

2011 PROGRESS REPORT

For the Lake Jesup Basin Management Action Plan

*Developed by the
Lake Jesup Basin Working Group*

*In cooperation with the
Florida Department of Environmental Protection
Division of Environmental Assessment and Restoration
Bureau of Watershed Restoration
Tallahassee, Florida 32399*

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LIST OF ACRONYMS

BMAP	Basin Management Action Plan
BMP	Best Management Practice
CDS	Continuous Deflective Separation (Unit)
EPA	Environmental Protection Agency
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FYN	Florida Yards and Neighborhood (Program)
LID	Low Impact Development
LOS	Level of Service
MS4	Municipal Separate Storm Sewer System
NELAC	National Environmental Laboratory Accreditation Conference
NPDES	National Pollutant Discharge Elimination System
OOCEA	Orlando Orange County Expressway Authority
PSA	Public Service Announcement
RSF	Regional Stormwater Facility
SJRWMD	St. Johns River Water Management District
STORET	STOrage and RETrieval (Database)
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TSI	Trophic State Index
UF-IFAS	University of Florida - Institute of Food and Agricultural Sciences
WBID	Waterbody identification

EXECUTIVE SUMMARY

TOTAL MAXIMUM DAILY LOADS

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 about 10,660 acres (16.7 square miles) and drains a watershed of about 86,382 acres (135 square miles), 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. At high stage levels, Lake Jesup has surface area up to 16,000 acres. The Florida Department of Environmental Protection (FDEP) identified Lake Jesup to be impaired for nutrients, and, in 2006, adopted total maximum daily loads (TMDLs) for total phosphorus (TP) and total nitrogen (TN) for the lake.

The Lake Jesup Basin Management Action Plan (BMAP) was adopted in May 2010 to implement the TP TMDL. This 2011 Progress Report is the first annual progress report for the Lake Jesup BMAP, and it describes the major accomplishments and issues identified during the reporting period from BMAP adoption (May 2010) through May 31, 2011.

MAJOR ACCOMPLISHMENTS

The first year of BMAP implementation has been very successful. In addition to the reductions accomplished before the BMAP was completed, six BMAP stakeholders completed a total of 22 stormwater projects since the BMAP was adopted, which resulted in a combined reduction of 133.9 lbs/yr of TP. Also, the Florida Department of Agriculture and Consumer Services (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, citrus, and cow/calf best management practice (BMP) programs. This BMP implementation is expected to reduce loads from agricultural operations. Most of the efforts so far have concentrated on the container nurseries and cow/calf operations. Several of the research studies to gather additional data for the next iteration of the TMDL and BMAP have been completed. SJRWMD has also completed a few of the feasibility studies for the regional projects in the basin. In addition, the responsible stakeholders implemented the BMAP monitoring plan to gather water quality data for Lake Jesup and its tributaries.

MAJOR ISSUES

Several entities have encountered delays with their project implementation. However, these delays are not causing an issue with BMAP compliance because the delayed projects are either additional reductions not required in this five-year iteration or the projects will be completed in the five-year period. The stakeholders also noted that obtaining funding to implement the projects and research studies has been an issue. Data were not collected from a few of the BMAP monitoring stations due to low flow conditions from lack of rainfall. The locations of these stations may need to be modified in the future if low flow continues to be an issue.

ACTIVITIES FOR THE UPCOMING YEAR

The second annual BMAP progress report will encompass the period of June 1, 2011 through May 31, 2012. During this time the City of Casselberry will complete six projects for a total reduction of 14.2 lbs/yr of TP. The City of Maitland will also complete six projects for a total reduction of 32.7 lbs/yr of TP. The City of Oviedo and FDOT will continue designing several of their projects. FDACS will continue to sign up growers for BMPs under the citrus and cow/calf manuals. In addition, all components of the BMAP monitoring plan will continue.

SECTION 1: INTRODUCTION

1.1 PURPOSE OF THE REPORT

This is the first annual progress report for the Lake Jesup Basin Management Action Plan (BMAP). **Section 2** and **Section 3** describe the accomplishments and issues, respectively, during the period from BMAP adoption (May 2010) through May 31, 2011. A summary of efforts for the upcoming year (June 1, 2011 through May 31, 2012) is included in **Section 4**.

1.2 TOTAL MAXIMUM DAILY LOADS FOR THE LAKE JESUP BASIN

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 about 10,660 acres (16.7 square miles) and drains a watershed of about 87,322 acres (136.4 square miles), 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. At high stage levels, Lake Jesup has surface area up to 16,000 acres. Lake Jesup includes waterbody identification numbers (WBIDs) 2981 and 2981A. The subbasins and local governments located in the Lake Jesup Basin are shown in **Figure 1**.

The total maximum daily loads (TMDLs) for the Lake Jesup Basin were adopted by the Florida Department of Environmental Protection (FDEP) in April 2006 for total phosphorus (TP) and total nitrogen (TN). The focus of the BMAP is to achieve reductions in external TP loads to the lake. The focus on external TP loads was driven by the significant role of nitrogen fixation in Lake Jesup and several unknowns regarding internal nutrient cycling in the lake.

Table 1 lists the TMDLs and pollutant load allocations adopted by rule for the Lake Jesup Basin.

TABLE 1: TMDLS IN THE LAKE JESUP BASIN

WBID(s)	TMDL (LBS/YR)	TARGET CONCENTRATION (MG/L)	WASTELOAD ALLOCATION NPDES STORMWATER	LOAD ALLOCATION (NONPOINT)
2981 (Including 2981A)	41,888 TP	0.096	34%	34%
2981 (Including 2981A)	545,203 TN	1.27	50%	50%

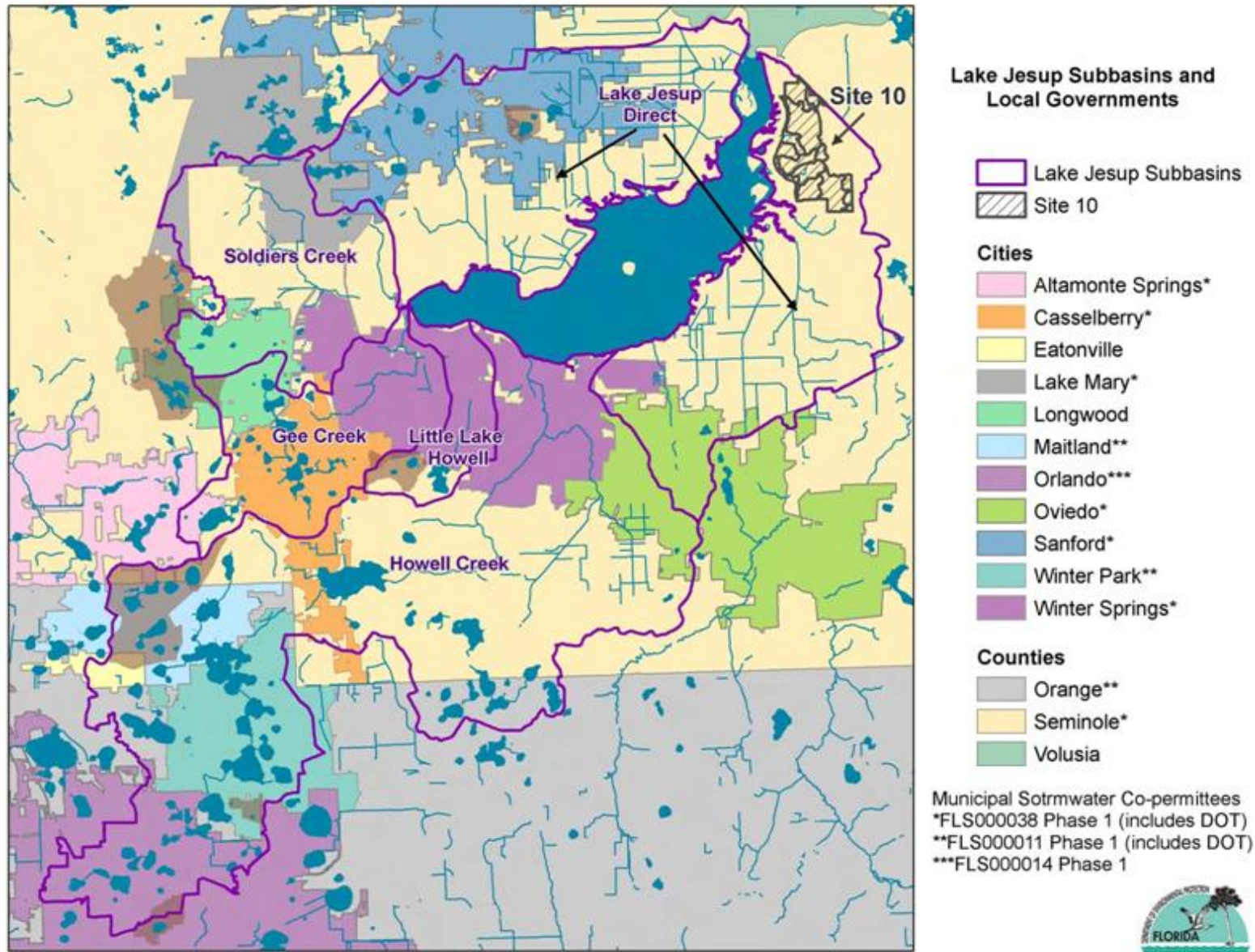


FIGURE 1: LAKE JESUP AND LOCAL GOVERNMENT JURISDICTIONS IN THE BASIN

1.3 RESPONSIBLE PARTIES AND KEY STAKEHOLDERS

The Lake Jesup BMAP identified municipal separate storm sewer systems (MS4s), septic tanks, and agricultural sources of TN and TP in the basin. Those entities that are responsible for achieving the load reductions are:

- Agriculture
- City of Altamonte Springs
- City of Casselberry
- City of Lake Mary
- City of Longwood
- City of Maitland
- City of Orlando
- City of Oviedo
- City of Sanford
- City of Winter Park
- City of Winter Springs
- Florida Department of Transportation (FDOT) District 5
- Orange County
- Orlando Orange County Expressway Authority (OOCEA)
- Seminole County
- Town of Eatonville
- Turnpike Authority

In addition to these entities, the Florida Department of Agriculture and Consumer Services (FDACS), FDEP, and St. Johns River Water Management District (SJRWMD) are essential to the implementation of the BMAP activities.

1.4 BMAP ALLOCATIONS

Stakeholders in the Lake Jesup Basin agreed that a fair approach for allocations would be to determine the relative contribution of each entity to the surface runoff and septic tank (if applicable) loadings and use this relative contribution to apportion the required reductions. This percentage was separately calculated for each entity for the surface runoff load and septic tank load. To allow time for additional monitoring and research studies (see **Section 2.4**) to address the unknowns identified in the BMAP, the required reductions were split into three, five-year time periods. The adopted BMAP addresses the first one-third of the required reductions over the period from BMAP adoption (May 2010) through December 31, 2014, as shown in **Table 2**.

TABLE 2: TP WASTELOAD ALLOCATIONS FOR 2010-2014

ALLOCATION ENTITY	2010-2014 TOTAL REQUIRED REDUCTION (LBS/YR)
Agriculture	254.7
City of Altamonte Springs	19.0
City of Casselberry	342.7
City of Lake Mary	264.3
City of Longwood	205.3
City of Maitland	124.8
City of Orlando	326.3
City of Oviedo	258.7
City of Sanford	602.2
City of Winter Park	370.5
City of Winter Springs	513.0
FDOT District 5	132.3
OOCEA	5.2
Orange County	569.0
Seminole County	2,137.0
Town of Eatonville	23.4
Turnpike Authority	101.1
Total	6,249.5

SECTION 2: MAJOR ACCOMPLISHMENTS

2.1 SUMMARY OF EFFORTS

The first year of BMAP implementation has been very successful. In addition to the reductions accomplished before the BMAP was completed, six BMAP stakeholders completed a total of 22 stormwater projects since the BMAP was adopted, which resulted in a combined reduction of 133.9 lbs/yr of TP. Also, 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, citrus, and cow/calf best management practice (BMP) programs. This BMP implementation is expected to reduce loads from agricultural operations. Most of the efforts so far have concentrated on the container nurseries and cow/calf operations. Several of the research studies to gather additional data for the next iteration of the TMDL and BMAP have been completed. SJRWMD has also completed a few of the feasibility studies for the regional projects in the basin. In addition, the responsible stakeholders implemented the BMAP monitoring plan to gather water quality data for Lake Jesup and its tributaries.

Additional details about the accomplishments over the past year are described in **Section 2.2** through **Section 2.4**. The individual project tables are included in **Appendix A**, and photographs of project implementation efforts are included in **Section 2.2** and **Appendix C**.

2.2 ACCOMPLISHMENTS BY ENTITY

2.2.1 CITY OF ALTAMONTE SPRINGS

The City of Altamonte Springs continued to sweep 4.4 miles of roadway two times per month. The city also continued their education efforts including the Florida Yards and Neighborhoods (FYN) Program, public service announcements (PSAs), pamphlets, presentations, website, and illicit discharge program.

2.2.2 CITY OF CASSELBERRY

The City of Casselberry substantially completed the Lake Concord Park project (which includes projects C-1 to C-5) in October 2009 and completed final touches, including the remainder of its public education signage, by May 2011. Over the past year, the park has received numerous awards, including the Florida Stormwater Association 2010 Excellence Award and the 2010 Friends of Our Urban Forest Award for Outstanding Project. In addition to providing real load reductions to Lake Concord, the park is a showcase of many BMPs and includes public education signage highlighting the importance of water quality related issues. The park incorporates low impact development (LID) concepts and includes stormwater harvesting, pervious pavement, environmental swales, wetland revegetation, underground exfiltration, Florida-friendly landscaping, baffle boxes, rain gardens, rain barrels, and more. The park has in many ways become the new cultural center for the City of Casselberry, providing high visibility of its many BMPs and educational features. The city has hosted many events, including an educational Earth Day event in April 2011 (see **Figure 2**), and has provided multiple tours to various groups, including the first joint meeting of the Central Florida Lake Management Society and the local American Society of Civil Engineers Water Resources Technical Group in November 2010, bringing together lake scientists and engineers for the sake of water quality protection.



FIGURE 2: CITY OF CASSELBERRY EARTH DAY 2011 AT LAKE CONCORD PARK - EDUCATIONAL RAIN GARDEN IN BLOOM

The city has also continued to enhance its public education programs related to water quality, including using the features of Lake Concord Park. The city continues to partner in the FYN program and has also begun a conservation/environmental branding program called “Green Up Casselberry.” This program’s special emphasis is on trees, but its “brand” has been broadened to provide a cohesive identity to the city’s public education efforts related to stormwater, water conservation, lakes, Florida-friendly landscaping, and other environmental concerns. In 2010, the city installed a graphic wrap on its street sweeper (see **Figure 3**) to reinforce to the public the connection between this important program and the lake system while also emphasizing “only rain down the storm drain” and drawing attention to the city’s dedicated educational website www.casselberry.org/lakes.



FIGURE 3: CITY OF CASSELBERRY STREET SWEEPER EDUCATIONAL GRAPHIC WRAP

The City of Casselberry conducted a nutrient and hydrologic budget study for Queen's Mirror and Triplet Chain of Lakes, which are part of the Gee Creek system. Queen's Mirror and South Lake Triplet are two of the city's highest trophic state index (TSI) lakes, typically falling into the eutrophic range. In an effort to better understand loading sources for the lake system, the city began a study in summer 2010 that included installation of seepage meters, sediment collection, and inflow monitoring. Data collection for the study has since been completed, and a final report is anticipated by October 2011. It is hoped that the study will better isolate nutrient loads, including surface loading at various inflows, as well as groundwater seepage. This information should help the city refine and modify its proposed projects for this lake system to improve their efficacy and cost/benefit ratio. This study was not mandated by the BMAP but will be very useful toward meeting BMAP goals. However, the study potentially impacts several projects proposed in the BMAP, including two baffle boxes (project C-16 and C-17), which will be delayed, and project C-18 (Carriage Hill Unit 4 2nd generation baffle boxes), which is being deleted from the project table. The City of Casselberry is already meeting its required reductions for this iteration of the BMAP; therefore, the delay in these projects is not an issue.

As part of its TMDL Grant, the city will be conducting an effectiveness evaluation of multiple baffle boxes, inlet filter baskets, and a continuous deflective separation (CDS) unit in 2012 and 2013. Many of the baffle boxes to be evaluated include downstream media filters not typically included in a second generation baffle box. It is hoped the results of this study will provide valuable information statewide in helping agencies choose the most cost-effective forms of pollutant reduction for particular applications. This study will also help guide the city in modifying its future proposed projects for the BMAP, as necessary, to improve the cost effectiveness.

2.2.3 CITY OF LAKE MARY

The City of Lake Mary continued their educational efforts in the Lake Jesup Basin. The city partners with the FYN Program to provide public education. The latest FYN presentation was held April 14, 2010, and the topic was the 9 Principles of Florida-Friendly Landscaping. The city annually adds a Stormwater Pollution Solutions informational flyer with all 4,839 utility bills. PSAs on stormwater runoff, fertilizer, and watering efficiently were aired on a local television station a total of 732 times from June 2009 through May 2010 reaching 21,050,500 adults. The city has landscaping, irrigation, and pet waste management ordinances; a website with water quality information; and an illicit discharge program. The City of Lake Mary has also created a rain garden at Trailhead Park (see **Figure 4**). In addition, the city sweeps 31.5 linear miles of roadway in the basin at least annually.

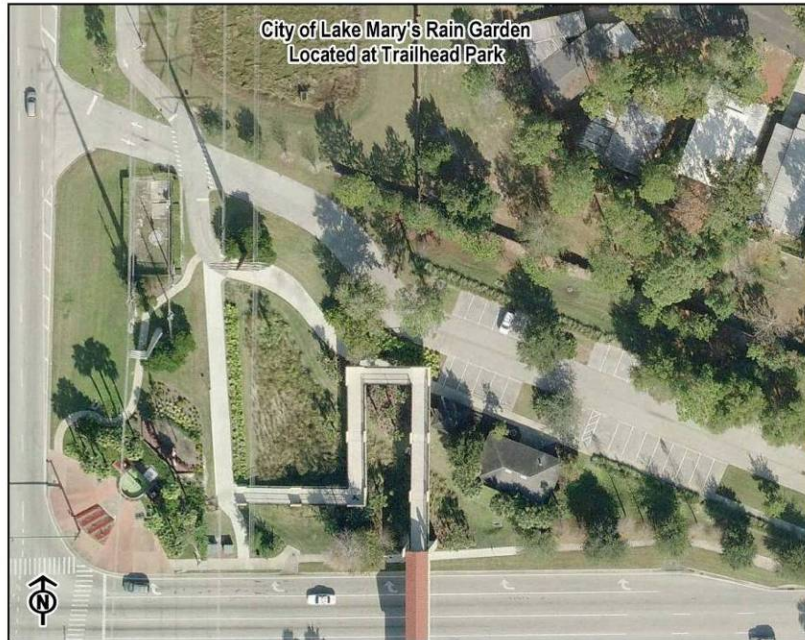


FIGURE 4: CITY OF LAKE MARY'S RAIN GARDEN LOCATED AT TRAILHEAD PARK

2.2.4 CITY OF LONGWOOD

The City of Longwood undertook an ambitious stormwater master planning process that includes topographic mapping, inventory of stormwater facilities, and modeling to determine future project needs. Future projects will be given a Level of Service (LOS) A to F for flood issues and LOS A to F for water quality. Any project that impacts the Lake Jesup watershed will receive a LOS F, which is the highest ranking for project funding. This master plan is scheduled for completion by September 2011. The stormwater master plan inventory has already assisted the city in developing a comprehensive maintenance program that includes critical facilities.

In addition, the City of Longwood took over the Aquatic Maintenance Program in early 2011. The city is taking a more aggressive approach to removing invasive plant species and improving the overall quality of the waterbodies. The city conducted several community meetings to educate residents on what a healthy lake is and how they could become more actively involved. This effort has resulted in volunteers joining the Florida Lake Watch Program.

In the proposed 2011/2012 budget, the city is including approximately \$750,000 in new stormwater projects, including repairs to the outfall canal for Lake Fairy and replacement of the Rangeline Road sluice gate. The budget also includes approximately \$1,000,000 in roadway projects that will have a positive impact on surface waters by removing unpaved roadways and increasing retention opportunities. Several unpaved road projects have been completed in the last year (Oak, Ridge, and Talmo) that included removal of dirt streets and provided roadside retention swales.

2.2.5 CITY OF MAITLAND

The City of Maitland designed and constructed the Lake Maitland Basin Drainage Improvements (projects M-7 through M-11, see **Figure 5**), and the projects have passed a one year warranty inspection. The Lake Maitland Basin Drainage Improvements were completed with over \$500,000 in grant funding from FDEP via a Section 319 grant from the U.S. Environmental Protection Agency (EPA). The Dommerich Drive Baffle Box (project M-12) is in the planning

stages. Currently the property has been surveyed and discussions with the Dommerich Hills Civic Association have begun. The Lake Gem/Park Lake Co-op (projects M-2 through M-6) is currently in the design stages. The construction plans are currently under review by the City of Maitland's Public Works Department and are nearing completion. Approval from FDOT to surplus their ditch for project construction has been received pending the adoption of a resolution by the city to absorb maintenance responsibilities. Cost-sharing agreements have yet to be confirmed with the developer, City of Maitland, City of Winter Park, and Orange County.

The City of Maitland has continued street sweeping once every two weeks throughout the reporting period. Educational events have also continued and include cooperative PSAs with Seminole County, stormwater education talks to classes at Maitland Middle School, presentations to lakefront property owners regarding stewardship, and a bi-monthly newsletter with tips and regulations regarding stormwater BMPs.



FIGURE 5: CITY OF MAITLAND LAKE MAITLAND DRAINAGE IMPROVEMENTS PROJECT

2.2.6 CITY OF ORLANDO

The City of Orlando was able to complete six of the ten structural projects listed in the BMAP as “envisioned but not funded” (projects ORL-5, ORL-6, ORL-10, ORL-20, ORL-21, and ORL-23). These projects included the installation of four second generation baffle boxes, a litter collection screen, and the removal of muck/sediment from a FDOT pond. The same pond was proven to be transporting nutrients to Spring Lake during larger rain events. Additional residence time for pollutant removal was achieved through the removal of muck and expanding the original design to accommodate more runoff. An additional project was added and completed in the watershed, which involved the removal of a sandbar from Spring Lake.

The City of Orlando continues to provide excellent maintenance of its stormwater facilities. Over the course of the year, the street sweeping program has modified its approach to concentrate efforts in areas within drainage basins that have been deemed “impaired” by FDEP and areas with large tree canopies. However, through careful planning, all areas within the city are still being maintained on a bi-weekly basis. Several years ago, the city elected to install numerous inlet baskets within the Howell Branch basin. Routine maintenance on the baskets continues to occur, with extra maintenance visits after rain events. The city’s educational

outreach program remains active. Efforts this year have been focused on educating school-aged children and creating additional literature for mass mailings to residents.

2.2.7 CITY OF OVIEDO

The City of Oviedo is a partner in the Solary Canal Stormwater Treatment Area project (project OV-4), which is under construction and near completion. The project is scheduled to be completed in October 2011, which is a delay from the original completion date of September 2010. The city is already meeting its required reductions for this iteration of the BMAP; therefore, the delay in this project is not an issue. The City of Oviedo has also started construction on the Aulin Avenue North stormwater project (part of project OV-1). The city is nearing completion of its Master Stormwater Conveyance Plan, which will provide long term planning tools for nutrient reduction and flood control planning.

2.2.8 CITY OF SANFORD

The City of Sanford continues to implement its street sweeping and public education programs. As funding becomes available, the city will look to partner with neighboring municipalities on projects that reduce pollutant loads to Lake Jesup.

2.2.8.1 Site 10

The City of Sanford has successfully implemented a program to reduce inflow and infiltration throughout the city's sanitary sewer system. As a result of addressing these deficiencies, the volume of flow sent to the wastewater treatment plants has been reduced, which ultimately reduces the volume of reclaimed water sent to Site 10, and thus applied to the site. In addition to improvements, the city now incorporates Actiflo® into its treatment of final effluent, which can then be discharged to the river or on occasion to Site 10 (when there is available capacity). Therefore, at certain times of the year, the quality of the effluent sent to Site 10 is better than the reclaimed water that is sent to Site 10 all other times of the year. The program started in 2004 and is still ongoing.

2.2.9 CITY OF WINTER PARK

The City of Winter Park continues to sweep its roadways two times per month. During the last National Pollutant Discharge Elimination System (NPDES) reporting period, the city had collected 4,676 cubic yards, or about 1,200 tons, of debris during the street sweeping activities. The city has also continued its public education program including participation in the FYN Program, a city-wide newsletter that covers fertilizer and pesticide use, and illicit discharge prevention and reporting. The City of Winter Park has a fertilizer ordinance; however, Orange County now has a more comprehensive ordinance in place that covers all its municipalities, including Winter Park. The City of Winter Park participates in the advertising of this ordinance in its newsletters and presentations. During the last NPDES permit reporting period, the city presented stormwater information to 43 people at homeowner group meetings and 102 students at public school or adult education courses, mailed 11,806 newsletters to its residents, and had 84 visits to the stormwater-related web pages. The city also continued the inlet signing program with 54 inlets newly marked and 172 lost or worn out markers replaced.

2.2.10 CITY OF WINTER SPRINGS

The City of Winter Springs is a partner in the Solary Canal Stormwater Treatment Area project (project WS-1), which is under construction and near completion. The project is scheduled to be completed in October 2011, which is a delay from the original completion date of September 2010. The city is already meeting its required reductions for this iteration of the BMAP;

therefore, the delay in this project is not an issue. The city has continued to sweep on a quarterly basis (see **Figure 6**). However, for more effective and better production, street sweeping services were outsourced and contracted with USA Services effective September 2010. In order to continue to provide supplemental and emergency sweeping capability, a used street sweeper was purchased by the city. The city implemented the FYN Program approximately three years ago. The program includes a series of Florida Friendly Landscape workshops, which have been well received and attended by the citizens of Winter Springs (see **Figure 7**). The city also recently hired a Water Conservation Coordinator, whose duties include public outreach related to TMDL activities.



FIGURE 6: CITY OF WINTER SPRINGS STREET SWEEPING



FIGURE 7: CITY OF WINTER SPRINGS FYN WORKSHOP

2.2.11 FDOT DISTRICT 5

FDOT District 5 has redesigned the proposed State Road 15/600 (US 17-92) widening project (project FDOT-2). The wet detention pond (Pond B) for treatment of Basin B is being eliminated. French drains are being added within the median to provide water quality treatment

and flood attenuation for Basin B. No BMAP load reduction credits are anticipated since the French drain is meant for meeting environmental resource permit requirements. The wet detention pond (Pond A) for Basin A is being reduced in size. No BMAP load reduction credits are anticipated for Pond A. Therefore, project FDOT-2 is being removed from the BMAP project list. To replace this project, FDOT is funding the construction and initial operation of a flow-through alum treatment system along County Road 427 in Seminole County. The Soldiers Creek alum treatment facility (new project FDOT-2) will be constructed as a regional project in partnership with Seminole County to reduce nutrient loads within Soldiers Creek, ultimately reducing TP loading to Lake Jesup. It is intended that the alum treatment project will replace the anticipated load reductions previously accounted for with Pond A and Pond B and will fully meet the remainder of FDOT's entire load reduction requirement for the Lake Jesup BMAP. Preliminary estimates for the project indicate a potential for 2,060 kg/yr of TN and 981 kg/yr of TP reduction. In addition, FDOT District 5 completed the State Road 46 Bridge replacement project (project FDOT-4) and associated stormwater treatment system in February 2010.

FDOT District 5 and Orange County completed a joint-participation agreement where FDOT will provide funding for the county's Water Atlas program, which includes monitoring for the Lake Jesup BMAP. The agreement was executed on May 25, 2010. FDOT and Seminole County also completed an amendment to an existing joint-participation agreement where FDOT will provide funding for the county's Water Atlas program, which includes water quality monitoring for the Lake Jesup BMAP. The agreement was executed on January 3, 2011.

2.2.12 ORANGE COUNTY

Orange County completed the stormwater retrofits along Hall Road and Lake Waunutta (projects OC-1 and OC-2). In addition, the county conducts weekly sweeping of 400 miles of roadway with twice per week sweeping occurring for four months of the year. The county also continues to maintain the inlet baskets on Lake Sue and Lake Killarney. The county will continue to collect local data for inlet basket and street sweeping sediment and nutrient removal. This effort began as part of the Florida Stormwater Association study and Orange County built upon the study by adding seasonal samples in order to ensure that data could be quantified on a yearly basis.



FIGURE 8: ORANGE COUNTY INLET BASKET

2.2.13 SEMINOLE COUNTY

Seminole County completed the Red Bug Lake Road Regional Stormwater Facility (RSF) and Anchor Road reconstruction (projects SC-3 and SC-8, respectively). The Cassel Creek RSF (project SC-1) is in final design and is scheduled to be completed in July 2012, which is behind the original BMAP completion date of September 2010. Seminole County is a partner in the Solary Canal Stormwater Treatment Area project (project SC-7), which is under construction and near completion. The project is scheduled to be completed in October 2011, which is a delay from the original completion date of September 2010. The county is already meeting its required reductions for this iteration of the BMAP; therefore, the delay in these projects is not an issue.

Seminole County is also working on the preliminary design for the Soldiers Creek at County Road 427 RSF, which will be done in conjunction with FDOT. The county and FDOT are currently developing a joint project agreement.

2.2.14 TOWN OF EATONVILLE

The Town of Eatonville has continued to sweep its roadways on a monthly basis.

2.2.15 TURNPIKE AUTHORITY

The Turnpike Authority has continued its monthly street sweeping program and its education efforts including presentations and an illicit discharge program.

2.2.16 AGRICULTURE

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, citrus, and cow/calf BMP programs. Most of the efforts so far have concentrated on the container nurseries and cow/calf operations. A FDACS staff member and/or contractor attended the annual Orange-Seminole County Cattlemen's Association meeting to discuss the importance of BMPs. The implementation contractors also were involved in the Spring Ranchers Forum, an annual educational event held at a ranch in Seminole County. In addition, FDACS is working in conjunction with the University of Florida - Institute of Food and Agricultural Sciences (UF-IFAS) Extension to plan a cow/calf BMP workshop at the Lake County extension center in fall 2011. It is anticipated that this workshop will also draw attendees from within the Lake Jesup BMAP area.

The land use table in the BMAP shows significant acreage in the nurseries and vineyards category that still needs to be enrolled in BMPs. As discussed in the agriculture section of the BMAP, most of the remainder of this acreage is an in-ground palm nursery in the Black Hammock area. This operation will be contacted once the existing nursery manual is revised to include in-ground operations, which is expected to be completed in 2012. A large citrus operation in the same area was not eligible to enroll in the existing citrus BMP programs. However, a recent rule change now allows this operation to be enrolled under the Peace River and Manasota Basins Citrus manual, and the producer will be contacted in the near future. The BMAP table also shows just over 200 acres of row/field crops, but field verification of the basin shows only one small row crop operation, which was enrolled prior to BMAP adoption. The remaining acres designated as row/field crops seem to be either no longer in agriculture or misidentified citrus. The basin also has several small equine operations that may or may not be eligible to enroll in the upcoming equine manual, depending on whether they are commercial agriculture or residential/hobby operations. Though not included in the agricultural load allocation, a cow/calf operation of 2,000 acres also enrolled last year. The land was designated

as wetlands in the TMDL. The agricultural acres currently enrolled in BMPs in the Lake Jesup Basin are listed in **Table 3** and shown in **Figure 9**.

TABLE 3: AGRICULTURAL ACRES ENROLLED IN FDACS BMPs IN THE LAKE JESUP BASIN

BMP PROGRAM	ACRES AS OF JULY 2009	ACRES AS OF MAY 2011
Citrus	100	100
Cow/Calf	N/A	2,158*
Vegetable and Agronomic Crops	15	15
Container Nurseries	93.5	110
Sod	N/A	209
BMP Implementation Total	208.5	2,592.0

* Note: 2,000 of these acres were categorized as wetlands because they are on SJRWMD conservation lands.

Estimated load reductions in the BMAP from agricultural BMPs were based on implementation of BMPs by enrolled agricultural operations. Based on enrollment and assessment figures, BMPs are being implemented on about 2,600 acres (excluding silviculture and aquaculture). These figures are assumed to underestimate the actual acreage on which BMPs are being implemented. As acknowledged in the BMAP, “the estimated total load ... for agriculture is greater than the actual loading” due to inaccurate land use categorizations and to agricultural operations that had gone out of production. Within the next year, FDACS will work with FDEP to calculate a load reduction “credit” based on more accurate agricultural acreage estimates.

The FDACS BMP manuals adopted since the Lake Jesup BMAP was adopted include sod, cow/calf, and specialty fruit and nut. Enrollments in these BMPs are currently in progress.

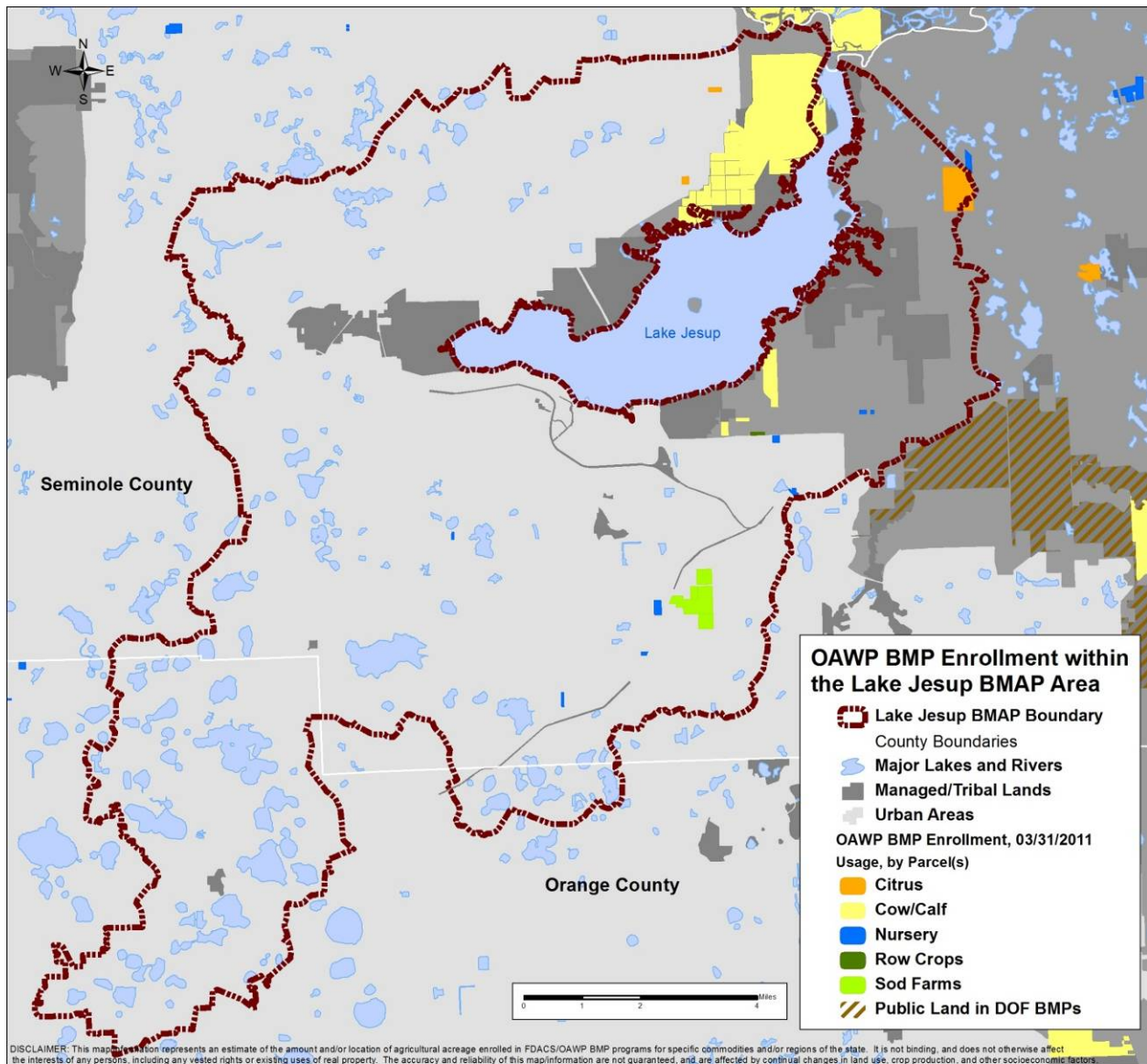


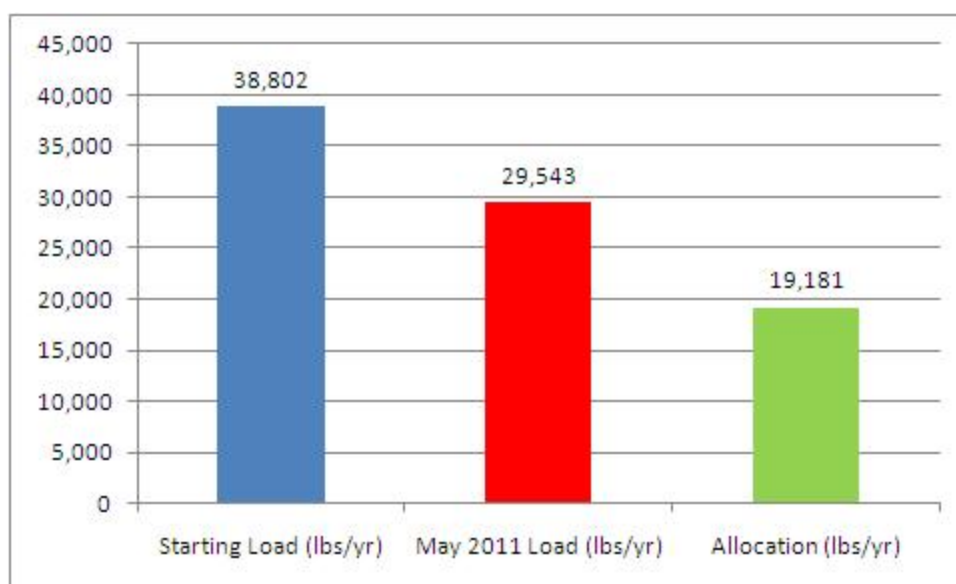
FIGURE 9: AGRICULTURAL OPERATIONS ENROLLED IN FDACS OAWP BMP PROGRAMS IN THE LAKE JESUP BASIN

2.3 SUMMARY OF ACCOMPLISHMENTS

The projects completed during the first annual BMAP reporting period are summarized in **Table 1**. These projects resulted in an estimated 133.9 lbs/yr of TP reductions. These reductions are in addition to those projects given credit before BMAP adoption, which totaled 8,090.1 lbs/yr TP. Therefore, the total project reductions to date, those projects completed in the last year plus those shown as completed in the BMAP, are 8,224 lbs/yr of TP, which is greater than the required reduction in the first BMAP iteration of 6,249.5 lbs/yr of TP. The progress towards the total TMDL load reductions are shown in **Figure 10**. The first bar in this figure shows the starting load for stormwater runoff and septic tanks from the TMDL. The second bar shows the current estimated loading with the implementation of projects and the removal of non-contributing areas. The third bar shows the total allocation for stormwater runoff and septic tanks to meet the TMDL.

TABLE 4: SUMMARY OF PROJECTS COMPLETED IN THE REPORTING PERIOD

ENTITY	PROJECT NUMBER	PROJECT NAME	TP REDUCTION (LBS/YR)
Casselberry	C-1	Lake Concord Stormwater Park/Anniversary Park - Plumosa Baffle Box	0.5
Casselberry	C-2	Lake Concord Stormwater Park/Anniversary Park - Exfiltration Trench	0.4
Casselberry	C-3	Lake Concord Stormwater Park/Anniversary Park - Dry Detention	0.0
Casselberry	C-4	Lake Concord Stormwater Park/Anniversary Park - Swale, Wetland Revegetation, & Boardwalk	0.1
Casselberry	C-5	Lake Concord Stormwater Park/Anniversary Park	0.1
Casselberry	C-6	Anchor Road Reconstruction	2.9
Maitland	M-7	Lake Maitland Basin - Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	0.5
Maitland	M-8	Lake Maitland Basin - Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	1.7
Maitland	M-9	Lake Maitland Basin - Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	0.6
Maitland	M-10	North Lake Maitland Leaf Trap Project	0.1
Maitland	M-11	Lake Maitland Basin - Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	0.9
Orlando	ORL-5	Mills Avenue Retrofit	8.4
Orlando	ORL-6	Overbrook Stormwater Improvements	1.8
Orlando	ORL-10	Winyah (Westchester Ave/Wilkinson St) 2nd Generation Baffle Box	1.6
Orlando	ORL-20	Reading Dr (24" line) - 2nd Generation Baffle Box at Lake Adair	0.5
Orlando	ORL-21	Spring Lake -2nd Generation Baffle Box at Rio Grande	0.6
Orlando	ORL-23	DOT Pond Maintenance, west of Spring Lake	6.1
FDOT	FDOT-4	FM: 240163-1 SR 46	5.4
Orange County	OC-1	Hall Road Improvements	0.1
Orange County	OC-2	OC CIP Lake Waunтта	3.5
Seminole County	SC-3	Red Bug Lake Road RSF	93.0
Seminole County	SC-8	Anchor Road Reconstruction	5.1
Total	N/A	Total Reductions in Reporting Period	133.9

**FIGURE 10: PROGRESS TOWARDS THE LAKE JESUP TP TMDL**

2.4 IMPROVING SCIENTIFIC UNDERSTANDING

2.4.1 WATER QUALITY MONITORING

All responsible stakeholders participated in the monitoring plan in the first year of BMAP implementation. Any issues associated with the monitoring plan are discussed in **Section 3.3**. A few highlights of the monitoring efforts are described below.

The City of Casselberry has continued to conduct quarterly ambient water quality sampling of twelve of its lakes. In addition, the city continued to partner with Seminole County by funding monthly sampling at the Gee Creek weir station and partially funding ambient sampling for Lake Howell. The City of Lake Mary collected samples for the Soldiers Creek upstream and downstream sites (see **Figure 11**) for 10 out of the last 12 months. The city has not collected samples at the outlet of Big Lake Mary site since there has been no flow. The City of Maitland has continued their monthly ambient water quality monitoring of all surface waters draining to Lake Jesup. The City of Orlando's water quality monitoring has remained on schedule with STORET data entry anticipated to occur before the end of the year. Orange County has continued to monitor discharge from the Lake Burkett subbasin (see **Figure 12**). FDEP started sampling at the new site at Cameron Avenue and Kentucky Street and are helping to sample the Seminole County Salt Creek and Sweetwater Creek sites.

The City of Sanford participates in the BMAP monitoring effort through a cooperative agreement with Seminole County. The ambient water quality monitoring stations currently sampled by the county include CHUBB (Chub Creek at East Lake Mary Boulevard) and NAV (Navy Canal at Pine Way). The city also implemented its storm event sampling program on Site 10 in early 2011 at pond B-2. The city collected several samples that were subsequently submitted to FDEP as part of the quarterly monitoring reports. The samples represent the first few that were collected as the city was becoming familiar with the equipment as well as troubleshooting problems. Recently, FDEP and SJRWMD visited the site and offered recommendations on modifying the storm event sampling. FDEP modified the city's permit language regarding the storm event sampling program and the city is currently reviewing the changes and offering comments.



FIGURE 11: CITY OF LAKE MARY SAMPLING SITE AT SOLDIERS CREEK DOWNSTREAM



FIGURE 12: ORANGE COUNTY LAKE BURKETT MONITORING STATION

Seminole County has continued their storm event sampling (see **Appendix B**) and their ambient monitoring. The phosphorus data from the Gee Creek, Howell Creek, Lake Jesup at State Road 46, and Soldiers Creek sites from 1998 to 2010 are shown in the figures below. Statistical analyses conducted by the county found no significant trend for TP at the Gee Creek, Lake Jesup, and Soldiers Creek sites. However, a decreasing trend in TP was found at the Howell Creek site.

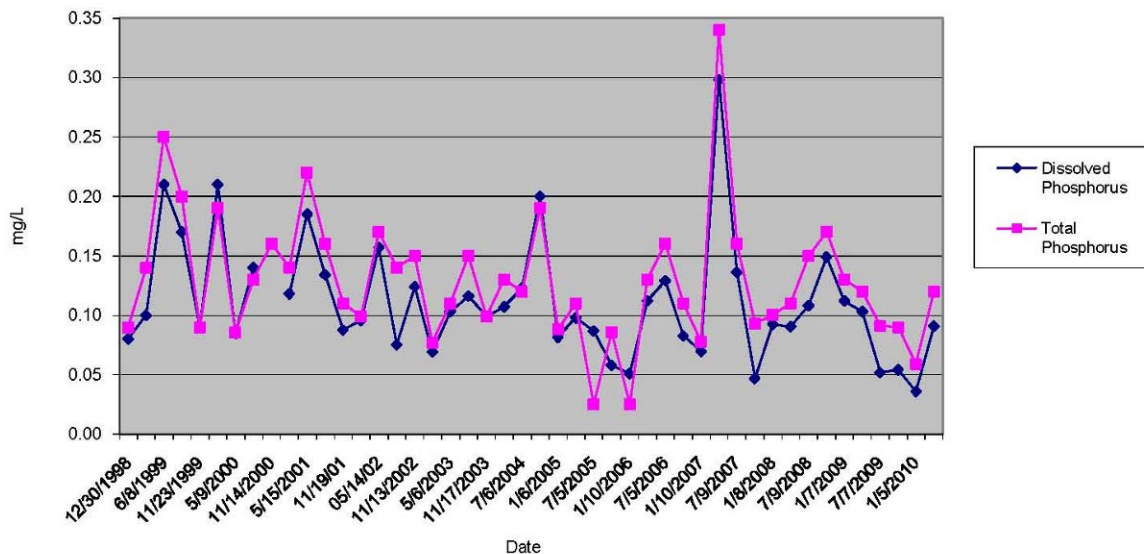


FIGURE 13: SEMINOLE COUNTY GEE CREEK SITE PHOSPHORUS DATA FROM 1998 TO 2010

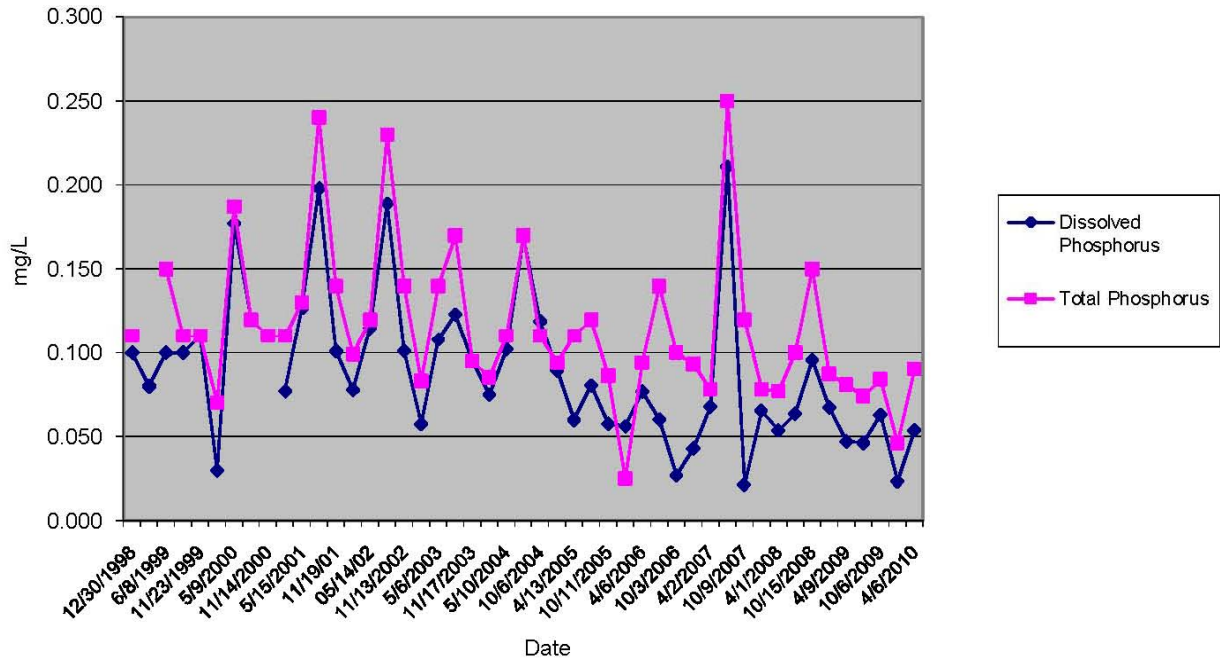


FIGURE 14: SEMINOLE COUNTY HOWELL CREEK SITE PHOSPHORUS DATA FROM 1998 TO 2010

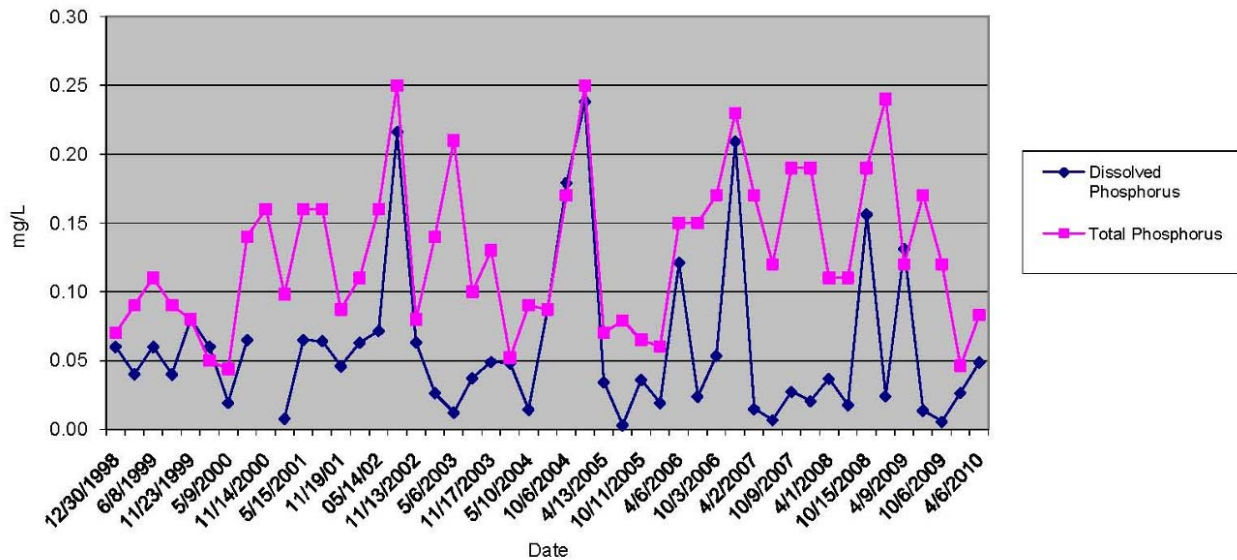


FIGURE 15: SEMINOLE COUNTY LAKE JESUP AT STATE ROAD 46 SITE PHOSPHORUS DATA FROM 1998 TO 2010

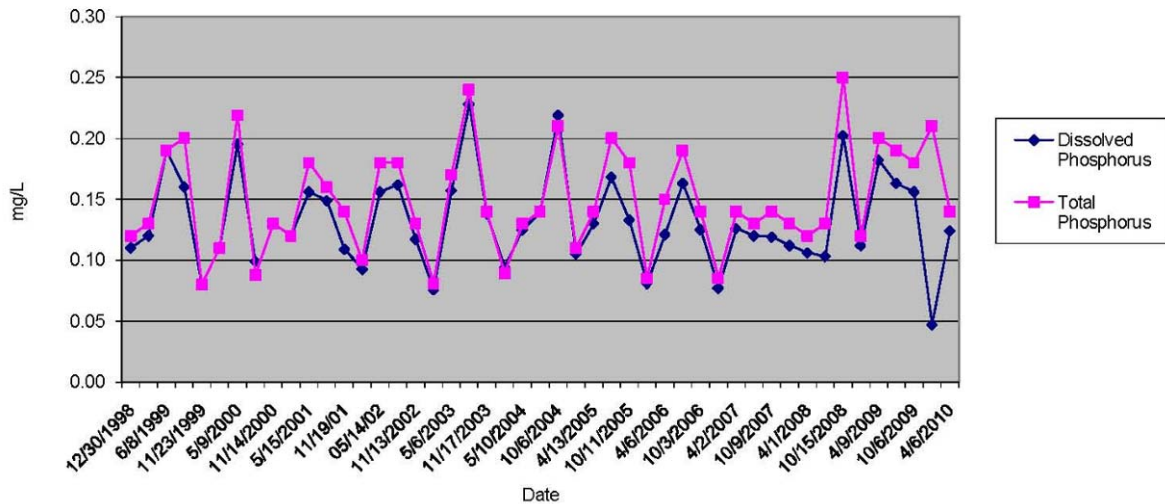


FIGURE 16: SEMINOLE COUNTY SOLDIERS CREEK SITE PHOSPHORUS DATA FROM 1998 TO 2010

SJRWMD has continued their ambient monitoring in the lake and its tributaries. SJRWMD compared TP data for their sites for the period of 1996-2000 to 2008-2011. The data for the stations for each of these periods are shown in the figures below. SJRWMD found that there has been a large decrease in the average TP concentration at the Howell Creek station (0.134 mg/L for 1996-2000, 0.088 mg/L for 2008-2011). There was also a decrease in the TP concentration at the Six Mile Creek station (0.177 mg/L for 1996-2000, 0.167 mg/L for 2008-2011). There was a small increase in the average TP concentration at the Gee Creek station (0.118 mg/L for 1996-2000, 0.120 mg/L for 2008-2011). There was also an increase at the Soldiers Creek site (0.138 mg/L for 1996-2000, 0.158 mg/L for 2008-2011). Increases were also observed at each of the three Lake Jesup stations: near Solider Creek/Gee Creek (0.146 mg/L for 1996-2000, 0.156 mg/L for 2008-2011), near Howell Creek (0.150 mg/L for 1996-2000, 0.167 mg/L for 2008-2011), and near Site 10 (0.150 mg/L for 1996-2000, 0.176 mg/L for 2008-2011). For the Lake Jesup near Site 10 station, the latest data from November 2009 through May 2011 had an average concentration of 0.145 mg/L, which is a decrease from the period of 1996-2000. This likely reflects the changes in the application practices on Site 10.

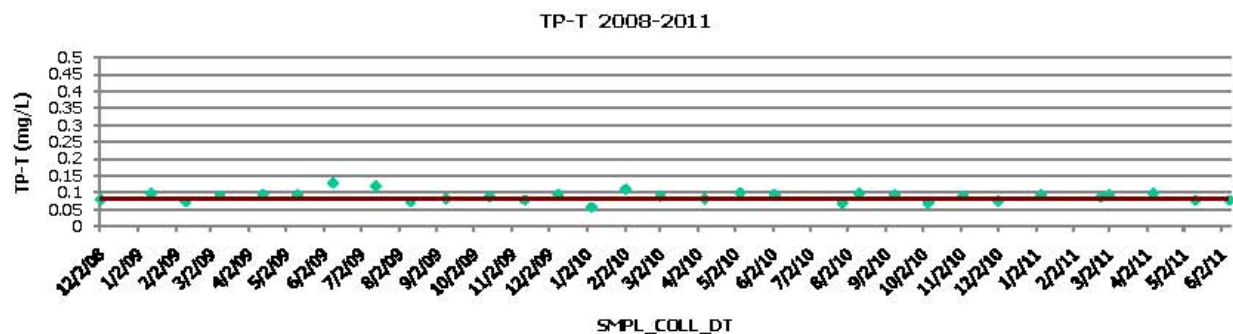
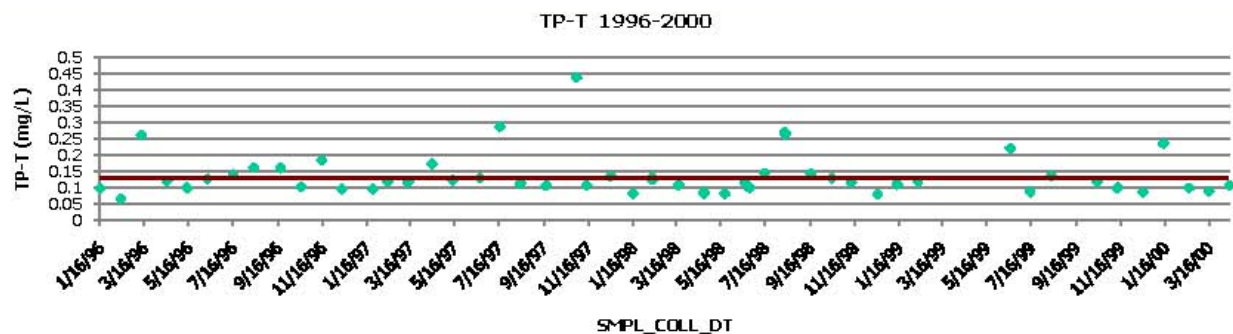


FIGURE 17: SJRWMD HOWELL CREEK SITE TP DATA FOR 1996-200 AND 2008-2011

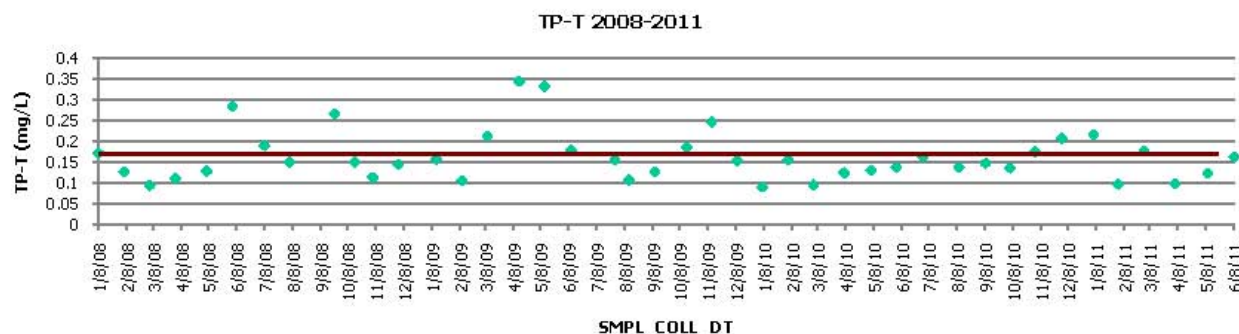
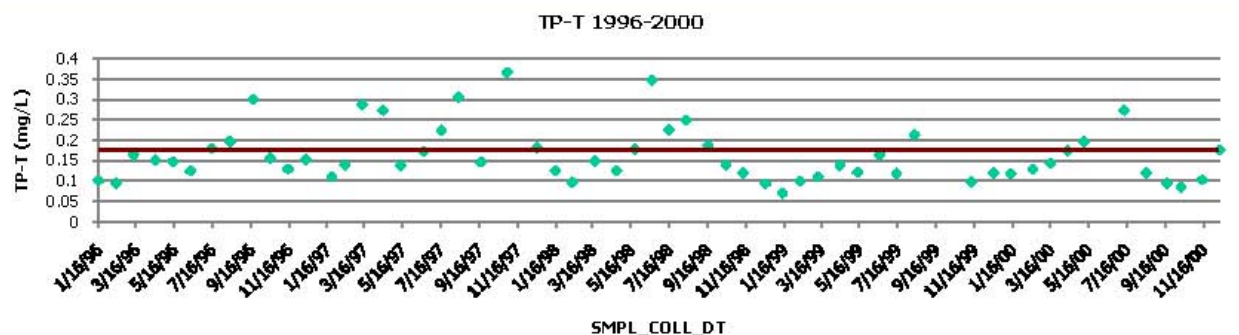


FIGURE 18: SJRWMD SIX MILE CREEK SITE TP DATA FOR 1996-200 AND 2008-2011

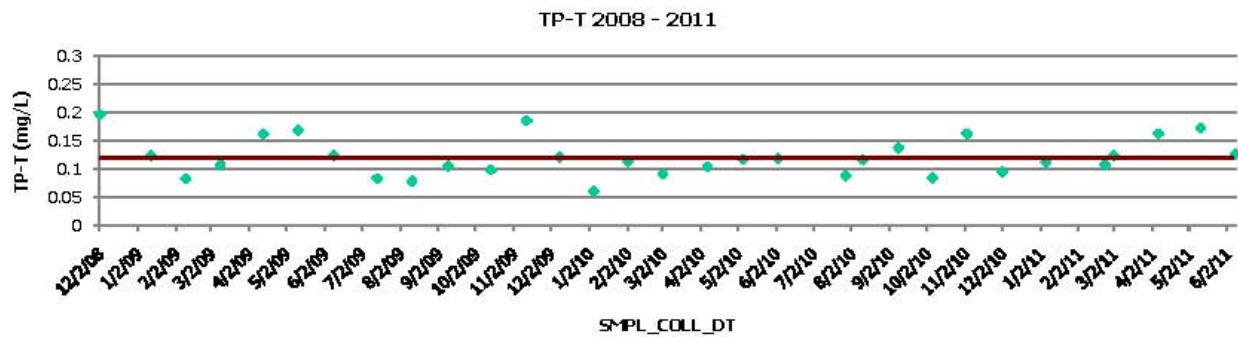
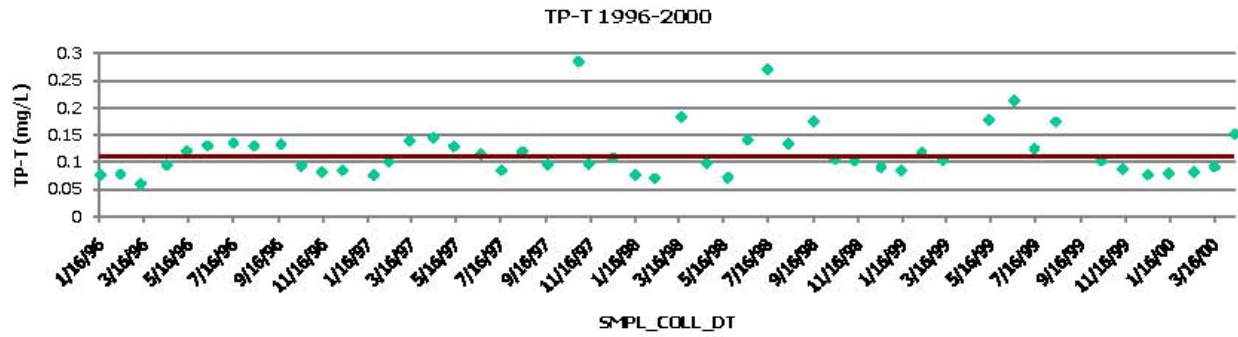


FIGURE 19: SJRWMD GEE CREEK SITE TP DATA FOR 1996-200 AND 2008-2011

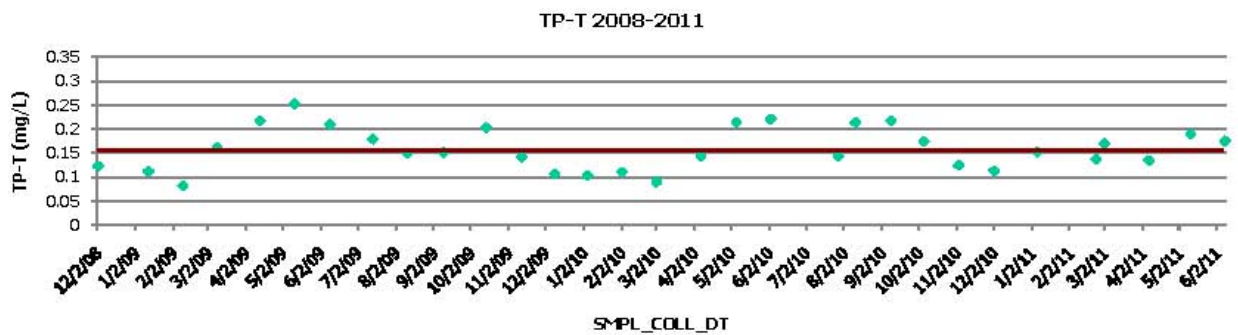
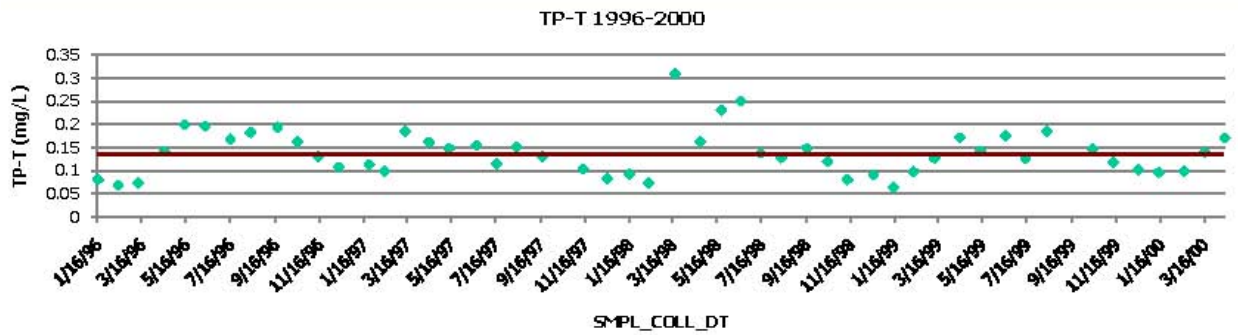


FIGURE 20: SJRWMD SOLDIERS CREEK SITE TP DATA FOR 1996-200 AND 2008-2011

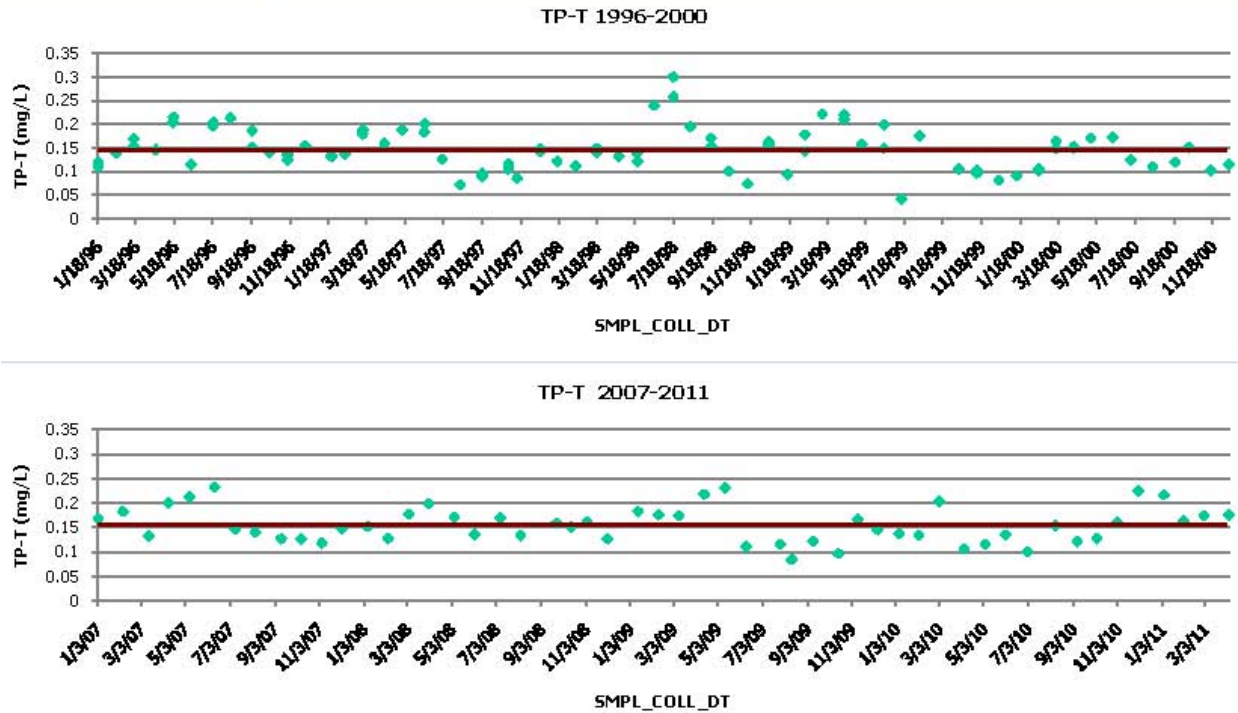


FIGURE 21: SJRWMD LAKE JESUP NEAR SOLDIERS CREEK/GEE CREEK SITE TP DATA FOR 1996-2000 AND 2008-2011

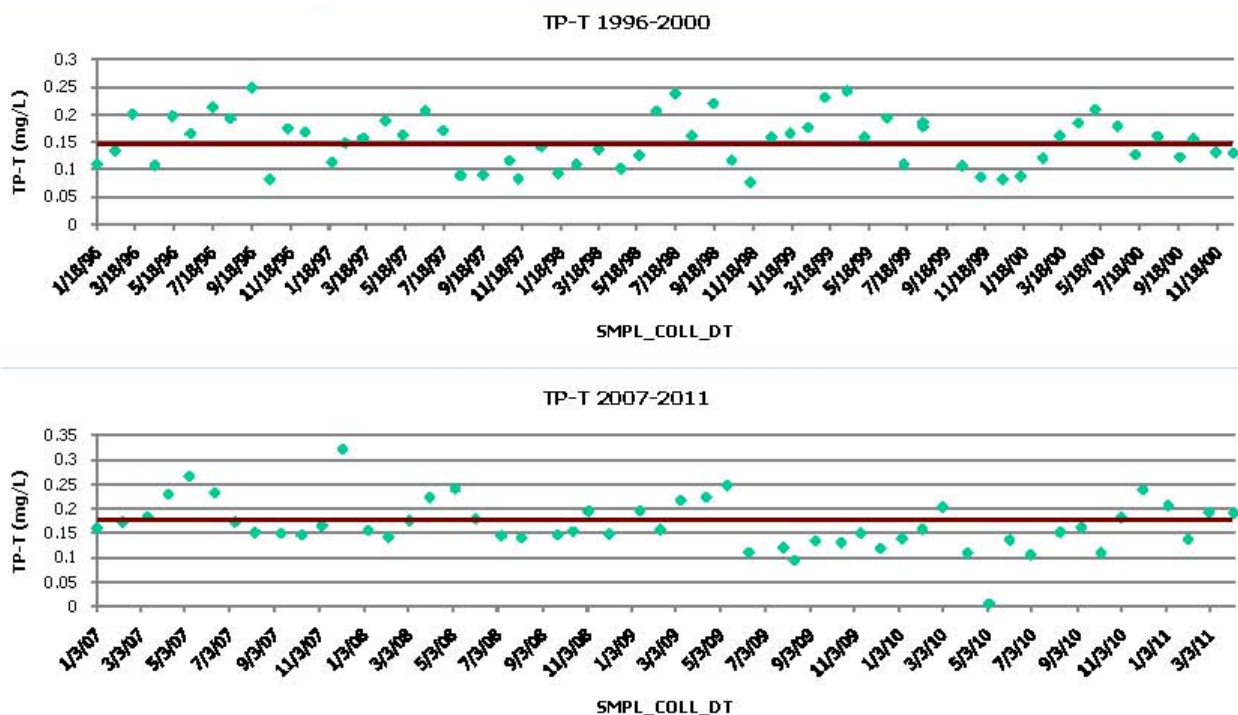


FIGURE 22: SJRWMD LAKE JESUP NEAR HOWELL CREEK SITE TP DATA FOR 1996-2000 AND 2008-2011

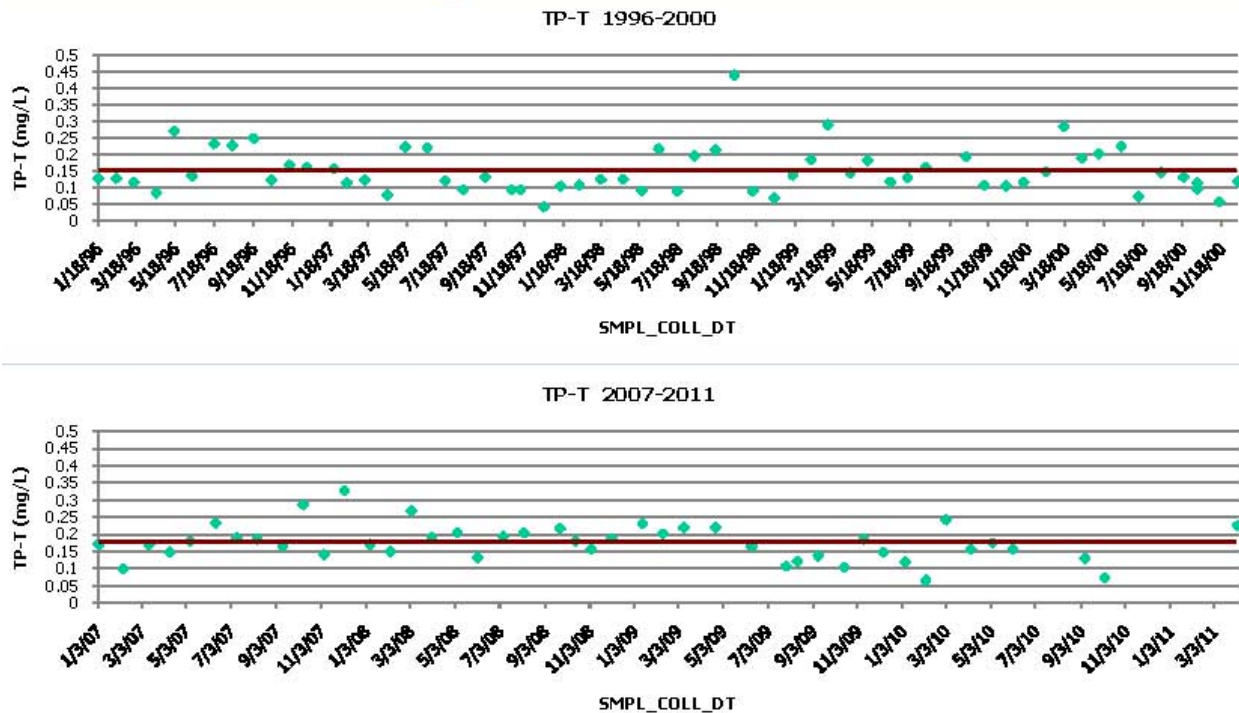


FIGURE 23: SJRWMD LAKE JESUP NEAR SITE 10 SITE TP DATA FOR 1996-200 AND 2008-2011

2.4.2 RESEARCH PRIORITIES

2.4.2.1 City of Oviedo

The City of Oviedo is working on a research study to determine the loading from the North Corporate Oviedo drainage area to the Lake Jesup Basin. The first draft report for this study is complete and under review with comments due by July 11, 2011. The goal of this study is to better understand the stormwater conveyance systems, associated loadings, and priority improvements.

2.4.2.2 Orange County

Orange County has been collecting monitoring data to determine the pollutant load being discharged from the county through Lake Burkett (refer to **Section 2.4.1**). The county has gathered preliminary data to determine whether Lake Georgia discharges into the Bear Gulley subbasin of Lake Jesup, or if it discharges outside the Lake Jesup Basin. The county is also in the process of gathering data to determine if Lake Killarney discharges to the Lake Jesup Basin because the water control structure from this lake is always closed.

2.4.2.3 Seminole County

Seminole County is in the process of conducting a seepage study throughout the lake to determine the surficial groundwater quality and quantity into and out of Lake Jesup. The first phase of the study is complete and the second phase is scheduled to be completed in June 2012. The county is also working on an update of the QUAL2K model for the lake, which is scheduled to be completed in December 2011. Seminole County is including BMP efficiency monitoring as part of their Navy Canal and Cameron Ditch RSFs to determine the actual pollutant load removal rates from these facilities. This monitoring will be completed in July 2011. The county is also implementing a project with SJRWMD to add three storm event

samplers to the Howell Creek subbasin to determine storm event loading. These samplers have been installed. In addition, the county project with SJRWMD to perform integrated surface-groundwater modeling for the Lake Jesup Basin has been put on hold due to lack of funding.

2.4.2.4 SJRWMD

For SJRWMD's sediment nutrient flux research study, additional elements were added to the scope of work and the new deadline for the final report is September 30, 2011. Additional testing at the current sites was completed over another year to assist with gaps in previous tests due to equipment loss and tampering. An additional site was added near the removed Highway 46 causeway to evaluate changes in sediment deposition with new flow patterns. Isotope evaluations to determine the source of nutrients in the water column were added to all sites. SJRWMD has also estimated reuse nutrient contributions for the Lake Jesup watershed and the entire Middle St. Johns River Basin. Less than 50% of reuse sources monitor TP data and destination volume data are insufficient for accurate modeling of potential loads.

2.4.3 LAKE JESUP INTERAGENCY RESTORATION STRATEGY

The *Lake Jesup Interagency Restoration Strategy* was jointly developed by FDEP, SJRWMD, and the Florida Fish and Wildlife Conservation Commission. The strategy lays out a plan for the restoration of Lake Jesup that will be implemented in two phases. The first phase includes developing the BMAP, reducing external loads to the lake, and reducing nutrients in the lake water column. The second phase of the strategy will be implemented as necessary after the first phase is complete. The strategy was endorsed by the agencies in January 2008. Since that time, several changes have occurred related to the restoration of Lake Jesup. An addendum to the strategy is currently being finalized by the agencies to address the following items:

- The Lake Jesup BMAP spreads the reduction of external phosphorus loads over 15 years rather than the five years as initially proposed in the strategy.
- Improved management of reuse water and elimination of sludge disposal to reduce phosphorus export from Site 10 was incorporated into a new FDEP permit.
- United States Army Corps of Engineers 1135 project determination and alternative process recommendation.
- Construction of the new State Road 46 high-span bridge.
- The feasibility phase of cost-effective regional TP projects is almost complete and regional project lists updated.
- Address incorporation of any new Pollutant Load Reduction Goals and TMDLs scheduled for completion by 2014.
- Provide a new timeline with parallel efforts identified as replacement for previously sequential activities.

As part of the strategy, SJRWMD has completed the feasibility studies for several regional projects. The treatment results for the in-lake TP reduction Pay-for-Performance project have been forwarded to FDEP at their request and with AquaFiber's approval. This project is demonstrating 60% - 80% TP removal from the water column near the project site on the south central Lake Jesup shore.

The first phase of the floating TP treatment feasibility study is complete. Initial results are promising with an estimated 40% - 97% TP removal, and the second phase to optimize the structure and maximize TP removal is ready to start. There is no SJRWMD funding to complete

this phase at this time, but SJRWMD staff will provide technical support and the proposed scope of work to any entity looking for a small, effective inexpensive treatment option.

Plans to pursue stream restoration and concomitant use of wetlands in the Black Hammock area for TP treatment have been put on hold indefinitely.

SJRWMD also evaluated the feasibility of using alum to reduce TP concentrations in tributary inflows into Lake Jesup and to develop conceptual designs for systems capable of removing 4-6 metric tons of TP per year from Lake Jesup tributaries. A five month field monitoring study was conducted to evaluate the hydrologic and water quality characteristics of seven significant tributary inflows to Lake Jesup. Five separate monitoring events were conducted at each tributary, including both wet and dry season conditions, with a series of laboratory jar tests conducted on each of the tributary samples, using a wide range of alum doses, to evaluate the effectiveness of alum for treatment of tributary inflows and develop systems for sites.

Alum treatment appears feasible for each of the evaluated tributaries; the focus of the feasibility study was limited to Gee Creek, Soldiers Creek, and Howell Creek. The other tributaries lacked the necessary historical hydrologic data necessary for development of a conceptual alum treatment system. Each of the three systems design is based on a broad-crested weir to divert water into a treatment system where alum is added and the flocculent allowed to accumulate in dedicated settling ponds. Flocculent removal is achieved in each of the three systems using a dedicated dredge system. With a smaller volume of annual flocculent generated for a Gee Creek or Soldier Creek system, flocculent dewatering is assumed to occur using drying beds for these systems, with a centrifuge system recommended for Howell Creek.

Separate construction and operation and maintenance costs were calculated for alum treatment systems installed on each of the three tributaries. Twenty-year present worth costs for the alum treatment systems are approximately \$9,500,943 for Gee Creek, \$7,773,246 for Soldiers Creek, and \$27,655,288 for Howell Creek. Twenty-year phosphorus removal costs range from \$138-\$163/lb of phosphorus removed. Construction of an alum treatment system on Howell Creek will remove approximately four metric tons of phosphorus per year without other systems. Phosphorus removal in the range of five to six metric tons per year can be achieved by a Howell Creek treatment system and either a Gee Creek or Soldiers Creek system. Since phosphorus removal costs are essentially equal for the three systems, the deciding factors on system construction would likely be land availability and proximity to Lake Jesup.

2.5 FUNDING

The City of Casselberry was awarded a \$250,000 TMDL Water Quality Restoration Grant through FDEP to assist with the construction of several baffle box and inlet filter baskets (projects C-10, C-11, C-12, C-15, and C-19), as well as to conduct a BMP effectiveness evaluation. Significant additional public education components were incorporated into the match components of the grant proposal. It is anticipated all components of the grant will be completed by September 2013.

The City of Longwood continues to operate a stormwater utility with a monthly fee, which is the primary source of revenue for BMAP projects. In addition, the city has achieved positive results utilizing the Seminole County one-cent sales tax for roadway improvements that include paving unpaved roads and providing retention.

The City of Maitland was given a Section 319 Grant in the amount of \$549,182 to construct the Lake Maitland Basin Drainage Improvements (projects M-7 through M-11).

The City of Orlando received a Community Issue Budget Request Grant for the baffle box installations (projects ORL-6, ORL-10, ORL-20, and ORL-23). The city also received an EPA Section 319 Nonpoint Source Management Grant for upcoming projects involving the expansion of an existing detention pond and installation of an exfiltration system.

In 2009, the City of Sanford received \$2.6 million in American Recovery and Reinvestment Act/State Revolving Fund funds to perform sanitary sewer system improvements in order to address infiltration and inflow.

Seminole County was notified by FDEP in May 2011 that the Cassel Creek RSF (project SC-1) was awarded a TMDL Non Point Source Management Grant for \$808,846.

The Solary Canal Regional Stormwater Treatment Area is funded for construction by SJRWMD in the amount of \$1.7 million.

FDACS provides BMP implementation assistance through field staff and a contract with the East Central Florida Resource Conservation and Development Council. The contractors work primarily in Orange, Lake, Seminole, and Volusia counties, with a priority focus on BMAP areas within those counties. Lake Jesup Basin expenditures include FDACS staff salary and contract expenditures, with an estimated total for contractor cost alone of \$36,000.

SECTION 3: MAJOR ISSUES

3.1 SUMMARY OF ISSUES

Several entities have encountered delays with their project implementation. However, these delays are not causing an issue with BMAP compliance because the delayed projects are either additional reductions not required in this five-year iteration or the projects will be completed in the five-year period. The stakeholders also noted that obtaining funding to implement the projects and research studies has been an issue. Data were not collected from a few of the BMAP monitoring stations due to low flow conditions from lack of rainfall. The locations of these stations may need to be modified in the future if low flow continues to be an issue. Additional details the issues encountered this past year are described in **Section 3.2**. The issues associated the BMAP monitoring plan are described in **Section 3.3**.

3.2 ISSUES BY ENTITY

3.2.1 CITY OF CASSELBERRY

The proposed 672 San Pablo baffle box (project C-10) has been replaced by two proposed inlet filters; the treatment area for this box was determined to be too small to warrant the expense of a baffle box. The 676 San Pablo box (project C-10) is still proposed. Projects C-10 through C-12 have been designed, permitted, and a bid awarded for construction, which is anticipated to begin in July 2011 and conclude by January 2012. This new completion date is behind the BMAP completion date of April 2010; however, the city has already met its required reductions for the first iteration of the BMAP without these projects.

The proposed Live Oaks Center baffle box (project C-13) has been deferred to at least Fiscal Year 2013. This proposed baffle box may not deliver a sufficient cost/benefit ratio to warrant its installation, as Grassy Lake typically has very good overall water quality. The city will be conducting an effectiveness evaluation of various baffle boxes through 2013 and in light of that study will revisit the feasibility of this particular project at a later date. This project was scheduled to be completed in April 2011; however, the city has already met its required reductions for the first iteration of the BMAP without this project.

Much of the flow for the 360 South Lake Triplet baffle box (project C-14) already receives wet detention pre-treatment, so it was determined this box would not make sense from a cost/benefit ratio perspective. Therefore, this project was removed from the BMAP table. The three Carriage Hill baffle boxes (project C-18) have also been deleted, at least for now, as they would only pre-treat runoff prior to discharge to a wetland, which then feeds into Queen's Mirror Lake. Such treatment would not guarantee effective nutrient load reduction to the lake itself due to internal wetland processes. These project reductions are not needed by the city in this iteration of the BMAP.

The City of Casselberry is currently finishing a nutrient and hydrologic budget study for the Triplet Chain of Lakes and Queens Mirror Lake. A final report is expected by October 2011. The baffle boxes in projects C-16 and C-17 have been delayed pending the outcome of this study, which may shed light on more cost effective means of significantly reducing pollutant loads to this lake system. These project reductions are not needed by the city in this iteration of the BMAP.

The proposed Carriage Hill detention pond with alum injection system (project C-21) was deemed to lack feasibility due to potential permitting issues (including wetland impacts) and lack of efficacy. This system would have disturbed an existing heavily wooded wetland area and would have principally pre-treated runoff prior to discharge to a wetland system that connects to Queen's Mirror Lake and the Triplet Chain system. Such treatment would not guarantee effective nutrient load reduction to the lake itself due to internal wetland processes. An alternative alum (or other flocculent) system project has been proposed and funded to treat flows directly entering Queen's Mirror Lake or within the lake system itself. Design of this system has been delayed pending outcome of the study this area. It is anticipated this system could be a much more effective means of improving water quality within Queens Mirror and South Lake Triplet, two of the city's highest TSI lakes, while simultaneously reducing net pollutant loads to downstream Lake Jesup.

3.2.2 CITY OF LONGWOOD

While the City of Longwood installed a substantial amount of sanitary sewers throughout the city, they continue to struggle with residential properties connecting to the system to reduce the impact of septic systems on the groundwater and surface waters (project L-3). The city removed the South Grant Street and North Grant Street drainage projects (BMAP projects L-1 and L-2) from their BMAP project table in favor of completing the stormwater master plan to more efficiently utilize limited stormwater funds. These projects will be replaced with other projects once the stormwater master plan process has been completed. The required reductions will still be achieved within the five-year BMAP period; therefore, this delay is not an issue.

3.2.3 CITY OF ORLANDO

The City of Orlando has experienced project delays due property acquisition issues. However, these delays have not affected compliance with the BMAP schedule.

3.2.4 CITY OF OVIEDO

The City of Oviedo, along with partners Seminole County and City of Winter Springs, have encountered delays in the Solary Canal project (projects OV-4, SC-7, and WS-1) due to artesian flow conditions at the project site. This project was originally scheduled to be completed in September 2010 and the project has been delayed until October 2011. These stakeholders are already meeting their required reductions for this BMAP so the delay in this project is not an issue for their compliance.

3.2.5 CITY OF SANFORD

Funding to support future capital projects and programs to reduce nutrient loads to Lake Jesup continues to be a challenge for the City of Sanford. As funding becomes available, the city will look to partner with neighboring municipalities on projects that reduce pollutant loads to Lake Jesup.

3.2.6 ORANGE COUNTY

Orange County's main issue is a lack of funding for research projects to gain a better understanding of the loading from different areas of the county.

3.2.7 AGRICULTURE

State-level cost-share funding was not available for the BMAP reporting year, and fiscal projections indicate the same for the upcoming year. However, FDACS is exploring the

possibility of providing additional staff time to work with farmers one-on-one to demonstrate and implement BMPs.

3.3 WATER QUALITY MONITORING ISSUES

The City of Altamonte Springs committed to sharing the sampling of the Prairie Lake site with Seminole County, with the city completing eight months of sampling each year. The city was unable to fully implement the sampling program until the new fiscal year beginning in October 2010. The city's lab is National Environmental Laboratory Accreditation Conference (NELAC) certified (ID #E53258) and performs the analyses; however, the laboratory only recently received certification for the chlorophyll-a corrected and color analyses in January 2011 after submittal for the certification in September 2010. These parameters are required as part of the BMAP monitoring plan. In addition, the city has been working with the University of South Florida to have the water quality data uploaded to STORET. This has been a lengthy process and, as of the date of this report, has not been completed.

The City of Lake Mary was unable to collect any samples at the site at the outlet of Big Lake Mary (see **Figure 24**) because water has not flowed at this location since before June 2010 due to low rainfall conditions. If lack of flow continues to be an issue, this site may need to be removed from the monitoring plan.



FIGURE 24: CITY OF LAKE MARY SAMPLING SITE AT THE OUTLET OF BIG LAKE MARY

Orange County has encountered issues with collecting samples at the Burkett Canal 2 site during the dry season. During this time, the site is often dry or zero flow detected. If collecting samples continues to be an issue at this site because of the lack of flow, this site may need to be removed from the monitoring plan.

SECTION 4: UPCOMING YEAR ACTIVITIES

4.1 SUMMARY OF EFFORTS FOR THE UPCOMING YEAR

The second annual BMAP progress report will encompass the period of June 1, 2011 through May 31, 2012. During this time the City of Casselberry will complete six projects for a total reduction of 14.2 lbs/yr of TP. The City of Maitland will also complete six projects for a total reduction of 32.7 lbs/yr of TP. The City of Oviedo and FDOT will continue designing several of their projects. FDACS will continue to sign up growers for BMPs under the citrus and cow/calf manuals. In addition, all components of the BMAP monitoring plan will continue. Additional details are included in **Section 4.2** and **Section 4.3**.

4.2 UPCOMING EFFORTS BY ENTITY

4.2.1 CITY OF CASSELBERRY

The City of Casselberry will complete installation of three baffle boxes and one inlet filter (projects C-10, C-11, and C-12) in January 2012, and three additional baffle boxes (projects C-15, C-16, and C-17) in April 2012. These projects will result in 14.2 lbs/yr of TP removal.

4.2.2 CITY OF MAITLAND

The City of Maitland will complete the Lake Gem/Park Lake Co-op projects (project M-2 through M-6) and the Dommerich Lot baffle box (project M-12) by the end of 2011. These projects will result in 32.7 lbs/yr of TP reductions.

4.2.3 CITY OF OVIEDO

The City of Oviedo will continue work on the Aulin Regional stormwater pond (project OV-1).

4.2.4 FDOT DISTRICT 5

FDOT District 5 will continue to work on the design for the Soldiers Creek alum treatment facility (project FDOT-2) and the retention project along US 17/92 from Shepard Road to Lake Mary Boulevard (project FDOT-3).

4.2.5 AGRICULTURE

During the coming year, FDACS anticipates that the remaining citrus and cow/calf acreage will be enrolled in FDACS BMP programs. In addition, FDACS will explore opportunities for more one-on-one work and/or workshops with growers in the basin to ensure the proper implementation of BMPs. State funding for agricultural BMPs is sorely lacking statewide. FDACS will work with SJRWMD and FDEP to explore opportunities for providing cost share and to determine where the monies can be most effectively spent. The FDACS BMP manuals scheduled to be adopted in 2011/2012 are equine and in-ground nurseries.

4.3 WATER QUALITY MONITORING

All responsible stakeholders in the BMAP monitoring plan will continue to sample their stations at the frequency noted in the BMAP. Any ongoing issues with collecting samples due to low flow conditions will be recorded and a decision about whether to keep those stations in the BMAP monitoring network will be made as part of the next annual report. The stakeholders will continue to upload their data to STORET on a regular basis. Any stakeholder that is not currently loading their data into STORET will work with FDEP to set up the capability to do so.

APPENDIX A: BMAP PROJECTS

The BMAP project tables below show the status of the projects as of May 31, 2011. The tables provide information on the nutrient reduction attributed to each individual project, shown in pounds per year (lbs/yr). These projects were submitted to provide reasonable assurance to FDEP that each entity has a plan on how they will meet their allocation; however, this list of projects is meant to be flexible enough to allow for changes that may occur over time, provided that the reduction is still met within the specified timeframe.

CITY OF ALTAMONTE SPRINGS

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	TP REDUCTION (LBS/YR)	STATUS
Altamonte Springs	A-1	Existing BMPs	BMPs in place at the time of the TMDL	35.0	Completed
Altamonte Springs	A-2	Street Sweeping	Street sweeping of 4.4 miles, two times per month	0.5	Ongoing
Altamonte Springs	A-3	Education Efforts	FYN, PSAs, pamphlets, presentations, website, illicit discharge program	4.6	Ongoing
Altamonte Springs	N/A	N/A	Total Projects Reduction	40.1	N/A
Altamonte Springs	N/A	N/A	Total Required Reduction 2010-2014	19.0	N/A
Altamonte Springs	N/A	N/A	Credit for Future BMAPs	21.1	N/A

CITY OF CASSELBERRY

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Casselberry	C-1	Lake Concord Stormwater Park/Anniversary Park - Plumosa Baffle Box	Redevelopment and retrofit of City-owned property into an educational stormwater park; 2 nd generation baffle box	10/2007	09/2009	0.5	\$43,250	8.5	Stormwater Retrofit	Completed
Casselberry	C-2	Lake Concord Stormwater Park/Anniversary Park - Exfiltration Trench	Redevelopment and retrofit of City-owned property into an educational stormwater park; an exfiltration trench	10/2007	09/2009	0.4	\$143,200	1.7	Exfiltration	Completed
Casselberry	C-3	Lake Concord Stormwater Park/Anniversary Park - Dry Detention	Redevelopment and retrofit of City-owned property into an educational stormwater park; dry detention	10/2007	09/2009	0.0	\$75,000	1.0	Dry detention pond	Completed
Casselberry	C-4	Lake Concord Stormwater Park/Anniversary Park - Swale, Wetland Revegetation, & Boardwalk	Redevelopment and retrofit of City-owned property into an educational stormwater park; swale, lakeshore revegetation, educational boardwalk	10/2007	09/2009	0.1	\$742,000	1.7	Swales	Completed
Casselberry	C-5	Lake Concord Stormwater Park/Anniversary Park	Redevelopment and retrofit of City-owned property into an educational stormwater park; baffle box, pervious pavement, bioretention/ parking lot	10/2007	09/2009	0.1	\$226,500	1.2	Stormwater Retrofit	Completed
Casselberry	C-6	Anchor Road Reconstruction	Reconstruction of Anchor Road with drainage improvements including upgraded detention/retention ponds	10/2007	10/2009	2.9	\$2,000,000	60.7	Wet detention pond	Completed
Casselberry	C-7	North Lake Triplet Shoreline Revegetation	Remove existing nuisance vegetation from the north and west shores of North Lake Triplet and replace with beneficial species; install reverse berm and swale	12/2007	09/2014	0.8	\$80,000	16.2	Swales	Planned & Funded

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Casselberry	C-8	Secret Lake Shoreline Revegetation	Remove existing nuisance vegetation from the east and southwest shores of Secret Lake and replace with beneficial species; install 2 reverse berms and swales	01/2008	05/2008	0.2	N/A	3.7	Swales	Completed
Casselberry	C-9	Fountain/Aeration and Revegetation for Grassy Lake	Installation of aeration for high BOD loading to this waterbody; includes shoreline revegetation for aesthetics and nutrient removal with swale construction as practicable	03/2009	07/2009	0.0	\$150,000	1.7	Aeration System	Completed
Casselberry	C-10	672 & 676 San Pablo Avenue 2nd generation Baffle Boxes	Replace existing storm manholes with two inlet filters and one 2nd generation baffle box for removal of pollutants	03/2009	01/2012	1.3	\$300,000	28.0	Stormwater Retrofit	Started
Casselberry	C-11	Madrid Drive at Desoto Drive 2nd generation Baffle Box	Replace existing storm manholes with 2nd generation Baffle Boxes for removal of pollutants	03/2009	01/2012	0.4	\$150,000	5.0	Stormwater Retrofit	Started
Casselberry	C-12	Sonora Drive at Desoto Drive 2nd generation Baffle box	Replace existing storm manholes with 2nd generation baffle boxes for removal of pollutants	03/2009	01/2012	2.4	\$170,000	42.7	Stormwater Retrofit	Started
Casselberry	C-13	Live Oaks Center 2nd generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutant	01/2013	12/2013	1.9	\$100,000	11.6	Stormwater Retrofit	Planned & Funded
Casselberry	C-15	Lake Hodge Park 2nd generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutants	03/2011	04/2012	3.3	\$170,000	53.2	Stormwater Retrofit	Started
Casselberry	C-16	161 South Lake Triplet Drive 2nd generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutants	03/2011	04/2012	5.5	\$170,000	89.9	Stormwater Retrofit	Planned & Funded
Casselberry	C-17	530 South Lake Triplet Drive 2nd generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutants	03/2011	04/2012	1.3	\$140,000	20.7	Stormwater Retrofit	Planned & Funded
Casselberry	C-19	808 Osceola Trail 2nd generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutants	03/2013	04/2014	1.2	\$140,000	25.2	Stormwater Retrofit	Design

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Casselberry	C-20	Park Drive Drainage/Wetland Improvements	Construction of stormwater retention area on Lots 10A & 11 on north side of Park Drive	03/2013	04/2014	4.2	\$36,000	46.4	Wet retention pond	Planned & Funded
Casselberry	C-21	Alternative Alum or Other Flocculent System	Construction of a feed system for the addition of an alternative alum or other flocculent to treat flows entering Queens Mirror Lake and the Triplet Lake chain	03/2013	04/2014	16.5	Unknown	Unknown	Flocculent System	Envisioned but Not Funded
Casselberry	C-22	Middle Lake Triplet Shoreline Revegetation	Remove existing nuisance vegetation from the north shore of Middle Lake Triplet and replace with beneficial species; install reverse berm and swale	12/2013	06/2014	0.3	\$33,000	3.4	Swales	Planned & Funded
Casselberry	C-23	Secret Way at canal 2nd generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutants	03/2014	12/2014	0.7	\$170,000	16.4	Stormwater Retrofit	Planned & Funded
Casselberry	C-24	51 North Lake Triplet Drive 2nd generation Baffle Box	Replace existing storm manholes with baffle boxes for removal of pollutants	03/2014	12/2014	1.2	\$140,000	27.4	Stormwater Retrofit	Planned & Funded
Casselberry	C-25	South Lake Triplet Swales	Replace existing storm manholes with baffle boxes for removal of pollutants	03/2014	12/2014	1.0	\$80,000	6.3	Swales	Envisioned but Not Funded
Casselberry	C-26	South Lake Triplet 2nd generation Baffle Box	Replace existing storm manholes with Baffle Boxes for removal of pollutants (sediment and detritus) (4.1)	03/2014	12/2014	0.8	\$140,000	18.3	Stormwater Retrofit (baffle box)	Envisioned but Not Funded
Casselberry	C-27	Street Sweeping	Monthly street sweeping of 72.5 miles	N/A	N/A	5.3	N/A	N/A	Street Sweeping	Ongoing
Casselberry	C-28	Education Efforts	FYN, landscape and irrigation ordinances, PSAS, pamphlets/presentations, website, illicit discharge program	N/A	N/A	85.6	N/A	N/A	Education	Ongoing
Casselberry	C-29	Existing BMPs	BMPs that were in place at the time of the TMDL	N/A	N/A	319.9	N/A	N/A	N/A	Completed
Casselberry	N/A	N/A	Total Projects Reduction	N/A	N/A	457.8	N/A	N/A	N/A	N/A
Casselberry	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	342.7	N/A	N/A	N/A	N/A
Casselberry	N/A	N/A	Credit for Future BMAPs	N/A	N/A	115.1	N/A	N/A	N/A	N/A

TOWN OF EATONVILLE

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT TYPE	STATUS
Eatonville	E-1	Street Sweeping	Monthly street sweeping of 3.7 miles	N/A	N/A	0.3	Street sweeping	Ongoing
Eatonville	E-2	Existing BMPs	BMPs that were in place at the time of the TMDL	N/A	N/A	9.6	N/A	Completed
Eatonville	E-3	Regional Project	Participate in a regional project	2009	2014	13.5	Regional Project	Planned
Eatonville	N/A	N/A	Total Projects Reduction	N/A	N/A	23.4	N/A	N/A
Eatonville	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	23.4	N/A	N/A
Eatonville	N/A	N/A	Credit for Future BMAPs	N/A	N/A	0.0	N/A	N/A

FLORIDA DEPARTMENT OF TRANSPORTATION

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	START DATE	END DATE	TP REDUCTION (LBS/YR)	TREATMENT ACRES	PROJECT TYPE	STATUS
FDOT	FDOT -1	FM: 240167-1 SR434	Widen from 2 to 6 lanes from McCulloch Road to Mitchell Hammock; drainage improvements and treatment of existing impervious	2002	2007	3.6	83.47	Wet Detention	Completed
FDOT	FDOT -2	Soldiers Creek Alum Treatment Facility	Flow-through alum system along CR 427 in Seminole County to reduce nutrient loads within Soldiers Creek	Pending	2014	80.0	N/A	Alum Treatment	Design
FDOT	FDOT -3	FM: 240196-1 SR17-92 Basin 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	Pending	2014	3.7	47.97	Dry Retention	Design
FDOT	FDOT -4	FM: 240163-1 SR 46	SR 46 Bridge Replacement over Lake Jesup; drainage improvements and treatment of existing impervious	2008	2010	5.4	50.50	Wet Detention	Completed
FDOT	FDOT -5	Street Sweeping	Monthly street sweeping of 1,232.6 miles	N/A	N/A	90.3	N/A	Street Sweeping	Ongoing
FDOT	FDOT -6	Education Efforts	Public Education efforts	N/A	N/A	6.5	N/A	Education	Ongoing
FDOT	FDOT -7	Existing BMPs	Varies	N/A	N/A	207.7	N/A	N/A	Completed
FDOT	N/A	N/A	Total Projects Reduction	N/A	N/A	397.2	N/A	N/A	N/A
FDOT	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	132.3	N/A	N/A	N/A
FDOT	N/A	N/A	Credit for Future BMAPs	N/A	N/A	264.9	N/A	N/A	N/A

CITY OF LAKE MARY

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	ANNUAL O&M COST	FOOTPRINT (ACRES)	PROJECT TYPE	STATUS
Lake Mary	LM-1	Lake Mary Woods	Eliminate 18 septic tanks 75 feet from surface water, some of them were failing	5/2005	4/2006	44.5	\$3,700,000	\$2,056	6,260	Extend sewer line	Completed
Lake Mary	LM-2	Street Sweeping	Annual street sweeping of 31.5 miles	N/A	N/A	1.1	N/A	N/A	N/A	Street Sweeping	Ongoing
Lake Mary	LM-3	Education Efforts	FYN, ordinances, PSAs, pamphlets, presentations, website, illicit discharge program	N/A	N/A	67.6	N/A	N/A	N/A	Education	Ongoing
Lake Mary	LM-4	Existing BMPs	BMPs that were in place at the time of the TMDL	N/A	N/A	264.3	N/A	N/A	N/A	N/A	Completed
Lake Mary	N/A	N/A	Total Projects Reduction	N/A	N/A	377.5	N/A	N/A	N/A	N/A	N/A
Lake Mary	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	264.3	N/A	N/A	N/A	N/A	N/A
Lake Mary	N/A	N/A	Credit for Future BMAPs	N/A	N/A	113.2	N/A	N/A	N/A	N/A	N/A

CITY OF LONGWOOD

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	PROJECT TYPE	STATUS
Longwood	L-1	Stormwater Master Plan Project	Project yet to be determined as part of the stormwater master plan	2011	2012	0.7	\$300,000	Stormwater Retrofit	Planned & Funded
Longwood	L-2	Stormwater Master Plan Project	Project yet to be determined as part of the stormwater master plan	2011	2012	1.4	\$300,000	Stormwater Retrofit	Planned & Funded
Longwood	L-3	Sewering projects to remove septic tanks	Sewering projects to remove tanks within 75 ft of surface waters (remove 20 septic tanks)	2009	2013	22.7	N/A	Wastewater plant improvements	Planned & Funded
Longwood	L-4	Street Sweeping	Quarterly street sweeping of 11.1 miles	N/A	N/A	0.6	N/A	Street sweeping	Ongoing
Longwood	L-5	Education Efforts	FYN, pamphlets, presentations, website, illicit discharge program	N/A	N/A	44.9	N/A	Education	Ongoing
Longwood	L-6	Existing BMPs	BMPs that were in place at the time of the TMDL	N/A	N/A	58.9	N/A	N/A	Completed
Longwood	L-7	Regional Project	Participate in a regional project	2009	2014	69.7	N/A	N/A	Planned
Longwood	N/A	N/A	Total Projects Reduction	N/A	N/A	198.9	N/A	N/A	N/A
Longwood	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	205.3	N/A	N/A	N/A
Longwood	N/A	N/A	Credit for Future BMAPs	N/A	N/A	-6.4*	N/A	N/A	N/A

* Note: Due to some project calculation adjustments done by FDEP, the remainder of the required reductions for this first BMAP will be met as part of the responsibilities in the second BMAP.

CITY OF MAITLAND

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	ANNUAL O&M COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Maitland	M-1	Sybelia Parkway Regional Pond	Construct wet pond	2005	2007	33.7	\$4,400,000	\$3,000	125.2	Wet detention pond	Completed
Maitland	M-2	Lake Gem/Park Lake COOP BMP	Construct second generation baffle box	2010	2011	0.3	\$30,000	\$3,000	3.4	Stormwater Retrofit	Planned and Funded
Maitland	M-3	Lake Gem/Park Lake COOP BMP	Construct second generation baffle box	2010	2011	3.1	\$30,000	\$3,000	20.0	Stormwater Retrofit	Planned and Funded
Maitland	M-4	Lake Gem/Park Lake COOP BMP	Construct second generation baffle box	2010	2011	0.2	\$60,000	\$6,000	3.1	Stormwater Retrofit	Planned and Funded
Maitland	M-5	Lake Gem/Park Lake COOP BMP	Construct second generation baffle box	2010	2011	18.9	\$60,000	\$6,000	178.9	Stormwater Retrofit	Planned and Funded
Maitland	M-6	Lake Gem/Park Lake COOP BMP	Construct second generation baffle box	2010	2011	9.1	\$60,000	\$6,000	58.1	Stormwater Retrofit	Planned and Funded
Maitland	M-7	Lake Maitland Basin - Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	Construct infiltration trenches	2009	2010	0.5	\$60,000	\$2,500	3.9	Infiltration trench	Completed
Maitland	M-8	Lake Maitland Basin - Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	Construct infiltration trenches	2009	2010	1.7	\$170,000	\$8,500	15.0	Infiltration trench	Completed
Maitland	M-9	Lake Maitland Basin - Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	Construct infiltration trenches	2009	2010	0.6	\$100,000	\$5,000	9.2	Infiltration trench	Completed
Maitland	M-10	North Lake Maitland Leaf Trap Project	Install curb inlet leaf trap	2009	2010	0.1	\$3,000	\$6,000	16.8	Inlet	Completed
Maitland	M-11	Lake Maitland Basin - Ridgewood Area Quality Neighborhood Program City Street Improvement Plan	Construct infiltration trenches	2009	2010	0.9	\$100,000	\$8,500	14.8	Infiltration trench	Completed

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	ANNUAL O&M COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Maitland	M-12	Dommerich Lot Baffle Box	Construct second generation baffle box	2010	2011	1.1	\$60,000	\$5,000	24.7	Stormwater Retrofit	Planned and Funded
Maitland	M-13	Chipewa Trail Baffle Box	Construct second generation baffle box	2007	2007	1.1	\$60,000	\$5,000	25.3	Stormwater Retrofit	Completed
Maitland	M-14	Horatio Avenue Infiltration Trench	Construct infiltration trenches	2012	2014	0.9	\$150,000	\$5,000	5.0	Infiltration trench	Envisioned, but Not Funded
Maitland	M-15	Minnehaha Park Stormwater Improvements Dry Stormwater Pond	Construct wet pond	2007	2008	1.3	\$65,000	\$2,000	9.9	Dry detention pond	Completed
Maitland	M-16	Street Sweeping	Street sweeping once every 2 weeks of 71 miles	2005	Ongoing	7.4	N/A	\$100,000	2898	Street Sweeping	Ongoing
Maitland	M-17	Education Efforts	Landscaping ordinance, PSAs, presentations/ pamphlets, website, illicit discharge program	N/A	N/A	40.8	N/A	N/A	N/A	Education	Ongoing
Maitland	M-18	Existing BMPs	BMPs in place at the time of the TMDL	N/A	N/A	0.7	N/A	N/A	N/A	N/A	Completed
Maitland	N/A	N/A	Total Projects Reduction	N/A	N/A	122.4	N/A	N/A	N/A	N/A	N/A
Maitland	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	124.8	N/A	N/A	N/A	N/A	N/A
Maitland	N/A	N/A	Credit for Future BMAPs	N/A	N/A	-2.4*	N/A	N/A	N/A	N/A	N/A

* Note: Due to some project calculation adjustments done by FDEP, the remainder of the required reductions for this first BMAP will be met as part of the responsibilities in the second BMAP.

ORLANDO ORANGE COUNTY EXPRESSWAY AUTHORITY

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	TP REDUCTION (LBS/YR)	PROJECT TYPE	STATUS
OOCEA	OOCEA-1	Existing BMPs	BMPs that were in place at the time of the TMDL	12.8	N/A	Completed
OOCEA	N/A	N/A	Total Projects Reduction	12.8	N/A	N/A
OOCEA	N/A	N/A	Total Required Reduction 2010-2014	5.2	N/A	N/A
OOCEA	N/A	N/A	Credit for Future BMAPs	7.6	N/A	N/A

ORANGE COUNTY

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT TYPE	STATUS
Orange County	OC-1	Hall Road Improvements	OC CIP Hall Road Improvements	2003	2009	0.1	Stormwater Retrofit	Completed
Orange County	OC-2	OC CIP Lake Wauntta	OC CIP Lake Wauntta	2005	2009	3.5	Stormwater Retrofit	Completed
Orange County	OC-3	Lake Sue Inlet Baskets	Lake Sue inlet baskets	N/A	N/A	0.7	Inlet Baskets	Completed
Orange County	OC-4	Street Sweeping	Street sweeping weekly of 400 miles for 8 months and two times per week sweeping for 4 months	N/A	N/A	56.3	Street Sweeping	Ongoing
Orange County	OC-5	Education Efforts	FYN, ordinances, PSAs, pamphlets, presentations, website, illicit discharge program	N/A	N/A	151	Education	Ongoing
Orange County	OC-6	Existing BMPs	BMPs that were in place at the time of the TMDL	N/A	N/A	197.3	N/A	Completed
Orange County	OC-7	Regional Project	Participate in a regional project	2009	2014	158.1	Regional Project	Planned
Orange County	OC-8	Inlet Baskets	Inlet baskets on Lake Sue and Lake Killarney	2010	N/A	2.0	Curb Inlet Baskets	Ongoing
Orange County	N/A	N/A	Total Projects Reduction	N/A	N/A	569.0	N/A	N/A
Orange County	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	569.0	N/A	N/A
Orange County	N/A	N/A	Credit for Future BMAPs	N/A	N/A	0.0	N/A	N/A

CITY OF ORLANDO

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	ANNUAL O&M COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Orlando	ORL-1	Lake Dot Water Quality Restoration	Installation of Alum Treatment System, where aluminum sulfate (alum) is injected into stormline on a flow-proportioned basis	1988	07/1990	70.4	\$569,207	N/A	276	Alum	Completed
Orlando	ORL-2	Hazel Street Outfall Improvements	Installation of CDS Unit at Lake Winyah from 96" pipe	07/2000	07/2003	8.3	\$410,992	N/A	505	Stormwater Retrofit	Completed
Orlando	ORL-3	Lake Rowena Screening Facility & Alum Stormwater Treatment	Installation of underground, flow-actuated rotating bar screen on 108" outfall pipe to capture debris with additional treatment via alum system	1994	1996	55.0	\$596,512	N/A	470	Screening and Alum	Completed
Orlando	ORL-4	Lake Highland CDS Unit	Installation of CDS Unit at Lake Highland	1998	1999	1.0	\$60,000	N/A	45	Stormwater Retrofit	Completed
Orlando	ORL-5	Mills Avenue Retrofit	Construction of Storm Flo Litter Collection Screen on Mills Ave., adjacent to Lake Rowena to treat runoff from 36" and 24" stormlines	01/2009	04/2009	8.4	\$250,000	N/A	89	Stormwater Retrofit	Completed
Orlando	ORL-6	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	10/2007	07/2008	1.8	\$400,000	N/A	236	Stormwater Retrofit	Completed
Orlando	ORL-7	Guernsey Park - Expansion of Wet Detention Pond	Expansion of wet detention pond to treat 61% of sub-basin drainage	N/A	N/A	0.1	\$425,000	N/A	80	Wet detention pond	Planned & Funded
Orlando	ORL-8	Ivanhoe Plaza Park Exfiltration	Installation of exfiltration galleries to treat 100% of sub-basin drainage	N/A	N/A	1.3	\$1,100,000	N/A	49	100% on-site retention	Planned & Funded

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	ANNUAL O&M COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Orlando	ORL-9	Don Dudley Park 2nd Generation Baffle Boxes	Construct two 2nd Generation Baffle Boxes upstream of Lake Concord and reroute flow to treat 30" and 24" outfalls from nearly 100% of two sub-basins	N/A	N/A	0.8	\$250,000	N/A	66	Stormwater Retrofit	Planned & Funded
Orlando	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	9/2009	10/2009	1.6	\$72,000	N/A	30	Stormwater Retrofit	Completed
Orlando	ORL-11	Westmoreland 2nd Generation Baffle Box	Construct 2nd Generation Baffle Box upstream of Lake Adair	N/A	2006	0.1	\$35,000	N/A	5.3	Stormwater Retrofit	Completed
Orlando	ORL-12	Stormwater Filtration Systems / Inlet Baskets	Installation of 6 inlet baskets around perimeter of Lake Adair	N/A	2007	0.0	\$5,400	N/A	25	Inlet Basket	Completed
Orlando	ORL-13	Stormwater Filtration Systems / Inlet Baskets	Installation of 11 inlet baskets in Spring Lake basin	N/A	2007	0.0	\$9,900	N/A	25	Inlet Basket	Completed
Orlando	ORL-14	Stormwater Filtration Systems / Inlet Baskets	Installation of 13 inlet baskets in Lake Formosa basin	N/A	2007	0.1	\$11,700	N/A	14	Inlet Basket	Completed
Orlando	ORL-15	Stormwater Filtration Systems / Inlet Baskets	Installation of 29 inlet baskets in Lake Highland basin	N/A	2007	3.5	\$26,100	N/A	223	Inlet Basket	Completed
Orlando	ORL-16	Stormwater Filtration Systems / Inlet Baskets	Installation of 2 inlet baskets in Lake Rowena basin	N/A	2007	0.5	\$1,800	N/A	39	Inlet Basket	Completed
Orlando	ORL-17	Stormwater Filtration Systems / Inlet Baskets	Installation of 49 inlet baskets in Lake Ivanhoe basin	N/A	2008	0.6	\$44,100	N/A	242	Inlet Basket	Completed
Orlando	ORL-18	Stormwater Filtration Systems / Inlet Baskets	Installation of 4 inlet baskets in Lake Druid basin	N/A	2007	0.4	\$1,800	N/A	39	Inlet Basket	Completed
Orlando	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	N/A	N/A	14.3	N/A	\$1,800,000	N/A	Street Sweeping	Completed

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	ANNUAL O&M COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Orlando	ORL-20	Reading Dr (24" line) - 2nd Generation Baffle Box at Lake Adair	Construct 2nd Generation Baffle Box upstream of Lake Adair to treat approximately 13% of subbasin	9/2009	10/2009	0.5	N/A	N/A	26	Stormwater Retrofit	Completed
Orlando	ORL-21	Spring Lake -2nd Generation Baffle Box at Rio Grande	Construct 2nd Generation Baffle Box upstream of Spring Lake to treat 100% of subbasin	9/2009	10/2009	0.6	\$128,000	N/A	39	Stormwater Retrofit	Completed
Orlando	ORL-22	Spring Lake- 2nd Generation Baffle Box at Springdale Rd	Construct 2nd Generation Baffle Box upstream of Spring Lake to treat 100% of subbasin	N/A	N/A	0.1	N/A	N/A	21	Stormwater Retrofit	Completed
Orlando	ORL-23	DOT Pond Maintenance, west of Spring Lake	Removal of muck/sediment and expansion of wet detention pond to treat 95% and 5% of two sub-basins, respectively.	2/2010	11/2010	6.1	N/A	N/A	141	Wet detention pond	Completed
Orlando	ORL-24	Weber Dr - 2nd Generation Baffle Box at Lake Druid	Construct 2nd Generation Baffle Box upstream of Lake Druid to treat approximately 7% of subbasin	N/A	2006	0.3	N/A	N/A	6	Stormwater Retrofit	Completed
Orlando	ORL-25	Educational Component	FYN, ordinances (landscape, irrigation, pet waste), PSAs, pamphlets, presentations, website, illicit discharge program	N/A	N/A	94.2	N/A	N/A	N/A	Education	Ongoing
Orlando	ORL-26	Hughey Avenue Retrofit	Divert stormwater from Lake Concord basin to Lake Dot Alum Treatment before discharging into chain of lakes	N/A	N/A	3.8	\$500,00	N/A	90.8	Stormwater Retrofit and Alum	Planned & Funded
Orlando	ORL-27	Existing BMPs	BMPs that were in place at the time of the TMDL	N/A	N/A	684.4	N/A	N/A	N/A	N/A	Completed
Orlando	ORL-28	FDOT Pond Sandbar Removal from Spring Lake	Removal of sandbar from FDOT pond outfall that enters Spring Lake	11/2010	2/2011	N/A	N/A	N/A	N/A	Wet detention pond	Completed
Orlando	N/A	N/A	Total Projects Reduction	N/A	N/A	958.2	N/A	N/A	N/A	N/A	N/A
Orlando	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	326.3	N/A	N/A	N/A	N/A	N/A
Orlando	N/A	N/A	Credit for Future BMAPS	N/A	N/A	631.9	N/A	N/A	N/A	N/A	N/A

CITY OF OVIEDO

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Oviedo	OV-1	Aulin Regional Stormwater Pond	Aulin Regional Stormwater Pond	2009	2014	13.5	N/A	N/A	Wet detention pond	Aulin North Underway
Oviedo	OV-2	Lightwood Knox Canal Project	Lightwood Knox Canal Project	2009	2014	84.5	N/A	N/A	Dry detention pond, Swales	Envisioned, but Not Funded
Oviedo	OV-3	Sweetwater Creek Project	Sweetwater Creek Project	2009	2014	30.4	N/A	N/A	Dry detention pond, wet detention pond	Envisioned, but Not Funded
Oviedo	OV-4	Solary Canal Stormwater Treatment Area	Regional Stormwater Treatment Facility consisting of an 8.0-acre wet pond and 4.8-acre wetland	4/2010	10/2011	230.0	\$1,700,000	1,471	Wet detention pond, Wetland treatment	Construction
Oviedo	OV-5	Street Sweeping	Monthly street sweeping of 160.8 miles	N/A	N/A	11.8	N/A	N/A	Street Sweeping	Ongoing
Oviedo	OV-6	Education Efforts	FYN, illicit discharge program	N/A	N/A	46.2	N/A	N/A	Education	Ongoing
Oviedo	OV-7	Existing BMPs	BMPs that were in place at the time of the TMDL	N/A	N/A	386.5	N/A	N/A	N/A	Completed
Oviedo	N/A	N/A	Total Projects Reduction	N/A	N/A	802.9	N/A	N/A	N/A	N/A
Oviedo	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	258.7	N/A	N/A	N/A	N/A
Oviedo	N/A	N/A	Credit for Future BMAPs	N/A	N/A	544.2	N/A	N/A	N/A	N/A

CITY OF SANFORD

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	TP REDUCTION (LBS/YR)	STATUS
Sanford	S-1	Street Sweeping	Weekly street sweeping of 25.3 miles	3.6	Ongoing
Sanford	S-2	Public Education	Public Education	108.9	Ongoing
Sanford	S-3	Existing BMPs	BMPs that were in place at the time of the TMDL	521.2	Complete
Sanford	N/A	N/A	Total Projects Reduction	633.7	N/A
Sanford	N/A	N/A	Total Required Reduction 2010-2014	602.2	N/A
Sanford	N/A	N/A	Credit for Future BMAPs	31.5	N/A

SEMINOLE COUNTY

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	FOOTPRINT (ACRES)	TREATMENT ACRES	PROJECT TYPE	STATUS
Seminole County	SC-1	Cassel Creek RSF	RSF to treat water in the sub basin upstream	11/2011	7/2012	156.8	\$1,700,000	10	830	Wet detention pond	Final Design
Seminole County	SC-2	Lake Ann Outfall	Baffle box and pipe replacement	4/2001	10/2001	10.8	\$148,000	0.1	322	Stormwater Retrofit	Completed
Seminole County	SC-3	Red Bug Lake Road RSF	RSF to treat water in the sub basin upstream	1/2010	7/2010	93.0	\$1,400,000	9	1050	Wet detention pond	Completed
Seminole County	SC-4	Navy Canal RSF	RSF to treat water in the sub basin upstream	3/1/2005	10/14/2006	285.0	\$2,112,336	7	889	Wet detention pond	Completed
Seminole County	SC-5	Cameron Ditch RSF	RSF to treat water in the sub basin upstream	4/17/2006	10/14/2006	71.9	\$3,735,374	32	376	Wet detention pond, Wetland treatment	Completed
Seminole County	SC-6	Lake Howell Road Pond Retrofit	Retrofit of an old FDOT pond now under county jurisdiction that drains Howell Branch Road	5/2007	11/1/2007	7.1	N/A	4.0	23	Wet detention pond	Completed
Seminole County	SC-7	Solary Canal Stormwater Treatment Area	RST facility consisting of an 8.0-acre wet pond and 4.8-acre wetland	4/2010	10/2011	230.0	\$1,700,000	12.7	1471	Wet detention pond, Wetland treatment	Construction
Seminole County	SC-8	Anchor Road Reconstruction	Reconstruction of Anchor Road with drainage improvements including upgraded detention/retention ponds	11/2008	4/2010	5.1	\$2,000,000	13	60.7	Wet detention pond	Completed
Seminole County	SC-9	Street Sweeping	Street sweeping monthly of 66.8 miles and quarterly of 160.2 miles	N/A	N/A	13.1	N/A	N/A	N/A	Street sweeping	Ongoing

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	FOOTPRINT (ACRES)	TREATMENT ACRES	PROJECT TYPE	STATUS
Seminole County	SC-10	Education Efforts	FYN, ordinances, PSAs, pamphlets, presentations, website, illicit discharge program	N/A	N/A	558.3	N/A	N/A	N/A	Education	Ongoing
Seminole County	SC-11	Existing BMPs	BMPs that were in place at the time of the TMDL	N/A	N/A	1,753.8	N/A	N/A	N/A	N/A	Completed
Seminole County	N/A	N/A	Total Projects Reduction	N/A	N/A	3,184.9	N/A	N/A	N/A	N/A	N/A
Seminole County	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	2,137.0	N/A	N/A	N/A	N/A	N/A
Seminole County	N/A	N/A	Credit for Future BMAPs	N/A	N/A	1,047.9	N/A	N/A	N/A	N/A	N/A

TURNPIKE AUTHORITY

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	TP REDUCTION (LBS/YR)	STATUS
Turnpike Authority	T-1	Existing BMPs	BMPs that were in place at the time of the TMDL	252.3	Completed
Turnpike Authority	T-2	Monthly street sweeping of 48 miles	Monthly street sweeping	3.2	Ongoing
Turnpike Authority	T-3	Education Efforts	Presentations, illicit discharge program	9	Ongoing
Turnpike Authority	N/A	N/A	Total Projects Reduction	264.5	N/A
Turnpike Authority	N/A	N/A	Total Required Reduction 2010-2014	101.1	N/A
Turnpike Authority	N/A	N/A	Credit for Future BMAPs	163.4	N/A

CITY OF WINTER PARK

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	ANNUAL O&M COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Winter Park	WP-1	Lake Island Interconnect	First Flush bypass to Wet Retention Ponds	06/2002	09/2003	4.7	\$408,009	N/A	74.5	Wet detention pond	Completed
Winter Park	WP-2	Via Lugano Exfiltration	Off Line Exfiltration	10/1996	11/1997	1.3	\$200,000	N/A	25.3	Dry detention pond	Completed
Winter Park	WP-3	N. Park Ave. Exfiltration	Off Line Exfiltration	06/2004	10/2004	6.6	\$250,000	N/A	21.44	Dry detention pond	Completed
Winter Park	WP-4	Fairway 3 Exfiltration	Off Line Exfiltration	11/2006	10/2007	5.5	\$1,000,000	N/A	57.39	Dry detention pond	Completed
Winter Park	WP-5	McKean Road CDS	CDS Unit on 24" outfall	05/2004	06/2005	0.0	N/A	N/A	5.58	Stormwater Retrofit	Completed
Winter Park	WP-6	Pinetree Rd Outfall CDS	CDS unit on 42" outfall	05/2004	06/2005	0.6	N/A	N/A	64.78	Stormwater Retrofit	Completed
Winter Park	WP-7	1190 Park Ave CDS	CDS unit on 30" outfall	08/1998	11/1999	0.2	N/A	N/A	22.82	Stormwater Retrofit	Completed
Winter Park	WP-8	Moss/ Venetian Dry Capture 1 st Generation Baffle box	Baffle screen on 15" outfall	02/2000	03/2007	0.1	N/A	N/A	3.02	Stormwater Retrofit	Completed
Winter Park	WP-9	Green Cove Road 2 CDS Units	2 CDS units on two 24" outfalls	05/2004	06/2006	0.1	N/A	N/A	11.35	Stormwater Retrofit	Completed
Winter Park	WP-10	Courtland Alum Injection treatment	Alum injection at Lake Mizell outfall	N/A	N/A	21.2	N/A	N/A	88.08	Alum	Completed
Winter Park	WP-11	Partnership/ wet detention/ Windsong	Developer's agreement to treat Palmer ditch basin run off within site MSSW	N/A	N/A	5.8	N/A	N/A	84.55	Wet detention pond	Completed
Winter Park	WP-12	Lincoln Ave Alum Injection treatment	Alum injection at Lake Osceola outfall	N/A	N/A	37.7	N/A	N/A	17.59	Alum	Completed
Winter Park	WP-13	Alexander Place Alum Injection treatment with baffle box	Alum injection at Lake Osceola outfall	N/A	N/A	22.6	N/A	N/A	24.61	Alum	Completed
Winter Park	WP-14	Morse /Alum Injection treatment	Alum injection at Lake Osceola outfall	N/A	N/A	6.9	N/A	N/A	57.13	Alum	Completed

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	ANNUAL O&M COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Winter Park	WP-15	Trismen and Lakewood Drive Exfiltration	Off Line Exfiltration	N/A	N/A	0.4	N/A	N/A	7.35	Dry detention pond	Completed
Winter Park	WP-16	Trismen CDS Unit	CDS Unit on 24" outfall	N/A	N/A	0.0	N/A	N/A	0.39	Stormwater Retrofit (CDS)	Completed
Winter Park	WP-17	Trismen Dry 1st Generation Baffle Box	Baffle screen on 15" outfall	N/A	N/A	0.0	N/A	N/A	1.84	Stormwater Retrofit	Completed
Winter Park	WP-18	Elizabeth CDS treating Inlet at Bonita and Dale	CDS on 15" Pipe	05/2004	06/2006	0.0	N/A	N/A	2.35	Stormwater Retrofit	Completed
Winter Park	WP-19	Lake Chelton Outfall Improvement	4 Dry Capture Baffle inlets and boxes	09/2003	01/2004	0.0	N/A	N/A	28.65	Stormwater Retrofit	Completed
Winter Park	WP-20	Lakeview Road Bricking	CDS Installation on 24" Outfall	03/2006	03/2006	0.1	N/A	N/A	9.53	Stormwater Retrofit	Completed
Winter Park	WP-21	Mead Gardens Borrow Pit Pond Retrofit	Retrofit Screening devices (two baffle boxes) to existing MSSW	05/2006	09/2006	15.4	N/A	\$560,000	62.06	Stormwater Retrofit	Completed
Winter Park	WP-22	Glencoe Road Bricking	Stormwater capture and screening system (baffle box)	03/2007	06/2007	0.1	N/A	N/A	3.39	Stormwater Retrofit	Completed
Winter Park	WP-23	Laurel Road Dry Retention Pond	On Line Dry retention Pond	05/1999	03/2001	1.7	N/A	N/A	17.15	Dry detention pond	Completed
Winter Park	WP-24	Alum Injection Treatment/ Rollins	Alum injection At Outfalls to Lake Virginia	01/1995	1996	26.8	N/A	N/A	72.99	Alum	Completed
Winter Park	WP-25	9th Grade Center Pond Wet Detention	Wet Detention Pond Retrofit	Pre 1995	Pre 1995	7.6	N/A	N/A	110.8	Wet detention pond	Completed
Winter Park	WP-26	Lakeview Bricking	Stormwater capture and screening system (baffle box)	02/2005	11/2006	0.1	N/A	N/A	6.97	Stormwater Retrofit	Completed
Winter Park	WP-27	Oxford Road Bricking	Stormwater capture and screening system (baffle box)	08/2006	11/2006	0.1	N/A	N/A	5.28	Stormwater Retrofit	Completed

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	ANNUAL O&M COST	TREATMENT ACRES	PROJECT TYPE	STATUS
Winter Park	WP-28	Lake Island Park	Created treatment volume in Lake Mednsen, construct control structures for wet detention treatment	06/1905	03/1996	83.8	N/A	N/A	256.00	Wet detention pond	Completed
Winter Park	WP-29	950 Palmer Ave Retrofit	Stormwater capture and screening system (baffle box)	07/2007	07/2007	0.3	N/A	N/A	18.33	Stormwater Retrofit	Completed
Winter Park	WP-30	Banchory Exfiltration	On-line Retention 0.25 treatment volume	2008	2008	0.4	N/A	N/A	N/A	On-line Retention	Completed
Winter Park	WP-31	Bryan CDS	CDS	2008	2008	0.2	N/A	N/A	N/A	Stormwater Retrofit	Completed
Winter Park	WP-32	E. Lake Sue CDS	CDS	2008	2008	0.1	N/A	N/A	N/A	Stormwater Retrofit	Completed
Winter Park	WP-33	Elizabeth Drive baffle box	Baffle box	N/A	N/A	1.1	N/A	N/A	N/A	Stormwater Retrofit	Completed
Winter Park	WP-34	Street Sweeping	Street sweeping two times per month of 130 miles	N/A	Ongoing	13.6	N/A	N/A	N/A	Street Sweeping	Ongoing
Winter Park	WP-35	Education Efforts	FYN, landscape and fertilizer ordinances, pamphlets, presentations, website, illicit discharge program	N/A	Ongoing	106.3	N/A	N/A	N/A	Education	Ongoing
Winter Park	WP-36	Existing BMPs	BMPs that were in place at the time of the TMDL	N/A	N/A	151.5	N/A	N/A	N/A	N/A	Completed
Winter Park	N/A	N/A	Total Projects Reduction	N/A	N/A	522.9	N/A	N/A	N/A	N/A	N/A
Winter Park	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	370.5	N/A	N/A	N/A	N/A	N/A
Winter Park	N/A	N/A	Credit for Future BMAPs	N/A	N/A	152.4	N/A	N/A	N/A	N/A	N/A

WINTER SPRINGS

ENTITY	PROJECT NUMBER	PROJECT NAME	PROJECT DETAIL	START DATE	END DATE	TP REDUCTION (LBS/YR)	PROJECT COST	ANNUAL O&M COST	STATUS
Winter Springs	WS-1	Solary Canal Stormwater Treatment Area	Regional Stormwater Treatment Facility consisting of an 8.0-acre wet pond and 4.8-acre wetland	4/2010	10/2011	230.0	\$1,700,000	N/A	Construction
Winter Springs	WS-2	Winding Hollow Wetland Treatment Area	Divert No Name Creek flow into wetland treatment system	2020	2020	210.1	\$357,000	N/A	Envisioned but Not Funded
Winter Springs	WS-3	Winter Springs and Wedgewood Filtration Devices	Retrofit stormwater outfalls with flow-through filtration devices	2020	2020	24.7	\$132,000	N/A	Envisioned but Not Funded
Winter Springs	WS-4	North Orlando Townsite Filtration Devices	Retrofit eastern and western outfalls with flow-through filtration devices	2020	2020	5.2	\$80,000	N/A	Envisioned but Not Funded
Winter Springs	WS-5	Highlands Regional Pond Enhancements	Expansion of existing wet pond and redirection of untreated stormwater runoff to the pond	2020	2020	64.5	\$1,385,000	N/A	Envisioned but Not Funded
Winter Springs	WS-6	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. Ordinances on review. City added a Water Conservation Coordinator, whose job responsibility is public education & outreach.	N/A	N/A	92.0	N/A	\$3,000	Ongoing
Winter Springs	WS-7	Street Sweeping	Quarterly street sweeping of 142.7 miles; total miles swept in reporting year is 738.9	N/A	N/A	7.3	N/A	N/A	Ongoing
Winter Springs	WS-8	Existing BMPs	BMPs that were in place at the time of the TMDL	N/A	N/A	765.2	N/A	N/A	Completed
Winter Springs	N/A	N/A	Total Projects Reduction	N/A	N/A	1,399.0	N/A	N/A	N/A
Winter Springs	N/A	N/A	Total Required Reduction 2010-2014	N/A	N/A	513.0	N/A	N/A	N/A
Winter Springs	N/A	N/A	Credit for Future BMAPs	N/A	N/A	886.0	N/A	N/A	N/A

APPENDIX B: WATER QUALITY DATA

The following tables show the data collected by Seminole County for the storm event sampling in the basin for the reporting period. These data are not appropriate for upload to STORET and are maintained by the county.

TABLE B-1: SEMINOLE COUNTY SIX MILE CREEK STORM EVENT SAMPLING RESULTS

SAMPLE COLLECTION DATE	TN (MG/L)	TKN (MG/L)	NO2/NO3-N (MG/L)	NH3-N (MG/L)	TP (MG/L)	TSS (MG/L)	BOD5 (MG/L)	FECAL COLIFORM (CFU/100ML)
6/9/2010	1.1	1.1	0.0075	0.034	0.09	14	6.5	490
6/21/2010	1.2	1.0	0.180	0.063	0.13	1	24.0	930
7/6/2010	5.4	5.3	0.08	0.14	1.1	470	2	900
8/10/2010	2.4	2.4	0.028	0.039	0.38	370	2.7	970
8/13/2010	1.3	1.2	0.058	0.035	0.097	1.6	2	200
9/10/2010	1.4	1.4	0.013	0.015	0.24	91	2	400
9/27/2010	0.92	0.9	0.018	0.059	0.12	6	2	400
1/19/2001	1.6	1.5	0.028	0.013	0.21	33	2	500
1/24/2011	1.5	1.4	0.099	0.039	0.2	33	2	540
3/7/2011	1.1	1	0.13	0.01	0.1	7.1	2	660
3/11/2011	1.291	1.2	0.091	0.018	0.15	14	2.5	510
Average Concentration	1.75	1.67	0.07	0.04	0.26	94.61	4.52	590.91
Minimum Concentration	0.92	0.90	0.01	0.01	0.09	1.00	2.00	200.00
Maximum Concentration	5.40	5.30	0.18	0.14	1.10	470.00	24.00	970.00

TABLE B-2: SEMINOLE COUNTY SOLDIERS CREEK STORM EVENT SAMPLING RESULTS

SAMPLE COLLECTION DATE	TN (MG/L)	TKN (MG/L)	NO2/NO3-N (MG/L)	NH3-N (MG/L)	TP (MG/L)	TSS (MG/L)	BOD5 (MG/L)	FECAL COLIFORM (CFU/100ML)
6/4/2010	1.10	1.00	0.1100	0.0710	0.12	3.2	3.50	4,700.0
6/9/2010	1.00	0.88	0.1200	0.0360	0.12	1.1	10.00	2,100.0
7/6/2010	1.80	1.70	0.1100	0.0460	0.17	38.0	2.00	3,400.0
07/19/10	1.20	1.20	0.0820	0.0490	0.11	6.0	2.30	1,800.0
08/10/10	1.00	0.96	0.0840	0.0320	0.16	2.6	2.00	570.0
09/10/10	1.10	0.89	0.1800	0.0180	0.19	31.0	2.00	580.0
09/14/10	1.10	0.98	0.0880	0.0410	0.14	11.0	2.00	450.0
11/04/10	0.95	0.87	0.0870	0.0097	0.20	29.0	2.00	360.0
01/19/11	1.20	1.10	0.0660	0.0090	0.18	36.0	2.00	380.0
01/27/11	1.00	0.87	0.1800	0.0400	0.11	3.3	37.00	190.0
03/11/11	1.15	1.10	0.0540	0.0120	0.15	13.0	2.00	320.0
03/30/11	1.80	1.70	0.0850	0.0150	0.33	22.0	3.10	370.0
04/07/11	1.2	1.2	0.056	0.1	0.13	1.9	2	240
Average Concentration	1.20	1.11	0.1002	0.0368	0.16	15.2	5.53	1,189.2
Minimum Concentration	0.95	0.87	0.0540	0.0090	0.11	1.1	2.00	190.0
Maximum Concentration	1.80	1.70	0.1800	0.1000	0.33	38.0	37.00	4,700.0

TABLE B-3: SEMINOLE COUNTY GEE CREEK STORM EVENT SAMPLING RESULTS

SAMPLE COLLECTION DATE	TN (MG/L)	TKN (MG/L)	NO2/NO3-N (MG/L)	NH3-N (MG/L)	TP (MG/L)	TSS (MG/L)	BOD5 (MG/L)	FECAL COLIFORM (CFU/100ML)
6/9/2010	0.760	0.65	0.12	0.068	0.051	1.2	8.2	2,900
6/21/2010	0.980	0.72	0.250	0.022	0.065	1.9	14.0	2,100
7/6/2010	1.200	1.10	0.097	0.011	0.14	14.0	2.6	5,000
7/16/2010	2.20	2.00	0.2100	0.0550	0.20	16.0	2.00	3,100.0
8/10/2010	1.60	1.50	0.0840	0.0490	0.21	24.0	3.00	5,300.0
8/13/2010	1.000	0.92	0.078	0.073	0.082	3.0	2	350
09/07/10	2.800	2.60	0.16	0.24	0.3	28.0	2	1,900
11/04/10	1.300	1.00	0.24	0.037	0.22	14.0	2	1,000

SAMPLE COLLECTION DATE	TN (MG/L)	TKN (MG/L)	NO2/NO3-N (MG/L)	NH3-N (MG/L)	TP (MG/L)	TSS (MG/L)	BOD5 (MG/L)	FECAL COLIFORM (CFU/100ML)
12/20/10	0.920	0.81	0.11	0.22	0.093	3.1	2	680
01/19/11	1.200	1.10	0.083	0.012	0.18	22.0	3.5	570
01/24/11	0.980	0.92	0.058	0.048	0.12	10.0	2.9	270
03/11/11	1.240	1.1	0.14	0.048	0.18	24.0	2	430
03/30/11	1.700	1.60	0.14	0.051	0.29	48.0	2	500
04/07/11	1.10	1.10	0.0700	0.0570	0.19	2.9	2.10	80.0
Average Concentration	1.36	1.22	0.13	0.07	0.17	15.2	3.59	1,727.14
Minimum Concentration	0.76	0.65	0.06	0.01	0.05	1.2	2.00	80.00
Maximum Concentration	2.80	2.60	0.25	0.24	0.30	48.0	14.00	5,300.00

TABLE B-4: SEMINOLE COUNTY HOWELL CREEK STORM EVENT SAMPLING RESULTS

SAMPLE COLLECTION DATE	TN (MG/L)	TKN (MG/L)	NO2/NO3-N (MG/L)	NH3-N (MG/L)	TP (MG/L)	TSS (MG/L)	BOD5 (MG/L)	FECAL COLIFORM (CFU/100ML)
6/7/2010	1.300	1.20	0.0490	0.030	0.076	2.9	2.0	260
8/10/2010	1.600	1.40	0.1400	0.075	0.099	9.3	2.1	1
8/26/2010	1.400	1.30	0.0730	0.028	0.150	23	2.0	280
9/27/2010	1.500	1.40	0.1300	0.025	0.190	61	2.1	210
11/4/2010	2.100	1.90	0.2000	0.026	0.230	34	2.0	310
12/20/2010	0.850	0.68	0.1700	0.070	0.070	7.3	2.0	720
1/19/2011	1.600	1.30	0.2200	0.025	0.220	31	2.2	610
1/24/2011	1.100	0.95	0.0300	0.160	0.130	14	2.2	550
3/11/2011	1.230	1.10	0.1300	0.026	0.130	19	2.0	360
3/30/2011	1.300	0.98	0.2900	0.042	0.120	11	2.0	310
4/7/2011	1.000	0.96	0.0740	0.150	0.088	3.8	2.1	30
Average Concentration	1.36	1.20	0.137	0.060	0.137	20	2.1	331
Minimum Concentration	0.85	0.68	BDL	BDL	0.070	3	BDL	1
Maximum Concentration	2.10	1.90	0.290	0.160	0.230	61	2.2	720

BDL - below detection limits

TABLE B-5: SEMINOLE COUNTY SOLARY CANAL STORM EVENT SAMPLING RESULTS

SAMPLE COLLECTION DATE	TN (MG/L)	TKN (MG/L)	NO2/NO3-N (MG/L)	NH3-N (MG/L)	TP (MG/L)	TSS (MG/L)	BOD5 (MG/L)	FECAL COLIFORM (CFU/100ML)
6/1/2010	2.1	1.9	0.21	0.11	0.33	19	2	3,000
06/21/10	1.5	1.30	0.17	0.06	0.2	4.5	18	900
7/6/2010	2.2	2.00	0.15	0.66	0.24	18	2.8	6,200
8/10/2010	1.5	1.30	0.2	0.12	0.18	4.8	2.3	1,800
8/13/2010	1.4	1.20	0.21	0.024	0.18	2.3	2.1	1,000
09/27/10	1.6	1.40	0.24	0.11	0.27	24	2	530
10/01/10	1.4	1.20	0.18	0.13	0.16	6.1	2	510
11/04/10	1.7	1.40	0.28	0.087	0.34	18	2	300
12/20/10	1	0.84	0.19	0.062	0.22	10	2	640
01/19/11	1.4	1.20	0.19	0.082	0.22	26	2	510
01/24/11	1.1	0.89	0.25	0.11	0.14	2.6	2	280
03/07/11	1.5	1.20	0.25	0.13	0.24	9.5	2	390
03/11/11	1.21	1.00	0.21	0.079	0.19	5.5	2	310
04/07/11	2	1.90	0.14	0.068	0.26	5.9	2	240
Average Concentration	1.54	1.34	0.21	0.13	0.23	11.16	3.23	1,186.43
Minimum Concentration	1.00	0.84	0.14	0.02	0.14	2.30	2.00	240.00
Maximum Concentration	2.20	2.00	0.28	0.66	0.34	26.00	18.00	6,200.00

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

TABLE B-6: MAITLAND SAMPLING RESULTS

Date	Ammonia	Chl a Corrected	Conductivity	DO	pH	Temp	Nitrate	Nitrite	Ortho-P	TKN	TP	TSS
5/2010	0.01	10.30	357.00	4.53	7.87	29.70	0.05	0.05	0.10	0.72	0.05	2.00
6/2010	0.01	12.30	195.00	7.24	5.19	30.10	0.05	0.05	0.10	0.82	0.04	2.40
7/2010	0.01	2.85	214.00	5.47	7.65	31.50	0.05	0.05	0.10	0.75	0.04	3.71
8/2010	0.19	1.00	200.00	3.60	7.21	31.50	0.05	0.05	0.10	0.76	0.01	1.33
9/2010	0.03	2.67	218.00	4.82	7.37	27.60	0.22	0.05	0.10	0.93	0.03	1.57
10/2010	0.12	1.34	206.00	4.39	7.23	24.20	0.21	0.05	0.10	0.83	0.06	2.00
11/2010	0.01	1.00	239.00	6.70	7.76	20.00	0.05	0.05	0.10	0.89	0.06	8.00
12/2010	0.01	2.14	208.00	11.20	8.01	10.00	0.05	0.05	0.10	0.81	0.04	8.00
1/2011	0.14	14.90	240.00	6.62	7.18	15.60	0.21	0.05	0.10	1.02	0.05	4.75
2/2011	0.01	1.84	208.00	6.88	7.57	15.70	0.05	0.05	0.10	1.37	0.03	6.25
4/2011	0.0438	11.2	222	7.72	6.93	21.1	0.05	0.05	0.01	1.32	0.048	6.75
5/2011	0.01	4.17	207	5.15	7.03	25.5	0.05	0.05	0.1	1.06	0.018	1.75

Winter Park is also working with FDEP to upload their data to STORET. The following table shows the results of their sampling at the Weir at Howell Branch Road sampling site during the reporting period.

TABLE B-7: WINTER PARK SAMPLING RESULTS

Date	Ammonium (mg/L)	Ammonia (mg/L)	TKN (mg/L)	NOx (mg/L)	Ortho-P (mg/L)	TP (mg/L)	Chl a (corrected) (mg/L)	BOD5 (mg/L)
9/22/2010	N/A	0.28	0.92	0.12	0.0053	0.03	0.0042	2
10/14/2010	N/A	0.32	0.81	0.04	0.01	0.065	0.011	2.5
11/11/2010	0.04	0.04	0.63	0.065	0.0019	0.075	0.0072	2
12/16/2010	1.3	1.3	1.8	0.052	0.0019	0.023	0.0038	2
1/13/2011	0.11	0.11	0.73	0.042	0.0057	0.052	0.0022	2.2
2/24/2011	0.03	0.03	0.58	0.012	0.0022	0.027	0.0065	2
3/15/2011	0.059	0.01	0.62	0.012	0.0019	0.033	0.011	3.4
4/28/2011	0.11	0.11	0.59	0.08	0.0061	0.031	0.0038	2

APPENDIX C: ADDITIONAL PROJECT PICTURES

Casselberry



CASSELBERRY EARTH DAY 2011 AT LAKE CONCORD PARK EDUCATIONAL EVENT



CASSELBERRY EARTH DAY 2011 AT LAKE CONCORD PARK WATER QUALITY AND CONSERVATION EDUCATIONAL BOOTH

Maitland



CITY OF MAITLAND LAKE MAITLAND BASIN DRAINAGE IMPROVEMENTS



CITY OF MAITLAND LAKE MAITLAND BASIN DRAINAGE IMPROVEMENTS



CITY OF MAITLAND LAKE MAITLAND BASIN DRAINAGE IMPROVEMENTS

Winter Springs



SOLARY CANAL PROJECT



SOLARY CANAL PROJECT



CITY OF WINTER SPRINGS WATER CONSERVATION EVENT