



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

3/9/2010 Board Meeting

7-4

Subject

Appropriate \$983,000; and authorize (1) two seismic upgrade projects at the Diemer plant; (2) environmental documentation for planned Diemer projects; (3) new agreement with ABS Consulting for seismic evaluations; and (4) amendment to existing agreement with P&D Consultants (Approp. 15436)

Description

This action authorizes seismic studies to upgrade the Administration Building and Filter Buildings at the Robert B. Diemer Water Treatment Plant, and preparation of environmental documentation for various planned Diemer projects. The Administration Building and Filter Buildings house critical plant functions which could be impacted by a major seismic event, potentially interrupting treated water deliveries. The planned seismic upgrades will reduce the risk of significant structural failure of these facilities in the event of a major earthquake. Environmental documentation is needed for planned projects whose potential environmental impacts have not been previously addressed. This action also authorizes a new professional services agreement for specialized technical support and an amendment to an existing agreement for preparation of the environmental documentation.

Timing and Urgency

The Administration and Filter Buildings at the Diemer plant have been identified via a systematic screening process as needing current seismic upgrades. A detailed structural evaluation is recommended, along with the development of feasible retrofit options to mitigate seismic risks. The upgrade of these two facilities, in addition to the Filter Outlet Conduit remediation and other planned projects at the Diemer plant over the next several years, will require preparation of environmental documentation.

These projects have been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria. Due to the critical nature of these facilities, staff recommends proceeding with all three projects at this time to enhance plant reliability. All three projects are categorized as Infrastructure Reliability projects and 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 a treatment capacity of 520 mgd. The plant delivers a blend of waters from the Colorado River and the State Water Project to Orange County and parts of Metropolitan's Central Pool portion of the distribution system.

The Whittier Fault is located less than half a mile north of the Diemer plant, and has a projected capability of generating a 6.8 magnitude earthquake. In order to maintain the reliability of the Diemer plant, staff initiated a seismic program in 2004 to identify and upgrade facilities which are potentially at risk of deformation or failure during a significant seismic event. Several upgrade projects have already been completed or are currently underway. Of the 32 structures and major conduits at the Diemer plant, 25 structures have been evaluated and found to be structurally sufficient, while seven facilities require upgrades. Seismic upgrades of the plant's Administration Building, the Filter Buildings, and the northeast Filter Outlet Conduit are addressed in this action. Final design of seismic upgrades for the Finished Water Reservoir and the East Washwater Tank is currently

underway, while the remaining two facilities (the Chlorine Control Building platform canopy and a segment of the Second Lower Feeder along the plant's main access road) will be the subject of future board actions.

Project No. 1 - Diemer Administration Building Seismic Upgrades – Study Phase (\$127,500)

The Diemer Administration Building is a three-story reinforced concrete building which was completed in 1963 as part of the original plant construction. The building houses the plant's Control Room, Incident Command Center, water quality laboratory, staff meeting rooms, and offices. The 72-foot wide by 158-foot long building has a flat roof, which includes a clerestory pop-up at the southern main entrance. At the basement level, the plant's Inlet Conduit runs the full length of the building.

A seismic screening evaluation of the Diemer Administration Building identified desirable structural upgrades including a need for enhanced lateral support in the clerestory roof (similar to the condition now being corrected at the Jensen Administration Building) and strengthened roof diaphragm and shear wall capacities. The building structure will require complex computer modeling to complete the structural analysis.

The structural integrity of the Administration Building is important for sustained plant operation. Staff recommends conducting a detailed structural evaluation to develop suitable seismic strengthening concepts. Due to the need to move forward with this study expeditiously and the highly specialized nature of the work, the detailed seismic evaluation is recommended to be performed by ABS Consulting, as discussed below.

This action appropriates \$127,500 and authorizes study phase activities for the seismic upgrade of the Diemer Administration Building. The appropriated funds include \$78,000 to conduct the evaluation by ABS Consulting; \$20,300 for technical oversight and peer review of the consultant study; \$12,600 for project management; and \$16,600 for remaining budget. Preparation of environmental documentation is included under Project No. 3, which is discussed below. Staff will return to the Board at a later date for authorization of preliminary design phase activities.

Project No. 2 - Diemer Filter Buildings Seismic Upgrades – Study Phase (\$196,500)

The Diemer plant's Filter Building No. 1 and the underlying filter structure were completed in 1963 as part of the original plant construction. Filter Building No. 2 and its underlying filter structure were completed in 1969 during the plant's Expansion No. 1. Each filter structure is 468 feet by 202 feet in plan, approximately 20 feet deep, and includes pipe galleries, box conduits, filters, troughs, and other filtration system appurtenances. A reinforced concrete superstructure, approximately 24 feet wide and 11 feet tall, is located at the operating floor level on top of both sides of filters and extends the full length of the filter basins in the north-south direction. These two buildings house filter control equipment.

A seismic screening evaluation of the two Filter Buildings identified seismic concerns including the capacity of the buildings' non-ductile concrete moment frames and discontinuous shear walls in the filters. Both the filters and the filter buildings are critical facilities that must be maintained in operation for sustained water deliveries. The chlorine solution lines in the filter galleries also require that seismic integrity be maintained. Staff recommends conducting a detailed structural evaluation to identify areas for upgrading, and to develop suitable seismic strengthening concepts. Due to the need to move forward with this study expeditiously, and the highly specialized nature of the work, the detailed seismic evaluation is recommended to be performed by ABS Consulting, as discussed below.

This action appropriates \$196,500 and authorizes study phase activities for the seismic upgrade of the Diemer Filter Buildings. The appropriated funds include \$126,600 to conduct the evaluation by ABS Consulting; \$29,300 for technical oversight and peer review of the consultant study; \$15,000 for project management; and \$25,600 for remaining budget. Preparation of environmental documentation is included under Project No. 3, which is discussed below. Staff will return to the Board at a later date for authorization of preliminary design phase activities.

Project No. 3 - Environmental Documentation for Planned Diemer Projects (\$659,000)

The Diemer plant is located on the top of a hill in Yorba Linda, with surrounding land uses that include residential developments, a golf course, and Chino Hills State Park. There are environmentally sensitive areas located within the plant boundary, as well as off-site. Due to the Diemer plant's unique setting, and its tight working space which restricts opportunities for simultaneous construction projects, staff endeavors to identify potential capital projects well in advance of their anticipated need, so that adequate time is available for planning and environmental review. Currently, a series of projects are underway at Diemer which were identified in the late 1990s, and which were included under an environmental impact report (EIR) certified by Metropolitan's Board in 2000. A Subsequent EIR (SEIR) included additional projects identified in the early 2000s, and was certified by the Board in 2006. Over the past several years, following certification of the previous EIRs, a number of new Diemer projects have been recommended for inclusion in Metropolitan's CIP. These later planned projects must be assessed with new environmental documentation.

Several upcoming Diemer plant projects, including seismic upgrades of the Administration Building and Filter Buildings (described above), along with seismic upgrade of the Filter Outlet Conduit and electrical improvements throughout the plant, are planned in order to enhance the Diemer plant's treatment and operational reliability. These projects may have the potential to affect the quality of the environment due to potential impacts to air quality and other environmental factors such as visual, traffic, noise, and biological resources.

Staff recommends that the potential environmental impacts of these projects and other upcoming rehabilitation work be analyzed in a programmatic EIR. A programmatic EIR presents a comprehensive approach to California Environmental Quality Act (CEQA) compliance and is best utilized when an agency is proposing a series of projects that can be characterized as a chain of contemplated actions related geographically, and/or individual activities carried out under the same authorizing regulatory authority. A programmatic EIR ensures consideration of cumulative impacts, and allows the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with cumulative impacts. Moreover, a programmatic EIR allows staff flexibility throughout the design and construction of a project by accommodating modifications in project schedules, design considerations, and construction approaches. This approach was utilized for the Diemer plant EIR certified in 2000, which enabled the eventual construction of numerous multi-year projects, including the Diemer Oxidation Retrofit Program.

This action appropriates \$659,000 and authorizes preparation of environmental documentation for planned seismic upgrade and rehabilitation projects at the Diemer plant. The work is recommended to be performed by P&D Consultants, as discussed below, with oversight by Metropolitan staff. The appropriated funds include \$400,000 to prepare the environmental documentation by P&D Consultants; \$135,000 for permitting, consultations with regulatory agencies, and technical oversight of the consultant work; \$35,800 for project management; and \$88,200 for remaining budget.

ABS Consulting – New Agreement

Seismic evaluation of the Diemer plant's Administration and Filter Buildings is recommended to be performed by ABS Consulting under a new professional services agreement. ABS Consulting was selected through a competitive process via Request for Qualifications No. 884. For this agreement, Metropolitan has established an SBE participation level of 18 percent. The scope of work include structural analyses of the existing facilities, development of seismic strengthening concepts, constructability reviews, development of conceptual cost estimates, and preparation of reports. The estimated cost for these services is \$78,000 for the Administration Building and \$126,600 for the Filter Buildings.

This action authorizes a new agreement with ABS Consulting, in an amount not to exceed \$204,600, to perform seismic evaluation for Diemer plant's Administration and Filter Buildings.

P&D Consultants – Amendment to Existing Agreement

P&D Consultants prepared previous environmental documentation for the Diemer plant, and is recommended to prepare the new programmatic EIR under an existing professional services agreement. The scope of work includes preparation and processing of an EIR, performing technical studies (addressing issues such as air quality,

traffic, noise, and biological resources), conducting scoping meetings, and preparing correspondence and related documentation in support of CEQA requirements. P&D Consultants was selected through a competitive process via Request for Qualifications No. 732. Amendment of the existing P&D Consultants agreement is consistent with the agreement's scope of work. For this agreement, Metropolitan has established an SBE participation level of 20 percent. The estimated cost for these services is \$400,000.

This action authorizes an increase of \$400,000 to the existing agreement with P&D Consultants, for a new not-to-exceed total of \$2.7 million, to prepare environmental documentation for the Diemer plant.

Summary

This action appropriates \$983,000; authorizes seismic upgrade studies of the Diemer Administration Building and Filter Buildings; authorizes preparation of environmental documentation for planned Diemer plant projects; and authorizes a new agreement with ABS Consulting and an amendment to the existing agreement with P&D Consultants. All work has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in the fiscal year 2009/10 capital budget. 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 plant in order to maintain reliable water deliveries in the future.

Project Milestones

October 2010 – Completion of seismic upgrade studies of Diemer Administration and Filter Buildings

October 2011 – Completion of environmental documentation for planned Diemer plant projects

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 determination for Options #1 and #2:

The proposed actions are not subject to CEQA because they involve government fiscal activities, which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines). In addition, the proposed actions consist of basic data collection and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource. This may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded. Accordingly, the proposed actions also qualify for a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed actions are exempt from CEQA pursuant to Sections 15306 and 15378(b)(4) of the State CEQA Guidelines.

CEQA determination for Option #3:

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Appropriate \$983,000;
- b. Authorize the Diemer Administration Building Seismic Upgrade Study;
- c. Authorize the Diemer Filter Buildings Seismic Upgrade Study;
- d. Authorize preparation of environmental documentation for planned Diemer projects;
- e. Authorize agreement with ABS Consulting in an amount not to exceed \$204,600; and
- f. Authorize amendment to existing agreement with P&D Consultants in an amount not to exceed \$400,000.

Fiscal Impact: \$983,000 of budgeted funds under Approp. 15436

Business Analysis: This option will enhance reliability in the event of a significant earthquake, and will allow timely execution of planned projects that require environmental documentation.

Option #2

Adopt the CEQA determination and

- a. Appropriate \$324,000;
- b. Authorize the Diemer Administration Building Seismic Upgrade Study;
- c. Authorize the Diemer Filter Buildings Seismic Upgrade Study;
- d. Authorize agreement with ABS Consulting in an amount not to exceed \$204,600;
- e. Do not proceed with preparation of environmental documentation for planned Diemer projects; and
- f. Do not authorize an amendment to the existing agreement with P&D Consultants.

Fiscal Impact: \$324,000 of budgeted funds under Approp. 15436

Business Analysis: Under this option, proceeding with the studies for seismic upgrade of key buildings at the Diemer plant would enhance the plant's reliability following a significant earthquake. However, deferral of environmental documentation for planned Diemer projects would result in delay of these seismic upgrades and other rehabilitation projects.

Option #3

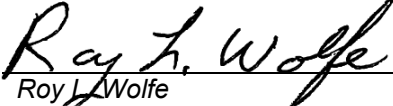
Do not proceed with the three Diemer projects at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to mitigate the risk of seismic failure of critical Diemer facilities, would not enhance the plant's capability to continue operation following a significant earthquake, and would result in delay of needed rehabilitation projects.

Staff Recommendation

Option #1



Roy L. Wolfe
Manager, Corporate Resources

2/23/2010

Date



Jeffrey Kightlinger
General Manager

2/24/2010

Date

Attachment 1 – Financial Statement

Attachment 2 – Location Map

Ref# CR12603950

Financial Statement for Diemer Improvements Program – Phase II

A breakdown of Board Action No. 7 for Appropriation No. 15436 for the Diemer Administration Building Seismic Upgrade, Filter Buildings Seismic Upgrade, and environmental documentation for planned Diemer projects* is as follows:

	Previous Total Appropriated Amount (Mar. 2010)	Current Board Action No. 7 (Mar. 2010)	New Total Appropriated Amount
Labor			
Studies and Investigations	\$ 472,000	\$ 181,300	\$ 653,300
Final Design	1,765,100	-	1,765,100
Owner Costs (Program mgmt., permitting)	1,256,438	63,700	1,320,138
Submittals Review	32,000	-	32,000
Construction Inspection & Support	380,791	-	380,791
Metropolitan Force Construction	1,506,500	-	1,506,500
Materials and Supplies	691,258	-	691,258
Incidental Expenses	66,793	3,000	69,793
Professional/Technical Services	246,343	-	246,343
ABS Consulting	-	204,600	204,600
P&D Consultants	-	400,000	400,000
Equipment Use	23,155	-	23,155
Contracts	986,429	-	986,429
Remaining Budget	287,193	130,400	417,593
Total	\$ 7,714,000	\$ 983,000	\$ 8,697,000

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.:	7
Requested Amount:	\$ 983,000	Capital Program No.:	15436-I
Total Appropriated Amount:	\$ 8,697,000	Capital Program Page No.:	288
Total Program Estimate:	\$ 123,980,000	Program Goal:	I- Infrastructure Reliability

* This action is the initial appropriation for all three projects.

Robert B. Diemer Water Treatment Plant

