Quarterly Communications Meeting on the Long-Term Plan for Achieving Water Quality Goals for the Everglades Protection Area Tributary Basins

A-1 Flow Equalization Basin (FEB)

August 23, 2013

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Engineering and Construction
FLOW EQUILIZATION BASIN DESIGN

Features
- 15,000 acres
- 4 feet in depth
- 60,000 acre-ft temporary storage
- Utilize internal east–west Agricultural Canals as spreader canals
- Uniform north-south flow

Inflows
- Canal Inflows
  - NNRC Canal (S-2 & S-7 Water Basin)
  - Miami Canal (S-8 Water Basin)

Outflows
- Evapotranspiration
- Seepage
- STA Releases
EXISTING SITE CONDITIONS

- STA-3/4 Supply / Inflow Canal
- East - West Agricultural Roads, Canals and Levees
- North – South Agricultural Canals / Berms and Typical East – West Swales
- Sorted Stockpiles
- Test Cells
- Perimeter Scraped Area
DEMOLITION

- **Typical Perimeter Stockpile Demolition**
  - Existing Seepage Canal
  - Excavation Spoils Piles
  - Existing Scraped Area

- **Typical Major Haul Road Demolition**
  - Existing East - West Roads and Canals
  - Existing North - South Haul Roads
  - Existing Perimeter Haul Road

- **Typical North - South Road / Berm Demolition**

- **Typical East – West Swale**

- **Typical Perimeter Muck Berm and Dewatering Cells Demolition**
  - Existing Perimeter Muck Berms
  - Existing Dewatering Cell Muck Berms
  - Existing Scraped Area
DEMOLITION (con’t)

TEST CELLS #1 & #2

CABASSA AGRICULTURAL PUMP STATION
‘LOOKING WEST’

TALSIMAN AGRICULTURAL PUMP STATION
‘LOOKING EAST’
CIVIL DESIGN

- Boat Ramps: 3,400 ft. Segments of Connecting Perimeter
- Seepage Canal: 60,000 ac-ft
- Attenuation Basin: 6.7 Miles Interior Flow
- Conveyance Levee: Turnout ramps every 2 Miles
- Collection and Conveyance Canal: 2,700 ft.
- Inflow Structure: G-720, G-721
- Parking Areas: (4) 6,000 – 11,000 sf
- Type I Levee: 13 Miles
- Type II Levee: 8.4 Miles

Map highlights:
- Northeast Access Road
- G-370 Access Road
- STA-3/4 Supply Canal West
- STA-3/4 Inflow Canal North
- G-370S Upgrade
- Outflow Structures G-724 (A-J)
Inflow from G-372
- G-720 Open
- 2,775 cfs to FEB
- 925 cfs to STA-3/4
  Inflow Canal
  - Inflow Canal Design Stage
    - +13.6’ NAVD 88

Inflow from G-370
- G-721 Open
- 1,850 cfs to FEB
- 925 cfs to STA-3/4
  Inflow Canal
  - Inflow Canal Design Stage
    - +13.6’ NAVD 88
Outflow Structures G-722W and G-722 in southeastern corner of site
- Water from FEB transported east, through G-722W, and discharged to NNRC.
- \( Q_{\text{max}} = 2,000 \text{ cfs} \)

Outflow Structures G-724 (A-J) along south perimeter levee
- Gravity flow discharge
- Available during times that the FEB WSE is above the operating stage of the STA-3/4 Inflow canal.
- \( Q_{\text{max}} = 2,000 \text{ cfs at 3 foot head differential} \)
WATER CONTROL STRUCTURE – G-720

- Location: Along west levee of EAA A-1 FEB; 7.4 Miles east of G-372
- Purpose: Divert flows from STA-3/4 Supply Canal into the FEB West inflow canal
- 3 - Bay Reinforced Concrete Gated Spillway
  - 11.25 feet tall by 20 feet wide per bay
  - Vertical lift roller gates

- Type Hoist: Electric Motor drum and Cable hoist; or portable power-drive for manual operations
- Control by remote telemetry through SFWMD SCADA system
- Normal Power Source: Commercial Electricity
- Emergency Power Source: Portable Backup generator
WATER CONTROL STRUCTURE - G-721

- Location: Along southeastern perimeter levee of EAA A-1 FEB; northwest of G-370
- Purpose: Divert flows from STA-3/4 Inflow Canal into the FEB East inflow canal
- 2 - Bay Reinforced Concrete Gate Spillway
  - 9.75 feet tall by 20 feet wide per bay
  - Vertical lift roller gate

Typical 2 Bay Gated Spillway

- Type Hoist: Electric Motor drum and Cable hoist; or portable power-drive for manual operations
- Control by remote telemetry through SFWMD SCADA system
- Normal Power Source: Commercial Electricity
- Emergency Power Source: Emergency power supplied from G-370
WATER CONTROL STRUCTURE - G-721

G-721 3-D Model Looking North
WATER CONTROL STRUCTURE – G-722W

- Location: Underneath G-721 Inflow canal; Southeastern corner FEB Collection and Conveyance Canal west of G-722
- Purpose: Deliver water from interior of FEB to G-722 outflow canal
- 3 - Barrel Reinforced Concrete Box Culvert
  - 10 feet tall; 10 feet wide; 606 feet length
  - Non-gated culvert structure
WATER CONTROL STRUCTURE – G-722

- **Location:** Underneath access roadway serving G-370; Southeastern corner FEB Collection and Conveyance Canal

- **Purpose:** Deliver flows from FEB interior to the headwater side of G-370

- **3 - Barrel Reinforced Concrete Gate Culvert**
  - 10 feet tall; 10 feet wide; 31 feet length
  - Stem operated vertical lift slide gates

- **Type Hoist:** Pedestal mounted, single stem hoist with electric motor; Hand wheel for manual operations

- **Control by remote telemetry through SFWMD SCADA system**

- **Normal Power Source:** Commercial Electricity

- **Emergency Power Source:** Manual or emergency power from G-370
WATER CONTROL STRUCTURE – G-722

G-722 3-D Model Looking Southeast
Location: Along south perimeter

Purpose: Deliver flows from EAA A-1 FEB to STA-3/4 Inflow Canal; Function as outflow structures directly to STA-3/4 Inflow Canal by gravity flow.

1 - Barrel Reinforced Concrete Gate Culvert
- 7.5 feet tall; 7.5 feet wide; 23 feet length

Type Hoist: Pedestal mounted, screw type hoist with electric motor; Hand wheel for manual operations

Control by remote telemetry through SFWMD SCADA system

Normal Power Source: Solar Electricity

Emergency Power Source: Manual or temporary portable generator
Design and Construction Schedule:

- Preliminary Design: Completed
- Intermediate Design Submittal: Completed
- Final Design Submittal: Completed
- Final Design TRB: Completed
- Corrected Final/RTA Design Submittal: Completed
- Governing Board: October 2013
- NTP: November 1, 2013
- Substantial Completion: December 31, 2014
- Final Completion: March 31, 2015
## Milestones

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<td>Submit state and federal permits</td>
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