



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

3/10/2015 Board Meeting

8-4

Subject

Appropriate \$3.96 million; award \$996,600 contract to Environmental Construction, Inc. for revegetation at the Robert B. Diemer Water Treatment Plant; and authorize: (1) completion activities for the Diemer Oxidation Retrofit Project; and (2) increase of \$76,000 to an agreement with Helix Environmental Planning, Inc. for a new not-to-exceed total of \$386,000 (Approp. 15389)

Executive Summary

This action authorizes the final elements of the Diemer Oxidation Retrofit Project (ORP): (1) construction to revegetate disturbed areas of the plant site in order to comply with mitigation measures of the ORP's Final Environmental Impact Report (EIR) and local agency regulations; and (2) Metropolitan force construction activities to integrate components of the new ozonation facilities into the Diemer plant's existing operating systems. This action also authorizes an amendment to an existing agreement for technical support during construction by the revegetation project's design consultant.

Timing and Urgency

At the present time, construction of the main ozonation facilities and functional testing of the equipment has been completed. In order to place the ozonation system into full operation, and to comply with mitigation measures contained in the Diemer ORP's Final EIR, several remaining activities must be completed. The first addresses revegetation of disturbed slope areas of the plant in order to comply with the Diemer Habitat Conservation Plan and current Orange County Fire Authority (OCFA) regulations; to control slope erosion; and to address local agency viewshed concerns. The second element includes construction activities by Metropolitan forces to integrate the new ozonation facilities into existing plant systems such as the Supervisory Control and Data Acquisition (SCADA) system and various chemical feed systems, and to comply with recent revisions to building codes and health and safety codes.

This work has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria, and the ORP is categorized as a Water Quality project. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2014/15.

Details

Background

The Diemer plant was placed into service in 1963 with an initial capacity of 200 million gallons per day (mgd), and was expanded in 1969 to its current capacity of 520 mgd. The plant delivers a blend of waters from the Colorado River and the State Water Project to Metropolitan's Central Pool portion of the distribution system and to an exclusive service area in Orange County. The Diemer plant is located on the top of a hill in the city of Yorba Linda.

Over the past ten years, the Diemer plant has undergone a series of major construction projects to add ozonation as the plant's primary disinfection process. Major components of the ozonation system include an ozone generation building; ozone contactors; liquid oxygen (LOX) tank farm; chemical tank farms; new electrical

switchgear; and standby generator buildings. Due to the constrained nature of the Diemer site, several sequential contracts were issued in order to minimize overlap of contractors on the site, to complete key elements of work within shutdown windows, and to minimize impacts to plant operations. A total of six major contracts were planned. To date, five contracts with a total value of approximately \$234 million have been completed. This completed work includes relocation of the plant's inlet conduit from the Lower Feeder; removal and replacement of the south-facing slope with roller-compacted concrete; relocation of the plant's Service Center; pre-purchase of the ozone generation equipment; and construction of the main ozonation facilities. The sixth and final contract of the Diemer ORP, which will revegetate disturbed slope areas and complete the EIR mitigation improvements, is included in this action. This action also authorizes a group of construction activities by Metropolitan forces that will integrate the new ozonation facilities with the Diemer plant's existing operating systems, and will incorporate upgrades that were identified and implemented at Metropolitan's other ozonation systems. These upgrades are intended to improve operating efficiency, reduce annual operation and maintenance costs, and comply with recent health, safety, and building code revisions.

Project No. 1 – Diemer Revegetation and Mitigation Improvements – Construction (\$1,860,000)

Under the Diemer ORP's Final EIR, the identified mitigation measures included installation of permanent erosion control features to protect soil, prevent slope erosion, reduce stormwater runoff, minimize sediment loss, and provide landscaping to screen the structures from the surrounding viewshed. The main ORP construction contract, which was awarded in 2008, included hydroseeding and planting of native and drought-tolerant trees and shrubs to prevent erosion and screen the ozonation facilities and the plant's south slope from view.

On November 15, 2008, the Freeway Complex Fire burned westward from Corona past the Diemer plant. The fire left over 30,000 acres of charred hillsides and burned approximately 90 percent of Chino Hills State Park. Sloped areas on the east, southeast, north, and west sides of the Diemer plant were also burned. Fire damage occurred to trees, grass, and brush on the east side of the plant near the Finished Water Reservoir and East Washwater tank. The fire also destroyed aboveground piping and fiber-optic communication lines to the solids lagoons on the north side of the plant. Although the Diemer plant remained operational, significant damage to vegetation, sensitive habitat, and irrigation systems occurred.

The OCFA has designated the area surrounding the Diemer plant as a Very High Fire Hazard Severity Zone. In January 2011, the OCFA issued revised vegetation management guidelines that require combustible vegetation material immediately surrounding the plant to be reduced, and that also require regularly scheduled vegetation clearing and maintenance. As a result of these guidelines, planting requirements within the disturbed slope areas of the plant were modified to greatly reduce the number and types of plants and the extent of landscape screening that had previously been planned. As an interim measure, the Diemer plant's south-facing slope was hydroseeded and minimal shrubbery was planted to reduce potential erosion while a revised revegetation plan was developed.

Since 2011, staff has developed comprehensive fire management and revegetation plans for the Diemer site. These plans have the goals of complying with: (1) the ORP's Final EIR mitigation commitments; (2) OCFA and local agency regulations; (3) viewshed concerns of the south-facing slope and the portions of the plant visible from Chino Hills State Park; and (4) creation of vegetation that can be maintained by plant staff at the lowest possible cost and without being burdensome. As a result of this effort, the final design for revegetation of disturbed areas of the Diemer plant was completed in late 2014.

The mitigation commitments of the Diemer ORP's Final EIR require that newly planted areas be maintained for at least five years to foster habitat reestablishment. As part of the revegetation construction contract, the contractor will perform six months of vegetation maintenance to assist in long-term plant establishment. To ensure survival of the plantings over the five-year establishment period, staff will prepare a separate contract for long-term maintenance after the installation contractor's initial maintenance period expires. For plants within EIR-sensitive zones, the duration of the extended maintenance will be four years. For plants outside of these zones, the duration of extended maintenance will be two years. The estimated amount of the separate maintenance contract is \$200,000. This contract will be competitively bid and will be awarded under the General Manager's Administrative Code authority.

On December 9, 2014, Specifications No. 1782 for revegetation and mitigation improvements at the Diemer plant was advertised for bids. As shown in [Attachment 2](#), eight bids were received and opened on January 22, 2015. The low bid from Environmental Construction, Inc. in the amount of \$996,600 complies with the requirements of the specifications. The seven higher bids ranged from approximately \$1.1 million to \$1.8 million. The engineer's estimate, which was prepared by the design consultant, was \$1.6 million. Staff has investigated the difference between the low bids and the engineer's estimate, and attributes the difference to the highly competitive bidding environment for this type of work.

For this contract, Metropolitan established a Small Business Enterprise (SBE) participation level of at least 25 percent of the bid amount. Environmental Construction, Inc. is an SBE firm and thus achieves 100 percent participation. No subcontractors are planned for this contract.

This action appropriates \$1.86 million and awards a \$996,600 construction contract to Environmental Construction, Inc. for revegetation of the Diemer site. In addition to the amount of the contract, the requested funds include: \$200,000 for the separate multi-year plant maintenance contract; \$30,000 for Metropolitan forces for tie-ins and upgrades to the existing irrigation systems, and for infrastructure potholing; \$105,000 for construction inspection; \$76,000 for submittals review and technical support by Helix Environmental Planning, Inc., as discussed below; \$177,000 for long-term mitigation monitoring and permitting, contract administration, and preparation of record drawings; and \$275,400 for remaining budget.

Construction inspection will be performed by Metropolitan staff. For this project, the anticipated cost of inspection is approximately 10 percent of the total construction cost. Engineering Services' goal for inspection of projects with construction cost less than \$3 million is 9 to 15 percent. The total cost of construction for this project is \$1,027,600.

Technical Services During Construction (Helix Environmental Planning, Inc.) – Amendment to Existing Agreement

Helix Environmental Planning, Inc. performed final design of the revegetation project at the Diemer plant. This work was performed under a board-authorized agreement. As the architect of record, Helix Environmental Planning, Inc. is recommended to provide technical support during construction. The planned activities include reviewing submittals, responding to requests for information, advising staff on technical issues as they may arise, performing environmental monitoring to demonstrate compliance with EIR mitigation measures, providing oversight of vegetation maintenance, and preparing record drawings. For this agreement, Metropolitan has established an SBE participation level of 18 percent. Helix Environmental Planning, Inc. is an SBE firm and thus achieves 100 percent participation. No subconsultants are planned for this agreement.

This action authorizes an increase of \$76,000 to the existing agreement with Helix Environmental Planning, Inc., for a new not-to-exceed total of \$386,000.

Project No. 2 – Diemer ORP Completion Activities – Construction (\$2,100,000)

The final element of construction for the Diemer ORP is to integrate components of the new ozonation facilities into the Diemer plant's existing systems such as the SCADA system and various chemical feed systems. This work will also incorporate upgrades to the ozonation facilities based on operating experience from Metropolitan's other ozonation systems. These improvements are intended to improve operating efficiency, reduce annual operation and maintenance costs, enhance safety, and improve security measures. Since much of the work will be performed around systems that remain in operation or have limited shutdown capability, these upgrades will be most efficiently constructed by Metropolitan forces. Examples of the work to be performed include:

- Modification of ozone contactor sample piping, installation of additional ozone destruct equipment, and addition of chemical feed instrumentation to more precisely measure ozone residual values, improve contactor performance, and reduce ozone usage when operating with 100-percent Colorado River water.
- Optimization and integration of SCADA system components, communication systems, and chemical feed systems between the new facilities and the existing plant.

- Addition of control system logic and wiring for improved automation of the ozonation process, based on experience gained over the past five to ten years of ozone operation at Metropolitan's other treatment plants.
- Installation of security cameras and systems that allow remote monitoring throughout the ozonation system to enhance safety and security. These improvements are consistent with Metropolitan's current security criteria for chemical areas.

This action appropriates \$2.1 million and authorizes Metropolitan forces to perform ORP completion activities at the Diemer plant. The requested funds include: \$1.63 million for construction by Metropolitan field forces; \$40,000 for technical support by Metropolitan design staff; \$80,000 for project management and contract administration; and \$350,000 for remaining budget.

The total estimated cost to complete the Diemer ORP, including the amount appropriated to date and current funds requested, is approximately \$370.2 million.

Summary

This action appropriates \$3.96 million, awards a construction contract for revegetation at the Diemer plant, authorizes completion activities for the Diemer ORP, and authorizes an amendment to the existing agreement with Helix Environmental Planning, Inc. These projects have been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2014/15 capital expenditure plan.

This work is included within capital Appropriation No. 15389, the Diemer Oxidation Retrofit Project, which was initiated in fiscal year 2001/02. With the present action, the total funding for Appropriation No. 15389 will increase from \$366,232,400 to \$370,192,400. See [Attachment 1](#) for the Financial Statement, [Attachment 2](#) for the Abstract of Bids, and [Attachment 3](#) for the Location Map.

Project Milestone

December 2015 – Completion of Diemer ORP construction activities

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)

CEQA determinations for Option #1:

Project No. 1 – Diemer Revegetation and Mitigation Improvements – Construction

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed project involves the funding and minor alterations of existing private or public facilities, reconstruction or replacement of existing public facilities, along with the construction of minor appurtenant structures, with minor modifications in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees. These activities would result in negligible expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under Class 1, Class 2, Class 3, and Class 4 Categorical Exemptions (Sections 15301, 15302, 15303, and 15304 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under four Categorical Exemptions (Class 1, Section 15301; Class 2, Section 15302; Class 3, Section 15303; and Class 4, Section 15304 of the State CEQA Guidelines).

Project No. 2 – Diemer ORP Completion Activities – Construction

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action involves the funding, design, and minor alterations, reconstruction or replacement of existing public facilities along with the construction of minor appurtenant structures with negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under Class 1, Class 2, and Class 3 Categorical Exemptions (Sections 15301, 15302, and 15303 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under three Categorical Exemptions (Class 1, Section 15301; Class 2, Section 15302; and Class 3, Section 15303 of the State CEQA Guidelines).

Technical Services During Construction (Helix Environmental Planning, Inc.) – Amendment to Existing Agreement

The proposed action is not defined as a project under CEQA because it involves continuing administrative activities, such as general policy and procedure making (Section 15378(b) (2) of the State CEQA Guidelines). In addition, where it can be seen with certainty that there is no possibility that the proposed action in question may have a significant effect on the environment, the proposed action is not subject to CEQA (Section 15061(b)(3) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is not subject to CEQA pursuant to Sections 15378(b)(2) and 15061(b)(3) of the State CEQA Guidelines.

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determinations that the proposed projects are exempt from CEQA, and

- a. Appropriate \$3.96 million;
- b. Award \$996,600 contract to Environmental Construction, Inc. for revegetation at the Diemer plant;
- c. Authorize Metropolitan force completion activities for the Diemer Oxidation Retrofit Project; and
- d. Authorize increase of \$76,000 to an agreement with Helix Environmental Planning, Inc. for a new not-to-exceed total of \$386,000.

Fiscal Impact: \$3.96 million in capital funds under Approp. 15389

Business Analysis: This work will complete the Diemer ORP and allow the newly constructed ozonation facilities to commence operation. In addition, the revegetation work will satisfy Metropolitan's environmental commitments for the ORP and will help reduce the overall fire risk at the Diemer plant.

Option #2

Do not proceed with the projects at this time.

Fiscal Impact: None

Business Analysis: Under this option, Metropolitan would not comply with mitigation requirements contained in the Diemer ORP's Final EIR, and would delay start-up of the new ozonation facilities.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer
Engineering Services

2/24/2015
Date



Jeffrey Kightlinger
General Manager

2/26/2015
Date

Attachment 1 – Financial Statement

Attachment 2 – Abstract of Bids

Attachment 3 – Location Map

Ref# es12631963

Financial Statement for Diemer Oxidation Retrofit Project

A breakdown of Board Action No. 13 for Appropriation No. 15389 for completion activities for the Diemer ORP is as follows:

	Previous Total Appropriated Amount (Feb. 2013)	Current Board Action No. 13 (Mar. 2015)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 1,800,000	\$ -	\$ 1,800,000
Final Design	6,172,237	-	6,172,237
Owner Costs (Program mgmt., contract admin., permitting, envir. monitoring)	7,956,410	265,000	\$ 8,221,410
Submittals Review & Record Drawings	6,817,100	32,000	6,849,100
Construction Inspection & Support	33,852,800	105,000	33,957,800
Metropolitan Force Construction	7,757,000	1,097,000	8,854,000
Materials & Supplies	9,782,741	558,000	10,340,741
Incidental Expenses	1,002,404	5,000	1,007,404
Professional/Technical Services	31,006,560	-	31,006,560
Helix Environmental Planning, Inc.	310,000	76,000	386,000
Landscape maint. firm	-	200,000	200,000
Equipment Use	200,892	-	200,892
Contracts	257,406,869	-	257,406,869
Environmental Construction, Inc.	-	996,600	996,600
Remaining Budget	2,167,387 ²	625,400	2,792,787
Total	\$ 366,232,400	\$ 3,960,000	\$ 370,192,400

Funding Request

Appropriation Name:	Diemer Oxidation Retrofit Project		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15389	Board Action No.:	13
Requested Amount:	\$ 3,960,000	Budget Page No.:	290
Total Appropriated Amount:	\$ 370,192,400	Total Appropriation Estimate:	\$370,000,000

¹The total amount expended to date on the Diemer ORP is approximately \$359.1 million.

²Includes previous reallocation of \$6,297,000 from Remaining Budget for authorized construction contract changes, SCADA process control development, and construction management for the Diemer ozonation facilities.

The Metropolitan Water District of Southern California
Abstract of Bids Received on January 22, 2015 at 2:00 P.M.
Specifications No. 1782
Robert B. Diemer Water Treatment Plant
South Slope Revegetation and Mitigation

The work consists of installation of irrigation system and revegetation of portions of the Diemer plant's south-facing slope.

Engineer's Estimate: \$1,600,000

Bidder and Location	Total Amount	SBE \$	SBE %	Met SBE¹
Environmental Construction, Inc. Woodland Hills, CA	\$996,600	996,600	100	Yes
MG Enterprises, Inc. Tarzana, CA	\$1,129,720	-	-	-
Green Giant Landscape, Inc. La Habra, CA	\$1,275,000	-	-	-
Unispec Construction, Inc. San Pedro, CA	\$1,392,000	-	-	-
Los Angeles Engineering, Inc. Covina, CA	\$1,551,649	-	-	-
Green Building Corporation North Hollywood, CA	\$1,560,000	-	-	-
Marina Landscape, Inc. Anaheim, CA	\$1,591,000	-	-	-
Horizons Construction Co. Int'l, Inc. Orange, CA	\$1,798,053	-	-	-

¹ SBE (Small Business Enterprise) participation level set at 25 percent

Distribution System

