THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

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

7/13/2010 Board Meeting

8-4

Subject

Appropriate $5.55 million; authorize three electrical upgrade projects at the Diemer, Jensen, and Mills plants; and award $419,680 contract to Dalke & Sons Construction, Inc. for the Skinner Electrical Building Upgrades (Approps. 15365, 15380, 15442, and 15452)

Description

This action authorizes final design phase activities for electrical improvements at the Diemer plant, authorizes preliminary design phase activities for electrical improvements at the Jensen and Mills plants, and awards a construction contract to install new insulation and air conditioning systems in 12 electrical buildings at the Skinner plant.

Timing and Urgency

Upgrades to the electrical systems at the Diemer, Jensen, and Mills plants are needed because their aging electrical systems lack redundancy and rely on obsolete equipment that is difficult to maintain and repair. Although the systems met then-current electrical standards at the time of construction over 30 years ago, much of the equipment is underrated by today's electrical standards, and does not have adequate short circuit interrupting capability, which could increase the potential of unintended shutdowns, equipment damage, and fire hazard. Most electrical systems that are critical to the water treatment processes at the Diemer and Jensen plants, and several critical systems at the Mills plant, have a common power feed. A single component failure within each power system could disable critical process equipment, impacting the treatment capability of each plant. The three electrical improvements projects are recommended to proceed at this time to enhance plant reliability and to improve safety.

At Skinner Plants Nos. 1 and 2, existing electrical components have deteriorated due to lack of building temperature control, while the frequency of equipment failures has significantly increased. The insulation and air conditioning upgrades will enhance plant reliability by keeping interior temperatures within equipment manufacturers' recommended operating environment.

A detailed report on the four electrical upgrade projects appears in **Attachment 1**. These projects have been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria, and are categorized as Infrastructure Refurbishment and Upgrade projects. All four projects are budgeted within Metropolitan's CIP for fiscal year 2010/11.

Background

Electrical systems at the Diemer, Jensen, and Mills plants need to be upgraded to increase treatment plant reliability and to be consistent with modern industry practice. Many electrical components at the Diemer, Jensen, and Skinner plants are aged and deteriorated, and have reached the end of their useful service life. The deteriorated components tend to overheat and fail. Replacement parts are difficult to obtain and are expensive. As the equipment continues to age, its capability of operating reliably and safely will diminish. In addition, electrical systems were originally designed to run through a single power center, which leaves the plant vulnerable to a shutdown caused by a single failure in the power system.

To address these issues, staff recommends proceeding with design to upgrade significant portions of the electrical systems at the Diemer, Jensen, and Mills plants to improve system reliability in accordance with current electrical standards, and to accommodate current and future needs. Some upgrades for these facilities have already been performed under the Oxidation Retrofit Program (ORP) and other projects.

At the Skinner plant, Metropolitan force construction of electrical upgrades in the 12 electrical buildings that supply power to Skinner Plants Nos. 1 and 2 is presently underway. An element of the upgrades to these 12 buildings, which is planned to be performed via a construction contract, is to add air conditioners and insulation to each building. Staff recommends awarding a contract at this time to add these air conditioners and insulation to the 12 buildings.

Project No. 1 – Diemer Electrical Improvements Stage 2 – Final Design Phase ($3.47 million)

Principal components of the Diemer electrical system date to the plant's original construction in 1963. Many critical electrical components at the Diemer plant are over 47 years old and are nearing the end of their useful life, which increases the possibility of equipment failure. In May 2008, Metropolitan's Board authorized the preliminary design of Stage 2 of the Diemer electrical upgrades. Preliminary design has been completed, and staff recommends proceeding with final design phase activities at this time.

This action appropriates $3.47 million and authorizes final design of the Diemer Electrical Improvements Stage 2 project. The scope of work includes field investigations, updating of existing drawings, preparation of specifications and plans, shutdown planning, development of a construction cost estimate, receipt of bids, and all activities in advance of award of a construction contract. All final design activities are planned to be performed by Metropolitan staff. Requested funds include $2.68 million for final design; $424,000 for environmental documents, hazardous material testing, plant staff support, bidding process, and project management; $50,000 for value engineering; and $315,000 for remaining budget. The anticipated cost of final design is approximately 11.6 percent of the estimated construction cost. Engineering Services' goal for design of projects with estimated construction cost greater than $3 million is 9 to 12 percent. The construction cost for Stage 2 of this project is anticipated to range from $20 million to $26 million.

Project No. 2 – Jensen Electrical Improvements – Preliminary Design Phase ($700,000)

Principal components of the Jensen electrical system were installed during the plant's original construction in 1972. Many critical electrical components at Jensen are 40 years old and are nearing the end of their useful life, which increases the possibility of equipment shutdown or damage. In March 2008, Metropolitan's Board authorized the Jensen Power Reliability Study to evaluate the Jensen plant's aging electrical infrastructure, and to identify potential upgrades to support continued reliable operation. Staff has completed a detailed assessment and recommends proceeding with preliminary design at this time.

This action appropriates $700,000 and authorizes preliminary design phase activities for the Jensen Electrical Improvements project. The preliminary design activities include field investigations, code assessment, value engineering, preparation of environmental documentation, permitting, development of a construction cost estimate, and preparation of a preliminary design report. Preliminary design activities are planned to be performed by Metropolitan staff.

Project No. 3 – Mills Electrical Improvements – Preliminary Design Phase ($610,000)

Principal components of the Mills electrical system were installed during the plant's original construction in 1978. The design of the Mills electrical system is more up-to-date than the other plants. In March 2008, Metropolitan's Board authorized the Mills Power Reliability Study to evaluate the Mills plant's aging electrical infrastructure, and to identify potential upgrades to support continued reliable operation. Staff has completed a detailed assessment and recommends proceeding with preliminary design at this time.

This action appropriates $610,000 and authorizes preliminary design phase activities for the Mills Electrical Improvements project. The preliminary design activities include field investigations, code assessment, value engineering, preparation of environmental documentation, permitting, development of a construction cost estimate, and preparation of a preliminary design report. Preliminary design activities are planned to be performed by Metropolitan staff.

Project No. 4 – Phase 2 Skinner Electrical Building Upgrades – Construction ($770,000)

In February 2007, Metropolitan's Board authorized final design of the Skinner Electrical Building Upgrades project to replace deteriorated electrical equipment and to add insulation and air conditioners to 12 electrical buildings; to upgrade ground fault protection in 3 of the 12 buildings; and to seismically upgrade two of the 12 buildings. Staff recommends awarding a contract at this time to add insulation and air conditioners to the 12 buildings and to seismically upgrade 2 of the 12 buildings.

Specifications No. 1607 for the Phase 2 Skinner Electrical Building Upgrades was advertised for bids on April 5, 2010. The work consists of installation of insulation and air conditioning systems for 12 electrical buildings; addition of structural foundations, supports, electrical conduits, and electrical wiring for the new air conditioning systems; and seismic upgrades to 2 of the 12 electrical buildings. As shown in **Attachment 3**, two bids were received on May 19, 2010. The low bid from Dalke & Sons Construction, Inc., in the amount of $419,680, complies with the requirements of the specifications. The other bid was in the amount of $517,711. The engineer's estimate was $514,000. For this contract, Metropolitan has established a Small Business Enterprise participation level of at least 20 percent of the total bid amount. Dalke & Sons Construction has committed to meet this level of participation.

This action appropriates $770,000 in budgeted funds and awards a $419,680 contract to Dalke & Sons Construction, Inc. for the Phase 2 Skinner Electrical Building Upgrades. In addition to the amount of the contract, the appropriated funds include $116,000 for Metropolitan force construction to temporarily relocate interfering equipment and to support plant electrical shutdowns; $80,000 for construction inspection; $24,000 for submittals review; $64,000 for contract administration, record drawing preparation, and project management; and $66,000 for remaining budget.

Metropolitan staff will perform inspection of the construction contract. For this project, the anticipated cost of inspection and support is approximately 14.9 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.

Summary

This action appropriates $5.55 million; authorizes final design of improvements to the Diemer electrical system; authorizes preliminary design of improvements to the Jensen and Mills electrical systems; and awards a $419,680 contract to Dalke & Sons Construction, Inc. for the Skinner Electrical Building Upgrades project. These projects have 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 Detailed Report, **Attachment 2** for the Financial Statements, **Attachment 3** for the Abstract of Bids, and **Attachment 4** for the Location Map.

These projects are consistent with Metropolitan's goals for sustainability by protecting water quality and improved worker safety at the Diemer, Jensen, Mills, and Skinner plants, 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 Electrical Improvements Stage 2 – 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 project involves the funding; final design; and minor alterations, reconstruction or replacement of existing public facilities along with the construction of minor appurtenant structures with no expansion of use and no possibility of significantly impacting the physical environment. In addition, the proposed project involves

minor modifications in the condition of land, water, and/or vegetation which does not involve removal of healthy, mature, scenic trees. 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).

CEQA determination for Option #3:

None required

Projects Nos. 2 and 3 – Jensen and Mills Electrical Improvements – Preliminary Design Phase

CEQA determination for Options #1 and #2:

The proposed actions are categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed actions involve 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 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 qualify under 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 actions qualify 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

Project No. 4 – Phase 2 Skinner Electrical Building Upgrades – Construction

CEQA determination for Option #1:

The project was previously determined to be categorically exempt under the provisions of CEQA and State CEQA Guidelines. The Board found the project to be exempt under Class 1, Section 15301 and Class 2, Section 15302 of the State CEQA Guidelines on February 13, 2007. A Notice of Exemption (NOE) was filed on the project at that time and the statute of limitations has ended. With the current board action, there are no substantial changes proposed to the project since the original NOE was filed. 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 2007 NOE (Class 1, Section 15301 and Class 2, Section 15302 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 $5.55 million;
b. Authorize final design of the Diemer Electrical Improvements;
c. Authorize preliminary design of the Jensen and Mills Electrical Improvements; and
d. Award $419,680 contract to Dalke & Sons Construction, Inc. to construct the Phase 2 Skinner Electrical Building Upgrades.

Fiscal Impact: $770,000 in budgeted funds under Approp. 15365; $3.47 million in budgeted funds under Approp. 15380; $700,000 in budgeted funds under Approp. 15442; and $610,000 in budgeted funds under Approp. 15452

Business Analysis: This option will enhance electrical reliability and safety at the Diemer, Jensen, Mills, and Skinner plants, in accordance with current electrical standards. The electrical improvement projects will provide backup capability for critical treatment process equipment.

Option #2

Adopt the CEQA determinations and

a. Appropriate $4.78 million;
b. Authorize final design of the Diemer Electrical Improvements;
c. Authorize preliminary design of the Jensen and Mills Electrical Improvements; and
d. Do not award the contract for the Phase 2 Skinner Electrical Building Upgrades, and readvertise in an attempt to receive more favorable bids.

Fiscal Impact: $3.47 million in budgeted funds under Approp. 15380; $700,000 in budgeted funds under Approp. 15442; and $610,000 in budgeted funds under Approp. 15452

Business Analysis: This option would enhance electrical reliability and safety at the Diemer, Jensen, and Mills plants, in accordance with current electrical standards. Readvertisement of the Phase 2 Skinner Electrical Building Upgrades may or may not result in lower bids for the construction contract.

Option #3

a. Do not authorize the Diemer, Jensen and Mills Electrical Improvement projects at this time; and
b. Do not proceed with the Skinner Electrical Buildings Upgrade project at this time.

Fiscal Impact: None

Business Analysis: Under this option, the electrical systems at the Diemer, Jensen and Mills plants will continue to be operated and maintained as before. However, the plants would remain susceptible to power interruptions and increasing risk for plant downtime. Deferral of the Skinner upgrades project would result in an increased risk of unplanned outages due to failure of aged, deteriorated electrical components due to overheating. Skinner plant staff would procure and install replacement electrical components as they fail; in the event of an unplanned outage, a temporary reduction in treatment capacity would be likely.

Staff Recommendation

Option #1

Roy L. Wolfe
Roy L. Wolfe
Manager, Corporate Resources

6/24/2010
Date

Jeffrey Kightlinger
Jeffrey Kightlinger
General Manager

6/25/2010
Date

Attachment 1 – Detailed Report

Attachment 2 – Financial Statements

Attachment 3 – Abstract of Bids

Attachment 4 – Location Map

Ref# cr12604429

Detailed Report

Introduction

This action authorizes final design phase activities for electrical improvements at the Diemer plant, authorizes preliminary design phase activities for electrical improvements at the Jensen and Mills plants, and awards a construction contract to install new insulation and air conditioning systems in 12 electrical buildings at the Skinner plant.

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 Diemer plant delivers a blend of waters from the Colorado River and the State Water Project (SWP) to Metropolitan's Central Pool portion of the distribution system.

The Jensen plant was placed into service in 1972 with an initial capacity of 350 mgd, and was expanded in the early 1990s to its current capacity of 750 mgd. The Jensen plant exclusively treats water from the West Branch of the SWP and delivers it to Metropolitan's Central Pool and to exclusive service areas on the west side of the distribution system.

The Mills plant exclusively treats water from the East Branch of the SWP. The plant was placed into service in 1978 with an initial capacity of 75 mgd, and was expanded twice. It is currently rated to treat 220 mgd. The Mills plant delivers water to Eastern Municipal Water District and to Western Municipal Water District of Riverside County.

The Skinner plant was placed into service in 1976. Since its original construction, the plant has been expanded four times and now consists of seven treatment modules that are operated as three distinct facilities (Plants Nos. 1, 2, and 3). The Skinner plant has a treatment capacity of 630 mgd, and delivers a blend of waters from the Colorado River and the SWP to Eastern Municipal Water District, Western Municipal Water District of Riverside County, and San Diego County Water Authority.

Electrical Upgrades at the Water Treatment Plants

Metropolitan's water treatment plants were expanded several times to their present-day capacities. With each of the plant's multiple expansions, their on-site electrical systems have been expanded or adapted to accommodate the increasing electrical loads. Incoming electrical current from the local power utilities has also increased to accommodate the plant improvements.

Electrical systems at the plants need to be upgraded to increase treatment plant reliability and be consistent with modern industry practice. Specifically, the electrical systems were initially designed as radial systems, with power running through a single path to each local unit power center (UPC) for distribution to powered equipment. This practice of powering all the components of a critical system from a single electrical source does not provide redundancy and reliability, and leaves the plant vulnerable to a shutdown caused by a single failure in the power system. Also, in order to perform corrective maintenance or routine preventive maintenance for electrical systems, the entire system has to be powered off. These power outages impact the plant's treatment capacity.

In addition, some protective equipment is now underrated for short circuit interrupting capacity. Many electrical components at the Diemer, Jensen, and Skinner plants are aged and deteriorated, and have reached the end of their useful service life. The deteriorated components tend to overheat and fail. Replacement parts are difficult to obtain and are expensive. As the equipment continues to age, its capability of operating reliably and safely will diminish.

To address these issues, staff recommends proceeding with design to upgrade significant portions of the electrical systems at the Diemer, Jensen, and Mills plants to improve system reliability and to accommodate current and future needs. Some upgrades for these facilities have already been performed under the Oxidation Retrofit Programs (ORPs) and other projects.

At the Skinner plant, electrical upgrades for many portions of the plant were performed under the Skinner Expansion No. 4 Program, the Skinner ORP, and other projects. Metropolitan force construction of electrical upgrades in the 12 electrical buildings that supply power to Skinner Plants Nos. 1 and 2 is presently underway. An element of the upgrades to these 12 buildings, which is planned to be performed via a construction contract, is to add air conditioners and insulation to each building. Staff recommends awarding a contract at this time to add these air conditioners and insulation to the 12 buildings**.**

Project No. 1 – Diemer Electrical Improvements Stage 2 – Final Design Phase ($3.47 million)

Principal components of the Diemer electrical system date to the plant's original construction in 1963. Many critical electrical components at the Diemer plant are over 47 years old and are nearing the end of their useful life, which increases the possibility of equipment failure.

In August 2005, Metropolitan's Board authorized the Diemer Power Reliability Study, which evaluated the Diemer plant's aging electrical infrastructure, addressed compatibility of the existing system with the planned Diemer ORP electrical facilities, and identified potential upgrades to support continued reliable operation, to ensure that a single component failure will not disable the entire plant, and to meet current electrical codes. Staff recommended implementing the electrical improvements in two stages.

Under Stage 1, electrical improvements related to the Diemer ORP construction, such as new switchgear, new emergency generators, and new duct banks, have been incorporated into the Diemer ORP construction contract. In July 2008, Metropolitan's Board awarded that contract, and construction of the Stage 1 improvements is approximately 65 percent complete.

The remaining improvements for the existing electrical systems will be addressed in Stage 2. In May 2008, Metropolitan's Board authorized the preliminary design of Stage 2 upgrades. Preliminary design has been completed, and staff recommends proceeding with final design phase activities at this time. The Stage 2 improvements will be coordinated with the Diemer plant's new incoming SCE electrical service and with the Stage 1 improvements currently under construction to ensure that the improvements are executed in a cost-effective manner. In addition, construction sequencing will be identified to minimize impact to plant operations.

The following are recommended to be included in Stage 2 electrical system improvements at the Diemer plant:

- Installation of new electrical conduits, duct banks, UPCs, motor control centers (MCCs), and uninterruptable power supplies (UPS) so that critical process systems are powered by more than one source and to ensure that circuits are not overloaded;
- Replacement of UPCs, MCCs and circuit breakers that are obsolete, are underrated, or are located in underground areas subject to flooding;
- Redistribution of process equipment so that critical processes can be powered by two sources;
- Upgrade of the grounding system to reduce the potential for plant shutdowns caused by electrical ground faults; and
- Improvement of the undersized liquid propane system for the 480V emergency generators. The existing liquid propane system for the 480V emergency generators does not provide enough storage and does not have sufficient capacity to support all three 480V emergency generators simultaneously. The 480V emergency generators provide backup power for critical water treatment processes.

This action appropriates $3.47 million and authorizes final design of the Diemer Electrical Improvements Stage 2 project. The scope of work includes field investigations, updating of existing drawings, preparation of specifications and plans, shutdown planning, development of a construction cost estimate, receipt of bids, and all activities in advance of award of a construction contract. All final design activities are planned to be performed by Metropolitan staff. Requested funds include $2.68 million for final design; $424,000 for environmental documents, hazardous material testing, plant staff support, bidding process, and project management; $50,000 for value engineering; and $315,000 for remaining budget. The anticipated cost of final design is approximately

11.6 percent of the estimated construction cost. Engineering Services' goal for design of projects with estimated construction cost greater than $3 million is 9 to 12 percent. The construction cost for Stage 2 of this project is anticipated to range from $20 million to $26 million.

Project No. 2 – Jensen Electrical Improvements – Preliminary Design Phase ($700,000)

Principal components of the Jensen electrical system were installed during the plant's original construction in 1972. Many critical electrical components at Jensen are 40 years old and are nearing the end of their useful life, which increases the possibility of equipment shutdown or damage.

In March 2008, Metropolitan's Board authorized the Jensen Power Reliability Study to evaluate the Jensen plant's aging electrical infrastructure, and to identify potential upgrades to support continued reliable operation. Staff has completed a detailed assessment and has identified cost-effective solutions. The following improvements are recommended for the electrical system at the Jensen plant:

- Modification of the 4 kV main switchgears to provide dual feeders to the UPCs to improve reliability and maintainability;
- Construction of an alternate feeder from the emergency generator switchgear to the 4 kV main switchgear;
- Installation of new electrical conduits, duct banks, UPCs, MCCs, and UPS so that critical process systems are powered by more than one source to improve process reliability;
- Replacement of UPCs, switchgear, MCCs, and circuit breakers that are obsolete or are underrated;
- Redistribution of process equipment so that critical processes can be powered by two sources; and
- Addition of provisions to integrate with future solar power generation systems.

This action appropriates $700,000 and authorizes preliminary design phase activities for the Jensen Electrical Improvements project. The preliminary design activities include field investigations, code assessment, value engineering, preparation of environmental documentation, permitting, development of a construction cost estimate, and preparation of a preliminary design report. Preliminary design activities are planned to be performed by Metropolitan staff.

Project No. 3 – Mills Electrical Improvements – Preliminary Design Phase ($610,000)

Principal components of the Mills electrical system were installed during the plant's original construction in 1978. The design of the Mills electrical system is more up-to-date than the other older plants. All UPCs except for UPC-9 have dual power sources. However, there is no redundant service for the 12 kV main power source. A single failure of the incoming 12 kV service could disable the entire plant. Further, a single failure of UPC-9 could shut down key process equipment including service water pumps, reservoir control gates, and water quality instrumentation, which would impact treatment capability of the plant. In addition, many pieces of critical process equipment are powered by a single MCC. If the MCC fails, the loss of power will shut down the entire process and will impact plant capacity. Providing backup power sources would enhance reliability and minimize outages while staff performs needed maintenance.

In March 2008, Metropolitan's Board authorized the Mills Power Reliability Study to evaluate the Mills plant's aging electrical infrastructure, and to identify potential upgrades to support continued reliable operation. Staff has completed a detailed assessment and has identified cost-effective solutions. The following improvements are recommended for the electrical system at the Mills plant:

- Installation of secondary 12 kV service to provide a redundant power source for the entire electrical distribution system;
- Addition of a new feeder from the emergency generator switchgear to the main switchgear to enhance redundancy and operational flexibility;

- Reprogramming of programmable logic controllers and protective relays to allow the emergency generators to power one ozone generator during utility outages;
- Installation of new electrical conduits, duct banks, and a UPC with high resistance grounding system to back up UPC-9;
- Installation of new MCCs and UPS, and redistribution of process equipment so that each critical process will be powered from two different sources; and
- Addition of provisions to integrate with future solar power generation systems.

This action appropriates $610,000 and authorizes preliminary design phase activities for the Mills Electrical Improvements project. The preliminary design activities include field investigations, code assessment, value engineering, preparation of environmental documentation, permitting, development of a construction cost estimate, and preparation of a preliminary design report. Preliminary design activities are planned to be performed by Metropolitan staff.

Project No. 4 – Phase 2 Skinner Electrical Building Upgrades – Construction ($770,000)

In February 2007, Metropolitan's Board authorized final design of the Skinner Electrical Building Upgrades project to replace deteriorated electrical equipment and to add insulation and air conditioners to 12 electrical buildings; to upgrade ground fault protection in 3 of the 12 buildings; and to seismically upgrade 2 of the 12 buildings.

The 12 electrical buildings serving Skinner Plants Nos. 1 and 2 house six UPCs and nine MCCs. The buildings provide power to process equipment critical to plant operation, such as the flocculators, traveling bridges, solids transfer pumps, filter surface wash valves, filter inlet valves, and the chemical feed systems in the ferric chloride, polymer, and sodium hypochlorite tank farms. These 12 buildings are constructed of ribbed sheet metal and were installed without insulation or air-conditioning systems over 25 years ago. The lack of temperature control inside the electrical buildings has contributed to equipment deterioration and component failures. As a result, electrical components such as circuit breakers, motor starters, transfer switches, and relays do not always function properly. Electrical component failure could result in an unplanned outage of process equipment, or potentially an entire module. When the components do fail, they require intensive maintenance. Spare parts for some of the electrical equipment are difficult to locate or are no longer available.

In December 2009, Metropolitan's Board authorized construction of Phase 1 of the Skinner Electrical Building Upgrades by Metropolitan forces. Construction of the electrical upgrades in the 12 electrical buildings is presently underway. An element of the upgrades to these 12 buildings is to add air conditioners and insulation to each building. Staff recommends awarding a contract at this time to add these air conditioners and insulation to the 12 buildings.

Bid Results

Specifications No. 1607 for the Phase 2 Skinner Electrical Building Upgrades was advertised for bids on April 5, 2010. The work consists of installation of insulation and air conditioning systems for 12 electrical buildings; addition of structural foundations, supports, electrical conduits, and electrical wiring for the new air conditioning systems; and seismic upgrades to 2 of the 12 electrical buildings. As shown in **Attachment 3**, two bids were received on May 19, 2010. The low bid from Dalke & Sons Construction, Inc., in the amount of $419,680, complies with the requirements of the specifications. The other bid was in the amount of $517,711. The engineer's estimate was $514,000. For this contract, Metropolitan has established a Small Business Enterprise participation level of at least 20 percent of the total bid amount. Dalke & Sons Construction has committed to meet this level of participation.

This action appropriates $770,000 in budgeted funds and awards a $419,680 contract to Dalke & Sons Construction, Inc. for the Phase 2 Skinner Electrical Building Upgrades. In addition to the amount of the contract, the appropriated funds include $116,000 for Metropolitan force construction to temporarily relocate

interfering equipment and to support plant electrical shutdowns; $80,000 for construction inspection; $24,000 for submittals review; $64,000 for contract administration, record drawing preparation, and project management; and $66,000 for remaining budget.

Metropolitan staff will perform inspection of the construction contract. For this project, the anticipated cost of inspection and support is approximately 14.9 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 Milestones

March 2011 – Completion of Phase 2 Skinner Electrical Building Upgrades construction

November 2011 – Completion of preliminary design of Mills Electrical Improvements

December 2011 – Completion of preliminary design of Jensen Electrical Improvements

June 2012 – Completion of final design of Diemer Electrical Improvements

Financial Statement for Diemer Improvements Program

A breakdown of Board Action No. 18 for Appropriation No. 15380 for the Diemer Electrical Improvements project* is as follows:

	Previous Total Appropriated Amount (Oct. 2009)		Current Board Action No. 18 (July 2010)	New Total Appropriated Amount
Labor				
Studies and Investigations	$ 1,419,500		$ -	$ 1,419,500
Final Design	1,748,900		2,672,000	4,420,900
Owner Costs (Program mgmt., permitting, envir. doc.)	6,244,176	**	416,000	6,660,176
Construction Inspection and Support	5,650,246	**	-	5,650,246
Metropolitan Force Construction	2,028,768	**	-	2,028,768
Materials and Supplies	830,916		-	830,916
Incidental Expenses	323,767		17,000	340,767
Professional/Technical Services	10,178,375		50,000	10,228,375
Equipment Use	96,608		-	96,608
Contracts	67,244,900	**	-	67,244,900
Remaining Budget	2,055,444	**	315,000	2,370,444
Total	**$ 97,821,600**		**$ 3,470,000**	**$ 101,291,600**

Funding Request

Program Name:	Diemer Improvements Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15380	**Board Action No.:**	18
Requested Amount:	**$** 3,470,000	**Capital Program No.:**	15380-I
Total Appropriated Amount:	**$** 101,291,600	**Capital Program Page No.:**	287
Total Program Estimate:	**$** 194,100,000	**Program Goal:**	I – Infrastructure Reliability

* The total amount expended to date on the Diemer Electrical Improvements project is approximately $5,900,000.
** Reflects reallocation of $146,300 from Remaining Budget to Contracts ($1,600), Owner Costs ($7,420), Construction Inspection ($7,280), Metropolitan Force Construction ($84,500), and Materials and Supplies ($45,500) for the Washwater Tank Pumps Replacement project.

Financial Statement for Jensen Improvements Program - Phase II

A breakdown of Board Action No. 6 for Appropriation No. 15442 for the Jensen Electrical Improvements project* is as follows:

	Previous Total Appropriated Amount (May 2010)		Current Board Action No. 6 (July 2010)	New Total Appropriated Amount
Labor				
Studies and Investigations	$ 353,495		$ 488,000	$ 841,495
Final Design	884,000		-	884,000
Owner Costs (Program mgmt., permitting, envir. doc.)	383,463	**	120,000	503,463
Construction Inspection and Support	44,000		-	44,000
Metropolitan Force Construction	647,000		-	647,000
Materials and Supplies	455,000		-	455,000
Incidental Expenses	33,000		10,000	43,000
Professional/Technical Services	314,840		50,000	364,840
Equipment Use	19,000		-	19,000
Contracts	-		-	-
Remaining Budget	262,202	**	32,000	294,202
Total	**$ 3,396,000**		**$ 700,000**	**$ 4,096,000**

Funding Request

Program Name:	Jensen Improvements Program - Phase II		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15442	**Board Action No.:**	6
Requested Amount:	**$** 700,000	**Capital Program No.:**	15442-I
Total Appropriated Amount:	**$** 4,096,000	**Capital Program Page No.:**	302
Total Program Estimate:	**$** 34,970,000	**Program Goal:**	I – Infrastructure Reliability

* The total amount expended to date on the Jensen Electrical Improvements project is approximately $160,000.
** Reflects reallocation of $51,537 from Owner Costs to Remaining Budget for the Liquid Polymer Storage Building Seismic Upgrade project, which was completed under budget.

Financial Statement for Mills Improvements Program – Phase II

A breakdown of Board Action No. 8 for Appropriation No. 15452 for the Mills Electrical Improvements project* is as follows:

	Previous Total Appropriated Amount (May 2010)	Current Board Action No. 8 (July 2010)	New Total Appropriated Amount
Labor			
Studies and Preliminary Design	$ 703,100	$ 410,000	$ 1,113,100
Final Design	498,000	-	498,000
Owner Costs (Program mgmt., envir. doc., permitting)	621,200	115,000	736,200
Construction Inspection and Support	61,000	-	61,000
Metropolitan Force Construction	676,000	-	676,000
Materials and Supplies	553,000	-	553,000
Incidental Expenses	49,700	5,000	54,700
Professional/Technical Services	47,000	50,000	97,000
Equipment Use	50,000	-	50,000
Contracts			-
Remaining Budget	299,000	30,000	329,000
Total	**$ 3,558,000**	**$ 610,000**	**$ 4,168,000**

Funding Request

Program Name:	Mills Improvements Program – Phase II		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15452	**Board Action No.:**	8
Requested Amount:	**$** 610,000	**Capital Program No.:**	15452-I
Total Appropriated Amount:	**$** 4,618,000	**Capital Program Page No.:**	309
Total Program Estimate:	**$** 12,900,000	**Program Goal:**	I- Infrastructure Upgrade

* The total amount expended to date on the Mills Electrical Improvements project is approximately $155,000.

Financial Statement for Skinner Improvements Program

A breakdown of Board Action No. 20 for Appropriation No. 15365 for the Skinner Electrical Building Upgrades project* is as follows:

	Previous Total Appropriated Amount (Dec. 2009)	Current Board Action No. 20 (July 2010)	New Total Appropriated Amount
Labor			
Studies and Investigations	$ 787,000	$ -	$ 787,000
Final Design	2,492,500	-	2,492,500
Owner Costs (Program mgmt. & record drawings)	4,561,100	64,000	4,625,100
Submittals Review	290,000	24,000	314,000
Construction Inspection and Support	9,529,000	80,000	9,609,000
Metropolitan Force Construction	5,052,400	96,000	5,148,400
Materials and Supplies	5,966,150	10,000	5,976,150
Incidental Expenses	494,500	5,000	499,500
Professional/Technical Services	5,334,000	-	5,334,000
Equipment Use	328,000	5,000	333,000
Contracts	116,327,800	419,680	116,747,480
Remaining Budget	2,288,250	66,320	2,354,570
Total	**$ 153,450,700**	**$ 770,000**	**$ 154,220,700**

Funding Request

Program Name:	Skinner Improvements Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15365	**Board Action No.:**	20
Requested Amount:	**$** 770,000	**Capital Program No.:**	15365-I
Total Appropriated Amount:	**$** 154,220,700	**Capital Program Page No.:**	318
Total Program Estimate:	**$** 163,700,000	**Program Goal:**	I-Infrastructure Reliability

*The total amount expended to date on the Skinner Electrical Building Upgrades project is approximately $1.1 million.

The Metropolitan Water District of Southern California

Abstract of Bids Received on May 19, 2010 at 2:00 P.M.

Specifications No. 1607

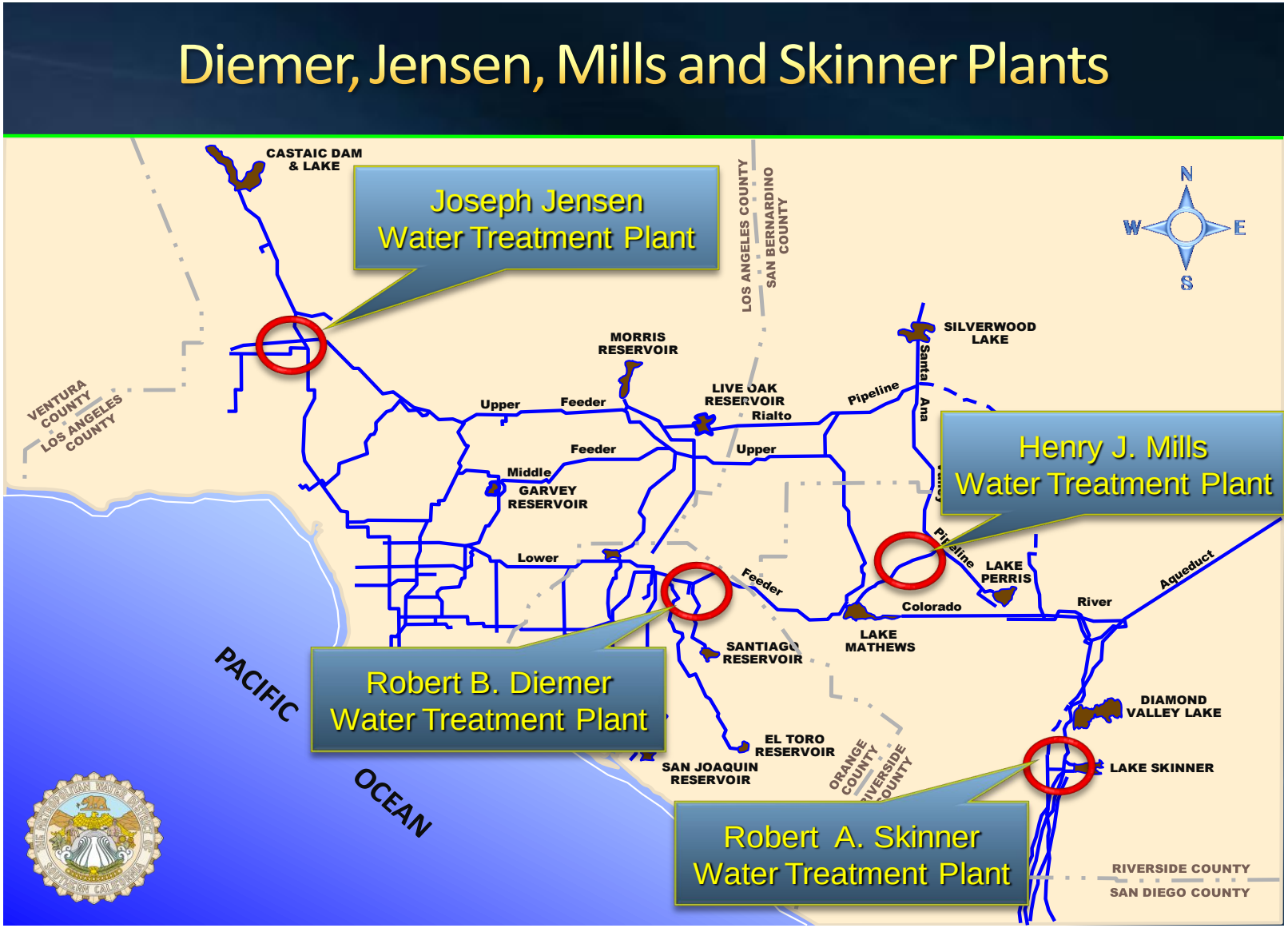
Robert A. Skinner Water Treatment Plant
Skinner Electrical Building Upgrades – Phase 2

The work consists of installation of insulation and air conditioning systems for 12 electrical buildings; addition of structural foundations, supports, electrical conduits, and electrical wiring for the new air conditioning systems; and seismic upgrades to two electrical buildings.

Engineer's Estimate: $514,000

Bidder and Location	Total	SBE $	SBE %	Met SBE*
Dalke & Sons Construction, Inc., Riverside, CA	$ 419,680	$ 173,279	41.3%	Yes
Metro Builders & Engineers Group, Ltd., Newport Beach, CA	$ 517,711	N/A	N/A	N/A

*SBE (Small Business Enterprise) participation set at 20 percent
N/A – not applicable


Diemer, Jensen, Mills and Skinner Plants
CASTAIC DAM & LAKE
Joseph Jensen Water Treatment Plant
LOS ANGELES COUNTY
SAN BERNARDINO COUNTY
N
W
E
S
SILVERWOOD LAKE
MORRIS RESERVOIR
VENTURA COUNTY
LOS ANGELES COUNTY
Upper Feeder
LIVE OAK RESERVOIR
Rialto Pipeline
Santa Ana
Feeder
Upper
Middle
GARVEY RESERVOIR
Henry J. Mills Water Treatment Plant
Lower
Feeder
Pipeline
LAKE PERRIS
Aqueduct
Colorado River
LAKE MATHEWS
SANTIAGO RESERVOIR
Robert B. Diemer Water Treatment Plant
PACIFIC OCEAN
DIAMOND VALLEY LAKE
EL TORO RESERVOIR
SAN JOAQUIN RESERVOIR
ORANGE COUNTY
RIVERSIDE COUNTY
LAKE SKINNER
Robert A. Skinner Water Treatment Plant
RIVERSIDE COUNTY
SAN DIEGO COUNTY