

FINAL

2015 ANNUAL PROGRESS REPORT

**for the Lake Jesup
Basin Management Action Plan**

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

in cooperation with the
Lake Jesup Basin Working Group

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ACKNOWLEDGMENTS

This 2015 Annual Progress Report for the Lake Jesup Basin Management Action Plan was prepared as part of a statewide watershed management approach to restore and protect Florida's water quality. It was prepared by the Florida Department of Environmental Protection in cooperation with the Lake Jesup Basin Working Group:



Orlando-Orange County Expressway Authority

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TABLE OF CONTENTS

Summary	10
SECTION 1 : Introduction	12
1.1 Purpose of the Report	12
1.2 Total Maximum Daily Loads (TMDLs) for the Lake Jesup Basin.....	12
1.3 Area Covered by the BMAP.....	13
SECTION 2 : Improving Scientific Understanding.....	14
2.1 Water Quality Monitoring.....	14
2.1.1 Lake Jesup and Tributary Monitoring.....	14
2.1.2 Site 10 Monitoring.....	14
2.2 Research Priorities	16
2.2.1 Orange County.....	16
2.2.2 Seminole County	16
2.2.3 SJRWMD	16
2.3 TMDL Model Update.....	17
SECTION 3 : Water Quality Observations.....	18
3.1 SJRWMD Ambient Monitoring Results	18
3.2 Site 10 Storm Event and Ambient Monitoring results.....	24
SECTION 4 : Project Descriptions	27
4.1 Florida Department of Agriculture and Consumer Services (FDACS)	27
4.2 City of Altamonte Springs	29
4.3 City of Casselberry	30
4.4 City of Lake Mary	30
4.5 City of Longwood	31
4.6 City of Maitland.....	31
4.7 City of Orlando	31
4.8 City of Oviedo	31
4.9 City of Sanford.....	32
4.9.1 City of Sanford – Site 10.....	32
4.10 City of Winter Park.....	32
4.11 City of Winter Springs	32
4.12 Florida Department of Transportation (FDOT) District 5.....	33
4.13 Orange County.....	33
4.14 Seminole County.....	33
4.15 Town of Eatonville.....	33
4.16 Turnpike Authority	33
4.17 Summary of Accomplishments.....	33
4.18 Activities for the Upcoming Year.....	34

4.18.1 FDACS	34
4.18.2 City of Casselberry	35
4.18.3 City of Longwood.....	35
4.18.4 City of Maitland	35
4.18.5 City of Winter Park	35
4.18.6 FDOT District 5.....	35
4.18.7 Orange County.....	35
4.18.8 Seminole County	35
Appendix A: BMAP Projects	36
Appendix B: Water Quality Data	63

LIST OF FIGURES

Figure ES-1: Progress towards the Lake Jesup TP TMDL through May 31, 2015	11
Figure 1: Lake Jesup and local government jurisdictions in the basin	13
Figure 2: Site 10 grab sample collection locations	15
Figure 3: Comparison of Howell Creek annual averages for TP and phosphate (PO ₄) between two independent periods (1995–2000 and 2009–14).....	18
Figure 4: Soldier Creek and Gee Creek annual TP average results from two independent periods (1995–2000 and 2009–14)	19
Figure 5: Comparison of TP annual averages from Lake Jesup stations between two independent periods (1995–2004 and 2005–14)	20
Figure 6: Comparison of Howell Creek TSS concentrations between two periods of analysis (1995–2000 and 2009–14)	21
Figure 7: Comparison of Soldier Creek TSS concentrations between two periods of analysis (1995–2000 and 2009–14)	21
Figure 8: Comparison of Gee Creek TSS concentrations between two periods of analysis (1995–2000 and 2009–14).....	21
Figure 9: TSS annual averages from Lake Jesup stations, 2000–14.....	22
Figure 10: Monthly averages for chl <i>a</i> , 1995–2014.....	23
Figure 11: Relative abundance of primary phytoplankton divisions in Lake Jesup	24
Figure 12: Site 10 storm event sampling – TN results.....	25
Figure 13: Site 10 storm event sampling – TP results	25
Figure 14: Site 10 stormwater grab sampling – TN results	26
Figure 15: Site 10 stormwater grab sampling – TP results.....	26
Figure 16: Agricultural operations enrolled in FDACS BMP programs in the Lake Jesup BMAP area as of March 31, 2015	28
Figure 17: Progress towards the Lake Jesup TP TMDL through May 31, 2015	34

LIST OF TABLES

Table 1: TMDLs in the Lake Jesup Basin	12
Table 2: Entities in the Lake Jesup BMAP Basin with monitoring responsibilities.....	14
Table 3. Phytoplankton divisions present in Lake Jesup at different intervals.....	23
Table 4: Agricultural acres enrolled in FDACS BMPs in the Lake Jesup BMAP area.....	27
Table 5: Agricultural TP load reduction allocation and estimated reductions in TP loads	29
Table 6: Summary of projects completed in the reporting period(June 1, 2014–May 31, 2015) ..	34
Table A-1: City of Altamonte Springs projects	37
Table A-2: City of Altamonte Springs summary of reductions	37
Table A-3: City of Casselberry projects	37
Table A-4: City of Casselberry summary of reductions	41
Table A-5: City of Lake Mary projects.....	42
Table A-6: City of Lake Mary summary of reductions	42
Table A-7: City of Longwood projects	43
Table A-8: City of Longwood summary of reductions.....	43
Table A-9: City of Maitland projects	43
Table A-10: City of Maitland summary of reductions.....	45
Table A-11: City of Orlando projects	46
Table A-12: City of Orlando summary of reductions	49
Table A-13: City of Oviedo projects	50
Table A-14: City of Oviedo summary of reductions	51
Table A-15: City of Sanford projects.....	51
Table A-16: City of Sanford summary of reductions	51
Table A-17: City of Winter Park projects	52
Table A-18: City of Winter Park summary of reductions.....	55
Table A-19: City of Winter Springs projects	56
Table A-20: City of Winter Springs summary of reductions.....	56
Table A-21: FDOT projects	57
Table A-22: FDOT summary of reductions	57
Table A-23: Orange County projects	58
Table A-24: Orange County summary of reductions.....	58
Table A-25: Orlando Orange County Expressway Authority (OOCEA) projects	58
Table A-26: OOCEA summary of reductions	59
Table A-27: Seminole County projects.....	59
Table A-28: Seminole County summary of reductions	61
Table A-29: Town of Eatonville projects	61
Table A-30: Town of Eatonville summary of reductions	61
Table A-31: Turnpike Authority projects	62

Table A-32: Turnpike Authority summary of reductions62
Table B-1: City of Winter Park sampling results.....63
Table B-2: City of Maitland sampling results.....64

LIST OF ACRONYMS AND ABBREVIATIONS

°C.	Degrees Celsius
uS/cm	MicroSiemens per centimeter
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
BOD ₅	Biochemical Oxygen Demand-Five Day
BMAP	Basin Management Action Plan
CDS	Continuous Deflective Separation (Unit)
Chl <i>a</i>	Chlorophyll <i>a</i>
CIP	Capital Improvement Plan
DEP	Florida Department of Environmental Protection
DO	Dissolved Oxygen
EFDC	Environmental Fluid Dynamics Code
FDACS	Florida Department of Agriculture and Consumer Services
FDOT	Florida Department of Transportation
FLMS	Florida Lake Management Society
FOG	Fats, Oils, and Grease
FSA	Florida Stormwater Association
FWC	Florida Fish and Wildlife Conservation Commission
FYN	Florida Yards and Neighborhood (Program)
HSPF	Hydrologic Simulation Program – FORTRAN (model)
II	Inflow and Infiltration
kg/yr	Kilograms per Year
lbs/yr	Pounds per Year
MG	Million Gallons
mgd	Million Gallons per Day
mg/L	Milligrams per Liter
mg/m ³	Milligrams per Cubic Meter
MS4	Municipal Separate Storm Sewer System
MSSW	Management and Storage of Surface Waters
NuRF	Nutrient Reduction Facility
NO ₂	Nitrite
NO ₃	Nitrate
NO _x	Nitrous Oxides
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
OOCEA	Orlando Orange County Expressway Authority
PLRG	Pollutant Load Reduction Goal
PO ₄	Phosphate
PSA	Public Service Announcement
RSF	Regional Stormwater Facility
SJRWMD	St. Johns River Water Management District
SR	State Road
SRP	Soluble Reactive Phosphorus
STORET	STorage and RETrieval (Database)

su	Standard units
SWIM	Surface Water Improvement and Management
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
UF–IFAS	University of Florida Institute of Food and Agricultural Sciences
USGS	U.S. Geological Survey
uS/cm	MicroSiemens per Centimeter
WASP	Water Quality Analysis Simulation Program
WBID	Waterbody Identification

SUMMARY

Total Maximum Daily Loads (TMDLs)

Lake Jesup is one of the largest lakes in Central Florida and is part of the St. Johns River system. Lake Jesup has a surface area of 10,660 acres and drains a watershed of 86,382 acres, including a large portion of Seminole County, a small portion of Orange County, the entire City of Winter Springs, and portions of the following municipalities: Altamonte Springs, Casselberry, Eatonville, Lake Mary, Longwood, Maitland, Orlando, Oviedo, Sanford, and Winter Park.

The Florida Department of Environmental Protection (DEP) identified Lake Jesup as impaired for nutrients, and, in 2006, adopted TMDLs for total phosphorus (TP) and total nitrogen (TN) for the lake. The TMDLs required a 34 % reduction in TP to achieve the target concentration of 0.096 milligrams per liter (mg/L) and a 50 % reduction in TN to achieve the target concentration of 1.27 mg/L.

The Lake Jesup Basin Management Action Plan (BMAP) was adopted in May 2010 to implement the TP TMDL. The focus on the TP loads was driven by the significant role of nitrogen fixation in Lake Jesup and several unknowns regarding internal nutrient cycling in the lake, including mineralization and resuspension from the sediments to the water column, mass deposition from the water column to the sediments, and diffusion. However, the stakeholders have been conducting studies to evaluate the unknowns and plan to include TN load reductions in the second iteration of the BMAP. The BMAP allocated the required surface runoff and septic tank reductions to the responsible entities. To allow time for additional monitoring and research studies to address the unknowns identified, the required reductions were split into three five-year periods. The adopted BMAP addresses the first one-third of the required reductions.

Major Accomplishments

The fifth year of BMAP implementation was successful (**Figure ES-1**). The total project reductions during the reporting period are 51 pounds per year (lbs/yr) of TP.¹ The total BMAP project reductions, including those listed as completed in the BMAP and the projects completed during the first 4 years of implementation, are 13,038.1 lbs/yr of TP. These are greater than the required reduction in the first BMAP iteration of 6,249.5 lbs/yr of TP. The total reductions, including those from completed projects to date and the load within noncontributing areas to the lake, are 14,073.1 lbs/yr of TP; this is a 71.7 % reduction from the starting load. The goal of the first BMAP iteration is a 33 % reduction in TP.

¹ This number does not include estimated load reductions from agricultural BMP implementation during the period of record. Estimates for the most recent agricultural nutrient reductions will be calculated using the revised and recalibrated watershed and receiving water models (see **Section 2.3**), and will be included in the next annual report.

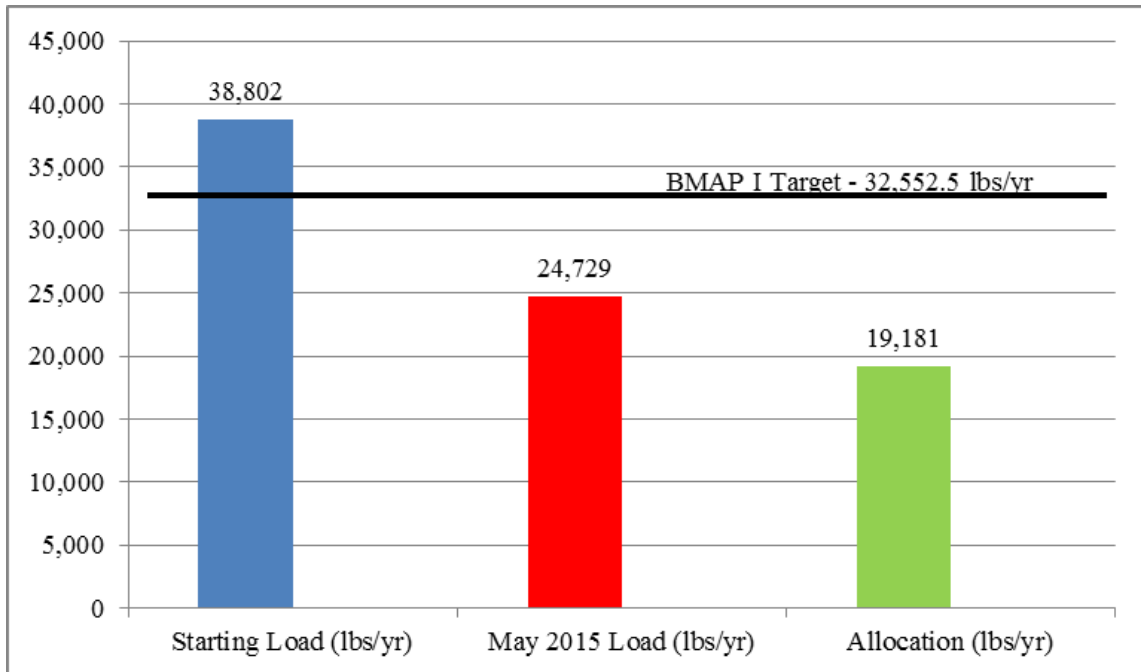


Figure ES-1: Progress towards the Lake Jesup TP TMDL through May 31, 2015

Water Quality Trends

Downward trends in annual average concentrations of TP and total suspended solids (TSS) were observed in three gauged tributaries to Lake Jesup when comparing two different periods, 1995 to 2000 and 2005 to 2014. Declines in TP and TSS loads were also observed in all three tributaries between the two periods. As observed from samples collected from the three in-lake ambient monitoring sites, downward trends in TP and TSS concentrations also became evident between the two periods.

Chlorophyll *a* (chl *a*) concentrations above 40 milligrams per cubic meter (mg/m³) were observed in all three in-lake monitoring sites more than 50 % of the time between 1995 and 2014, indicating that there is an algal bloom problem in the lake. No major changes were observed in chl *a* concentrations in the lake during the period of observation (1995–2014).

SECTION 1: INTRODUCTION

1.1 Purpose of the Report

This is the fifth annual progress report for the Lake Jesup Basin Management Action Plan (BMAP). **Section 2** and **Section 3** describe the water quality monitoring and trends that occurred during the period from June 1, 2014, through May 31, 2015, for the Lake Jesup Basin. **Section 4** describes the projects and activities that occurred during the reporting period.

1.2 Total Maximum Daily Loads (TMDLs) for the Lake Jesup Basin

The total nitrogen (TN) and total phosphorus (TP) TMDLs for these waterbodies were adopted by the Florida Department of Environmental Protection (DEP) in April 2006. The Lake Jesup BMAP addresses the TN and TP TMDLs for the segments with waterbody identification (WBID) numbers 2981 and 2981A. **Table 1** lists the TMDLs and pollutant load allocations adopted by rule for the watershed.

Table 1: TMDLs in the Lake Jesup Basin

WBID(s)	TMDL (pounds per year [lbs/yr])	Target Concentration (milligrams per liter [mg/L])	Wasteload Allocation Stormwater	Load Allocation (nonpoint)
2981 (Including 2981A)	41,888 TP	0.096	34 %	34 %
2981 (Including 2981A)	545,203 TN	1.27	50 %	50 %

1.3 Area Covered by the BMAP

Figure 1 shows the Lake Jesup Basin boundary and local governments located in the Lake Jesup Basin.

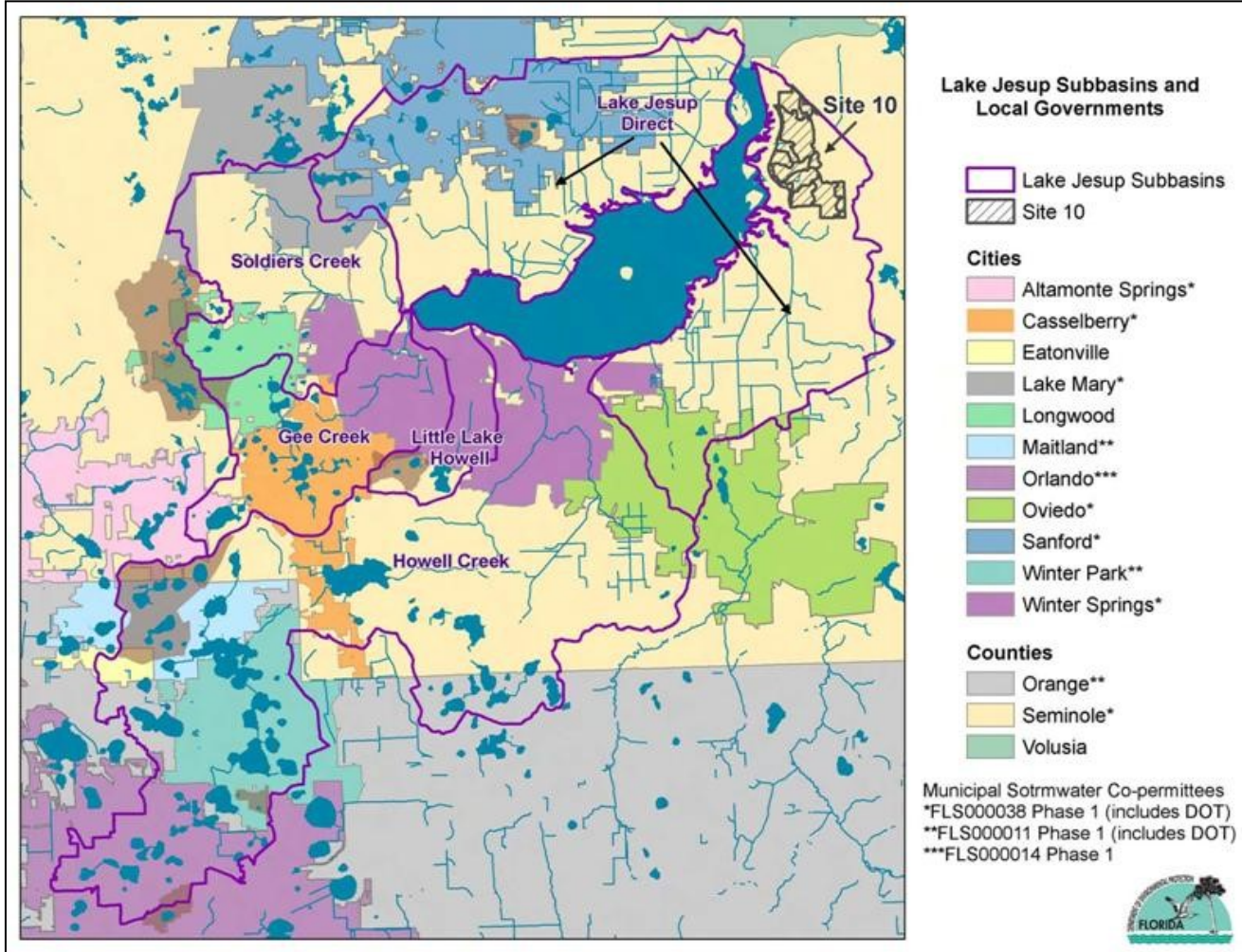


Figure 1: Lake Jesup and local government jurisdictions in the basin

SECTION 2: IMPROVING SCIENTIFIC UNDERSTANDING

2.1 Water Quality Monitoring

2.1.1 Lake Jesup and Tributary Monitoring

The Lake Jesup BMAP monitoring plan was designed to enhance the understanding of basin loads, track project implementation, and identify long-term water quality trends. The information gathered through the monitoring plan measures progress toward achieving the TP TMDL and provides a foundation for continued improvement in cost-effective project implementation. The BMAP monitoring plan consists of ambient water quality sampling, storm event sampling, and biological monitoring. All responsible stakeholders (see **Table 2**) participated in the monitoring plan in the fifth year of BMAP implementation. Local stakeholders continue to use their existing water atlas (Seminole County Water Atlas, or Orange County Water Atlas) or the Florida Storage and Retrieval (STORET) Database platform to store and disseminate data. **Appendix B** includes data that were not uploaded to STORET.

Table 2: Entities in the Lake Jesup BMAP Basin with monitoring responsibilities

DEP
Seminole County/Lake Mary
Seminole County/Longwood
Maitland
Orange County
Orlando
Seminole County
Seminole County/Casselberry
Seminole County/Sanford
Seminole County/Oviedo
Seminole County/Sanford
Seminole County/Altamonte Springs
Winter Park

2.1.2 Site 10 Monitoring

As part of the City of Sanford's domestic wastewater facility permit number FL002014, the city was required to identify an additional sampling point for storm event sampling that could be alternated with the initial sampling location (Pond B-2). City staff initiated the relocation of the autosampler from Pond B-2 to Pond C-2B in early 2014, but had to resolve some equipment issues until sample collection could be initiated at the new location. The city started collecting samples at Pond C-2B that met the rainfall thresholds defined in the city's permit in mid-2014. **Figure 2** shows the locations where the grab samples are collected.

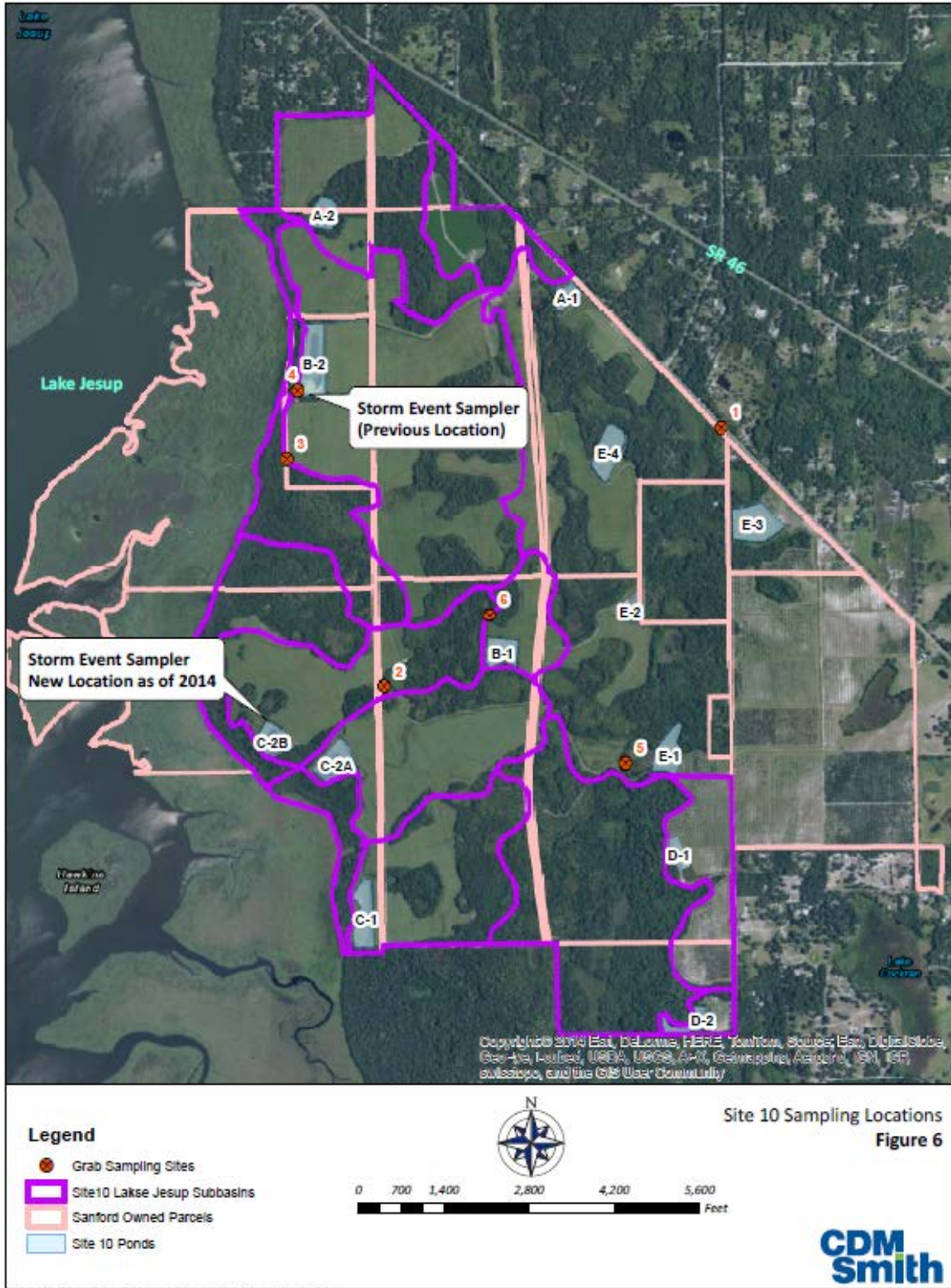


Figure 2: Site 10 grab sample collection locations

2.2 Research Priorities

Several entities in the basin have completed research projects or are currently implementing studies that will provide information to address the unknowns in the basin identified in the BMAP. DEP will use the applicable data from these studies in future re-evaluations of the TMDLs (see **Section 2.3**).

2.2.1 Orange County

Orange County continued with its efforts to determine the pollutant loads being discharged through Lake Burkett. Sampling is ongoing and data are submitted to DEP and the St. Johns River Water Management District (SJRWMD). Orange County has also been working with a consultant, ATM, to review and provide detailed comments on the SJRWMD and DEP assessment of the Jesup system.

2.2.2 Seminole County

Seminole County continues to conduct research studies (such as the Crow Creek Nutrient Study and Red Bug Regional Stormwater Facility [RSF] Vegetative Efficiency Study), as well as monitoring for in-lake vegetation and biological bioassessments. The Crows Creek Study has been completed, but the final report has not yet been delivered. The QUAL2K model update has been completed; it reflects the additional research and ongoing monitoring results. The report is available on request.

2.2.3 SJRWMD

The SJRWMD study evaluating the unconsolidated sediment began in July 2014 and was completed in August 2014 (results from the study are available on request). Other SJRWMD activities in the Jesup watershed centered on the development of conceptual plans for a treatment wetland to filter lake water. SJRWMD conservation lands on Jesup's northwest and south central shore continue to be managed at natural background conditions, and Aquafiber Technologies, located on a small piece of the southern conservation area, finished a five-year pilot project removing nutrients from lake water. There are no current plans for the SJRWMD to proceed with the treatment wetland, although it could be considered a viable option for regional treatment if other stakeholders indicate an interest in partnering on the project.

The modeling of watershed loads and in-lake assimilative capacity were completed in fall 2014 and spring 2015, respectively. The pollutant load reduction goal (PLRG) analysis and report are in final review now. Recommendations for target concentrations and load reduction goals are expected to be available in August 2015.

While the SRJWMD remains focused on providing support for TP reductions, effort over the next year will be applied to understanding the dynamics that may have led to the dominance of the cyanobacterium *Cylindrospermopsis*. Future project concepts will likely attempt to deal with the reduction of this specific genus, since it has a strong competitive advantage and contributes significantly to nitrogen fixation in Lake Jesup.

2.3 TMDL Model Update

The Lake Jesup BMAP identified “technical uncertainties,” and stakeholders committed to address these uncertainties within the first BMAP iteration to allow for possible recalculation of the TMDLs and requisite adjustments to the allocations required by the BMAP.

Following a 2014 mandate requiring the Surface Water Improvement and Management (SWIM) Program to establish the PLRG for Lake Jesup, the SJRWMD developed a set of mechanistic models. These models included the Hydrologic Simulation Program-FORTRAN (HSPF), the Environmental Fluid Dynamic Code (EFDC), and the Water Quality Analysis Simulation Program (WASP) for Lake Jesup and its watershed to simulate the nutrient loads entering the lake, and the in-lake nutrient and chl *a* dynamics. In addition to meeting the needs of PLRG development, these models also provided a refined platform for addressing some of the key questions (i.e., the near-field and far-field effects of nutrient loads and internal nutrient loads on the nutrient condition of the lake) raised by stakeholders on the existing Lake Jesup nutrient TMDLs.

New information obtained through a collaborative process between stakeholders, the SJRWMD, and DEP ascertained the need for further refinements of these models, especially to improve the spatial accuracy of nutrient loads from the watershed and to refine the simulation of contributions from sediment nutrient flux and ground water seepage. DEP has contracted with Tetra Tech, Inc. to conduct a comprehensive evaluation of the models, examine key issues raised by stakeholders, identify the model refinement needs to address these issues and the needed data for revising the models, and recalibrate the watershed and receiving water models based on the revised model structure.

DEP will work closely with stakeholders to evaluate the revised models and results, and will use the new modeling results to re-evaluate the existing Lake Jesup TMDLs and the watershed nutrient load allocation. In addition, DEP will use the Lake Jesup watershed HSPF modeling results as input and develop several WASP applications to establish nutrient TMDLs for seven other impaired lakes in the Lake Jesup watershed: Lake Alma (WBID 2986D), Lake Howell (WBID 2997B), Little Lake Howell (WBID 2994X), Lake Adair (WBID 2997R), Lake Searcy (WBID 2986E), Bear Gulley Lake (WBID 3009), and Lake Georgia (WBID 3009E).

SECTION 3: WATER QUALITY OBSERVATIONS

3.1 SJRWMD Ambient Monitoring Results

The SJRWMD compared monitoring results between two periods, 1995 to 2000 and 2009 to 2014. These provide a good representation of pre-TMDL and post TMDL activities to reduce nutrient loads.

Ambient monitoring of TP in three gauged tributaries and the lake demonstrated significant decreases in concentration and load from Howell Creek; no significant decreases in Soldier Creek, Gee Creek, or the lake; but downward trends accompanied by a reduced range of variability (**Figures 3 through 5**). Howell Creek, delivering almost half of the TP load to Lake Jesup, showed the highest reduction. Data from U.S. Geological Survey (USGS) gauges in Howell, Soldier, and Gee Creeks indicated no change in annual average discharge between the two periods.

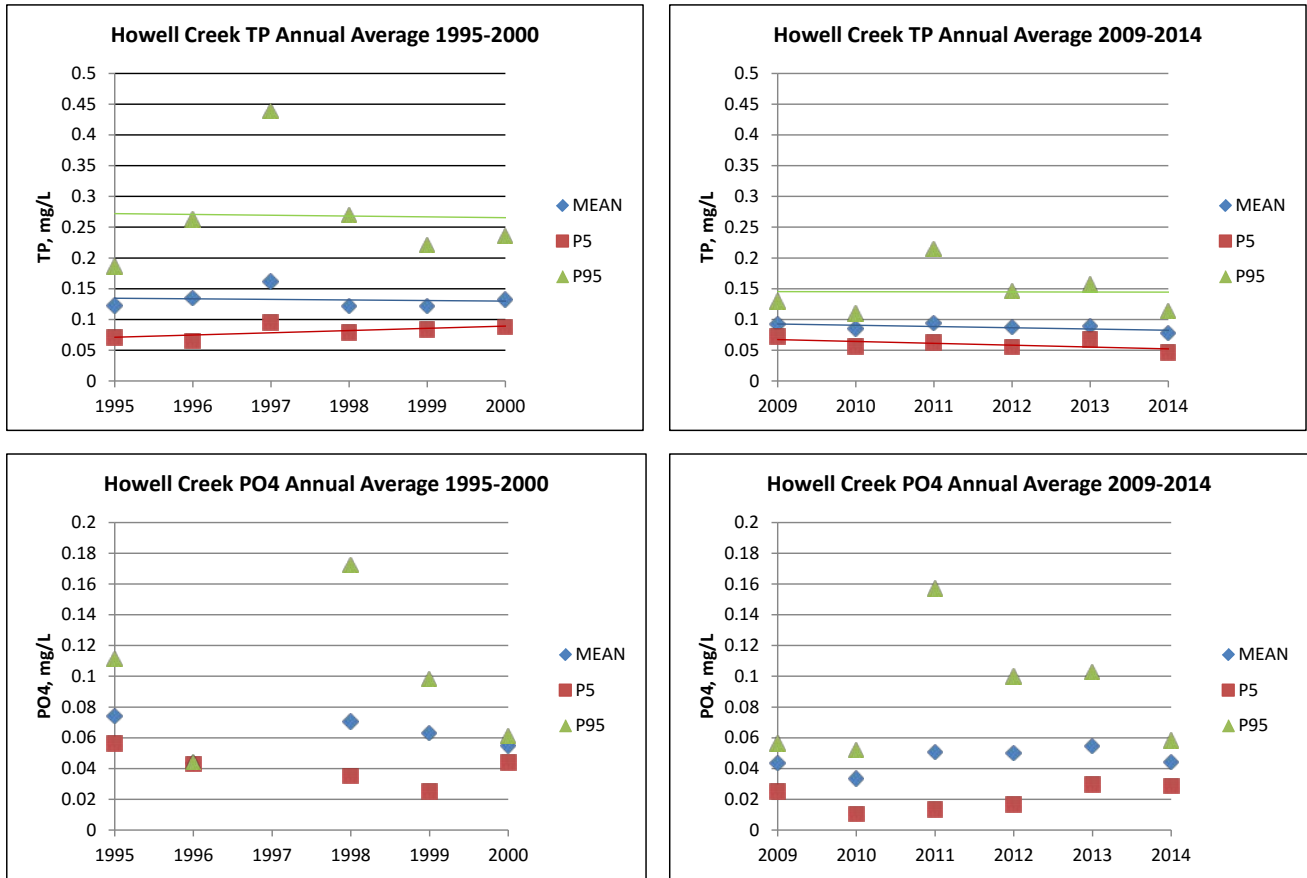


Figure 3: Comparison of Howell Creek annual averages for TP and phosphate (PO₄) between two independent periods (1995–2000 and 2009–14)

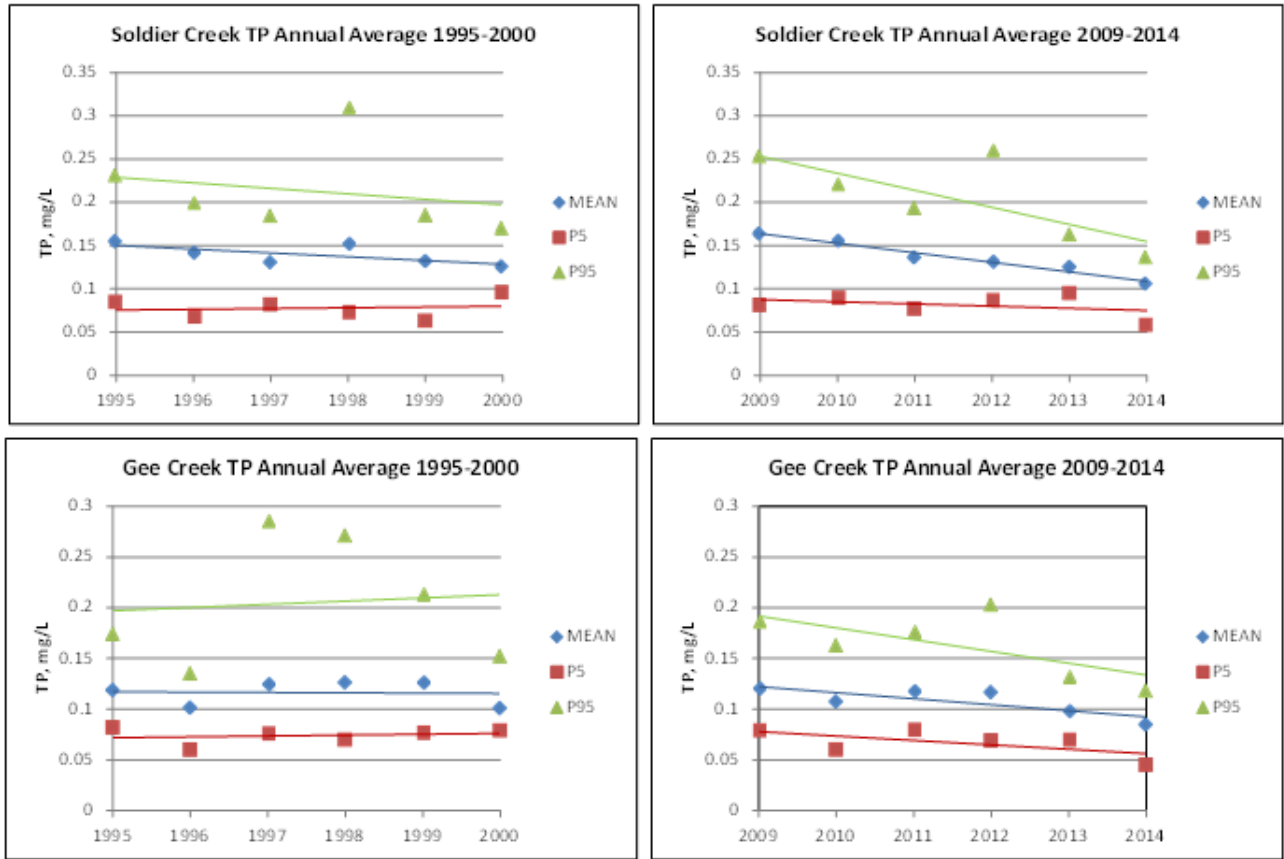


Figure 4: Soldier Creek and Gee Creek annual TP average results from two independent periods (1995–2000 and 2009–14)



Figure 5: Comparison of TP annual averages from Lake Jesup stations between two independent periods (1995–2004 and 2005–14)

Ambient monitoring of total suspended solids (TSS) in the same tributaries showed significant declines in concentrations and loads from all three creeks when comparing 1995 to 2000 with 2009 to 2014 (**Figures 6 through 8**). There was no significant difference in water column TSS in the lake when comparing the two periods (**Figure 9**). Overall, there was less suspended solids and phosphorus input from the tributaries, and discharge records from the lake indicate higher export to the river.

These factors, combined with potential flushing at the neck from the new State Road (SR) 46 Bridge, appear to be facilitating the oxidization, flushing, and consolidation of internal unconsolidated sediments. Isotope analysis of the unconsolidated sediments indicated that no waste water inputs from Jesup’s legacy loading prior to 1983 remain in the floc layer. The two primary sources of nutrients in the current soft sediments appear to be from fertilizer and nitrogen fixation from high cyanobacteria populations.

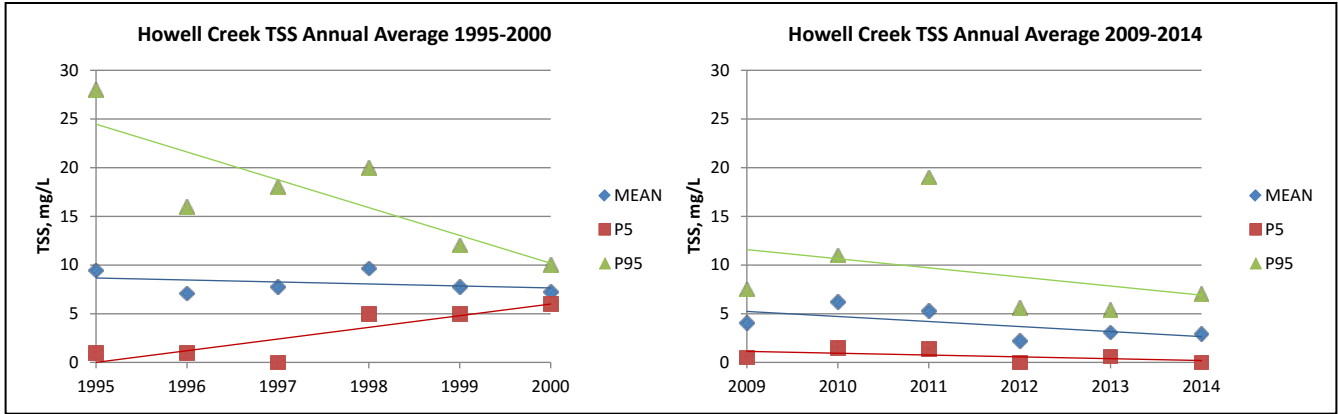


Figure 6: Comparison of Howell Creek TSS concentrations between two periods of analysis (1995–2000 and 2009–14)

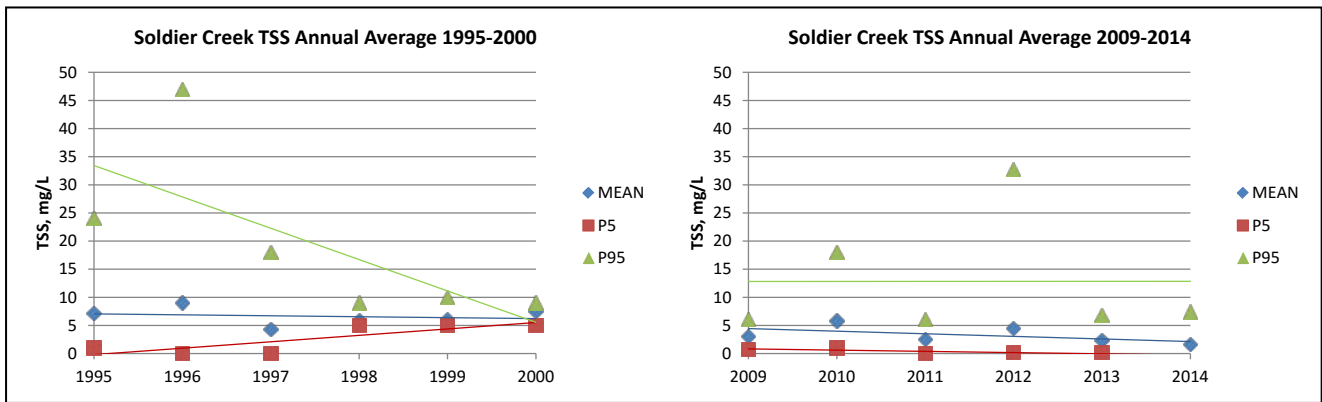


Figure 7: Comparison of Soldier Creek TSS concentrations between two periods of analysis (1995–2000 and 2009–14)

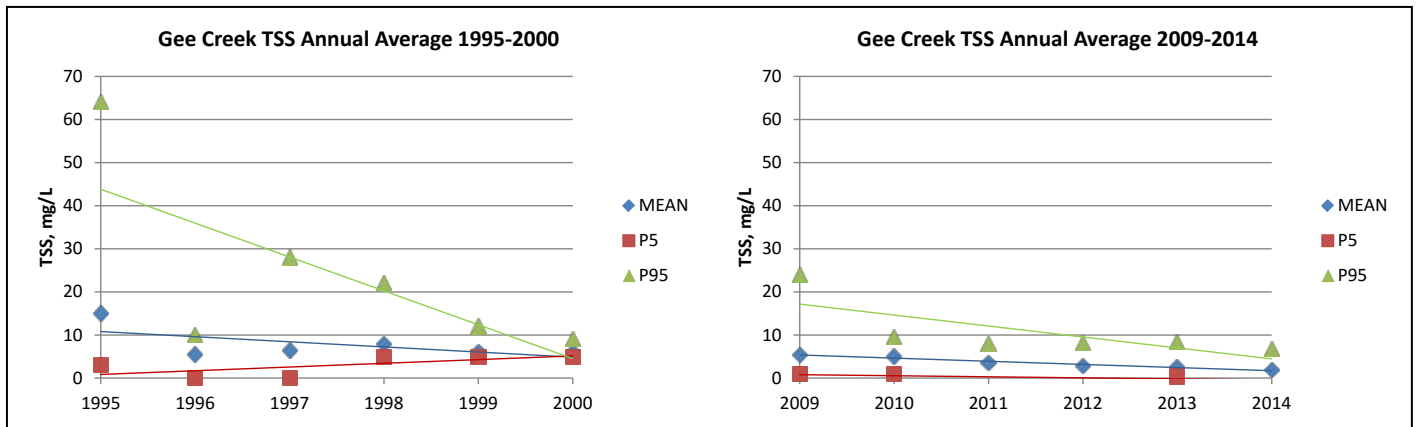


Figure 8: Comparison of Gee Creek TSS concentrations between two periods of analysis (1995–2000 and 2009–14)

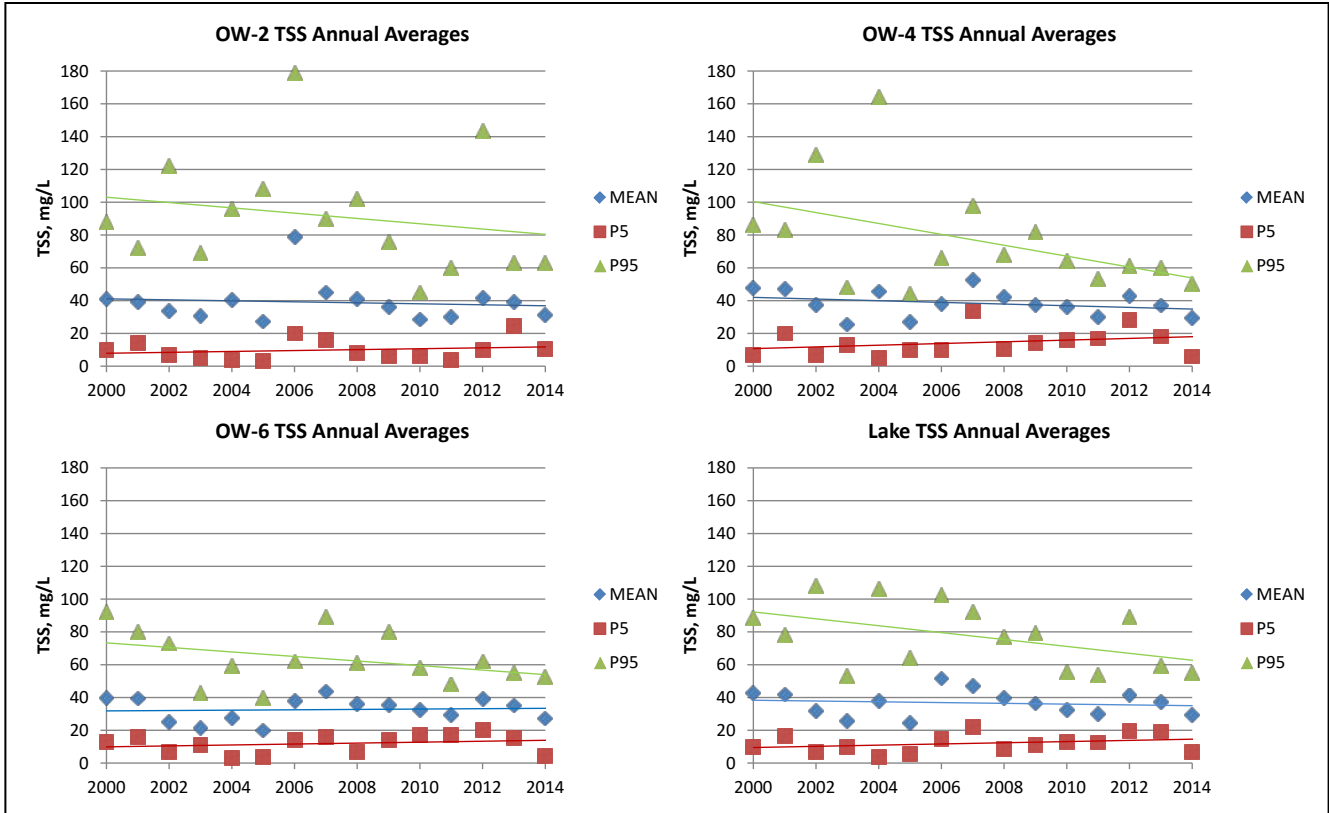


Figure 9: TSS annual averages from Lake Jesup stations, 2000–14

Chl *a* concentrations remained level for the entire reporting period at all three lake stations (Figure 10). When chl *a* counts are greater than 40 mg/m³, a waterbody is typically considered to be in an algal bloom even though the algal concentration may not visually appear as a bloom. Between 1995 and 2015, chl *a* concentrations in all in-lake stations (OW-2, OW-4, and OW-6) were above 40 mg/m³ more than 70 % of the time. High chl *a* concentrations, which might lead to visible bloom reports, appear to be episodic in Jesup, with higher concentrations from 1998 to 2001 and again in 2012.

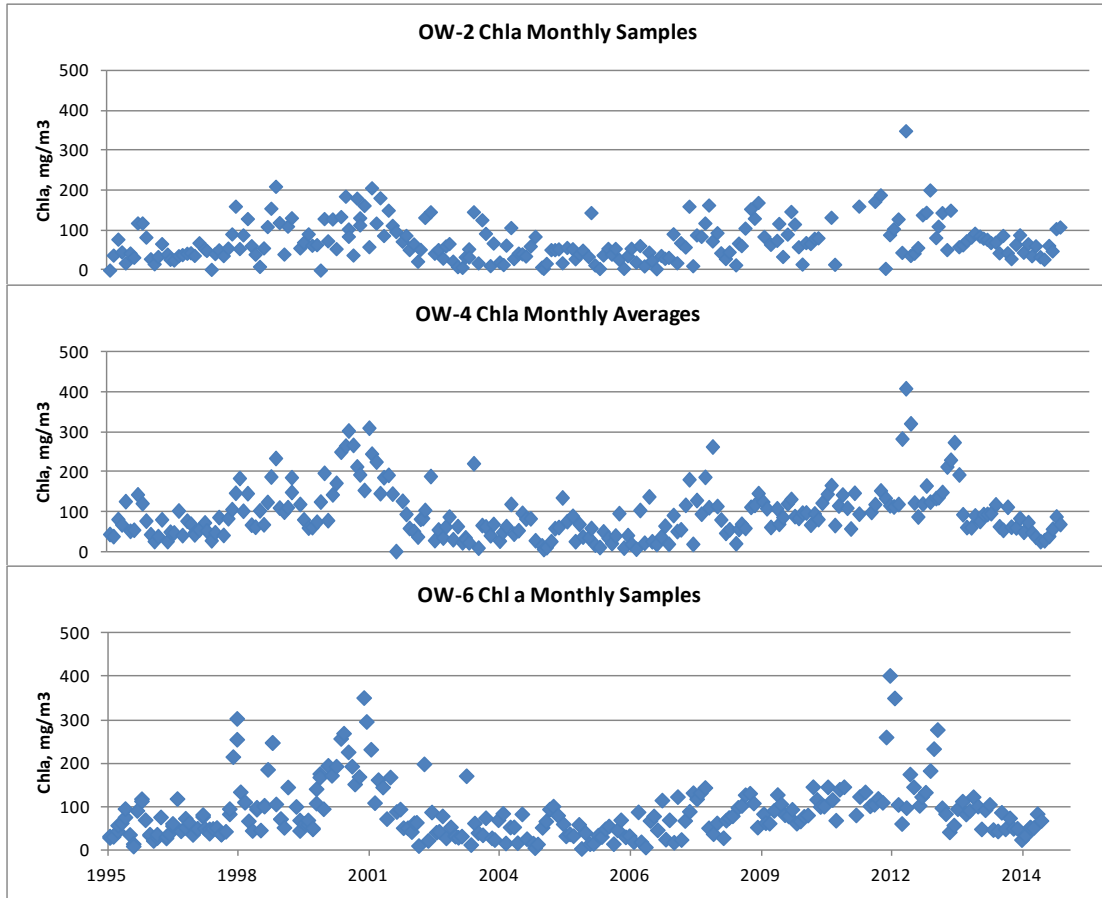


Figure 10: Monthly averages for chl *a*, 1995–2014

Seven divisions of phytoplankton are present in Lake Jesup (Table 3 lists these divisions in order of relative abundance, from left to right, for each year presented), and although this level of diversity at this taxonomic level remains constant through the period of record for sampling, the relative abundance exhibited several changes in the same period. The most abundant divisions are *Cyanobacteria*, *Bacillariophyta*, and *Chlorophyta* (Figure 11) although *Cryptophyta* has recently been more abundant.

Table 3. Phytoplankton divisions present in Lake Jesup at different intervals

Year	Phytoplankton Division						
1995	<i>Cyanobacteria</i>	<i>Chlorophyta</i>	<i>Bacillariophyta</i>	<i>Euglenophyta</i>	<i>Cryptophyta</i>	<i>Chrysophyta</i>	<i>Pyrrhophyta</i>
2000	<i>Cyanobacteria</i>	<i>Bacillariophyta</i>	<i>Chlorophyta</i>	<i>Euglenophyta</i>	<i>Cryptophyta</i>	<i>Chrysophyta</i>	<i>Pyrrhophyta</i>
2005	<i>Cyanobacteria</i>	<i>Chlorophyta</i>	<i>Bacillariophyta</i>	<i>Euglenophyta</i>	<i>Cryptophyta</i>	<i>Chrysophyta</i>	<i>Pyrrhophyta</i>
2010	<i>Cyanobacteria</i>	<i>Bacillariophyta</i>	<i>Chlorophyta</i>	<i>Euglenophyta</i>	<i>Cryptophyta</i>	<i>Chrysophyta</i>	<i>Pyrrhophyta</i>
2015	<i>Cyanobacteria</i>	<i>Bacillariophyta</i>	<i>Cryptophyta</i>	<i>Chlorophyta</i>	<i>Pyrrhophyta</i>	<i>Euglenophyta</i>	<i>Chrysophyta</i>

Prior to 2006, the most abundant *Cyanobacteria* genera were *Aphanocapsa*, *Anabaena*, and *Planktolyngbya*. By 2007, the profile had shifted to *Planktolyngbya* and *Chroococcus*, with *Cylindrospermopsis* rapidly increasing. By 2010, *Cylindrospermopsis* and *Dactylococcopsis* were the most abundant genera, and by 2012 *Cylindrospermopsis* was the dominant genus for 9 of the 12 months.

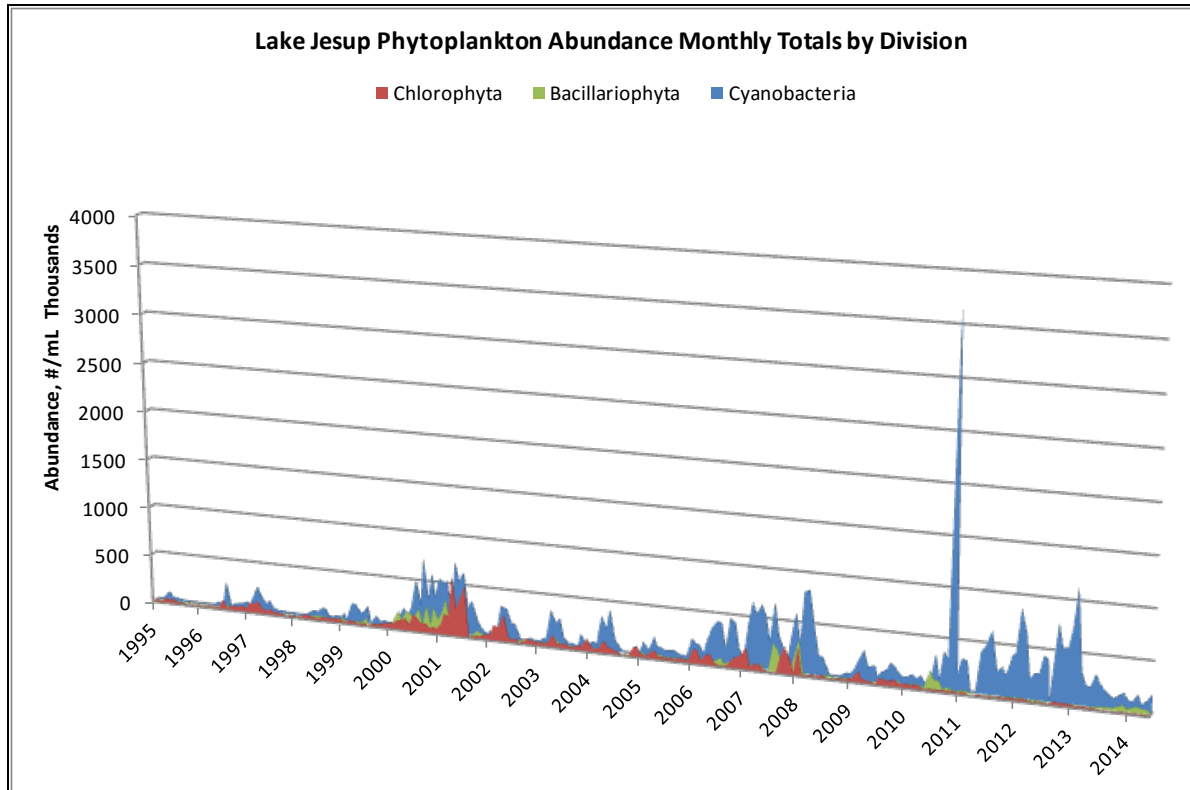


Figure 11: Relative abundance of primary phytoplankton divisions in Lake Jesup

3.2 Site 10 Storm Event and Ambient Monitoring results

Figures 12 and 13 show TN and TP storm event sampling results, collected as part of the City of Sanford’s domestic wastewater facility permit number FL002014. Storm events that met the rainfall thresholds resulted in sample collection at Pond C-2B during the third and fourth quarters of 2014 and the first quarter of 2015.

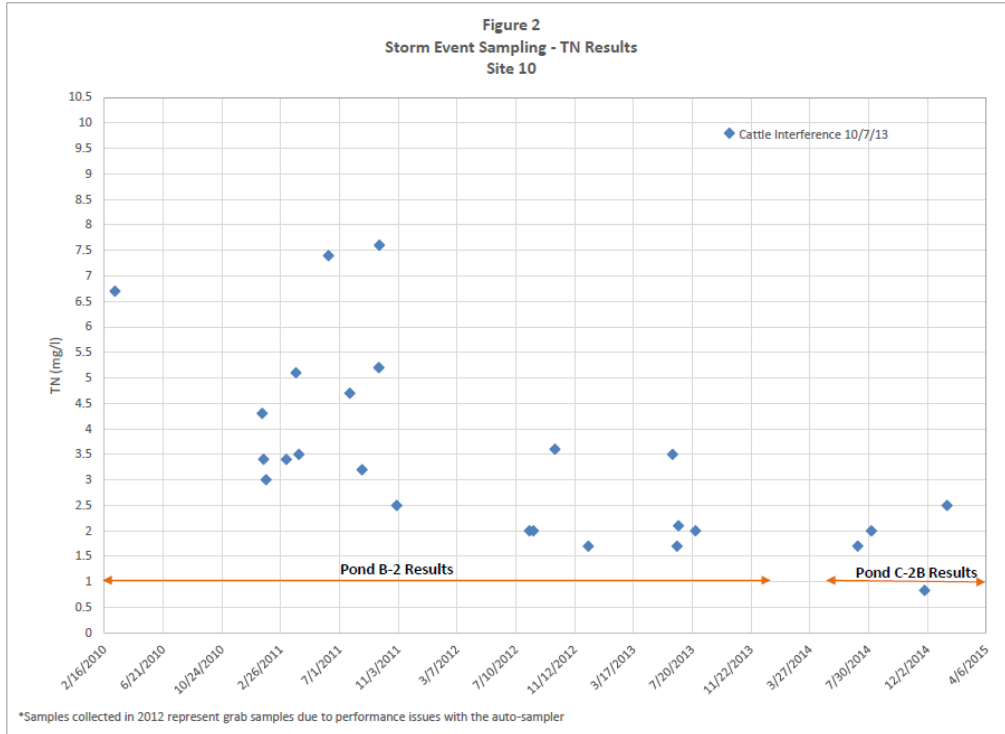


Figure 12: Site 10 storm event sampling – TN results

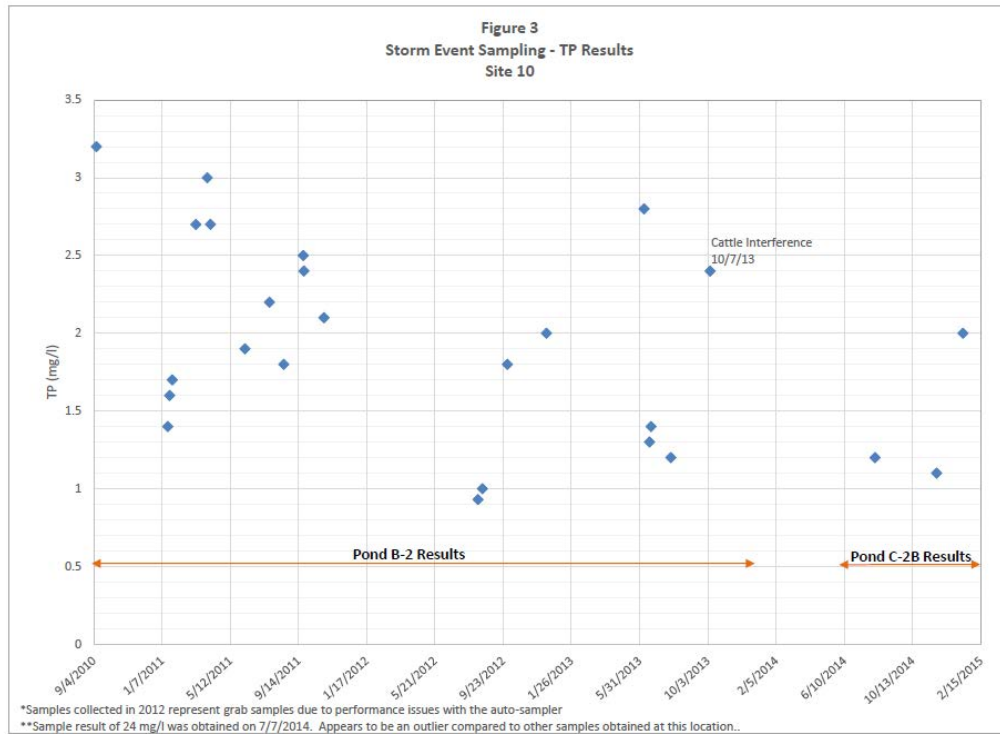


Figure 13: Site 10 storm event sampling – TP results

TN and TP grab sample data collected since 2010 and through the reporting period are shown graphically in **Figures 14** and **15**.

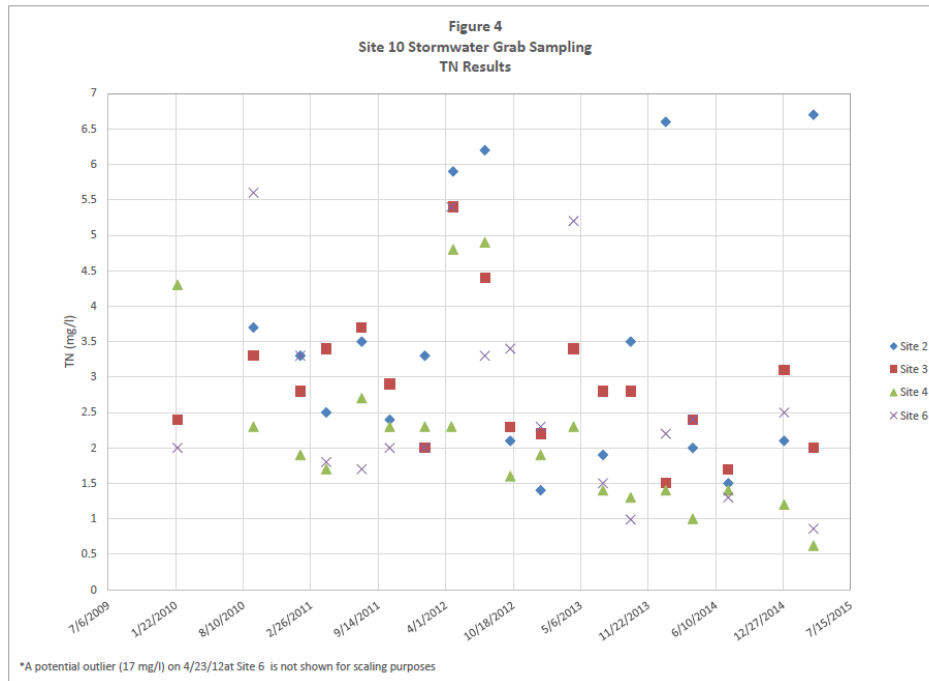


Figure 14: Site 10 stormwater grab sampling – TN results

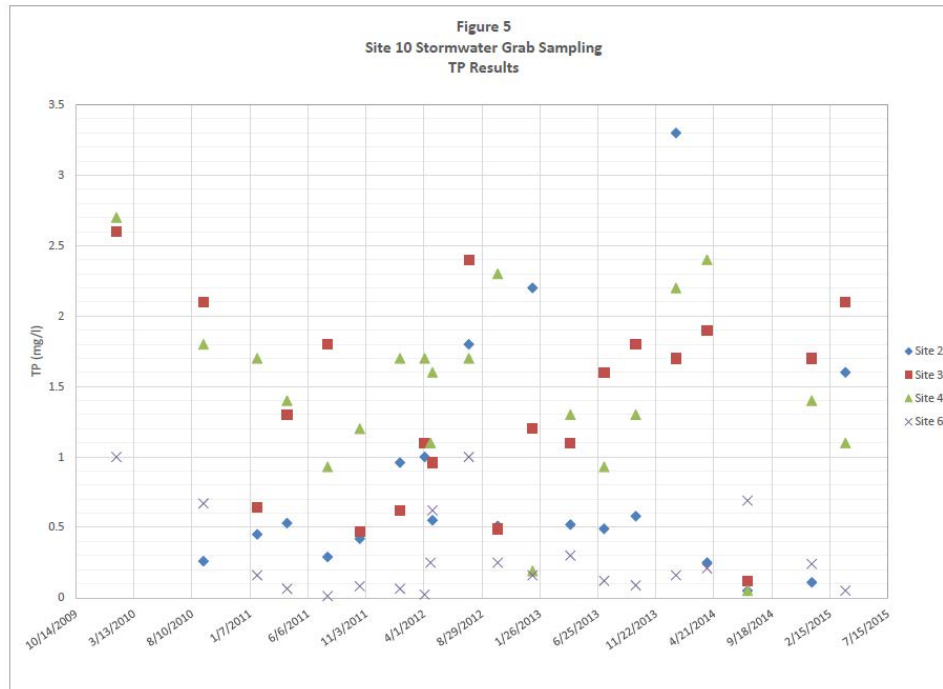


Figure 15: Site 10 stormwater grab sampling – TP results

SECTION 4: PROJECT DESCRIPTIONS

Section 4.1 through **Section 4.17** describes the accomplishments in the Lake Jesup Basin over the past year, and **Appendix A** includes the individual project tables.

4.1 Florida Department of Agriculture and Consumer Services (FDACS)

FDACS, through field staff and contracted staff with the East Central Florida Resource Conservation and Development Council, has been working on enrolling growers in the container nursery (now statewide), citrus, and cow/calf best management practice (BMP) programs. Most of the efforts so far have concentrated on the container nurseries and cow/calf operations. During the reporting period, FDACS enrolled 192 acres in the nursery program. Current enrollment figures are contained in **Table 4** and depicted in **Figure 16**.

The basin also has several small equine operations that may be eligible to enroll in the equine manual, depending on whether they are commercial agriculture or residential/hobby operations. With limited staff, the FDACS equine BMP enrollments have focused on heavily commercial equine regions in the state. While no assessments have yet taken place in the Lake Jesup Basin, FDACS staff may consider this as a future effort in this basin.

Table 4: Agricultural acres enrolled in FDACS BMPs in the Lake Jesup BMAP area

¹ 2,197.6 of the cow/calf acres and were categorized as wetlands in the 2004 SJRWMD land use coverage.

² The majority of the acres included in the sod enrollment in the 2004 SJRWMD land use coverage were categorized as pasture and wetlands.

Land Use Description	Land Use Acres (2004 SJRWMD)	FDACS Adjusted Acres	BMP Program	Acres Enrolled as of July 2009	Acres Enrolled as of March 2015
Citrus	1,340.8	991.9	Citrus	100.0	376.0
Unimproved, improved, and woodland pasture	2,425.3	831.4	Cow/Calf	Not applicable	2,558.0 ¹
Row crops, field crops, and mixed crops	212.1	184.5	Vegetable and Agronomic Crops	15.0	7.5
Nurseries and vineyards, ornamentals	475.0	470.5	Nurseries	93.5	245.8
Nurseries and vineyards, ornamentals	Same as above	Same as above	Specialty Fruit and Nut	Not applicable	1.0
Sod farm	278.0	445.0	Sod	0.0	609.0 ²
Horse farm	88.2	67.0	Equine	Not applicable	0.0
Poultry feeding	2.5	0.0	Poultry – planned for 2016	Not applicable	0.0
Total Acres	4,824.2	2,990.3	BMP Implementation Total	208.5	3,797.4

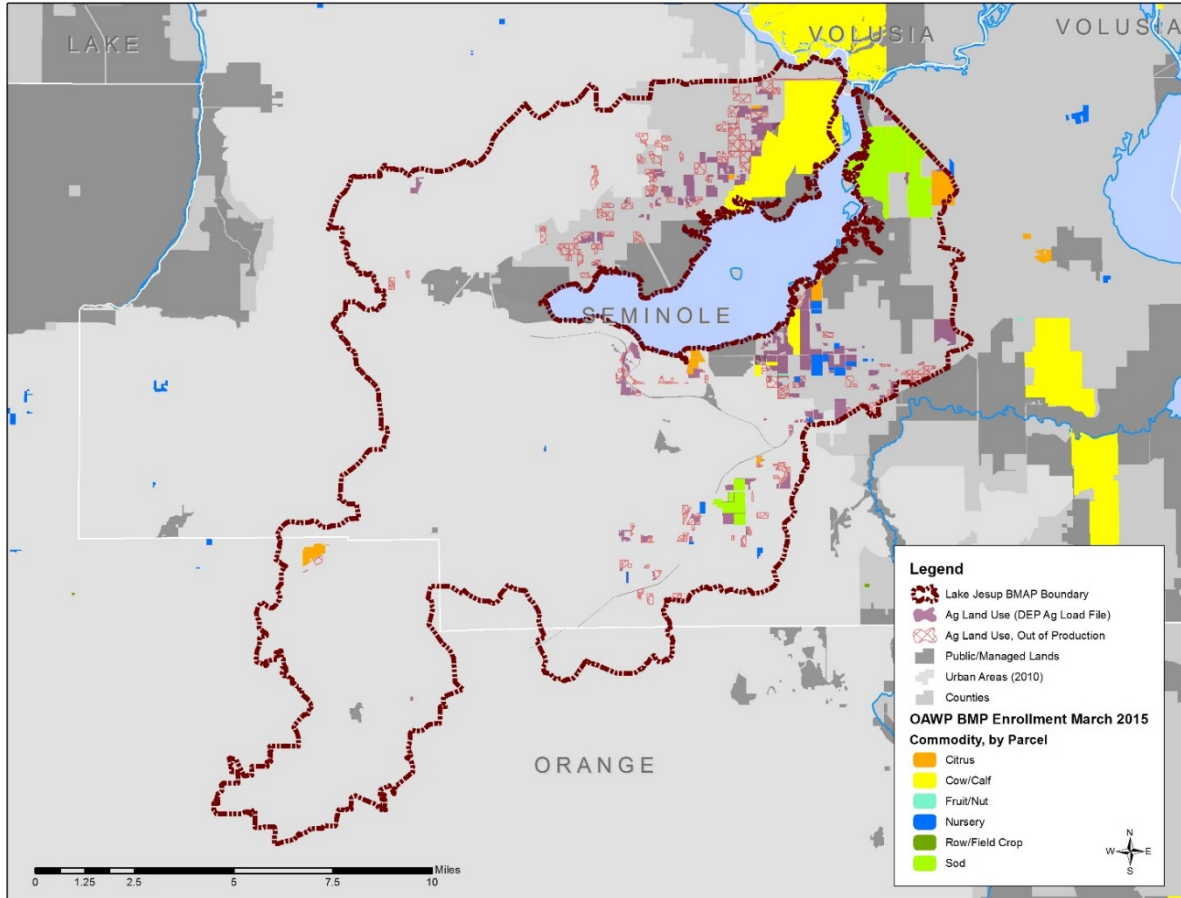


Figure 16: Agricultural operations enrolled in FDACS BMP programs in the Lake Jesup BMAP area as of March 31, 2015

For the BMAP, FDACS and DEP used a spreadsheet model tool to calculate the total potential load reduction from BMP implementation at 277.9 lbs/yr of TP, based on agricultural land use acreage. Estimated load reductions to date, based on FDACS enrollment of 3,797.4 acres within the BMAP basin (excluding silviculture and aquaculture) comes to 72.5 lbs/yr of TP.² This does not include the majority of the acres enrolled in cow/calf BMPs, as those acres were not initially included in the 2004 SJRWMD agricultural acres used to calculate the starting loads and associated load reduction estimates. Those acres were identified as wetlands. The more recent

² This number does not include estimated load reductions from agricultural BMP implementation during the period of record. Estimates for the most recent agricultural nutrient reductions will be calculated using the revised and recalibrated watershed and receiving water models (see **Section 2.3**), and will be included in the next annual report.

land use/land cover identifies most of the acreage as unimproved pasture, but no loadings have been assigned to that acreage.

FDACS worked with DEP to calculate an estimated load reduction credit based on the loss of agricultural production acreage. During the development of this BMAP, FDACS identified 2,650 acres classified as agricultural land in the 2004 land use/land cover that appeared to be no longer in production. However, no agricultural credit was calculated due to the limitations listed in the BMAP document, including the absence of commodity-specific load estimates.

During the 2013–14 reporting year, FDACS compared 2004 land use with the most recent land use data available in the basin, and worked with DEP to refine the agricultural loading information to calculate an estimated load reduction associated with the loss of production acreage. The total reduction from changes in agricultural land uses was 144.9 lbs/yr of TP (see **Table 5**). In June 2015, FDACS again reviewed the land use data and enrollment figures as shown in the “FDACS Adjusted Acres” column in **Table 3**. These adjusted acres account for fallow citrus, as well as areas where there is an airport rather than citrus, as is reported in the 2004 land use/land cover.

Table 5: Agricultural TP load reduction allocation and estimated reductions in TP loads³

Estimated Loads	TP (lbs/yr)
Agricultural Load Reduction Allocation	764.0
Agricultural Reduction Needed per BMAP Allocation Scenario, 2010–15	254.7
Estimated Load Reductions via BMPs, 100% Target Enrollment, 2010–15	235.9
Reductions from Land Use Changes	144.9
Total Estimated Load Reductions	380.8
Estimated Load Reductions Needed for BMAP, 2010–15	(credit) -126.1

4.2 City of Altamonte Springs

Altamonte Springs continued to participate in educational efforts, such as the Florida Yards and Neighborhoods (FYN) Program, and surface water sampling efforts. The city continued to fund and participate in the FYN Program through Seminole County and the University of Florida–Institute of Food and Agricultural Sciences (UF–IFAS) Extension Office (Project A-3). In addition, the city’s street sweeping program continues to operate year-round and citywide on a biweekly basis (Project A-2). The city’s Land Development Code 6.1.11.3 also requires new development and redevelopment to meet predevelopment stormwater conditions. For example, the Altamonte Springs SunRail Station (a private development) has less impervious area than

³ This number does not include estimated load reductions from agricultural BMP implementation during the period of record. Estimates for the most recent agricultural nutrient reductions will be calculated using the revised and recalibrated watershed and receiving water models (see **Section 2.3**), and will be included in the next annual report.

what was there before, and it provides water quality volume not provided previously to the station. The reduction of discharged phosphorus is calculated at 2.08 kilograms per year (kg/yr) (from 2.16 to 0.08 kg/yr).

4.3 City of Casselberry

As reported previously, a series of cost-effective whole-lake alum treatments was proposed for two lakes to bind phosphorus in the sediments, reducing loads and water quality impacts caused by internal nutrient recycling and groundwater seepage. In 2013, this project was expanded to include a total of 4 lakes (Middle, North, and South Lake Triplet, and Queen's Mirror Lake) (Project C-21). Altogether 15 treatments have been completed so far, with 1 more planned for completion in fall 2015 (or sooner) to conclude the project. The total cost of the project is anticipated to be \$297,016, and is fully funded.

The city has continued its public education programs related to water quality (Project C-28). It continues to participate in the FYN Program and continues to grow its conservation/environmental branding program, Green Up Casselberry. In May, the city once again hosted an Earth Day event called Earth Fest at Lake Concord Park. The event was very successful and included several very well-attended educational workshops that covered Florida-friendly landscaping, shoreline plants, rain gardens, rain barrels, and more. Events such as this result in high public exposure to Lake Concord Park's permanent stormwater educational features. The city also created and filled a new staff position, Natural Resources Officer, who will help enhance the city's educational, lake management, BMAP, and National Pollutant Discharge Elimination System (NPDES)-related activities.

The city completed the [final report](#) on the effectiveness evaluation of multiple baffle boxes, inlet filter baskets, and a continuous deflective separation (CDS) unit. A summary presentation of the results was presented at Florida Stormwater Association (FSA) and Florida Lake Management Society (FLMS) events. The results of the study will help guide the city in modifying its future proposed projects for the BMAP as necessary to improve their cost-effectiveness. It is anticipated that the results will provide valuable information statewide in helping agencies choose the most cost-effective forms of pollutant reduction for particular applications.

The city completed the Middle Lake Triplet portion of the project and substantially completed the North Lake Triplet shoreline revegetation (Projects C-7 and C-22). The project consisted of the removal of invasive vegetation, the installation of a shallow bioretention area (North Lake Triplet only), and restoration with native shoreline and emergent plants. The project included a volunteer planting event and the installation of educational signage. Additional plantings are proposed for North Lake Triplet later in 2015 to further enhance the shoreline.

4.4 City of Lake Mary

Lake Mary continued its street sweeping, education and outreach efforts, and catch basin clean out over the last year (Projects LM-3, LM-4, and LM-5). In addition, during the reporting period

BMPs (swales) were installed to hold and provide some pretreatment of stormwater runoff from roadways along East Lakeview Ave. at North Country Club.

4.5 City of Longwood

Longwood continued its BMP clean out (Project L-3), street sweeping (Project L-4), and education and outreach efforts (Project L-5) during the reporting year.

4.6 City of Maitland

Maitland continued its street sweeping and education components to achieve the city's nutrient reduction goals. Street sweeping continued once every two weeks throughout the reporting period (Project M-16). Educational events included, but were not limited to, cooperative public service announcements (PSAs) with Seminole County, stormwater education talks to classes at Maitland Middle School, presentations to lakefront property owners regarding stewardship, educational booths and community events, and a bimonthly newsletter with tips and regulations regarding stormwater BMPs. In addition, the city completed the Dommerich Lot Baffle Box Project (Project M-12) and the Minnehaha Circle Baffle Box Project (Project M-19) for a reduction of 1.1 and 7.7 lbs/yr, respectively, of TP.

4.7 City of Orlando

Orlando continues to maintain all its stormwater retrofit BMPs with clean out performed on the inlet baskets. The city is continually implementing ways to increase maintenance frequency. The city has developed a complete inventory of all structures and pipes in the Howell Branch Basin.

4.8 City of Oviedo

Oviedo adopted a Fats Oils and Grease (FOG) Disposal Ordinance (Ordinance #1620). The adoption of this ordinance provides a twofold benefit—it reduces the cost of utility line failures due to improper disposal and also addresses environmental issues such as the improper outside storage of commercial used cooking oil and fats the illicit dumping of cooking grease into storm pipes. The ordinance will allow city staff to check logs inside the facility to ensure that licensed grease haulers are collecting the fats, oils, and grease correctly.

The city purchased a video surveillance truck for proactive inspections of municipal separate storm sewer system (MS4) pipes. This will allow the city to more efficiently inspect and clean pipes, removing nonpoint pollutants before they reach waterbodies. In addition, as a part of the Garden Groves Subdivision Drainage Investigation, water sampling was conducted on Lake Charm, a waterbody not previously sampled. The outfall pipe is considered a “major outfall.” The 36-inch outfall pipe discharges on the north side of Panther Street and conveys over vacant agricultural land leading to Lake Jesup. The city also sampled for fecal coliform at the Panther Street conveyance ditch. The Panther Street ditch also conveys along the same drainage path as Lake Charm outfall. Both areas were of sampling interest, as the surrounding neighborhoods are all older and without traditional infrastructure or public sewer service.

A Pet Waste Ordinance adopted by the city last year spurred homeowners' associations to implement pet waste stations around common areas. Developers are now required to place pet waste stations in common areas.

4.9 City of Sanford

Sanford continued its street sweeping program, which includes sweeping 37.7 miles of roadways weekly in the Lake Jesup Basin (Project S-1). The city has also continued to participate in the FYN Program, which provides ongoing public education that takes place in the city (Project S-2).

4.9.1 City of Sanford – Site 10

The city recently completed the construction of a reclaimed water interconnection pipeline to Volusia County. While the system is not yet fully operational, the city will eventually send reclaimed water to Volusia County routinely, decreasing the amount of reclaimed water sent to Site 10 over time.

The city also continues to look for opportunities/partnerships for alternative water supply projects on Site 10 in an effort to reduce the demand for potable water supplies and decrease pollutant loadings to surface waters. As part of this long-term planning effort, the city evaluated an option for the additional storage of reclaimed water (a 9.7-acre pond with 9.2 million gallons of live storage) on Site 10.

The potential benefits of additional storage were evaluated through the development of a conceptual water balance. Based on this conceptual water balance, this will only allow the city to increase its reclaimed water flows to the site by 2 % or 0.025 million gallons per day (mgd). Conversely, the sprayfield irrigation of reclaimed water on Site 10 can only be decreased by 2 % as well (or 0.025 mgd) with the additional storage. The recently constructed reclaimed water interconnection to Volusia County will have an impact on the water balance at the site and should be re-evaluated once the system is fully operational.

4.10 City of Winter Park

Winter Park continued its street sweeping twice a month, education and outreach efforts, and the implementation of the stormwater and lake management program (Projects WP-34 and WP-35).

The city completed several projects during the reporting period, including the alum station rehab Phase 1 projects at two stations (Lake Osceola and Virginia North - Lake Virginia) (Project WP-43), and outfall improvements at Howard Drive (Lake Forest) and West Fawsett Road (Lake Sue) (Projects WP-44 and WP-45).

4.11 City of Winter Springs

Winter Springs continued its education and outreach activities and quarterly street sweeping of roads in the city. During the reporting period, the city improved the performance of its street sweeping operation (Project WS-7).

4.12 Florida Department of Transportation (FDOT) District 5

FDOT District 5 has continued its public education efforts (Project FDOT-6). In addition, the agency has reimplemented its street sweeping program throughout Seminole County, including the Lake Jesup BMAP Basin. Seven hundred and one pounds per year of TP are being removed through the District 5 current street sweeping program (Project FDOT-5).

4.13 Orange County

Orange County continued its street sweeping and educational outreach efforts (Projects OC-4 and OC-5). The pressure transducer installed at Lake Burkett continues to transmit data real-time to the [Water Atlas](#). Debris and sediment continue to be removed from stormwater conveyances using curb inlet baskets installed around Lake Sue (Project OC-3) and Lake Killarney (Project OC-10).

4.14 Seminole County

Seminole County continued to conduct ongoing educational efforts, PSAs, and ambient monitoring, cooperatively funded by the county and other local governments (Project SC-10). In addition, the county continued to conduct lake restoration events using volunteers, as well as AquaScaping Classes through the FYN Program. The county also continued biological and vegetative monitoring, mapping, and restoration both in-lake and in-basin, and conducted research studies, such as the Crow Creek Nutrient Study and Red Bug RSF Vegetative Efficiency Study. The submerged aquatic vegetation (SAV) (eelgrass) planted as a result of these programs has been thriving and expanding, and has rebounded; 3 acres of eelgrass have been re-established off the northern shore.

4.15 Town of Eatonville

Eatonville continued its street sweeping of all town roads and its public education and outreach activities (Projects E-1 and E-4).

4.16 Turnpike Authority

The Turnpike Authority continued its monthly street sweeping in the basin (Project T-2). In addition, the agency continued education and outreach efforts through presentations and an illicit discharge program (Project T-3).

4.17 Summary of Accomplishments

The fifth year of BMAP implementation was successful. The total project reductions during the reporting period were 51 lbs/yr of TP.¹ The total BMAP project reductions, including those shown as completed in the BMAP and the projects completed during the first four years of implementation, are 13,038.1 lbs/yr of TP, which are greater than the required reduction in the first BMAP iteration of 6,249.5 lbs/yr. The total reductions, including those from completed projects to date and the load within noncontributing areas to the lake, are 14,073.1 lbs/yr of TP, is a 71.7% reduction from the starting load. The goal of the first BMAP iteration was a 33 %

reduction in TP. **Table 6** and **Figure 17** illustrate the load reductions made by stakeholders in the Lake Jesup Basin and the remainder of the nutrient loading in each segment of the river to achieve the TMDLs.

Table 6: Summary of projects completed in the reporting period (June 1, 2014–May 31, 2015)

* This number does not include estimated load reductions from agricultural BMP implementation during the period of record. Estimates for the most recent agricultural nutrient reductions will be calculated using the revised and recalibrated watershed and receiving water models (see **Section 2.3**), and will be included in the next annual report.

Entity	Project Number	Project Name	TP Reduction (lbs/yr)
City of Casselberry	C-22	Middle Lake Triplet Shoreline Revegetation	0.3
City of Maitland	M-12	Dommerich Lot Baffle Box	1.1
City of Maitland	M-19	Minnehaha Circle Baffle Box	7.7
City of Oviedo	OV-3	Sweetwater Creek Project	30.4
Orange County	OC-8	Lake Burkett Inlet Baskets Phase I	11.5
Total*		Total Reductions in Reporting Period	51

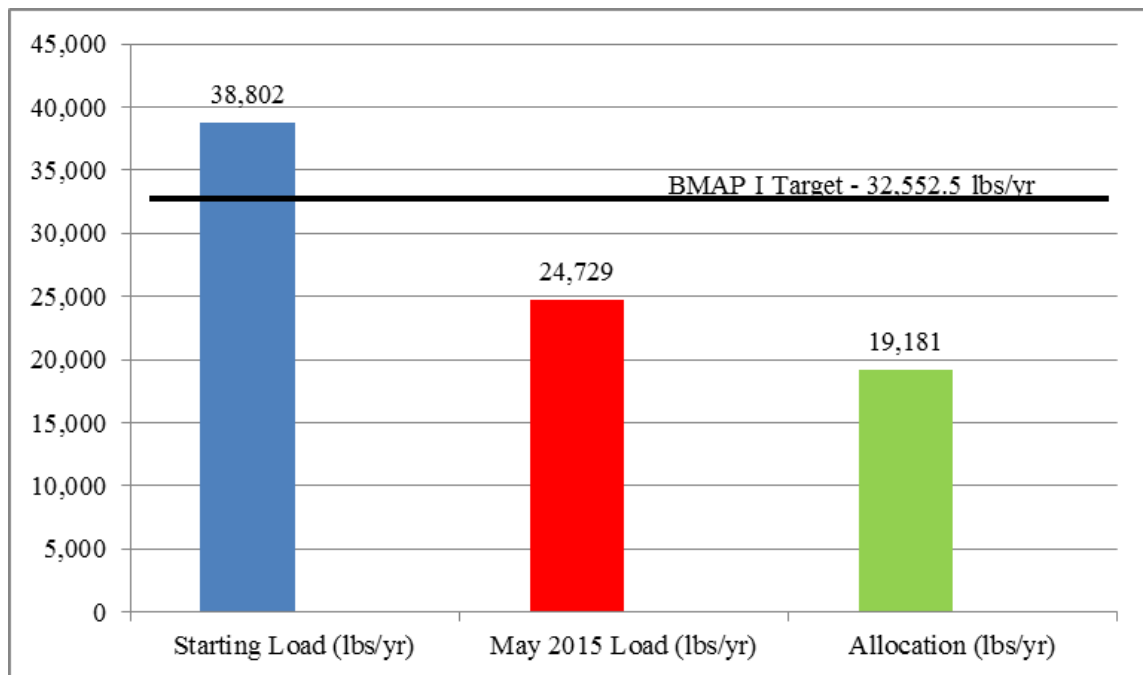


Figure 17: Progress towards the Lake Jesup TP TMDL through May 31, 2015

4.18 Activities for the Upcoming Year

4.18.1 FDACS

FDACS will continue to sign up growers for BMPs under the citrus, vegetable and agronomic crop, nursery, and cow/calf manuals. It will also explore opportunities for more one-on-one work and/or workshops with growers in the basin to ensure the proper implementation of BMPs.

As per the BMAP, the target date for enrolling all operations for which an adopted manual exists is June 2015. The target date for enrolling all other commodities is within five years of manual adoption. As of March 2015, unenrolled acreage in citrus, vegetable and agronomic crops, and nursery exists. However, the citrus manual was adopted in 2013 and the nursery manual was adopted in 2014. The vegetable and agronomic crop manual is expected to be adopted in 2015. During the coming year, FDACS will work to enroll the remaining acreage.

4.18.2 City of Casselberry

To further enhance the shoreline North Lake Triplet shoreline, additional plantings are proposed as part of the North Lake Triplet Shoreline Revegetation project later in 2015.

4.18.3 City of Longwood

Longwood will complete the Raven Avenue stormwater pipe replacement (Project L-2) for a reduction of 1.4 lbs/yr in TP.

4.18.4 City of Maitland

Maitland will complete the construction of two second-generation baffle boxes. The reduction in pounds per year of TP as a result of this project has yet to be determined.

4.18.5 City of Winter Park

Winter Park has a completed design (currently under review) for upgrades to the Howell Branch Retention Pond and is finalizing the scope for alum station rehab Phase 2 projects at two stations (Courtland Ave. and Morse Blvd.).

4.18.6 FDOT District 5

Final design and permitting for the Soldiers Creek alum treatment project, developed by FDOT and Seminole County, was finalized in 2014. The project is slated to begin construction in fall 2015.

4.18.7 Orange County

Orange County and Winter Park have secured funding from the SJRWMD to provide in-lake sediment inactivation on Lake Killarney. The project is planned and funded to be completed during 2015/2016.

4.18.8 Seminole County

Design, permitting, and all funding have been completed and secured for the Soldiers Creek Alum Nutrient Reduction Facility (NuRF) project; with construction scheduled to begin in September 2015. In addition, as part of the Black Hammock Creek Restoration Project, the design and permitting of Salt Creek were initiated. Potential restoration projects are still being determined for Sweetwater Creek.

APPENDIX A: BMAP PROJECTS

The BMAP project tables below show the status of the projects as of May 31, 2015. These tables provide information on the nutrient reduction attributed to each individual project and the remaining nutrient load after each project is implemented, shown in both kg/yr and lbs/yr. The expected load reductions are subtracted from the entity's starting point load. The remaining nutrient balance once all projects have been implemented by an entity should be equal to or exceed the allocation for that entity's facility or facilities. The schedule to implement each of the projects is also included in the tables.

Table A-1: City of Altamonte Springs projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
A-01	Existing BMPs	BMPs in place at time of TMDL	BMPs		35.0	
A-02	Street Sweeping	Street sweeping of 4.4 miles, twice monthly	Street sweeping	Completed	220.0	
A-03	Education Efforts	FYN, irrigation ordinance, PSAs, pamphlets, presentations, website, illicit discharge program	Education	Ongoing	4.6	

Table A-2: City of Altamonte Springs summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	259.6
Total Required Reduction 2010-2015	19.0
Credit for Future BMAPs	240.6

Table A-3: City of Casselberry projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
C-01	Lake Concord Stormwater Park/Anniversary Park – Plumosa Baffle Box	Redevelopment and retrofit of city-owned property into educational stormwater park; 2nd-generation baffle box	2nd-generation baffle box	Completed	1.10	10/1/2007
C-02	Lake Concord Stormwater Park/Anniversary Park – Exfiltration Trench	Redevelopment and retrofit of city-owned property into educational stormwater park; an exfiltration trench	Exfiltration	Completed	0.88	10/1/2007
C-03	Lake Concord Stormwater Park/Anniversary Park – Dry Detention	Redevelopment and retrofit of city-owned property into educational stormwater park; dry detention	Dry detention pond	Completed	0.00	10/1/2007

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
C-04	Lake Concord Stormwater Park/Anniversary Park – Swale, Wetland Revegetation, and Boardwalk	Redevelopment and retrofit of city-owned property into educational stormwater park; swale, lakeshore revegetation, educational boardwalk	Swales	Completed	0.22	10/1/2007
C-05	Lake Concord Stormwater Park/Anniversary Park	Redevelopment and retrofit of city-owned property into educational stormwater park; baffle box, pervious pavement, bioretention/ parking lot	Stormwater retrofit	Completed	0.22	10/1/2007
C-06	Anchor Road Reconstruction	Reconstruction of Anchor Road with drainage improvements including upgraded detention/retention ponds	Wet detention pond	Completed	6.39	10/1/2007
C-07	North Lake Triplet Shoreline Revegetation	Remove existing nuisance vegetation from north and west shores of North Lake Triplet and replace with beneficial species; install reverse berm and swale	Swales	Completed	1.76	12/1/2007
C-08	Secret Lake Shoreline Revegetation	Remove existing nuisance vegetation from east and southwest shores of Secret Lake and replace with beneficial species; install 2 reverse berms and swales	Swales	Completed	0.44	1/1/2008
C-09	Fountain Aeration and Revegetation for Grassy Lake	Install aeration	Aeration system	Completed	0.00	3/1/2009
C-10	672 and 676 San Pablo Avenue 2nd-Generation Baffle Boxes	Baffle boxes	2nd-generation baffle box	Completed	2.87	3/1/2009

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
C-11	Madrid Drive at Desoto Drive 2nd-Generation Baffle Box	Replace existing storm manholes with 2 inlet filters and 1 2nd-generation baffle box for removal of pollutants	2nd-Generation Baffle Box	Completed	0.88	3/1/2009
C-12	Sonora Drive at Desoto Drive 2nd-Generation Baffle box	Replace existing storm manholes with 2nd-generation baffle boxes for removal of pollutants	2nd-generation baffle box	Completed	5.29	3/1/2009
C-13	Live Oaks Center 2nd-Generation Baffle Box	Replace existing storm manholes with 2nd-generation baffle boxes for removal of pollutants	2nd-generation baffle box	Deferred	4.19	
C-14	360 South Lake Triplet Drive 2nd-Generation Baffle Box	Replace existing storm manholes with 2nd-generation baffle boxes for removal of pollutants	2nd-generation baffle box	Completed	3.75	3/1/2011
C-15	Lake Hodge Park 2 nd Generation Baffle Box	Replace existing storm manholes with 2nd-generation baffle boxes for removal of pollutants	2nd-generation baffle box	Completed	7.28	
C-16	161 South Lake Triplet Drive 2nd-Generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutants	2nd-generation baffle box	Planned	12.13	January 2015 (substituted project)
C-17	530 South Lake Triplet Drive 2nd-Generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutants	2nd-generation baffle box	Planned	2.87	

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
C-18	Carriage Hill Unit 4 2nd-Generation Baffle Boxes at the Three Outfalls North of Violet Dell, Tulip Trail and Lowndes Square Queens Mirror	Replace existing storm manholes with baffle boxes for removal of pollutants; this project has been replaced with one constructing bioswales and other drainage improvements instead	2nd-generation baffle box	Planned	2.65	10/1/2013
C-19	808 Osceola Trail 2nd Generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutants	2nd-generation baffle box	Completed	2.65	9/1/2012
C-20	Park Drive Drainage/Wetland Improvements	Construction of stormwater retention	Stormwater retention	Planned	9.26	12/1/2013
C-21	Whole Lake Alum Treatment	Retention area on Lots 10A and 11 on north side of Park Drive	Alum treatment	Under way	1,125.24	
C-22	Middle Lake Triplet Shoreline Revegetation	Modified project: Execution of whole lake alum treatments to directly treat Queens Mirror Lake and Triplet Lake chain to address loads due to groundwater seepage and internal recycling		Completed	0.66	
C-23	Secret Way at Canal 2nd-Generation Baffle Box	Remove existing nuisance vegetation from north shore of Middle Lake Triplet and replace with beneficial species	2nd-generation baffle box	Planned	1.54	
C-24	51 North Lake Triplet Drive 2nd-Generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutants	2nd-generation baffle box	Planned	2.65	
C-25	South Lake Triplet Swales	Replace existing storm manholes with baffle boxes for removal of pollutants	Swales	Planned	2.20	

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
C-26	South Lake Triplet 2nd-Generation Baffle Box	Install water quality swales along northwestern shore of south Lake Triplet to provide golf course runoff treatment	2nd-generation baffle box	Planned	1.76	
C-27	Street Sweeping	Replace existing storm manholes with baffle boxes for removal of pollutants (sediment and detritus) (4.1)	Street sweeping	Completed	11.68	
C-27	Street Sweeping – Additional Credit	Monthly street sweeping of 72.5 miles, 29,876 cubic feet of material collected annually	Street sweeping	Completed	2,007.75	
C-28	Education Efforts	FYN, landscape and irrigation ordinances, PSAs, pamphlets/ presentations, website, illicit discharge program	Education	Ongoing	188.72	
C-29	Existing BMPs	BMPs in place at time of TMDL		Completed	705.26	
C-30	Structures Cleaning	729 cubic feet of solids collected from catch basins, baffle boxes, and other structures per year	BMP clean out	Completed	57.32	

Table A-4: City of Casselberry summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	1,902.0
Total Required Reduction 2010–15	342.7
Credit for Future BMAPs	1,559.3

Table A-5: City of Lake Mary projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
LM-01	Lake Mary Woods	Eliminate 18 septic tanks 75 feet from surface water; some were failing	Eliminate 18 septic tanks 75 feet from surface water; some were failing	Completed	44.50	5/1/2005
LM-02	Street Sweeping	Annual street sweeping of 31.5 miles	Street sweeping	Ongoing	17.00	
LM-03	Education Efforts	FYN, ordinances, PSAs, pamphlets, presentations, website, illicit discharge program	Education	Ongoing	67.60	
LM-04	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	264.30	
LM-05	Catch Basin Clean Out	Removal of 1,620 cubic feet of material per year	BMP clean out	Completed	57.00	

Table A-6: City of Lake Mary summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	450.4
Total Required Reduction 2010–15	264.3
Credit for Future BMAPs	186.1

Table A-7: City of Longwood projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
L-01	Fairy Lake Outfall	Fairy Lake outfall	Stormwater retrofit	Completed	0.7	
L-02	Stormwater Master Plan Project	Raven Ave. replacement of stormwater pipe	Stormwater retrofit	Planned	1.4	
L-03	BMP Clean Out	Clean out of BMPs, 176 cubic feet of material per year	BMP clean out	Completed	5	
L-04	Street Sweeping – additional credit	Quarterly street sweeping of 11.1 miles	Street sweeping	Completed	4	
L-05	Education Efforts	FYN, pamphlets, presentations, website, illicit discharge program	Education	Ongoing	44.9	
L-06	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	58.9	
L-07	Regional Project	Participate in regional project		Planned	90.4	

Table A-8: City of Longwood summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	205.3
Total Required Reduction 2010–15	205.3
Credit for Future BMAPs	0

Table A-9: City of Maitland projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
M-01	Sybelia Parkway Regional Pond	Construct wet pond	Wet pond	Completed	33.7	
M-02	Lake Gem/Park Lake COOP BMP	Construct 2nd-generation baffle box	2nd-generation baffle box	Delayed indefinitely	0.3	
M-03	Lake Gem/Park Lake COOP BMP	Construct 2nd-generation baffle box	2nd-generation baffle box	Delayed indefinitely	3.1	
M-04	Lake Gem/Park Lake COOP BMP	Construct 2nd-generation baffle box	2nd-generation baffle box	Delayed indefinitely	0.2	
M-05	Lake Gem/Park Lake COOP BMP	Construct 2nd-generation baffle box	2nd-generation baffle box	Delayed indefinitely	18.9	

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
M-06	Lake Gem/Park Lake COOP BMP	Construct 2nd-generation baffle box	2nd-generation baffle box	Delayed indefinitely	9.1	
M-07	Lake Maitland Basin – Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	Construct infiltration trenches	Infiltration trenches	Completed	0.5	
M-08	Lake Maitland Basin – Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	Construct infiltration trenches	Infiltration trenches	Completed	1.7	
M-09	Lake Maitland Basin – Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	Construct infiltration trenches	Infiltration trenches	Completed	0.6	
M-10	North Lake Maitland Leaf Trap Project	Install curb inlet leaf trap	Install curb inlet leaf trap	Completed	0.1	
M-11	Lake Maitland Basin 2 Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	Construct infiltration trenches	Infiltration trenches	Completed	0.9	
M-12	Dommerich Lot Baffle Box	Construct 2nd-generation baffle box	2nd-generation baffle box	Planned and funded	1.1	
M-13	Chippewa Trail Baffle Box	Construct 2nd-generation baffle box	2nd-generation baffle box	Completed	1.1	
M-14	Horatio Avenue Infiltration Trench	Construct infiltration trenches	Infiltration trenches	Planned	0.9	
M-15	Minnehaha Park Stormwater Improvements Dry Stormwater Pond	Construct wet pond	Construct wet pond	Completed	1.3	
M-16	Street Sweeping	Street sweeping once every 2 weeks of 71 miles	Street sweeping	Completed	398	

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
M-17	Education Efforts	Landscaping ordinance, PSAs, presentations/ pamphlets, website, illicit discharge program	Education	Ongoing	40.8	
M-18	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	0.7	
M-19	Packwood Avenue Baffle Box	Construct 2nd-generation baffle box	2nd-generation baffle box	Completed	9.9	
M-20	Park Lake Baffle Boxes	Construct 2nd-generation baffle box	2nd-generation baffle box	Planned	7.7	
M-21	Minnehaha Circle Baffle Box	Construct 2nd-generation baffle box	2nd-generation baffle box	Completed	23.2	

Table A-10: City of Maitland summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	553.8
Total Required Reduction 2010–15	124.8
Credit for Future BMAPs	429.0

Table A-11: City of Orlando projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
ORL-01	Lake Dot Water Quality Restoration	Install alum treatment system, where aluminum sulfate (alum) is injected into stormline on flow-proportioned basis	Alum treatment	Completed	70.4	6/10/1905
ORL-02	Hazel Street Outfall Improvements	Install CDS unit at Lake Winyah from 96" pipe	Stormwater retrofit	Completed	8.3	7/1/2000
ORL-03	Lake Rowena Screening Facility and Alum Stormwater Treatment	Install underground, flow-actuated rotating bar screen on 108" outfall pipe to capture debris with additional treatment via alum system	Screening and alum	Completed	55	6/16/1905
ORL-04	Lake Highland CDS Unit	Install CDS unit at Lake Highland	BMP clean out	Completed	1	6/20/1905
ORL-05	Mills Avenue Retrofit	Construct litter collection screen on Mills Ave., adjacent to Lake Rowena, to treat runoff from 36" and 24" storm lines	Stormwater retrofit	Completed	8.4	1/1/2009
ORL-06	Overbrook Stormwater Improvements	Construct 2nd-generation baffle box upstream of Lake Adair; implement pollution prevention methods, including gravel bottom and check dams to settle out pollutants	Stormwater retrofit	Completed	1.8	10/1/2007
ORL-07	Guernsey Park – Expansion of Wet Detention Pond	Expand wet detention pond to treat 61 % of sub-basin drainage	Wet detention pond	Completed	0.1	11/1/2011
ORL-08	Ivanhoe Plaza Park Exfiltration	Install exfiltration galleries to treat 100 % of sub-basin drainage	Exfiltration	Completed	1.3	5/1/2012

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
ORL-09	Lake Concord 2nd-Generation Baffle Boxes	Construct 2 2nd-generation baffle boxes upstream of Lake Concord and reroute flow to treat 30" and 24" outfalls from nearly 100 % of 2 sub-basins	2nd-generation baffle box	Completed	0.8	7/1/2011
ORL-10	Winyah (Westchester Ave./Wilkinson St.) 2nd-Generation Baffle Box	Construct 2nd-generation baffle box upstream of Lake Winyah to treat 71 % of sub-basin	2nd-generation baffle box	Completed	1.6	9/1/2009
ORL-11	Westmoreland 2nd-Generation Baffle Box	Construct 2nd-generation baffle box upstream of Lake Adair	2nd-generation baffle box	Completed	0.1	
ORL-12	Stormwater Filtration Systems/ Inlet Baskets	Install 6 inlet baskets around perimeter of Lake Adair	BMP clean out	Completed	0	
ORL-13	Stormwater Filtration Systems/ Inlet Baskets	Install 11 inlet baskets in Spring Lake Basin	BMP clean out	Completed	0	
ORL-14	Stormwater Filtration Systems/ Inlet Baskets	Install 13 inlet baskets in Lake Formosa Basin	BMP clean out	Completed	0.1	
ORL-15	Stormwater Filtration Systems/ Inlet Baskets	Install 29 inlet baskets in Lake Highland Basin	BMP clean out	Completed	3.5	
ORL-16	Stormwater Filtration Systems/ Inlet Baskets	Install 2 inlet baskets in Lake Rowena Basin	BMP clean out	Completed	0.5	
ORL-17	Stormwater Filtration Systems/ Inlet Baskets	Install 49 inlet baskets in Lake Ivanhoe Basin	BMP clean out	Completed	0.6	
ORL-18	Stormwater Filtration Systems/ Inlet Baskets	Install 4 inlet baskets in Lake Druid Basin	BMP clean out	Completed	0.4	

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
ORL-19	Street Sweeping	2 times per week of 6.4 miles, weekly of 9.3 miles, and 2 times per month of 113 miles	Street sweeping	Completed	428	
ORL-20	Reading Dr (24" line) – 2nd-Generation Baffle Box at Lake Adair	Construct 2nd-generation baffle box upstream of Lake Adair to treat 13 % of sub-basin	2nd-generation baffle box	Completed	0.5	9/1/2009
ORL-21	Spring Lake – 2nd-Generation Baffle Box at Rio Grande	Construct 2nd-generation baffle box upstream of Spring Lake to treat 100 % of sub-basin	2nd-generation baffle box	Completed	0.6	9/1/2009
ORL-22	Spring Lake– 2nd-Generation Baffle Box at Springdale Rd.	Construct 2nd-generation baffle box upstream of Spring Lake to treat 100 % of sub-basin	2nd-generation baffle box	Completed	0.1	
ORL-23	DOT Pond Maintenance, west of Spring Lake	Remove muck/sediment and expand wet detention pond to treat 95 % and 5 % of 2 sub-basins, respectively	Wet detention pond	Completed	6.1	2/1/2010
ORL-24	Weber Dr – 2nd-Generation Baffle Box at Lake Druid	Construct 2nd-generation baffle box upstream of Lake Druid to treat 7 % of sub-basin	2nd-generation baffle box	Completed	0.3	
ORL-25	Educational Component	FYN, ordinances (landscape, irrigation, pet waste), PSAs, pamphlets, presentations, website, illicit discharge program	Education	Ongoing	94.2	

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
ORL-26	Lake Concord Alum Injection Retrofit	Divert stormwater from Lake Concord Basin to Lake Dot alum treatment before discharging into chain of lakes; install injection line in Lake Dot and new baffle box on Concord Ave.	Stormwater management	Under way	3.8	6/1/2013
ORL-27	Existing BMPs	BMPs in place at time of TMDL		Completed	684.4	
ORL-28	FDOT Pond Sandbar Removal from Spring Lake	Remove sandbar from FDOT pond outfall that enters Spring Lake	Stormwater management	Completed	0.0	11/1/2010
ORL-29	Catch Basin Clean Out	Clean out catch basins, remove 524 cubic feet of material per year	BMP clean out	Completed	19	
ORL-30	BMP Clean Out	Clean out of BMPs, removal of 133 cubic feet of material per year	BMP clean out	Completed	4	

Table A-12: City of Orlando summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	1,394.9
Total Required Reduction 2010–15	326.3
Credit for Future BMAPs	1,068.6

Table A-13: City of Oviedo projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
OV-01	Aulin Regional Stormwater Pond	Aulin Regional Stormwater Pond	Wet detention pond	Completed	13.5	
OV-02	Lightwood Knox Canal Project	Lightwood Knox Canal Project	Dry detention pond, swales	Planned	84.5	
OV-03	Sweetwater Creek Project	Sweetwater Creek Project	Dry detention pond, wet detention pond	Completed	30.4	
OV-04	Solarly Canal Stormwater Treatment Area	Regional stormwater treatment facility consisting of 8.0-acre wet pond and 4.8-acre wetland	Wet detention pond, wetland treatment	Completed	188.3	
OV-05	Street Sweeping	Monthly street sweeping of 315 lane miles	Street sweeping	Ongoing	601	
OV-06	Pet waste ordinance and Education Efforts	FYN, pet waste ordinance adopted, illicit discharge program, Adopt A Pond Program, FOG ordinance approved and adopted	Education/ ordinance	Completed	52	
OV-07	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	386.5	
OV-08	Inlets and Pipe Cleaning	Routine cleaning of inlets and pipes	BMP clean out	Completed	220	
OV-09	Aulin Ave. North	Construct stormwater conveyance system and treatment area	Stormwater retrofitting and water quality treatment	Planned	Not quantified	
OV-10	Oviedo Regional Pond	Construct retention pond to receive and treat drainage from commercial sites and treat surrounding runoff prior to being discharged to Sweetwater Creek	Wet detention treatment area and infrastructure	Planned	1.9	
OV-11	Phase II of 426 at S. Lake Jessup	Construct 2 new treatment areas and enlarge and improve existing system in conjunction with FDOT and widen 426 outfalls to WBID 2999 and WBID 2996	Stormwater management	Planned	0.00	

Table A-14: City of Oviedo summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	1,578.1
Total Required Reduction 2010–15	758.7
Credit for Future BMAPs	

Table A-15: City of Sanford projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
S-01	Street Sweeping	Weekly street sweeping of 37.7 miles	Street sweeping	Completed	427.0	
S-02	Public Education	Public education	Education	Ongoing	108.9	
S-03	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	521.2	

Table A-16: City of Sanford summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	1,057.1
Total Required Reduction 2010–15	602.2
Credit for Future BMAPs	

Table A-17: City of Winter Park projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
WP-01	Lake Island Interconnect	First flush bypass to wet retention ponds	Wet detention pond	Completed	4.7	6/1/2002
WP-02	Via Lugano Exfiltration	Off-line exfiltration	Dry detention pond	Completed	1.3	10/1/1996
WP-03	N. Park Ave. Exfiltration	Off-line exfiltration	Off-line exfiltration	Completed	6.6	6/1/2004
WP-04	Fairway 3 Exfiltration	Off-line exfiltration	Exfiltration trench	Completed	5.5	11/1/2006
WP-05	McKean Road CDS	CDS Unit on 24" outfall	CDS	Completed	0	5/1/2004
WP-06	Pinetree Rd. Outfall CDS	CDS unit on 42" outfall	CDS	Completed	0.6	5/1/2004
WP-07	1190 Park Ave. CDS	CDS unit on 30" outfall	BMP clean out	Completed	0.2	8/1/1998
WP-08	Moss/Venetian Dry Capture 1st-Generation Baffle Box	Baffle screen on 15" outfall	1st-generation baffle box	Completed	0.1	2/1/2000
WP-09	Green Cove Road 2 CDS Units	2 CDS units on 2 24" outfalls	BMP clean out	Completed	0.1	5/1/2004
WP-10	Courtland Alum Injection Treatment	Alum injection at Lake Mizell outfall	Alum	Completed	21.2	
WP-11	Partnership/Wet Detention/Windsong	Developer's agreement to treat Palmer Ditch Basin runoff in site MSSW Management and Storage of Surface Water (MSSW) site	Wet detention pond	Completed	5.8	
WP-12	Lincoln Ave Alum Injection Treatment	Alum injection at Lake Osceola outfall	Alum	Completed	37.7	
WP-13	Alexander Place Alum Injection Treatment with Baffle Box	Alum injection at Lake Osceola outfall	Alum	Completed	22.6	
WP-14	Morse/Alum Injection Treatment	Alum injection at Lake Osceola outfall	Alum	Completed	6.9	

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
WP-15	Trismen and Lakewood Drive Exfiltration	Off-line exfiltration	Dry detention pond	Completed	0.4	
WP-16	Trismen CDS Unit	CDS unit on 24" outfall	Stormwater retrofit (CDS)	Completed	0	
WP-17	Trismen Dry 1st-Generation Baffle Box	Baffle screen on 15" outfall	Stormwater retrofit	Completed	0	
WP-18	Elizabeth CDS Treating Inlet at Bonita and Dale	CDS on 15" pipe	Stormwater retrofit	Completed	0	5/1/2004
WP-19	Lake Chelton Outfall Improvement	4 dry-capture baffle inlets and boxes	Stormwater retrofit	Completed	0	9/1/2003
WP-20	Lakeview Road Bricking	CDS installation on 24" outfall	CDS unit	Completed	0.1	3/1/2006
WP-21	Mead Gardens Borrow Pit Pond Retrofit	Retrofit screening devices (2 baffle boxes) to existing MSSW	Baffle boxes	Completed	15.4	5/1/2006
WP-22	Glencoe Road Bricking	Stormwater capture and screening system(baffle box)	Baffle box	Completed	0.1	3/1/2007
WP-23	Laurel Road Dry Retention Pond	On-line dry retention pond	Dry retention pond	Completed	1.7	5/1/1999
WP-24	Alum Injection Treatment/ Rollins	Alum injection at outfalls to Lake Virginia	Alum	Completed	26.8	1/1/1995
WP-25	9th Grade Center Pond Wet Detention	Wet detention pond retrofit	Wet detention pond	Completed	7.6	Pre-1995
WP-26	Lakeview Bricking	Stormwater capture and screening system(baffle box)	Baffle box	Completed	0.1	2/1/2005
WP-27	Oxford Road Bricking	Stormwater capture and screening system(baffle box)	Baffle box	Completed	0.1	8/1/2006

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
WP-28	Lake Island Park	Created treatment volume in Lake Mendsen, construct control structures for wet detention treatment	Wet detention pond	Completed	83.8	6/1/1905
WP-29	950 Palmer Ave. Retrofit	Stormwater capture and screening system(baffle box)	Baffle box	Completed	0.3	7/1/2007
WP-30	Banchory Exfiltration	On-line retention 0.25 treatment volume	On-line retention	Completed	0.4	6/30/1905
WP-31	Bryan CDS	CDS	BMP clean out	Completed	0.2	6/30/1905
WP-32	E. Lake Sue CDS	CDS	BMP clean out	Completed	0.1	6/30/1905
WP-33	Elizabeth Drive Baffle Box	Baffle box	2nd-generation baffle box	Completed	1.1	
WP-34	Street Sweeping	Street sweeping 2 times per month of 130 miles	Street sweeping	Completed	13.6	
WP-35	Education Efforts	FYN, landscape and fertilizer ordinances, pamphlets, presentations, website, illicit discharge program	Education	Ongoing	106.3	
WP-36	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	151.5	
WP-37	Courland Avenue Alum System Retrofit	Two Suntree baffle boxes (Osceola Ave. and Mizell Ave. outfalls)	Baffle boxes	Completed	40.7	6/1/2011
WP-38	Alabama Drive Improvements	2 dry retention swales and 1 baffle box	Stormwater management	Completed	1.7	8/1/2011
WP-39	Morse Boulevard Outfalls Retrofit	2 Suntree baffle boxes	Baffle boxes	Completed	194.7	4/1/2012
WP-40	Park North Exfiltration	Exfiltration trench	Exfiltration trench	Completed	9.7	2/1/2014
WP-41	Canton Avenue Outfall Retrofit	Suntree baffle box	Baffle box	Completed	6.6	5/1/2013

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
WP-43	Alum Station Rehabs Phase 1 – 2 Stations	Exfiltration trench	Exfiltration trench	Completed	6.6	4/15/2014
WP-44	Howard Drive Outfall Retrofit	CDS, detention, Beemats	CDS, detention, Beemats	Completed	47.4	3/2/2014
WP-45	W. Fawsett Road Outfall Retrofit	CDS	CDS	Completed	31.8	2/13/2014

Table A-18: City of Winter Park summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	862.1
Total Required Reduction 2010–15	370.5
Credit for Future BMAPs	

Table A-19: City of Winter Springs projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
WS-01	Solary Canal Stormwater Treatment Area	Regional stormwater treatment facility consisting of 8.0-acre wet pond and 4.8-acre wetland		Completed	188.3	
WS-02	Winding Hollow Wetland Treatment Area	Divert no name creek flow into wetland treatment system		Planned	210.1	
WS-03	Winter Springs and Wedgewood Filtration Devices	Retrofit stormwater outfalls with flow-through filtration devices		Planned	24.7	
WS-04	North Orlando Townsite Filtration Devices	Retrofit eastern and western outfalls with flow-through filtration devices		Planned	5.2	
WS-05	Highlands Regional Pond Enhancements	Expand existing wet pond and redirect untreated stormwater runoff to pond		Planned	64.5	
WS-06	Education Efforts – Update Local Codes and Ordinances (Fertilizer Rule, etc.), FYN	Continue FYN, PSAs, distribution of pamphlets, presentations to various groups, and inspection program on illicit discharges	Education	Ongoing	92	
WS-07	Street Sweeping	Quarterly street sweeping; total swept in reporting year is 671 miles.	Street sweeping	Completed	58	
WS-08	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	765.2	

Table A-20: City of Winter Springs summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	1,408
Total Required Reduction 2010–15	513
Credit for Future BMAPs	

Table A-21: FDOT projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
FDOT-01	FM: 240167-1 SR434	Widen from 2 to 6 lanes from McCulloch Road to Mitchell Hammock; drainage improvements and treatment of existing impervious area	Wet detention	Completed	3.6	
FDOT-02	Soldiers Creek Alum Treatment Facility	Flow-through alum system along CR 427 in Seminole County to reduce nutrient loads in Soldiers Creek	Alum treatment	Planned	80	
FDOT-03	FM: 240196-1 SR17-92 Basin Construction and Demolition (C&D)	Proposed widening of SR 15/600 (US 17-92) from Shepard Road to Lake Mary Blvd.; drainage improvements and treatment of existing impervious area	Dry retention pond	Planned	3.7	
FDOT-04	FM: 240163-1 SR 46	SR 46 bridge replacement over Lake Jesup; drainage improvements and treatment of existing impervious area	Wet detention	Completed	5.4	
FDOT-05	Street Sweeping	Monthly street sweeping	Street sweeping	Completed	90.80	
FDOT-06	Education Efforts	Public education efforts	Education	Ongoing	6.5	
FDOT-07	Existing BMPs	Varies	BMPs	Completed	207.7	

Table A-22: FDOT summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	397.7
Total Required Reduction 2010–15	132.3
Credit for Future BMAPs	

Table A-23: Orange County projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
OC-01	Hall Road Improvements	OC Capital Improvement Plan (CIP) Hall Road Improvements	Stormwater retrofit	Completed	0.1	
OC-02	OC CIP Lake Waunatta	OC CIP Lake Waunatta	Stormwater retrofit	Completed	3.5	
OC-03	Lake Sue Inlet Baskets	Lake Sue inlet baskets	BMP clean out	Completed	1	
OC-04	Street Sweeping	Street sweeping for total of 971.93 curb miles per year	Street sweeping	Completed	29.1	
OC-05	Education Efforts	FYN, ordinances, PSAs, pamphlets, presentations, website, illicit discharge program	Education	Ongoing	151	
OC-06	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	197.3	
OC-07	Regional Project	Participate in regional project		Planned	157	
OC-08	Lake Burkett Inlet Baskets Phase I	Lake Burkett sub-basin	BMP clean out	Completed	11.5	
OC-09	Lake Burkett Inlet Baskets Phase II	Lake Burkett sub-basin	Inlet baskets	Planned	12.7	
OC-10	Lake Killarney Inlet Baskets	Lake Killarney	Inlet baskets	Ongoing	5.8	

Table A-24: Orange County summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	569.0
Total Required Reduction 2010-2015	569.0
Credit for Future BMAPs	

Table A-25: Orlando Orange County Expressway Authority (OOCEA) projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
OOCEA-01	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	12.8	

Table A-26: OOCEA summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	
Total Required Reduction 2010–15	5.2
Credit for Future BMAPs	

Table A-27: Seminole County projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
SC-01	Cassel Creek RSF	RSF to treat water in sub-basin upstream	Wet detention pond	Completed	156.80	9/1/2012
SC-02	Lake Ann Outfall	Baffle box and pipe replacement	Stormwater retrofit	Completed	10.80	4/1/2001
SC-03	Red Bug Lake Road RSF	RSF to treat water in sub-basin upstream	Wet detention pond	Completed	93.00	1/1/2010
SC-04	Navy Canal RSF	RSF to treat water in sub-basin upstream	Wet detention pond	Completed	285.00	3/1/2005
SC-05	Cameron Ditch RSF	RSF to treat water in sub basin upstream	Wet detention pond, wetland treatment	Completed	71.90	4/17/2006
SC-06	Lake Howell Road Pond Retrofit	Retrofit of old FDOT pond now under county jurisdiction that drains Howell Branch Road	Wet detention pond	Completed	7.10	5/1/2007
SC-07	Solary Canal Stormwater Treatment Area	RST facility consisting of 8.0-acre wet pond and 4.8-acre wetland	Wet detention pond, wetland treatment	Completed	188.30	4/1/2010
SC-08	Anchor Road Reconstruction	Reconstruct Anchor Road with drainage improvements, including upgraded detention/retention ponds	Wet detention pond	Completed	5.10	11/1/2008
SC-09	Street Sweeping	Street sweeping monthly of 66.8 miles and quarterly of 160.2 miles	Street sweeping	Completed	124.00	
SC-10	Education Efforts	FYN, ordinances, PSAs, pamphlets, presentations, website, illicit discharge program	Education	Ongoing	558.30	
SC-11	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	1,753.80	
SC-12	Soldiers Creek at County Road 427 RSF	RSF with alum to treat water in sub-basin upstream	Alum treatment	Final design	2,137.00	4/1/2014

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
SC-13	Bear Gully RSF at Chapman Road	Preliminary design for RSF to treat water from Bear Gully Canal sub-basin	Wet detention pond	Preliminary design under way, in sampling phase	82.0–238.0 (estimated)	2/1/2013
SC-14	Eagle Lake RSF at Six Mile Creek	Preliminary design for RSF to treat water from Six Mile Creek	Wet detention pond	Preliminary design, in sampling phase, under way	229 (estimated)	8/1/2013
SC-15	Lake Jesup In-Lake Restoration/Revegetation	2,400 linear feet of shoreline planting at Jesup Park	Shoreline planting	Completed	0.00	10/1/2012
SC-16	Lake Jesup SAV Restoration	Planting 2 acres of eel grass near the Marlbed Flats	In-lake restoration, native SAV	Completed	0.00	4/1/2012
SC-17	Black Hammock Creek Reclamation and Floodplain Treatment System	Preliminary and final design, construction, and monitoring to treat water from Black Hammock area	Creek restoration/reclamation	Preliminary design under way	0.00	4/1/2013
SC-18	Lake Howell Restoration Events	In-lake revegetation of submersed and emergent plants by residents and volunteers, 6 events held to date	In-lake restoration	Ongoing	0.00	2011
SC-19	Lake Burkett/ Martha Restoration Events	In-lake revegetation of submersed and emergent plants by residents and volunteers; 1 event held to date	In-lake restoration	Ongoing	0.00	2013
SC-20	BMP Clean Out	Clean out of BMPs, 6,936 cubic feet of material per year	BMP clean out	Completed	141.00	-
SC-21	Bear Gully Lake Restoration Events	In-lake revegetation of submersed and emergent plants by residents and volunteers; 2 events held to date	In-lake restoration	Ongoing	0.00	2011
SC-22	Lake Jesup SAV Restoration	Planting of 2 acres of eel grass within containment, to reestablish SAV in lake; completed by staff and volunteers; 3 events completed to date	In-lake restoration	Ongoing	0.00	2011

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
SC-23	Lake Jesup Shoreline Restoration at 2 county parks; Jesup and Overlook	In-lake revegetation of shoreline emergent plants by contractors monitored by county staff and maintained with herbicides for invasive plant management	In-lake restoration	Ongoing – 2 county parklands completed to date	0.00	2011
SC-24	Lake Jesup Shoreline Restoration	In-lake revegetation of shoreline emergent plants by contractors	In-lake restoration	Ongoing – 17,000 linear feet of shoreline Completed to date	0.00	2011

Table A-28: Seminole County summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	5,843.1
Total Required Reduction 2010–15	2,137.0
Credit for Future BMAPs	

Table A-29: Town of Eatonville projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
E-01	Street Sweeping	Monthly street sweeping of 3.7 miles	Street sweeping	Completed	0.3	
E-02	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	9.6	
E-03	Regional Project	Participate in regional project		Planned	11.6	
E-04	Public Education	Brochures, newsletters, public displays, workshops, illicit discharge program	Education	Ongoing	1.9	

Table A-30: Town of Eatonville summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	23.4
Total Required Reduction 2010–15	23.4
Credit for Future BMAPs	

Table A-31: Turnpike Authority projects

Project Number	Project Name	Project Description	Project Type	Status	TP Reduction (lbs/yr)	Start Date
T-01	Existing BMPs	BMPs in place at time of TMDL	BMPs	Completed	252.3	
T-02	Monthly Street Sweeping of 48 Miles	Monthly street sweeping	Street sweeping	Ongoing	3.2	
T-03	Education Efforts	Presentations, illicit discharge program	Education	Ongoing	9	

Table A-32: Turnpike Authority summary of reductions

Category	TP Reduction (lbs/yr)
Total Projects Reduction	264.5
Total Required Reduction 2010–15	101.1
Credit for Future BMAPs	

APPENDIX B: WATER QUALITY DATA

The Lake Jesup BMAP monitoring plan was designed to enhance the understanding of basin loads, track project implementation, and identify long-term water quality trends. The information gathered through the monitoring plan will measure progress toward achieving the TP TMDL and provide a foundation for continued improvement in cost-effective project implementation. The following summarizes the data collected during the reporting period that have not been uploaded to STORET.

The following table shows the City of Maitland’s sampling results at the outfall weir from Lake Maitland (at Howell Branch Road).

Table B-1: City of Winter Park sampling results

N/A = Not applicable, TN sample was corrupted

Date	Ammonia (mg/L)	Nitrous Oxides (NOx) (mg/L)	TN (mg/L)	Soluble Reactive Phosphorus (SRP) (mg/L)	TP (mg/L)	Chl a (mg/L)	Biochemical Oxygen Demand– Five Day (BOD ₅) (mg/L)
6/11/2014	0.006	0.467	0.010	0.004	0.011	0.024	4.0
7/9/2014	0.010	0.306	0.044	0.001	0.021	0.008	2.4
8/13/2014	0.011	0.396	0.003	0.004	0.018	0.014	2.4
9/17/2014	0.040	0.501	0.008	0.002	0.022	0.008	3.2
10/8/2014	0.010	0.605	0.013	0.001	0.016	0.005	2.8
11/12/2014	0.041	0.607	0.026	0.001	0.024	0.009	1.7
12/10/2014	0.136	0.482	0.013	0.002	0.022	0.002	1.8
1/20/2015	0.019	0.350	0.003	0.005	0.014	0.002	1.0
2/11/2015	0.003	0.313	0.005	0.001	0.014	0.001	1.7
3/11/2015	0.020	0.302	0.011	0.002	0.013	0.001	1.4
4/15/2015	0.104	N/A	0.015	0.001	0.021	0.001	1.3
5/20/2015	0.030	0.689	0.006	0.004	0.028	0.010	2.0

The City of Maitland is currently working with DEP to upload its data to STORET. The following table shows the results of the sampling at the Lake Waumpi site during the reporting period.

Table B-2: City of Maitland sampling results

n/a = Data not available
 u and uu = Qualifier code for samples at the minimum detection limit
 DO = Dissolved oxygen
 uS/cm = MicroSiemens per centimeter
 su = Standard units
 °C. = Degrees Celsius
 TKN = Total Kjeldahl nitrogen

Date	Ammonia (mg/L)	Chl <i>a</i> (mg/L)	Conductivity (uS/cm)	DO (mg/L)	pH (su)	Temperature (°C)	Nitrate (mg/L)	Nitrite (mg/L)	Ortho-P (mg/L)	TKN (mg/L)	TP (mg/L)	TSS (mg/L)
Jun-14	0.01	1.53	188	4.05	7.59	28.7	0.05	0.05	0.1	0.87	0.0371	2.5
Jul-14	0.01	1	191	4.34	7.44	29.4	0.05	0.05	0.1	0.625	0.0199	1
Aug-14	0.01	2.56	178	3.91	8.11	29.8	0.05	0.05	0.1	0.862	0.0156	1
Sep-14	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Oct-14	0.01	1	194	5.3	7.48	27.2	0.05	0.05	0.1	0.666	0.0232	1.38
Nov-14	0.248	3.42	231	3.37	7.64	18.2	0.06	0.02	0.002	0.831	0.0247	1.63
Dec-14	0.01	2.67	344	5.74	7.57	20	0.2	0.2	0.1	0.6	0.0133	1.38
Jan-15	0.01u	1.34	353	6.74	7.77	21.8	0.2u	0.2u	0.1u	0.641	0.00696	1.0u
Feb-15	0.01u	1u	190	9.05	7.68	17.3	0.0394	0.02u	0.002u	0.777	0.0255	1u
Mar-15	0.0233	2	202	4.78	7.08	25.4	.2u	.2u	.1u	0.597	0.0337	1u
Apr-15	0.01u	7.43	191	5.47	7.96	27.1	0.2uu	0.2uu	0.1u	1.25	0.0706	4.25
May-15	0.01u	1u	177	5.04	6.76	27.8	0.2uu	0.2uu	0.1u	0.855	0.073	16.1
Jun-15	0.0212	2.38	206	5.83	7.12	30.8	0.2u	0.2u	0.1u	0.54	0.038	1.88