The Clean Water Act and the Central and South Florida Project Canals

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U.S. Environmental Protection Agency’s Nutrient TMDL Workshop
New Orleans, Louisiana
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Purpose of Presentation

- Describe the Central and South Florida (CS&F) Project:
  - History and Purpose
  - Current and Future Comprehensive Everglades Restoration Plan Goals
- Describe State and Federal TMDL Programs in relation to Freshwater Canals
- Describe Current EPA Numeric Nutrient Criteria Development for Freshwater Canals
- The Hillsboro Canal will be our ‘test case’ to walk through these three current events in South Florida watershed management
South Florida Water Management District

- Regional governmental agency responsible for:
  - flood control
  - water supply
  - water quality
  - environmental restoration

- 16 counties, from Orlando to the Florida Keys
South Florida History

- By 1917, four primary canals had been dug from Lake Okeechobee to the Atlantic:
  - e.g., Hillsboro Canal

- By 1940, the lake was diked and opened to the Gulf and Atlantic:
  - Canals became the backbone of water movement and control
Historic Problems for Water Management in South Florida

- **Flood Control:**
  - 1926/1928: Lake Okeechobee levee failed
  - 1947: Hurricane & regional flooding

- **Water Supply:**
  - 1931 – 1945: Lower East Coast saltwater intrusion threat identified

- **Environmental Impacts:**
  - Marshes over-drained in dry years and extensive areas of peat were burned
  - Watershed connections altered
1947 Hurricane Season

State of Florida requested federal assistance to build a regional system to allow better water management.
The Central and Southern Florida Project

- C&SF Project for Flood Control and Other Purposes:
  - Authorized in 1948
  - Constructed between 1950s and 1970s

- Operated in accordance with US Army Corps of Engineers (USACE) criteria

- Now the South Florida Water Management District
Comprehensive Everglades Restoration Plan (CERP)

- On July 1, 1999, the Secretary of the Army and the State of Florida presented the Plan to Congress.

Project Cost Sharing

- 50% Federal
- 50% State

Rescuing an Endangered Ecosystem: The Plan to Restore America’s Everglades

The Central and Southern Florida Project Comprehensive Review Study (The Restudy)

July 1999
CERP: The Goal
CERP: The Primary Components

- Includes 68 components to be implemented over 35 years

- Features include:
  - Aquifer Storage & Recovery
  - Operational Changes
  - Removing Barriers to Sheetflow
  - Reuse Wastewater
  - Seepage Management
  - Stormwater Treatment Areas
  - Surface Water Storage Reservoirs
Getting the Water Right for CERP Requires: Quantity, Quality, Timing and Distribution

These aspects of water are linked

Sustainable management requires their integration

Canals are the means to that end in South Florida..............
CERP Component in Hillsboro Canal Basin: Site 1 Impoundment, The Fran Reich Preserve
Site 1 Impoundment: Primary Purpose

- Improve Hydro-periods and Hydro-patterns:
  - Loxahatchee National Wildlife Refuge (Water Conservation Area 1)
  - Estuarine reaches of Hillsboro Canal and Intracoastal Waterway

- Capturing and Storing excess freshwater currently discharged to tidal waters
TMDLs in Florida: The Federal Level

- 27 states where USEPA is under court order or agreed in a consent decree to establish TMDLs if states do not establish them. (http://www.epa.gov/owow/tmdl/lawsuit.html)

- In Florida, a consent decree laid out a 13 year schedule for USEPA to set TMDLs for a list of impaired waters if Florida did not. (Florida Wildlife Fed'n, Inc. v. Browner, No. 4:98CV356-WS, N.D. Fla., Tallahassee Division, Apr. 22, 1998)

- Impaired waters may end up with a TMDL developed via EPA or by FDEP.
TMDLs in Florida: The Federal Level

- 1998 303(d) list had over 40 canals within SFWMD listed for nutrients (not all CS&F Canals)
- Near half of canals on original list had TMDL due dates of 2010 and 2011
- Includes two segments of Hillsboro Canal upstream of Site 1 impoundment
Other Canals in TMDL Assessments

- Secondary and Tertiary Canals exist in between major CS&F Canals
- One example shown is Lake Worth Drainage District (eastern Palm Beach County)
Florida’s TMDL Program: The Florida Watershed Restoration Act

The Florida Department of Environmental Protection (FDEP) established a 5 phase process in 5 rotating basins (Florida Statutes 403.067)

1: Preliminary Evaluation

2: Strategic Monitoring, Assessment, and Listings

3: Development and Adoption of TMDLs

4: Development of Basin Management Action Plans (BMAP)

5: Implementation of the BMAP
FDEP Phase 3: Potential TMDL Development for 2011

- Potential TMDLs in the SFWMD include CS&F Canals
- Hillsboro Canal located on the Lake Worth Lagoon/Palm Beach Coast Rotating Basin
- Deadlines for Year 2010 TMDLs will be September 30, 2011
Impaired Waterbodies (WBIDs) for potential TMDLs in 2011

- FDEP is currently compiling information for Lake Worth Lagoon/Palm Beach Coast (map)
- 7 of 9 canals impaired for nutrients from consent decree
- Hillsboro Canal (WBID 3264) determined impaired by FDEP’s Impaired Water Rule, not consent decree

Map from FDEP’s presentation October 6, 2010 Meeting Lake Worth Lagoon/Palm Beach County
EPA’s Numeric Nutrient Criteria (NNC) Schedule (as of January 2011)

- **Lakes*** (final criteria December 2010; covers entire state)
- **5 Rivers and Streams regions** (final criteria December 2010)
- **South Florida Canals** (under Scientific Advisory Board peer review; proposed criteria due November 2011)
- **Marine Waters*** (under Scientific Advisory Board peer review; proposed criteria due November 2011)

* Lakes and Estuaries/Coastal Waters have or may have Downstream Protection Values in rule
NNC and Canals: An Abbreviated History

- 2001: EPA releases Ambient Water Quality Criteria Recommendations for Nutrient Ecoregions nationwide; no final recommendations for Ecoregion 13 (South Florida Canals)

- 2003 – 2009: FDEP’s Technical Advisory Committee unable to find sufficient science for ecological endpoints or NNC
2009: FDEP posts draft NNC for Florida’s springs, lakes, rivers and streams; South Florida Canals listed as To Be Determined

2010: EPA and NNC for South Florida Canals

- January: Original inland flowing waters proposed rule
- June: EPA and litigants propose new timelines and announcement of Scientific Advisory Board peer review
NNC and Canals: EPA’s Scientific Advisory Board (SAB)

- “Nutrient Criteria for Florida’s Estuarine and Coastal Waters, and Southern Canals - Methods and Approaches for Deriving Numeric Approaches”
- 18 panelists, primarily from academia, held 1st meeting Dec. 13th - 14th (2010) in D.C
- Draft SAB panel document posted January 2011, teleconference held February 2011

SFWMD Canal Science Inventory Submitted to EPA and SAB

- Purpose was to determine current level of scientific information for canals:
  - Detailed operations and maintenance
  - Described water quality in different sub-regions
  - Found very limited information on canal ecology
Looking Forward: Planned dates for TMDLs, NNC, and CERP for Hillsboro Canal

- September 2011: Proposed or Final EPA or FDEP Nutrient TMDLs for Freshwater Canals
- November 2011: Proposed EPA NNC for South Florida Canals
- August 2012: Final EPA NNC for South Florida Canals
- September 2012: Proposed or Final EPA or FDEP Nutrient TMDLs for Additional Freshwater Canals
- October 2012: Phase 1 for Site 1 Impoundment along Hillsboro Canal construction slated for completion (CERP component to restore the CS&F system)
Discussion and Contact Information

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