



Alamitos Bay Water Quality Enhancement Project

Climate, Environment, and Coastal Protection Committee – August 29, 2023

Alamitos Bay Water Circulation Summary

- Existing Alamitos Bay water circulation
 - Circulation by powerplant cooling pumps (AES & HGS) for over 55 years
 - Supports water quality and public uses
- Phase out of Once through cooling (OTC)
 - Due to fish impacts (impingement and entrainment)
- No Pumping
 - Immediate effect on circulation
 - Secondary effects on water quality:
 - bacteria concentrations harmful for human contact
 - Increase in temperatures and nutrients harmful for marine life
 - trash accumulation throughout bay
- Alamitos Bay Water Quality Enhancement (ABWQE) Project
 - Maintains existing water quality through circulation
 - Replaces six existing non-fish friendly pump houses with one fish friendly pump house

Location of Intakes and Outfalls for Once Through Cooling Pumps



AES Facilities



● AES Pump locations

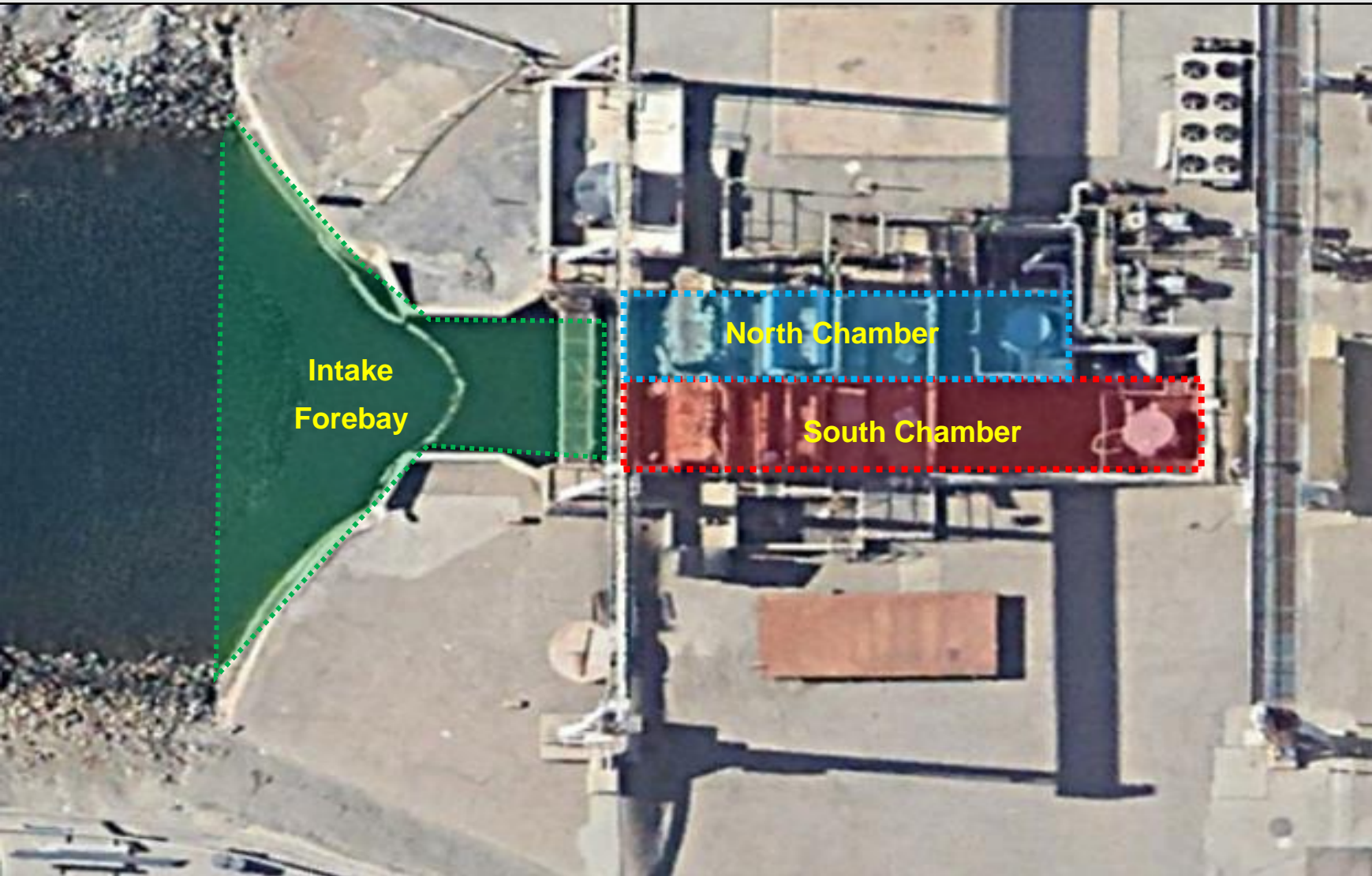
Currently planned shut down dates determined by CEC:
AES Unit 1, 2, 6 = Retired
AES Unit 3, 4, 5 = Can Participate in Strategic Energy Reserve through December 2026

Project Location

Project Update

- 2020 – Draft Conceptual Design Unit 6 Existing Intake
- 2021 – Unit 6 Existing Intake Inspection/Evaluation
- 2022 – “Pump House” Alternative Conceptual Design
 - Geotechnical Investigation and Survey
 - AES MOU Amendment 1
- 2023 – Preliminary Engineering
 - Water Quality Monitoring
 - 2/9 MAC Project Update
 - Preliminary Engineering Design submittal (in review)
 - Grant Applications (ongoing)
 - Environmental Document (scope planning)

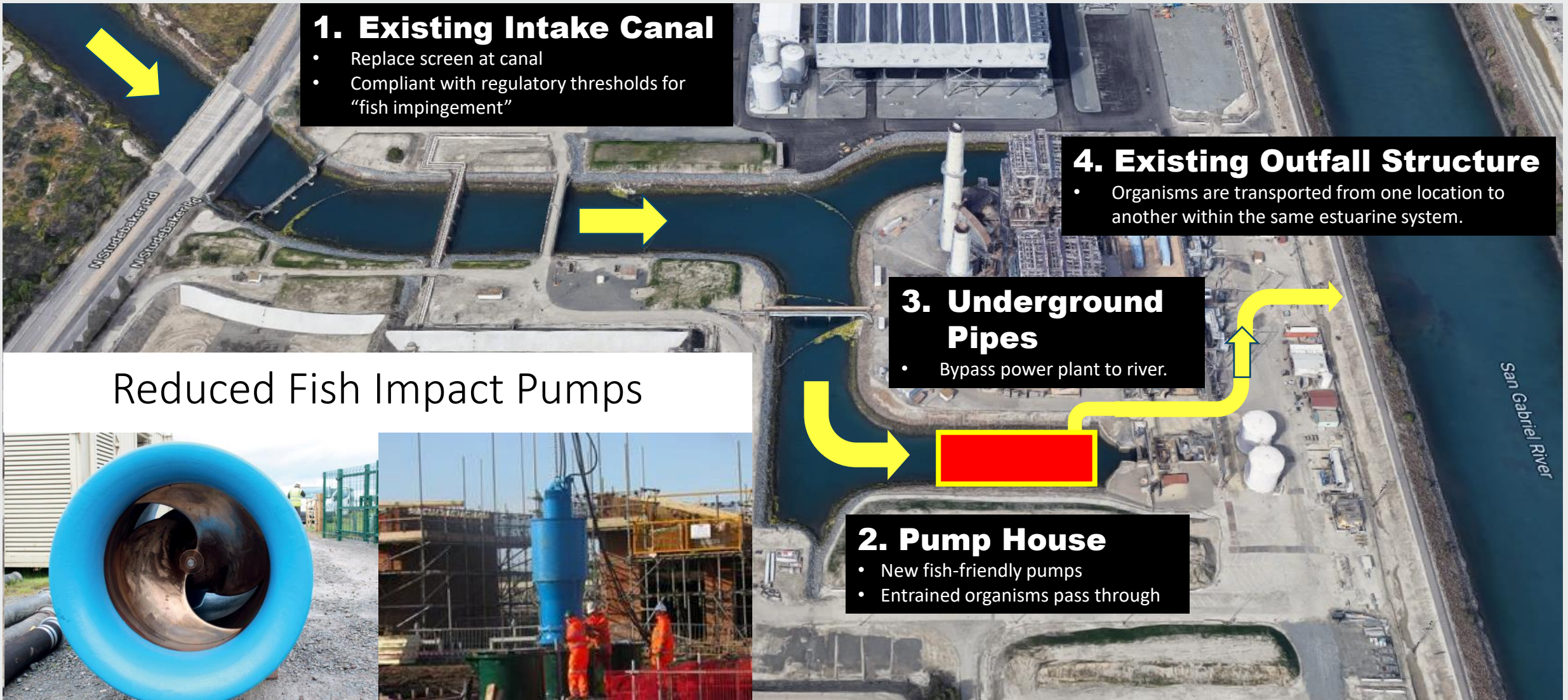
“Unit 6 Existing Intake” – Plan View of Inspection Areas



- Problems: Corrosion, structural, ground stability.
- Repair: expensive and does not meet pump standards.

CONCLUSION: Not recommended for reuse

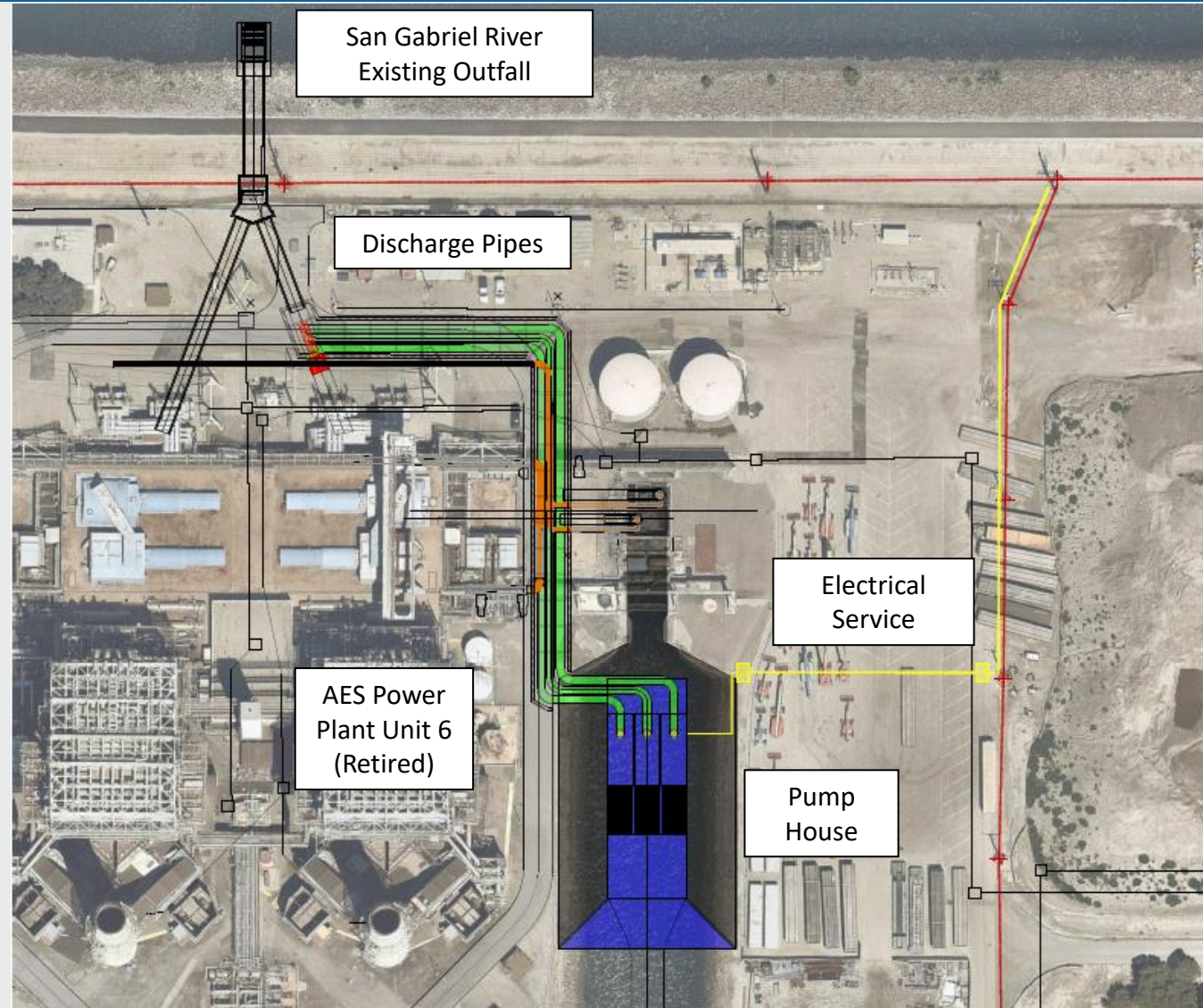
Water Circulation at AES Facility using a "Pump House"



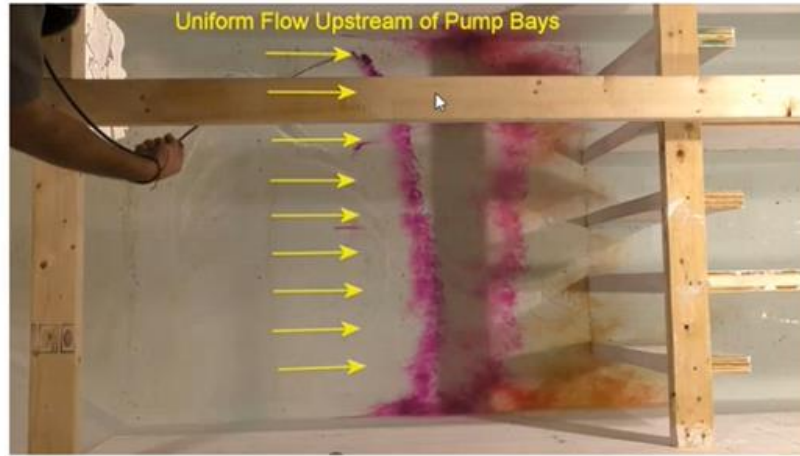
Reduced Fish Impact Pumps



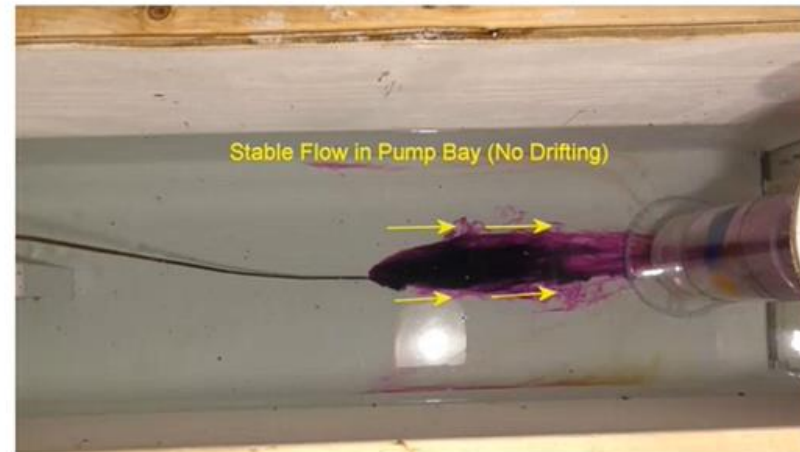
“Pump House” Concept Design – similar to existing large pump stations



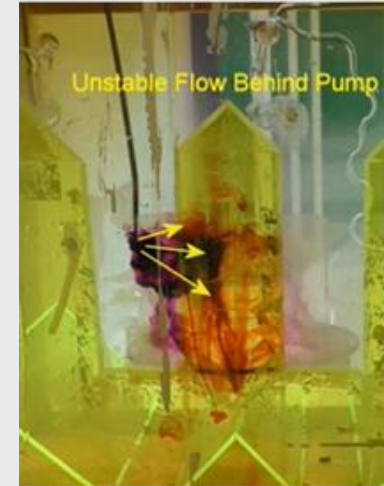
Preliminary Engineering Design – Physical Hydraulic Model



Uniform flow in the supply channel upstream of the pump bays



Approach flow in pump bays is stable with no side-to-side drifting



Tentative Schedule

- State Water Board OTC Policy extension to December 2026
- 2023 – complete Preliminary Engineering
 - Initiate environmental document and regulatory permitting
 - Financial and operational planning

Future Milestones

- Complete environmental/permitting tasks
- Fund final design, construction, operation
- Complete final design and bid for construction
- Construct

Estimated Project Costs

Conceptual Design Cost Estimate

- In review

Estimated Operations, Maintenance and Monitoring Cost

- \$2M a year

Current Funding – Preliminary Engineering / Environmental Permitting

- \$2.85M
 - Measure A (\$1.2 million in Five Year Infrastructure Plan)
 - Tidelands (\$1.5 million, includes \$500K in FY 24 CIP)
 - AES Contribution (\$150K)

The background of the slide features a night scene with multiple bursts of white and yellow fireworks exploding against a dark sky. In the lower portion of the image, the illuminated hull and funnels of a large ship are visible, along with some industrial structures on the right side. A vertical blue line divides the text area into two columns.

Thank you

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