

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
DNA	Deoxyribonucleic Acid
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
OCEHD	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 third annual progress report for the Long Branch Basin Management Action Plan (BMAP). The information presented includes updates on activities that occurred from June 1, 2011 through May 31, 2012. In addition, a summary of upcoming efforts for the period of June 1, 2012 through May 31, 2013 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. The BMAP to implement the TMDLs was adopted by FDEP in May 2008.

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 (OCEHD), and Orange County Stormwater Management Division (OCSMD). In addition to these entities, the Florida Department of Agriculture and Consumer Services

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1.4 BMAP ALLOCATIONS

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SECTION 2: STATUS OF BMAP MANAGEMENT ACTIONS

2.1 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 because of stagnant flow or dry conditions, which are inappropriate for sample collection, following the events.

2.2 MOBILE HOME PARK ISSUES

During the year, there were several locations of mobile home parks in the upstream area of the watershed that are under enforcement by OCEHD for dilapidated conditions (unmaintained/unsampled septic and well). In addition, there is a documented incident that occurred on January 4, 2012 in which the J&C Mobile Home Park had a sewage overflow. Since that time, OCEHD has responded to at least two more complaints at this mobile home park. OCEHD continues to monitor this facility to ensure compliance.

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, sampling conditions at the site have continued to be problematic, as 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 capture flow information at the lower velocities. The county removed the flow modules on March 9, 2011, and the data confirm that the water recedes quickly after an event unless the tributary is staged by the Econlockhatchee River, which results in stagnant to near stagnant conditions or no water. The equipment can 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 December 12, 2011. The results of this sampling were 2,500 colony forming units of fecal coliforms.

The watershed conditions remained similar to previous years within the Long Branch Basin. No significant water was observed in the roadside ditches feeding the tributary until the rainy season. During the rainy season, samples at the confluence of the Long Branch tributary to the Econlockhatchee River (station BELB) must be obtained within 0-3 days to collect flowing conditions. After that time period, the water remains stagnant or ponded. No deoxyribonucleic acid (DNA) samples were taken during the year due to the lack of steadily flowing conditions.

Orange County is concerned over the possibility of fecal coliform resuspension from sediments as a possibility for some of the higher levels in the water column.

Long Branch Sampling Sites



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

In addition to surface water sampling in the basin, Orange County has been involved in drinking water sampling on private wells. This was due to a local concern over a former gas station underground contamination of petroleum products. No wide-scale contamination has been

found; however, a large number of wells confirmed the presence of iron, which FDEP determined was a background condition in the area during the development of the BMAP. During this project, two community meetings were held on water quality in which Orange County assisted in educating the residents on both ground and surface water quality.

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 and SJRWMD 2009 land use data, there appears to be little other agriculture in the basin. The updated land use does indicate that there are approximately 50 acres of field crops in the basin. However, 48 acres, located in the southern half of the basin, appear to be residential equestrian facilities and associated pasture. The remaining two acres are improved pasture that appears to be vacant. In the northern portion of the basin, there are approximately 77 acres of improved pasture that was historically used for cattle grazing, but an OAWP contractor contacted the current landowner and determined that the land is now vacant and awaiting development.

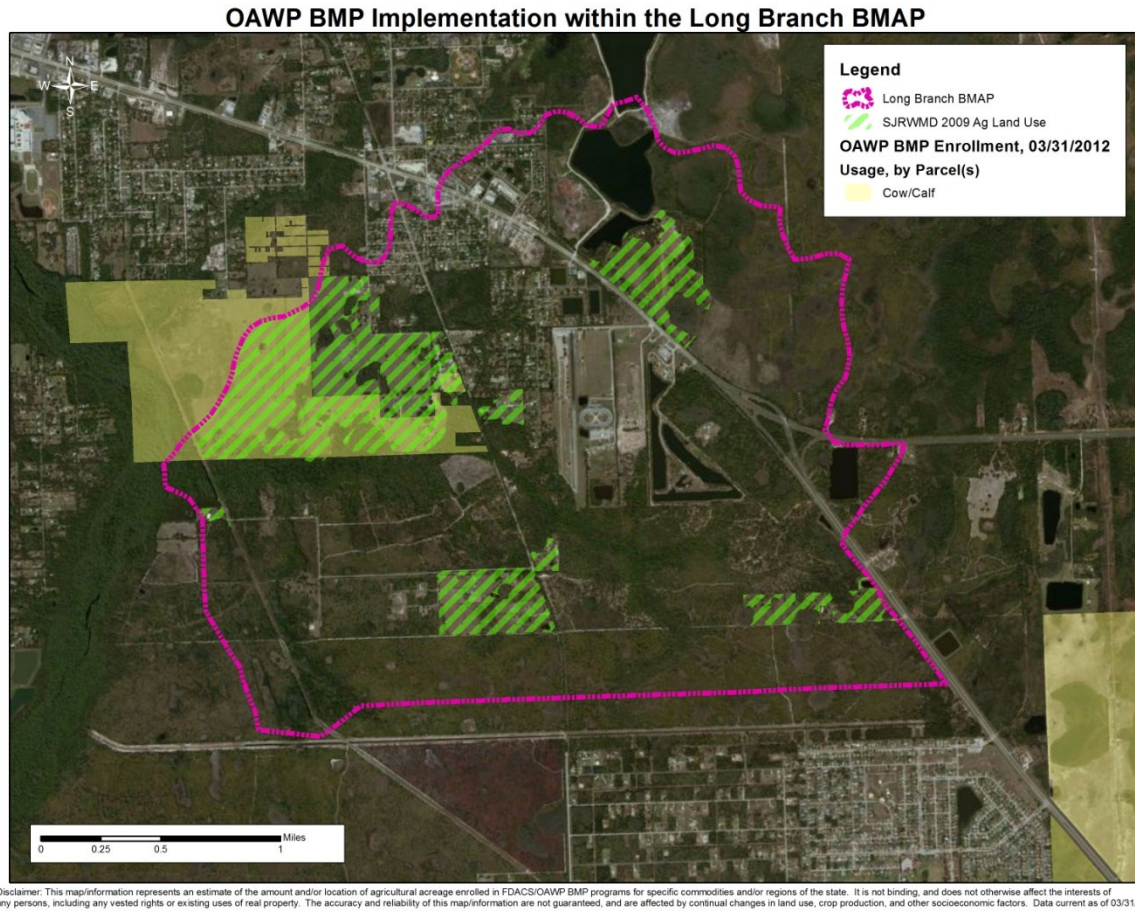


FIGURE 3: AGRICULTURAL BMP IMPLEMENTATION WITHIN THE LONG BRANCH BASIN

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
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 the data confirm that the water recedes quickly after an event unless the tributary is staged by the Econlockhatchee River, which results in stagnant to near stagnant conditions or no water. The equipment can be re-deployed if additional data are needed. Sampling conditions at the site have continued to be problematic, as the flashiness of the system does not allow for the collection of water samples on a routine basis. 2011 data consists of only one sample for the STORET station that collects for this area, which 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	OCEHD
Mobile Home Park Issues	The OCEHD will continue to monitor the J&C Mobile Home Park to ensure compliance after three documented sewage overflows during the period of June 1, 2011 through May 31, 2012.	Ongoing	OCEHD
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 collect any samples to date from the ditches discharging from Speed World following an event due to low or no flow conditions.	Ongoing	OCEPD
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 , 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 countywide 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, 2012 through May 31, 2013.

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 MOBILE HOME PARK ISSUES

OCEHD will continue to monitor the J&C Mobile Home Park to ensure compliance after the three documented sewage overflows.

3.3 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.

3.4 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, equine, and cow/calf operations. The equine manual was only very recently adopted, so OAWP staff will determine if the potential equine operations in this basin are commercial and, therefore, eligible to participate in the BMP program. FDACS OAWP currently is revising the container nursery manual to include in-ground nurseries; however, this manual may not be relevant in this basin. The target for adoption of the revised nursery manual is 2013-14.