

## **D'Olive Creek Watershed Management Plan (WMP) Implementation Update**

With a **Comprehensive Management Plan for the D'Olive Creek, Tiawasee Creek, and Joe's Branch Watershed** completed in August, 2010, partners are making progress towards implementing measures recommended to address the primary problems impacting its 23 miles of streams and downstream receiving waters. This 7,700-acre watershed includes portions of Daphne and Spanish Fort and has been plagued by excessive erosion and sedimentation since the early 1970s. With steep, hilly terrain; sandy, erodible soils; hardened, developed surfaces; and, on average, five and a half feet of hard rainfall annually, the D'Olive Watershed presents “the perfect storm” of stormwater impacts. All three principal streams and two unnamed tributaries appear on the State’s 303(d) List of Impaired Waters Bodies for siltation and habitat alteration (from development).

Management measures recommended in the WMP include restoration or mitigation of past environmental impacts, policy or regulatory changes, and opportunities to employ “cutting edge technologies for green infrastructure and low-impact development.

### **Joe's Branch Subwatershed.**

- **Joe's Branch tributary JB Step Pool Stormwater Conveyance.** In 2011, collapsing banks along an ephemeral (only wet after rains) Spanish Fort tributary on Westminster Village property threatened residences and Highway 31 and delivered an unprecedented 100,000 tons of sediment per square mile into Mobile Bay. MBNEP secured Clean Water Act Section 319 funding to construct a rock step pool conveyance over a sand infiltration matrix down the steep 1,000-foot slope to reduce stormwater energy and volume. Southern Excavating was contracted to implement this Thompson Engineering design. This successful restoration project won a 2015 Gulf Guardian Award for Partnerships and survived the April 29, 2014, 500-year rain event.
- **JB Project 2.** With funding from a National Fish and Wildlife Foundation Gulf Environmental Benefits Grant for comprehensive restoration of the most critically-degraded streams across the D’Olive Watershed, a head cut advancing towards the toe of the step pool conveyance and threatening sewer infrastructure was the next project to be addressed. Thompson designed hybrid measures, including elevating the stream bed, expanding the flood plain, using rock to stabilize steam banks, and installing rock weirs and energy dissipating log structures. This project, constructed by North State Environmental and including restoration of 1,700-linear feet of stream and eight acres of wetland and flood plains, was substantially completed in August 2015. Of note: GSA sampling indicates that the Step Pool Conveyance and JB Project 2 were successful in reducing sediment loads by over 90%.
- **Stream tributaries J4-1, J4-2, and JA and JB and J Stormwater Management Facilities.** Designed by Thompson Engineering and currently under construction by Southern Excavating, remaining tasks to be funded by NFWF GEBF in this subwatershed include:
  - Repair/restoration of an existing detention basin on the property of Westminster Gates to original storage capacity (**J SWF**).
  - Construction of a new detention basin (**JB SWF**) on the Alabama Power easement at Westminster Village immediately upstream of the Step Pool Conveyance.

- “Green” restoration of two incised stream segments (**J4-1** and **J4-2**) of the main stem of Joe’s Branch downstream of J SWF along with relocation of an existing sewer line.
- Restoration of the degraded, rock-reinforced tributary **JA** behind the Piggly Wiggly. Water will be piped down the steep slope, which will be restored to provide ecological services, to a splash pad and wetlands to reduce energy and improve water quality prior to its confluence with the main stem of Joe’s Branch.

### **Tiawasee Creek Subwatershed**

- Managed by the City of Daphne and co-funded through a Daphne Coastal Impact Assistance Program Grant, MBNEP’s NFWF GEBF Grant, and a State CWA Section 319 Grant, restoration of this 1,400-foot-long Tiawasee Creek segment **TC1-TC2**, near the corner of Park Drive and Pollard Road in Daphne, is nearing completion. Designed by Goodwyn Mills Cawood and constructed by North State Environmental, restoration involves excavation of a new and wider flood plain, relocation and elevation of the stream bed, installation of rock and log energy dissipating structures, and headwater wetland restoration.

### **D’Olive Creek Subwatershed**

- **Tributary D4-D6**, abutting and downstream of Interstate 10 near Mile Marker 37 on property owned by Malbis Plantation, has been the target of at least two previous restoration attempts, both of which were “blown out” by significant rain events. ALDOT is completing Volkert-designed stabilization of the box culverts and the splash pool, as Goodwyn Mills Cawood works to tie that project into the 100% stream restoration design. The design includes expanding the flood plain across a 30-acre footprint, elevating the streambed, and installing instream energy dissipating structures. The project is currently being advertised for bids and is expected to go to construction in early May, 2016.
- Restoration of **Tributary DA3**, also on Malbis Plantation land and east of County Road 13 in Daphne, is currently under early phases of design by a Volkert team. The project area includes several incised braids (totaling ~1,000 linear feet) through degraded wooded wetlands upstream of a small-scale step pool project implemented by the City of Daphne a decade ago. Restoration will include elevating the streambed and construction of two detention ponds. Design will be completed in late 2016.
- Restoration of **Tributary DAE**, involving less-than-1,000-feet of a severely head cut reach with a particularly small drainage area running north to south and splitting two property parcels in the Oakstone neighborhood south of Highway 90 and west of County Road 13. The restoration is under design by AMEC/Foster Wheeler with expected delivery of a 100% plan later in 2016.
- Restoration of **Tributary DAF**, directly downstream of and across County Road 13 from DA3 is being designed by Hatch Mott MacDonald. Both the 1,200 linear foot main stem and a 400-foot degraded tributary originating near the Lake Forest Golf Course will be stabilized and restored, along with three acres of wetlands. Discussions are in progress with property owners as delivery of the 100% design is expected later in 2016.

### **D’Olive Watershed Restoration Technical Workshop**

On February 16 & 17, 2016, the MBNEP hosted a D'Olive Watershed Restoration Technical Workshop at 5 Rivers Delta Resource Center. All five engineering firms and both construction contracting firms involved in D'Olive Watershed restorations; nationally-recognized stream restoration specialists Greg Jennings, Dave Bidelsbach, and Mike Geenan; hydrologist John Curry; sediment-loading expert Marlon Cook; Auburn University scientists and extension specialists, and municipal and MBNEP staffs shared strategies, techniques, lessons learned, and other trade secrets to facilitate the best project implementation possible in this challenging environment. It was an extraordinary event that benefited practitioners and degraded streams across coastal Alabama and beyond.