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## LAKE OKEECHOBEE WATERSHED STORMWATER TREATMENT AREAS (STAs): TAYLOR CREEK AND NUBBIN SLOUGH PILOT STAs

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### Taylor Creek Pilot Stormwater Treatment Area

#### Project Overview:

The construction and operation of Stormwater Treatment Areas (STAs) in the Lake Okeechobee watershed is a major component of the Lake Okeechobee Protection Plan. Required as part of Sec. 373.4595 (F.S.), the plan seeks to restore and protect Lake Okeechobee by achieving and maintaining compliance with water quality standards in the lake and its tributaries, through an innovative restoration program designed to reduce total phosphorus (TP) loads and implement long-term solutions, in accordance to the lake's Total Maximum Daily Load.

The Taylor Creek STA is one of the two pilot-scale STAs being implemented north of the lake. The U.S. Army Corps of Engineers was responsible for the design and construction of the project. The long-term average TP removal rate within the STA was estimated during the design phase to be about 2 metric tons per year or about 9% of the phosphorus load of Taylor Creek at the project location.

#### Project Objectives:

The goal for water quality improvement is to reduce TP loads to the maximum extent possible, given the limited area of the STA relative to the amount of water in Taylor Creek. The Taylor Creek Pilot STA is expected to have a long-term average TP removal rate of about 2.08 metric tons of TP per year.

#### Project Description/Features:

The Taylor Creek STA is located about 2 miles north of the city of Okeechobee. It is bordered on the east by US 441 and by Taylor Creek on the west. The site is approximately 200 acres and the STA has a treatment area of 142 acres. An inflow pump station lifts water from Taylor Creek at the north end of the STA. Treatment occurs through natural biogeochemical processes as the water slowly flows by gravity southeasterly through the 49-acre Cell 1 and subsequently through the 93-acre Cell 2 before being discharged back into Taylor Creek, just upstream of US 441. Water levels and flow rates through the treatment



cells are controlled by individual gated structures located at the southerly end of each cell.

**Project Status:**

Flow through operations at Taylor Creek STA commenced on June 26, 2008. The facility continued to operate on a discharge mode until February 24, 2009 when pumping and discharge activities were suspended after a failure of the culvert at the outfall structure was detected. From June 2008 to February 2009, the system removed 1.35 metric tons of P from the Taylor Creek drainage basin. Completion of repairs is slated for March 2010. Once all flow-through phase requirements are satisfied, the District will officially take over control of the project from the Corps and begin long-term operational phase of the project.

**Nubbin Slough Pilot Stormwater Treatment Area****Project Overview:**

The construction and operation of Stormwater Treatment Areas (STAs) in the Lake Okeechobee watershed is a major component of the Lake Okeechobee Protection Plan. Required as part of Sec. 373.4595 (F.S.), the plan seeks to restore and protect Lake Okeechobee by achieving and maintaining compliance with water quality standards in the lake and its tributaries, through an innovative restoration program designed to reduce total phosphorus (TP) loads and implement long-term solutions, in accordance to the lake's Total Maximum Daily Load.

The Nubbin Slough STA is one of the two pilot-scale STAs being implemented north of the lake. The U.S. Army Corps of Engineers was responsible for the design and construction of the project. The South Florida Water Management District is the sponsor of the project and will be responsible for operation and maintenance of the STA.

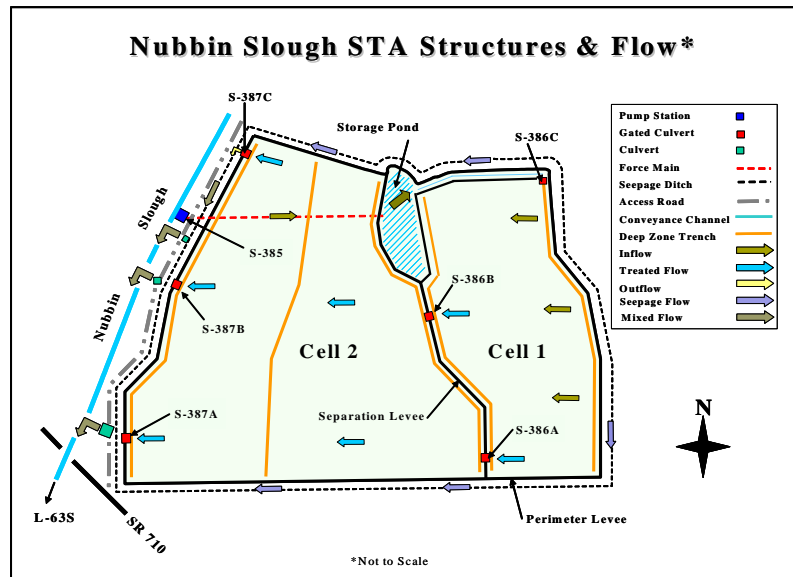
**Project Objectives:**

The goal of the Nubbin Slough STA is to capture and reduce the mass of total phosphorus from the Nubbin Slough Basin prior to discharge back into Nubbin Slough and on to Lake Okeechobee. The long-term average TP removal rate within the STA was estimated during the design phase to be over five metric tons per year or about 85% of the phosphorus load of Nubbin Slough at the project location.

**Project Description/Features:**

The Nubbin Slough STA is approximately 6.5 miles southeast of the city of Okeechobee, adjacent to Nubbin Slough, immediately north of State Road 710 and just east of the bridge that spans Nubbin Slough. The STA is approximately 809 acres with an effective treatment area of 773 acres. An inflow pump station lifts water from Nubbin Slough at the western edge of the STA and delivers it through a 48-inch diameter underground force main to a 30-acre storage pond located in the north central portion of the STA. Treatment occurs through natural biogeochemical processes as the water slowly flows by gravity south and westerly through the

263-acre Cell 1 and subsequently through the 546-acre Cell 2 before being discharged back to Nubbin Slough. Water levels and flow rates through the treatment cells are controlled by individual gated structures located at the western boundaries of each cell.



### Project Status:

Construction of the Nubbin Slough STA was completed in September 2006. However, operations have not been initiated due to a series of mechanical problems uncovered during pump tests. Construction of the repairs at Nubbin Slough is expected to be completed in February 2010.