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Innovations
In Stormwater Control

Florida Urban Stream Restoration

Urban stream segments have been channelized, paved with concrete, and neglected for decades. Recently, the City of Gainesville has begun to restore them to a more natural system. Sweetwater Branch is a 2500-foot segment of an urban stream that discharges to an Outstanding Florida Waterbody (OFW). Paynes Prairie Preserve is the final receiving water for the Gainesville drainage basin. OFW's have the highest level of water quality protection in the state. Existing problems have been downstream water pollution (bacteria, nutrients, and metals) in the sediment runoff, habitat smothering and contamination, anoxic conditions, loss of wildlife usage, and turbidity. Sweetwater Branch flows through an active neighborhood and has been an aesthetic problem for the community.

That all changed this summer when Stewart Pearson, Stormwater Services Manager and Project Engineer, kicked off the start of the first of over thirteen stream restoration projects for Gainesville. Water quality improvements are the goal of the city's Watershed Master Plan. Coordination of this project for NPDES compliance was the job of Sally Adkins, Permit Manager. Sally and Bill Benson, Labor Crew Leader and Site Supervisor, first heard about APS products while attending a local erosion control-training seminar. They later contacted the APS office and technical services personnel to inquire about using their PAM blended products for this project.

A site-specific water/soil sample test showed that APS 706b Floc Logs along with 705 powders could be used to provide flocculation and chelation of the fine mucky soil particles generated from the construction activities. The 705 powder could be used to stabilize the canal embankment and provide additional turbidity treatment as needed. APS 640 liquid emulsion was applied to the slopes and embankments to stabilize the soil and control runoff during storm events.

Good BMP practices were utilized to take advantage of control techniques taught in the Florida Department of Environmental Protections training course, recently attended by project staff. Daily clearing was limited to small sections that were completed and stabilized at the end of each workday. Bypass pumping was done to allow stream work to be done in the dry. Multiple layering of BMP controls were employed to minimize soil movement and provide sediment trapping and turbidity control. Some of these controls were coir logs placed at the toe of slope, silt fence, floating turbidity curtains, inlet protection, slope stabilization with jute, erosion blankets, and grass seed or sod. Even with these BMPs in use, the potential for a turbidity release or slope failure was a daily risk.

Turbidity in the stream channel area was acted on by the Floc logs, which caused the mucky sediment to form floc materials and chelating bridges between individual particles. As these particles clumped together, they became larger and heavier. Gravity settled out most of these particles leaving the water very clear. Jute was placed downstream of the work area, to capture lighter floc and act as a surface area. Active management of this system kept turbidity within compliance levels throughout the project.

The project was able to preceed rapidly, due in part to good weather and an effective erosion, sediment, and turbidity control program. A tremendous visual improvement was apparent in the canal. Water clarity improved so well that fish were observed feeding along the streambed. This is a testament to the turbidity control and non-toxic materials used in APS products.

Final slope stabilization was with vegetation using various combinations of native plants, sod, and grass seed. Applied Polymer System's PAM blends have the ability to accelerate grass germination provided additional slope protection and stability.

This is another example of how APS can help protect natural resources and allow restoration projects to succeed without jeopardizing permit compliance.

For product and distributor information please contact us at:

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