

PROGRESS REPORT

For the Long Branch Basin Management Action Plan

*Developed by Orange County, Florida and the Florida Department of
Environmental Protection, Division of Environmental Assessment and
Restoration, Bureau of Watershed Restoration*

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LIST OF ACRONYMS

BMAP	Basin Management Action Plan
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
DO	Dissolved Oxygen
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
MS4	Municipal Separate Storm Sewer System
OAWP	Office of Agricultural Water Policy
OCEH	Orange County Environmental Health
OCEPD	Orange County Environmental Protection Department
OCSMD	Orange County Stormwater Management Division
RV	Recreational Vehicle
SJRWMD	St. Johns River Water Management District
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus

SECTION 1: INTRODUCTION

1.1 PURPOSE OF THE REPORT

This is the second annual progress report for the Long Branch Basin Management Action Plan (BMAP). The information presented includes updates on activities that occurred from May 1, 2010 through May 31, 2011. In addition, a summary of upcoming efforts for the period of June 1, 2011 through May 31, 2012 is included in **Section 3**.

1.2 TOTAL MAXIMUM DAILY LOAD FOR THE LONG BRANCH BASIN

The Long Branch watershed is located within the Middle St. Johns River Basin. Long Branch is a tributary to the Big Econlockhatchee River and is located in east central Orange County as shown on **Figure 1**. The watershed is generally bounded on the west by the Big Econlockhatchee River, to the south by the Wedgefield Subdivision, to the east by State Road 520, and to the north by Madison Avenue. The area of the watershed is entirely within unincorporated Orange County and comprises approximately 4,511 acres, including a small portion of the unincorporated town of Bithlo. Long Branch consists of a northern tributary that drains the southeastern portion of Bithlo, a southern tributary that drains conservation area, and the mainstem flanked primarily by wetlands. Streamflow in this system is intermittent, and there is typically only flow immediately after a storm event. Times of no flow or stagnant water in Long Branch are common.

In 2006, the Florida Department of Environmental Protection (FDEP) adopted total maximum daily loads (TMDLs) to address elevated fecal coliforms and low dissolved oxygen (DO) in Long Branch. For the DO TMDL, three different causative pollutants were found: (1) biochemical oxygen demand (BOD) in the tributaries; (2) total phosphorus (TP) in the tributaries; and (3) total nitrogen (TN) in the mainstem. Thus, the DO TMDL is expressed in terms of these three parameters. **Table 1** lists the TMDLs adopted for Long Branch.

TABLE 1: LONG BRANCH TMDLS AND REDUCTION REQUIREMENTS

PARAMETER	TMDL	ORANGE COUNTY PERMITTED STORMWATER (PERCENT REDUCTION)	OTHER NONPOINT (PERCENT REDUCTION)
Fecal Coliform	4.64×10^{10} counts/day	32%	32%
BOD (tributaries)	14.96 tons/year	10%	10%
TP (tributaries)	0.74 tons/year	30%	30%
TN (mainstem)	5.20 tons/year	17%	17%

1.3 RESPONSIBLE PARTIES AND KEY STAKEHOLDERS

The Long Branch BMAP identified the Orange County municipal separate storm sewer system (MS4), other urban stormwater, and agriculture as potential sources of the BOD, TN, TP, and fecal coliform impairments in the basin. Orange County is responsible for the reductions and investigations in the BMAP. Several county departments are involved in these efforts including the Orange County Environmental Protection Division (OCEPD), Orange County Environmental Health Department (OCEH), and Orange County Stormwater Management Division (OCSMD). In addition to these entities, the Florida Department of Agriculture and Consumer Services (FDACS), FDEP, and St. Johns River Water Management District (SJRWMD) are key to the implementation of the BMAP activities.

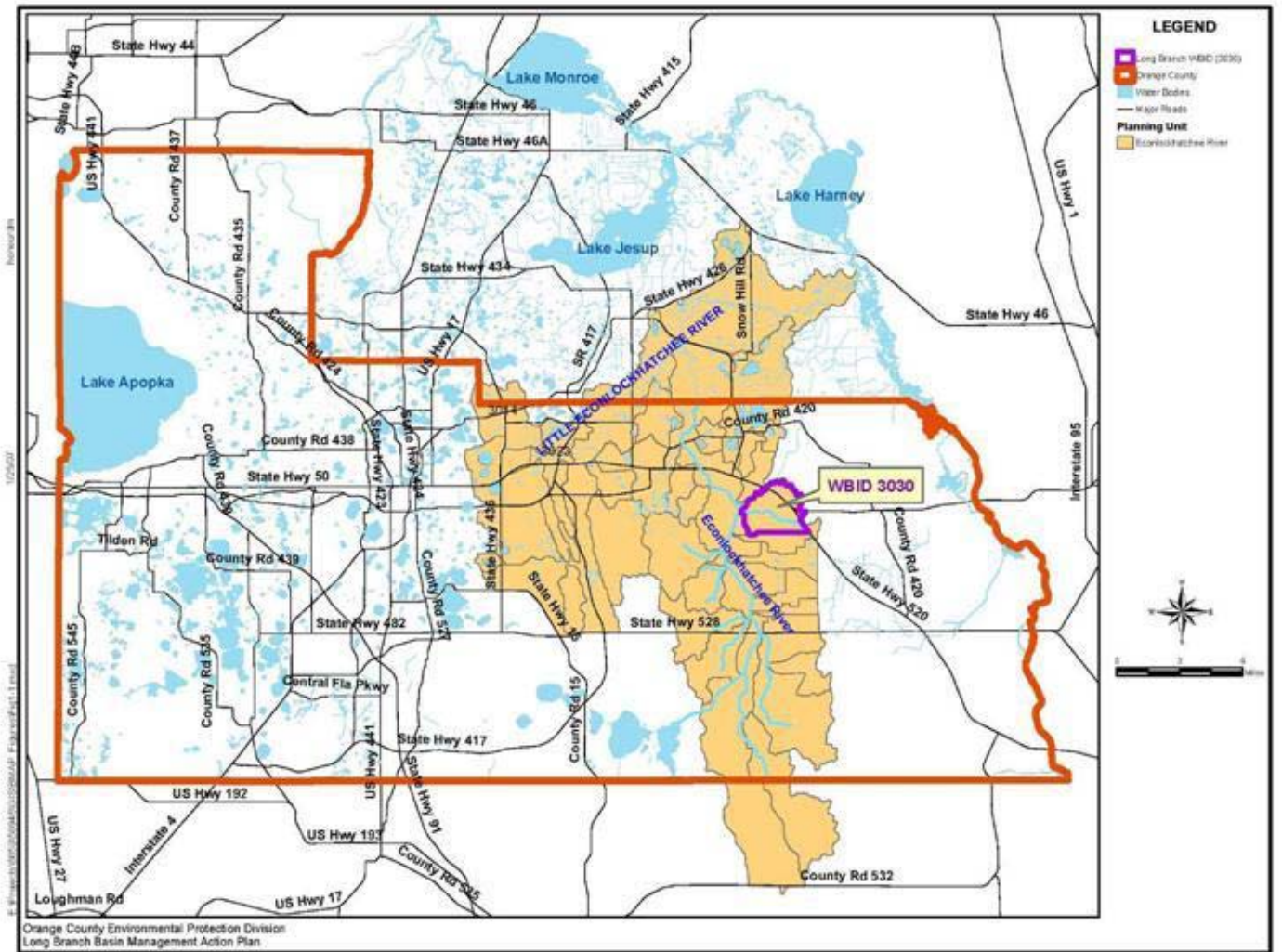


FIGURE 1: LOCATION OF THE LONG BRANCH WATERSHED

1.4 BMAP ALLOCATIONS

With only one permitted source in the watershed, the Orange County MS4, there was no need to divide the initial DO TMDL allocation beyond permitted nonpoint and non-permitted nonpoint sources. In addition, fecal coliform counts in the natural environment are variable. Given the unknowns about fecal coliform behavior in Long Branch (such as the potential for regrowth in the sediments, frequency of extremely low flow, effect of sampling day selection relative to flow), division of the fecal coliform allocation could not be made. Thus, detailed allocations were not developed in the Long Branch BMAP.

SECTION 2: STATUS OF BMAP MANAGEMENT ACTIONS

2.1 SEPTIC TANK SANITARY SURVEY

During a field survey that was conducted on April 2, 2010 with staff from OCEPD and OCEH, one washing machine connection was noted and OCEH staff spoke with the resident about connection to the septic system. This issue was corrected by the resident shortly after the field visit, and OCEH confirmed that the pipe had been removed and the wash water was plumbed into the septic system. In addition, the sanitary nuisances observed associated with the mobile home park have been corrected.

Based on OCEH data, there have not been an unusual number of complaints about failing septic systems, and residents have been cooperative when repairs are needed. Therefore, it does not appear that flooding in this area seems to be an issue for septic tanks.

All follow up actions from the septic tank sanitary survey have been completed.

2.2 SPEED WORLD ASSESSMENT

OCEPD staff coordinated with the Speed World owner regarding onsite waste management during events. The existing bathroom facility is adequate for small events; however, for larger multi-day events Speed World provides portable toilets. In addition, pump-out access is provided to recreational vehicle (RV) owners by a private company. From an informational/educational standpoint, OCEPD has made signs stating that onsite discharge of waste is illegal and the signs are posted with the owner's permission in the area where RVs park, which is adjacent to a drainage canal. The signs are visible to Speed World attendees as well as the adjacent property owners. Water quality sampling following large events at Speed World has been attempted; however, staff have been unable to collect any samples from the ditches discharging from Speed World.

2.3 HYDROLOGIC MEASUREMENTS AND WATER QUALITY SAMPLING

OCEPD staff conducted flow-related measurements at Site G (see **Figure 2**) along County Road 13 since March 2008. However, conditions at the site have continued to be problematic and the flashiness of the system does not allow for the collection of water samples on a routine basis. On April 16, 2010, the County installed ISCO 2150 series flow modules at the location of the Long Branch tributary and County Road 13. The purpose of adding the flow modules was to try and capture flow information at the lower velocities. The county removed the flow modules on March 9, 2011, and they are currently evaluating the data. The equipment will be re-deployed if additional data are needed.

The sample sites for Long Branch include one site (BELB) that is part of the overall long-term OCEPD sampling program, as well as eight sites established to address the unique nature of the Long Branch basin and BMAP related issues (see **Figure 2**). Site BELB reflects flow from both the north and south branches of Long Branch; however, there are access issues for this site. During the reporting period, site BELB was sampled one time on June 28, 2010. The results of this sampling were 360 colony forming units of fecal coliforms, 1.54 mg/L of TN, and 0.149 mg/L of TP.

Long Branch Sampling Sites

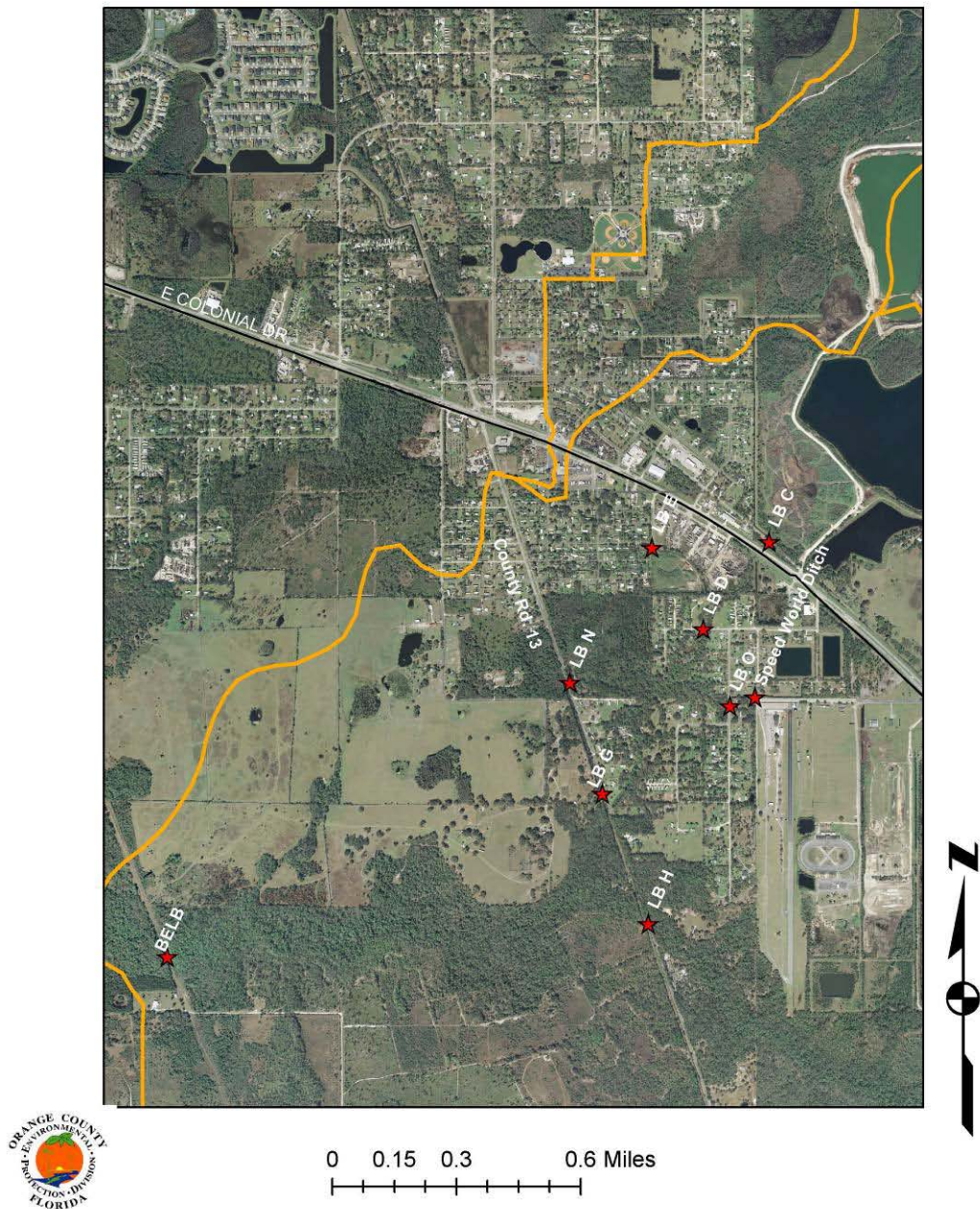


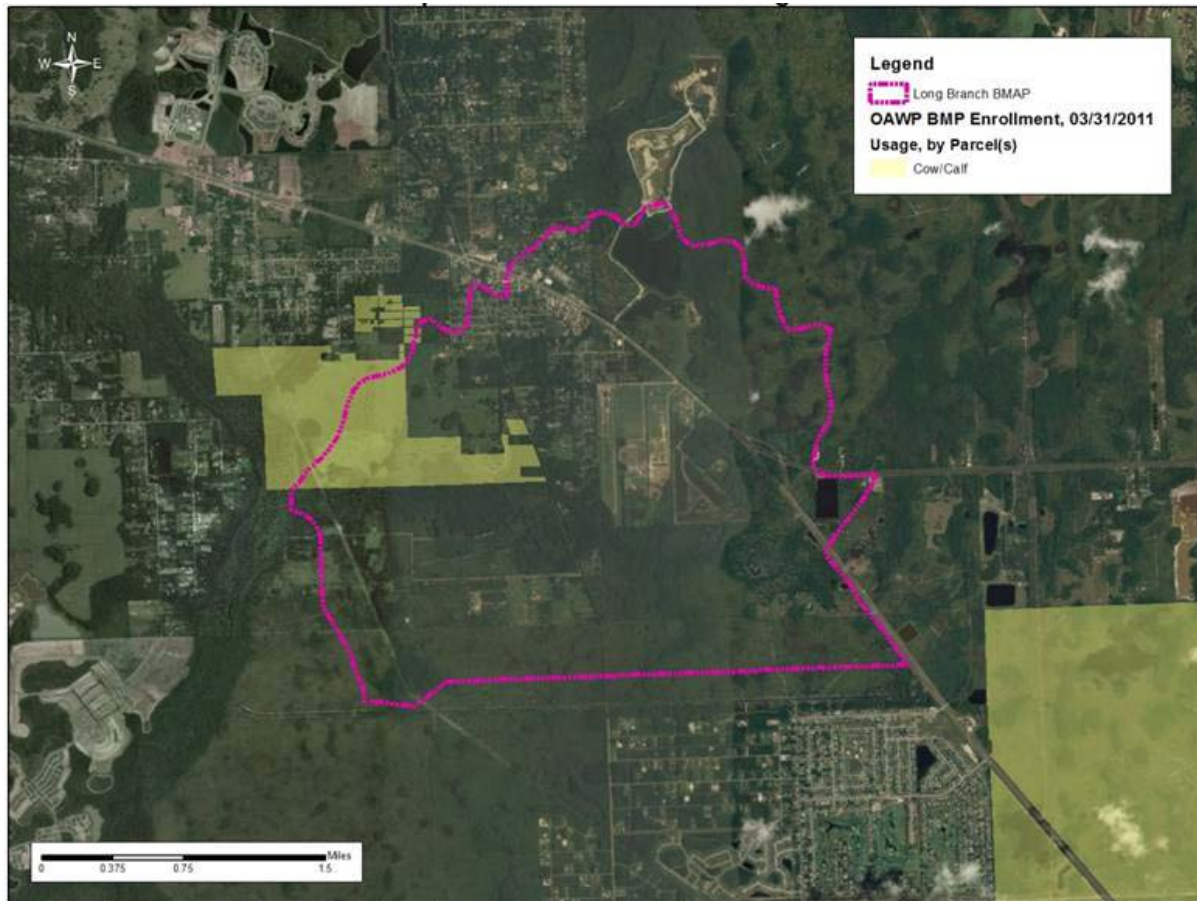
FIGURE 2: LOCATIONS OF THE LONG BRANCH WATER QUALITY SAMPLING STATIONS

2.4 AGRICULTURE

The FDACS Office of Agricultural Water Policy (OAWP) adopted the manual, Water Quality Best Management Practices for Florida Cow/Calf Operations (2008 edition) in 2009. Subsequently, OAWP staff participated in events held by the Florida Cattlemen's Association and the University of Florida Institute of Food and Agricultural Sciences in the Orange County area, to provide information on cow/calf best management practices (BMPs) and schedule

enrollment visits. In addition, OAWP has directed its contractor in the region, East Central Florida Resource Conservation and Development Council, to increase their focus on assisting cow/calf operations with BMP enrollment and implementation.

The largest agricultural operation in the Long Branch basin, a 600-acre cow/calf operation (see **Figure 3**), enrolled in the BMP program in spring 2010. About half of the operation resides inside the basin. Based on aerial photos, there appears to be very little other agriculture in the basin, if any. However, OAWP will determine whether there are other agricultural operations in the basin that would fall under adopted BMP programs. Additionally, OAWP enrolled a very large cow/calf operation that is located just outside the Long Branch boundary.



Disclaimer: This map information represents an estimate of the amount and/or location of agricultural acreage enrolled in FDACS/OAWP BMP programs for specific commodities and/or regions of the state. It is not binding, and does not otherwise affect the interests of any persons, including any vested rights or existing uses of real property. The accuracy and reliability of this map information are not guaranteed, and are affected by continual changes in land use, crop production, and other socioeconomic factors.

FIGURE 3: AGRICULTURAL BMP IMPLEMENTATION WITHIN THE LONG BRANCH BASIN

2.5 SUMMARY OF EFFORTS

Table 2 summarizes the basin-specific management actions that were described above, as well as other broad-based actions, which should also contribute to water quality improvements in the Long Branch basin.

TABLE 2: MANAGEMENT ACTIONS SUMMARY

MANAGEMENT ACTION	DESCRIPTION	TIMELINE	RESPONSIBLE PARTY
Basin-Specific Management Actions			
Hydrologic Measurements	Flow-related measurements have occurred at Site G along County Road 13 since March 2008. An acoustic flow velocity meter and pressure transducer was installed that recorded velocity and stage, respectively. The County installed ISCO 2150 series flow modules on April 16, 2010 at the location of the Long Branch tributary and County Road 13 to capture smaller velocities in order to document the low to no flow conditions. The county removed the flow modules on March 9, 2011, and they are currently evaluating the data. The equipment will be re-deployed if additional data are needed. Conditions at the site have continued to be problematic and the flashiness of the system does not allow for the collection of water samples on a routine basis. 2010 data consists of only of a few sites in and around the Long Branch watershed. The STORET station that collects for this area is BELB.	Ongoing	OCEPD
Sanitary Survey	A field survey was conducted on April 2, 2010 and no visible illicit connections from septic systems to the creek were observed. OCEH followed up on one washing machine connection, past inspections for the mobile home parks, and septic tank repair records for Bithlo. Flooding does not appear to be an issue for septic tanks in the area.	Completed	OCEH
Optical Brightener Testing	Optical brightener tests have not been performed in the Long Branch basin. Use in other waterbodies provided inconclusive results. However, Methylene Blue Active Substances testing was conducted to determine whether detergents were present; the results were negative. Samples at Site D came back positive for human sewage indicators.	Completed	OCEPD
Speed World Wastewater Field Visits and Follow-up	Staff coordinated with the Speed World owner regarding onsite waste management during events. OCEPD has posted signs stating that onsite discharge of waste is illegal. Staff will attend future Speed World events to observe how waste is handled. Staff have been unable to catch any samples to date from the ditches discharging from Speed World following an event.	Ongoing	OCEPD
Broad-Based Management Actions			
MS4 Permit Implementation	Orange County is a Phase I MS4 (Permit No. FLS000011) responsible for developing and implementing a stormwater management program that reduces pollutants in stormwater to the maximum extent practicable. This involves a broad range of activities from public education through erosion control, stormwater system and facility inspections, and system inventories.	Ongoing	OCEPD
Public Education and Outreach	To help citizens develop a commitment to the environment's health and well being, the County conducts two types of public outreach efforts: those intended to change behavior and those intended to inform the public about water resources. These efforts include implementation of the Florida Yards and Neighborhoods Program, the Orange County Water Atlas www.orange.wateratlas.org , CLIP program, brochures, public presentations, school programs, Earth Day activities, and other outreach efforts.	Ongoing	Orange County
Econlockhatchee River Protection Program	Orange County has established special criteria for development within the Big Econlockhatchee River Basin, which are defined in Chapter 15 of the County's Code of Ordinances. Within this basin, Orange County regulations require pollution abatement, recharge where possible, and flood protection.	Ongoing	OCEPD

MANAGEMENT ACTION	DESCRIPTION	TIMELINE	RESPONSIBLE PARTY
Orange County Fertilizer Ordinance	Orange County has implemented a county-wide fertilizer ordinance effective March 1, 2010, that is applicable to turf fertilization. The ordinance addresses nitrogen and phosphorus content, weather and seasonal application restrictions, a fertilizer-free zone around waterbodies, the requirement for a deflector shield on spreaders, the requirement for training for applicators, and enforcement options as necessary.	Ongoing	Orange County
Pollution Abatement Swale Design Criteria	The County has researched the possibility of developing more specific criteria for the design, construction and maintenance of environmental berms and swales on properties abutting lakes and streams. The County has identified specific deficiencies in the current code that require modification. These modifications would apply to new development and redevelopment in the Land Development Code.	Program under development	OCSMD
Environmental Control Regulations (Ch. 15, Article X, Orange County Code)	Orange County has established environmental regulations for development within Orange County. These regulations require pollution abatement, flood protection, and wetland habitat preservation.	Ongoing	Orange County
Stormwater Regulations (Ch. 38, Zoning, Orange County Code)	In the zoning code, Orange County established stormwater regulations for development within Orange County. These regulations require pollution abatement, recharge criteria, and flood protection.	Ongoing	Orange County
Environmentally Sensitive Lands Ordinance (Chapter 15, Article XVIII)	Provides further protection of habitat, buffer areas of the Econlockhatchee River, and density requirements.	Ongoing	Orange County
Environmental Resource Permit	Activities that exceed SJRWMD permitting thresholds must be authorized by an Environmental Resource Permit from the District, which incorporates both stormwater treatment and mitigation of any wetland impacts.	Ongoing	SJRWMD
Agricultural BMPs	FDACS develops, adopts, and implements BMPs to reduce water quality impacts from agricultural discharges and enhance water conservation. FDACS is working with private landowners to implement the appropriate BMPs.	Ongoing	FDACS and Private Landowners

SECTION 3: UPCOMING ACTIVITIES

The following activities are planned in the Long Branch watershed for the upcoming period of June 1, 2011 through May 31, 2012.

3.1 SPEED WORLD ASSESSMENT

OCEPD staff will attend future Speed World events to observe how waste is handled. If any issues are observed, staff will coordinate with the owner to ensure the problem is resolved.

3.2 WATER QUALITY SAMPLING

OCEPD will continue to sample the eight sites (see **Figure 2**) that are part of the Long Branch BMAP monitoring plan. The system is very flashy, which may prohibit sampling at some of the sites if there is not sufficient flow.

3.3 AGRICULTURE

OAWP will determine whether there are other agricultural operations in the basin that would fall under adopted BMP programs and enroll those operations for the appropriate BMPs. Adopted programs include citrus, vegetables and row crops, container nurseries, sod, specialty fruit and nut, and cow/calf operations. FDACS OAWP currently is developing a BMP manual for equine operations and revising the container nursery manual to include in-ground nurseries; however, these manuals may not be relevant in this basin. The target for adoption of these manuals is 2011-2012.