



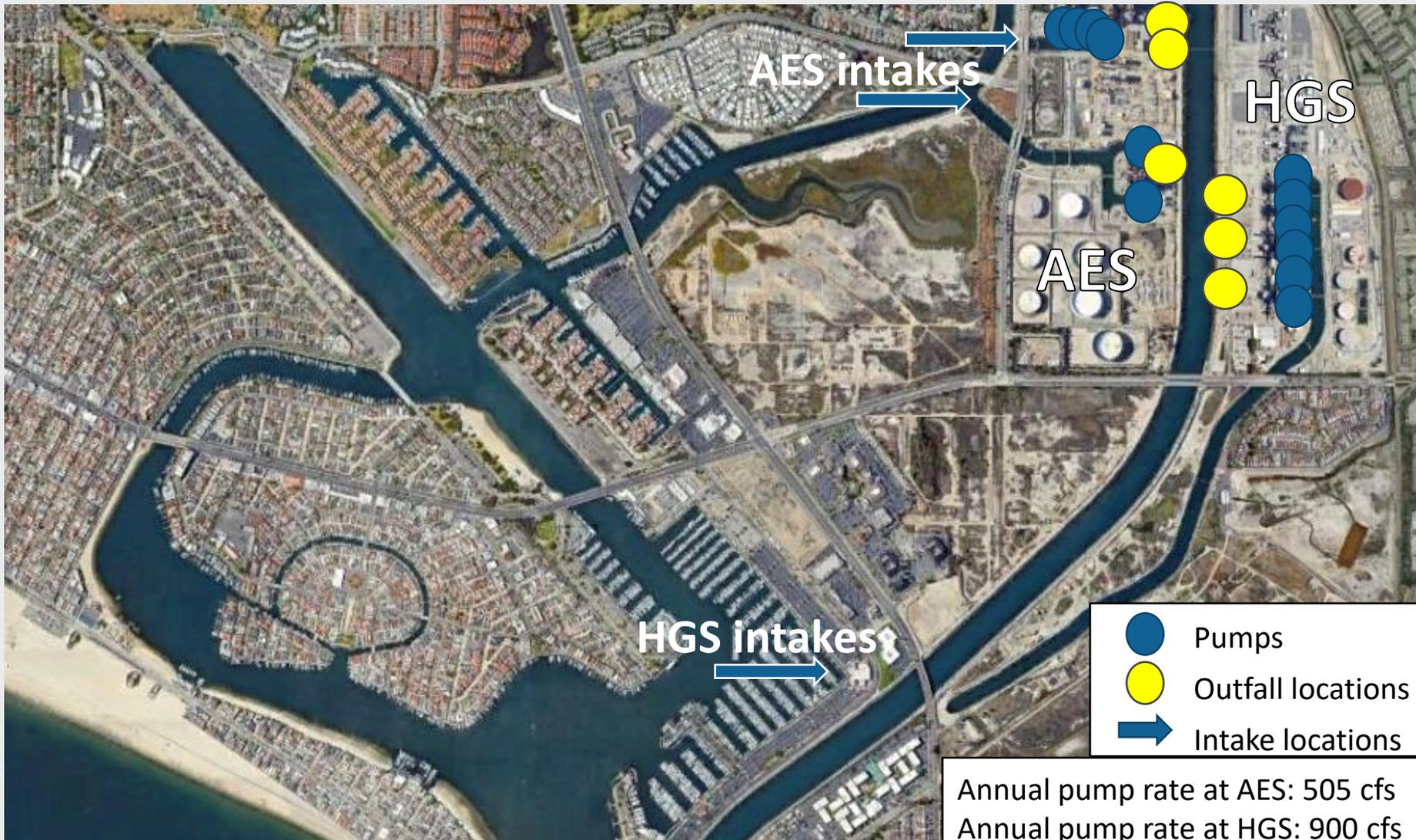
# Alamitos Bay Water Quality Enhancement Project

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

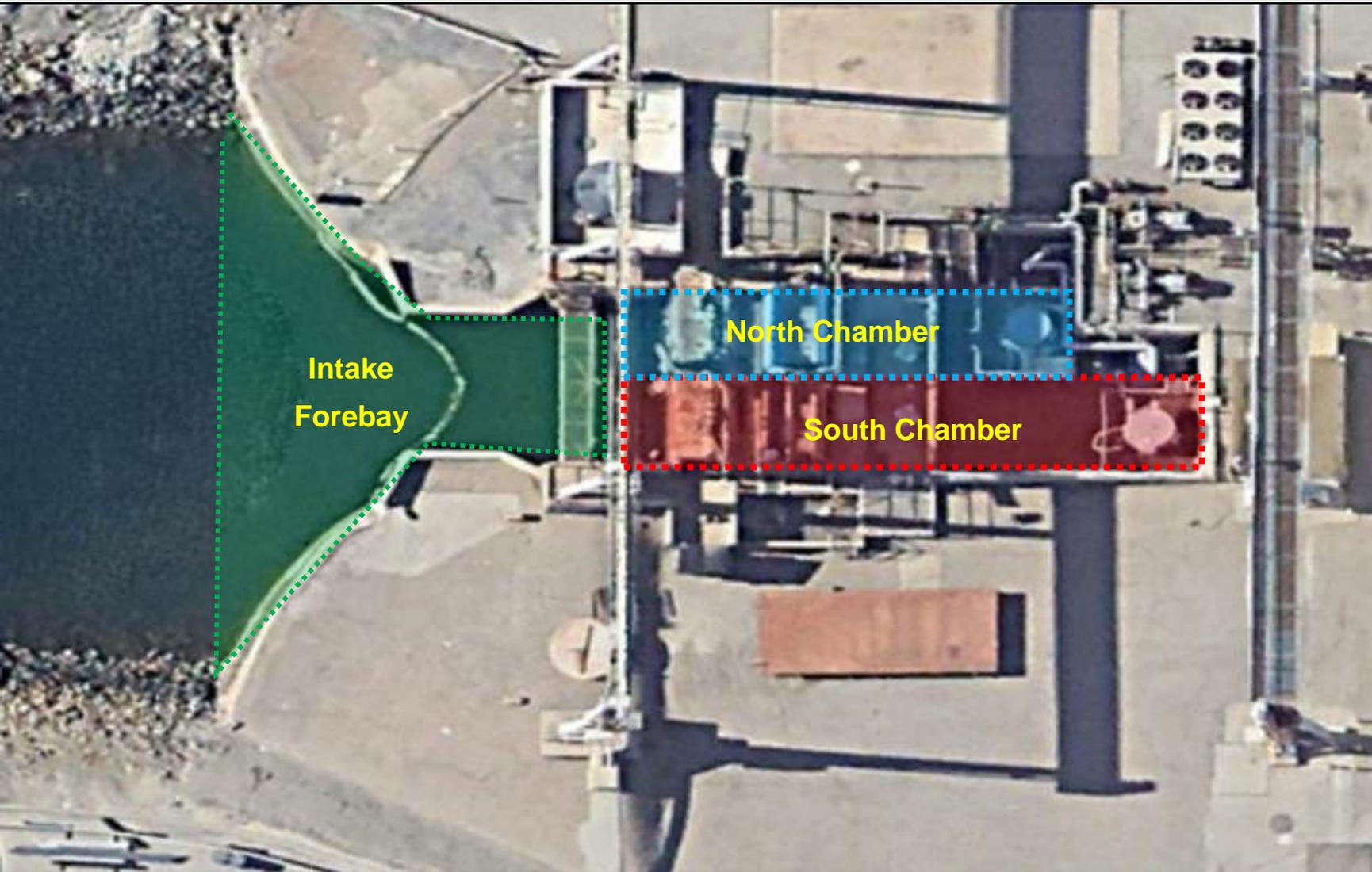
4 out of 6 units retired

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

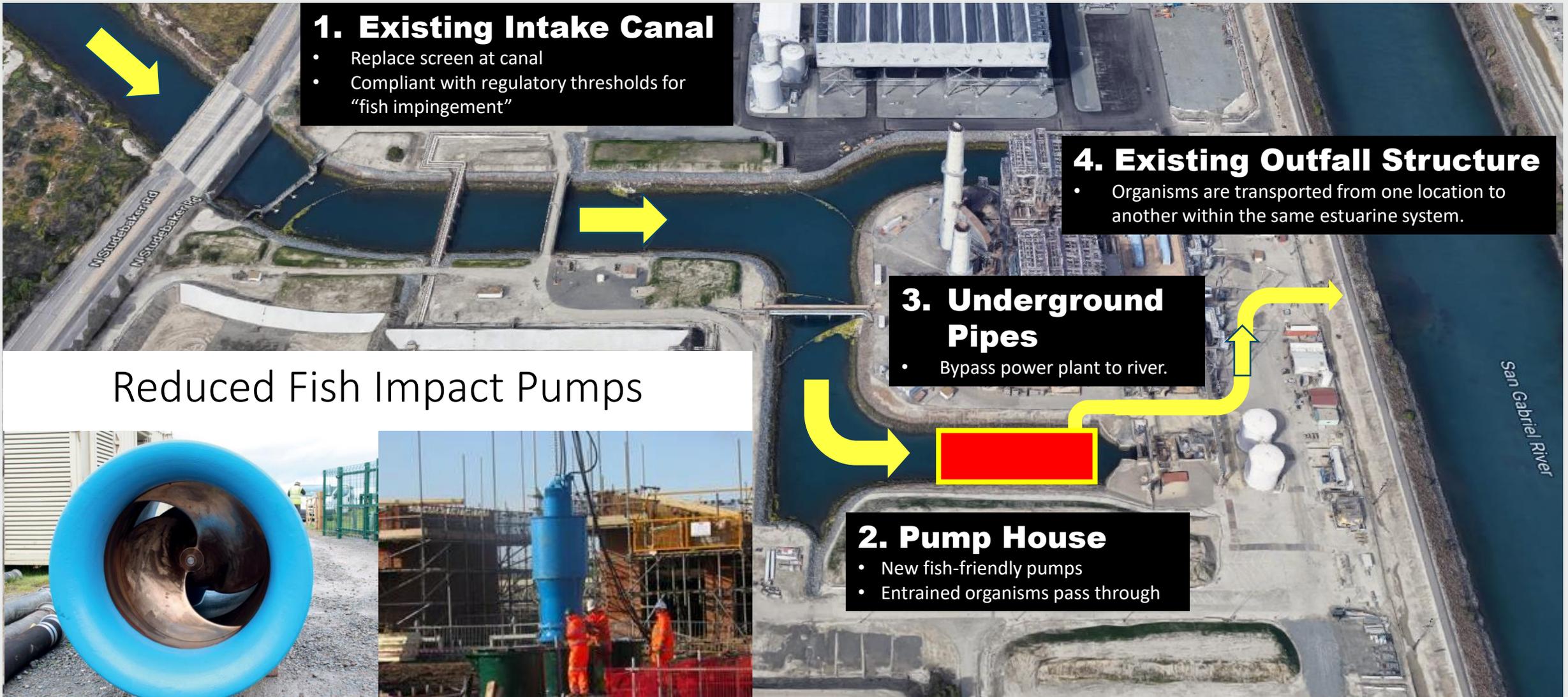
# “Unit 6 Existing Intake” – Plan View of Inspection Areas



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

**CONCLUSION: Not recommended for reuse**

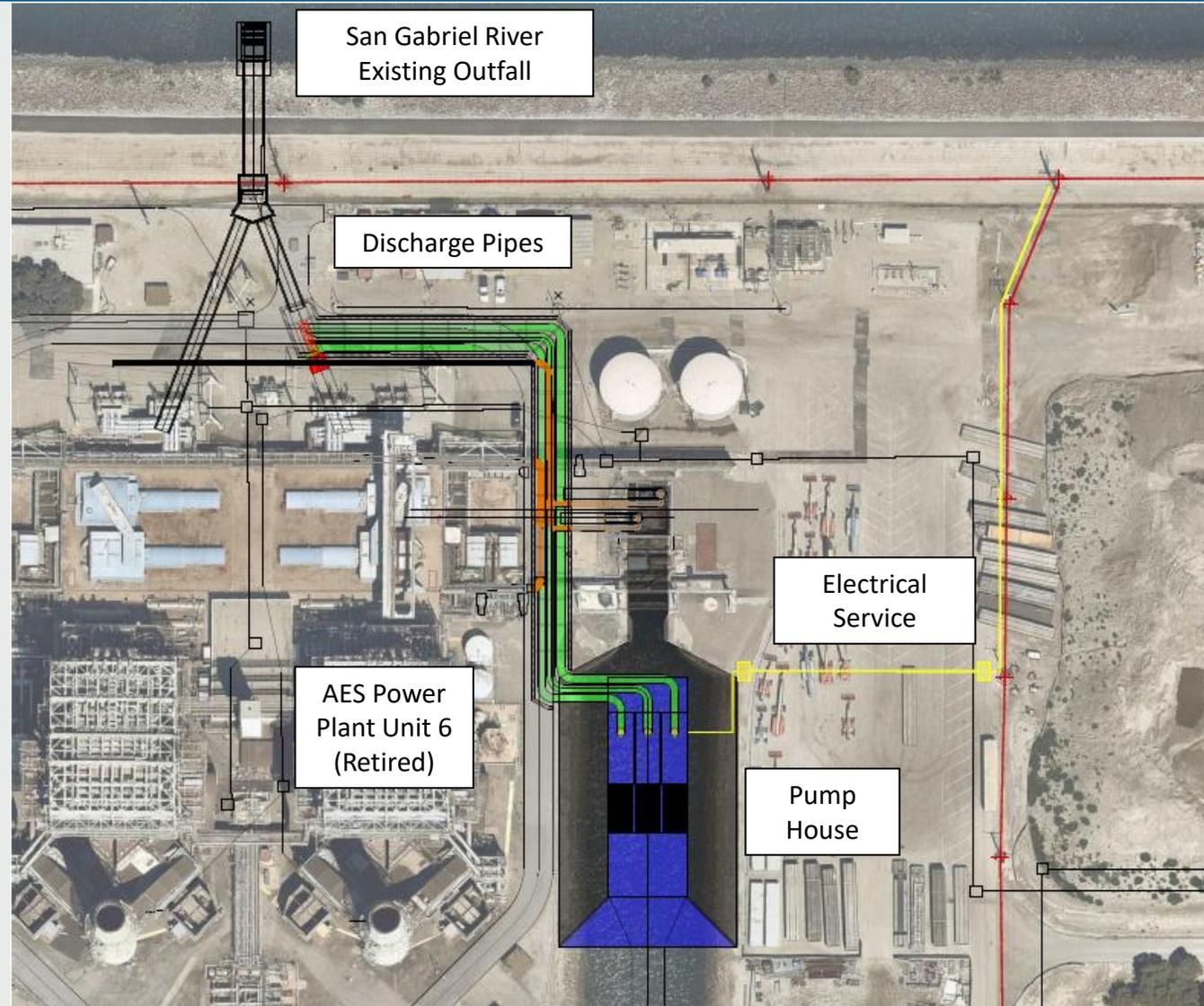
# Water Circulation at AES Facility using a "Pump House"



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**

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