THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

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

5/11/2010 Board Meeting

8-3

Subject

Appropriate $7.1 million; award $4,966,937 contract to Zusser Company, Inc. for construction of the Diemer Fire and Potable Water Pump Station; and authorize amendment to existing agreement with Camp Dresser & McKee (Approp. 15436)

Description

This action awards a contract at the Robert B. Diemer Water Treatment Plant to construct a pump station to supply fire water and potable water to the plant. This facility will supply fire water to the plant's new ozonation facilities, and is required by the Orange County Fire Authority (OCFA) to be tested and accepted prior to start-up of ozonation. An amendment to an existing professional services agreement is also included to prepare for commissioning of the ozone system. Both projects are needed so that the Diemer ozonation facilities can start up as scheduled.

Timing and Urgency

Water for fire suppression and potable uses at the Diemer plant is currently drawn from the plant's two elevated washwater tanks. Upon completion of the Diemer ozonation facilities and the accompanying switchover to biological filtration in 2012, water stored in the washwater tanks will no longer be continuously chlorinated. As a result, this water will no longer be suitable for use in the potable water system. In addition, due to all of the new facilities planned and under construction at Diemer, a new fire water pump station of increased capacity is needed. This project will construct a fire and potable water pump station that will draw water downstream of the Diemer Finished Water Reservoir and will discharge into the new fire and potable water piping currently being constructed under the Diemer Oxidation Retrofit Program (ORP) contract.

The timing for completion of ozone system control descriptions is important in order to program and test the plant's Supervisory Control and Data Acquisition (SCADA) system prior to start-up of the completed facility. Staff recommends that the ozone system control descriptions for the Diemer ORP proceed at this time to enable the ozonation facilities to start up on schedule, and thereby avoid potential claims of delay by the ORP contractor. No additional funds are requested, as sufficient funds were previously appropriated and are available within the Diemer ORP. The work is recommended to be performed by Camp Dresser & McKee (CDM), who designed the Diemer ozone system. These two projects have been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria. Staff recommends award of the fire and potable water pump station contract and amendment of the CDM agreement at this time to allow start-up of the ozone system and switchover to biological filtration to occur on schedule. The Diemer Fire and Potable Water Pump Station project is categorized as an Infrastructure Upgrade project and the Diemer ORP is categorized as a Water Quality project. Both projects are budgeted within Metropolitan's CIP for fiscal year 2009/10.

Background

The Diemer plant was placed into service in 1963 with an initial capacity of 200 million gallons per day (mgd). In 1969, the plant was expanded to its current capacity of 520 mgd. The plant delivers a blend of waters from the

Colorado River and the State Water Project to Orange County and to parts of Metropolitan's Central Pool portion of the distribution system.

The Diemer plant has two washwater tanks that store water used to backwash the plant's filters. Potable and fire-protection water is also currently supplied from the two washwater tanks. When the Diemer ozonation facilities are completed in 2012, the filters will be allowed to become biologically active, which will enable more effective removal of disinfection byproduct precursors and other organic material that may impact treated water quality. To promote the biologically active filter operation, the backwash water stored in the washwater tanks will no longer be continuously chlorinated and will therefore be considered non-potable.

Since 2003, the construction of several new Diemer facilities, such as the Solids Dewatering Building, Vehicle Maintenance Center, Plant Maintenance Building, and chemical tank farm upgrades, have added demands to the existing fire protection system. The new ozonation facilities, which are currently under construction, will also increase the demand on that system. As a result, major upgrades are needed for the plant's fire water system. The existing fire water system is combined with the potable water system and is pressurized by the same pumps, which was a typical practice when the plant was constructed in 1963. Current fire codes require that separate fire water pumps be provided to pressurize the fire water piping. In addition, much larger fire water pumps are needed to meet current fire code flow requirements.

During a site master-planning effort conducted previously under the Diemer ORP, several options were evaluated for siting the upgraded fire water pump station. Under a centralized option, the new fire water pump station could be constructed adjacent to the new potable water pump station at its planned location along the plant's main access road. Under a split option, the new fire water pump station would be constructed adjacent to the existing fire water pumps.

During the previously completed south slope stabilization project, and under the ongoing ORP construction, plant piping, electrical duct banks, and standby generators have been upgraded and relocated in a coordinated sequence. Infrastructure and utilities are now in place for the fire water pump station to be co-located with the new potable water pump station. Proceeding with the centralized option would be less expensive to construct than the split option, would reduce the risk of interferences with ongoing construction contracts, and would be simpler to operate and maintain due to its proximity to the new potable water pump station. The split option would require that existing fire water piping on the east side of the plant be replaced with larger piping, and extensive electrical duct banks be installed. As a result, staff recommends proceeding with the centralized option.

In September 2008, Metropolitan's Board authorized final design phase activities for the Diemer fire and potable water pump station, which will draw fire water and potable water from the plant's finished water reservoir. The final design was coordinated with the ongoing Diemer ORP construction contract, under which yard piping for both the fire water and potable water systems is being constructed. The new fire water system is designed to meet current fire code requirements.

In January 2010, the Diemer ORP contractor installed a tie-in to the outlet of the finished water reservoir, in preparation for future connection to the inlet side of the new fire and potable water pump station.

In February 2010, Metropolitan's Board authorized procurement of new fire water and potable water pumps, and two procurement contracts were awarded under the General Manager's authority in April 2010. Final design of the pump station has been completed, and staff recommends award of a contract at this time to complete the pump station.

Project No. 1 - Diemer Fire and Potable Water Pump Station – Construction ($7,100,000)

Specifications No. 1648 for the Diemer Fire and Potable Water Pump Station was advertised for bids on February 25, 2010. As shown in **Attachment 2**, 13 bids were received on April 6, 2010. The work consists of installation of Metropolitan-furnished pumps and construction of a fire and potable water pump station, along with associated piping and appurtenances. The low bid from Zusser Company, Inc., in the amount of $4,966,937, complies with the requirements of the specifications. The 12 higher bids ranged from approximately $5.69 million to $9.9 million. The engineer's estimate was $6 million. Staff believes the difference between the engineer's estimate and the group of low bids reflects the current highly competitive bidding environment. For

this contract, Metropolitan has established a Small Business Enterprise (SBE) participation level of at least 25 percent of the total bid amount. Zusser Company is a registered SBE firm, and thus achieves 100 percent participation.

This action appropriates $7.1 million and awards a $4,966,937 contract to Zusser Company, Inc. to construct the Diemer Fire and Potable Water Pump Station. The total cost to construct the pump station is approximately $5.6 million, including the construction contract, Metropolitan force construction ($376,000), and previously purchased pumps ($230,000). The Metropolitan force construction includes procurement and installation of SCADA equipment, telecommunication equipment, and security equipment. In addition to the amount of the construction contract and Metropolitan force construction, the appropriated funds include: $643,000 for construction inspection (11.5 percent of total construction cost); $290,000 for submittals review by Metropolitan staff, including shop drawings, requests for clarification, and change orders (5.2 percent of total construction cost); $284,000 for project management, permitting, and as-built preparation; and $540,063 for remaining budget.

Metropolitan staff will perform inspection of the construction contract. As noted above, the anticipated cost of inspection is approximately 11.5 percent of the total construction cost. Engineering Services' goal for inspection of projects with construction cost greater than $3 million is 9 to 12 percent.

Project No. 2 - System Control Descriptions (No Funds Required)

The Diemer ozonation process consists of numerous mechanical, electrical, and safety systems that require detailed planning for commissioning and start-up. The systems will be automatically controlled and monitored by the plant's SCADA system. Ozonation system process control descriptions are needed prior to start-up so that the SCADA system may be programmed and tested. The descriptions will explain the operational aspects of the process systems including the system purpose, function, design, and control philosophy; list identification numbers unique to every instrument, piece of equipment, and other devices in that system; and describe how multiple system devices are to interact and control the system. System control descriptions should be prepared by the designer of the ozonation facilities to ensure that the descriptions are complete, that they correctly indicate how the systems are intended to operate, and are fully coordinated with the design drawings and specifications.

Staff's experience with start-up of the Jensen and Skinner ozonation systems revealed that the preparation of system control descriptions for these systems is complex and requires several iterations of review, which can be lengthy. Metropolitan's previous practice has been to initiate work on the system control descriptions toward the end of construction, in conjunction with other project completion activities. Based on recent experience with the Jensen and Skinner systems, staff recommends initiating the Diemer ORP system control description work at this time. Since the ORP construction is approximately 50 percent complete, proceeding with the control descriptions at this time will enable the multi-system startup and commissioning to be executed in a timely, efficient, and synchronized manner, and will help prevent delay claims by the ORP contractor.

CDM performed final design of the Diemer ozonation facilities, and has provided technical support during construction. CDM is the Engineer of Record and is recommended to develop the system control descriptions in preparation for commissioning and start-up of the ORP facilities. This work is impractical and inefficient to be performed by Metropolitan staff, because CDM has intimate knowledge of the design drawings and specifications. CDM was selected through a competitive process (Request for Qualifications No. 719), and amendment of the existing CDM agreement is consistent with the agreement's scope of work and with the planned approach for project implementation. For this agreement, Metropolitan has established an SBE participation level of 15 percent.

This action authorizes an increase of $258,000 to the existing agreement with CDM, for a new not-to-exceed total of $19,838,000, to provide technical support for preparation of system control descriptions to enable SCADA programming to commence for the Diemer ORP ozonation facilities. No additional funds are requested, as sufficient funds were previously appropriated and are available within the Diemer ORP. Staff plans to return to the Board in 2011 to request authorization for Diemer ORP completion work and start-up activities.

Project Milestones

November 2011 – Completion of pump station construction and tie-ins to fire and potable water piping systems

June 2012 – Completion of system control descriptions for all mechanical and process equipment systems

See **Attachment 1** for the Financial Statement, **Attachment 2** for the Abstract of Bids, and **Attachment 3** for the Location Map.

This project is consistent with Metropolitan's goals for sustainability by protecting water quality, and to maintain reliable water deliveries in the future.

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

California Environmental Quality Act (CEQA)

Project No. 1 - Diemer Fire and Potable Water Pump Station – Construction

The environmental effects from the funding, design, procurement of equipment, construction and operation of the Diemer Oxidation Retrofit Program (Program) were evaluated in the Robert B. Diemer Treatment Plant Improvements Project Environmental Impact Report (EIR), Supplemental EIR, and Subsequent EIR, certified by the Board on February 13, 2001, August 20, 2002, and April 11, 2006, respectively. During these three board meetings, the Board also approved the Findings of Fact (Findings), the Statement of Overriding Considerations (SOC), and the Mitigation Monitoring and Reporting Program (MMRP) for the Diemer Improvements Project EIR, Supplemental EIR, and Subsequent EIR. The current board action is to appropriate budgeted funds and award a construction contract, and amend and award construction administration contracts for the Program, and does not propose any significant changes to the approved project itself. Therefore, the previous environmental documentation acted on by the Board in conjunction with the proposed action fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation is necessary for the Board to act on the proposed action.

CEQA determination for Option #1:

Determine that the proposed action has been previously addressed in the Final EIRs, Findings, SOCs, and MMRPs certified by the Board on February 13, 2001, August 20, 2002, and April 11, 2006, respectively, 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 and

a. Appropriate $7.1 million;
b. Award $4,966,937 construction contract to Zusser Company, Inc. to construct the Diemer Fire and Potable Water Pump Station; and
c. Authorize increase of $258,000 to the existing agreement with CDM, for a new not-to-exceed total of $19,838,000.

Fiscal Impact: $7.1 million of budgeted funds under Approp. 15436
Business Analysis: This option will allow the Diemer ozonation facilities to commence operation in 2012 as planned, and will allow Metropolitan to meet fire suppression and potable use requirements at the Diemer plant. The fire system will be upgraded in capacity and the potable water system will be reconfigured to serve existing facilities and the future ozone facilities.

Option #2

Adopt the CEQA determination and

a. Do not award the contract and re-advertise in an attempt to receive more favorable bids; and
b. Do not proceed with the system control descriptions at this time.

Fiscal Impact: Unknown

Business Analysis: This option may or may not result in lower bids, would delay completion of the fire and potable water pump station, and would delay switchover to biological filtration when the ozonation facilities are completed. This would not achieve Metropolitan's planned reduction in disinfection by-products with ozone, because chlorine would still be required.

Staff Recommendation

Option #1

4/28/2010
Roy L. Wolfe *Date*
Manager, Corporate Resources

4/28/2010
Jeffrey Kightlinger *Date*
General Manager

Attachment 1 – Financial Statement

Attachment 2 – Abstract of Bids

Attachment 3 – Location Map

Ref# cr12604772

Financial Statement for Diemer Improvements Program – Phase II

A breakdown of Board Action No. 8 for Appropriation No. 15436 for the Diemer Fire and Potable Water Pump Station project* is as follows:

	Previous Total Appropriated Amount (Mar. 2010)	Current Board Action No. 8 (May 2010)	New Total Appropriated Amount
Labor			
Studies and Investigations	$ 653,300	$ -	$ 653,300
Final Design	1,765,100	-	1,765,100
Owner Costs (Program mgmt., permitting, as-builts)	1,320,138	284,000	284,000
Submittals Review	32,000	290,000	322,000
Construction Inspection & Support	380,791	643,000	1,023,791
Metropolitan Force Construction	1,506,500	186,000	1,692,500
Materials and Supplies	691,258	180,000	871,258
Incidental Expenses	69,793	10,000	79,793
Professional/Technical Services	850,943	-	850,943
Equipment Use	23,155	-	23,155
Contracts	986,429	4,966,937	5,953,366
Remaining Budget	417,593	540,063	957,656
Total	**$ 8,697,000**	**$ 7,100,000**	**$ 15,797,000**

Funding Request

Program Name:	Diemer Improvements Program – Phase II		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15436	**Board Action No.:**	8
Requested Amount:	**$** 7,100,000	**Capital Program No.:**	15436-I
Total Appropriated Amount:	**$** 15,797,000	**Capital Program Page No.:**	288
Total Program Estimate:	**$** 123,980,000	**Program Goal:**	I- Infrastructure Reliability

* The total amount expended to date on the Diemer Fire and Potable Water Pump Station project is approximately $1,700,000.

The Metropolitan Water District of Southern California

Abstract of Bids Received on April 6, 2010 at 2:00 P.M.

Specifications No. 1648

Robert B. Diemer Water Treatment Plant
Fire and Potable Water Pump Station

The project consists of installation of the Metropolitan-furnished pumps and construction of a fire and potable water pump station and associated piping.

Engineer's Estimate: $6,000,000

Bidder and Location	Total	SBE $	SBE %	Met SBE*
Zusser Company, Inc., Los Angeles, CA	$ 4,966,937	$ 4,966,937	100%	Yes
Environmental Const., Woodland Hills, CA	$ 5,693,268	N/A	N/A	N/A
Brutoco Engineering & Construction, Inc., Fontana, CA	$ 5,755,000	N/A	N/A	N/A
J.F. Shea Construction, Inc., Walnut, CA	$ 5,782,340	N/A	N/A	N/A
Metro Builders & Engineers Group, Newport Beach, CA	$ 5,874,358	N/A	N/A	N/A
Gantry Constructors, Inc., Clarkdale, AZ	$ 5,879,000	N/A	N/A	N/A
Norman A. Olsson Construction, Inc., Orange, CA	$ 5,970,000	N/A	N/A	N/A
Orion Construction Corporation, Vista, CA	$ 6,172,000	N/A	N/A	N/A
HPS Mechanical Inc., Bakersfield, CA	$ 6,332,500	N/A	N/A	N/A
Minako America Corp. dba Minco Construction, Gardena, CA	$ 6,377,000	N/A	N/A	N/A
SCW Contracting Corporation, Fallbrook, CA	$ 6,597,819	N/A	N/A	N/A
Mladen Buntich Construction, Co., Inc., Upland, CA	$ 7,080,000	N/A	N/A	N/A
Mike Bubalo Construction Co., Inc., Baldwin Park, CA	$ 9,900,000	N/A	N/A	N/A

*SBE (Small Business Enterprise) participation set at 25 percent

Robert B. Diemer Water Treatment Plant