

MCINTOSH PRESERVE WETLANDS PROJECT – INTEGRATED WATER RESOURCES MANAGEMENT FOR MULTIPLE BENEFITS

Chris Keller¹, Amy Tracy², Lynn Spivey³, Jack Holland³

¹Wetland Solutions, Inc., Gainesville, FL, USA

²Dewberry|Hydro, Lakeland, FL USA

³City of Plant City, Plant City, FL, USA

Plant City's 360-acre McIntosh Preserve includes an existing, enhanced stormwater treatment wetland (ESTW) that was designed to provide water quality treatment and flood attenuation for the East Canal watershed. The benefits of the original ESTW have been limited by the flashy nature of stormwater runoff and dehydration of the treatment wetlands between storms.

The proposed McIntosh Preserve wetlands project, expands upon the original project by adding more than 100 acres of multi-purpose constructed treatment wetlands. To address the dehydration experienced by the original wetland and increase treatment, this project reconfigures the original wetland cells and adds additional treatment wetlands in the center and western portion of the site. The proposed wetland cells will receive supplemental water from Plant City's reclaimed system during dry periods to maintain suitable wetland hydroperiods and maximize wildlife habitat value. The project will also increase the stormwater system capacity to reduce localized flooding conditions. The expanded wetland treatment system is estimated to decrease nutrient loading to East Canal, above and beyond the original project, with a net improvement of over 7,000 pounds per year (lb/yr) of total nitrogen (TN) and 2,000 lb/yr of total phosphorus (TP).

The final component of the project is the enhancement of public recreational access facilities. The City is enhancing the park elements through a series of phased projects to match the construction timeline of the wetland's expansion. Phase I of the recreational improvements was completed in April 2021 and included two miles of upland pedestrian hiking trails, a three-story wildlife observation tower, and a playground for children. Additional parking, and educational signage, benches and trash cans were also included. Future phases will include additional trails, boardwalks, educational signage, and restroom facilities.

This project maximizes environmental and public recreational benefits through the implementation of an integrated water resources management strategy.

PRESENTER BIO: Chris Keller is president and lead engineer at Wetland Solutions, Inc. Amy Tracy is a senior environmental scientist with Dewberry|Hydro. Lynn Spivey is the Director of Utilities for the City of Plant City. Jack Holland is the Director of the City of Plant City's Parks and Recreation Department.