



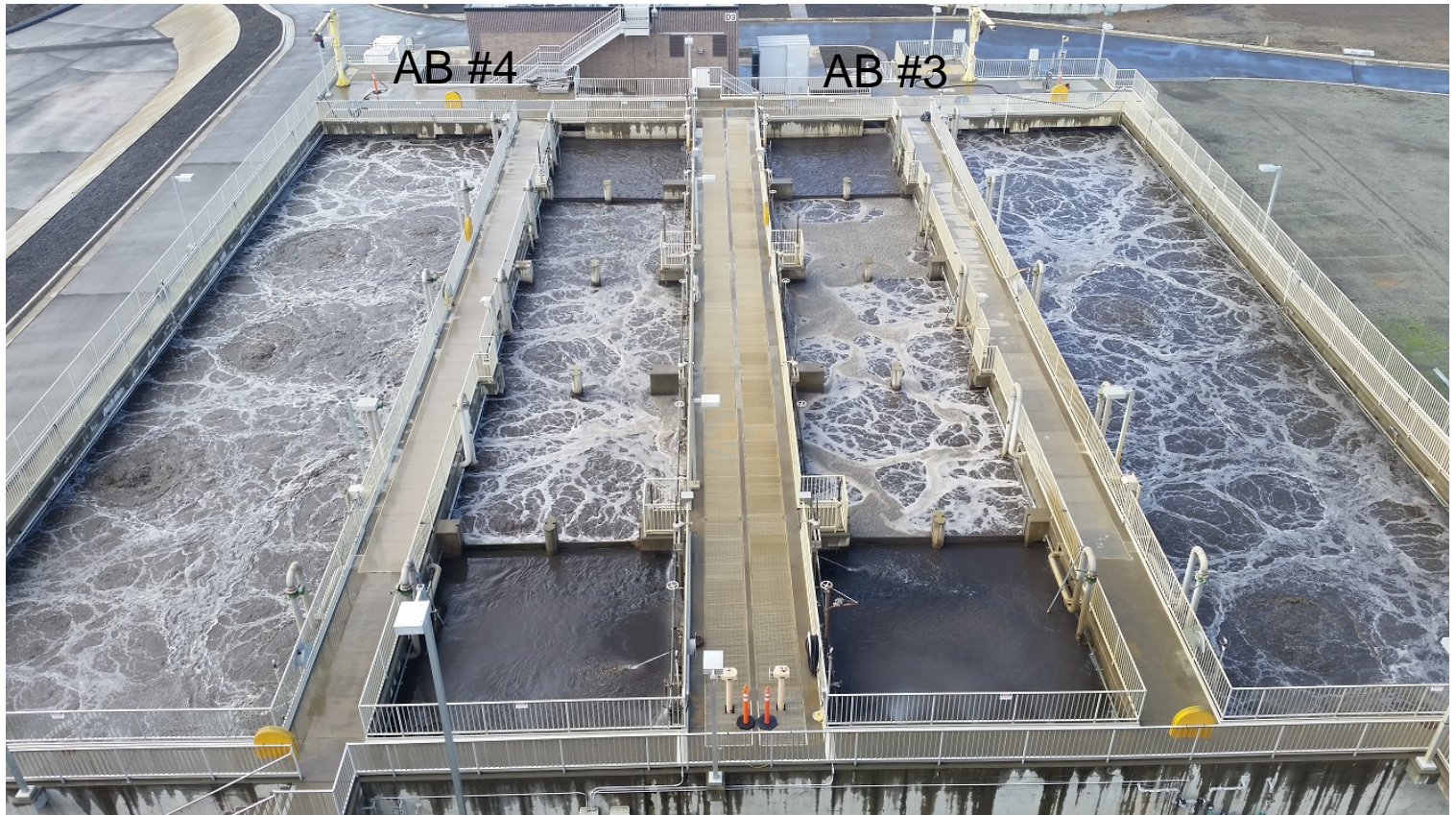
Accept Completion: Aeration Basin Diffusers, Instrumentation & Controls Project (CIP 15713)

Napa Sanitation District
Board of Directors Meeting
May 17, 2017

Project Location



Aeration Basins





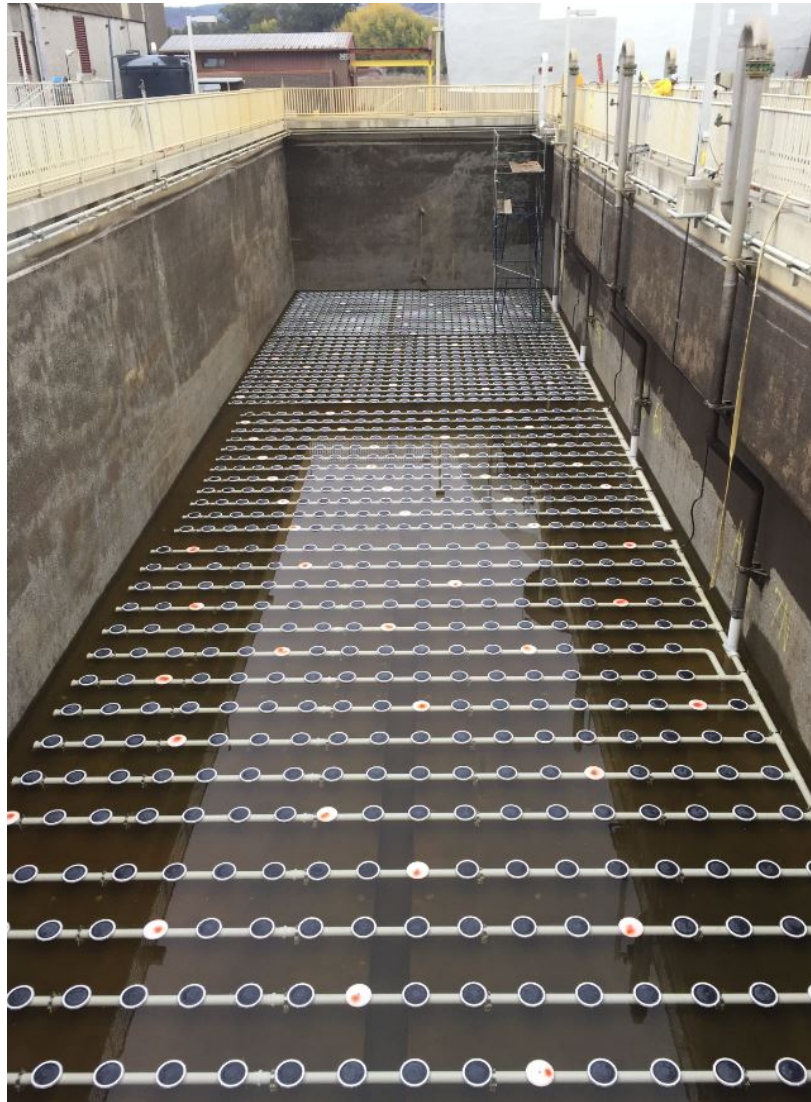
Project Goals

1. Replace Existing Diffuser Equipment
 - Installed 2000
 - Refurbished 2008
 - End of useful service life
2. Activated Sludge Process Improvements
 - Process Improvements, Energy and Chemical Savings
 - A. Flow Balancing via Influent Controls
 - B. Improved DO Control
 - C. Ammonia Monitoring/Control

1. Diffuser Equipment: Existing Panels



1. Diffuser Equipment: New Discs



2A. Influent Flow Balancing

- (E) AB influent gates manually controlled
- Diurnal (day/night) fluctuations disrupt process
- Project added (N) automated gate operators and flow meters to balance influent into the Aeration Basins

2A. (E) Manual Influent Gates



2A. Flow Balancing – (N) Automatic Influent Gate Motor Operators



2B. Improved DO Control

- Blowers are one of the largest energy consumers in the plant
- (E) Manual air control valves result in large DO fluctuations
- Desirable to keep DO as low as possible to meet treatment requirements (energy savings)
- Proper DO control required for process efficiency

2B. (E) Manual Air Control Valves



2B. (N) Automated Air Control Valves & Air Flow Meters



2C. Ammonia Monitoring/Control

- Ammonia concentration passing through the ABs is an indicator of process efficiency
 - nitrification/denitrification process
- Increased efficiency in ABs results in less chemical addition downstream
 - Chlorine Contact Basins – Sodium Hypochlorite
 - Sand Filters - Polymer

2C. (N) Ammonia Analyzers





Project Benefits

- Critical treatment equipment replacement
- Increased process efficiency
- Energy savings
- Chemical savings



Construction Cost

- Contractor: Spiess Construction
- Bid Cost \$1,176,000
- Change Orders \$16,183 (1%)
- Final Contract Amount \$1,191,483
- Diffuser Equipment \$122,000
 - Prepurchased by NapaSan

Questions?

Recommendation

- Adopt Resolution accepting completion and authorize General Manager to file Notice of Completion with the County Recorder