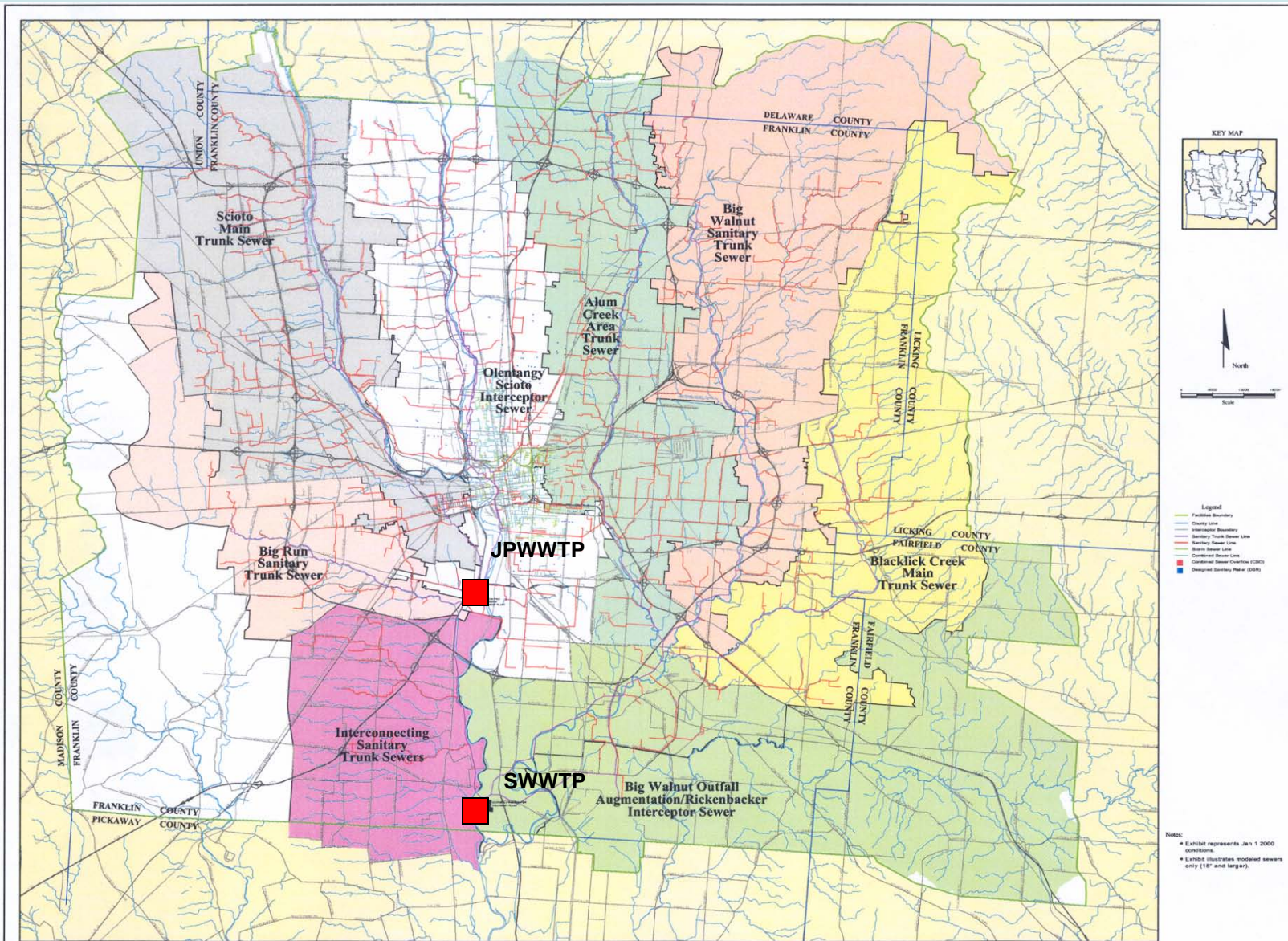


# Interim Interconnector Sewer Operational Plan

- Gary Hickman  
Plant Manager  
Jackson Pike Wastewater Treatment Plant
- Jeff Hall  
Assistant Plant Manager  
Southerly Wastewater Treatment Plant

# Columbus Area Collection System Overview



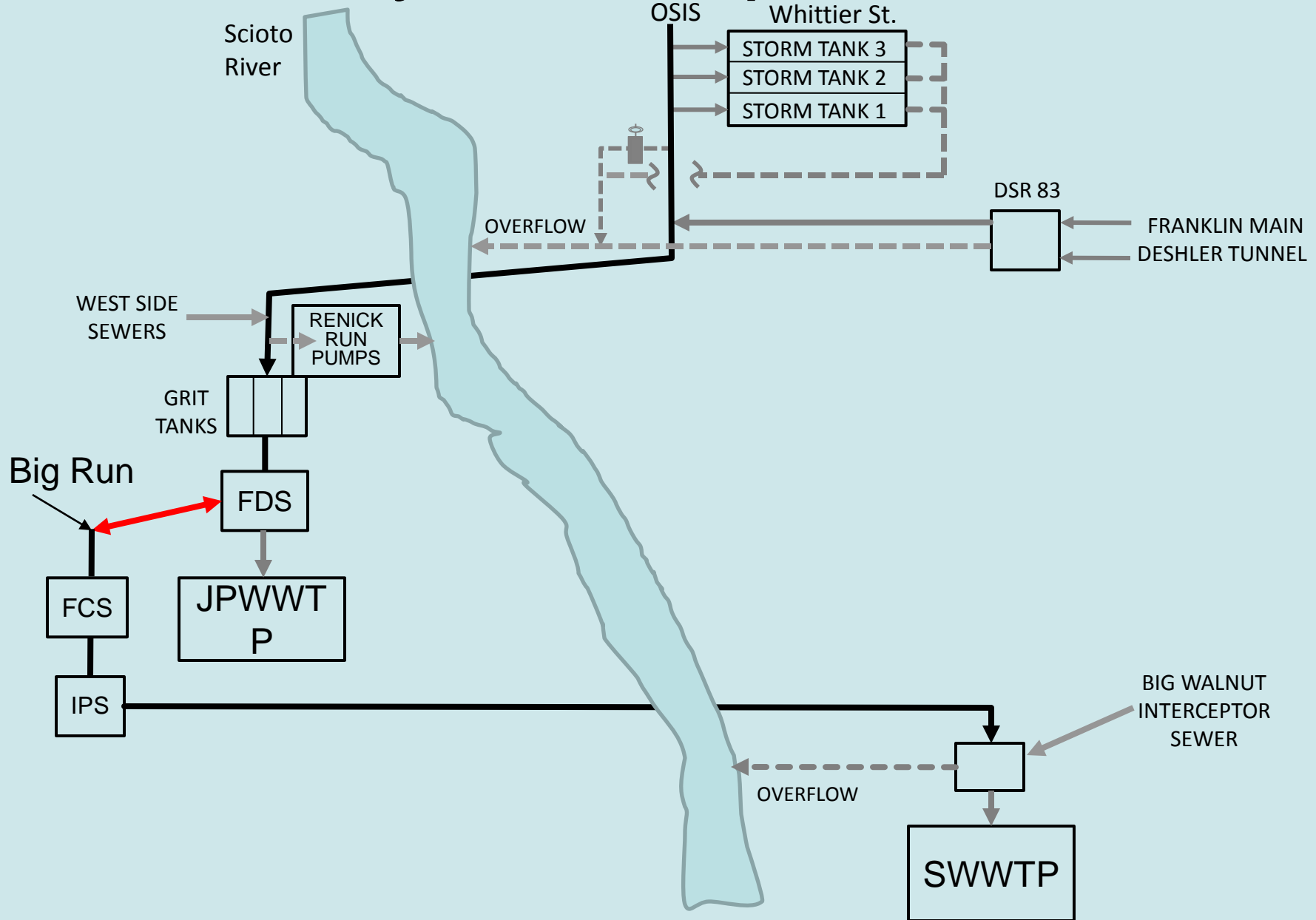
# Interim Interconnector Sewer Operational Plan (2003)

- History
  - 1986 Project '88
    - Reduced JPWWTP design to 60 MGD
  - 1991 Start-up of the Interconnector Sewer between JPWWTP and SWWTP
  - 1994, 1995 Max Wet Weather Flow Analysis
    - JPWWTP – Anytime Flow: 70MGD, Ideal 115 MGD
    - SWWTP – Anytime Flow: 130MGD, Ideal 180 MGD
  - 1996 Interconnector System and Stormwater Control Program Plan of Operations

# Interim Interconnector Sewer Operational Plan 2003

- Purpose:
  - To provide for the necessary uniform combined sewer overflow (CSO) control/separate sanitary sewer overflow (SSO) control operating strategy as well as to account for the operation of the West Columbus Local Protection Project (WCLPP) and its downstream interior drainage features.

# Before System Improvements



# Interim Interconnector Sewer Operational Plan (Update)

- Major Operational Components
  - Jackson Pike WWTP
    - Whittier Street Storm Tanks
    - ~~Grit Chamber Inlet Gate~~
    - ~~Old Renick Run Pump Station~~
    - Flow Diversion Structure
    - ~~Flow Control Structure~~
  - Southerly WWTP
    - ~~Interconnector Pump Station~~

# Jackson Pike Wastewater Treatment Plant Old Grit Removal Facility Removed



# Jackson Pike Wastewater Treatment Plant Old Renick Run Storm Sewer Pumping Station

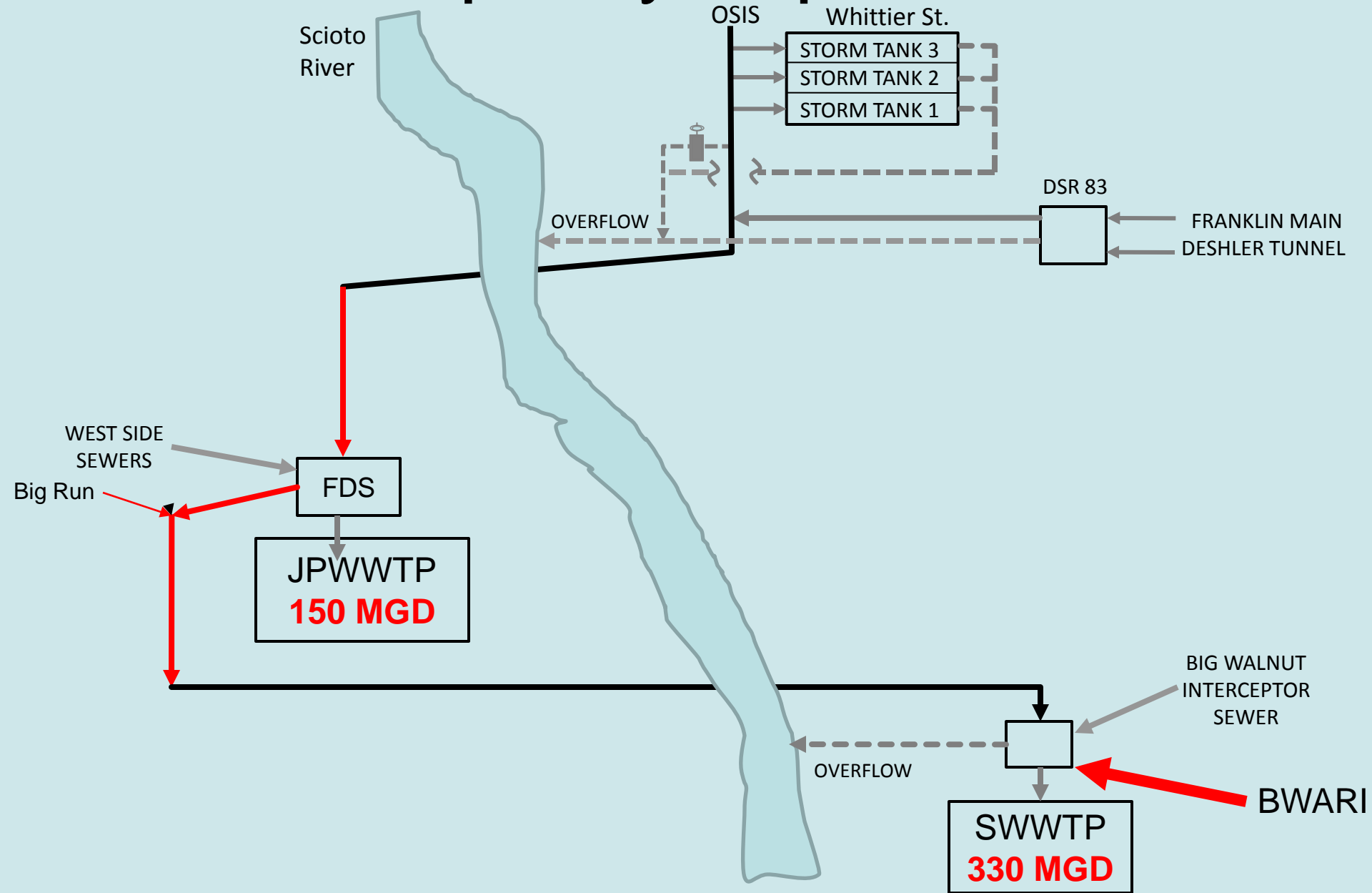
Old Pump Station



New Pump Station



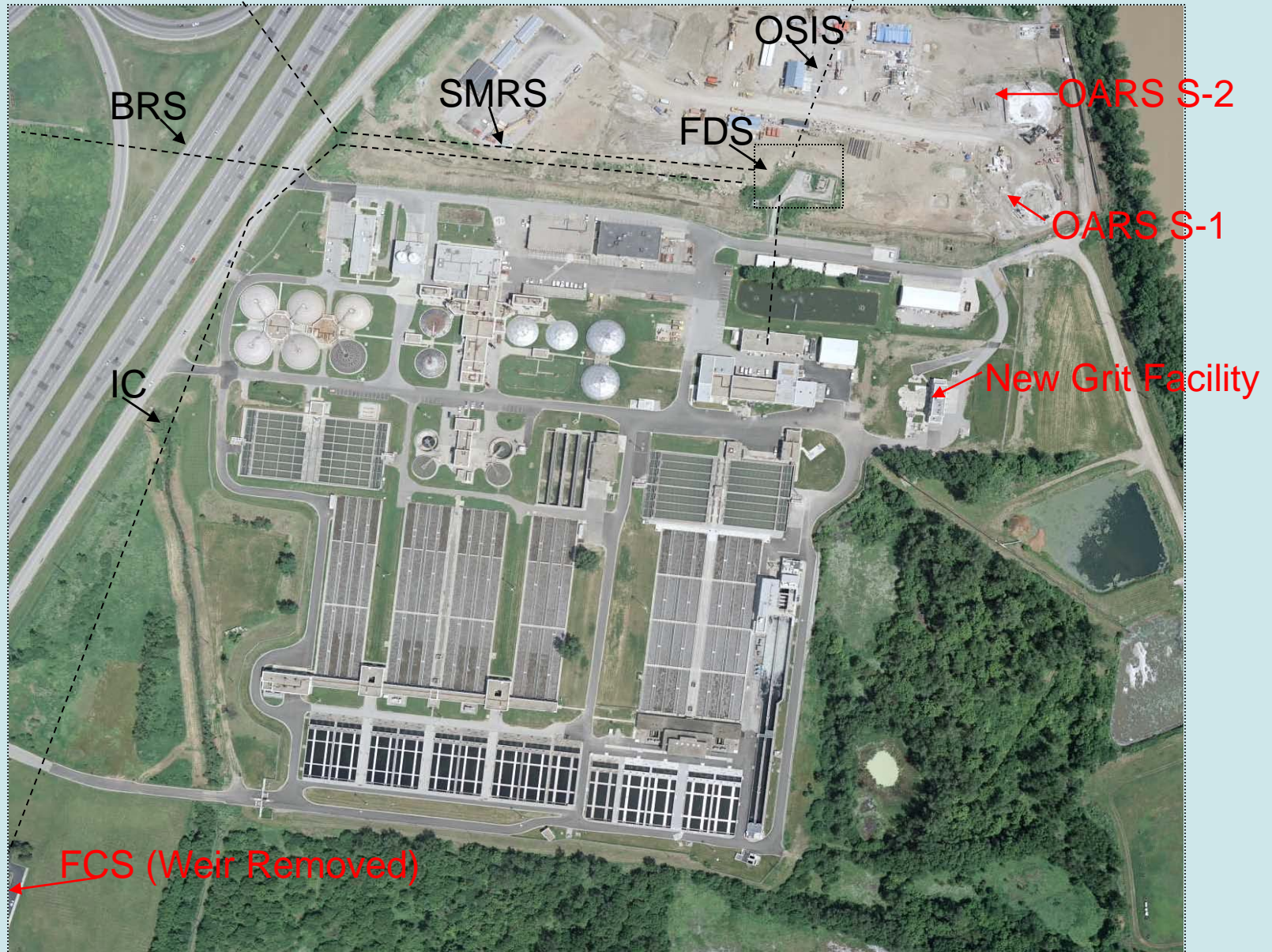
# Plant Capacity Improvements



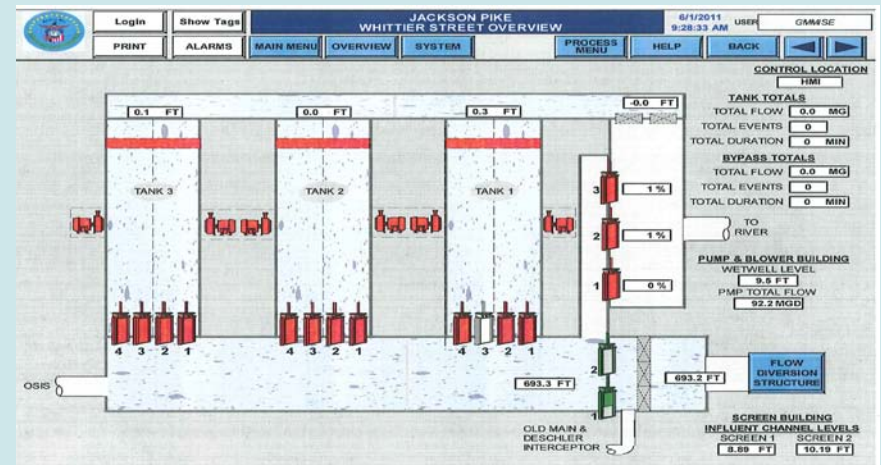
# Interim Interconnector Sewer Operational Plan Update

- Major Operational Components
  - **Jackson Pike WWTP**
    - Whittier Street Storm Tanks
    - Flow Diversion Structure
  - Southerly WWTP
    - Interconnector Pump Station (level sensor)

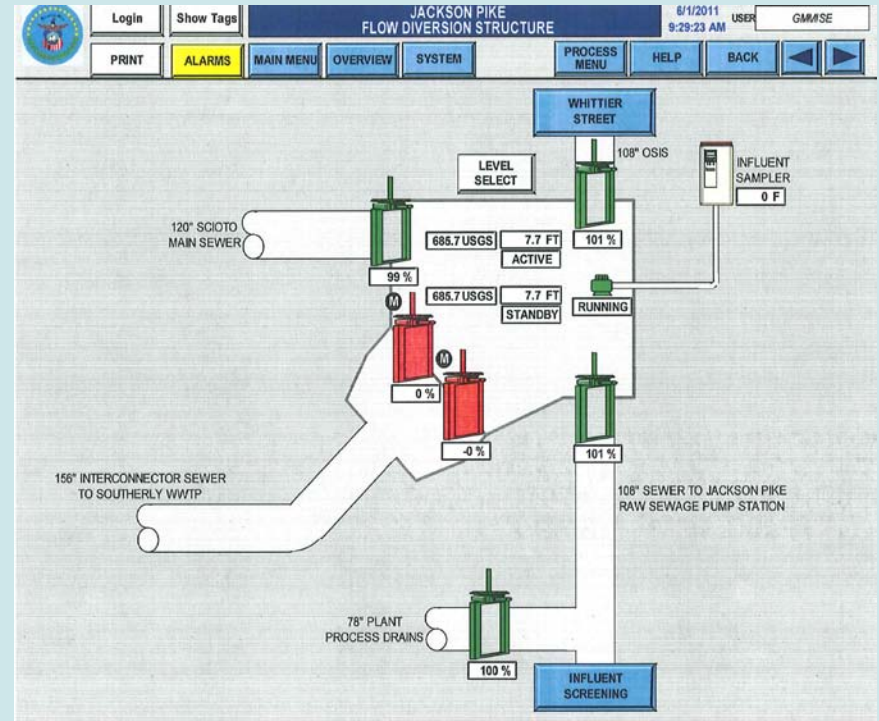
# Jackson Pike Wastewater Treatment Plant



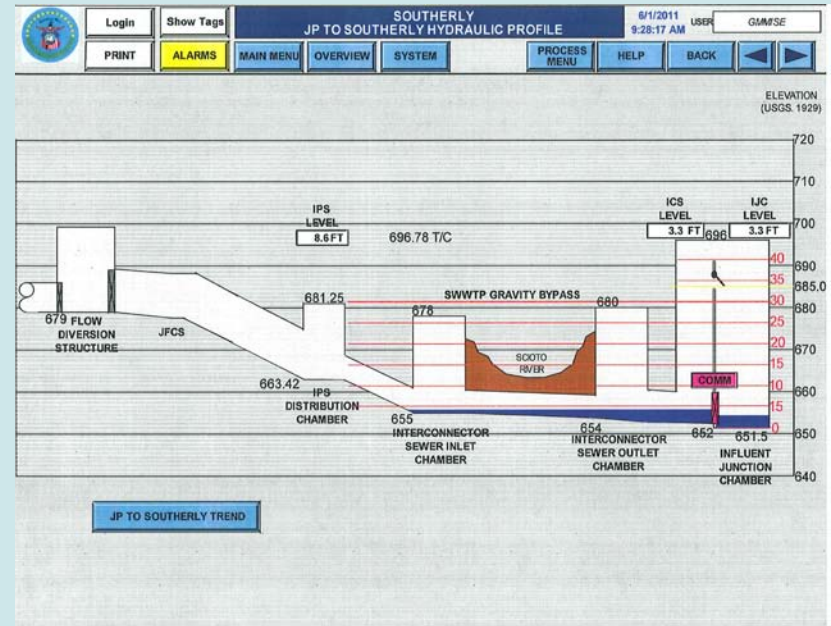
# Jackson Pike Wastewater Treatment Plant Whittier Street Storm Tanks



# Jackson Pike Wastewater Treatment Plant Flow Diversion Structure (FDS)



# Southerly Wastewater Treatment Plant Interconnecting Pump Station

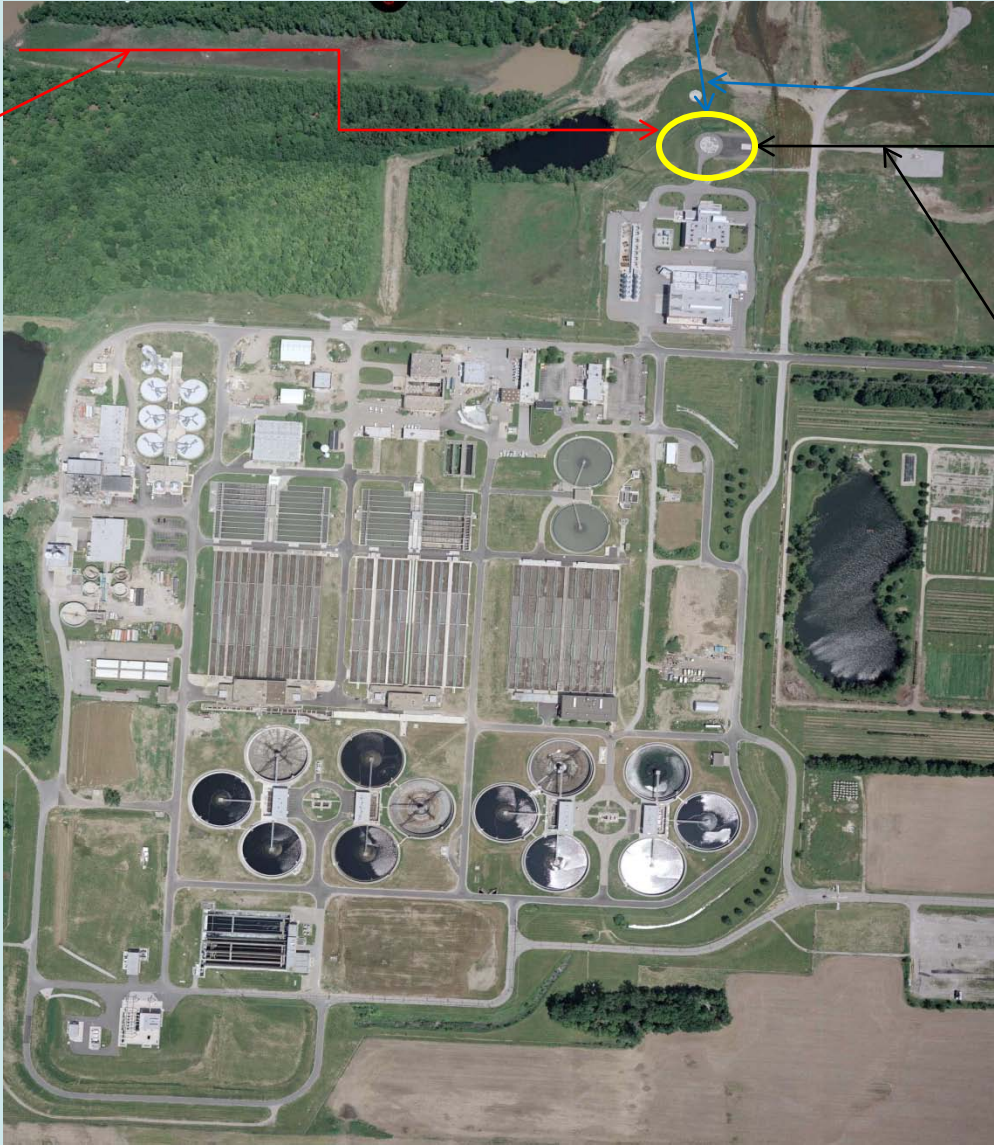


# Interim Interconnector Sewer Operational Plan

- Major Operational Components
  - Jackson Pike WWTP
    - Whittier Street Storm Tanks
    - Flow Diversion Structure
  - **Southerly WWTP**
    - Interconnector Pump Station (Level Sensor)

# Southerly Wastewater Treatment Plant

Inter-Connector  
Sewer

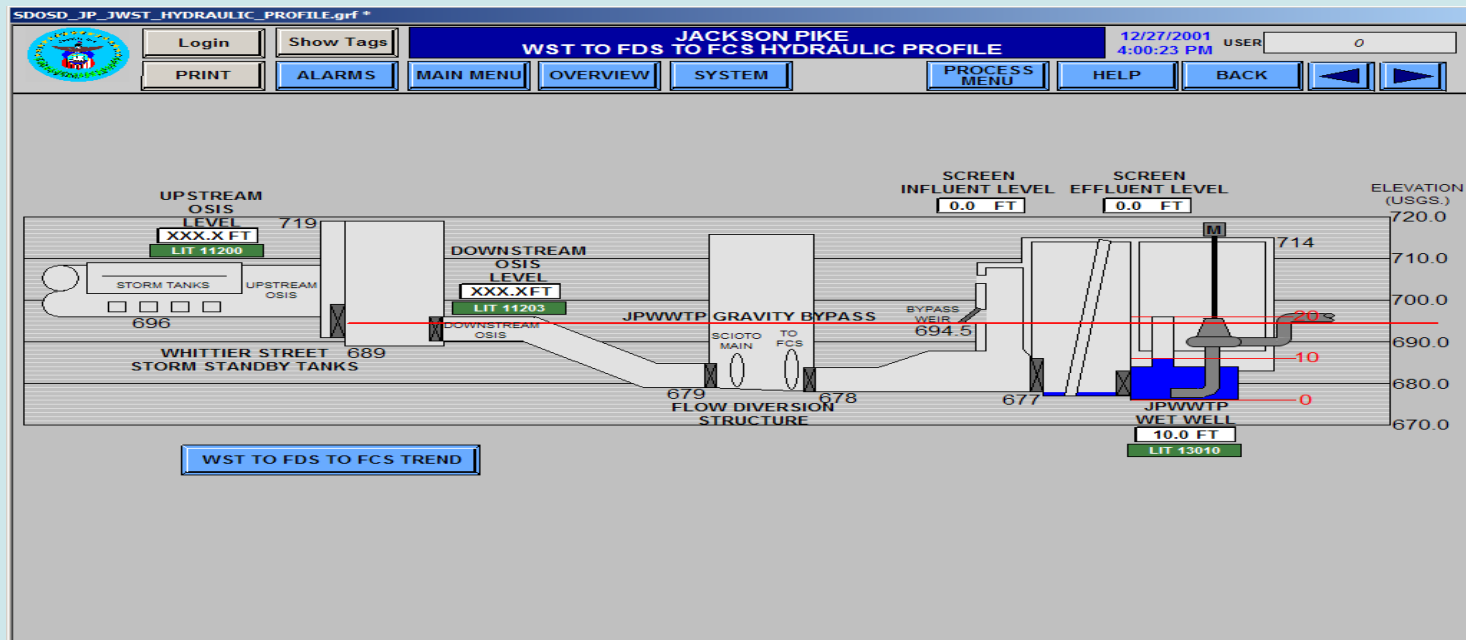


Big  
Walnut  
Outfall

Big  
Walnut  
Augmentation/  
Rickenbacker  
Interceptor

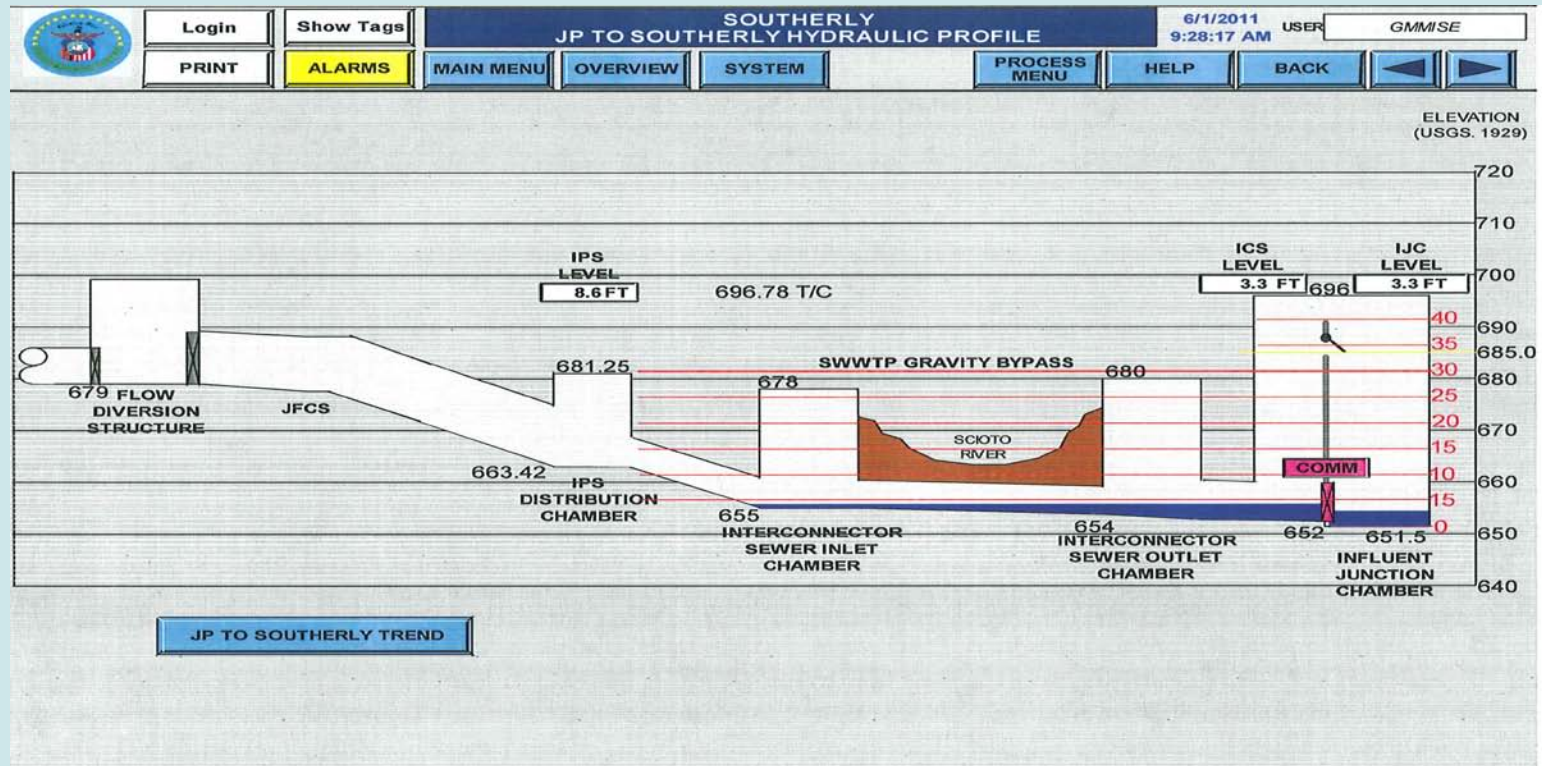
# Interim Interconnector Sewer Operational Plan

- **Normal Operations (JPWWTP):**
  - Keep FDS Interconnector Gates Closed
  - Keep both Whittier Street OSIS Regulator Gates open 36 inches (100%)
  - Maintain the Jackson Pike WWTP wet well between 6 – 12 feet. (USGS 682.0 – 688.0)
  - Maintain JPWWTP treatment between 50 – 95 MGD



# Interim Interconnector Sewer Operational Plan

- **Normal Operations (SWWTP):**
  - Maintain an Influent Junction Chamber (IJC) level of between 2 and 5 feet. (USGS 653.5 – 656.5)

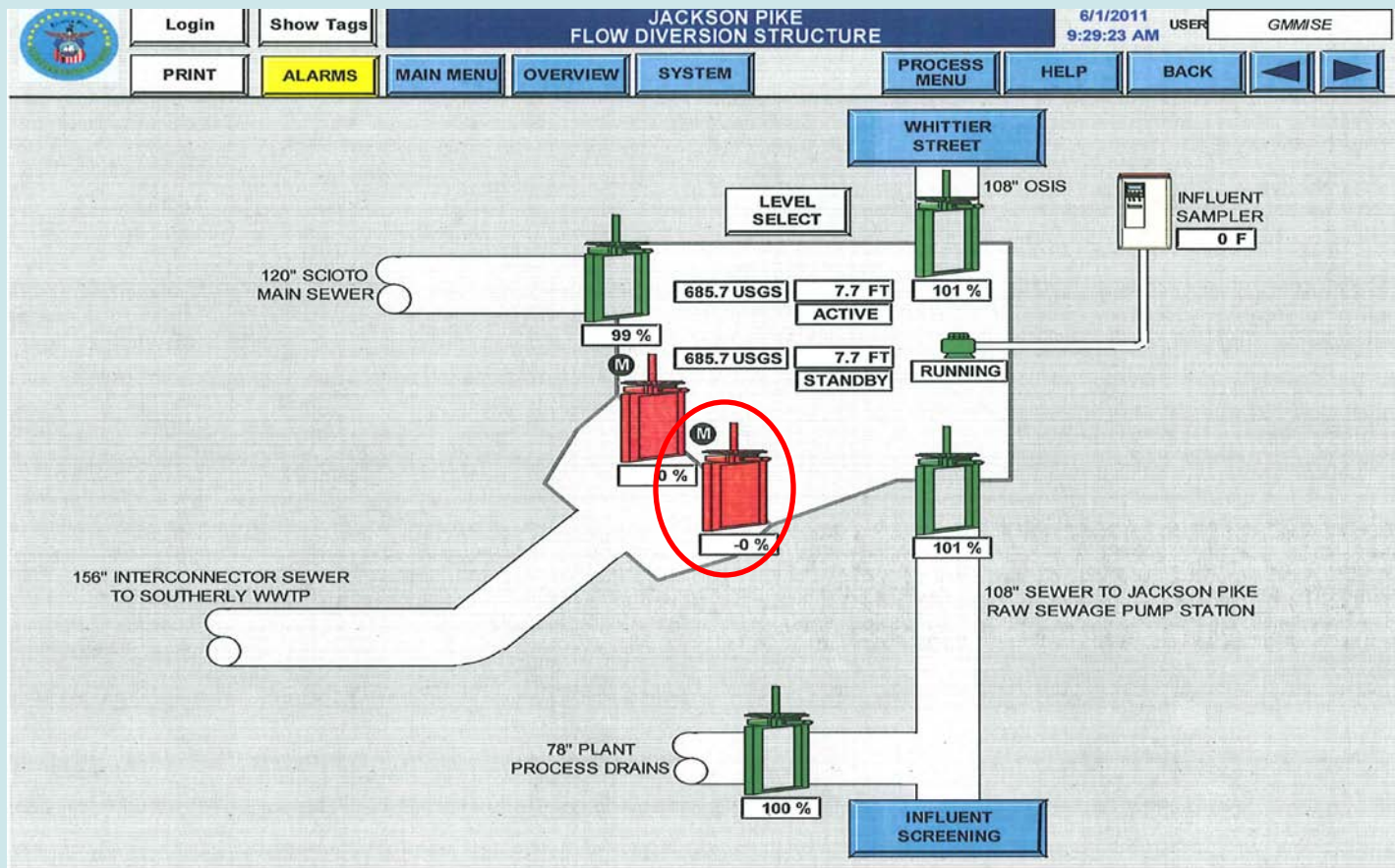


# Interim Interconnector Sewer Operational Plan

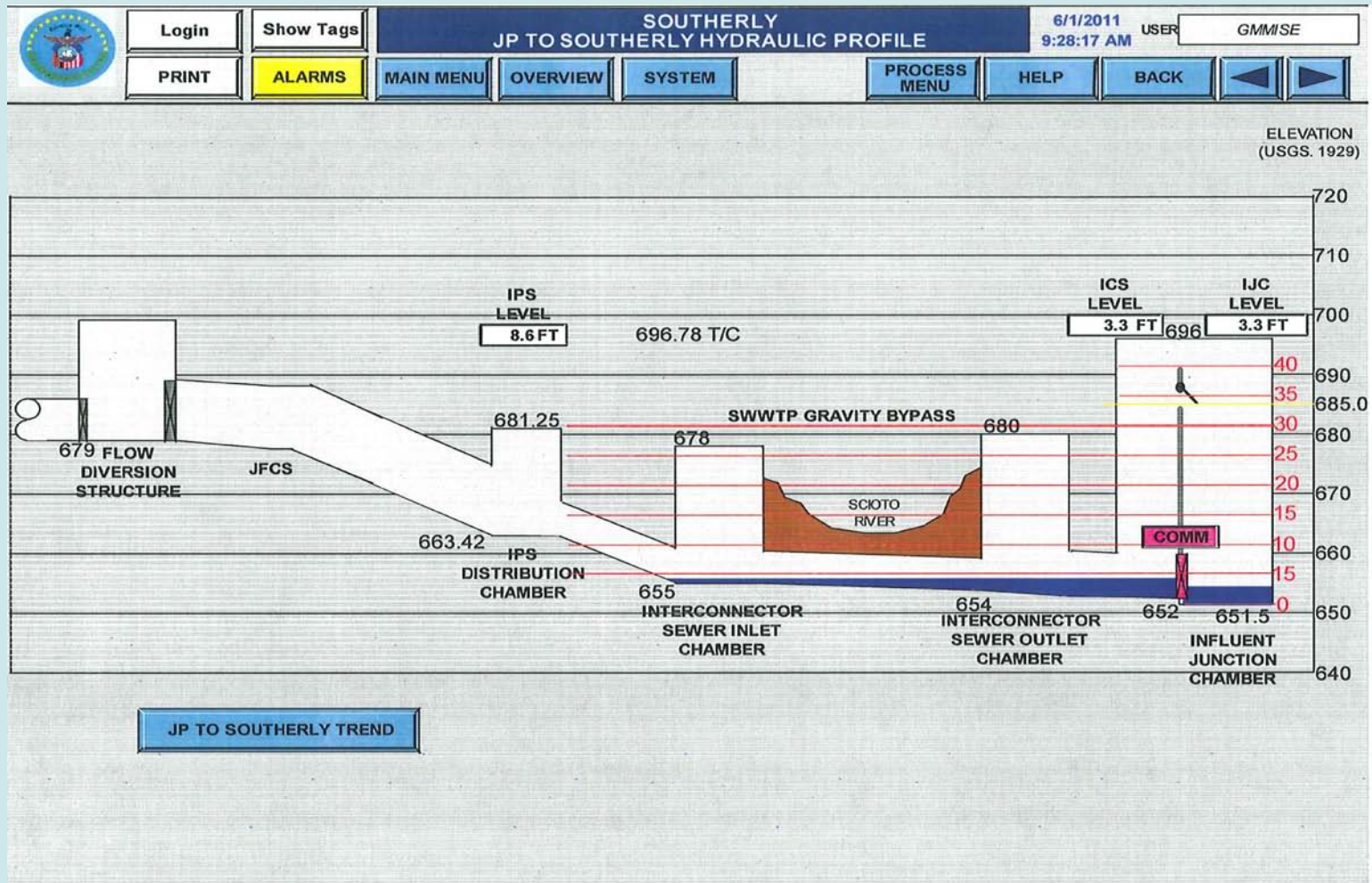
- Wet Weather Operations
  - If possible gradually increase treatment at Jackson Pike and Southerly while maximizing conveyance and collection system storage.
  - Gradually bring JP wetwell up to 14 foot while increasing treatment to 100 MGD. (Continue to increase flow to 160 MGD.)
  - Increase flow at SWWTP to 180 mgd while allowing IJC level to rise to capture “first flush”.
  - Continue to increase SWWTP flow and bring additional equipment online until all equipment is in service and plant flow is 330 mgd prior to an 18’ (USGS 669.5) IJC level.

# JP FDS Interconnector Gate Operation

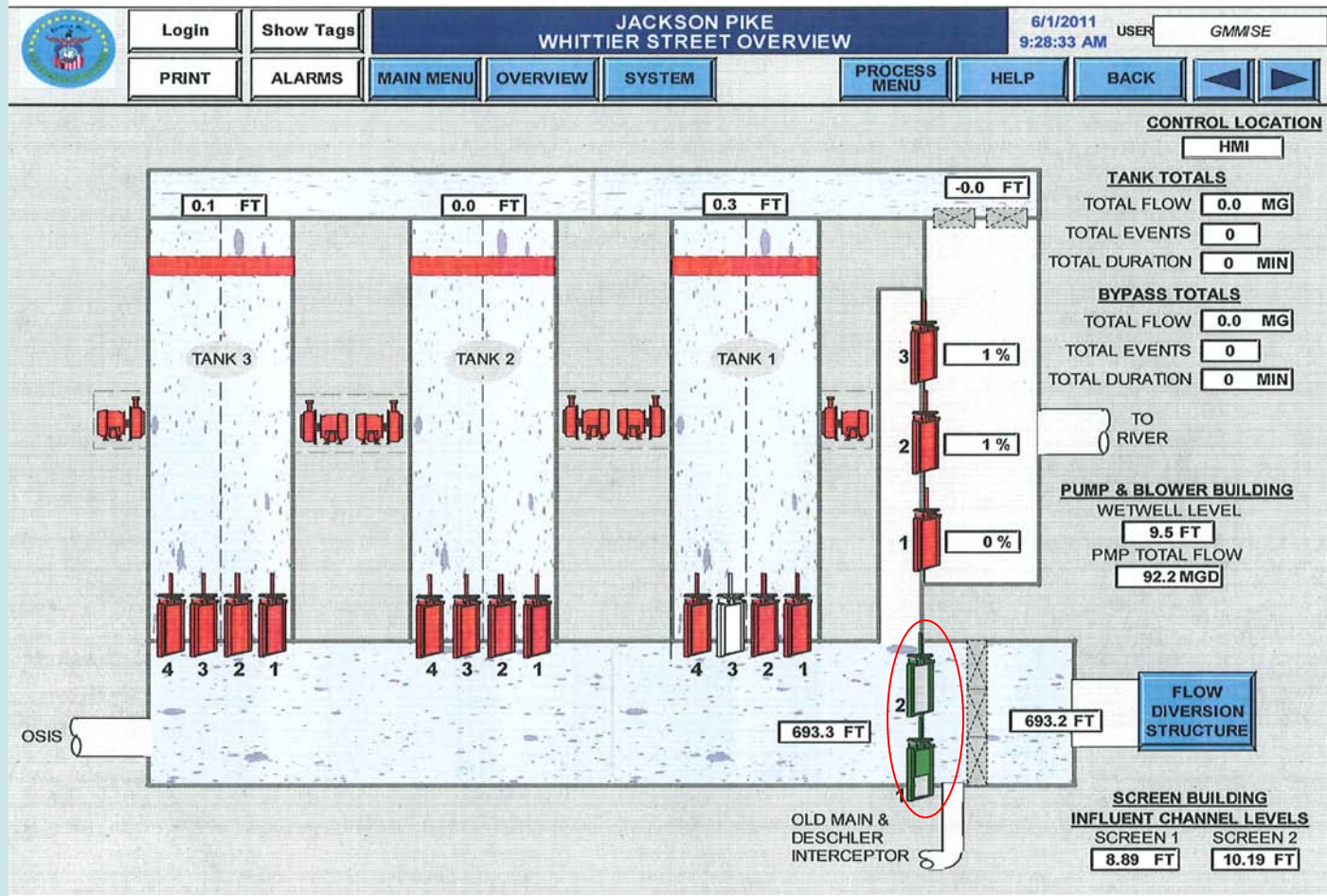
- Jackson Pike will maintain wet well elevation at ~ 14 feet by using FDS Interconnector Gate to Southerly to capture first flush.



# Interconnector Sewer Profile JP to Southerly



# Whittier Street Regulator Gates



# Interim Interconnector Sewer Operational Plan

- Once JP treatment capacity is maxed out (160 MGD), additional flow cannot be conveyed to Southerly, and the JP wet well cannot be maintained below USGS 690' initiate pumped bypass. [Note: operate pumped bypass until the JP wet well can be sustained below USGS 688.]

# Interim Interconnector Sewer Operational Plan Update

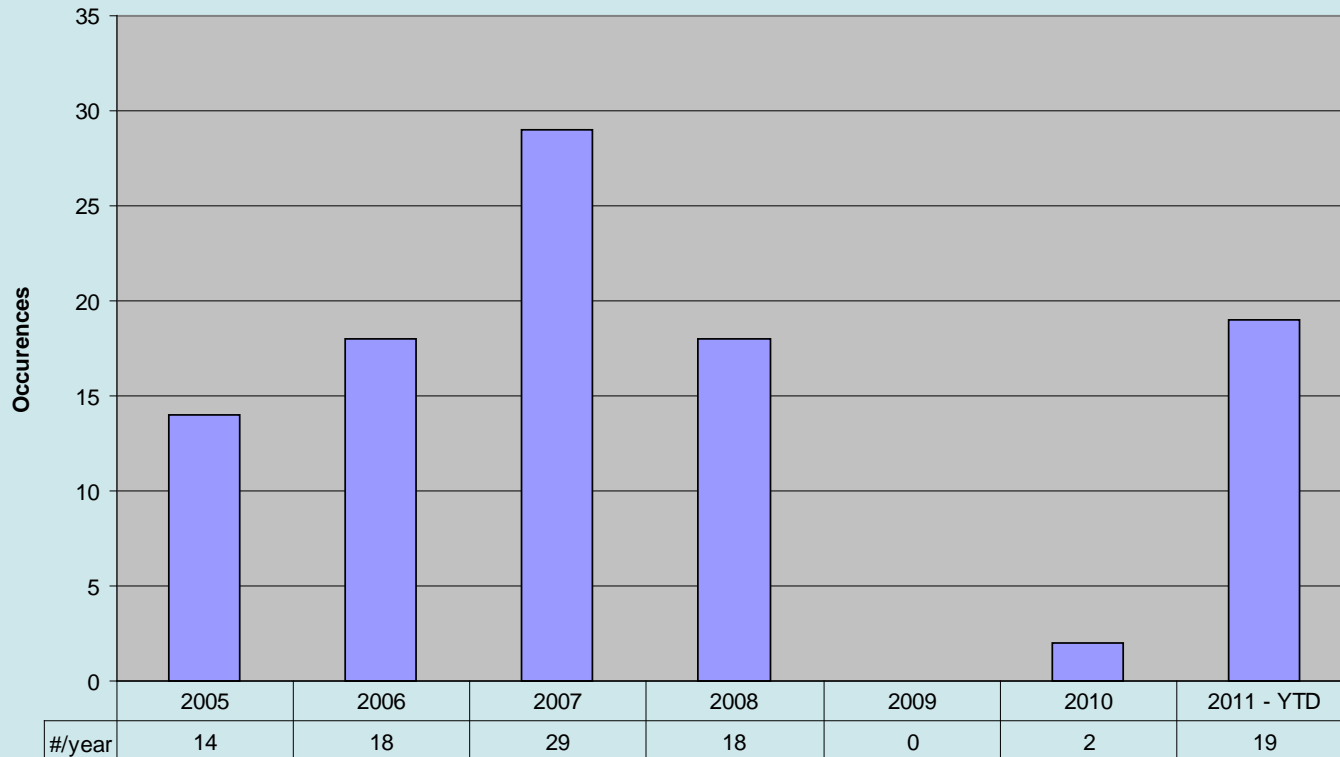
- Flood Protection Measures:
  - When the Scioto River reaches the 25-year elevation (USGS 706.2), as measured at the USGS Gauging Station located behind the Jackson Pike WWTP on the Scioto River or as predicted by the National Weather Service, close the Sluice Gate at the Scioto Main Flow Control Structure at Rhodes Park.
  - Divert all flows at Jackson Pike WWTP to the Mechanical Bypass. Close FDS Gates to Interconnector. Pump up to maximum Headworks capacity (approximately 180 mgd) to the Scioto River.

# Interim Interconnector Sewer Operational Plan

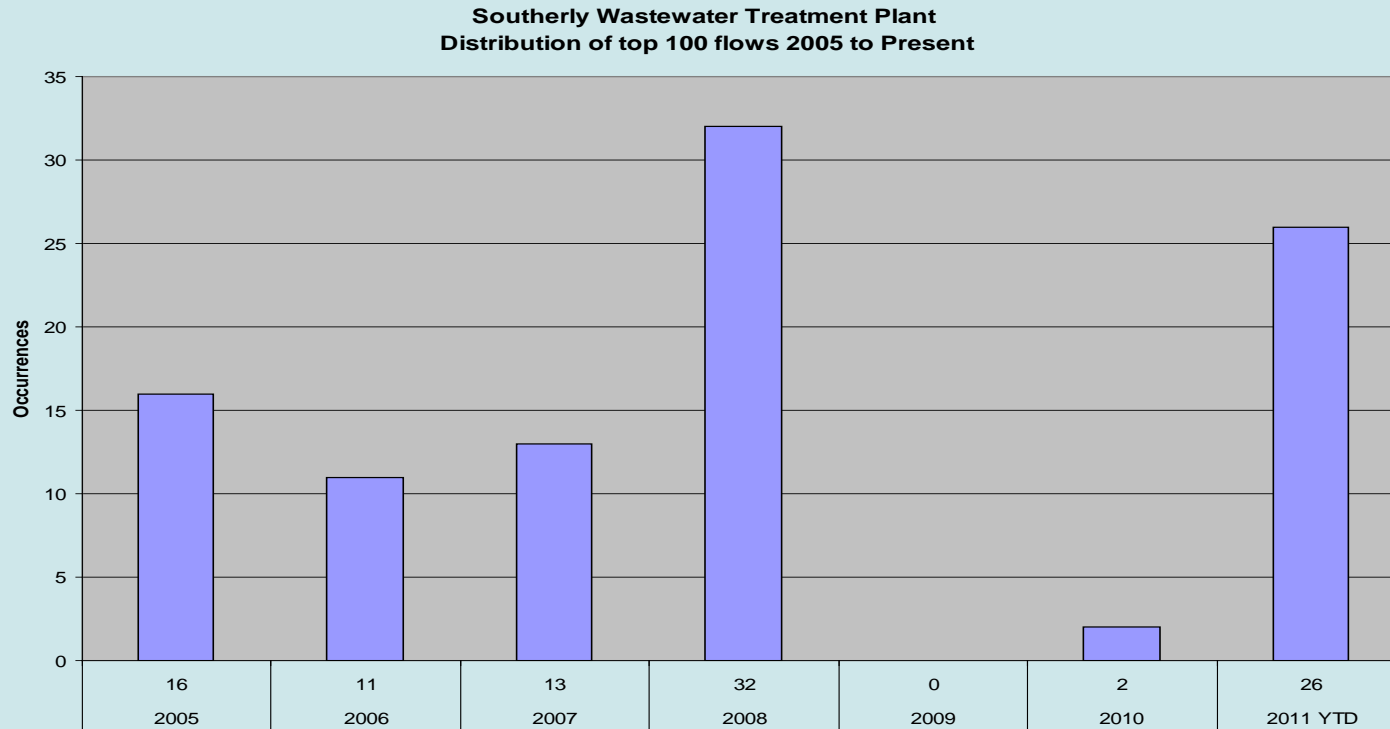
How Has the Interim Interconnector  
Sewer Operational Plan Worked to  
Date?

# Jackson Pike Wastewater Treatment Plant Hydraulic Performance 2005 to Present

**Jackson Pike Wastewater Treatment Plant**  
Distribution of top 100 flows 2005 to Present



# Southerly Wastewater Treatment Plant Hydraulic Performance 2005 to Present



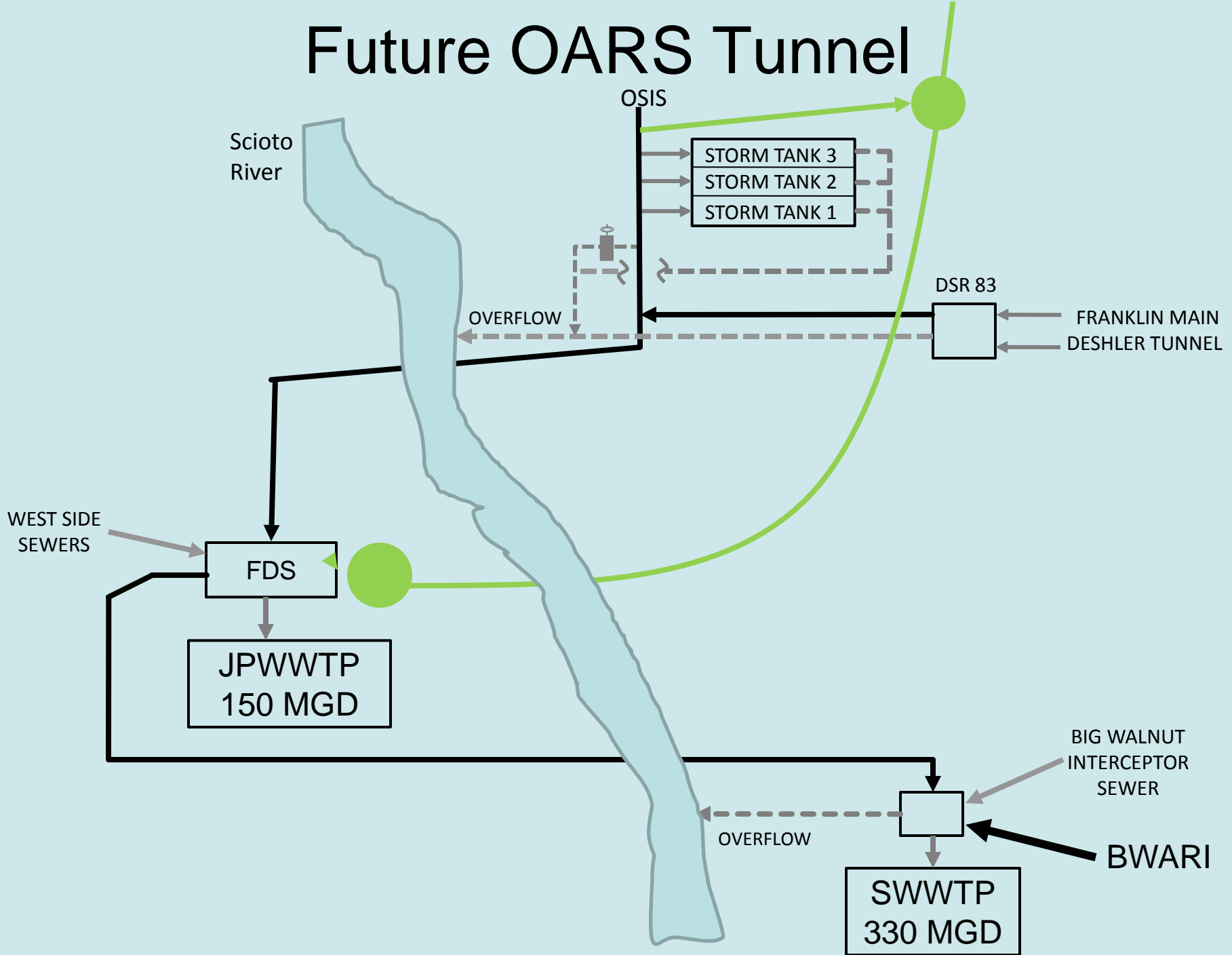
# Interim Interconnector Sewer Operational Plan

## Where Do We Go From Here?

# Interim Interconnector Sewer Operational Plan

- Current and Future Projects
  - Olentangy Scioto Interceptor Sewer Augmentation Relief Sewer (OARS) Tunnel Project
    - Completion 2015
    - Will provide nearly 60 million gallons of deep tunnel wet weather flow storage ~23,400 feet long 20 feet in diameter, 165 - 180 feet deep.

# Future OARS Tunnel



# Future SSO Mitigation

- Alum Creek Relief Tunnel (ART)
  - Start date 2015. Additional deep tunnel storage ~73,000 feet long, with tunnel diameter varying from 10 – 18 feet.
- Olentangy Relief Tunnel (ORT)
  - Start date TBD. Additional deep tunnel storage ~58,000 feet long, with tunnel diameter of 14 feet.

# **Interim Interconnector Sewer Operational Plan**

## **Questions?**