



Engineering, Operations, & Technology Committee

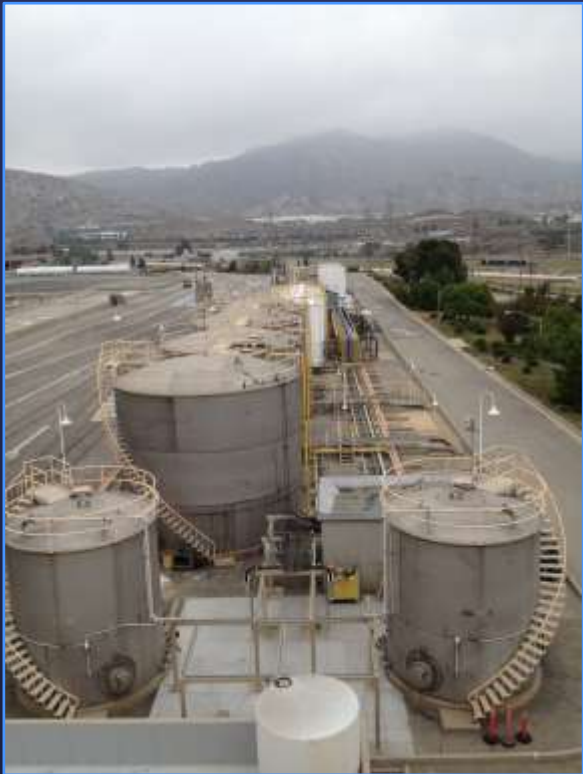
Update on Jensen Reliability Projects

Item 7c

April 10, 2023

Jensen Reliability Upgrades

Outline



- **Operations**
 - Recent operations under extreme conditions
 - Long-term system reliability improvements
- **Key Projects**
 - Bromate Control Upgrades
 - Electrical Upgrades Stage 3
 - Solids Mechanical Dewatering
- **Schedule and Next Steps**

Jensen Water Treatment Plant



Jensen Plant Overview

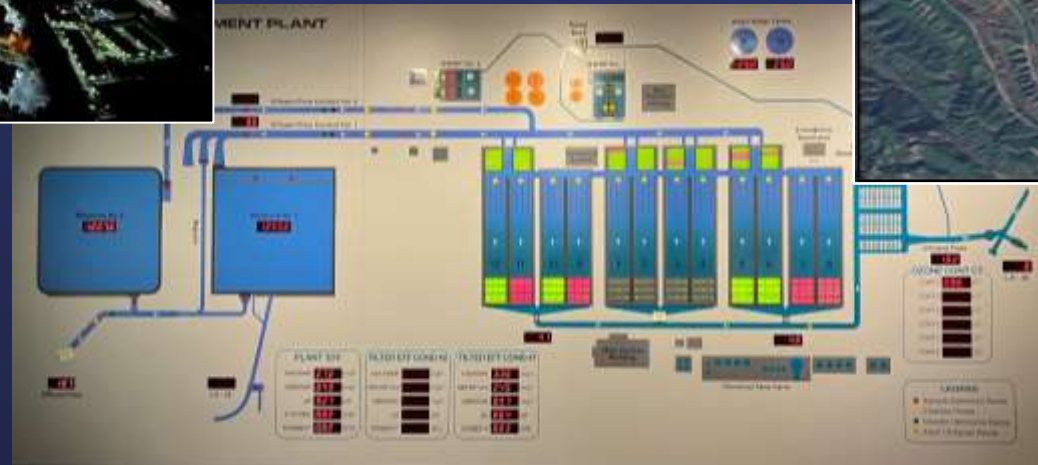


Recent Operations under Extreme Conditions

Saddle Ridge Fire – Oct. 2019



Castaic Lake – Jan. 2023



Wide Flow Range

System Reliability Improvement 1 – Rehabilitate Aging Infrastructure and Manage Chemical Costs

- Existing caustic tank farm
 - Original from 1972
 - Previous containment retrofit does not meet current Metropolitan standards



Existing Jensen Caustic Tank Farm

- Caustic soda price increasing
 - Project cost reduced by integrating ammonia-chlorine process for bromate control

Enhanced Bromate Control Process



*Ammonia-chlorine bromate control process has been effectively implemented at the Mills and Weymouth plants

System Reliability Improvement 2 – Enhance Redundancy

- Additional power supply needed for key treatment processes
 - Chlorine
 - Coagulants
 - Flocculators
 - Finished Water Reservoirs
 - Administrative Building
- Standby 480V generators can power equipment during emergency
- Double-ending power completed at Diemer, Skinner, and Weymouth plants; underway at Mills plant



Original Plant Equipment from 1972

System Reliability Improvement 3 – Increase Solids Handling Capacity

- Existing agreement with LADWP
 - Use of four lagoons at LAAFP
 - Return two lagoons in Oct. 2024
 - Construct two new lagoons
- Limited solids handling capacity
 - Four lagoons meet design criteria for 250 MGD plant capacity
 - Ability to operate at higher flows with favorable water quality



Upcoming Reliability Projects

Mechanical
Dewatering Facility

Bromate
Control Upgrades

Electrical System
Reliability Upgrades
Stage 3



Bromate Control Upgrades

Long-term process improvements

- Ammonia and chlorine added upstream of ozone contactor
 - Effectively controls bromate
 - Reduces chemical costs
- New caustic soda tank farm adjacent to plant outlet
- Removal of decommissioned tank farm

*\$22M estimated construction contract



Bromate control ejector building at Weymouth

Electrical Upgrades

Multi-Stage Approach

- **Stage 1:** Enhanced medium-voltage switchgear & provided electrical infrastructure for the Solar & BESS Facilities (**completed in 2018**)
- **Stage 2:** Upgraded Uninterruptible Power Supply (UPS) units and associated Motor Control Centers (MCCs) supporting critical process equipment on western portion of the plant (**completed in 2022**)



New Unit Substation

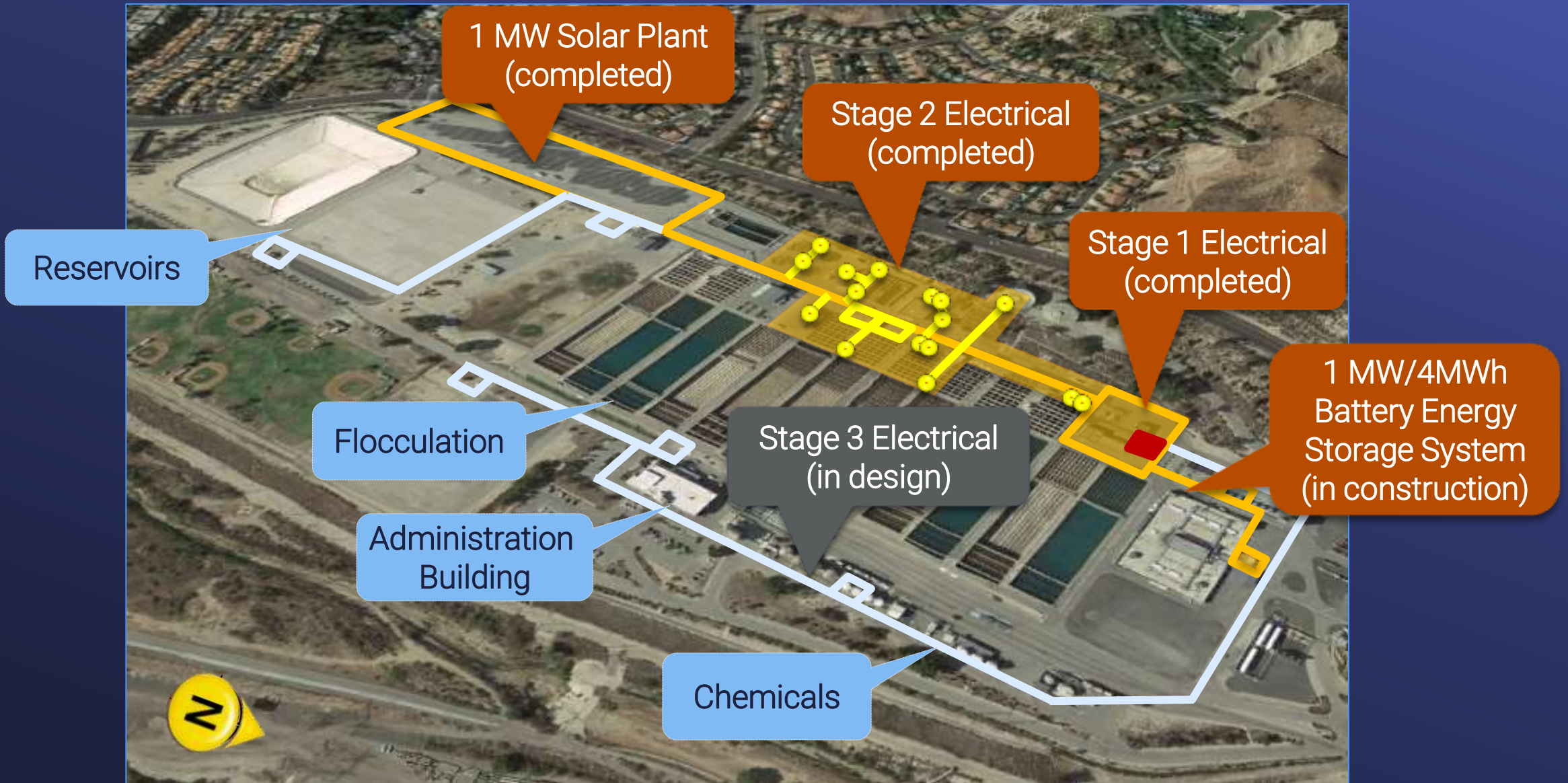


Existing Cables in Vaults



New Cables & Cable Trays

Electrical Upgrades – Stage 3



Electrical Upgrades – Stage 3

Multi-Stage Approach

- **Stage 3 Scope**
 - Upgrades to six existing UPCs
 - Addition of five new double-ended substations & associated MCCs
 - Improvements to backup capability of critical process equipment

***\$50M estimated construction contract**



New UPC – Electrical Upgrades Stage 2

Solids Mechanical Dewatering – Increased Capacity and Improved Reliability

- Long-term plan for Jensen solids handling includes both lagoons and mechanical dewatering
 - Inadequate space for lagoons to support 500 MGD and above
- Most cost-effective solution
 - Use of two existing lagoons
 - Addition of mechanical dewatering

***\$40M estimated construction contract**

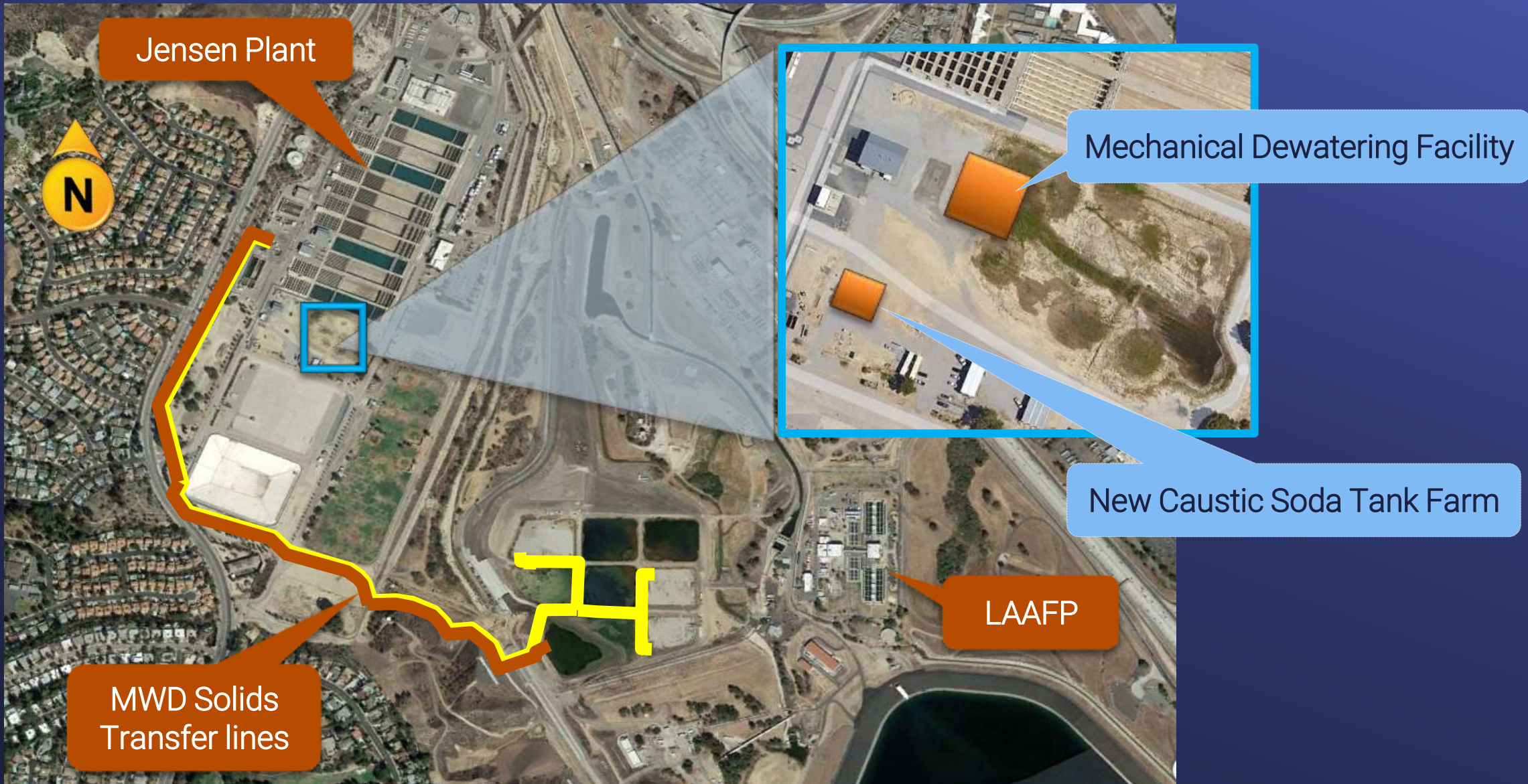


Mechanical Dewatering at Weymouth

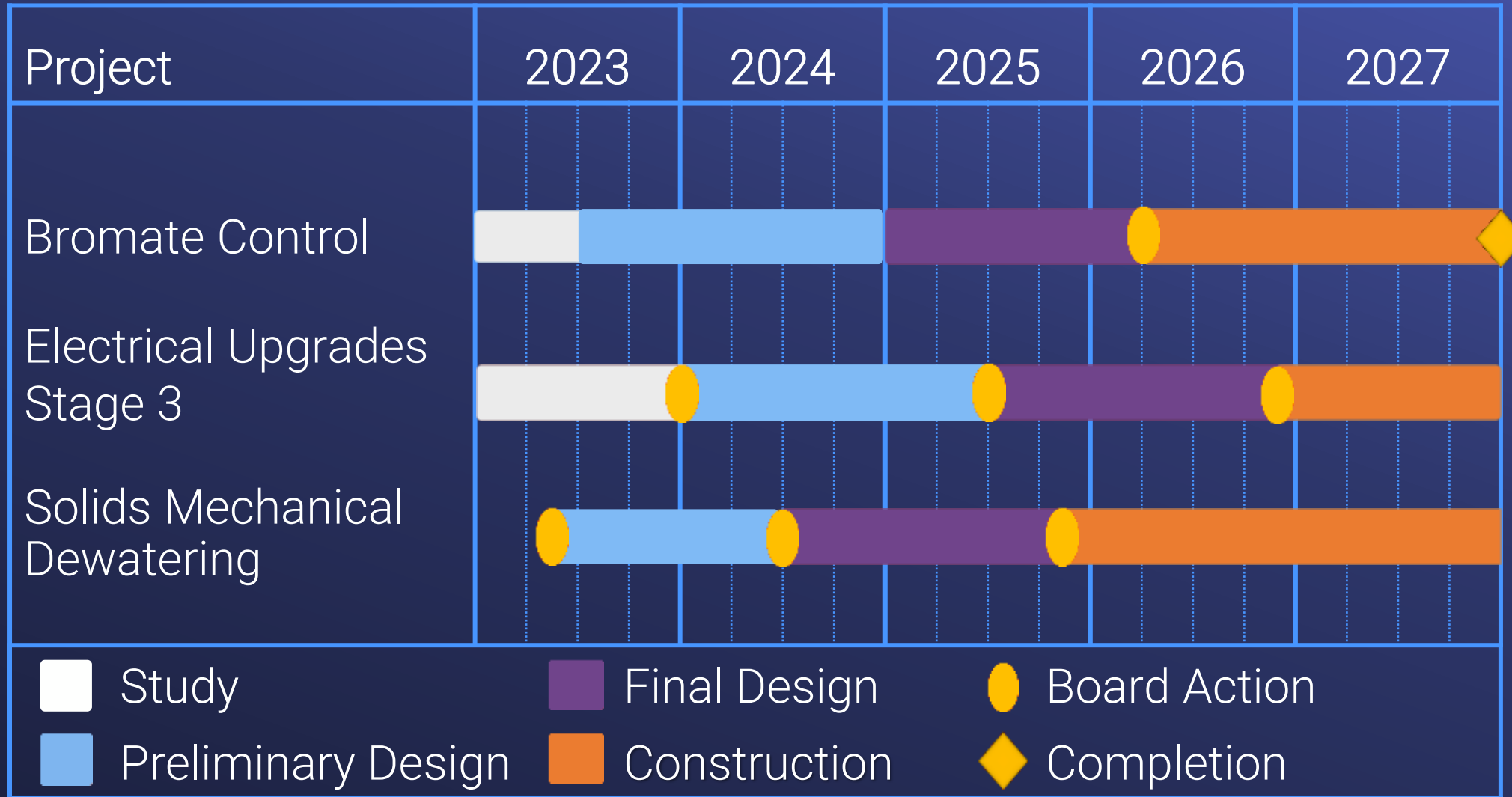
Amendment of Use Agreement with LADWP (in Progress)



Solids Mechanical Dewatering - Proposed Location



Project Schedule



Next Steps

- Proceed with Jensen reliability projects
- Upcoming May 2023 Board Action for solids handling facilities
 - Authorize consultant agreement for preliminary design of solids mechanical dewatering
 - Amend lagoon Use Agreement with LADWP



2022 E&O Field Inspection Trip at Jensen

