



# Alamitos Bay Water Quality Enhancement Project

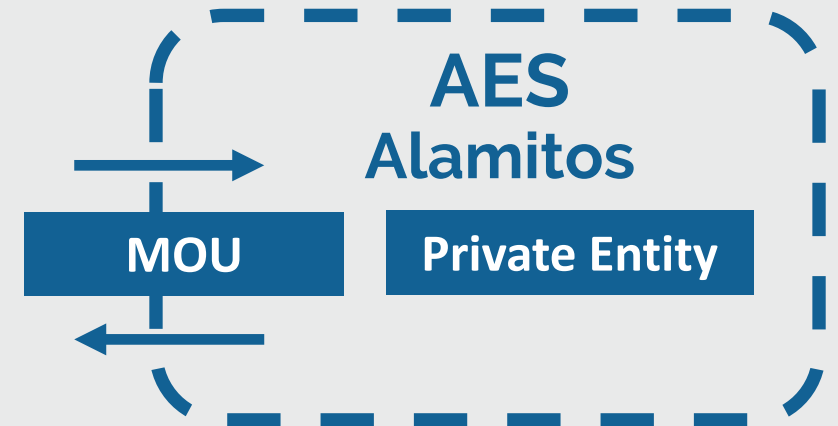
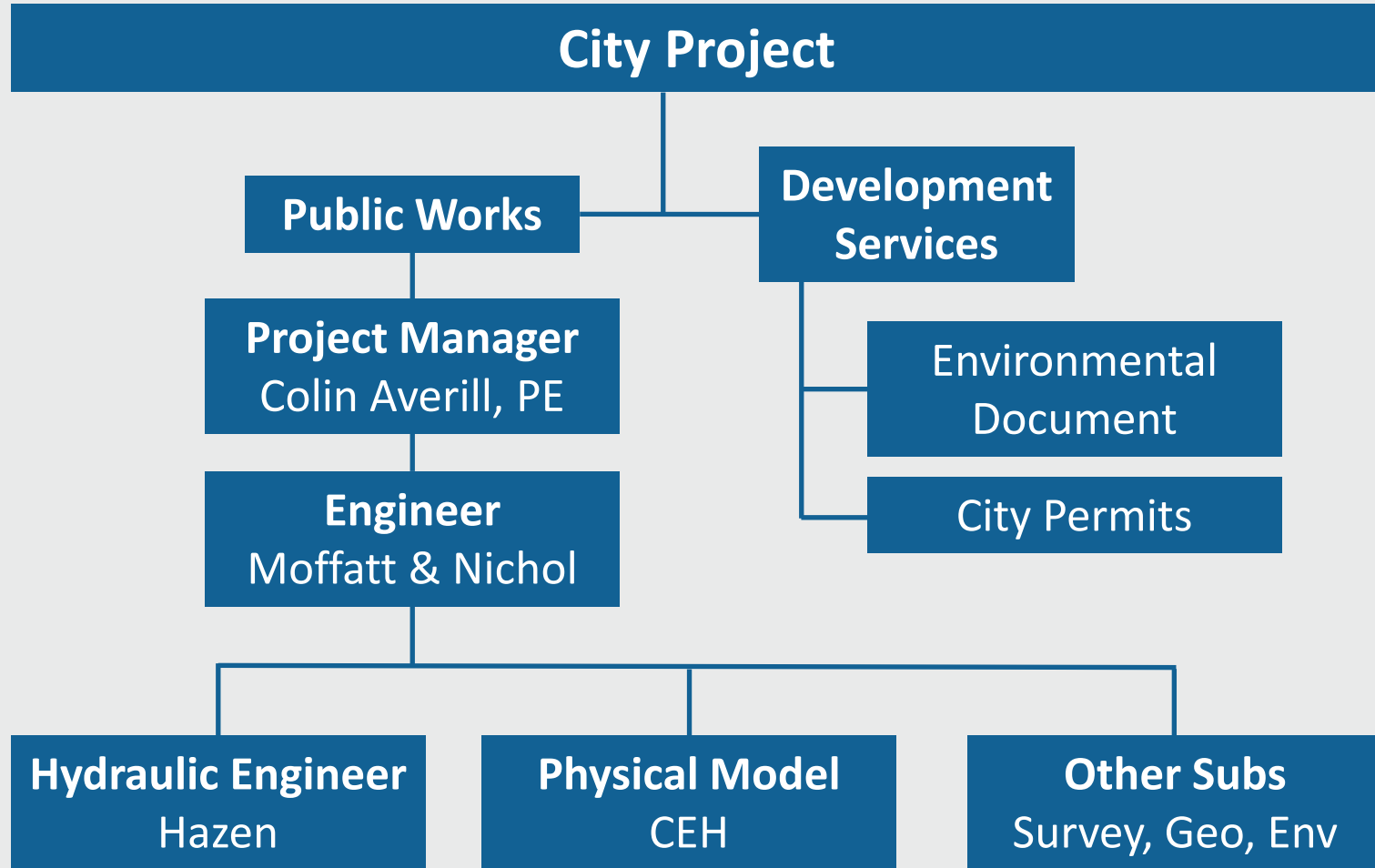
**Council District 3 Community Update – September 13, 2023**

# Agenda

- Introduction
- Summary
- Project updates
- Schedule
- Costs
- FAQ

# Introduction

## Alamitos Bay Water Quality Enhancement (ABWQE)



# Alamitos Bay Water Circulation Summary

## Existing Alamitos Bay water circulation

- Circulation from tides and powerplant cooling pumps (AES & HGS) for over 55 years
- Supports water quality and public uses

## Phase out of Once Through Cooling (OTC)

- State Water Board Policy

## 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
- New fish-friendly pump house

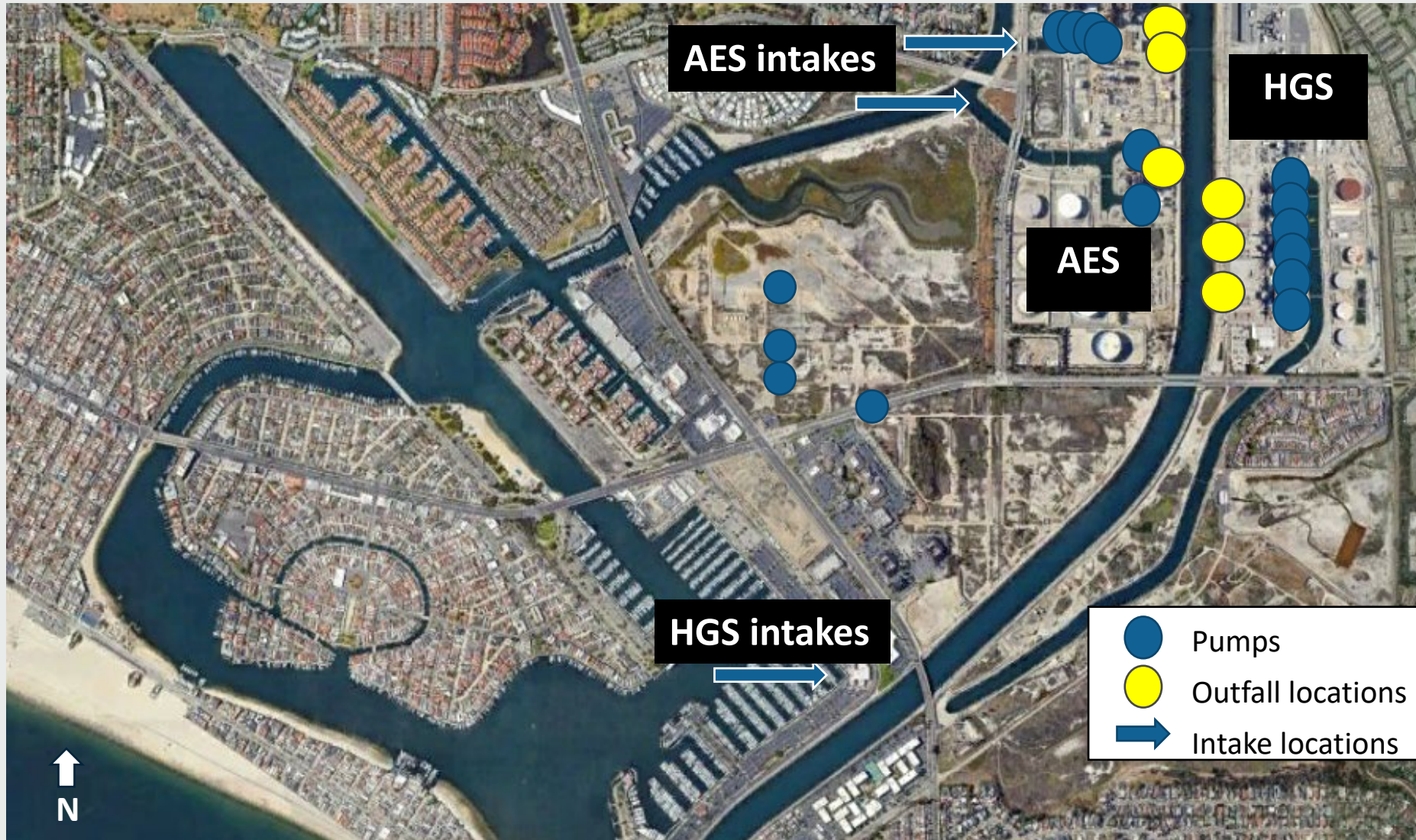
# Historic Context - Alamitos Bay and the San Gabriel River



1922



# Location of Intakes and Outfalls for Once Through Cooling Pumps



# AES Facilities



● AES Pump locations

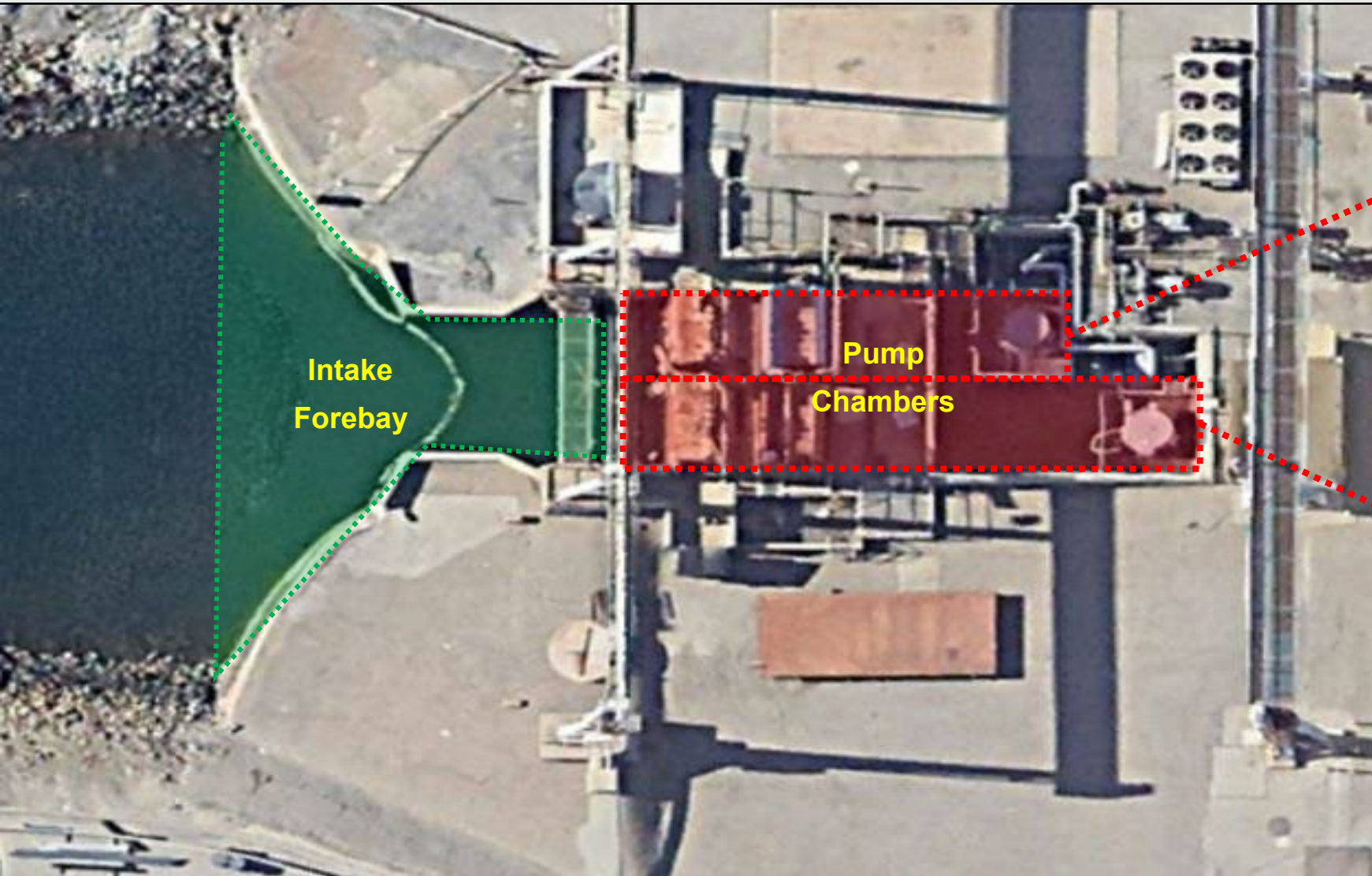
Currently planned shutdown dates determined by State Water Board:  
AES Unit 1, 2, 6 = Retired  
AES Unit 3, 4, 5 = Operations extended through December 2026 for extreme events

# 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, 8/29 CECP Project Update
  - Preliminary Engineering Design submittal (in review)
  - Grant Applications (ongoing)
  - Environmental Document (scope planning)

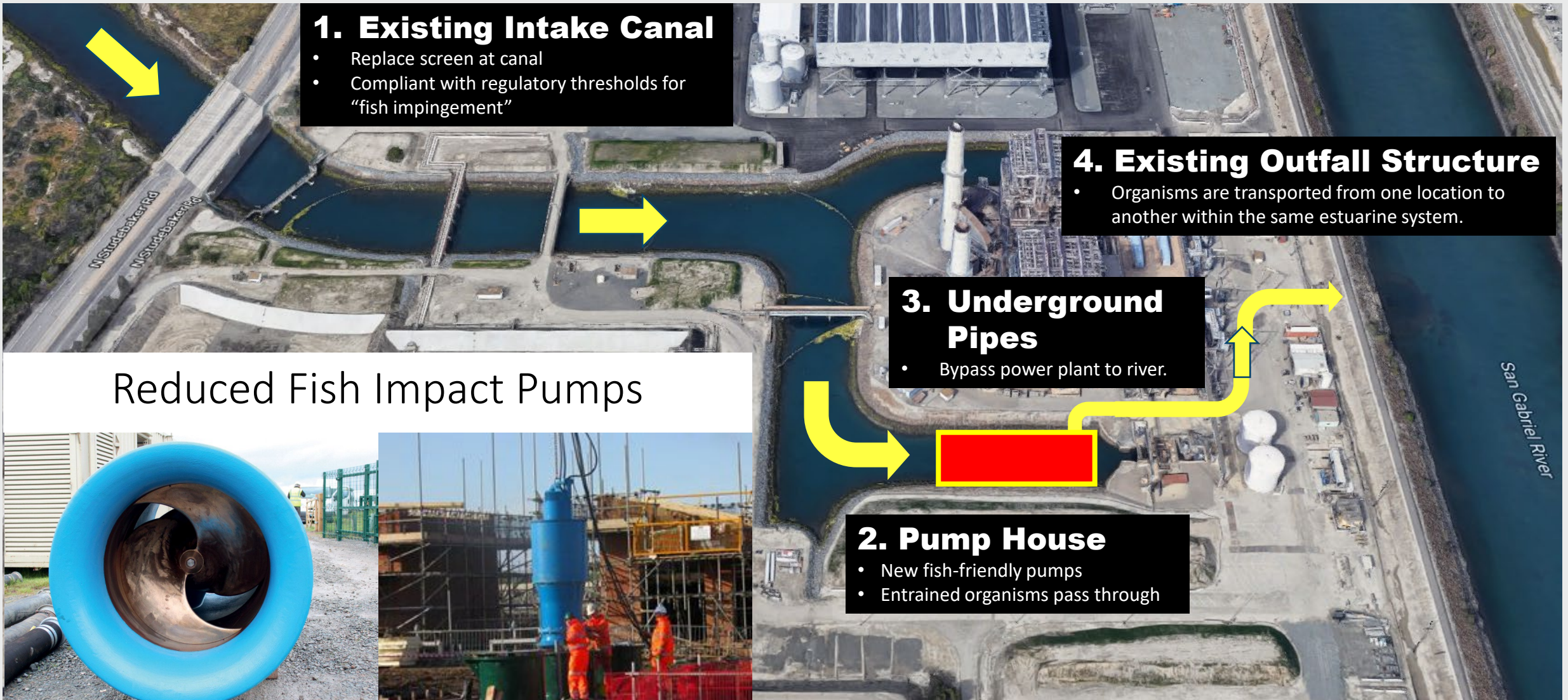


# “Unit 6 Existing Intake” – Plan View of Inspection Areas



**Condition:**  
Not recommended for reuse

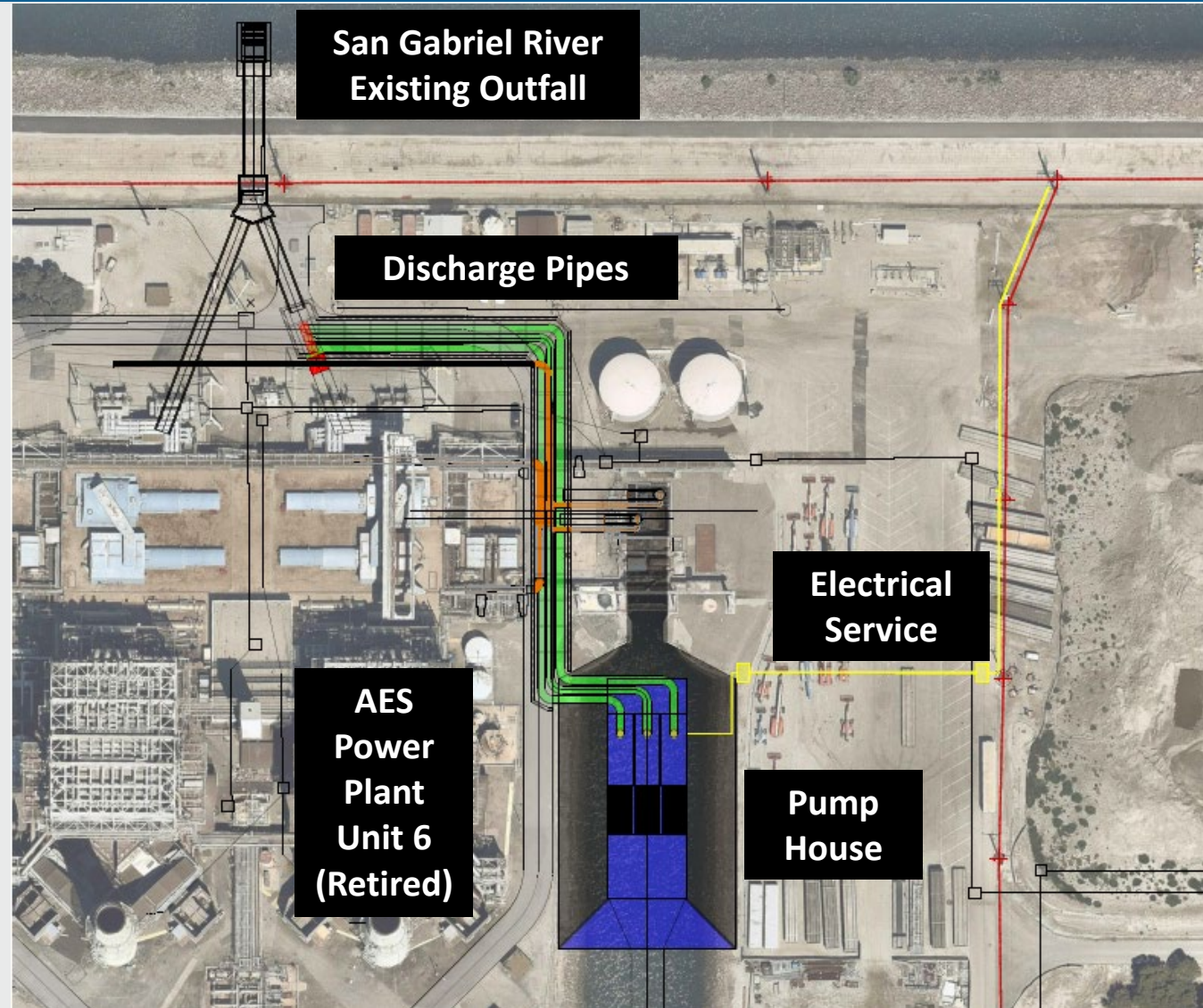
# Water Circulation at AES Facility using a “Pump House”



Reduced Fish Impact Pumps



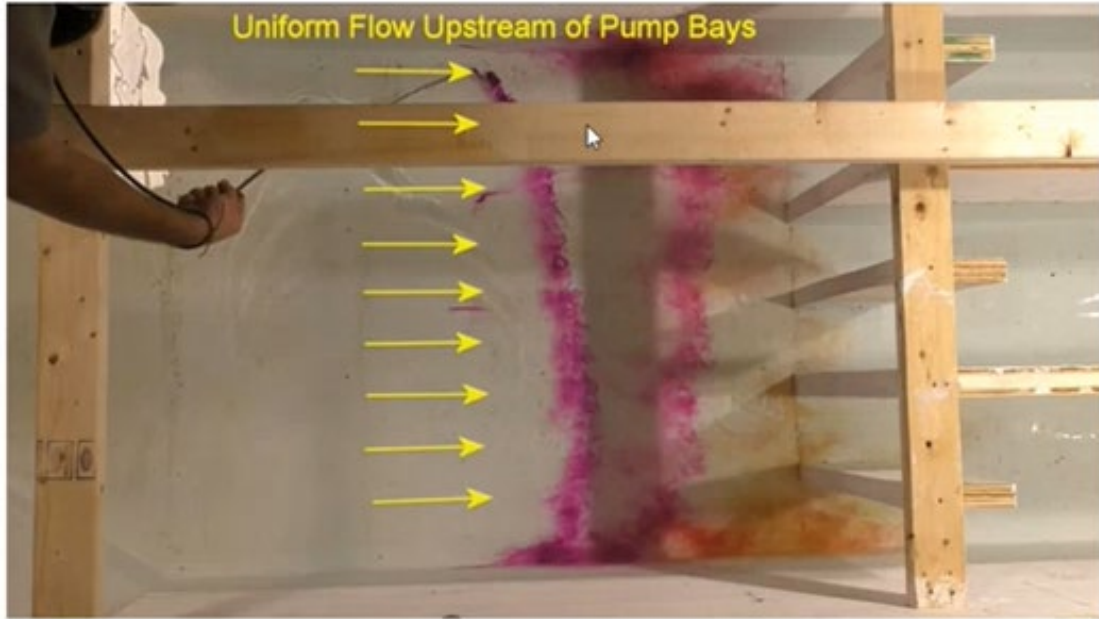
# “Pump House” Concept Design – similar to existing large pump stations



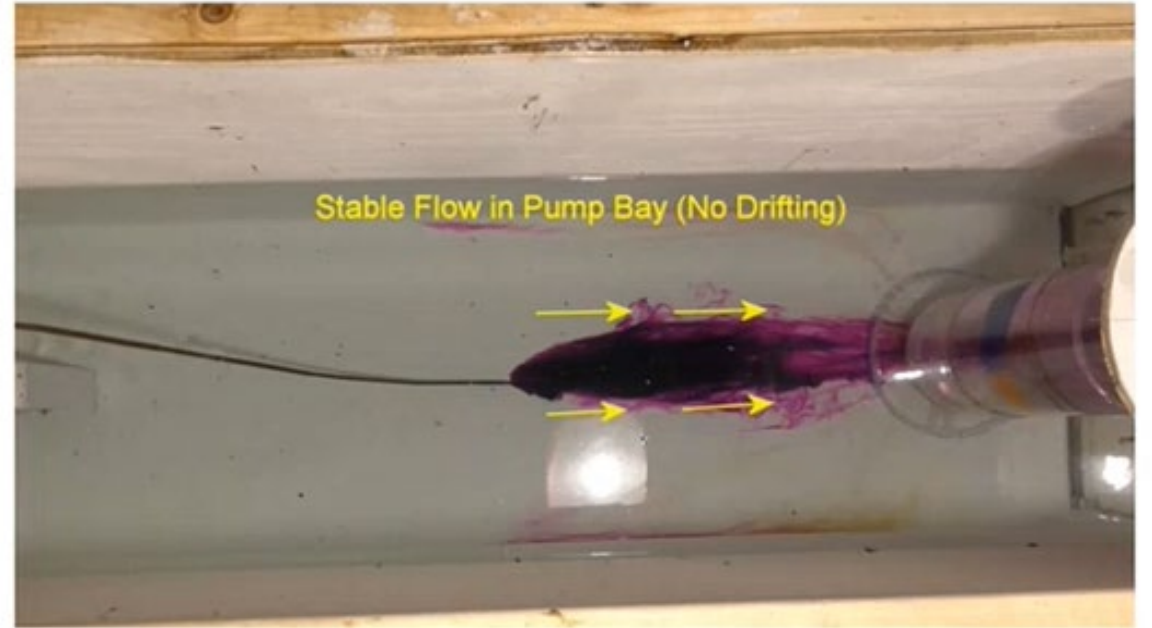
# Preliminary Engineering Design – Physical Hydraulic Model



# Preliminary Engineering Design – Physical Hydraulic Model

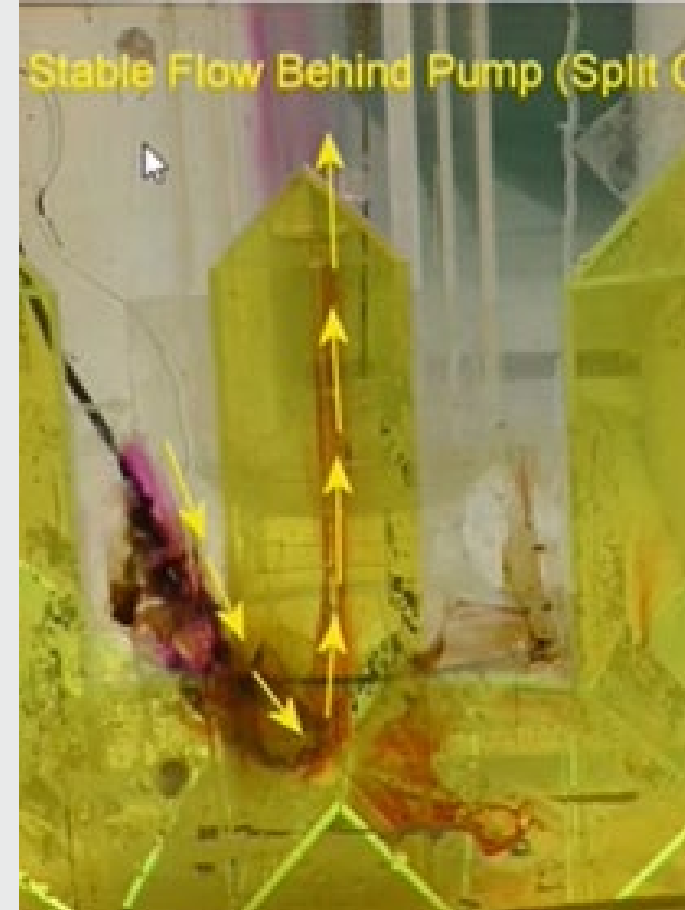
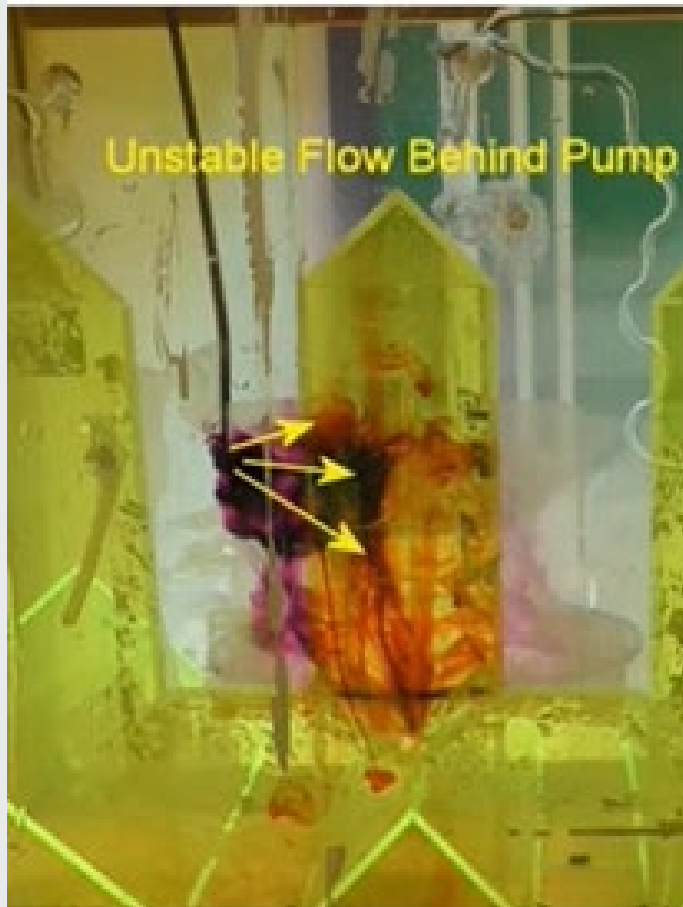


Uniform flow in the supply channel upstream of the pump bays



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

# Preliminary Engineering Design – Physical Hydraulic Model



## **Tentative Project Schedule**

- 2023 – complete Preliminary Engineering
  - Initiate environmental document and regulatory permitting
  - Financial and operational planning

## **Future Project Milestones: TBD**

- Complete environmental/permitting tasks
- Fund final design, construction, operation
- Complete final design and bid for construction
- Construction
- Operation, Maintenance and Monitoring

# Estimated Project Costs

## Preliminary Engineering Cost Estimate

- In review

## Estimated Project Costs

- Conceptual construction costs \$30-45M
- Operations, Maintenance & Monitoring \$2M/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)



# Frequently Asked Questions

**Are there current impacts to water quality in Alamitos Bay?**

**What are the bacteria levels in Alamitos Bay?**

**Is Alamitos Bay safe for recreation?**

- Refer to LB Health & Human Services Recreational Water Monitoring for current water quality conditions.
- Water samples are collected three times a week and tested routinely for indicator bacteria.
- [longbeach.gov/health/inspections-and-reporting/inspections/water-quality/ocean-water-monitoring/](https://www.longbeach.gov/health/inspections-and-reporting/inspections/water-quality/ocean-water-monitoring/)

# Frequently Asked Questions

**Are there current impacts to water quality in Alamitos Bay?**

**What are the bacteria levels in Alamitos Bay?**

**Is Alamitos Bay safe for recreation?**

- Long Beach received A and B summer dry grades for 2022-2023 from Heal the Bay
- Additional information from Heal the Bay
- [healthebay.org/beachreportcard2022-2023/](https://healthebay.org/beachreportcard2022-2023/)

# Frequently Asked Questions

**What are the schedules and rates of pumping?**

**What impacts are seen from decreased pumping?**

- Power plant operations are not subject to a set schedule and vary with electricity demand and regulations.
- Pumping rates are reported quarterly to the State Water Board by permittees.
- The City is analyzing several data sets and data collection is not yet complete.

## What data and information are available?

- LB Health & Human Services recreational water monitoring data
- [longbeach.gov/health/inspections-and-reporting/inspections/recreational-water-samples](https://longbeach.gov/health/inspections-and-reporting/inspections/recreational-water-samples)
- Information on ABWQE website
- [longbeach.gov/abwqe](https://longbeach.gov/abwqe)

# Frequently Asked Questions

## What data and information are available?

- Technical permit data from the State Water Board
- Example data output
- [//ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=esmrAnalytical](http://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=esmrAnalytical)

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Water Boards

### eSMR Analytical Report

Region:   
Report Document Type:   
Program:   
Parameter:   
WDID:   
Sample Date Range: Start:   
End:   
Order Number:   
Facility:   
Party:   
County:   
Monitoring Location Type:   
Record Type:

Note: Hold "Ctrl" while clicking to select multiple values

Location	Parameter	Analytical Category	Qual	Result	Units	MDL	ML	RL	Sampling	Sampling	Analysis
EFF-002	Flow	Data Unavailable	=	195.34	MGD				1/1/2023	23:59:00	1/1/2023
EFF-002	Temperature	Instantan	=	78.9	Degrees F				1/1/2023	23:59:00	1/1/2023
EFF-002	Flow	Data Unavailable	=	277.94	MGD				1/2/2023	23:59:00	1/2/2023
EFF-002	Temperature	Instantan	=	74.7	Degrees F				1/2/2023	23:59:00	1/2/2023
EFF-002	pH	Standard Method (1=		7.9	SU	0.03		0.05	1/3/2023	9:01:00	1/3/2023
EFF-002	pH	Standard Method (1=		7.89	SU	0.03		0.05	1/3/2023	9:00:00	1/3/2023
EFF-002	Temperat	Standard Method (1=		15	Degrees C	0.03		0.05	1/3/2023	9:01:00	1/3/2023
EFF-002	Temperat	Standard Method (1=		14.9	Degrees C	0.03		0.05	1/3/2023	9:00:00	1/3/2023
EFF-002	Flow	Data Unavailable	=	284.73	MGD				1/3/2023	23:59:00	1/3/2023
EFF-002	Temperature	Instantan	=	61.3	Degrees F				1/3/2023	23:59:00	1/3/2023
EFF-002	Chlorine, Standard Method (1=	DNQ		0.03	mg/L	0.02		0.05	1/4/2023	15:45:00	1/4/2023
EFF-002	Flow	Data Unavailable	=	367.05	MGD				1/4/2023	23:59:00	1/4/2023
EFF-002	Chlorine, Standard Method (1=			0.05	mg/L	0.02		0.05	1/4/2023	15:46:00	1/4/2023
EFF-002	Chlorine, Standard Method (1=			0.05	mg/L	0.02		0.05	1/4/2023	15:45:00	1/4/2023
EFF-002	Chlorine, Standard Method (1=	DNQ		0.04	mg/L	0.02		0.05	1/4/2023	14:22:00	1/4/2023
EFF-002	Chlorine, Standard Method (1=	DNQ		0.04	mg/L	0.02		0.05	1/4/2023	14:23:00	1/4/2023
EFF-002	Chlorine, Standard Method (1=	DNQ		0.02	mg/L	0.02		0.05	1/4/2023	15:46:00	1/4/2023
EFF-002	Chlorine, Standard Method (1=			0.05	mg/L	0.02		0.05	1/4/2023	14:23:00	1/4/2023
EFF-002	Chlorine, Standard Method (1=			0.06	mg/L	0.02		0.05	1/4/2023	14:22:00	1/4/2023
EFF-002	Chlorine, Free Availi	Daily Max DNQ		0.03	mg/L	0.02		0.05	1/4/2023	15:45:00	1/4/2023
EFF-002	Chlorine, Total Resic	Daily Max		0.06	mg/L	0.02		0.05	1/4/2023	14:22:00	1/4/2023
EFF-002	Chlorine, Free Availi	Daily Max DNQ		0.04	mg/L	0.02		0.05	1/4/2023	14:22:00	1/4/2023
EFF-002	Chlorine, Free Availi	Instantan DNQ		0.04	mg/L	0.02		0.05	1/4/2023	14:22:00	1/4/2023
EFF-002	Chlorine, Free Availi	Instantan DNQ		0.03	mg/L	0.02		0.05	1/4/2023	15:45:00	1/4/2023
EFF-002	Temperature	Instantan	=	73.3	Degrees F				1/4/2023	23:59:00	1/4/2023
EFF-002	Chlorine, total Resic	Daily Max	=	0.05	mg/L		0.02	0.05	1/4/2023	15:45:00	1/4/2023
EFF-002	Flow	Data Unavailable	=	378.13	MGD				1/5/2023	23:59:00	1/5/2023
EFF-002	Temperature	Instantan	=	82.5	Degrees F				1/5/2023	23:59:00	1/5/2023
EFF-002	Flow	Data Unavailable	=	378.19	MGD				1/6/2023	23:59:00	1/6/2023
EFF-002	Temperature	Instantan	=	66.979	Degrees F				1/6/2023	23:59:00	1/6/2023
EFF-002	Flow	Data Unavailable	=	309.93	MGD				1/7/2023	23:59:00	1/7/2023
EFF-002	Temperature	Instantan	=	67.6	Degrees F				1/7/2023	23:59:00	1/7/2023
EFF-002	Flow	Data Unavailable	=	231.38	MGD				1/8/2023	23:59:00	1/8/2023
EFF-002	Temperature	Instantan	=	67.4	Degrees F				1/8/2023	23:59:00	1/8/2023
EFF-002	Chlorine, Standard Method (1=			0.05	mg/L	0.02		0.05	1/9/2023	14:32:00	1/9/2023
EFF-002	pH	Standard Method (1=		7.88	SU	0.03		0.05	1/9/2023	11:35:00	1/9/2023

## How much will the project cost?

### **Preliminary Engineering Cost Estimate**

- In review

### **Estimated Project Costs**

- Conceptual construction costs \$30-45M
- Operations, Maintenance & Monitoring \$2M/year

## How is this project being funded?

- \$2.85M Preliminary Engineering / Environmental Permitting
  - Measure A (\$1.2 million in Five Year Infrastructure Plan)
  - Tidelands (\$1.5 million, includes \$500K in FY 24 CIP)
  - AES Contribution (\$150K)
- Potential grant opportunities

## What is the schedule?

- 2023 – complete Preliminary Engineering
  - Initiate environmental document and regulatory permitting
  - Financial and operational planning
- Future schedule dependent on funding and environmental permitting process



## What are the next steps?

- Complete environmental/permitting tasks
- Fund final design, construction, operation
- Complete final design and bid for construction
- Construction
- Operation, Maintenance and Monitoring

## What is the status of Once-Through-Cooling (OTC)?

- On August 15, 2023: The State Water Board adopted the Amendment to the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC).
- Compliance Schedule for the Alamitos generating station revised from December 31, 2023, to December 31, 2026
- [waterboards.ca.gov/water\\_issues/programs/ocean/cwa316/](https://waterboards.ca.gov/water_issues/programs/ocean/cwa316/)



**Thank you**

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