

L-8 Background and Potential Connection to West Leg of C-18 Canal



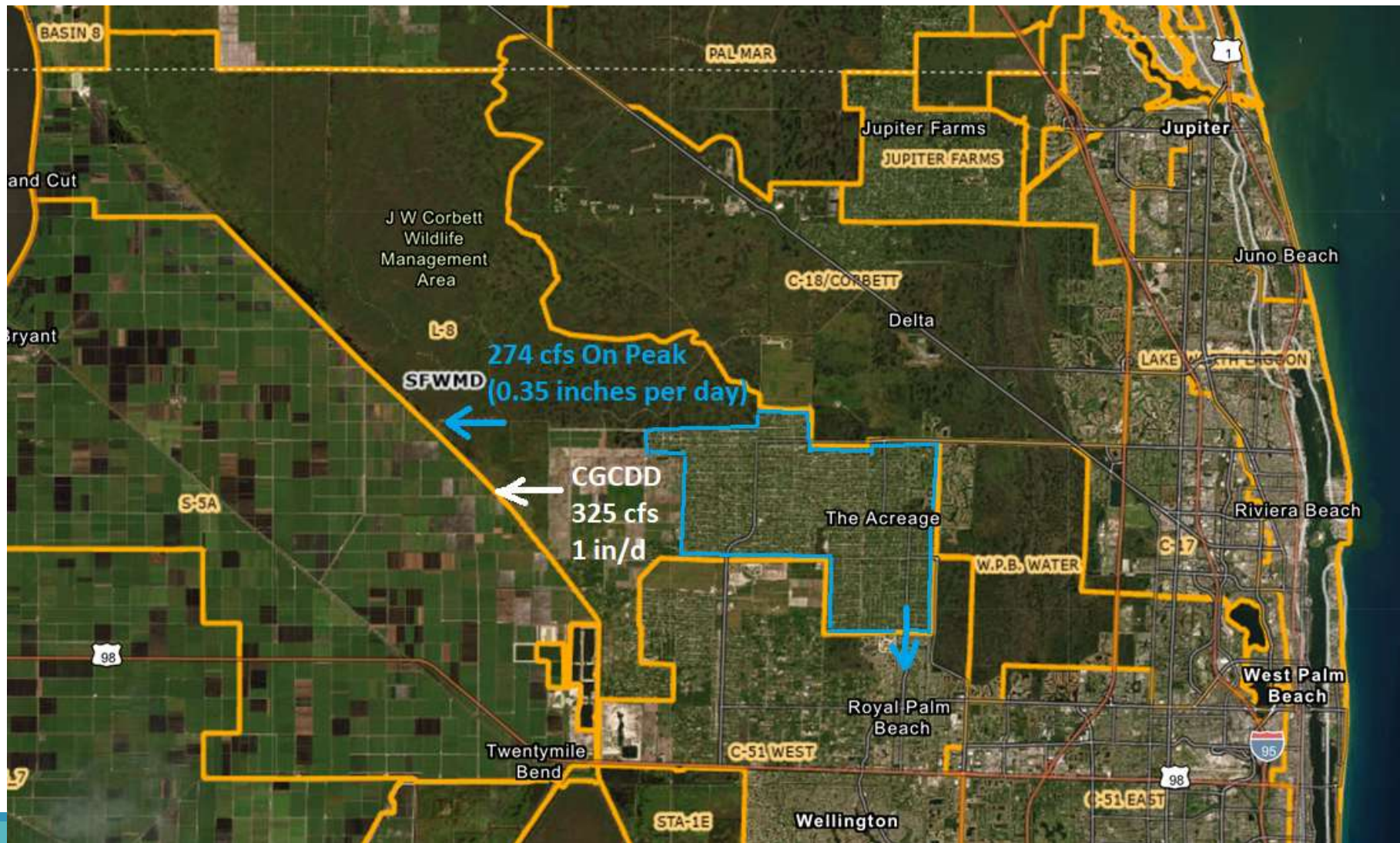
WATER RESOURCES TASK FORCE MEETING
AUGUST 15, 2024

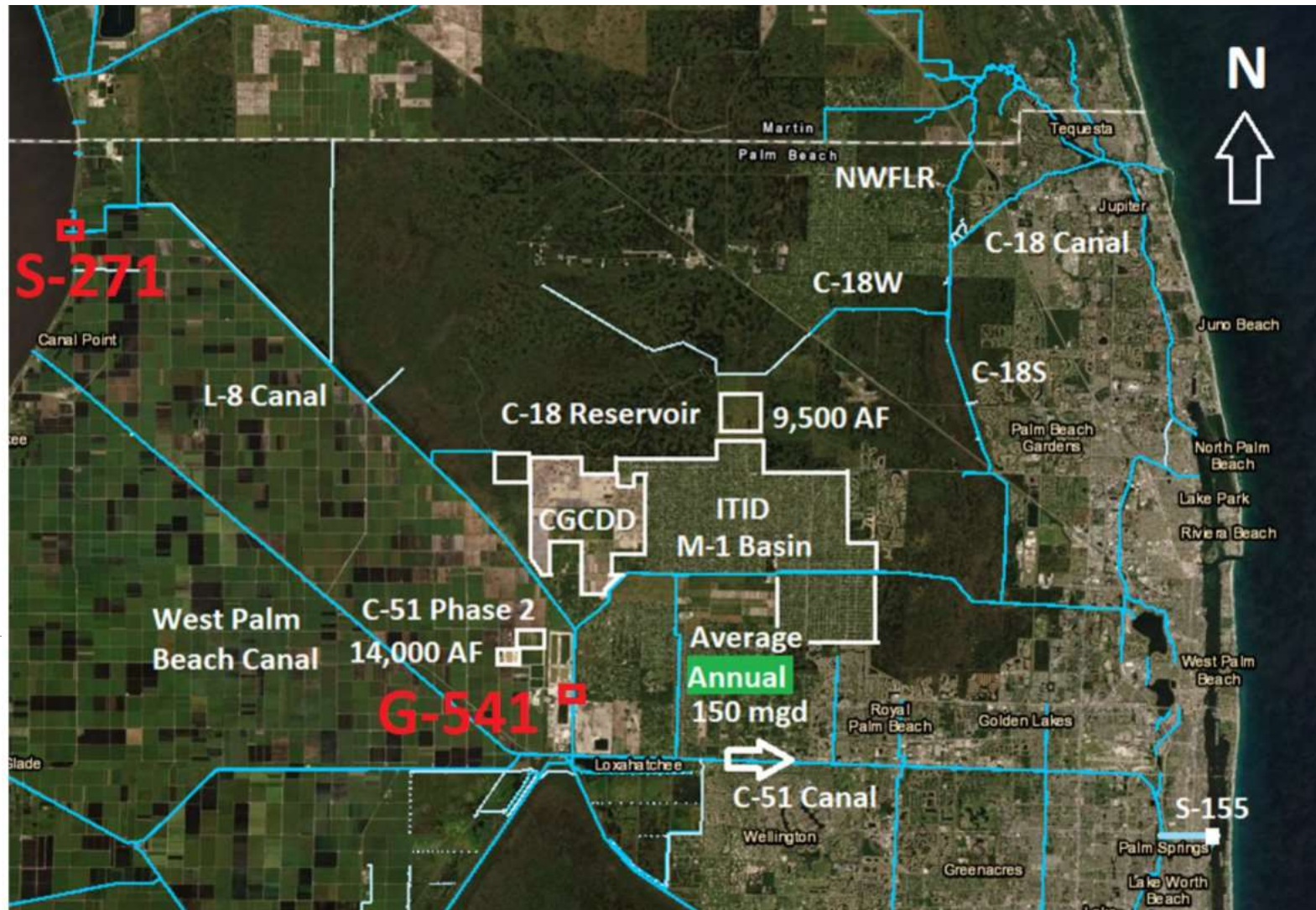
Paul Linton, PE, PBC Water Resources Manager

L-8 Basin Background

Description of Drainage Area and challenges

Description of Water Supply Demands and Routes





L-8 Basin Drainage Area

The L-8 Basin receives excess water from CGCDD, ITID, J.W. Corbett WMA, Dupuis Wildlife Preserves, EAA (4,640 acres of the Bourne Two Area), and the White Fences and Deer Run Developments. With resolution of the pump station issues for White Fences, CGCDD and ITID are the most impacted by high water in the L-8 Canal.

L-8 Basin Drainage Area


Total Area on the order of 171.2 square miles (109,568 acres). J. W. Corbett WMA and Dupuis Wildlife Preserve make up about 62,600 acres. Using a drainage rate of 0.25 inches per day these areas generate about 660 cfs.

Using an average of 0.75 inches per day for the remaining 46,968 acres the discharge is 1,479 cfs. The 46,968 acres includes ITID and CGCDD.

These flows total about 2,139 cfs. This number is an order of magnitude estimate (some flows are throttled by hydraulics).

L-8 Basin Water Supply

The maximum monthly water supply demands from Lake Okeechobee through the L-8 Canal are about:

- 140 cfs for City of West Palm Beach (CWPB)
 - 50 cfs for Cypress Grove Community Development District
 - 0 to 100 cfs Lake Worth Drainage District (alternative route)
 - Everglades Agriculture Area irrigation
- 



L-8 Basin Water Supply Issues

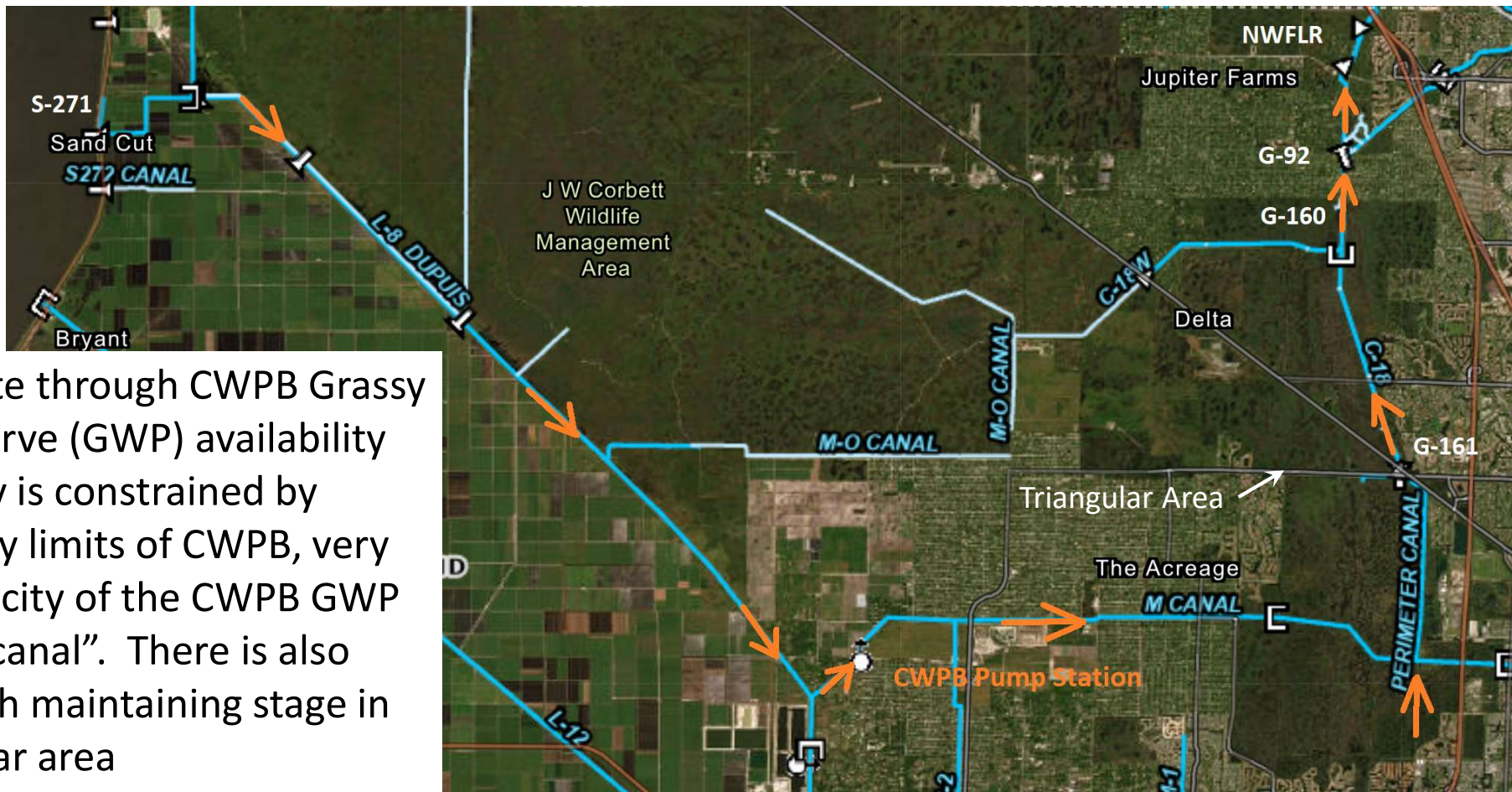
Currently during extended dry periods the ordinary source of water is Lake Okeechobee with the following issues:

- The ~23 miles of the L-8 Canal is a borrow canal with limited capacity.
- Water quality of Lake Okeechobee varies considerably with suspended solids and algae complicating water supply
- CWPB is much more vulnerable to turbidity and algae than the agricultural users.
- Chloride contents rises during low water conditions

Existing and Potential Routes from L-8 Basin to Northwest Fork of the Loxahatchee River (NWFLR)



Existing Route from L-8 Canal to NWFLR



Existing route through CWPB Grassy Water Preserve (GWP) availability and capacity is constrained by water quality limits of CWPB, very limited capacity of the CWPB GWP perimeter "canal". There is also conflicts with maintaining stage in the triangular area

Authorized Plan: Alt 5R

Flow Way 3

- 1 - Kitching Creek
- 2 - Moonshine Creek/Gulfstream East
- 3 - Cypress Creek Canal
- 4 - Gulfstream West
- 5 - Palmar East

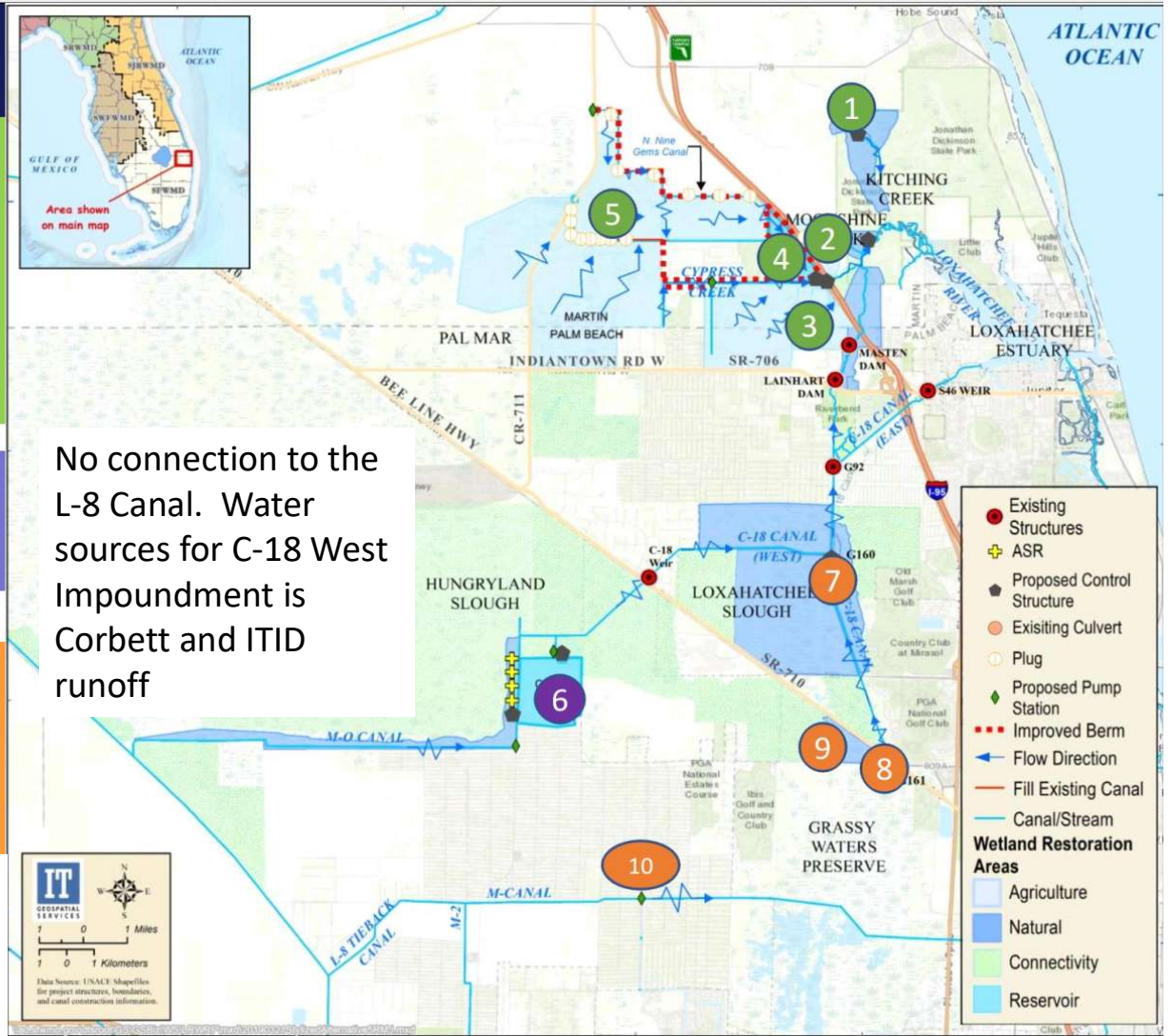
Flow Way 2

- 6 - C-18W Impoundment (9,500 ac/ft & 4 ASR wells)

Flow Way 1

- 7 - G-160 Structure
- 8 - G-161 Structure
- 9 - Grassy Waters Triangle
- 10 - M-1 Pump Station

No connection to the L-8 Canal. Water sources for C-18 West Impoundment is Corbett and ITID runoff



Routes Identified by the CERP Loxahatchee River Watershed Restoration Project (LRWRP)

Interim Routes Before Completion of C-18 West Reservoir

As will be seen from the following figures there is very limited capacity to move water north in ITID canals north of Northlake BLVD.

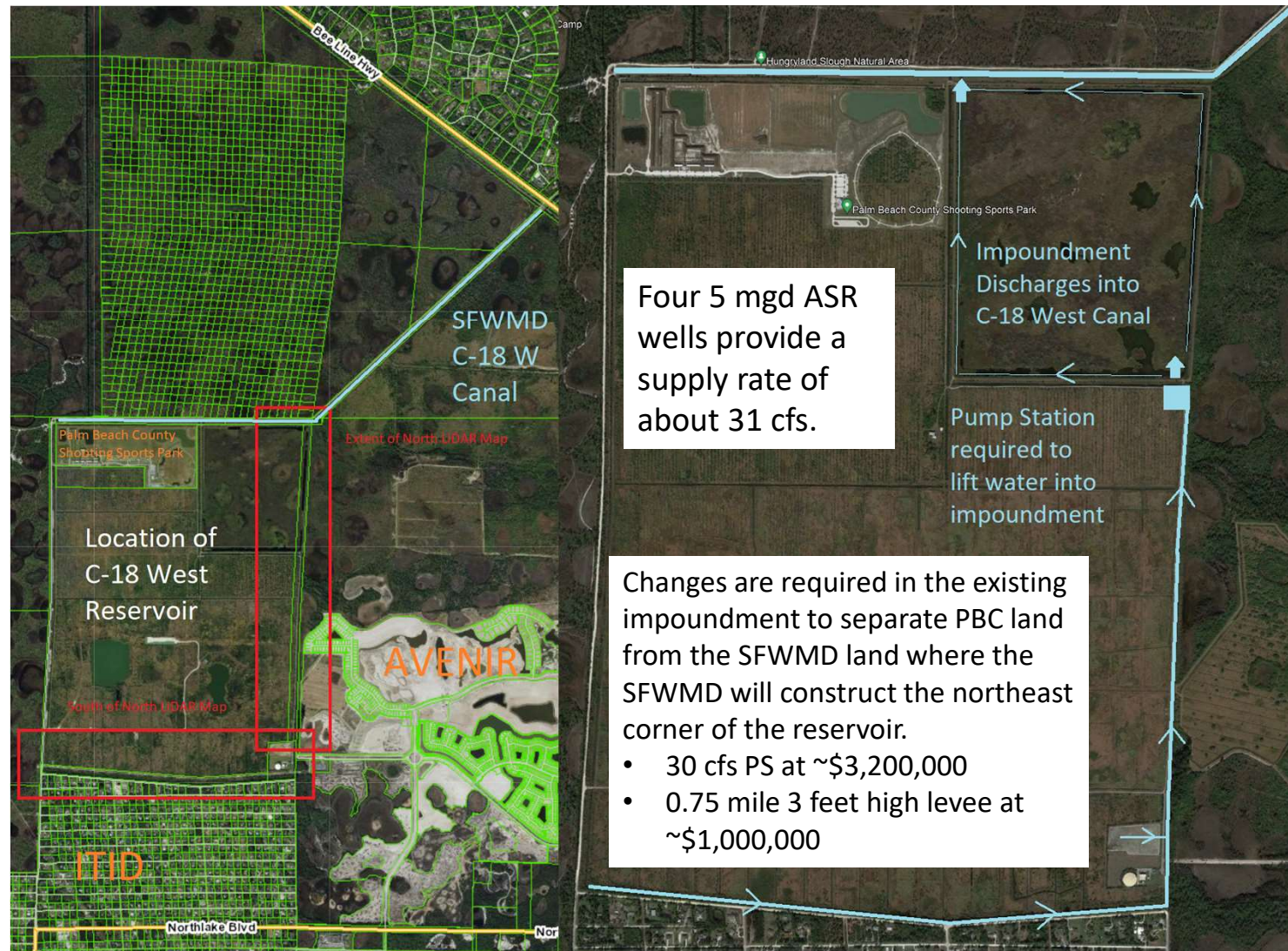
Once the C-101W is constructed it provides a path connected to ITID's larger canals

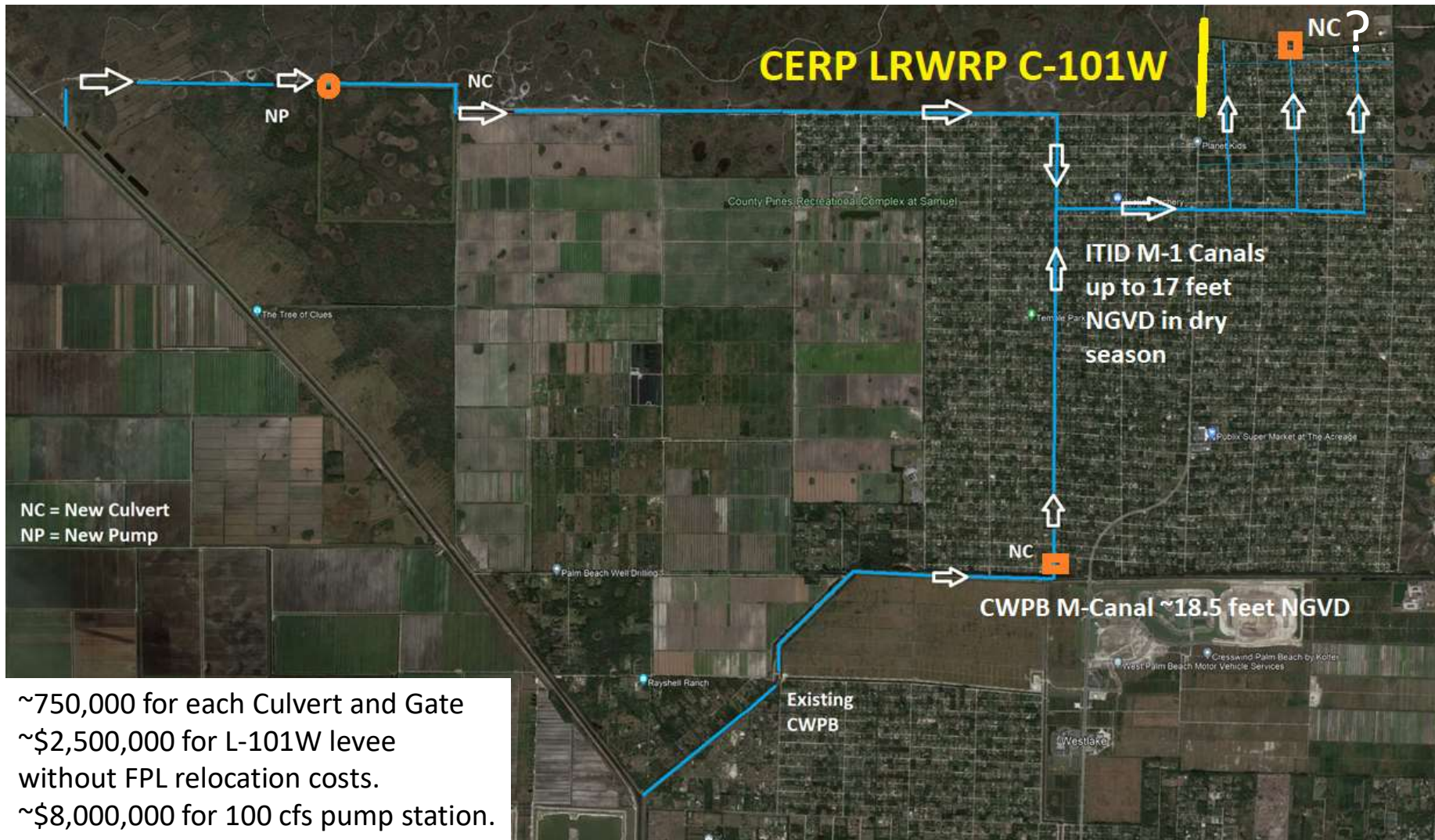
(FYI it would take 100 cfs about 2 weeks to raise the upper M-1 Basin one foot)

Route through Mecca Farms

PBC owns land along the south and east side of what was Mecca Farms and will be the C-18W Reservoir

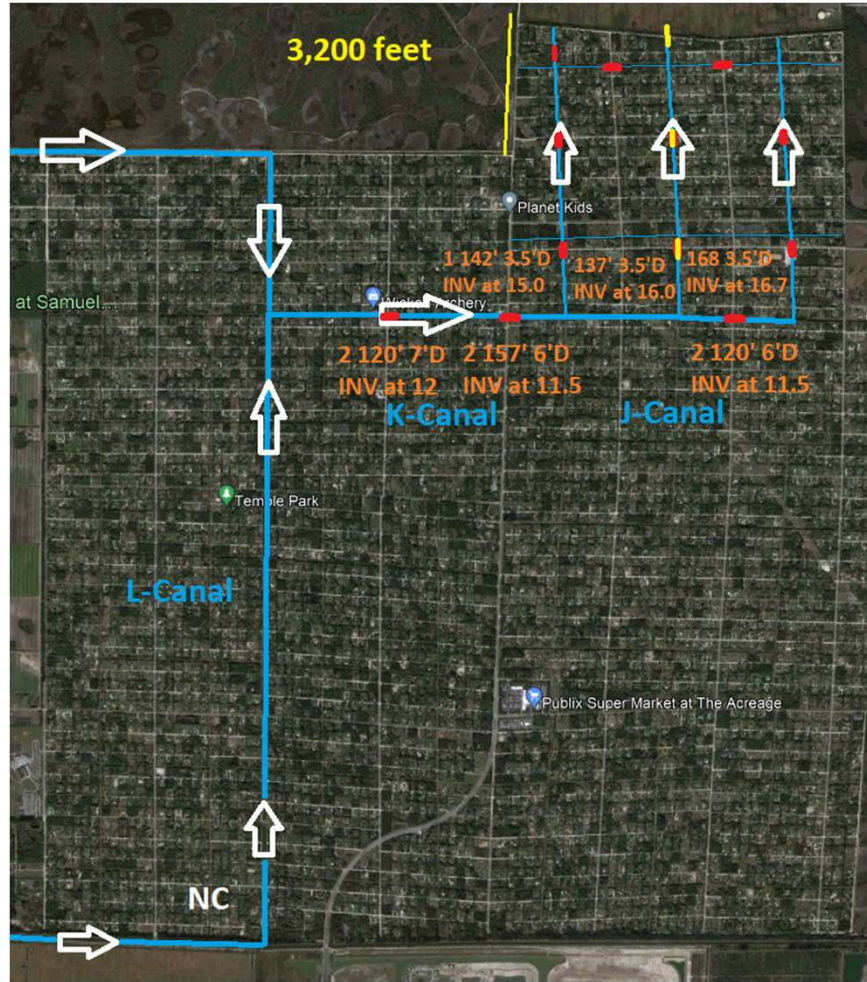
There is an existing canal and pump station within PBC land that can convey water from the southeast corner of this parcel to the West Leg of the C-18 Canal.





X

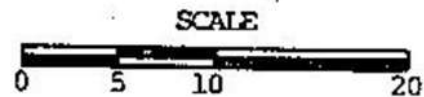
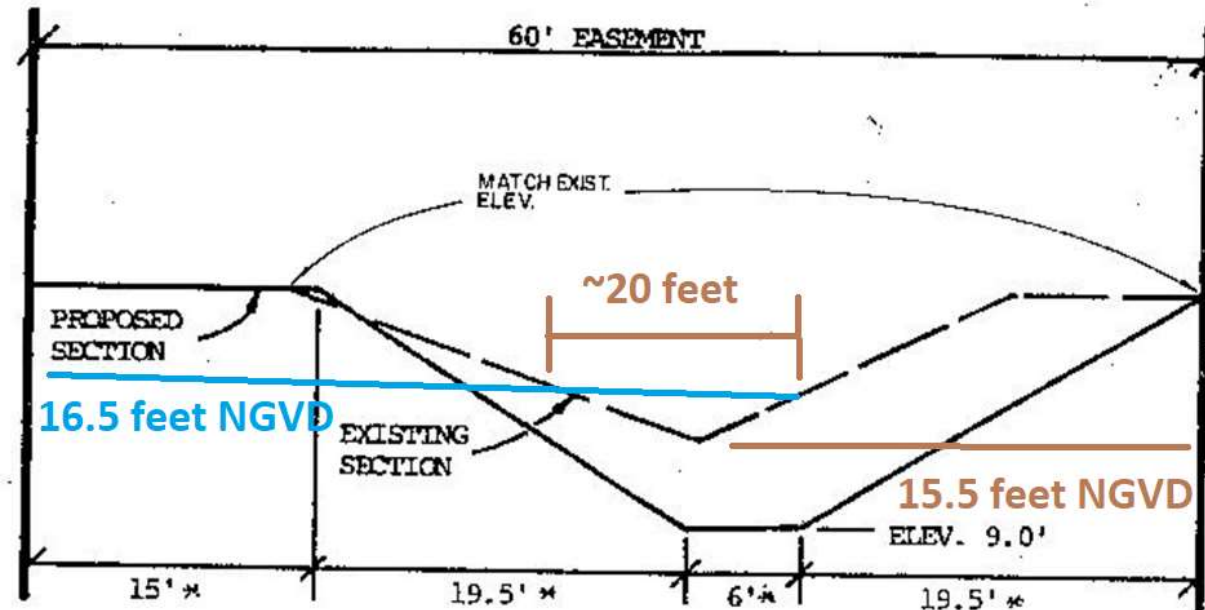
X



Route through Existing ITID Canals

Very limited capacity through ITID existing canals north of North Lake BLVD. Flow of 10 to 30 cfs using all three canals would require raising and maintaining ITID canal in the 16.5 to 17.0 feet NGVD range.

This can only be done during the dry season.



ALL ELEVATIONS N.G.V.D.
CROSS SECTION LOOKING WEST

**Cross Section Area Available
~ 10 square feet.
~ 10 cfs available capacity**

CROSS SECTION

**CANALS "C", "D", "E", "F", "G", "H", "I", "J", "K"
AND ALL OTHER M-1 BASIN 60' R/W CANALS**

Long Term Changes to ITID system to provide more capacity and two way flow.



Changes

Several changes are required to allow two way flow from the L-8 Canal to the East End of ITID M-0 Canal where the CERP LRWRP can access it. This could include 640 acre expansion of ITID impoundment (not shown)

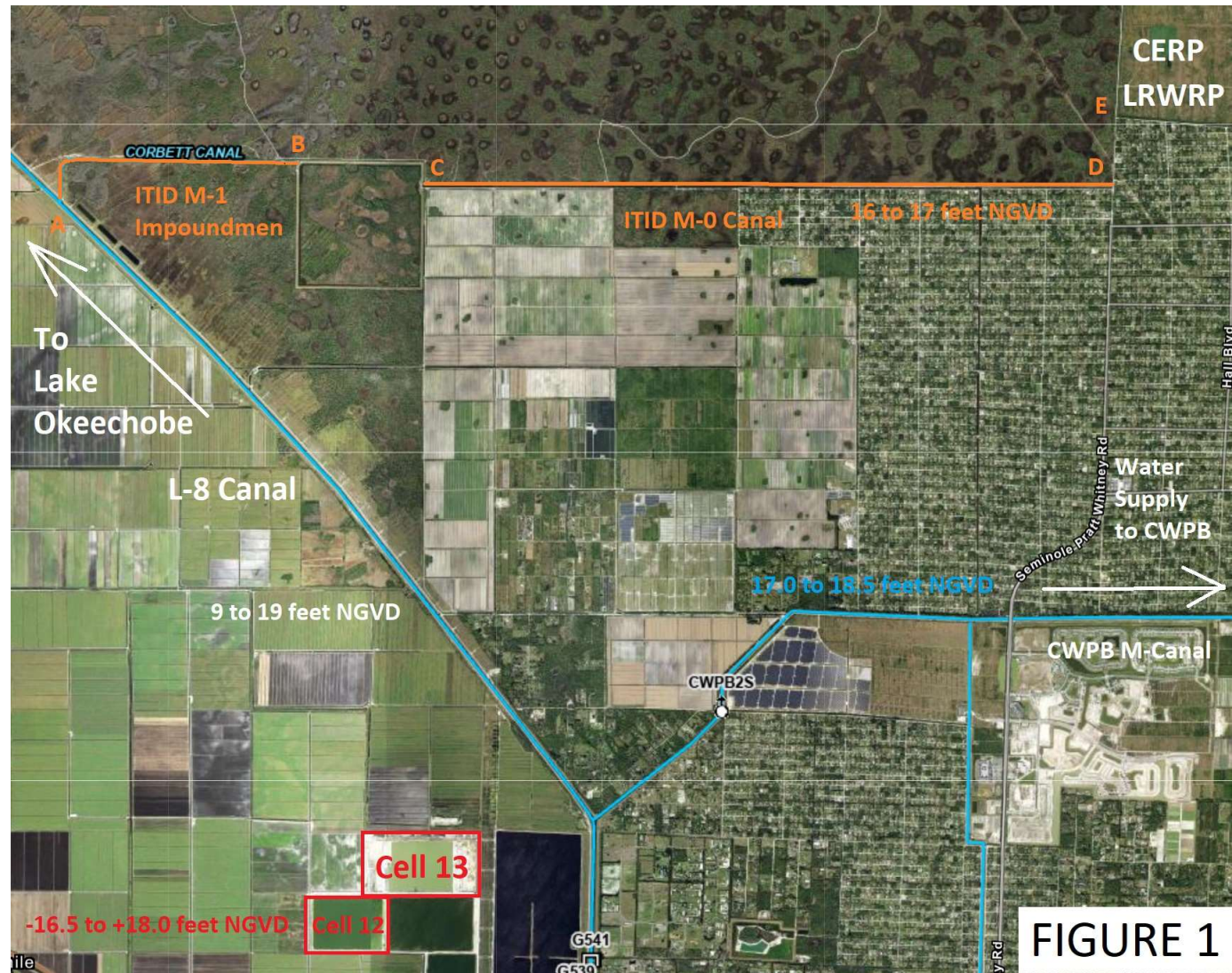






Figure 3

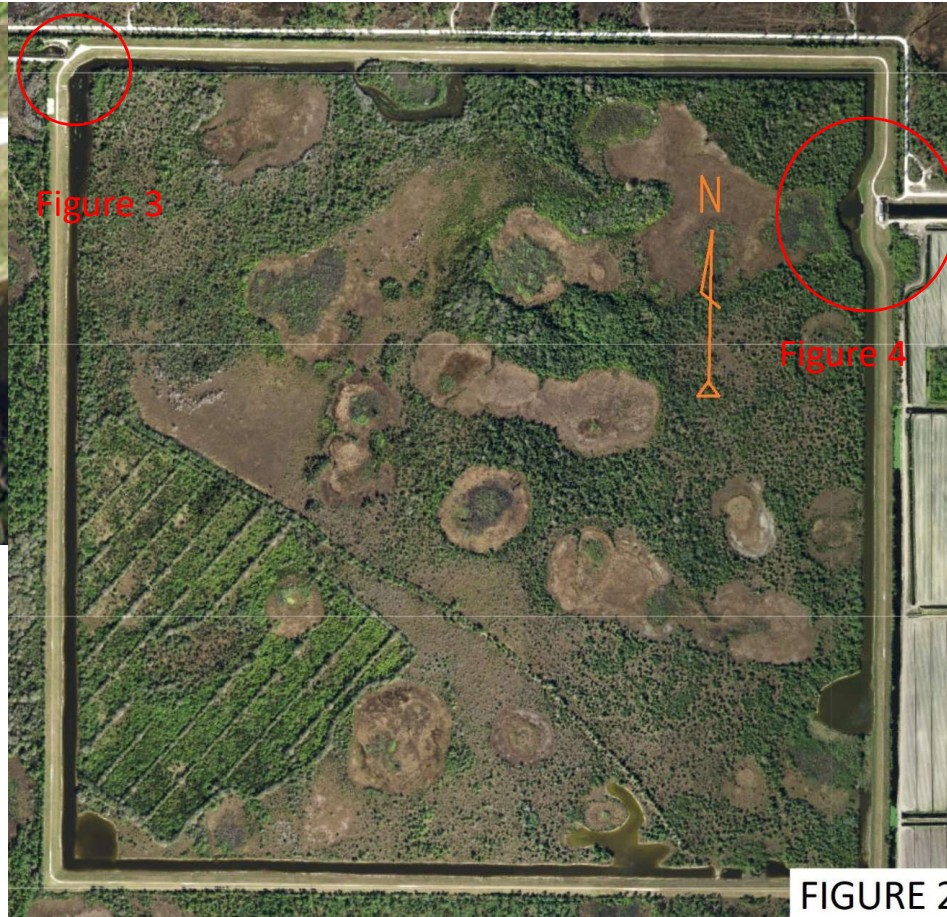


Figure 3

Figure 4

FIGURE 2

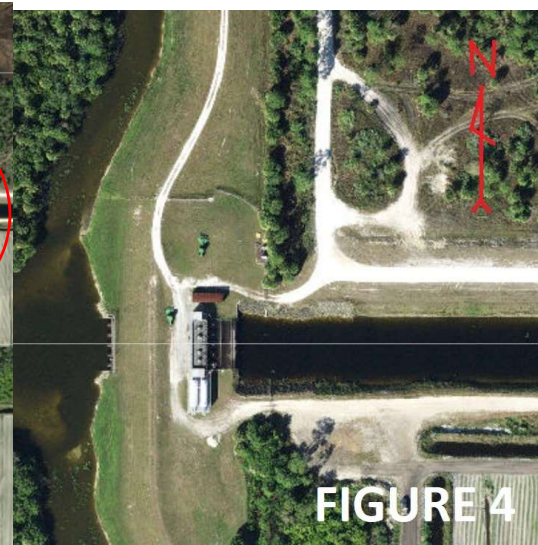
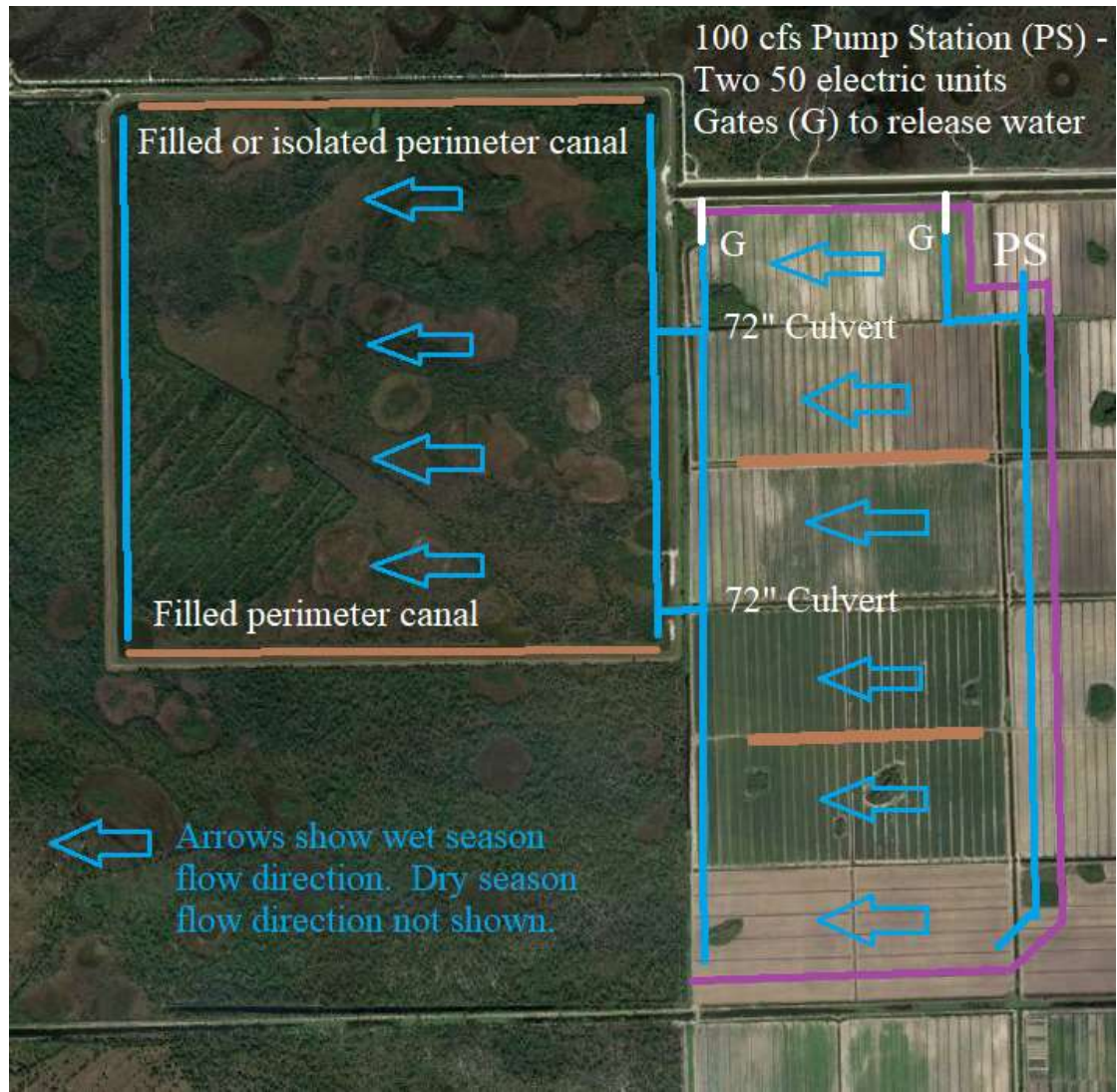


FIGURE 4



Thank You

Questions/Discussion



Photo: Katelyn Cucinotta