- **Board of Directors**
  Engineering and Capital Programs Committee

April 8, 2008 Board Meeting

7-2

Subject

Appropriate $980,000; and authorize: (1) design and construction of the Jensen Chemical Tank Conversion project; and (2) increase in change order authority for the Jensen Chlorine Containment Facilities contract (Approp. 15371)

Description

This action authorizes the conversion of two unused chemical storage tanks for additional polymer storage at the Joseph Jensen Water Treatment Plant. Design and construction will be completed by Metropolitan forces. This action also authorizes an increase in the General Manager's authority to execute change orders for the Jensen Chlorine Containment Facilities contract. The increase covers a Metropolitan-requested change for the contractor to perform an element of work which was originally planned for Metropolitan forces to complete. These projects are categorized as Infrastructure Upgrade and Stewardship projects, respectively, and are budgeted within Metropolitan's Capital Investment Plan (CIP).

Background

The Jensen plant was placed into service in 1972 with an initial capacity of 350 million gallons per day (mgd). The plant was expanded in the early 1990s to its current capacity of 750 mgd. The Jensen plant exclusively treats water from the State Water Project and delivers it to Metropolitan's Central Pool portion of the distribution system.

The proper storage, handling and containment of water treatment chemicals are critical to ensuring plant reliability and compliance with drinking water objectives and environmental regulations. Several projects are underway to upgrade chemical systems at the Jensen plant. These projects include the addition of chlorine containment facilities, upgrade of chemical feed and spill containment systems, and construction of several tank farm roof structures. One project is recommended to proceed at this time.

Jensen Chemical Tank Conversion – Design Phase and Construction ($980,000)

Liquid cationic polymer is a primary coagulant used to improve the removal of turbidity in the water treatment process. Metropolitan's goal for storage of primary treatment chemicals is to provide 14 days of storage capacity for anticipated dosages at the full plant design flowrate. The existing polymer tank farm at Jensen has four 2,800-gallon storage tanks, which provide only five days of storage at full plant design flowrate. If the polymer supply is interrupted, as occasionally happens during delivery interruptions or supplier shortages, there would be insufficient polymer storage capacity which could potentially result in plant flow restrictions, an unplanned plant outage, or possible violation of water quality regulations. To ensure that on-site storage is adequate for reliable plant treatment operation, staff recommends converting two existing unused 25,000-gallon stainless steel storage tanks to polymer service. These 40-year-old tanks had previously been used to store alum. However, when the new Alum/Ferric Chloride Tank Farm was completed in 2005, the two 25,000-gallon tanks were removed from service. The tank conversion project will add polymer unloading facilities, a transfer pump and piping system between the two converted tanks and four existing tanks, ultrasonic level transmitters, control panels, automatic shut-off for all six storage tanks to comply with current California Fire Code regulations, and connections to the Jensen plant's control system. The increased polymer storage capacity will enhance overall plant reliability.

This action appropriates $980,000 and authorizes final design phase activities and construction of the Jensen Chemical Tank Conversion project. Metropolitan staff will perform the design and construction work. The requested funds include $160,400 for preliminary and final design; $702,600 for Metropolitan force construction; $72,500 for program management, permitting, and environmental documentation; and $44,500 for remaining budget. The final design cost as a percentage of the estimated total construction cost is approximately 15 percent. Engineering Services' goal for design of projects with construction cost less than $3 million is 9 to 15 percent. This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team and funds have been included in the fiscal year 2007/08 capital budget.

Change Order Authority for Jensen Chemical System Upgrades Contract (No Funds Required)

In July 2006, Metropolitan's Board awarded a $19,988,000 contract to Brutoco Engineering & Construction, Inc. for the Jensen Chemical System Upgrades project (Specifications No. 1516A). This project involves the addition of a chlorine containment facility, fluoridation facilities, and a chemical tank farm roof. At this time, construction of the fluoridation facilities and tank farm roof is complete, while construction of the chlorine containment facility is approaching 75 percent completion. Per Metropolitan's Administrative Code, the General Manager has the authority to execute change orders with Brutoco Engineering & Construction, Inc. up to $999,400 (which is 5 percent of the original contract).

In July 2006, the Board also authorized final design and construction of the Jensen Chlorination Capacity Increase project to increase the maximum chlorine dose at the filter outlet of the Jensen plant. This project involves the construction of a chemical injection vault, installation of a new chlorine diffuser during a plant shutdown, installation of chlorine ejectors and piping, and a capacity upgrade of the existing chlorinators. The construction was originally planned to be completed entirely by Metropolitan forces. However, before the construction could be completed, Metropolitan forces were reassigned to perform higher priority shutdown work.

To ensure that the chlorine-related work would be completed within the 2007 shutdown period, Metropolitan staff requested that Brutoco install the chlorine injection piping and chlorine diffusers under a change order to the Jensen Chemical System Upgrades contract. The cost of this additional scope of work was $210,000. While sufficient funds were available in the appropriation for Brutoco to perform the additional work, this change reduced the remaining change order authority for handling unanticipated issues which may arise. Approximately $670,000 in change orders have been issued to date, including the $210,000 of Metropolitan-requested work and $460,000 of other changes. These other changes have resolved construction issues such as previously unknown underground interferences, modifications to electrical ductbanks, relocation of the railroad track alignment, and modifications to tank farm mechanical and electrical systems. As a result, $329,400 of change order authority remain (1.6 percent of the original contract amount). Since the contract has a large amount of construction still remaining to be performed (approximately 25 percent of the work), staff recommends restoring change order authority by an amount equal to the Metropolitan-directed work, to handle other unanticipated issues which may arise as the contract is finalized.

This action authorizes an increase in the General Manager's authority to execute change orders with Brutoco Engineering & Construction, Inc. from $999,400 (which is 5 percent of the original contract, per Metropolitan's Administrative Code) to an aggregate amount not to exceed $1,209,400 (6.1 percent of the original contract amount). No additional funds are required, as sufficient funds are available within the existing appropriation.

Summary

This action appropriates $980,000, authorizes design and construction of the Jensen Chemical Tank Conversion project, and authorizes an increase in the General Manager's authority to execute change orders for the Jensen Chlorine Containment Facilities contract. See **Attachment 1** for the Financial Statement and **Attachment 2** for the Location Map.

These projects are consistent with Metropolitan's goals for sustainability by enhancing the reliability of the existing treatment, conveyance and distribution system, in order to maintain reliable water deliveries in the future.

Project Milestones

July 2008 – Completion of construction of the Jensen Chlorine Containment Facilities project.

December 2008 – Completion of construction of the Jensen Chemical Tank Conversion project.

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Section 8123: Authority of the General Manager to Amend Contracts

California Environmental Quality Act (CEQA)

Jensen Chemical Tank Conversion – Design Phase and Construction

CEQA determination for Options #1 and #2:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. In particular, the proposed action consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. In addition, it will not have a significant effect on the environment. Accordingly, this proposed action qualifies as a Class 1 Categorical Exemption (Section 15301 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under a Categorical Exemption (Class 1, Section 15301 of the State CEQA Guidelines).

CEQA determination for Option #3:

None required

Change Order Authority for Jensen Chemical System Upgrades Contract

CEQA determination for Options #1 and #2:

This project was previously determined to be categorically exempt under the provisions of CEQA and State CEQA Guidelines. The Board found this project to be exempt under Class 1, Section 15301; Class 2, Section 15302; Class 3, Section 15303, and Class 11, Section 15311 of the State CEQA Guidelines on April 13, 2004, for the Chlorine Containment and Handling Facilities (CCHF) Program. The Notice of Exemption (NOE) was filed on the project at that time. The present proposed board action is solely based on appropriating budgeted funds and not on any other substantial changes to the original project. 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 2004 NOE (Class 1, Section 15301; Class 2, Section 15302; Class 3, Section 15303; and Class 11, Section 15311 of the State CEQA Guidelines) and that no further environmental analysis or documentation is required.

CEQA determination for Options #2 and #3:

None required

Board Options

Option #1

Adopt the CEQA determinations and

a. Appropriate $980,000 in budgeted funds;
b. Authorize design and construction of the Jensen Chemical Tank Conversion project; and
c. Authorize an increase of $210,000 in the General Manager's change order authority for the Jensen Chemical System Upgrades contract.

Fiscal Impact: $980,000 of budgeted funds under Approp. 15371

Business Analysis: This option would increase the polymer storage volume and improve overall plant reliability, and provide sufficient change order authority to address unanticipated construction issues which may arise.

Option #2

Adopt the CEQA determinations and

a. Appropriate $980,000 in budgeted funds;
b. Authorize design and construction of the Jensen Chemical Tank Conversion project; and
c. Do not authorize an increase in the General Manager's change order authority for the Jensen Chemical System Upgrades contract.

Fiscal Impact: $980,000 of budgeted funds under Approp. 15371

Business Analysis: This option would increase the polymer storage volume to meet Metropolitan's chemical storage goal of 14 days and would improve overall plant reliability. By not authorizing the increase in change order authority to restore the original 5 percent of the contract amount, this reduces the available change order capacity to address contract changes on a timely basis.

Option #3

Do not proceed with the Jensen Chemical Tank Conversion project at this time; and do not authorize an increase in the General Manager's change order authority for the Jensen Chemical System Upgrades contract.

Fiscal Impact: None

Business Analysis: The current storage capacity for liquid polymer does not meet Metropolitan's storage goal of 14 days and may lead to insufficient supply being on hand in the event of peak chemical usage, chemical shortages, or unexpected delivery problems. By not authorizing the increase in change order authority to restore the original 5 percent of the contract amount, this reduces the available change order capacity to address contract changes on a timely basis.

Staff Recommendation

Option #1

Roy L. Wolfe — 3/20/2008

Roy L. Wolfe — *Date*
Manager, Corporate Resources

Jeffrey Kightlinger — 3/24/2008

Jeffrey Kightlinger — *Date*
General Manager

Attachment 1 – Financial Statement

Attachment 2 – Location Map

BLA #6022

Financial Statement for Jensen Improvements Program

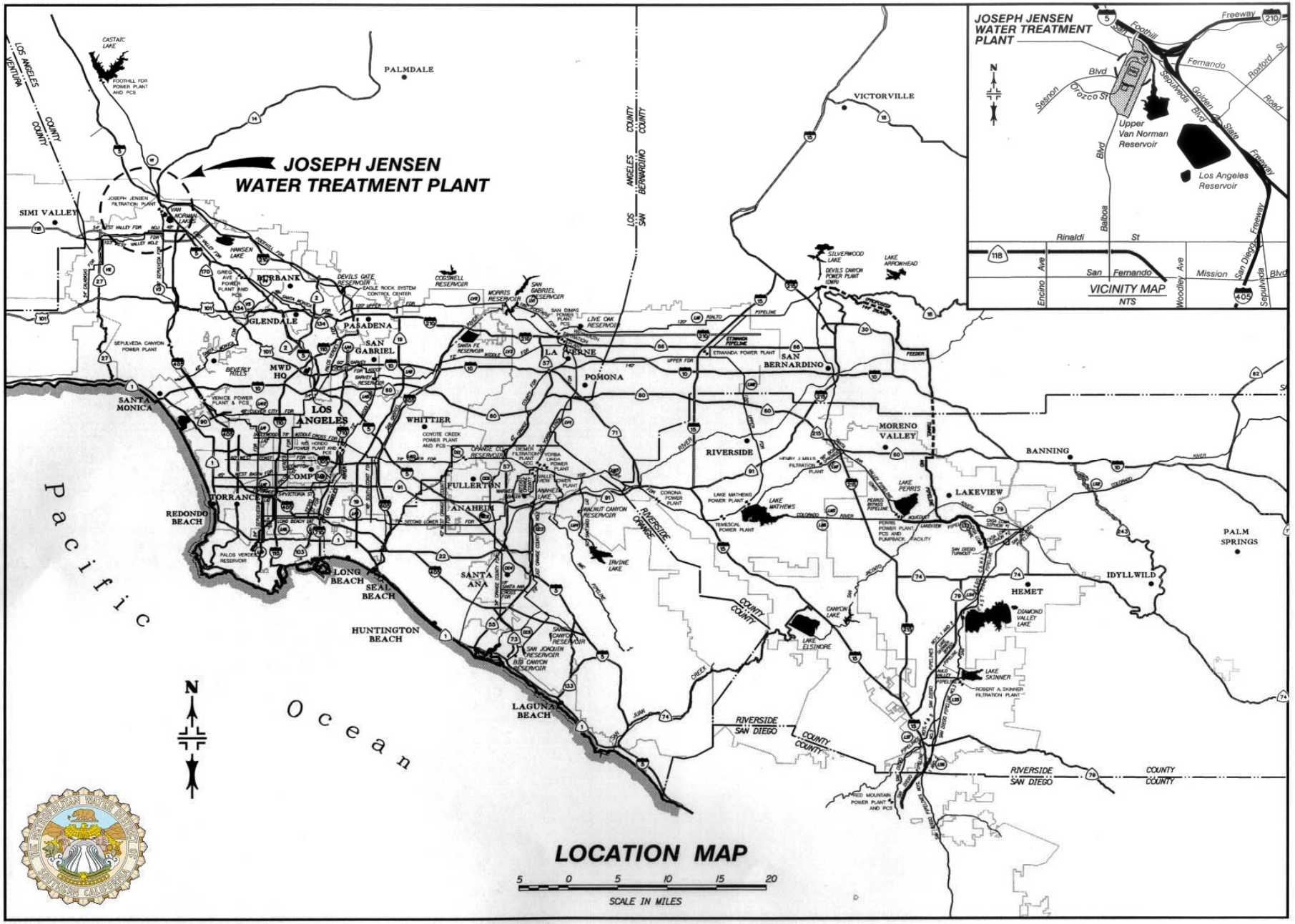
A breakdown of Board Action No. 12 for Appropriation No. 15371 is as follows:

	Previous Total Appropriated Amount (Oct. 2007)		Current Board Action No. 12 (Apr. 2008)	New Total Appropriated Amount
Labor				
Studies and Investigations	$ 687,750	*	$ 52,600	$ 740,350
Final Design	1,780,232	*	107,800	1,888,032
Owner Costs (program mgmt., permitting, envir. doc.)	1,293,041		72,500	1,365,541
Construction Inspection and Support	858,000		-	858,000
Metropolitan Force Construction	1,209,700		399,700	1,609,400
Materials and Supplies	1,820,000		284,900	2,104,900
Incidental Expenses	118,000		10,000	128,000
Professional/Technical Services	1,890,000		-	1,890,000
Equipment Use	86,000		8,000	94,000
Contracts	6,678,226	*	-	6,678,226
Remaining Budget	553,051	*	44,500	597,551
Total	**$ 16,974,000**		**$ 980,000**	**$ 17,954,000**

* Includes previous allocation of $143,901 from Remaining Budget to the Jensen Filter Media Replacement Project ($103,951) for contract to replace filter media; and to Studies and Investigations ($19,950) and Final Design ($20,000) for the Jensen Solids Thickener project.

Funding Request

Program Name:	Jensen Improvements Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15371	**Board Action No.:**	12
Requested Amount:	$ 980,000	**Capital Program No.:**	15371-I
Total Appropriated Amount:	$ 17,954,000	**Capital Program Page No.:**	E-39
Total Program Estimate:	$ 41,200,000	**Program Goal:**	I – Infrastructure & Reliability


JOSEPH JENSEN
WATER TREATMENT PLANT
JOSEPH JENSEN
WATER TREATMENT
PLANT
Upper
Van Norman
Reservoir
Los Angeles
Reservoir
VICINITY MAP
NTS
LOCATION MAP
SCALE IN MILES
Pacific
Ocean
PALMDALE
VICTORVILLE
SIMI VALLEY
BURBANK
GLENDALE
PASADENA
SAN GABRIEL
LA VERNE
POMONA
SAN BERNARDINO
SANTA MONICA
LOS ANGELES
WHITTIER
RIVERSIDE
MORENO VALLEY
BANNING
TORRANCE
REDONDO BEACH
FULLERTON
ANAHEIM
LAKEVIEW
PALM SPRINGS
LONG BEACH
SEAL BEACH
SANTA ANA
HEMET
IDYLLWILD
HUNTINGTON BEACH
LAGUNA BEACH
LAKE ELSINORE
LAKE SKINNER
DIAMOND VALLEY LAKE
LAKE MATHEWS
LAKE PERRIS
IRVINE LAKE
CANYON LAKE
SILVERWOOD LAKE
LAKE ARROWHEAD
RIVERSIDE COUNTY
SAN DIEGO COUNTY
LOS ANGELES COUNTY
SAN BERNARDINO COUNTY
ORANGE COUNTY

JOSEPH JENSEN WATER TREATMENT PLANT