

# Engineering, Operations, & Technology Committee Jensen Flocculation Upgrades

Item 7-2 May 13, 2024 Item 7-2 Jensen Flocculation Upgrades

#### Subject

Amend the Capital Investment Plan for fiscal years 2022/2023 and 2023/2024 to include upgrades to the flocculation system at the Joseph Jensen Water Treatment Plant

#### Purpose

Upgrade the flocculation system to handle extended turbidity spikes and unfavorable water quality conditions, which are expected to become more common due to climate change

#### **Recommendation and Fiscal Impact**

Amend the Capital Investment Plan to include the upgrades to the flocculation system Fiscal Impact of \$460,000

#### Not Budgeted

#### Location Map



# Background

- Flocculator Basin
  - Six flocculator shafts per basin
- Equipment refurbished in 2020
  - Rotating equipment upgraded to stainless steel & fiber reinforced polymer (FRP) for extended life



Biocks 02/08/2021

Flocculator Bearing Block



**HDPE Bearing** 

# Background – Climate Impact

- Late 2022 through early 2023 extreme climate conditions
- Debris flow from watershed runoff highest turbidity event recorded
- All treated water quality requirements met



Castaic Lake – Jan. 2023

# Background – Impacts to Flocculation System

- Critical damage to equipment anchorage
- Necessary repairs completed Aug 2023
  - Partial anchorage repairs & shaft alignment in two basins
- Similar upgrades required at other flocculator shafts for long term resiliency



Anchorage failure at Basin 10



Structural reinforcement at bearing completed at Basin 10

### Planned Work

- Structural reinforcement for rotating equipment anchorage
- Alignment of shafts & bearings
- Replacement of worn or damaged components

# **Alternatives Considered**

- Implement flocculation equipment upgrades under a minor capital project
  - Upgrades for equipment with highest likelihood of failure
  - Analysis concluded this would not enhance longterm resiliency
- Selected Alternative comprehensive flocculator upgrades
  - Strengthens anchorage & fixes shaft alignment for all flocculators
  - Complete upgrade plan to prevent unplanned basin outages

# Scope of Work

- Field investigations
- Develop final design drawings & specifications
- Prepare cost estimate
- Prepare environmental documentation

# Allocation of Funds

#### Jensen Flocculator System Upgrades

Metropolitan Labor\$ 28,000Studies & Investigations\$ 288,000Final Design288,000Owner Costs (Proj. Mgmt., Contract Admin., Envir. Support)82,000Remaining Budget62,000Total\$ 460,000

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#### **Project Schedule**



# **Board Options**

#### • Option #1

Amend the Capital Investment Plan for fiscal years 2022/2023 and 2023/2024 to include upgrades to the flocculation system at the Joseph Jensen Water Treatment Plant.

• Option #2

Do not proceed with this project at this time.

### Staff Recommendation

• Option #1

