Resilience Planning and Adaptation Training for Water and Wastewater Utilities

# Adaptation Utility Case Study: Binghamton-Johnson City

Binghamton-Johnson City Joint Sewage Treatment Plant

# Binghamton-Johnson City Joint Sewage Treatment Plant (BJCJSTP)

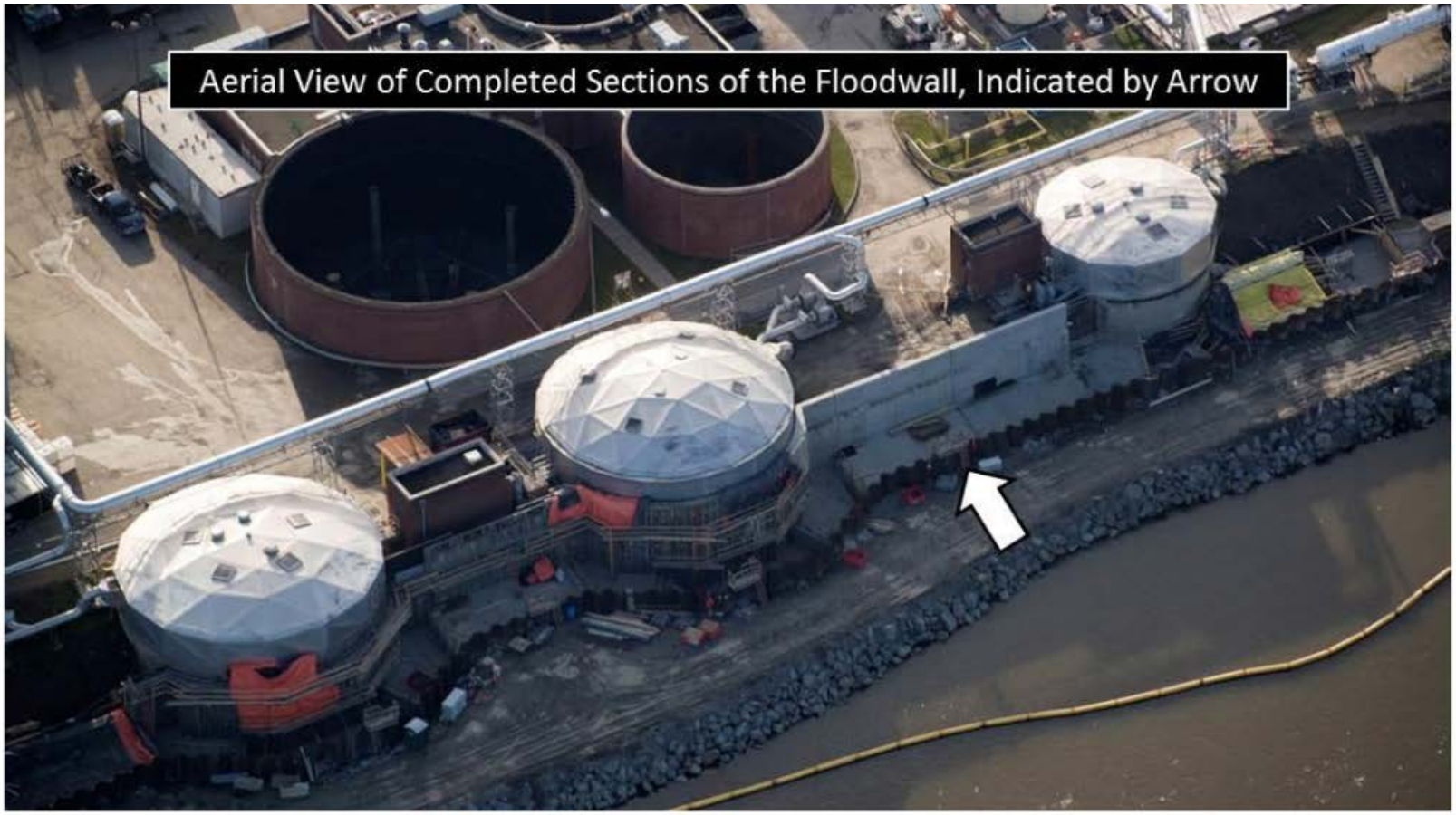
- Jointly owned by the City of Binghamton and the Village of Johnson City
- Vestal, New York
- Wastewater and stormwater utility (~90,000 customers)
- Processes ~18 MGD with capability up to 60 MGD of wet weather flow

# Past threats

- BJCJSTP has suffered several catastrophic events since 2006:
  - In 2006, the BJCJSTP was flooded by a 500 year flood that affected many of the processes in operation
  - In May of 2011, a concrete structure suffered structural failure
  - In September 2011, the BJCJSTP suffered another 500 year flood associated with Tropical Storm Lee that critically damaged key equipment throughout the entire facility and rendered the secondary treatment fundamentally Inoperable

# Restoration and rehabilitation activities

- Since 2011, much of the BJCJSTP has been inoperable or performing poorly due to process system failures, structure failure, Tropical Storm Lee flood damage, and general age/wear of process equipment
- A Consent Order was negotiated between the Binghamton, Johnson City, the Joint Sewage Board and the NYSDEC to develop a plan to restore treatment operations at the BJCJSTP
  - Construction to be substantially complete by August 1, 2018, fully complete by March 1, 2019, and must meet the SPDES Permit discharge limits by May 1, 2019
- Spending about $200M to complete restoration and rehabilitation activities




- A new floodwall is being constructed intended to protect the plant to an elevation 1.5 feet above the 2011 flood level
  - » Also includes two new pump stations to pump rainwater out of the plant during the storm events that might overwhelm the existing storm drain system
- Funded by a FEMA recovery grant

# Future threats

- More intense precipitation events with flooding that is worse than 2011 levels
  - » Changing precipitation patterns in winter, spring and fall
  - » Faster snowmelt
- Longer-lasting power outages due to storms and flooding impacts