



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

10/12/2010 Board Meeting

7-4

Subject

Appropriate \$1.48 million; award \$710,000 contract to Unispec Construction, Inc. for the Diemer Emergency Broadcast System; and authorize final design of the Weymouth Emergency Broadcast System (Approps. 15436 and 15440)

Description

This action awards a construction contract at the Robert B. Diemer Water Treatment Plant to rehabilitate the plant's emergency broadcast system, and authorizes final design of a similar project at the F. E. Weymouth Water Treatment Plant. The emergency broadcast system is critical to emergency response and plant and staff safety.

Timing and Urgency

Both the Diemer and Weymouth plants utilize public address systems to broadcast emergency messages. The original public address systems at both plants were installed in the 1960s and have been expanded several times, without replacing original equipment components. Both systems are overtaxed, creating poor and distorted audio quality at nearly inaudible volume levels throughout each of the plants.

The 2008 Freeway Complex fire and the 2009 Chino Hills earthquake, which both occurred in close proximity to the Diemer plant, further exposed the deficiencies of the existing Diemer system. Water System Operations staff was not able to use the public address system to communicate or to provide emergency instructions to all personnel on the site. To compensate for the inadequate public address system, messages were relayed by telephones, radios, and messengers to various locations at the plant.

Cal-OSHA requires that employee alarms be distinctive and recognizable as a signal to evacuate a work area or to perform actions designated under an emergency action plan. Because a fully functional emergency broadcast system is essential to protect plant personnel, visitors, and contractors working at either plant, staff recommends that rehabilitation projects at the Diemer and Weymouth plants move forward at this time. The public address systems at Metropolitan's three other water treatment plants were installed more recently and do not need to be rehabilitated at this time.

These two projects have been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria. Both projects are categorized as Infrastructure Reliability projects and are budgeted within Metropolitan's CIP for fiscal year 2010/11.

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 Weymouth plant was placed into service in 1941 with an initial capacity of 100 mgd, and was expanded twice to its current capacity of 520 mgd. Both plants deliver a blend of waters from the Colorado River and the State Water Project to Metropolitan's Central Pool portion of the distribution system.

Each plant utilizes a public address system to support day-to-day plant operations, and to provide emergency communications. In addition to broadcasting general nonemergency messages, the public address systems transmit alarm notifications and general evacuation instructions.

The backbone components of the existing public address systems at both plants were installed in the 1960s. The original systems have since been expanded several times to add new speakers during various plant expansions and building additions, but the original equipment components have not been replaced. Since the nearly 50-year-old systems were not designed to support the added speakers, the existing public address systems have become overtaxed and underpowered. This creates poor and distorted audio quality, nearly inaudible volume levels, and a high probability for system failure.

Numerous new facilities have been added to the plants in recent years, while several more are planned, such as the ozonation facilities. Due to the limited capacity of the existing public address systems at both plants, the recently added facilities were built with stand-alone public address systems that are not fully integrated into the plant-wide systems. Upgrades and expansion of the public address systems at both plants are needed in order to support existing facilities and future improvements.

Cal-OSHA requires that a notification method be installed to fulfill the requirement of an emergency response plan; public address systems are an acceptable notification method. The evacuation procedures established in Metropolitan's Emergency Action Plan for both the Diemer and Weymouth plants require that emergency and evacuation messages be announced over the public address systems. Furthermore, the public address systems have been identified in each plant's Hazardous Materials and Hazardous Waste Contingency Plan as "the primary means of notifying plant site personnel and visitors of emergency situations." Rehabilitating the public address systems will also enhance each plant's safety and operational efficiency.

Staff recommends upgrading the existing Central Control Unit in the Administration Building of each plant to provide the needed public address system capacity, supplementing the existing speakers to provide plant-wide coverage, adding local interface modules at new facilities where necessary, and connecting fiber optic lines between the Central Control Unit and all plant facilities.

Project No. 1 – Diemer Emergency Broadcast System Rehabilitation – Construction (\$1,090,000)

The Diemer plant currently has a total of 147 public address speakers and horns located throughout the plant. Evacuation drills have revealed that the existing public address system cannot broadcast understandable evacuation messages to numerous areas at the Diemer plant.

In September 2008, Metropolitan's Board authorized final design phase activities for the expansion and upgrade of the Diemer plant's public address system to provide clear and reliable broadcasting of notifications and evacuation instructions throughout the plant. Final design has been completed, and staff recommends award of a contract at this time to rehabilitate the system.

Award of Contract

Specification No. 1643A for the Diemer Emergency Broadcast System Rehabilitation project was advertised for bids on July 28, 2010. As shown in [Attachment 2](#), six bids were received on August 26, 2010. The low bid from Unispec Construction, Inc., in the amount of \$710,000, complies with the requirements of the specifications. The five higher bids ranged from approximately \$748,000 to \$818,000. The engineer's estimate was \$830,000. 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 20 percent of the total bid amount. Unispec Construction, Inc. is a registered SBE firm, and thus achieves 100 percent participation.

This action appropriates \$1.09 million and awards a \$710,000 contract to Unispec Construction, Inc. to rehabilitate the existing emergency broadcast system at the Diemer plant. In addition to the amount of the contract, the appropriated funds include \$25,400 for Metropolitan force construction support, which includes conduit routing, shutdown activities, and system testing. The total cost of construction is \$735,400. The

appropriated funds also include \$111,400 for construction inspection; \$32,500 for review of submittals and preparation of record drawings; \$64,200 for project management; and \$146,500 for remaining budget.

Metropolitan staff will perform inspection of the construction contract. For this project, the anticipated cost of inspection and support is approximately 15 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.

Project No. 2 – Weymouth Emergency Broadcast System Rehabilitation – Final Design Phase (\$390,000)

There is currently a total of 213 public address speakers and horns at the Weymouth plant, within Metropolitan's Water Quality Laboratory, and at various shop and office buildings throughout the La Verne site. A recent evacuation drill revealed that the existing public address system cannot broadcast understandable evacuation messages to numerous areas throughout the site. Although all speakers at the Water Quality Laboratory are functional, only 15 percent of the speakers in other buildings and 17 percent of the outside speakers are fully functional.

In November 2006, Metropolitan's Board authorized preliminary design for the expansion and upgrade of the Weymouth plant's public address system. Preliminary design has been completed, and staff recommends proceeding with final design at this time to rehabilitate the public address system. Since the Diemer plant's emergency broadcast system rehabilitation project is moving into construction while the Weymouth project will be under design, staff intends to incorporate experience gained from the Diemer project into the Weymouth design. Based on this experience, and since the Weymouth system will cover a larger site with more facilities than at Diemer, staff anticipates that increased efficiency will result for the Weymouth system.

This action appropriates \$390,000 and authorizes final design phase activities to rehabilitate the emergency broadcast system at the Weymouth plant. Planned activities include hazardous materials survey, engineering design, preparation of drawings and specifications, development of a construction cost estimate, receipt of bids, and all other activities in advance of award of a construction contract. Final design will be performed by Metropolitan staff. The anticipated cost of final design is approximately 14.8 percent of the estimated total construction cost. Engineering Services' goal for design of projects with construction cost less than \$3 million is 9 to 15 percent. The construction cost for the emergency broadcast system rehabilitation is estimated to range from \$1.4 million to \$1.6 million.

Staff will return to the Board in late 2011 to award a construction contract for the Weymouth Emergency Broadcast System Rehabilitation.

Summary

This action appropriates \$1.48 million; awards a \$710,000 contract to Unispec Construction, Inc. to rehabilitate the Diemer Emergency Broadcast System; and authorizes final design to rehabilitate the Weymouth Emergency Broadcast System.

All work has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in the fiscal year 2010/11 capital budget. See [Attachment 1](#) for the Financial Statements, [Attachment 2](#) for the Abstract of Bids, and [Attachment 3](#) for the Location Map.

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

Project Milestones

July 2011 – Completion of final design of Weymouth Emergency Broadcast System Rehabilitation

October 2011 – Completion of construction of Diemer Emergency Broadcast System Rehabilitation

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 Emergency Broadcast System Rehabilitation - Construction

CEQA determination for Option #1:

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).

CEQA determination for Options #2 and #3:

None required

Project No. 2 – Weymouth Emergency Broadcast System Rehabilitation - Final Design Phase

CEQA determination for Options #1 and #2:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action involves the funding of a study and minor modifications to existing public facilities with negligible or no expansion of use and no possibility of significantly impacting the physical environment. In addition, the proposed action consists of basic data collection and resource evaluation activities, which does 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 action qualifies for both Class 1 and Class 6 Categorical Exemptions (Sections 15301 and 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under two Categorical Exemptions (Class 1, Section 15301 and Class 6, Section 15306 of the State CEQA Guidelines).

CEQA determination for Option #3:

None required

Board Options

Option #1

Adopt the CEQA determinations and

- a. Appropriate \$1.48 million;
- b. Award \$710,000 contract to Unispec Construction, Inc. to rehabilitate the Diemer Emergency Broadcast System; and
- c. Authorize final design to rehabilitate the Weymouth Emergency Broadcast System.

Fiscal Impact: \$1.09 million of budgeted funds under Approp. 15436; and \$390,000 of budgeted funds under Approp. 15440

Business Analysis: This option will enhance the efficiency of treatment plant operations and staffs and emergency communications at both the Diemer and Weymouth plants.

Option #2

Adopt the CEQA determinations and

- a. Appropriate \$390,000;
- b. Do not award the Diemer construction contract and re-advertise in an attempt to receive more favorable bids; and
- c. Authorize final design to rehabilitate the Weymouth Emergency Broadcast System.

Fiscal Impact: \$390,000 of budgeted funds under Approp. 15440

Business Analysis: This option may or may not result in a lower bid, and would delay completion of the emergency broadcast system rehabilitation at the Diemer plant.

Option #3

Do not proceed with the two projects at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to enhance personnel safety and operational efficiency at both plants under emergency situations.

Staff Recommendation

Option #1

	9/28/2010
Roy L. Wolfe Manager, Corporate Resources	Date
	9/29/2010
Jeffrey Kightlinger General Manager	Date

Attachment 1 – Financial Statements

Attachment 2 – Abstract of Bids

Attachment 3 – Location Map

Ref# cr12605166

Financial Statement for Diemer Improvements Program – Phase II

A breakdown of Board Action No. 9 for Appropriation No. 15436 for the Diemer Emergency Broadcast System Rehabilitation project* is as follows:

	Previous Total Appropriated Amount (May 2010)	Current Board Action No. 9 (Oct. 2010)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 653,300	\$ -	\$ 653,300
Final Design	1,765,100	-	1,765,100
Owner Costs (Program mgmt, record drwgs.)	1,604,138	72,300	1,676,438
Submittals Review	322,000	22,400	344,400
Construction Inspection & Support	1,023,791	111,400	1,135,191
Metropolitan Force Construction	1,692,500	25,400	1,717,900
Materials and Supplies	871,258	-	871,258
Incidental Expenses	79,793	2,000	81,793
Professional/Technical Services	850,943	-	850,943
Equipment Use	23,155	-	23,155
Contracts	5,953,366	710,000	6,663,366
Remaining Budget	957,656	146,500	1,104,156
Total	\$ 15,797,000	\$ 1,090,000	\$ 16,887,000

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.:	9
Requested Amount:	\$ 1,090,000	Capital Program No.:	15436-I
Total Appropriated Amount:	\$ 16,887,000	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 Emergency Broadcast System Rehabilitation project is approximately \$519,000.

Financial Statement for Weymouth Improvements Program – Phase II

A breakdown of Board Action No. 10 for Appropriation No. 15440 for the Weymouth Emergency Broadcast System Rehabilitation project* is as follows:

	Previous Total Appropriated Amount (Sep. 2010)	Current Board Action No. 10 (Oct. 2010)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 735,500	\$ -	\$ 735,500
Owner Costs (Program mgmt, bidding process)	823,000	106,000	929,000
Final Design	380,000	214,500	594,500
Construction Inspection & Support	260,300	-	260,300
Metropolitan Force Construction	287,700	-	287,700
Materials and Supplies	375,000	-	375,000
Incidental Expenses	43,800	3,000	46,800
Professional/Technical Services	889,000	-	889,000
Equipment Use	2,500	-	2,500
Contracts	1,588,122	-	1,588,122
Remaining Budget	641,078	66,500	707,578
Total	\$ 6,026,000	\$ 390,000	\$ 6,416,000

Funding Request

Program Name:	Weymouth Improvements Program - Phase II		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15440	Board Action No.:	10
Requested Amount:	\$ 390,000	Capital Program No.:	15440-I
Total Appropriated Amount:	\$ 6,416,000	Capital Program Page No.:	324
Total Program Estimate:	\$ 37,100,000	Program Goal:	I-Infrastructure Reliability

*The total amount expended to date on the Weymouth Emergency Broadcast System Rehabilitation project is approximately \$65,000.

The Metropolitan Water District of Southern California
Abstract of Bids Received on August 26, 2010 at 2:00 P.M.
Specifications No. 1643A
Robert B. Diemer Water Treatment Plant
Emergency Broadcast System Rehabilitation

The project consists of furnishing and installing a new micro-processor-based emergency broadcast system; adding looped fiber optic cable network and remote fiber-linked amplifier cabinets; expanding the existing emergency broadcast system controller; and furnishing and installing new speakers, horns, handsets, and amplifiers throughout the Diemer plant.

Engineer's Estimate: \$830,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE*
Unispec Construction, Inc., San Pedro, CA	\$ 710,000	\$ 710,000	100%	Yes
Safeway Building Services, Inc. dba Safeway Security Systems, Colton, CA	\$ 748,430	N/A	N/A	N/A
FORE Engineering Construction, Inc., Tustin, CA	\$ 784,000	N/A	N/A	N/A
Mel Smith Electric, Inc., Stanton, CA	\$ 785,210	N/A	N/A	N/A
JAM Corporation, Monrovia, CA	\$798,000	N/A	N/A	N/A
M.B. Herzog Electric, Inc., Paramount, CA	\$817,784	N/A	N/A	N/A

*SBE (Small Business Enterprise) participation set at 20 percent

N/A – not applicable

Robert B. Diemer and F. E. Weymouth Water Treatment Plants

