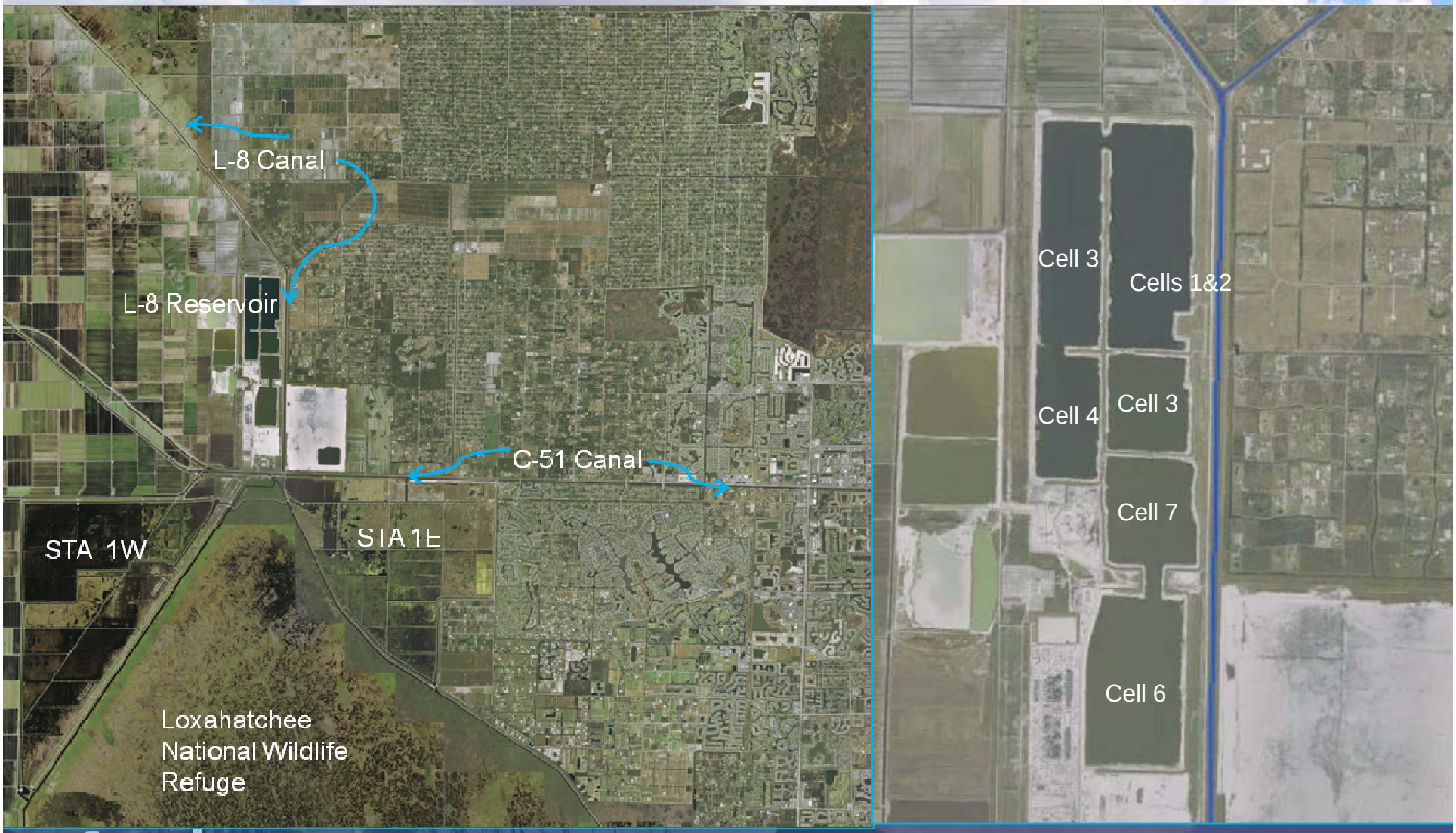
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

# L-8 Flow Equalization Basin

## Long-Term Plan
## Communications Meeting
## November 28, 2012

**John Mitnik, PE**
**Section Administrator**
**Engineering & Construction Bureau**

# Project Location



# Project Objectives


- Attenuate peak storm water runoff from the S-5A and C-51W basins
- Provide desired inflow rates to STA-1W and STA-1E to optimize phosphorus treatment performance
- Location allows potential ability to satisfy select CERP objectives

# L-8 Reservoir
# Existing Site Conditions

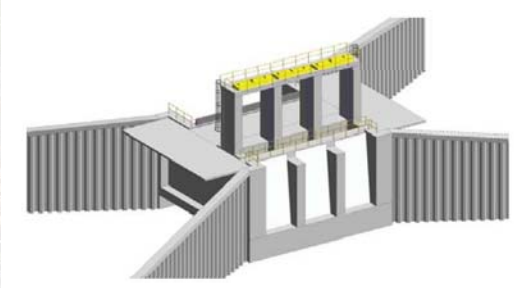
- Located in central Palm Beach County
- Former 950-acre rock mine
- Geology allows below ground storage
- 46,000 ac/ft or 15 billion gallons of storage
- 75 cfs outflow structure (pump) and ~600 cfs inflow structure
- Existing infrastructure is able to provide limited benefit to South Florida's ecosystem and regional water supplies

# Governing Board Resolution

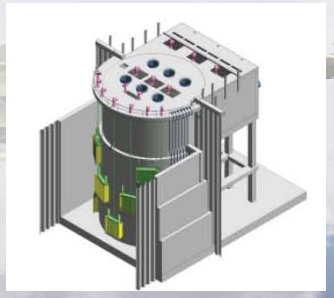
- **Governing Board authorized a three-year contract with Archer Western Contractors, LLC for the design/build of the L-8 Reservoir Pump Station and Inflow Structure, in the amount of $63,883,800**

# Construction Sequencing

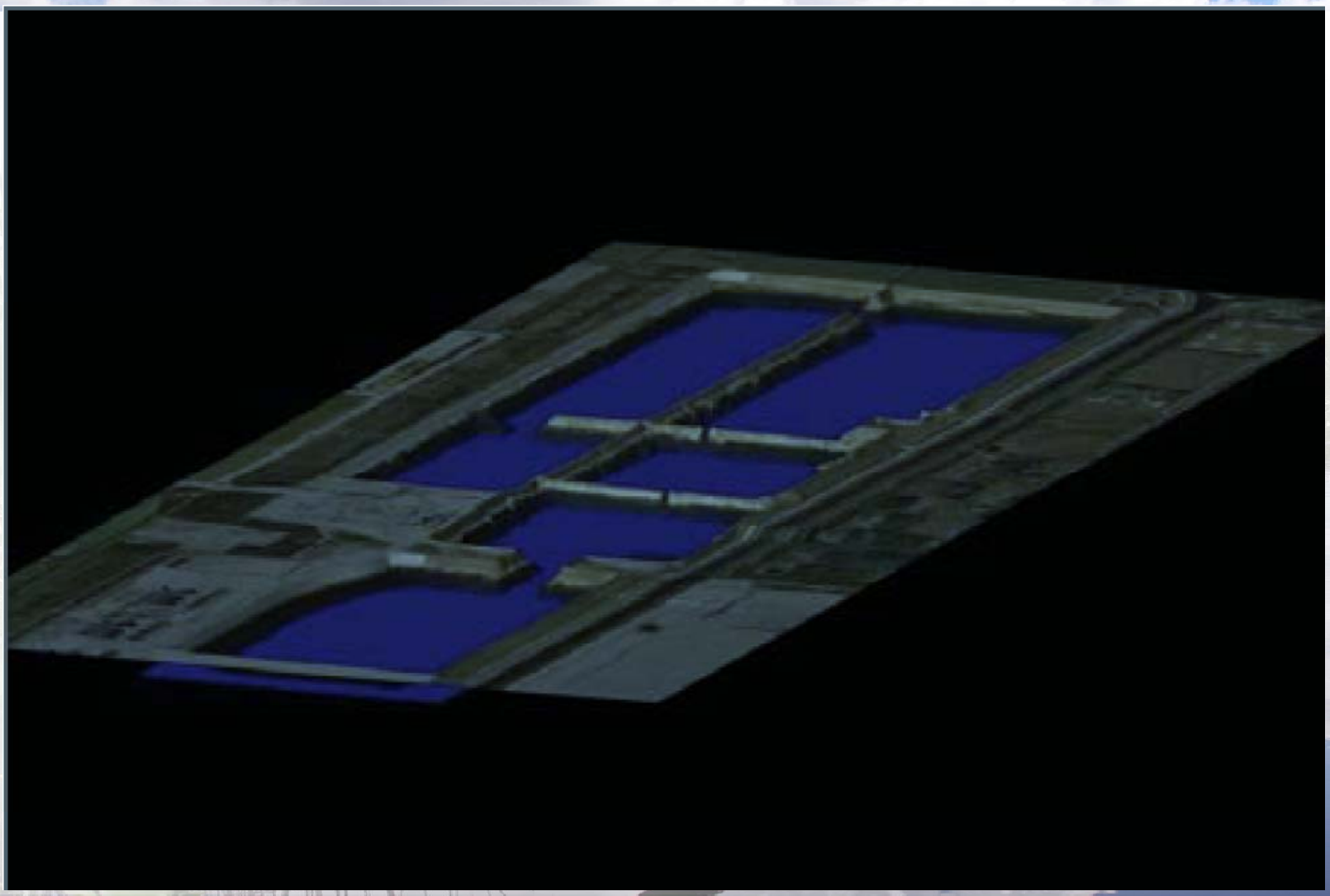
- **Dewatering: Oct 2012 – Apr 2014**
- **Mobilization: March 2013**
- **Reservoir Revetment: May 2013 – Mar 2014**
- **Reservoir Modifications: Mar 2013 – Sep 2014**
- **Inflow Structure: Jun 2013 – Oct 2014**



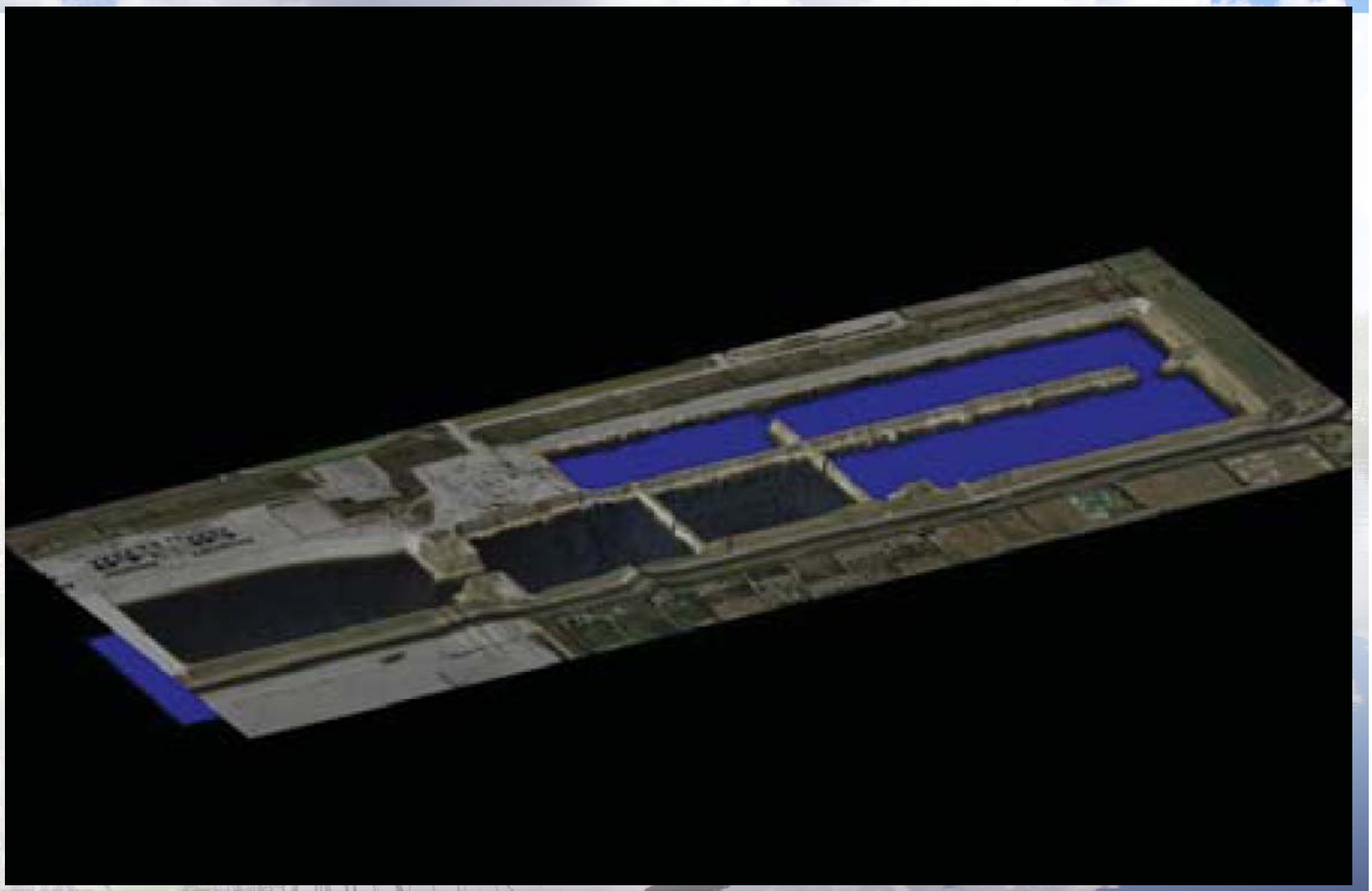
- **Pump Station: Sep 2013 – Apr 2015**



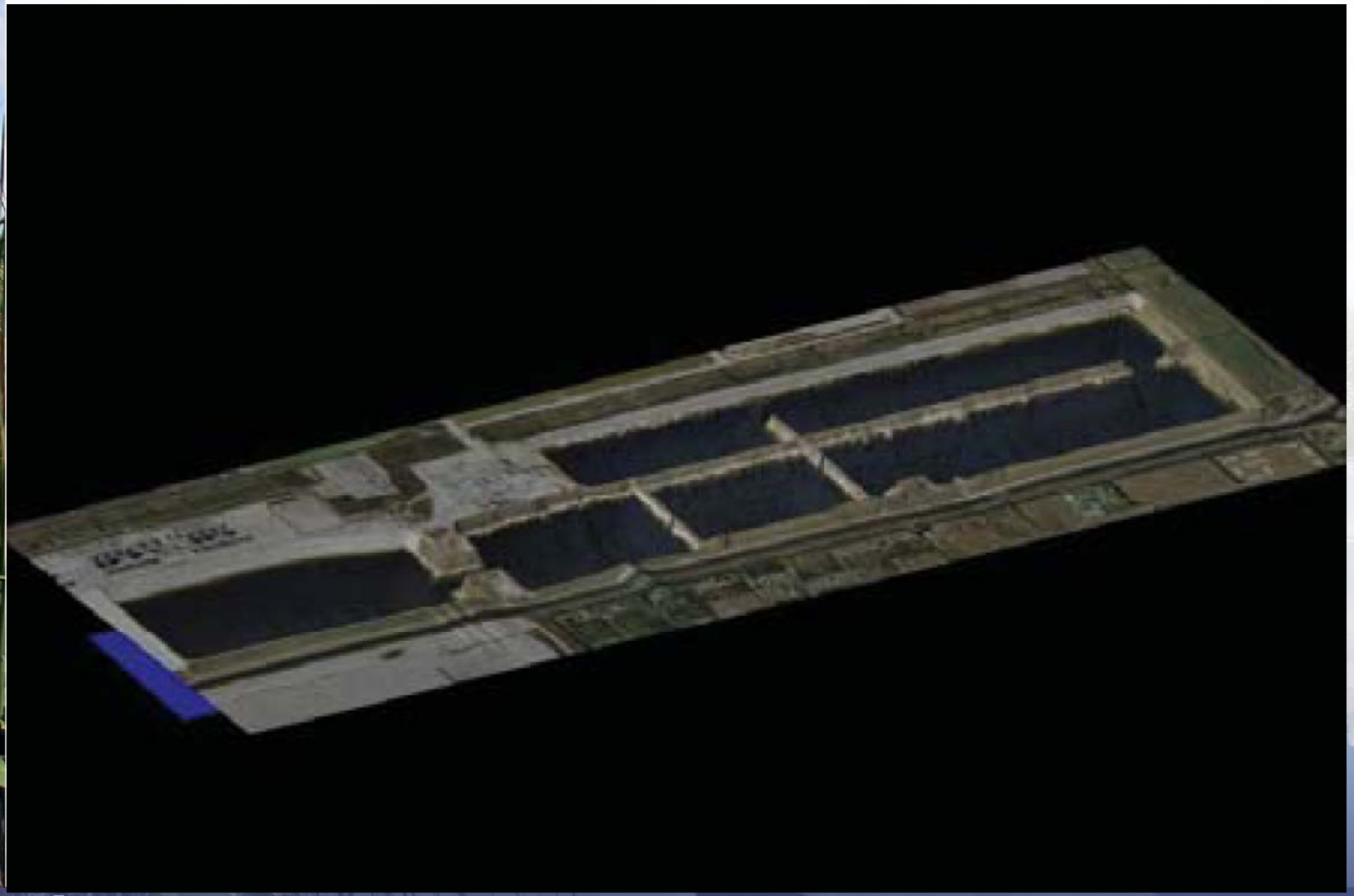
# Step 1 – Dewater all Cells to elevation -20.



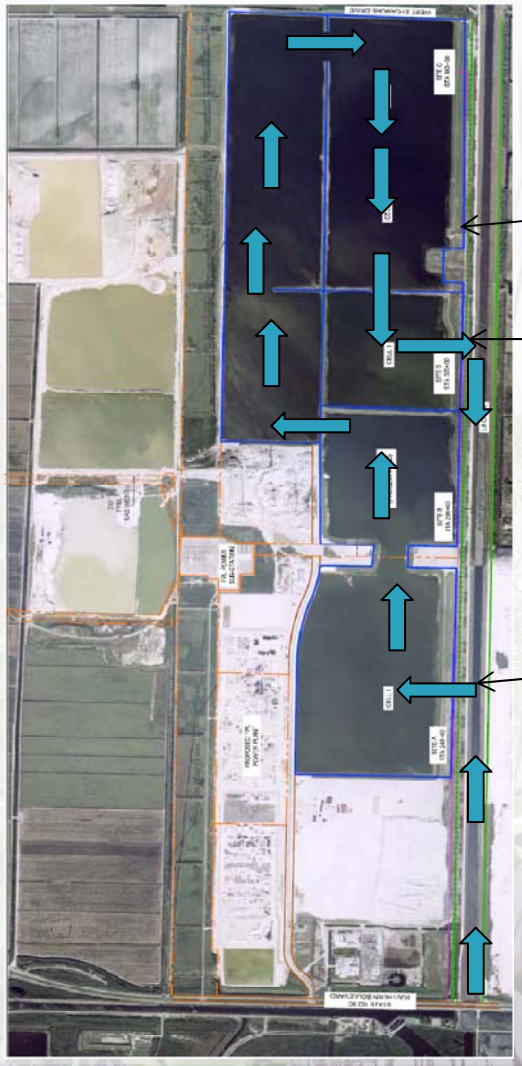
# Step 2 – Fully dewater Cells 3, 6, & 7



# Step 3 – Fully dewater all cells



# Flow Routing



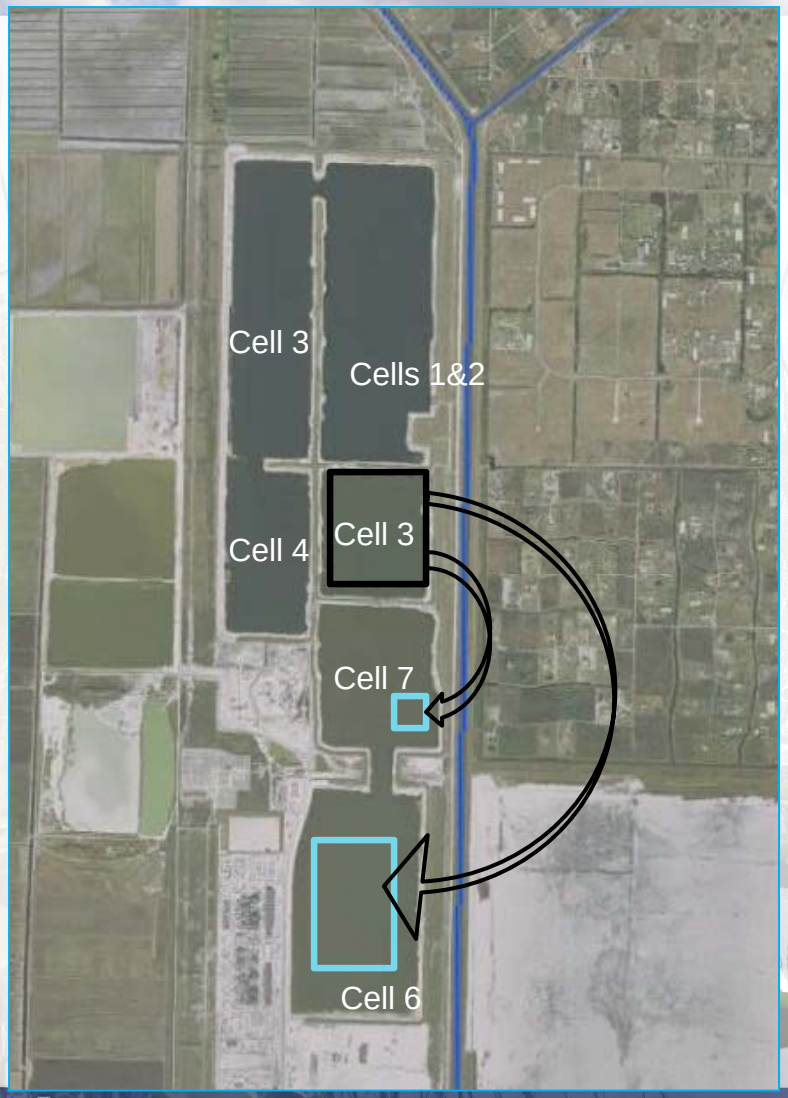
**Existing 75 cfs Pump and Inflow Structure**

**Cell 3 (Pump Station outflow of 450 cfs)**

**Cell 6 (Inflow up to 3000 cfs)**

- Reservoir Operating Levels
  - +16.0 feet NAVD
  - -37.0 feet NAVD

# Additional Excavation




## Cell 3 Excavation

- Dispose in section of Cell 7
- Dispose in section of Cell 6

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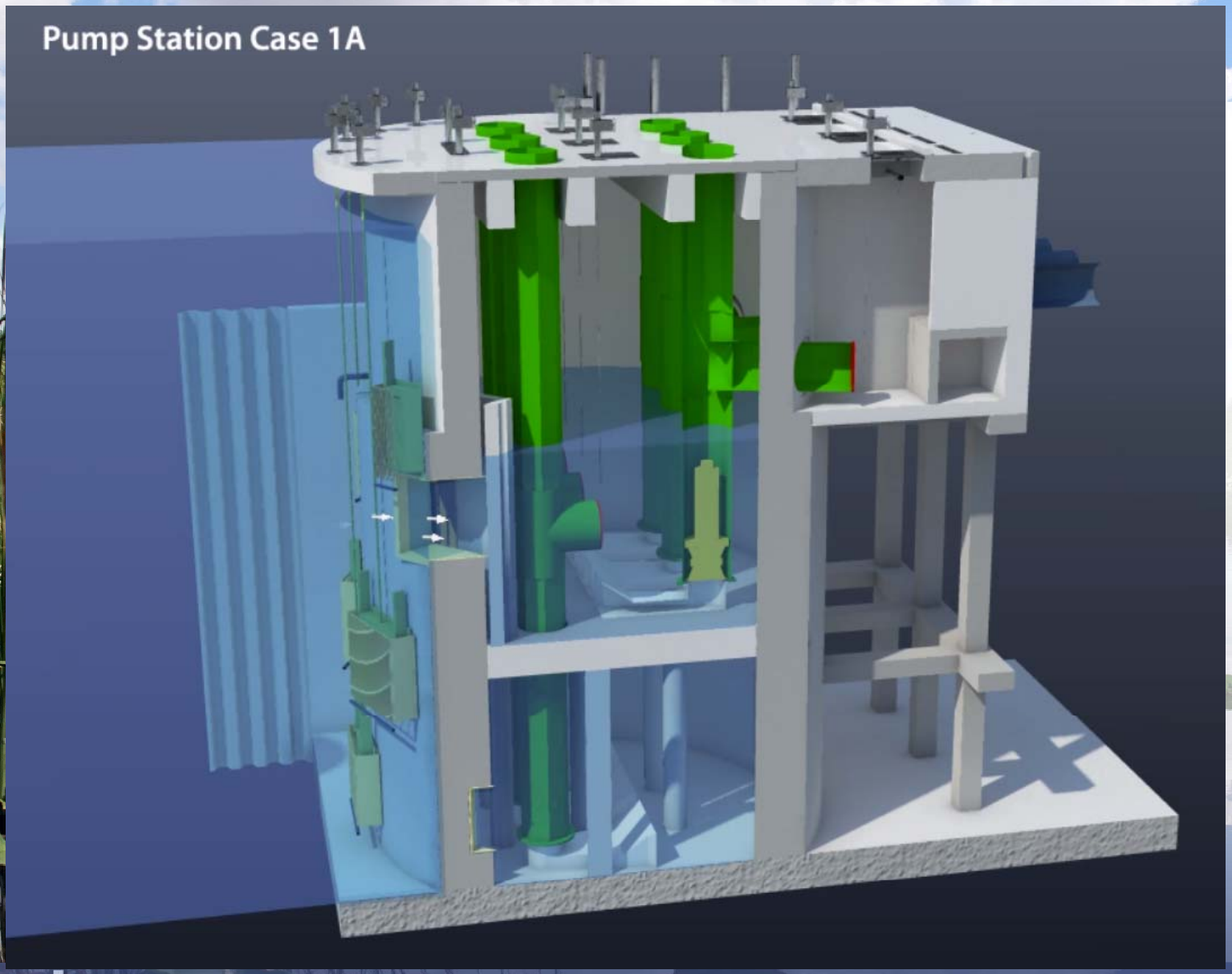

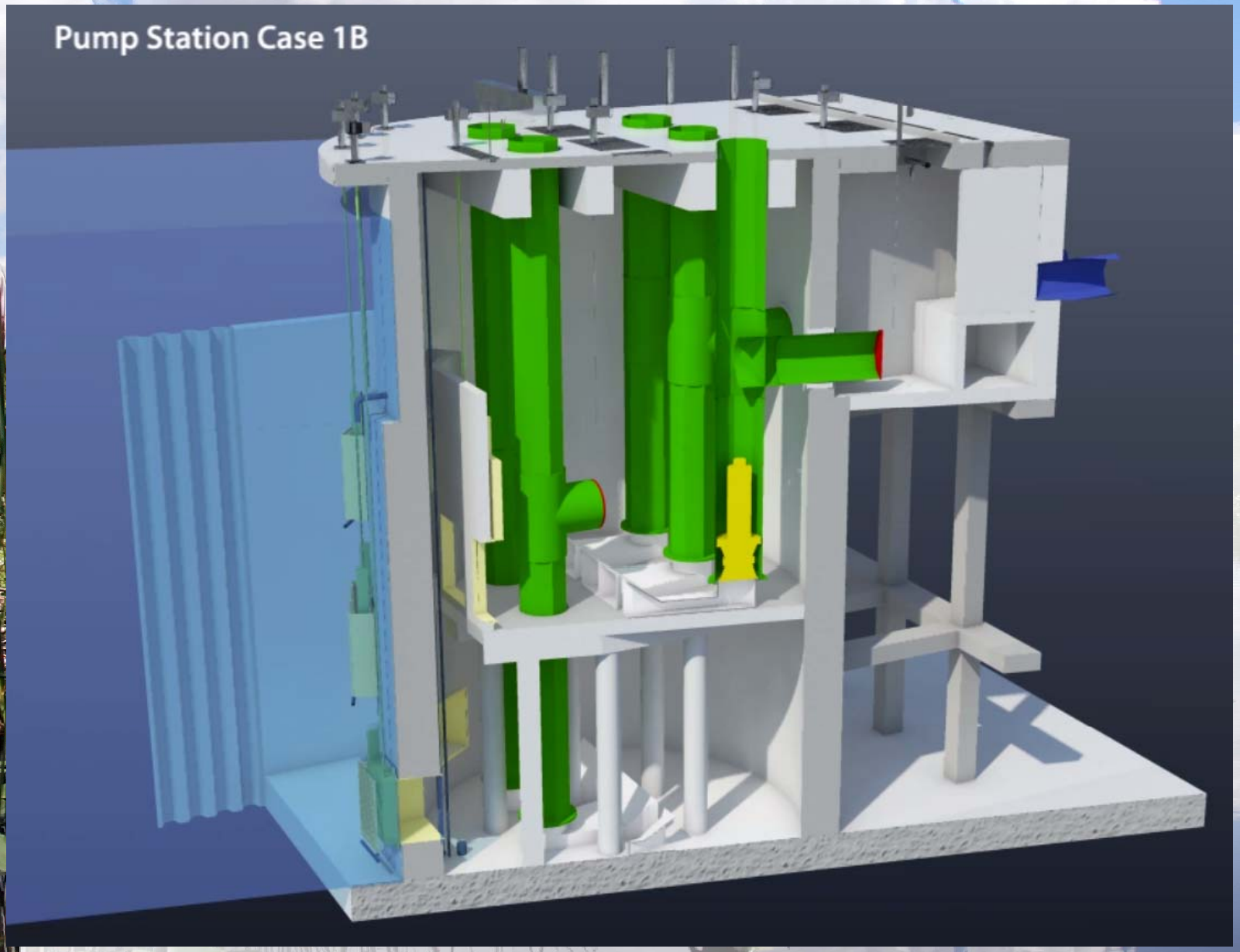
Pump Station Case 1B

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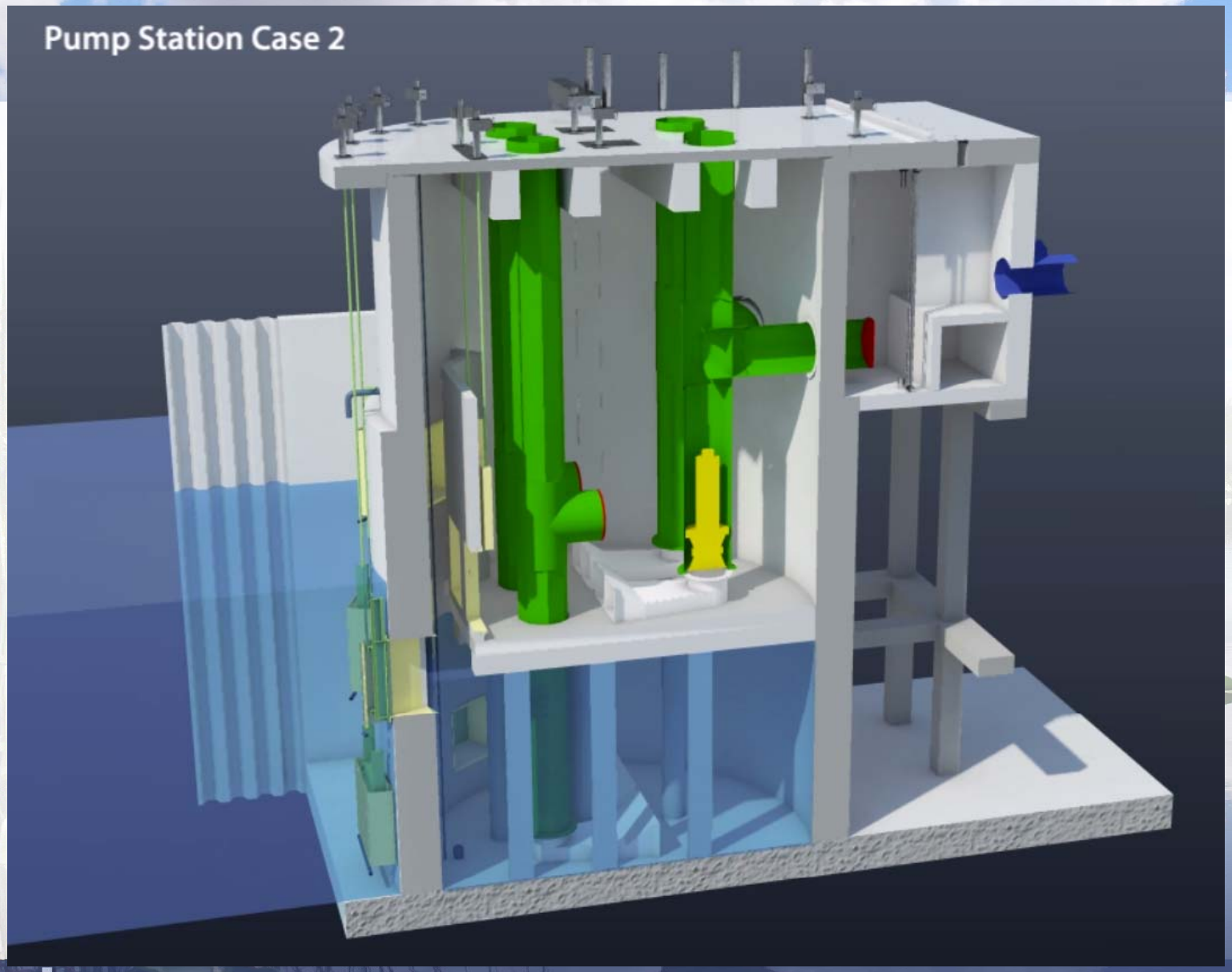

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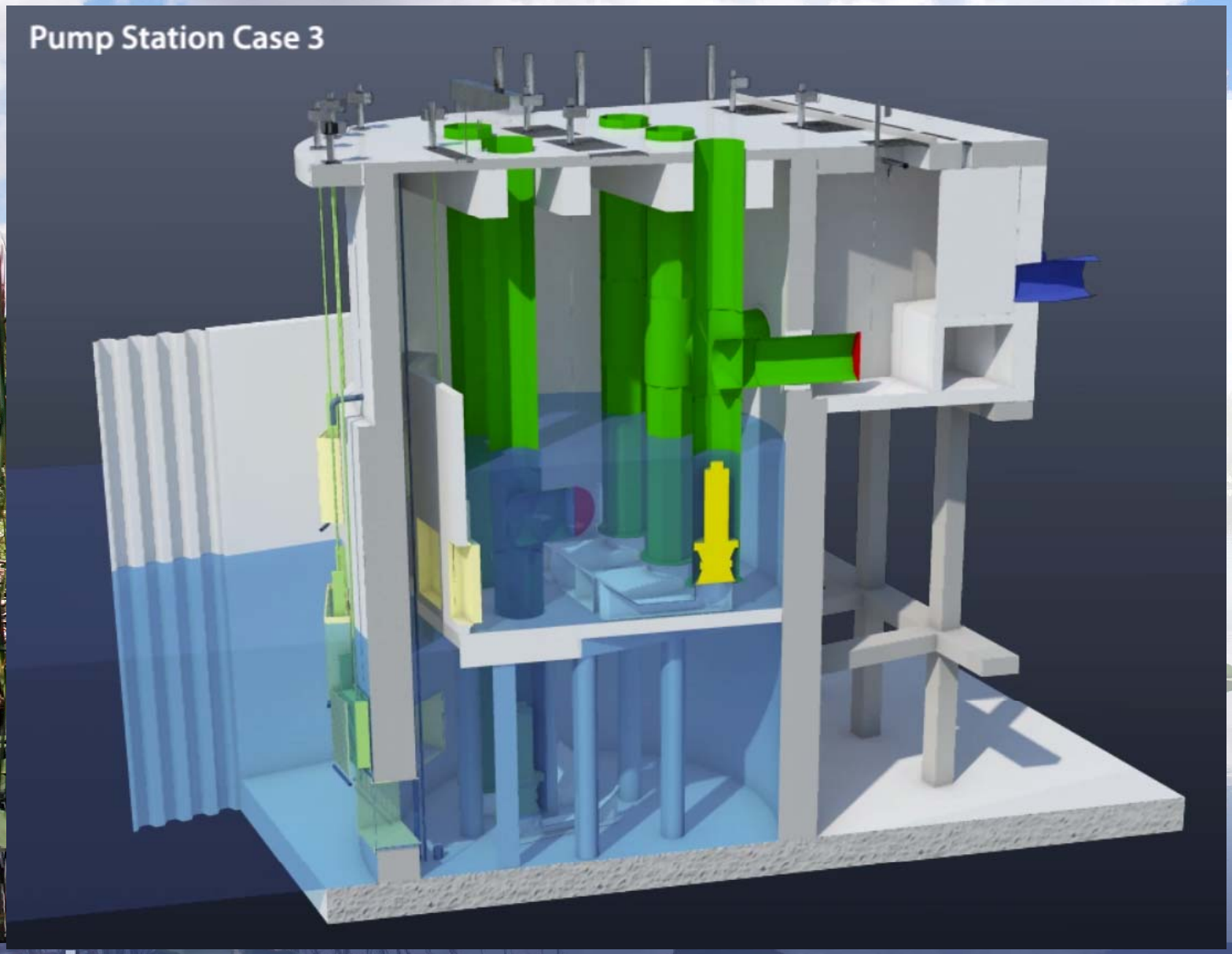

# Design/Build Schedule

- Governing Board – September 13, 2012
- NTP – October 15, 2012
- Preliminary Design (Revetment) – December 5, 2012
- Preliminary Design (Pump Station and Inflow) – Jan. 29, 2013
- Final Design (Revetment) – January 31, 2013
- Final Design (Pump Station) – May 29, 2013
- Final Design (Inflow) – June 17, 2013
- Revetment Construction Starts – March 15, 2012
- Substantial Completion – April 18, 2015
- Final Completion – October 15, 2015

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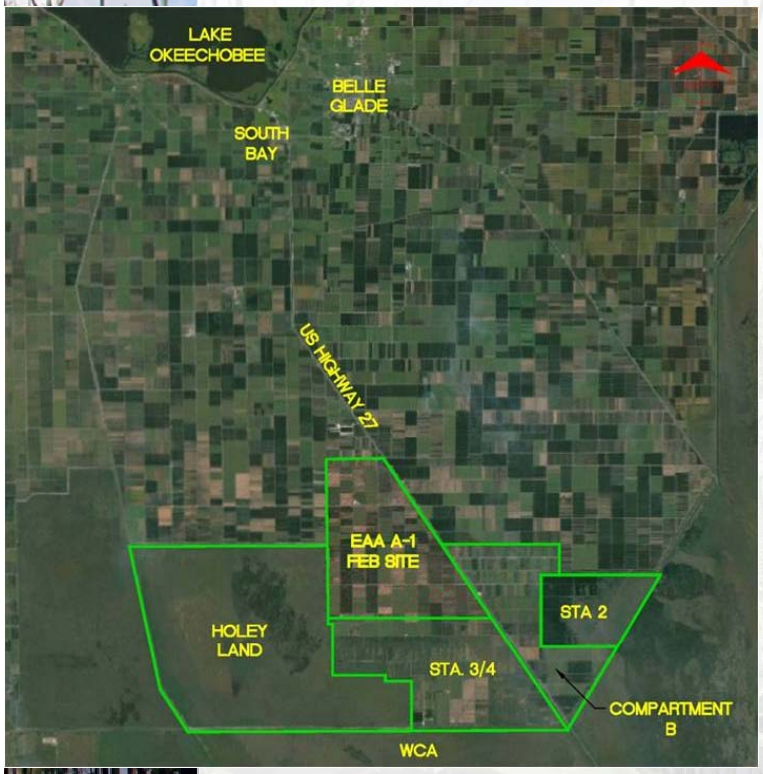
# Quarterly Communications Meeting on the Long-Term Plan for Achieving Water Quality Goals for the Everglades Protection Area Tributary Basins

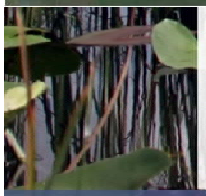
## A-1 Flow Equalization Basin (FEB)

November 28, 2012

*John Mitnik, P.E., Section Administrator*
*Engineering and Construction Bureau*

# A-1 FEB – Location and Existing Conditions

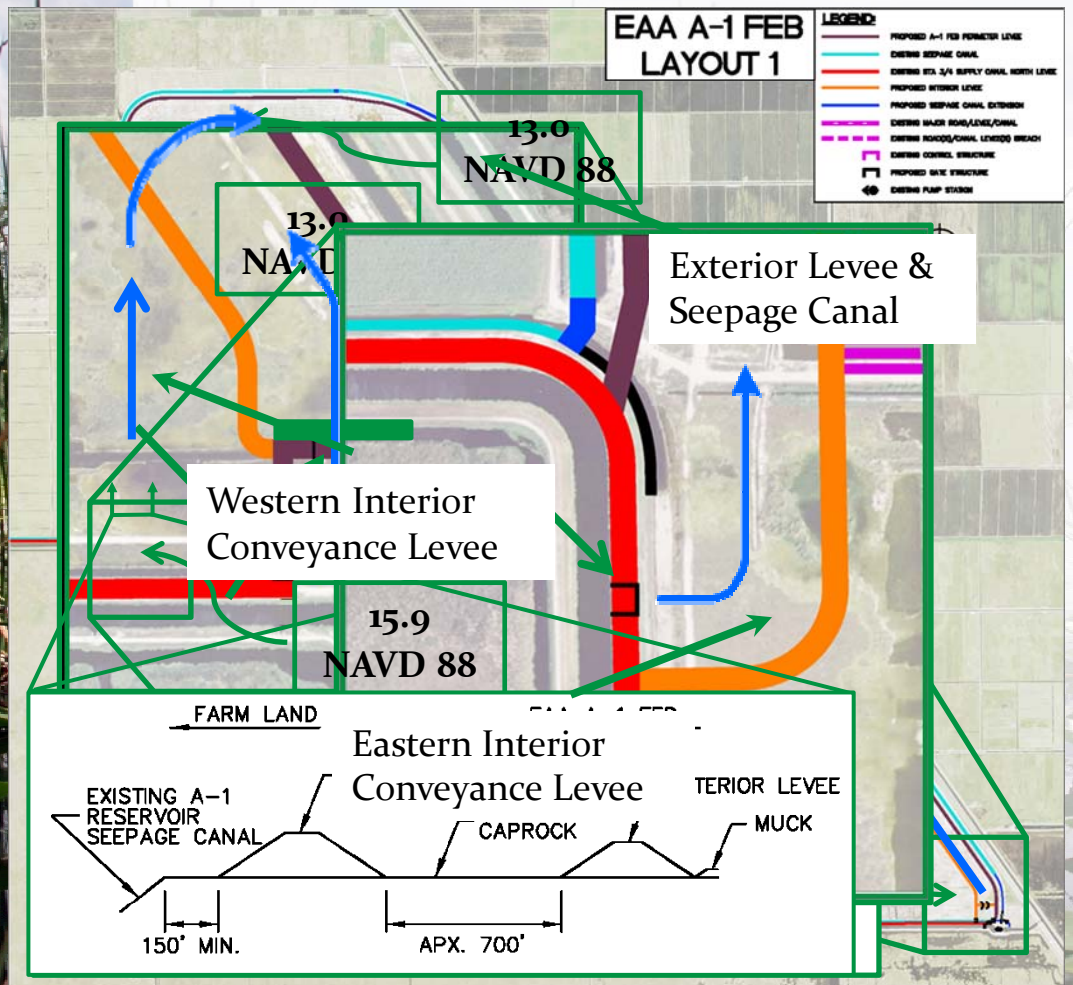


# Basis and Purpose

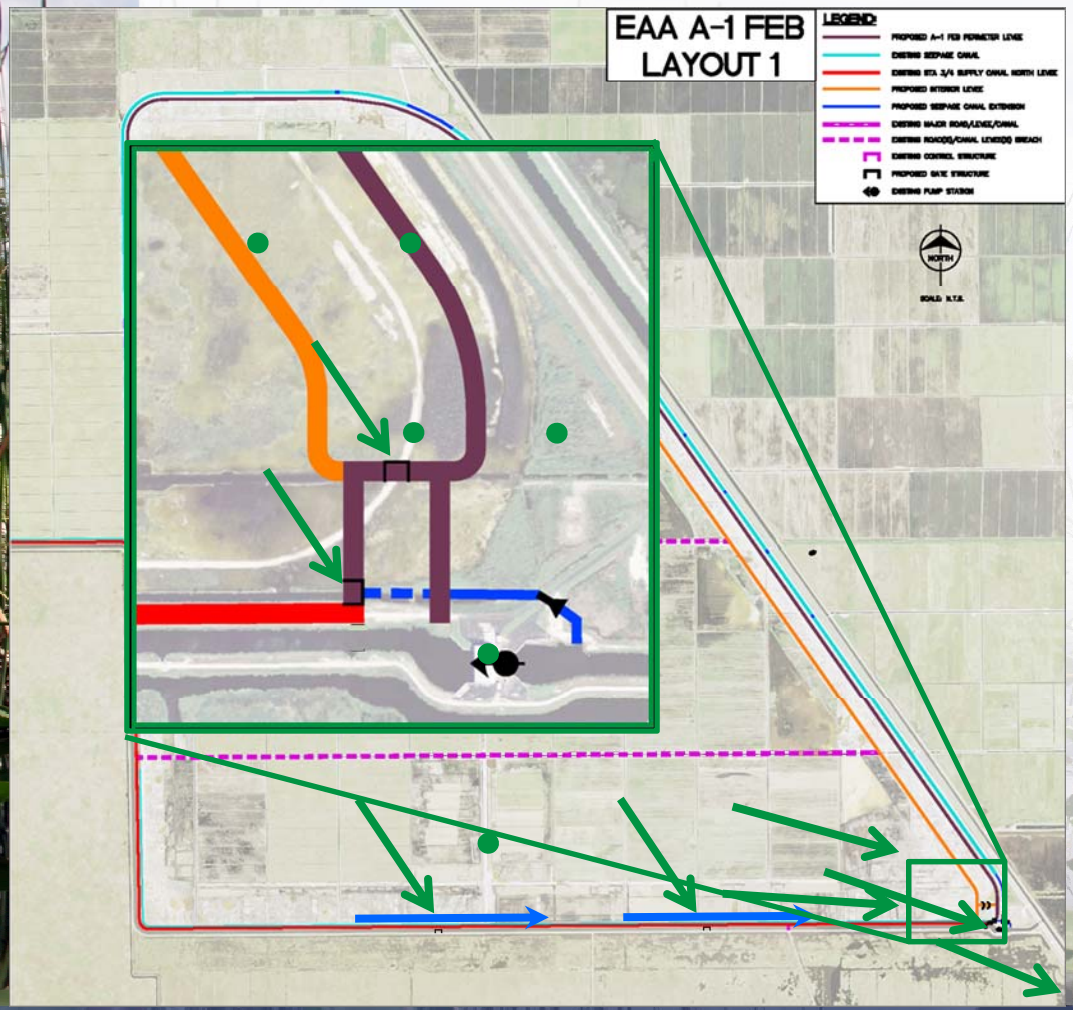
The A-1 FEB project is a part of the overall Everglades restoration effort and specifically is designed to support the operations of STA-3/4 and STA-2/Compartment B. The A-1 Flow Equalization Basin (FEB) will be an approximately 15,000 acre basin that will be utilized to attenuate peak storm water runoff flows being delivered to the STA-3/4 and STA-2/Compartment B from the North New River Canal (NNRC) and the Miami Canal. The objective of the Project is to temporarily detain up to 60,000 ac-ft of these excessive flows within the FEB for release to STA-3/4 and STA-2/Compartment B at an ideal rate once the peak runoff flows have subsided in the NNRC.

# Proposed Layout (Inflow)




- Inflow from G-370
  - Control Structure G-13 (3 barrel 10 feet wide by 10 feet high gated box culvert) is Closed.
  - Control Structure G-15 (3 bay 20 feet wide by 9.5 feet high gated spillway inflow structure) Opens
  - 2,340 cfs Conveyed North
  - Inflow Stage Elevation = 14.8ft NAVD 88
  - North Stage Elevation = 13.0ft NAVD 88
- Inflow from G-372
  - Control Structure G-11 (4 bay 20 feet wide by 9.5 feet high gated spillway inflow structure) Opens
  - 3,120 cfs Conveyed North
  - Inflow Stage Elevation = 15.9ft NAVD 88
  - North Stage Elevation = 13.0ft NAVD 88

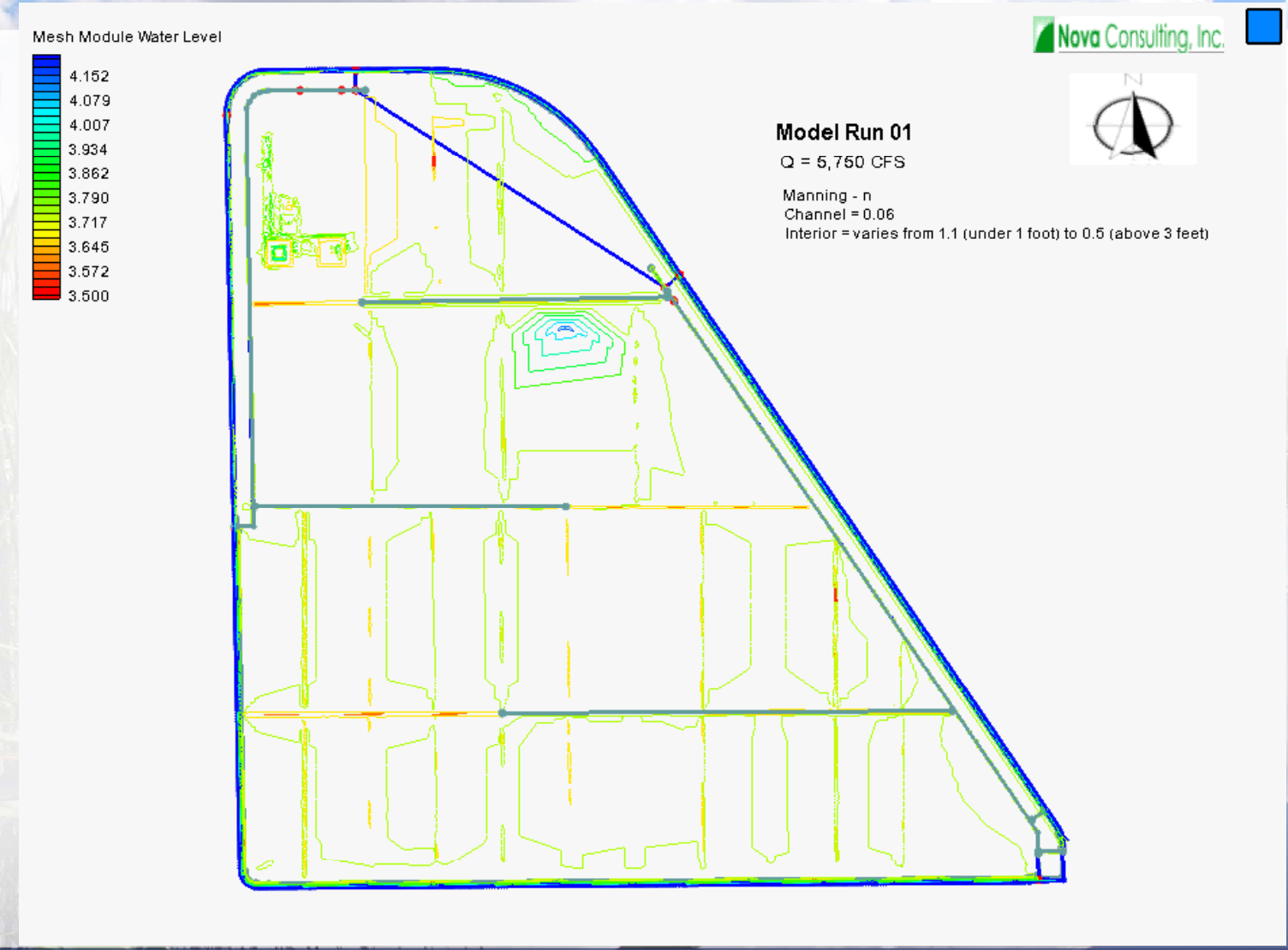
# Proposed Layout (Outflow)




- Internal Flow
  - Existing Road/Levee degraded to approximately 0.5 feet above adjacent grade
  - Plug Existing Agricultural Canals
- Outflow through Southeast
  - Control Structure G-15 already closed
  - Control Structure G-13 opens
  - Pump Station G-370, G-434 and/or G-435, Start
- Outflow Conveyed by Improved STA 3/4 Supply Canal North Seepage Canal
- Gravity Outflow to STA 3/4
- Outflow Range: Maximum of 2000cfs

# G-370 Pump Station

# Stage vs. Time



# A-1 FEB

- Design and Construction Schedule:
  - Preliminary Design – Completed
  - Intermediate Design Submittal – February 4, 2013
  - Final Design Submittal – May 6, 2013
  - Final Design TRB – June 6, 2013
  - Corrected Final/RTA Design Submittal – July 22, 2013
  - Governing Board – October 2013
  - NTP – November 1, 2013
  - Substantial Completion – December 31, 2014
  - Final Completion – March 31, 2015

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

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

## L-8 Divide Structure

November 28, 2012

*John Mitnik, P.E., Section Administrator*
*Engineering and Construction Bureau*

# L-8 Divide Structure

This project includes the design and construction of an automated water control structure located within the L-8 Borrow Canal. The structure will be designed to allow current operational criteria for flows within the L-8 Borrow Canal, while facilitating flows from the STA-1 Inflow Basin into the L-8 FEB. The structure will also be used to allow flows to be directed south from the L-8 FEB into the STA-1 Inflow Basin.

## Project Status:

- **Design has commenced**
  - **Hydrographic & topographic survey underway – 26 miles of L-8 cross sections**
  - **Hydrologic & Hydraulic modeling efforts underway for structure design**
  - **Geotechnical survey has been initiated for structure subsurface and seepage analysis**
- **Preliminary design due - July 2013**
- **Final design package due - February 2014**
- **Notice to Proceed – June 2014**
- **Project Substantial Completion – November 2015**
- **Project Final Acceptance – January 2016**

# Questions?