Sub-regional Source Control Projects Update

11th Annual Public Meeting on the Long-Term Plan for Achieving Water Quality Goals for Everglades Protection Area Tributary Basins

February 26, 2014
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Outline Topics

1. Project Goals
2. Planning Concepts
3. Available Data Toolbox
4. Status of Areas Prioritized
5. Remaining Strategy
Key Projects
Construction Schedule

Storage and Treatment Facilities (2012-2024)

- 6,500 acres of Stormwater Treatment Area (STA)
- 110,000 acre-feet of shallow storage (Flow Equalization Basins)
- 800 acres of earthwork within existing STAs to maximize effective treatment area

Sub-Regional Source Controls (2015 – 2020)

Replacement Features

- Phase 1 (2015 – 2020)
- Phase 2 (2019 – 2024)

C-139 Annex Restoration Mitigation Project (2014-2018)

![Diagram showing storage and treatment facilities with specific areas labeled for mitigation projects.](image-url)
Regional Water Quality Plan

- Supplement regulatory BMP program
- Provide a safety factor for greater assurance phosphorus WQBEL can be achieved
- Control phosphorus discharges upstream of STA-1E and STA-1W (Eastern Flowpath)
- Focus on areas and projects with greatest potential to further improve water quality
Project Planning Concepts

Control phosphorus sources:

• Increased retention
• Reduced runoff rates
• Limiting P transport in runoff
  – Improving canal bank stabilization
  – Adding or improving sediment sumps
  – Managing aquatic vegetation
Considering the “Potential to Improve”

- Historic phosphorus levels
- Proximity and potential impact to STAs
- Certainty of reduction
- Long-term sustainability
- Willing participants
Data - Farm Level

- Farm (basin-ID) discharge data:
  - Phosphorus (TP) Concentration
  - Flow
  - TP Unit Area Load
  - Total TP Load
- Structure data submitted by permittees
- Load computed and stored in RegDB
- Annual summaries reported by District
S-5A Works of the District Permits
Data - West Palm Beach Canal

• Structures S352 and S5A
• In-canal between S352 and S5A (EAAP)
  – Flow measurement (3 sites)
  – Water quality sampling (7 sites)
    • TPO4, OPO4, TDP, in-situ
  – Weekly; June - October 2008
  – Bi-weekly; Nov. 2012 - Sept. 2015
• Sediment Investigation (UF-IFAS)
  – 9 sites; June 2010 and November 2010
Potential Areas to Consider

- East Beach Water Control District (EBWCD)
  - Diversion from Lake to EAA S5A
  - Concentrations and UAL
  - Historical investigations of TP levels

- Lease north of STA1W
  - Flow and UAL

- Farms between WPB and L-8 Canals
  - Elevation change and muck loss challenges
  - Concentration and UAL
EAA WY2009-2013 Concentrations

Legend

Total Phosphorus Concentration (ppb)
- Zero Discharge
- < 50
- 50 - 100
- 101 - 200
- > 200

LAKE OKEECHOBEE
East Beach Water Control District (EBWCD)

- 7,356 acres
- EAA 298 Diversion District with 82% originally outside EAA

WY2003-2013 data:
- Runoff Rate: 31 inches/yr
- TP Conc.: 489 ppb
- TP UAL: 3.48 lbs/ac/yr
EBWCD Background

• Evaluation of historic discharge data
• Coordinated investigation with FDEP
• Synoptic upstream WQ collection
• Coordination with EBWCD
  – Potential solutions identification
  – Implement canal cleaning demonstration project
EBWCD Canal Cleaning Project Demonstration / Implementation

Local Government Agreement (5/24/2013)

**District Provides**

- $150,000
- WQ collection and analysis
- Storage of public records and data

**EBWCD Provides**

- Backhoe, operator, fuel
- Staff and consultant; Pre- and Post- cleaning canal sediment and vegetation data
- Access & coordination
EBWCD Project Status

- **Completed:**
  - Initiated WQ collection May 2013
  - Existing conditions and plan deliverable
  - Backhoe delivered & funds reimbursed
  - Cleaned 7 miles of canal as of Nov. 2013

- **Remaining:**
  - Canal cleaning through October 2015
  - WQ monitoring through November 2016
  - Quarterly updates and final report
Lease North of STA-1W

- 120 acres
- 33.5 ac. District lease
- 86.5 ac. County lease
- Adjacent to STA-1W
- Seepage challenge

WY2003-2013 data:
- Runoff > 300 in/yr
- TP Conc: 112 ppb
- TP UAL = 7.74 lbs/ac/yr
Lease North of STA1W Consideration

- Load Reduction Alternatives
  - Structural Improvements
  - Operation of STA1W seepage canal
  - Lease Options
- Structural and Operational not practical
- Lease restrictions Feb 2013 - Feb 2014
- Allow expiration of lease
- Continued coordination with County
Next Load Reduction Opportunities

- **Considerations:**
  - Phosphorus data
  - Stakeholder input
  - Conservation
  - Sustainability

- **Types of projects:**
  - Structural and operational improvements
  - Innovative technology application
  - Research, implementation, demonstration
Sub-regional Source Controls Summary

- Safety Factor for Eastern Flowpath
- 2015-2020 plan; initiated early
- Enhance the potential to reduce...
  - Implementation and demonstration
  - Phased approach
    - Adaptive management
    - Apply lessons learned
  - Reporting and stakeholder involvement
• Questions?
• Contributions?

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