

December 2008  
Executive Summary – 2008 Report for the Long-Term Plan

The long-term Everglades water quality objective is to implement the optimal combination of source controls, Stormwater Treatment Areas (STAs), Advanced Treatment Technologies, and/or regulatory programs to ensure that all waters in the Everglades Protection Area (EPA) meet water quality standards, including compliance with the phosphorus criterion established in Rule 62-302.540 of the Florida Administrative Code (F.A.C.), consistent with the requirements of Florida's 1994 Everglades Forever Act (EFA, Section 373.4592 Florida Statutes). The October 27, 2003 *Everglades Protection Area Tributary Basins, Long-Term Plan for Achieving Water Quality Goals* (Burns & McDonnell 2003) (Long-Term Plan) sets forth a recommended plan and strategy for achieving that objective allowing the State of Florida and the South Florida Water Management District (District) to fulfill their obligations under both the EFA and the federal Everglades Settlement Agreement (Case No. 88-1886-CIV-MORENO). This document provides the first 5-year report on the Long-Term Plan and is to be submitted no later than December 31, 2008, to the Governor and the Legislature.

Substantial progress towards reducing phosphorus levels discharged into the EPA has been made by the State of Florida and other stakeholders. The combined performance of the regulatory program in the Everglades Agricultural Area (EAA) and the STAs constructed under the 1994 Everglades Construction Project, both mandated by the EFA, has exceeded initial expectations. Since the inception, the EAA best management practices (BMPs) and the ECP STAs have collectively removed more than 2,848 metric tons of TP that otherwise would have entered the Everglades.

As originally envisioned, the Everglades Construction Project was to consist of approximately 40,000 acres of effective treatment area<sup>1</sup> of constructed wetlands distributed among six discrete STAs. The ECP has been expanded to a total of slightly more than 45,000 acres in recent years, and further expansion of the ECP is underway with the increased footprint being implemented expected to be approximately 56,500 acres of effective treatment area. Outflow total phosphorus (TP) concentrations from the STAs continue to improve following enhancements and recovery from the 2004-2005 hurricanes, averaging 26 ppb for Water Year 2008 (WY2008) (SFER 2009, in press). As a direct result of these significant water quality improvement strategies, TP loads to the EPA from the ECP Basins over the last five years have decreased 70% from the WY1979-1988 base period (SFER 2009, in press)<sup>2</sup>. In part due to the regional drought, WY2008 TP loads from the ECP Basins exhibited an 86% reduction from the WY1979-1988 base period (SFER 2009, in press). Since 1994, over 1,050 metric tons of TP have been removed by the STAs that otherwise would have entered the EPA.

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<sup>1</sup> A distinction is made between effective treatment area, which equates to acreage of treatment vegetation, and total area which includes canals, levees, control structures and all other areas that are not directly removing TP. Typically, the total area is about 15% larger than the effective treatment area.

<sup>2</sup> It should be noted that discharges from the ECP Basins are not comprised entirely of EAA runoff; TP loads to the EPA from the EAA have been reduced by approximately 80% compared to the WY1979-1988 base period.

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A combination of phosphorus source controls, local government and private water control and conservation programs, and integration with Comprehensive Everglades Restoration Plan (CERP) projects form the foundation for water quality improvements in the Non-ECP Basins. TP loads from the Non-ECP Basins to the EPA over the last five years have decreased 25% from the WY1979-1988 base period (SFER 2009, in press). In part due to the regional drought, WY2008 TP loads from the Non-ECP Basins exhibited a 74% reduction from the WY1979-1988 base period (SFER 2009, in press).

Ongoing engineering and scientific investigations by the District and others engaged in Everglades Restoration since the time of development of the 2003 Long-Term Plan have provided valuable information which has supported refinements to the estimated performance of the water quality improvement strategies for both the ECP and non-ECP basins. In many respects, work conducted over the past 5 years has far exceeded the original expectations. For example, major increases in the STA system footprint have occurred well in advance of what was originally viewed as recommended, and conversion of significant portions of the macrophyte-based STAs to SAV systems has been achieved successfully in spite of the major disturbances of the hurricane seasons of 2004 and 2005 followed by the severe drought conditions that have prevailed in the region in 2006, 2007, and much of 2008. This period of STA operations has been extremely instructive in management of these large systems following significant hurricane disturbances, and periods of both hydraulic and phosphorus overload and dry out. Considering the range of operational challenges that have been imposed on the STA system during periods of start up, recovery, and stabilization, it is significant that the treatment performance of the various STAs appears to be measurably improving with time and as the District learns how to optimize system operations.

Because there were several events that occurred during the development of this 2008 Report that could result in additional proposed revisions to the Long-Term Plan, this 2008 Report focuses on activities and accomplishments to date in the ECP Basins and non-ECP Basins. A future effort is planned to develop a comprehensive set of Long-Term Plan proposed revisions, once all of the related projects and activities are better defined. Planning will proceed with reliance on a strategy of adaptive implementation, in which all scientifically defensible steps are to be expeditiously implemented with ongoing refinements expected to be necessary. Through a continued collaborative approach to issues evaluation, the District will continue its leadership role in implementation of the Long-Term Plan and in achievement of water quality goals for the Everglades Protection Area.

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