross pollutants, including organic debris, sediment, and litter.	9.90	Part of project ORL-1		City of Orlando Stormwater Utility + 50 % cost funded from SFWMD grant		Completed	Unknown	2009	0.00	0.10	0.01	7.10
ORL-03	Pine Street/ Orange Blossom Trail Corridor Stormwater Improve-ments	City of Orlando	2nd generation baffle box	Installation of 1,800 feet of stormwater pipe from Pine Street to Lake Lorna Doone, including baffle box.	11.50	$577,822.00		City of Orlando Stormwater Utility + 50 % cost funded by Community Budget Issue Request (CBIR) grant		Completed	Unknown	2010	0.00	0.30	0.00	2.80
ORL-04	Lake Holden Terrace/ Albert Shores Sanitary Compo-nents	City of Orlando	Septic tank phaseout	Sanitary infrastructure installed for septic tank conversions. 11 of 77 homes converted.	0.00	$3,522,911.00		City of Orlando Wastewater Division, City of Orlando Stormwater Utility, Orlando Utility Commission		Completed	Unknown	2012	0.00	0.00	0.00	0.00
ORL-05	Lake Holden Terrace/ Albert Shores Stormwater Compo-nents	City of Orlando	2nd generation baffle box	Two baffle boxes and one Storm Flo unit installed in stormwater infrastructure for capturing organic debris, sediment, and litter; stormwater infrastructure added to alleviate flooding.	76.40	Part of ORL-4		City of Orlando Wastewater Division, City of Orlando Stormwater Utility, Orlando Utility Commission		Completed	Unknown	2012	0.00	1.00	0.04	39.30

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
ORL-06	Lake Angel Drainage Improve-ments	City of Orlando	Wet detention pond	Expand permanent pool volume of Lake Angel and install three baffle boxes in main inflow pipes.	87	$2,000,000.00		City of Orlando Stormwater Utility + EPA grant		Completed	2005	2015	0.00	0.50	0.02	16.60
ORL-07	Cemex-South Division Avenue Roadway and Drainage Improve-ments	City of Orlando	2nd generation baffle box	Pave unimproved access road to industrial park and install baffle box to capture sediment; install curbing along additional areas of Division Avenue to allow street sweepers to effectively capture more sediment in Lake Holden Basin.	52.6	$1,500,000.00		City of Orlando Stormwater Utility		Planned and funded – start date 2017	2017	TBD	0.00	1.30	0.01	12.70
ORL-08	Lake Pineloch Basin Inlet Baskets	City of Orlando	Catch basin inserts/ inlet filters	32 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter; 49.9 cubic yds/yr of material collected.		$40,480.00	$11,735.00	City of Orlando Stormwater Utility		Ongoing	Unknown	Ongoing	0.01	4.80	0.02	14.00
ORL-09	Clear Lake Basin Inlet Baskets	City of Orlando	Catch basin inserts/ inlet filters	29 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter; 39.7 cubic yds/yr of material collected.		$8,550.00	$8,332.00	City of Orlando		Ongoing	Unknown	Ongoing	0.01	3.70	0.02	11.20

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
ORL-10	Lake Lorna Doone Basin Inlet Baskets	City of Orlando	Catch basin inserts/ inlet filters	16 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter; 34.8 cubic yds/yr of material collected.		$17,755.00	$8,673.00	City of Orlando		Ongoing	Unknown	Ongoing	0.01	3.30	0.02	10.00
ORL-11	Lake Mann Basin Inlet Baskets	City of Orlando	Catch basin inserts/ inlet filters	44 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter; 38.4 cubic yds/yr of material collected.		$48,826.00	$3,566.00	City of Orlando		Ongoing	Unknown	Ongoing	0.01	3.70	0.03	10.80
ORL-12	Lake Rabama Basin Inlet Baskets	City of Orlando	Catch basin inserts/ inlet filters	16 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter; 20.0 cubic yds/yr of material collected.		$14,720.00	$7,752.00	City of Orlando		Ongoing	Unknown	Ongoing	0.01	2.00	0.02	5.60
ORL-13	Rock Lake Basin Inlet Baskets	City of Orlando	Catch basin inserts/ inlet filters	10 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter; 48.1 cubic yds/yr of material collected.		$8,550.00	$9,706.00	City of Orlando		Ongoing	Unknown	Ongoing	0.00	4.60	0.01	13.60

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
ORL-14	Lake Sunset Basin Inlet Baskets	City of Orlando	Catch basin inserts/ inlet filters	8 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter; 17.4 cubic yds/yr of material collected.		$8,550.00	$11,451.00	City of Orlando		Ongoing	Unknown	Ongoing	0.01	1.70	0.02	4.80
ORL-15	Walker Lagoon Basin Inlet Baskets	City of Orlando	Catch basin inserts/ inlet filters	16 inlet baskets installed to remove gross pollutants, including organic debris, sediment and litter; 20.5 cubic yds/yr of material collected.		$17,755.00	$7,049.00	City of Orlando		Ongoing	Unknown	Ongoing	0.01	2.00	0.02	5.60
ORL-16	Street Sweeping	City of Orlando	Street sweeping	Street sweeping within all public roads in city limits; 14,126 cubic yds/yr of material collected.	N/A		$850,000.00	City of Orlando Stormwater Utility		Ongoing	Unknown	Ongoing	0.09	1,151.00	0.26	3,308.00
ORL-17	Public Education	City of Orlando	Public education	FYN; landscaping, irrigation, and pet waste management ordinances; PSAs; pamphlets; website; illicit discharge program.	N/A		$80,000.00	City of Orlando Stormwater Utility		Ongoing	Unknown	Ongoing	0.21	206.70	3.44	3,440.00
OSC-01	Narcoossee Road IB Pond 2 and 3	Osceola County	Wet detention pond	Roadway widening.	29.3			Unknown		Completed	Unknown	2011	0.00	0.20	0.01	5.70
OSC-02	Narcoossee Rodd III Pond C3A & C3B	Osceola County	Wet detention pond	Roadway widening.	20.5			Unknown		Completed	Unknown	2012	0.00	0.10	0.00	3.80

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
OSC-03	Narcoossee Road III Pond D3 Comp	Osceola County	Wet detention pond	Roadway widening.	24.3			Unknown		Completed	Unknown	2012	0.00	0.20	0.00	3.70
OSC-04	Narcoossee Road III Pond E1 Comp	Osceola County	Wet detention pond	Roadway widening.	22.4			Unknown		Completed	Unknown	2012	0.00	0.10	0.00	2.40
OSC-05	Neptune Road I - Ponds 100, 200, and 300	Osceola County	Wet detention pond	Road improvement.	226.8			Unknown		Completed	Unknown	2010	0.01	8.30	0.22	219.30
OSC-06	Old Wilson Road Pond D002-P	Osceola County	Online retention	Road improvement.	55.8			Unknown		Completed	Unknown	2012	0.00	0.60	0.02	18.90
OSC-07	Old Wilson Road Pond D004-P	Osceola County	Online retention	Road improvement.	18.7			Unknown		Completed	Unknown	2012	0.00	0.30	0.02	19.80
OSC-08	Old Wilson Road Pond E002-P	Osceola County	Online retention	Road improvement.	12.5			Unknown		Completed	Unknown	2012	0.00	0.70	0.02	21.30
OSC-09	Stewart Street Regional Pond Retrofit	Osceola County	Wet detention pond	Regional pond retrofit.	2,249.2			Unknown		Completed	Unknown	2009	0.07	70.40	1.75	1,747.00
OSC-10	Education	Osceola County	Public education	FYN; landscaping, irrigation, fertilizer, and pet waste management ordinances; PSAs; pamphlets; website; illicit discharge program.	N/A			Unknown		Ongoing	Unknown	Ongoing	0.32	321.60	10.61	10,612.30
OSC-12	East Lake Reserve Stormwater Reuse	Osceola County	Stormwater reuse	Stormwater reuse for landscape irrigation from Pond A1 (9.1A).	130.8			Homeowners Association		Ongoing	Unknown	Ongoing	0.01	5.50	0.37	365.40
OSC-13	Neptune Road Stormwater Reuse	Osceola County	Stormwater reuse	Stormwater reuse for landscape irrigation from Ponds 100/101 and 300.	35.7	$640,690.00	$26,000.00	Operations		Ongoing	Unknown	Ongoing	0.00	1.10	0.02	24.90

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
OSC-14	Bellalago and Isles of Bellalago Stormwater Reuse	Osceola County	Stormwater reuse	Stormwater reuse for landscape irrigation (197A).	1,386.8			Homeowners Association		Ongoing	Unknown	Ongoing	0.06	63.80	3.07	3,071.70
OSC-15	Poinciana Commerce Center Reuse	Osceola County	Stormwater reuse	Stormwater reuse for landscape irrigation from Pond 1.	10.20			Private		Started, partially funded	2005	TBD	0.00	0.50	0.01	13.80
OSC-16	Kissimmee Bay Reuse	Osceola County	Stormwater reuse	Stormwater reuse 20-year duration for 84.5 acres of golf course and 5-year duration for 45.5 acres of landscape irrigation.	271			Private		Ongoing	Unknown	Ongoing	0.02	19.60	0.91	910.10
OSC-17	Remington Reuse	Osceola County	Stormwater reuse	Stormwater reuse for golf course irrigation from Ponds 12, 13, 14A, and 14B.	149.4			Private		Ongoing	Unknown	2015	0.01	12.10	0.52	523.40
OSC-18	Eagle Lake Reuse	Osceola County	Stormwater reuse	Stormwater reuse for turf irrigation.	435.1			Private		Ongoing	Unknown	Ongoing	0.02	19.20	0.87	873.90
OSC-19	La Quinta Inn Reuse	Osceola County	Stormwater reuse	Stormwater reuse for turf irrigation.	12.5			Private		Ongoing	Unknown	Ongoing	0.00	1.70	0.01	14.20

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
OSC-20	Lake Toho Regional Water Storage Facility (Judge Farms)	Osceola County/ City of Kissimmee	Stormwater reuse	Stormwater reuse.	5,883.00			Multiple		Planned-regional facility is being coordinated with design and construction of larger adjoining project. Stormwater facility has 3 phases. Phases 1 & 2 (Site develop-ment in con-juncttion with construction of regional pond) are anticipated to be completed in 2018.	2015	2018	0.41	412.10	8.78	8,775.30
OSC-21	Street Sweeping	Osceola County	Street sweeping	Monthly street sweeping.	-		$60,000.00	Osceola County		Ongoing	Unknown	Completed	0.02	16.10	0.05	46.20
OSC-22	Buena-ventura Lakes Golf Course Ponds	Osceola County	Wet detention pond	Two new lakes at golf course.	517.7			Osceola County		Completed	Unknown	Completed	0.00	2.00	0.01	6.00
OSC-23	Slaman	Osceola County	Conservation area	Conservation areas.	32.2			Osceola County		Completed	Unknown	Prior to 2014	0.00	0.00	0.00	0.30
OSC-24	Jim Yates	Osceola County	Conservation area	Conservation areas.	5.3			Osceola County		Completed	Unknown	Prior to 2014	0.00	0.50	0.00	3.20
OSC-25	Udstad	Osceola County	Conservation area	Conservation areas.	5.9			Osceola County		Completed	Unknown	Prior to 2014	0.00	0.50	0.01	7.70
OSC-26	Proctor	Osceola County	Conservation area	Conservation areas.	0.7			Osceola County		Completed	Unknown	Prior to 2014	0.00	0.10	0.00	0.30
OSC-27	Twin Oaks	Osceola County	Conservation area	Conservation areas.	399.6			Osceola County		Completed	Unknown	Prior to 2014	0.05	47.00	0.26	264.90
OSC-28	Cherokee Point	Osceola County	Conservation area	Conservation areas.	178.6			Osceola County		Completed	Unknown	Prior to 2014	0.00	1.20	0.01	6.70
OSC-29	Encatada Resort	Osceola County	Stormwater reuse	Stormwater reuse for landscape irrigation from pond.	57.6			Homeowners Association		Planned and funded	TBD	2032	0.00	3.10	0.03	33.20

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
OSC-30	Cypress Palms Condos	Osceola County	Stormwater reuse	Stormwater reuse for landscape irrigation from pond.	12.40			Homeowners Association		Planned and funded	2012	2032	0.00	1.00	0.01	10.40
OSC-31	Lake Pointe	Osceola County	Stormwater reuse	Stormwater reuse for landscape irrigation from pond.	150.20			Homeowners Association		Planned and funded	2012	TBD	0.01	5.90	0.32	322.30
OSC-32	Traditions at Westside	Osceola County	Stormwater reuse	Stormwater reuse for landscape irrigation from pond.	21.70			Homeowners Association		Planned and funded	2011	TBD	0.00	2.30	0.02	19.70
PC-03	Education and Outreach	Polk County	Public education	FYN, fertilizer ordinance, PSAs, pamphlets, website, illicit discharge inspection program.	N/A			Polk County		Ongoing	Unknown	Ongoing	0.12	118.80	4.44	4,438.10
PC-04	Sumica Preserve Water Storage/ Hydrologic Restoration	Polk County/ SFWMD	DWM	Construction of gravel berm to store water on-site for wetland restoration.	4,077.4	$42,850.00	$13,000.00	SFWMD		Operational	Unknown	2010	0.01	7.50	Not quan-tified	Not quan-tified
SFWMD-06	Phase I Rolling Meadows	SFWMD	Restoration	Goal of project is to restore historical Lake Hatchineha floodplain wetlands and habitat in Rolling Meadows property, purchased jointly with DEP.	1,900.00	$43,200,000.00		SFWMD and DEP		Under construction	2015	2016	0.07	65.10	Not quan-tified	Not quan-tified

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
SFWMD-07	Gardner-Cobb Marsh	SFWMD	Restoration	Located south of Cypress Lake, project included activities such as ditch plugs, berm removal, exotic treatment, and culvert replacement. It helps attenuate regional stormwater runoff and provide incidental nutrient reductions due to plant uptake from overland flows in marsh.	2,000.00			SFWMD		Completed	2009	2010	0.01	5.20	Not quan-tified	Not quan-tified
SFWMD-08	Rough Island	SFWMD	Restoration	Located southwest of Cypress Lake and west of C-36 Canal, project included activities such as ditch plugs, ditch filling, and exotic removal. It helps attenuate regional stormwater runoff and provides incidental nutrient reductions due to plant uptake from overland flows. Estimated to create 215 ac-ft of storage	1,000.00			SFWMD		Completed	2009	2009	0.06	60.80	Not quan-tified	Not quan-tified

Project Number	Project Name	Lead Entity/Partners	Project Type	Project Description	Acres Treated	Cost	Annual O&M Cost	Funding Source(s)	Contract Agreement Number	Status	Start Date	Completion Date	TP Reduction (mtyr)	TP Reduction (kg/yr)	TN Reduction (mt/yr)	TN Reduction (kg/yr)
SFWMD-09	Oasis Marsh Restoration	SFWMD	Restoration	Oasis wetlands are located in floodplain of southwest corner of Lake Kissimmee and site is mosaic of dewatered wetlands and uplands. To restore floodplain function, four ditches totaling 2.4 acres in size were filled with 3,144 cubic yards of sediment material from levee adjacent to site in spring 2010. Restoration of topography of Oasis Marsh will restore approximately 77 acres of wetlands and reconnect them to littoral zone of Lake Kissimmee.	77.00			SFWMD		Completed	2009	2010	0.20	195.30	Not quan-tified	Not quan-tified
SFWMD-16	Lost Oak Ranch	SFWMD	DWM	Storage of 374 ac-ft of water through pasture.		$61,030.00	$55,000.00	SFWMD		Operational	10/19/2015[1]	2023[2]	0.03	28.00	Not quan-tified	Not quan-tified
SFWMD-22	Kissimmee River Headwaters Revitaliza-tion	SFWMD	Restoration	Land use change to wetlands in project area.	7,200	Refer to Kissimmee River Restoration Project (SFMWD-05)[4]		SFWMD		Revised regulation schedule completed; construction and land acquisition in progress	2000[5]	2020[6]	0.57	566.40	Not quan-tified	Not quan-tified
Agricul-tural BMPs	Agricultural BMPs	FDACS	N/A	See **Section 2.4.4**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.30	3,295.55	169.78	169,783.10

Table A-7. Projects under development with the Coordinating Agencies

Note: These attenuated project reductions are calculated specifically to estimate the reductions at the inflow to Lake Okeechobee.

Project Name	Sub-watershed	Status	Estimated TP Reduction (mt/yr)	Estimated TP Reduction (kg/yr)	Schedule
Istokpoga Marsh Watershed Improvement District-Phase II	Indian Prairie	A Memorandum of Understanding for this project exists between FDACS, SFWMD, Istokpoga Marsh Watershed Improvement District, and Highlands County. FDACS has identified funds to cover Phase II of the project.	2	2,000	Work will begin in 2016.
Lakeside Ranch STA Phase II	Taylor Creek/ Nubbin Slough	This phase includes a southern STA and a second pump station (S-191A) to manage rim canal levels during high water flow periods and potentially to recirculate lake water back to the STA for additional TP removal. Under Phase II, the southern STA is under construction. However, the construction of the S-191A pump station is contingent on future funding.	7.6	7,600	Southern STA is anticipated to be completed by 2018. Once funded, the pump station is estimated to be completed in three years.
MacArthur Agro-Ecology Research Center "Buck Island" Ranch/Rafter T Realty, Inc.	Lake Istokpoga Indian Prairie	Both NE PES-2 contracts were executed in December 2014. Both Rafter T Ranch (SFWMD-11) and Buck Island Ranch (SFWMD-23) are in the operational phase.	0.945	945	Under NE PES-2, Rafter T Ranch became operational in December 2014, and Buck Island Ranch became operational in December 2015.
Brighton Valley – Lykes	Indian Prairie	FDACS is currently funding the engineering of the Brighton Valley project, located in the Indian Prairie Sub-watershed. The design is in its final stages as changes had to be incorporated to address archeological issues.	7.7	7,700	Construction will begin in 2016; completion is expected in 2017.

Project Name	Sub-watershed	Status	Estimated TP Reduction (mt/yr)	Estimated TP Reduction (kg/yr)	Schedule
Rolling Meadows Wetland Restoration – Phase II	Upper Kissimmee	Land acquired and planning started. Phase II of this project, which involves the further restoration of approximately 580 acres of wetlands, is contingent upon future funding.	0.009	9	Once funded, project work is estimated to be completed in two to three years.
Inactive Dairies – Lagoon Remediation	Taylor Creek/ Nubbin Slough and Indian Prairie	FDACS worked with a dairy in the LOW to partially remediate its lagoon. The soil was spread on the field for crops to use the nutrients from the excavated soil. The stormwater is routed back to the remediated pond to minimize discharges and is reused to reduce ground water withdrawals. In the future, the dairy will finish excavating and remediating the entire site.	TBD	TBD	1. Identify areas for remediation activities/talk to landowners. (Winter 2014/2015–Summer 2015) 2. Procure contractors/conduct work. (Winter 2015/2016–Spring 2016) 3. Analyze data. (Yearly)
PL-566 Funded/ Fisheating Creek Structure	Fisheating Creek	The USACE is working with the USDA-NRCS to develop various alternatives. FDACS has set aside up to $1 million to fund this effort. The NRCS, FDACS, and USACE are working with landowner groups to determine the type of structure that will be used to replace the existing structure and the elevation of the new structure.	0.88–2.65	883-2,648	1. NRCS plans to reapply for different funding. (Fall 2014) 2. If funding is obtained, work will be conducted. (2015) 3. Water quality benefit calculations will be done. (Fall 2015)
S.R. 710 Regional Project	Taylor Creek/ Nubbin Slough and Indian Prairie	Feasibility study was completed. The Coordinating Agencies are reviewing the feasibility study to determine the best project design.	TBD	TBD	1. Final feasibility study was completed on October 22, 2014. 2. Work will be implemented. (To be determined)

Project Name	Sub-watershed	Status	Estimated TP Reduction (mt/yr)	Estimated TP Reduction (kg/yr)	Schedule
Legislative Cost-Share Appropriation Program ($10 million annually for 7 years)	All	FDACS has conducted two rounds of solicitations for dairy project proposals. The first solicitation occurred in fall 2014. Eight projects were selected for cost-share, and the cost-share funding allocated for these projects totaled $3,710,801.25. These eight projects consist of three stormwater improvement projects, the construction of waste management systems for four new free stall barns, and one project that involved installing a seepage interceptor system adjacent to a ditch that drained off-site.	26.56	26,560	1. Develop plan and present to DEP annually. 2. Implement projects once funds are available. 3. Conduct the same exercise annually.
TOTAL			**45.65–47.46**	**45,652–47,461**	

Table A-8. Other initiatives

[a] Contingent on the USACE's 3x3x3 compliance approval.

Initiative	Explanation	Schedule	Start Date	Completion Date
CERP planning	The SFWMD will consider reinitiating formulation of the storage components of the LOW project. However, this requires concurrence from the USACE (Federal Partner).	The initial stage of the planning effort will include developing the overall scope for the plan. The planning process is anticipated to take approximately three years to complete.	Summer 2016	2019[a]
Owner-implemented BMP verification	FDACS and DEP are developing a plan for BMP verification.	1. Identify key BMPs for each commodity type in the basin. (Spring 2015) 2. Identify the locations of BMPs in basin. (Fall 2015) 3. Develop a monitoring plan/strategy. (Winter 2015/2016) 4. Identify willing owners. (Spring 2016) 5. Begin data collection. (Summer 2016) 6. Form a committee to review findings. (Winter 2016/2017) 7. Evaluate data. (Annually)	Spring 2015	Winter 2016/2017
Cost-share BMP effectiveness verification	FDACS and DEP are developing an approach to evaluate the effectiveness of various types of cost-share projects.	1. Identify key cost-share projects. (Fall 2015) 2. Identify locations for effectiveness evaluation. (Winter 2015/2016) 3. Develop the evaluation approach (monitoring/modeling/calculation). (Winter 2015/2016) 4. Implement cost-share projects. (Spring 2016) 5. Evaluate data. (Annually)	Fall 2015	Spring 2016

Initiative	Explanation	Schedule	Start Date	Completion Date
WAM revisions	Coordinating Agencies are developing a contract to revise the WAM to complete the model domain set-up for the northern region and the 3 southern sub-watersheds of the LOW. Estimated completion date: a year after the adoption of the BMAP. DEP will work to develop revised allocations and targets based on this information.	1. Develop scope of work for contract. (Fall 2014) 2. Execute contract. (Fall 2014) 3. Complete WAM efforts. (Winter 2015/2016) 4. Conduct sensitivity/uncertainty analyses. (Spring 2016) 5. Use WAM results to update sub-watershed existing loads and project nutrient reduction benefits in the northern sub-watersheds and to develop existing loads in the southern sub-watersheds and calculate project nutrient reduction benefits. (Fall 2016) 6. Conduct predrainage characterization (TBD, following results of fall 2016 model revisions) 7. Identify elevated TP areas for additional project locations and prioritization. (Winter 2016/2017)	Fall 2014	Winter 2016/2017
Water quality monitoring	As DEP develops the monitoring plan for the BMAP, consideration is being given to areas with on-the-ground projects/BMPs to evaluate water quality improvements.	1. Identify areas with regional projects already in place. (Complete) 2. Evaluate areas with needs for additional water quality data. (Once WAM complete.) 3. Identify lead entity for monitoring efforts. (Spring 2017 – Summer 2017) 4. Finalize monitoring plan. (Upon BMAP adoption)	In progress	Fall 2018
Alternative BMP nutrient reduction projects	North of Lake Okeechobee	The Coordinating Agencies have begun building a team to identify possible new strategies. The first quarterly meeting is scheduled for July 2016.	Winter 2014/2015	TBD
In-lake strategies: muck scraping and tilling	In Lake Okeechobee	Potential for inclusion as BMAP project(s) during low lake levels if drought conditions occur and if project logistics (e.g., planning, permitting, contracting) are able to be implemented timely for work to be conducted. The SFWMD Low Water Level Habitat Enhancement Plan drafted for the lake in November 2015 may inform this initiative (see **Section 2.2.4***)*.	Fall 2014	TBD

APPENDIX B: BMAP MONITORING NETWORK

Table B-1 lists the stations included in the BMAP monitoring network. These stations are not specifically BMAP stations—i.e., the data they generate are also used for other purposes—but the data collected at these sites will be used to monitor the effectiveness of the BMAP. The water quality monitoring will be conducted in accordance with the frequencies below. The stations in the monitoring network are also shown in **Figure B-1**.

Table B-1. BMAP monitoring network

ACF = Autosampler flow-corrected
ACT = Autosampler composite time proportional
* As of December 2015, sampling frequencies were temporarily reduced.
[a] Station has not yet been established in STORET. Upon completion of STORET setup, data will be uploaded under the STORET Station ID listed.
[b] USGS station data available from USGS website.
[c] Sampling location represents outflow from Lakeside Ranch STA.
[d] Sampling location represents outflow from Taylor Creek STA.

Sampling Entity	Station Name	Florida STORET Station ID	Frequency	Year Site Established	Sub-watershed	Date of Latest Sample in Florida STORET[b]
City of Orlando	Buck Lake	BUCK	Quarterly	1994	Upper Kissimmee	12/11/2014
City of Orlando	Lake Fran	FRAN	Quarterly	1999	Upper Kissimmee	1/26/2015
City of Orlando	Lake Mare Prairie	MARE PRAIRIE	Quarterly	1990	Upper Kissimmee	12/17/2014
City of Orlando	Mud Lake	MUD	Quarterly	1994	Upper Kissimmee	12/11/2014
City of Orlando	Turkey Lake (North)	TURKEY NORTH	Quarterly	1985	Upper Kissimmee	10/30/2014
City of Orlando	Turkey Lake (South)	TURKEY SOUTH	Quarterly	1985	Upper Kissimmee	10/30/2014
City of Kissimmee	East City Ditch Outfall	MS 02[a]	Quarterly	2007	Upper Kissimmee	
City of Kissimmee	Mill Slough Outfall	MS 03[a]	Quarterly	2007	Upper Kissimmee	
City of Kissimmee	Bass Slough at Boggy Creek	MS 04[a]	Quarterly	2007	Upper Kissimmee	
City of Kissimmee	Bass Slough at Timothy Lane	MS 05[a]	Quarterly	2007	Upper Kissimmee	
City of Kissimmee	Mill Slough at Mill Run Boulevard	MS 06[a]	Quarterly	2007	Upper Kissimmee	
City of Kissimmee	West City Ditch at Hacienda Circle	MS 13[a]	Quarterly	2007	Upper Kissimmee	
City of Kissimmee	Shingle Creek at John Young Parkway	MS 14[a]	Quarterly	2007	Upper Kissimmee	
City of Kissimmee	Shingle Creek at Town Center Boulervard	MS 15[a]	Quarterly	2007	Upper Kissimmee	
City of Kissimmee	Shingle Creek at Yates Road	MS 17[a]	Quarterly	2007	Upper Kissimmee	
Orange County	Boggy Creek A (Tradeport)	BCA	Quarterly	1982	Upper Kissimmee	8/27/2015
Orange County	Shingle Creek (Central FL Pkwy.)	SCC	Quarterly	1972	Upper Kissimmee	9/28/2015

Sampling Entity	Station Name	Florida STORET Station ID	Frequency	Year Site Established	Sub-watershed	Date of Latest Sample in Florida STORET[b]
Orange County	HART: Lake Hart Outflow at S-62 (Clap Sims Duda)	XLKEHS62	Quarterly	2011	Upper Kissimmee	9/3/2015
Orlando/Orange County	Boggy Creek B (S.R. 527A)	BCB	Biannually (winter and summer)	1999	Upper Kissimmee	7/19/2010
Orlando/ Orange County	Boggy Creek @ 527A City of Orlando Site aka bcb	BCO	Biannually (winter and summer)	1999	Upper Kissimmee	6/9/2014
Orlando/ Orange County	Shingle Creek City of Orlando	SCO	Biannually (winter and summer)	1999	Upper Kissimmee	8/11/2015
Osceola County	ETO5253114	ETO5253114	Monthly, if flowing	2009	Upper Kissimmee	6/23/2015
Osceola County	JUDGES_DCH	JUDGES_DCH	Monthly, if flowing	2011	Upper Kissimmee	5/5/2015
Osceola County	PARTIN_CNL	PARTIN_CNL	Monthly, if flowing	2011	Upper Kissimmee	6/23/2015
Osceola County	RUNNYMEDE	RUNNYMEDE	Monthly, if flowing	2011	Upper Kissimmee	6/23/2015
SFWMD	A03	A03	Bimonthly (6 times/yr)	1981	Upper Kissimmee	6/8/2015
SFWMD	ABOGGN	ABOGGN	Monthly*	1981	Upper Kissimmee	6/8/2015
SFWMD	B02	B02	Bimonthly (6 times/yr)	1981	Upper Kissimmee	6/8/2015
SFWMD	B06	B06	Bimonthly (6 times/yr)	1981	Upper Kissimmee	6/8/2015
SFWMD	B09	B09	Bimonthly (6 times/yr)	1981	Upper Kissimmee	6/8/2015
SFWMD	BNSHINGLE	BNSHINGLE	Monthly*	1981	Upper Kissimmee	6/8/2015
SFWMD	BS-59	BS-59	Monthly*	1981	Upper Kissimmee	6/8/2015
SFWMD	C03	C03	Bimonthly (6 times/yr)	1981	Upper Kissimmee	6/8/2015
SFWMD	C38W	C38W	Biweekly, if flowing/ Monthly/Quarterly	1973	Indian Prairie	6/1/2015
SFWMD	C41H78	C41H78	Weekly – ACT/ Biweekly, if flowing/ Monthly/Quarterly	2008	Indian Prairie	6/15/2015
SFWMD	CL06283111	CL06283111	Biweekly, if flowing*	2006	Upper Kissimmee	6/30/2015
SFWMD	CREEDYBR	CREEDYBR	Monthly*	1981	Upper Kissimmee	6/8/2015
SFWMD	CULV10A	CULV10A	Biweekly, if flowing / Monthly/Quarterly	1973	East Lake Okeechobee	6/15/2015
SFWMD	CULV5	CULV5	Biweekly, if flowing / Monthly/Quarterly	1973	Fisheating Creek	6/1/2015

Sampling Entity	Station Name	Florida STORET Station ID	Frequency	Year Site Established	Sub-watershed	Date of Latest Sample in Florida STORET[b]
SFWMD	CULV5A	CULV5A	Biweekly, if flowing / Monthly/Quarterly	1973	West Lake Okeechobee	6/1/2015
SFWMD	D02	D02	Bimonthly (6 times/yr)	1981	Upper Kissimmee	6/8/2015
SFWMD	E02	E02	Bimonthly (6 times/yr)	1981	Upper Kissimmee	6/8/2015
SFWMD	ET05253114	ET05253114	Biweekly, if flowing*	2006	Upper Kissimmee	6/23/2015
SFWMD	FECSR78	FECSR78	Biweekly, if flowing/ Monthly/Quarterly	1973	Fisheating Creek	6/1/2015
SFWMD	INDUSCAN	INDUSCAN	Biweekly, if flowing/ Monthly/Quarterly	1973	South Lake Okeechobee	6/15/2015
SFWMD	IOC	IOC[c]	Weekly recorded flow ACF/Biweekly grabs	2012	Within Lake	6/30/2015
SFWMD	ISTK6	ISTK6	Bimonthly (6 times/yr)*	1998	Lake Istokpoga	5/11/2015
SFWMD	KISSR0.0	KISSR0.0	Monthly	1986	Within Lake	6/3/2015
SFWMD	KREA 30A/02273630	KREA 30A	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	8/20/2014
SFWMD	KREA 98	KREA 98	Monthly	1997	Lower Kissimmee	6/17/2015
SFWMD	L001	L001	Monthly	1986	Within Lake	6/3/2015
SFWMD	L004	L004	Monthly	1986	Within Lake	6/3/2015
SFWMD	L006	L006	Monthly	1986	Within Lake	6/2/2015
SFWMD	L008	L008	Monthly	1986	Within Lake	6/3/2015
SFWMD	L59E	L59E	Biweekly, if flowing/ Monthly/Quarterly	1973	Indian Prairie	6/1/2015
SFWMD	L59W	L59W	Biweekly, if flowing/ Monthly/Quarterly	1973	Indian Prairie	6/1/2015
SFWMD	L60E	L60E	Biweekly, if flowing/ Monthly/Quarterly	1973	Indian Prairie	6/1/2015
SFWMD	L60W	L60W	Biweekly, if flowing/ Monthly/Quarterly	1973	Indian Prairie	6/1/2015
SFWMD	L61E	L61E	Biweekly, if flowing/ Monthly/Quarterly	1973	Indian Prairie	6/1/2015
SFWMD	LI02362923	LI02362923	Biweekly, if flowing*	2011	Lake Istokpoga	6/22/2015

Sampling Entity	Station Name	Florida STORET Station ID	Frequency	Year Site Established	Sub-watershed	Date of Latest Sample in Florida STORET[b]
SFWMD	LZ25A	LZ25A	Monthly	1981	Within Lake	6/2/2015
SFWMD	LZ30	LZ30	Monthly	1986	Within Lake	6/2/2015
SFWMD	MBOXSOU	MBOXSOU	Monthly – Stage dependent	1996	Within Lake	1/15/2015
SFWMD	POLE3S	POLE3S	Monthly	1986	Within Lake	6/2/2015
SFWMD	S127	S127	Biweekly, if flowing/ Monthly/Quarterly	1973	Indian Prairie	6/1/2015
SFWMD	S129	S129	Biweekly, if flowing/ Monthly/Quarterly	1973	Indian Prairie	6/1/2015
SFWMD	S131	S131	Biweekly, if flowing/ Monthly/Quarterly	1973	Indian Prairie	6/1/2015
SFWMD	S133	S133	Biweekly, if flowing/ Monthly/Quarterly	1973	Taylor Creek/ Nubbin Slough	6/1/2015
SFWMD	S135	S135	Biweekly, if flowing/ Monthly/Quarterly	1973	Taylor Creek/ Nubbin Slough	6/1/2015
SFWMD	S154	S154	Weekly – ACT/ Biweekly, if flowing/ Monthly/Quarterly*	1973	Taylor Creek/ Nubbin Slough	6/15/2015
SFWMD	S154C	S154C	Biweekly, if flowing/ Monthly/Quarterly	1973	Taylor Creek/ Nubbin Slough	5/4/2015
SFWMD	S169	S169	Biweekly, if flowing/ Monthly/Quarterly	1973	South Lake Okeechobee	6/1/2015
SFWMD	S191	S191	Weekly – ACF/ Biweekly, if flowing/ Monthly/Quarterly	1973	Taylor Creek/ Nubbin Slough	6/15/2015
SFWMD	S2	S2	Weekly – ACF/ Biweekly, if flowing/Monthly/ Quarterly/Event	1973	South Lake Okeechobee	6/1/2015
SFWMD	S236	S236	Biweekly, if flowing/ Monthly/Quarterly	1979	South Lake Okeechobee	6/1/2015
SFWMD	S3	S3	Weekly – ACF/ Biweekly, if flowing/	1981	South Lake Okeechobee	6/1/2015

Sampling Entity	Station Name	Florida STORET Station ID	Frequency	Year Site Established	Sub-watershed	Date of Latest Sample in Florida STORET[b]
			Monthly/Quarterly/ Event			
SFWMD	S308C	S308C	Biweekly, if flowing/ Monthly/Quarterly	1973	East Lake Okeechobee	6/15/2015
SFWMD	S351	S351	Weekly – ACF	2000	South Lake Okeechobee	6/30/2015
SFWMD	S352	S352	Weekly – ACF/ Biweekly, if flowing/ Monthly/Quarterly	2000	South Lake Okeechobee	6/30/2015
SFWMD	S354	S354	Weekly – ACF	2000	South Lake Okeechobee	6/30/2015
SFWMD	S392	S392[d]	Weekly ACF/ Biweekly grabs	2006	Taylor Creek/ Nubbin Slough	6/30/2015
SFWMD	S4	S4	Weekly ACF/ Biweekly, if flowing/ Monthly/Quarterly	1973	South Lake Okeechobee	6/15/2015
SFWMD	S65	S65	Weekly – ACT/Biweekly/ Quarterly grabs *	1973	Upper Kissimmee	6/17/2015
SFWMD	S650	S650	Weekly ACF/ Biweekly grabs	2012	Taylor Creek/ Nubbin Slough	6/30/2015
SFWMD	S65A	S65A	Weekly – ACT/ Biweekly/ Quarterly grabs *	1973	Lower Kissimmee	6/17/2015
SFWMD	S65E	S65E	Weekly – ACF/ Biweekly/ Quarterly grabs	1973	Lower Kissimmee	6/17/2015
SFWMD	S71	S71	Weekly – ACF/ Biweekly, if flowing/ Monthly	1973	Indian Prairie	6/15/2015
SFWMD	S72	S72	Weekly – ACF/ Biweekly, if flowing/ Monthly	2007	Indian Prairie	6/1/2015
SFWMD	S77	S77	Biweekly, if flowing/ Monthly	2007	Within Lake	6/24/2015
SFWMD	S84	S84	Biweekly, if flowing/ Monthly	2007	Indian Prairie	6/15/2015

Sampling Entity	Station Name	Florida STORET Station ID	Frequency	Year Site Established	Sub-watershed	Date of Latest Sample in Florida STORET[b]
SFWMD	TCNS 201	TCNS 201	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	12/9/2014
SFWMD	TCNS 204	TCNS 204	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	3/5/2015
SFWMD	TCNS 207	TCNS 207	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	12/9/2014
SFWMD	TCNS 220	TCNS 220	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	5/11/2015
SFWMD	TCNS 222	TCNS 222	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	5/26/2015
SFWMD	TCNS 228	TCNS 228	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	11/24/2014
SFWMD	TCNS 230	TCNS 230	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	10/15/2014
SFWMD	TCNS 249	TCNS 249	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	4/27/2015
SFWMD/USGS	02270500	02270500	Weekly – ACF	2005	Lake Istokpoga	6/24/2015
SFWMD/USGS	02273198	02273198	Weekly – ACF	2005	Lake Istokpoga	6/24/2015
SFWMD/USGS	S390/02274325	S390	Weekly ACF/ Biweekly grabs	2006	Taylor Creek/ Nubbin Slough	6/30/2015
SFWMD/USGS	TCNS 209/02274005	TCNS 209	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	3/5/2015
SFWMD/USGS	TCNS 213/02274010	TCNS 213	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	6/10/2015
SFWMD/USGS	TCNS 214/02274490	TCNS 214	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	3/2/2015
SFWMD/USGS	TCNS 217/02274505	TCNS 217	Biweekly, if flowing*	1988	Taylor Creek/ Nubbin Slough	6/24/2015
SFWMD/USGS	02255600	02255600	Biweekly, if flowing*	2005	Fisheating Creek	6/11/2015
SFWMD/USGS	02256500	02256500	Biweekly, if flowing*	2005	Fisheating Creek	6/11/2015
SFWMD/USGS	02272676	02272676	Biweekly, if flowing*	2005	Upper Kissimmee	6/10/2015
SFWMD/USGS	02273230	02273230	Biweekly, if flowing*	2005	Indian Prairie	6/22/2015

Sampling Entity	Station Name	Florida STORET Station ID	Frequency	Year Site Established	Sub-watershed	Date of Latest Sample in Florida STORET[b]
SFWMD/USGS	02275197	02275197	Biweekly, if flowing*	2005	Taylor Creek/ Nubbin Slough	5/11/2015
SFWMD/USGS	E04	E04	Bimonthly (6 times/yr)	1981	Upper Kissimmee	6/8/2015
SFWMD/USGS	KREA 01/02272650	KREA 01	Biweekly, if flowing*	1986	Upper Kissimmee	3/5/2015
USGS	Boggy Creek near Taft	02262900	Continuous	1959	Upper Kissimmee	4/28/2016
USGS	Shingle Creek at Airport near Kissimmee	02263800	Continuous	1958	Upper Kissimmee	4/28/2016
USGS	2272650	02272650	Continuous	2003	Lower Kissimmee	4/28/2016
USGS	2273230	02273230	Continuous	2003	Indian Prairie	4/28/2016
USGS	2273630	02273630	Continuous	2003	Taylor Creek/ Nubbin Slough	4/28/2016
USGS	2274005	02274005	Continuous	2003	Taylor Creek/ Nubbin Slough	4/28/2016
USGS	2274010	02274010	Continuous	2003	Taylor Creek/ Nubbin Slough	4/28/2016
USGS	2274325	02274325	Continuous	2004	Taylor Creek/ Nubbin Slough	4/28/2016
USGS	2274490	02274490	Continuous	2003	Taylor Creek/ Nubbin Slough	4/28/2016
USGS	2274505	02274505	Continuous	2003	Taylor Creek/ Nubbin Slough	4/28/2016

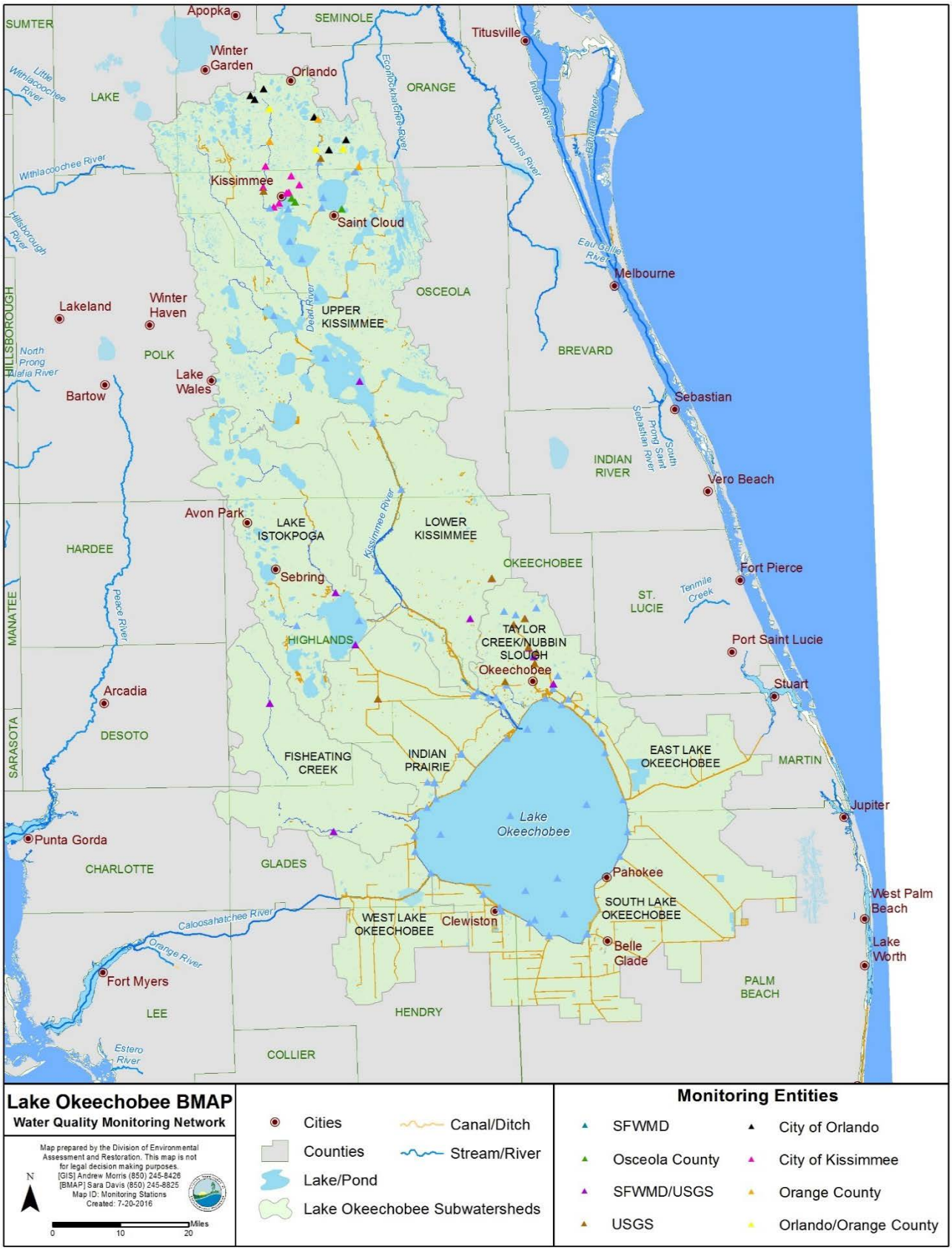

Figure B-1. Water quality monitoring network for the Lake Okeechobee Watershed

APPENDIX C. WEBSITE REFERENCES

- DEP final TMDL documents: http://www.dep.state.fl.us/water/tmdl/final_tmdl.htm.
- DEP TMDL Program: http://www.dep.state.fl.us/water/tmdl/.
- DEP basin management action plans: http://www.dep.state.fl.us/water/watersheds/bmap.htm.
- 2016 SFER: http://www.sfwmd.gov/sfer.
- SFWMD website: http://www.sfwmd.gov