



Alamitos Bay Water Quality Enhancement Project

Marine Advisory Commission – February 9, 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



Current Scheduled Dates of Pump Shutdown at AES



● AES Pump locations

Currently planned shut down dates determined by CEC:

AES Unit 1, 2, 6 = Retired

AES Unit 3, 4, 5 = December 2023

HGS = December 2029

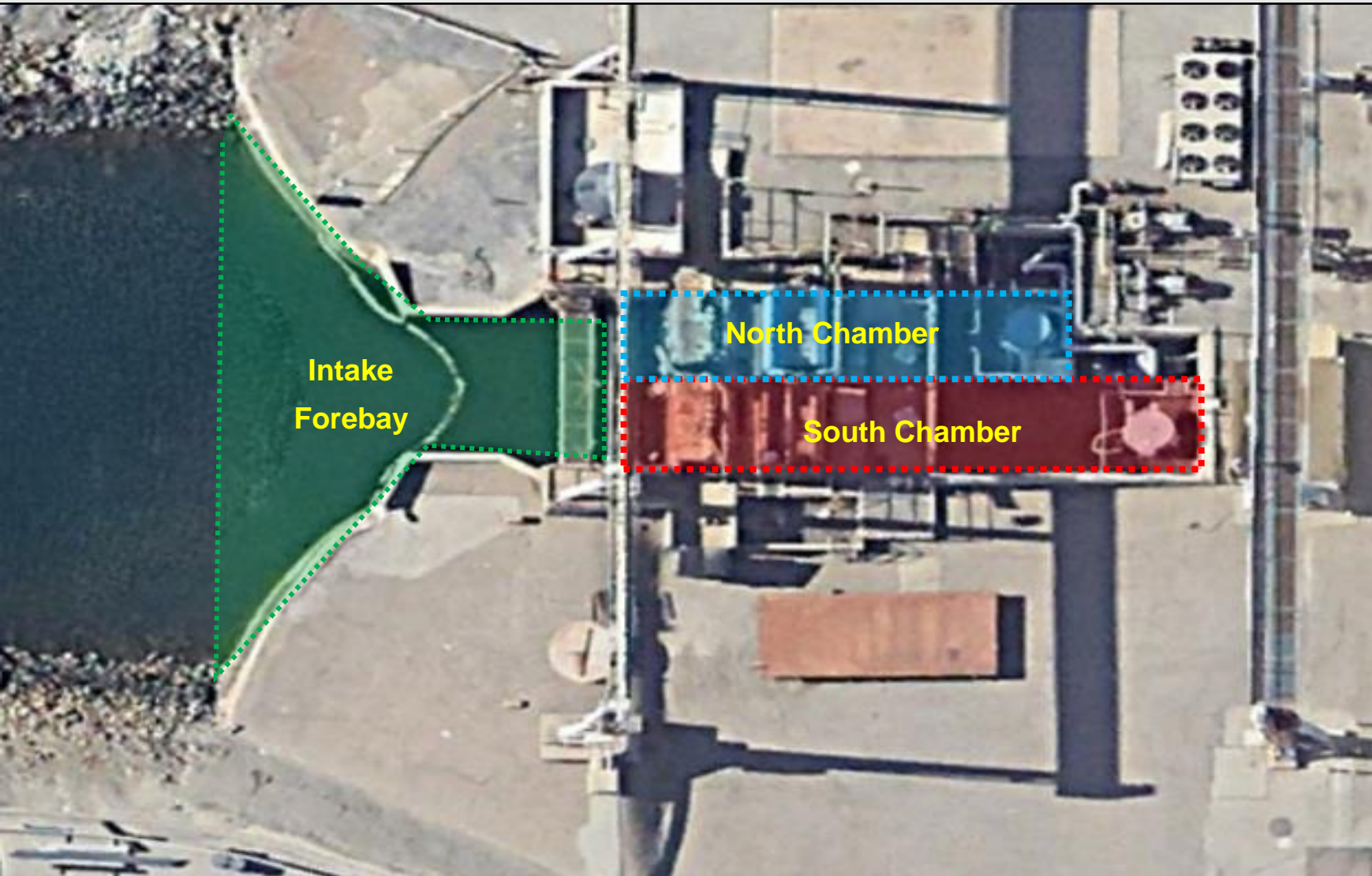
4 out of 6 units retired

Project Location

Project Update

- 2020 – Draft Conceptual Design considered four alternatives using Unit 6 Existing Intake
- 2021 – Unit 6 Existing Intake Inspection
- 2021 – Unit 6 Existing Intake Structure Upgrade Evaluation
- 2022 – “Pump House” Alternative Conceptual Design
- 2022 – Geotechnical Investigation and Survey
- June 21, 2022 City Council Meeting AES MOU Amendment 1
 - \$150K Contribution
 - Site access, term extension, coordination
- 2023 – Preliminary Engineering tasks are underway

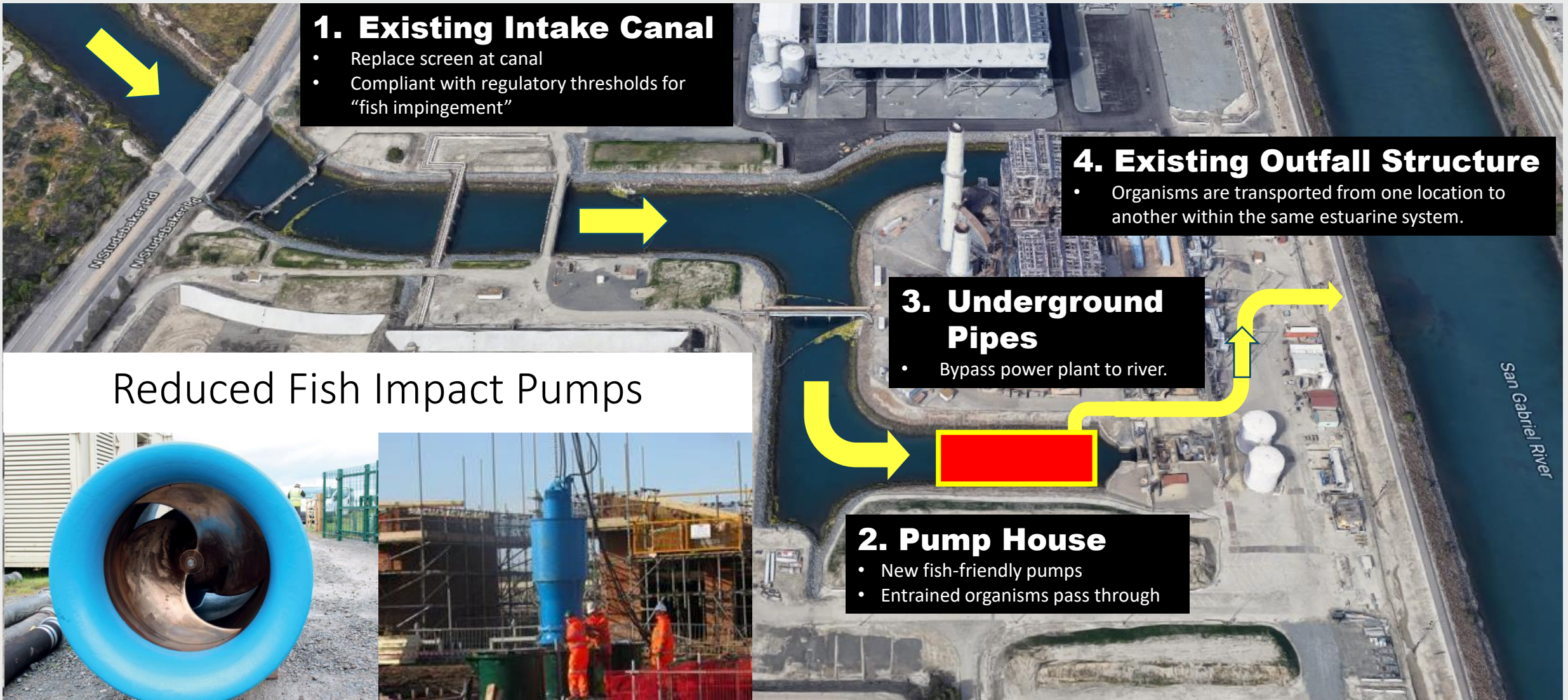
“Unit 6 Existing Intake” – Plan View of Inspection Areas



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

CONCLUSION: Not recommended for reuse

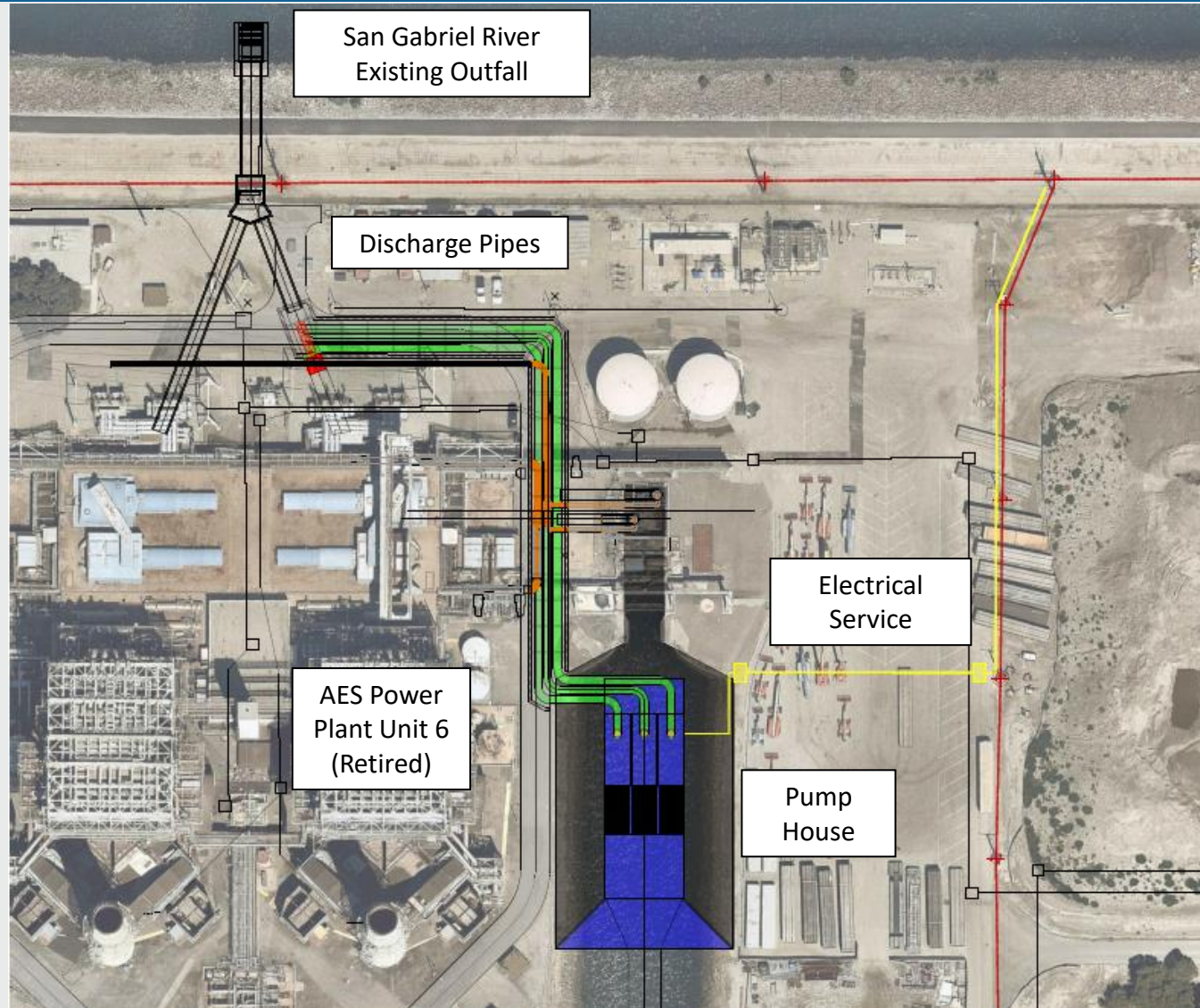
Water Circulation at AES Facility using a "Pump House"



Reduced Fish Impact Pumps



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



Tentative Schedule

- Existing AES pumps scheduled shutdown December 2023
- 2023 – complete Preliminary Engineering
 - 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

- To be refined following Preliminary Engineering

Estimated Project Costs

- Circulation System at AES Facility with pump house - \$30-45M
 - Currently funded: 30% engineering and initial permitting - \$500K
 - AES Contribution - \$150K

Estimated Operations, Maintenance and Monitoring

- \$2M a year



Thank you

Colin Averill, PE

Civil Engineer

Public Works Engineering Bureau

Colin.Averill@longbeach.gov