



- **Board of Directors**
Engineering and Operations Committee

2/13/2018 Board Meeting

7-3

Subject

Adopt CEQA determination and appropriate \$1.6 million; and authorize construction to replace chemical storage tanks at the Joseph Jensen Water Treatment Plant (Appropriation No. 15486)

Executive Summary

This action authorizes the installation of four tanks to replace deteriorated chemical storage tanks at the Joseph Jensen Water Treatment Plant. These tanks are critical components of the plant's water treatment infrastructure, and need to remain in operation to avoid a reduction in plant capacity.

Timing and Urgency

Metropolitan staff performs regular maintenance on the chemical feed systems at each of its water treatment plants. The mechanical and electrical components of the feed systems at the Jensen plant continue to perform reliably. However, internal inspections by staff identified significant damage to the interior surfaces of the plant's two sodium hypochlorite tanks, and cracks in the two fluorosilicic acid tanks. Both sodium hypochlorite tanks and one of the fluorosilicic acid tanks have been removed from service. All four tanks need to be replaced without delay to reduce the risk of unplanned reductions in treatment capacity at the Jensen plant.

This project has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria and is included in the Treatment Plant Reliability Program. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2017/18.

Details

Background

The Jensen plant was placed into service in 1972 with an initial capacity of 400 million gallons per day (mgd), and was expanded to its current capacity of 750 mgd in the early 1990s. The plant treats water from the West Branch of the State Water Project and delivers it to Metropolitan's Central Pool and to an exclusive service area on the west side of the distribution system. The facility is located in Granada Hills.

The Jensen plant uses sodium hypochlorite to control biomass growth and prevent excessive pressure drop through its filters. Fluorosilicic acid is added to the filtered water to provide fluoridation on a regional scale. Within each of Metropolitan's treatment plants, the chemical feed systems feature multiple storage tanks, feed equipment, instrumentation, and containment systems. Due to the corrosive or scaling characteristics of chemicals used in the treatment process, chemical feed equipment typically has a shorter service life than the equipment used for water service. As a result, replacement of chemical feed system components is required on a regular basis.

Metropolitan has an ongoing program to assess the condition of chemical storage tanks at its facilities. The Jensen plant relies on two 3,000-gallon fiberglass-reinforced plastic (FRP) tanks for the storage of sodium hypochlorite, and two 9,000-gallon cross-linked high-density polyethylene (HDPE) tanks for the storage of fluorosilicic acid. These tanks have recommended service lives of 15 years and 10 years, respectively. Each of the tanks has been in service since 2007.

In April 2017, Metropolitan's Board authorized design and procurement activities to replace one sodium hypochlorite tank and one fluorosilicic acid tank at the Jensen plant. These two tanks were determined to have deteriorated beyond repair and were removed from service. In October 2017, additional inspections and material testing were performed to monitor the condition of the remaining tanks. These inspections identified unrepairable damage to the interior surface within the single remaining sodium hypochlorite tank, and new cracks near the manway access hatch on the single remaining fluorosilicic acid tank. As a result of the deterioration, the remaining sodium hypochlorite tank was also removed from service. The Jensen plant is able to withstand a brief outage of the sodium hypochlorite feed system at this time, because the biomass growth rate in the filters is typically low during the winter. However, if the sodium hypochlorite tanks are not replaced expeditiously, a temporary system will need to be installed. For the single remaining fluorosilicic acid tank, temporary repairs were performed to continue delivery of the chemical on an interim basis.

Staff prepared two procurement specifications, based on the different types of tanks, and received competitive bids for the four tanks. Two procurement contracts have been awarded under the General Manager's Administrative Code authority. The new sodium hypochlorite tanks will be constructed of FRP, and the new fluorosilicic acid tanks will be constructed of extrusion-molded linear HDPE, which provides improved mechanical properties. All four tanks will employ a corrosion barrier made of an epoxy vinyl resin that will provide an expected service life of 20 years. The replacement tanks are scheduled to be delivered in early March 2018. Staff recommends moving forward with preparatory work in the chemical tank farms to enable the replacement tanks to be installed immediately upon delivery.

Jensen Chemical Tank Replacement – Construction (\$1,600,000)

The planned work includes: (1) temporary removal of a portion of the tank farm roof structures and beams to provide construction access; (2) removal and disposal of the existing sodium hypochlorite and fluorosilicic acid tanks; (3) temporary relocation of minor electrical and mechanical equipment to accommodate construction; and (4) installation of the new tanks and associated valves and instrumentation. All work will be performed by Metropolitan forces.

This action appropriates \$1.6 million and authorizes construction to replace sodium hypochlorite and fluorosilicic acid storage tanks at the Jensen plant. The requested funds include \$1.08 million for construction by Metropolitan forces; \$62,000 for record drawing preparation by Metropolitan staff; \$66,000 for hazardous materials handling and project management; and \$392,000 for remaining budget.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2017/18 capital expenditure plan. See **Attachment 1** for the Financial Statement and **Attachment 2** for the Location Map.

This project is included within capital Appropriation No. 15486, the Jensen Improvements Appropriation – FY 2012/13 Through FY 2017/18, which was initiated in fiscal year 2012/13. With the present action, the total funding for Appropriation No. 15486 will increase from \$3,549,000 to \$5,149,000.

The total estimated cost to complete the replacement of the four chemical storage tanks at the Jensen plant is approximately \$1.8 million.

Project Milestone

July 2018 – Completion of construction

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

By Minute Item 50785, dated April 11, 2017, the Board authorized design and procurement to replace chemical storage tanks at the Jensen plant.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The project was previously determined by the Board to be categorically exempt under Classes 1 and 2 (Sections 15301, and 15302 of the State CEQA Guidelines) on April 11, 2017. Since that time, the statute of limitations on the project has ended. With the current action, there is no substantial change proposed since the original project was first approved in 2017. Hence, the previous environmental documentation in conjunction with the project fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation is necessary for the Board to act with regards to the proposed action.

The CEQA determination is: Determine that the proposed action has been previously addressed in the 2017 categorical exemptions (Classes 1 and 2; Sections 15301 and 15302 of the State CEQA Guidelines) and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination that the proposed action has been previously addressed in the 2017 categorical exemptions, and that no further environmental analysis or documentation is required, and

- a. Appropriate \$1.6 million; and
- b. Authorize construction to replace four chemical storage tanks at the Jensen plant.

Fiscal Impact: \$1.6 million in capital funds under Appropriation No. 15486

Business Analysis: This option will reduce the risk of unplanned reductions in treatment capacity for the Jensen plant.

Option #2

Do not replace the tanks at this time.

Fiscal Impact: Unknown

Business Analysis: Under this option, Metropolitan staff would monitor the condition of the single remaining fluorosilicic acid tank and the rate of biomass growth in the plant’s filters. Staff will continue to repair the fluorosilicic acid tank when feasible, and assess options for a temporary chlorination system for the filters.

Staff Recommendation

Option #1


 _____ 1/24/2018
 Gordon Johnson Date
 Manager/Chief Engineer,
 Engineering Services


 _____ 1/31/2018
 Jeffrey Kightlinger Date
 General Manager

Attachment 1 – Financial Statement

Attachment 2 – Location Map

Financial Statement for Jensen Improvements Appropriation – FY 2012/13 Through FY 2017/18

A breakdown of Board Action No. 5 for Appropriation No. 15486¹ is as follows:

	Previous Total Appropriated Amount (Apr. 2017)	Current Board Action No. 5 (Feb. 2018)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 206,439	\$ -	\$ 206,439
Final Design	660,979	-	660,979
Owner Costs (Program mgmt)	464,313	66,000	530,313
Submittals Review & Record Drwgs	51,000	62,000	113,000
Construction Inspection & Support	93,000	-	93,000
Metropolitan Force Construction	227,000	699,000	926,000
Materials & Supplies	228,000	215,000	443,000
Incidental Expenses (Tank disposal & temporary storage tanks)	39,000	115,000	154,000
Professional/Technical Services	599,769	-	599,769
Equipment Use	-	51,000	51,000
Contracts	623,384	-	623,384
Remaining Budget	356,116	392,000	748,116
Total	\$ 3,549,000 ²	\$ 1,600,000	\$ 5,149,000

Appropriation Name:	Jensen Improvements Appropriation – FY 2012/13 Through FY 2017/18		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15486	Board Action No.:	5
Requested Amount:	\$ 1,600,000	Budget Page No.:	239
Total Appropriated Amount:	\$ 5,149,000	Total Appropriation Estimate:	\$ 16,300,000

¹ The total estimated cost to complete the replacement of the four tanks is \$1.8 million.

² The previous total appropriated amount reflects a transfer of \$166,000 to Appropriation No. 15417 for the Jensen Reservoir No. 1 roof refurbishment, which was authorized by the Board in April 2017.

Distribution System

