
***Using Reclaimed Phosphate Lands for Water
Treatment and Aquifer Recharge
Aquifer Recharge & Recovery Project (ARRP)***



INTECOL 2012 Conference

Orlando, FL

June 5, 2012

ARRP Presentation

- Project Background
- System Description
- Water Quality

ARRP Beginning

- In 2003 CF committed to partner with Hardee County in exploring the feasibility of the development of an alternative water resource on mined and reclaimed lands.
- Project Goal: Store, treat, and recharge between 2 and 4 mgd of water to the Floridan Aquifer.

Project Support

- Hardee County:
 - Approved by County Commissioners in 2003
- Southwest Florida Water Management District:
 - Alternate water supply option identified in Regional Water Supply Plan
- Florida Department of Environmental Protection
 - Has supported the project's aquifer recharge component
- Legislative support:
 - 378.212(g) F.S.
 - 2005 SB 444

2003 Legislation

- Chapter 378.212(g)

To accommodate reclamation that provides water supply development or water resource development not inconsistent with the applicable regional water supply plan approved pursuant to s. 373.0361 provided adverse impacts are not caused to the water resources in the basin. A variance may also be granted from the requirements of part IV of chapter 373, or the rules adopted thereunder, when a project provides an improvement in water availability in the basin and does not cause adverse impacts to water resources in the basin.

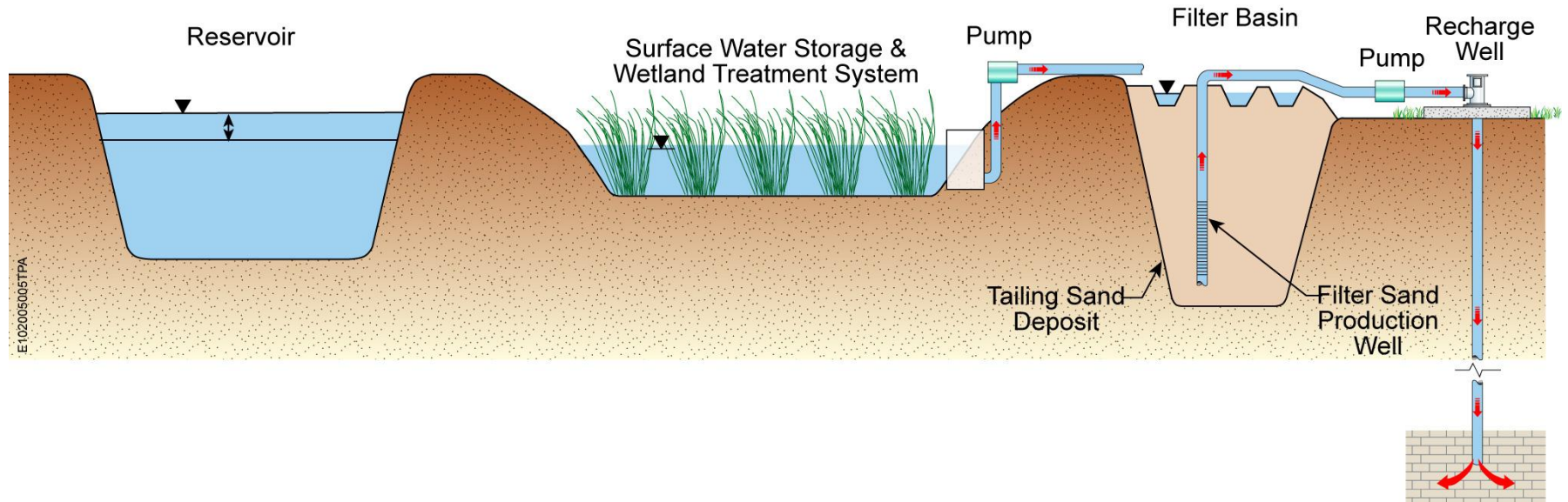
Project Benefits

- Positive impacts to a stressed water resource.
- Provide potential water resource for:
 - Future industrial, commercial, and agricultural ventures in Hardee County
 - Future local or regional water supply utility.

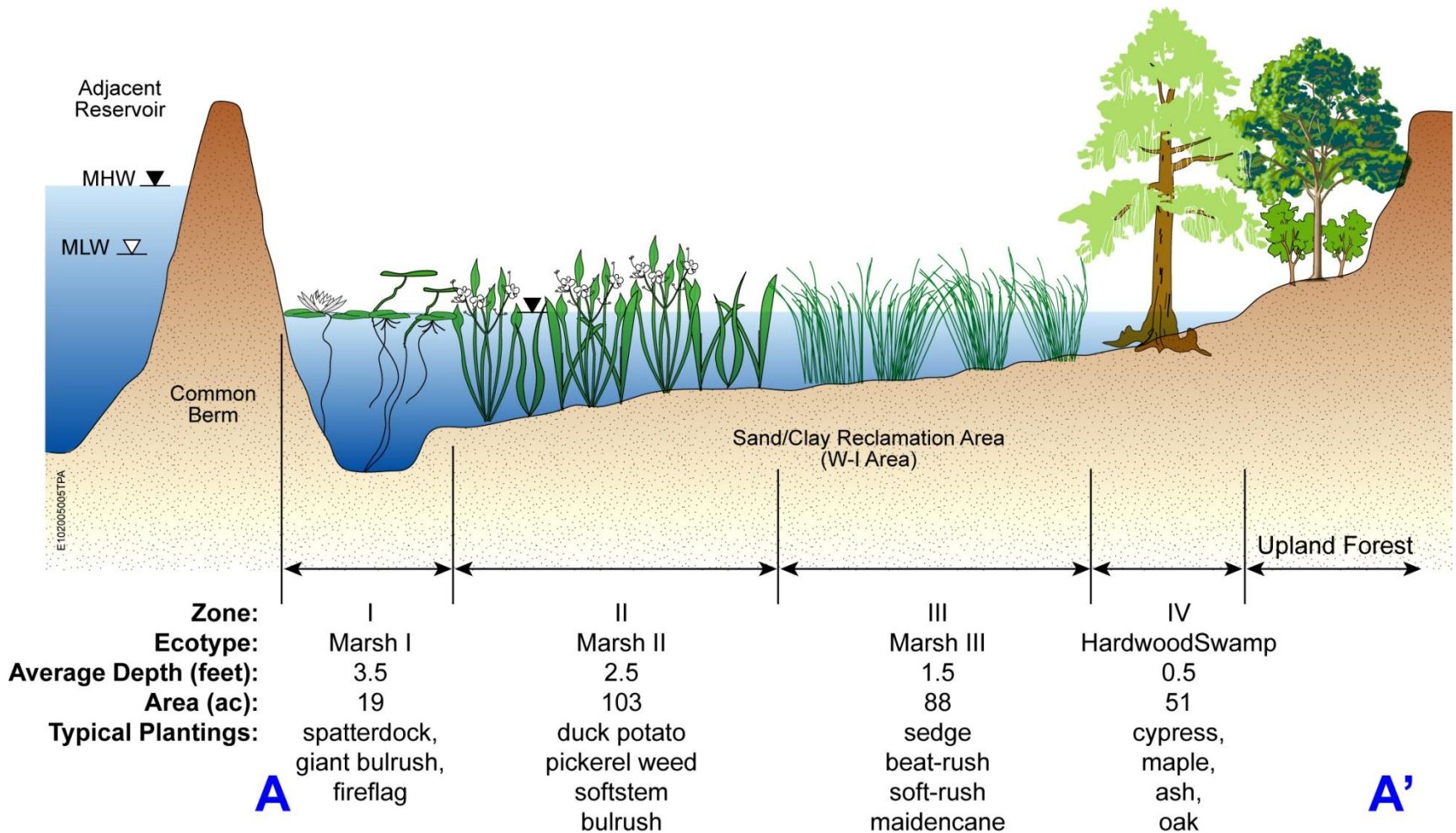
Aquifer Recharge & Recovery Project (ARRP) System



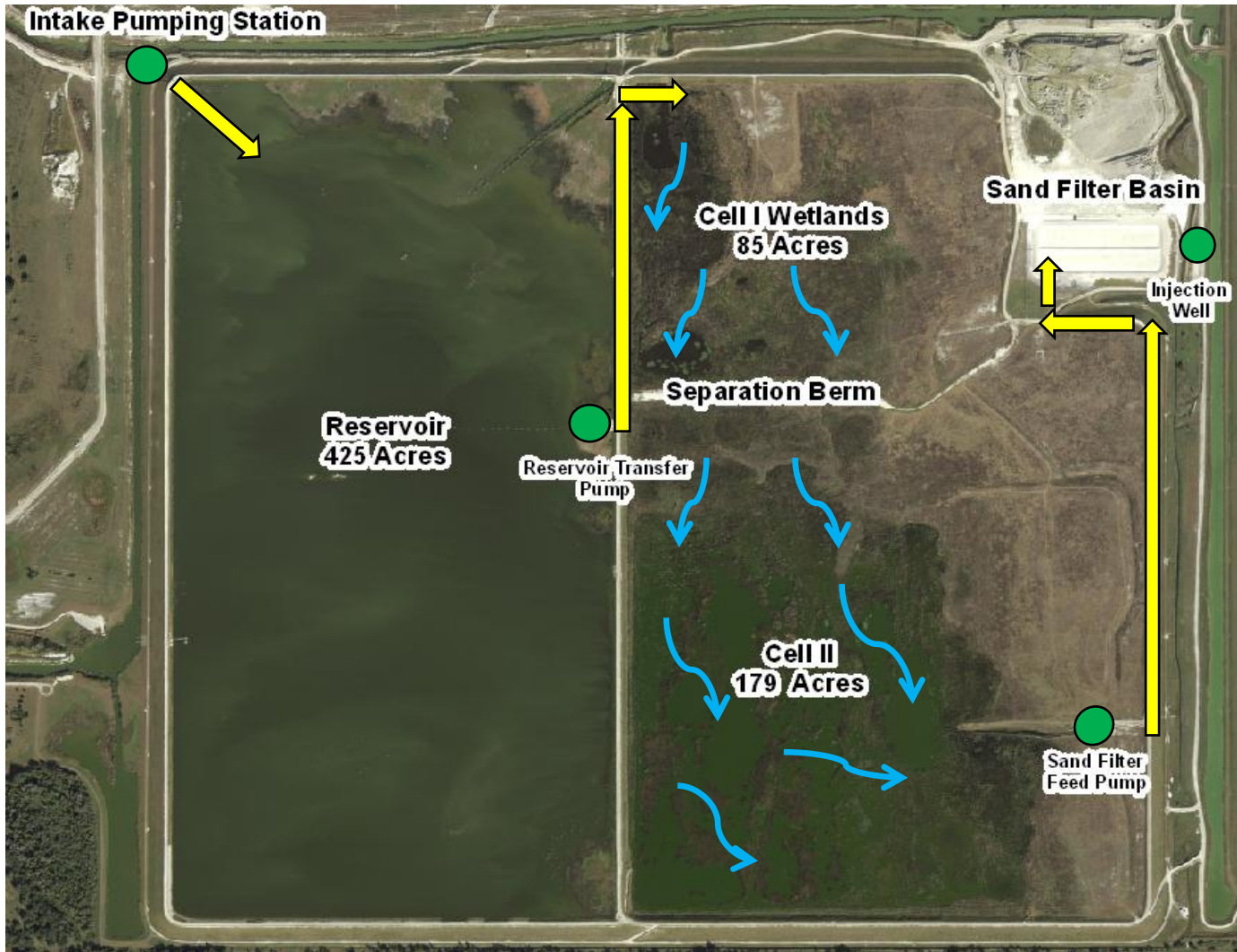
Conceptual Process Diagram



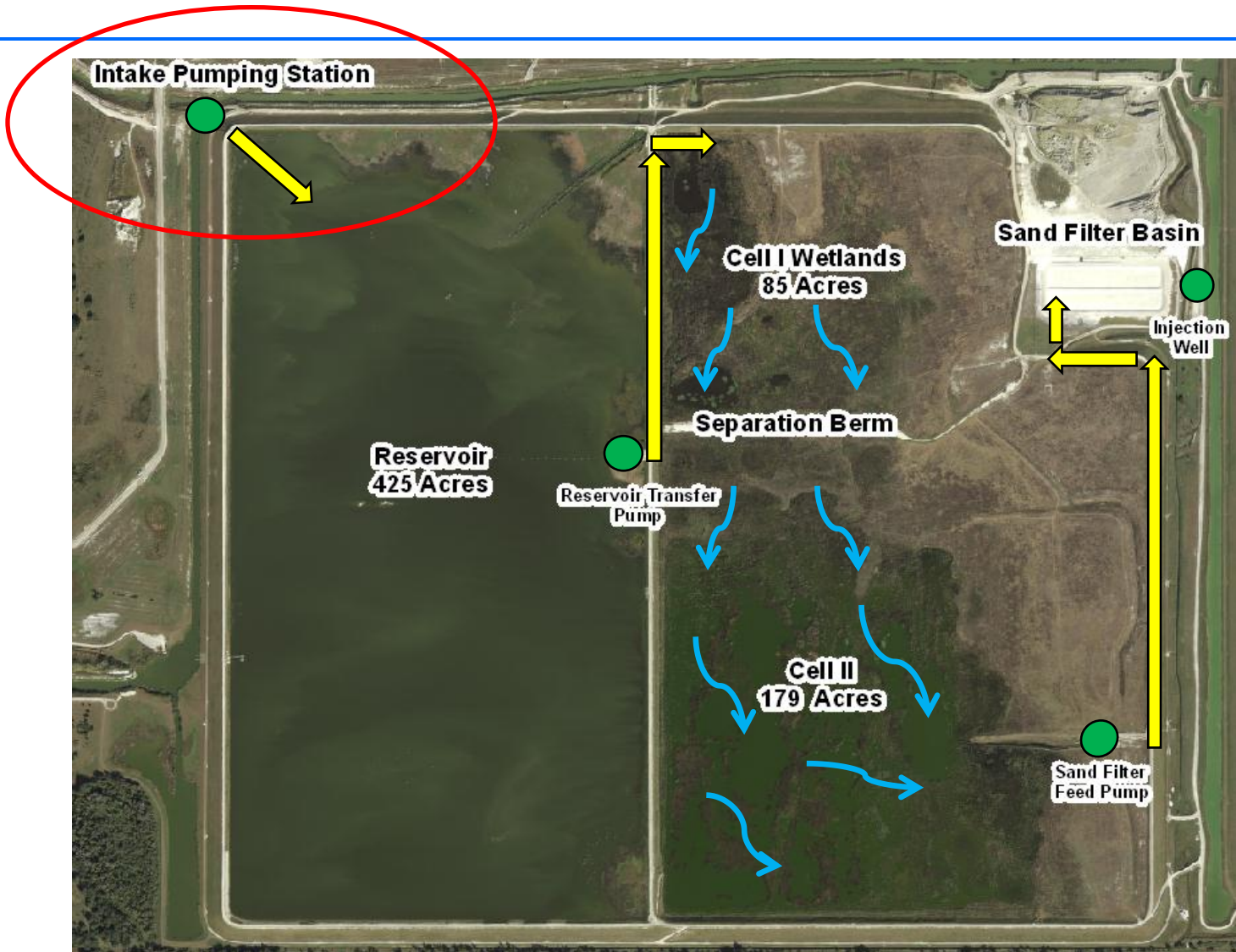
Treatment Wetland Adaptive Design



ARRP Component Layout



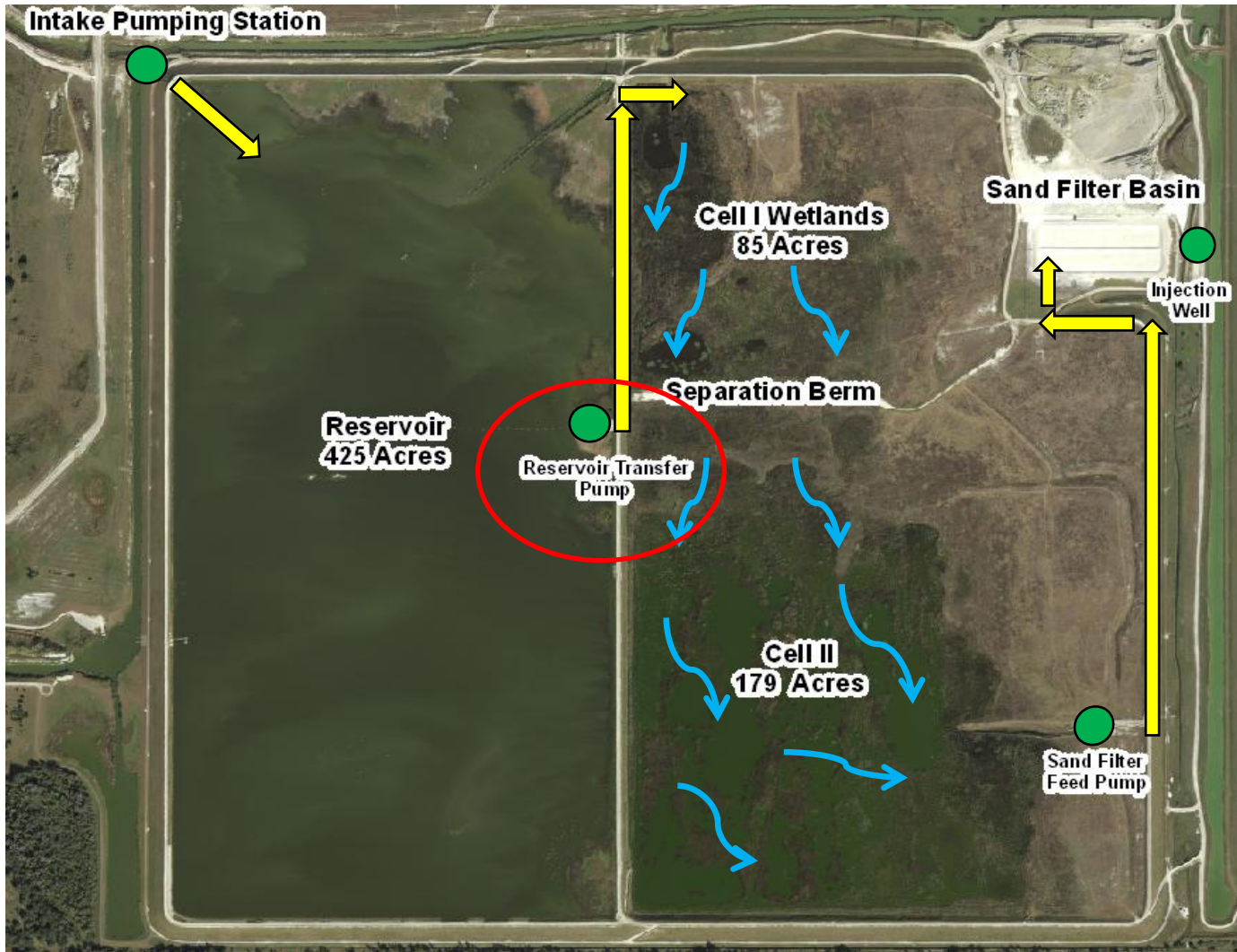
ARRP Component Layout



Intake Pumping Station



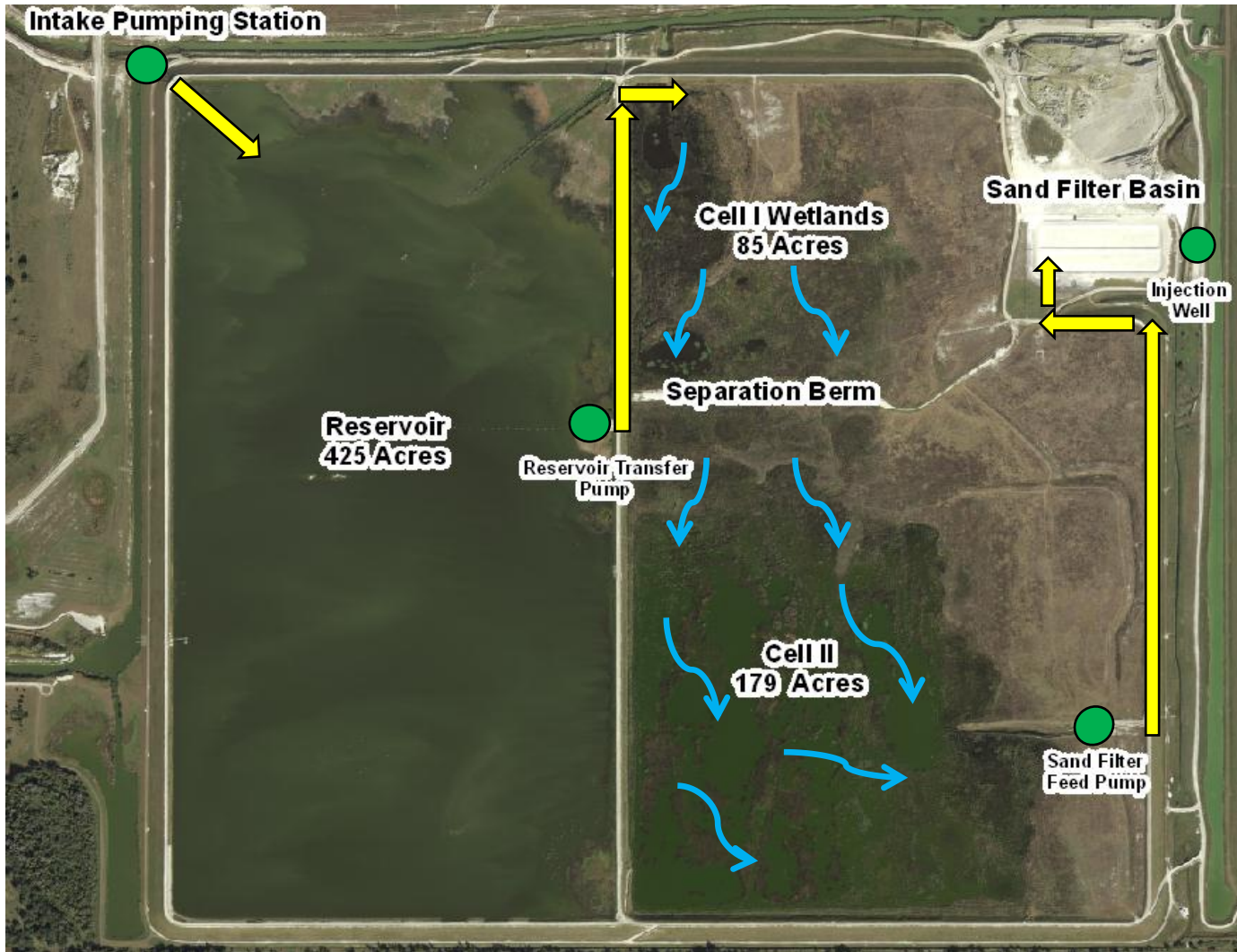
ARRP Component Layout



Reservoir Transfer Pump



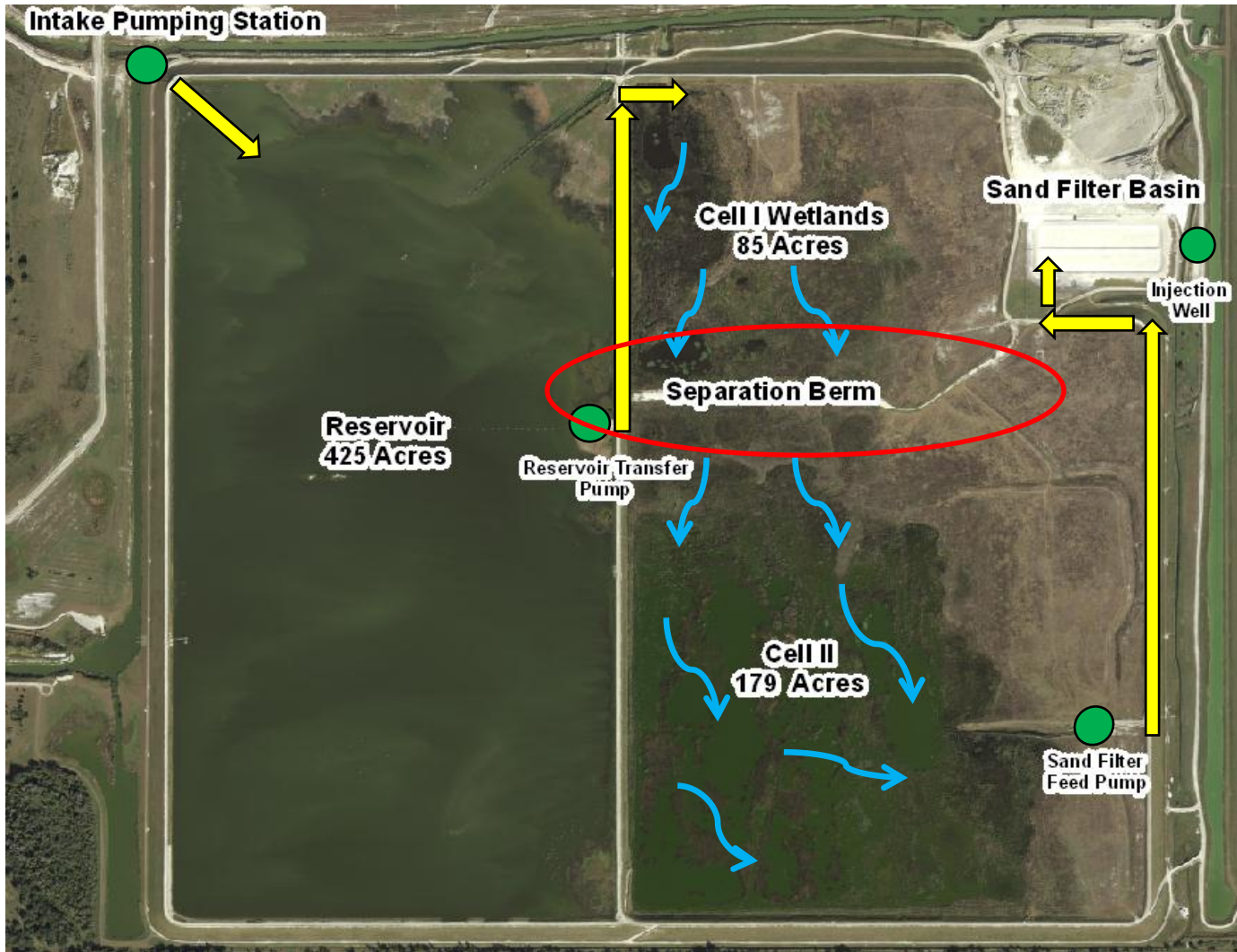
ARRP Component Layout



Cell 1 Wetland



ARRP Component Layout



Separation Berm



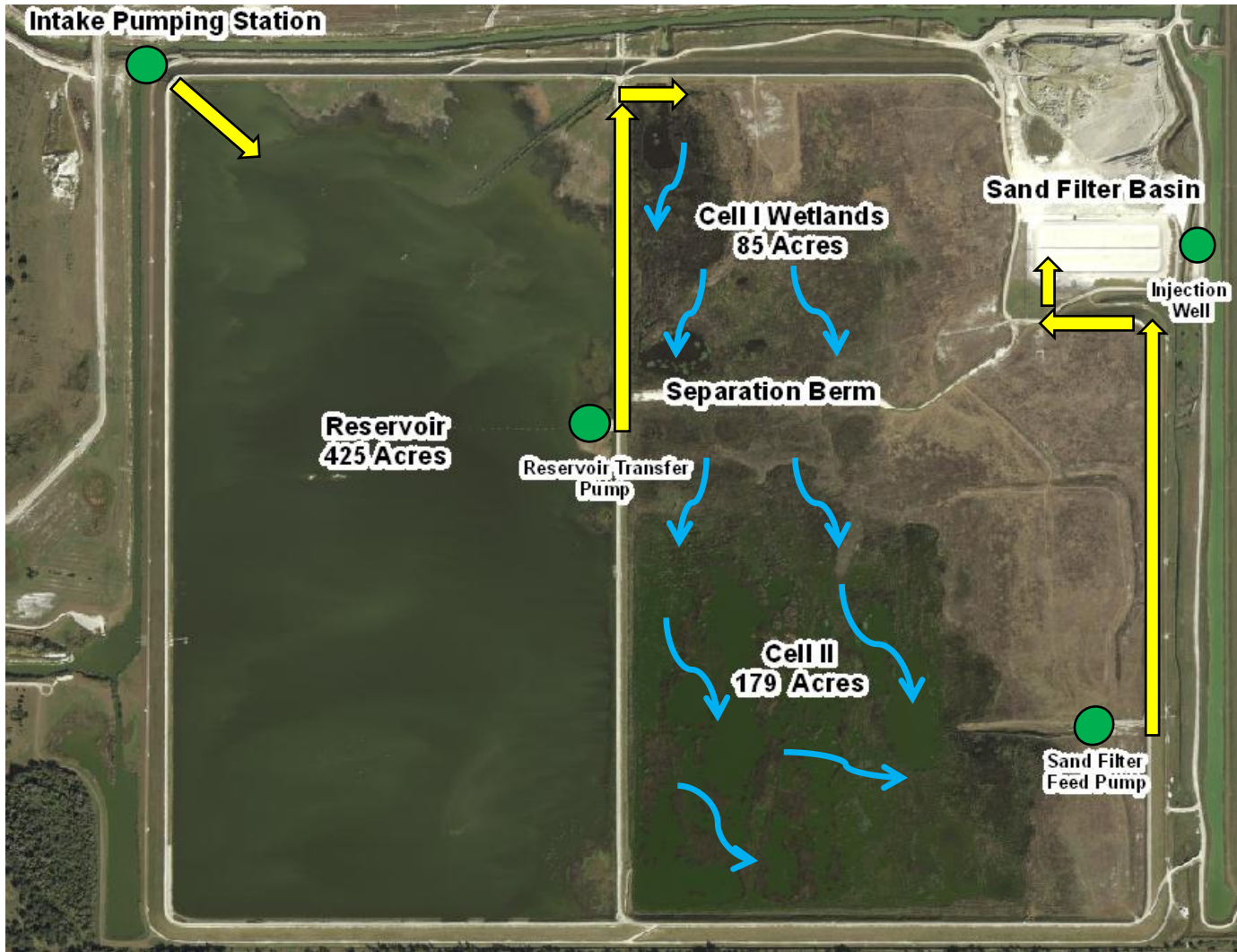
Separation Berm Control Structures



Separation Berm Control Structures



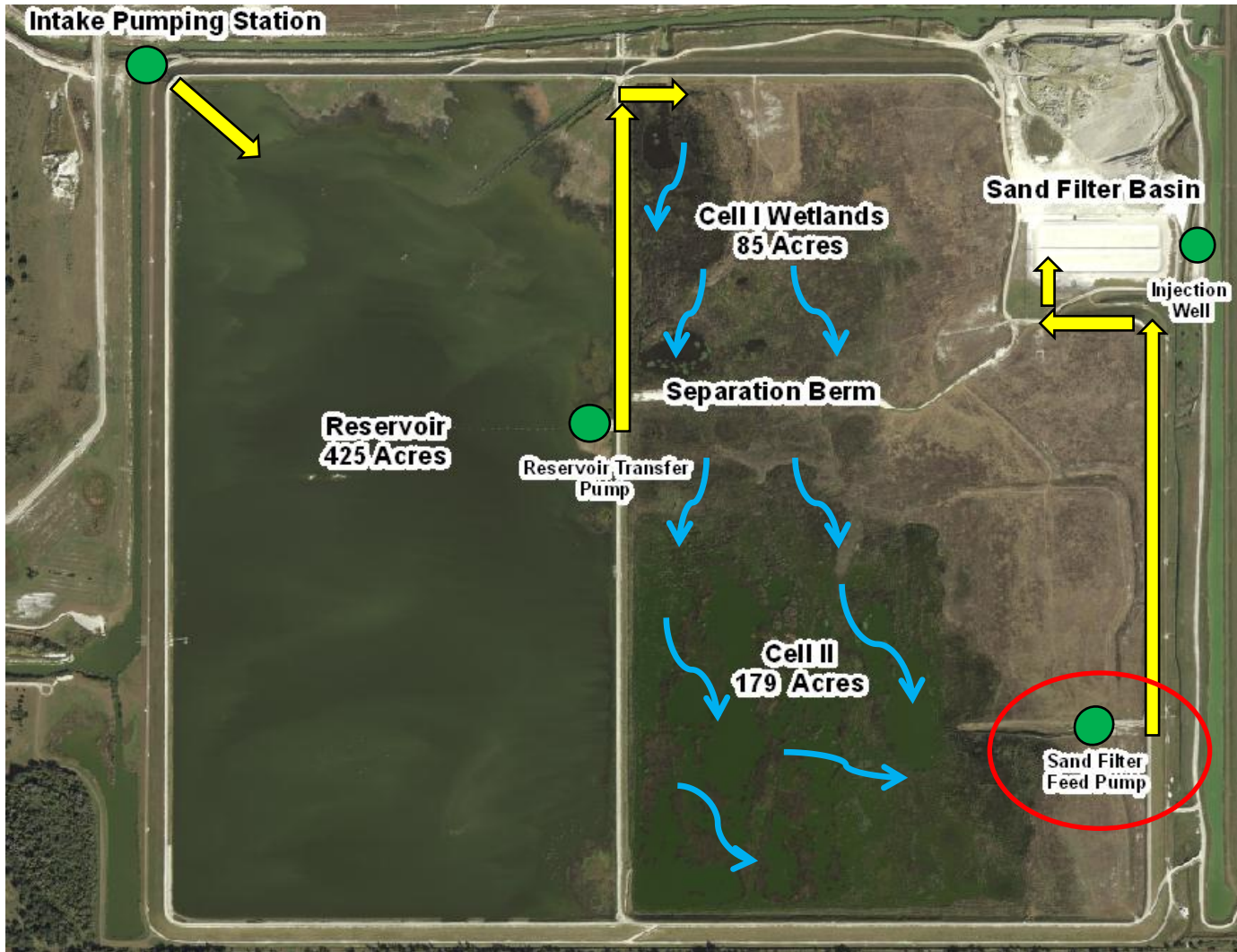
ARRP Component Layout



Cell II Wetland



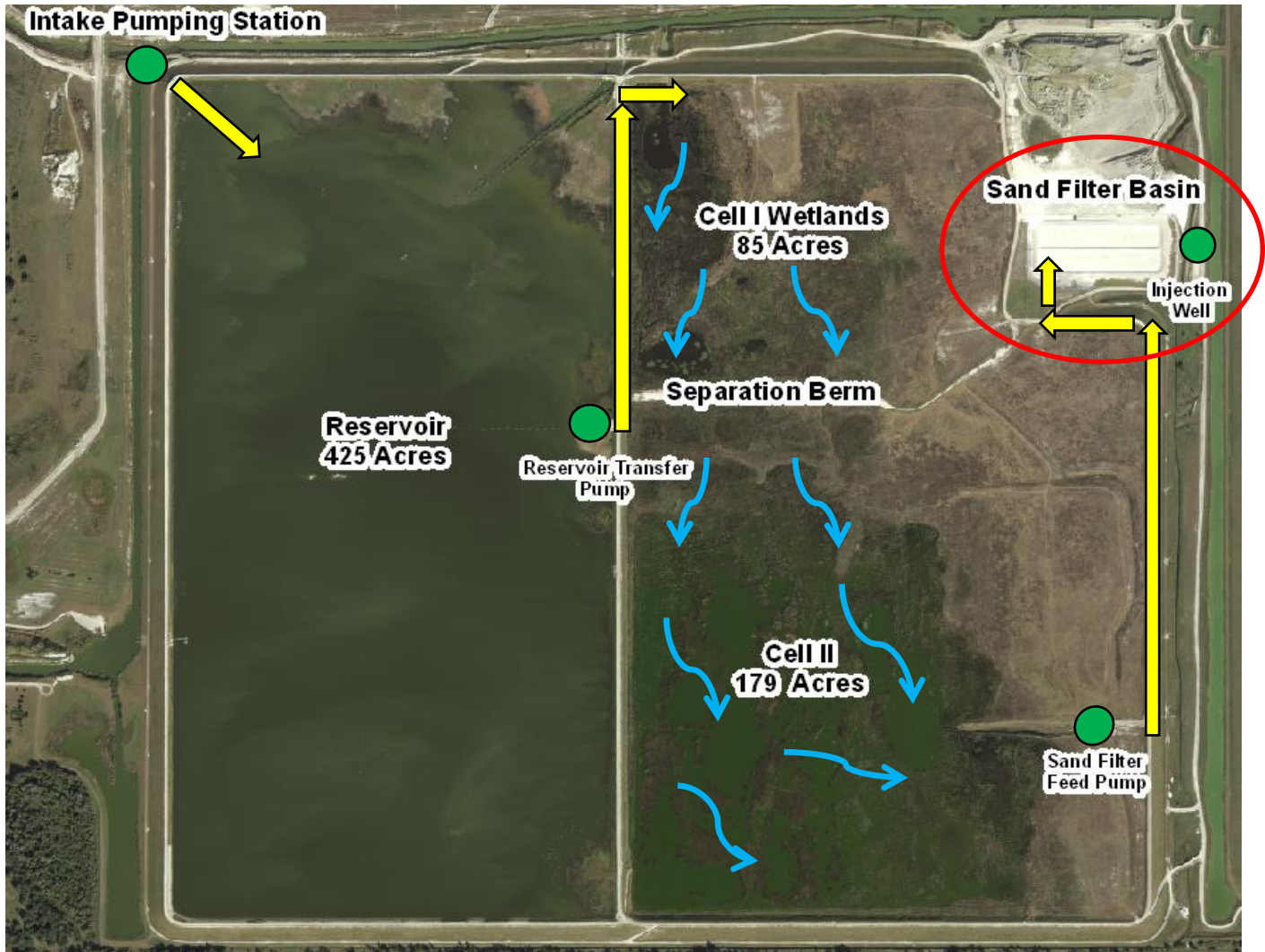
ARRP Component Layout



Sand Filter Feed Pump



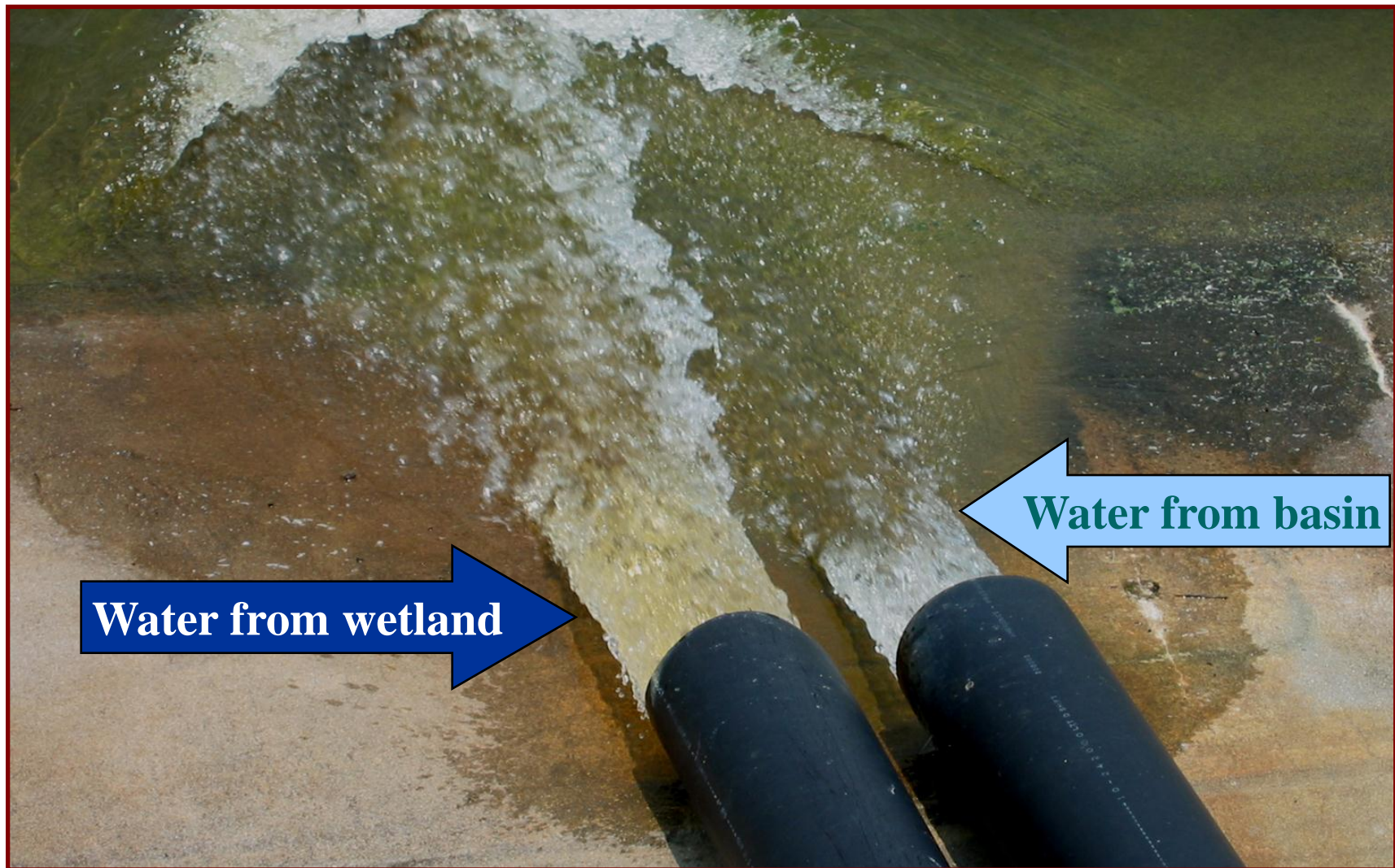
ARRP Component Layout



Sand Filter Basin



Water Quality Comparison: Wetland & Filter Basin Water



Water Quality Sampling Plan

- Field Parameters
 - Temp, DO, pH, ORP, Turbidity, ect.
- Nutrient Parameters
 - Total Phosphorus, Orthophosphate, TKN, Nitrate +Nitrite, Ammonia nitrate, VSS, Chlorophyll, Coliform, Ect.
- Drinking Water
 - Fluoride, Lead, Mercury, VOC, Pesticides and PCB's, Radionuclides, secondary parameters



Questions
