



- Board of Directors
Engineering and Operations Committee

7/10/2012 Board Meeting

7-3

Subject

Appropriate \$1.68 million; and award \$1,053,900 construction contract to Dahl, Taylor & Associates to replace the standby generator at the Julian Hinds Pumping Plant (Approp. 15438)

Description

This action awards a contract to replace and relocate the standby generator, transformer, and ancillary equipment at Hinds Pumping Plant on the Colorado River Aqueduct (CRA). The standby generator provides emergency power to critical auxiliary systems at the pumping plant.

Timing and Urgency

The standby generator at Hinds Pumping Plant is 50 years old, requires frequent repairs, and has reached the end of its service life. The generator needs to be replaced with an up-to-date unit, which meets current air quality regulations. In addition, in order to comply with current fire codes and environmental regulations, the generator must be relocated and its ancillary equipment must be upgraded. This project will improve the reliability of emergency power for critical auxiliary systems at the pumping plant, including fire protection pumps and the potable water treatment and delivery system. The electrical tie-in of the new generator is planned to take place during a scheduled shutdown of the CRA in February 2013.

This project has been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria, and is categorized as an Infrastructure Rehabilitation and Replacement project. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2012/13.

Background

The CRA is a 242-mile-long conveyance system that transports water from the Colorado River to Lake Mathews in Riverside County. The CRA was placed into service in 1941. It consists of five pumping plants, 124 miles of tunnels, 63 miles of canals, and 55 miles of conduits, siphons, and reservoirs.

The Hinds Pumping Plant was originally completed in 1939. This plant has nine 4,300-horsepower pumps whose auxiliary mechanical systems rely on a single standby diesel generator for backup power in the event of an outage of primary power. Critical auxiliary systems powered by the generator include fire water pumps, the Hinds village's potable water treatment and delivery system, emergency lighting, sump pumps, which prevent flooding of the pumping plant, and cooling water pumps servicing the nine main CRA pumps.

The existing standby generators at the five CRA pumping plants are over 50 years old and have reached the end of their service life. Over the past two years, the generators have required frequent repairs, while replacement parts have become difficult to obtain. In addition, unlike modern generators, the existing generators must be manually started in the event of a power loss. The manual startup routine results in a relatively lengthy time delay between loss of primary power and availability of standby power. Until the standby power can be activated, many supporting systems are impaired, which could disrupt plant operations or lead to equipment damage.

Metropolitan staff investigated the viability of refurbishing the existing generators, but found this alternative to be uneconomical and impractical due to the difficulty of locating or fabricating spare parts. In addition,

refurbishment of the existing generators would not meet current auxiliary electrical load requirements and a second generator would need to be purchased. Per the Mojave Desert and South Coast Air Quality Management Districts, generator refurbishments which exceed 50 percent of the cost of a new generator must meet current air quality regulations. Staff has contacted several vendors who stated that it would not be feasible to refurbish a 50-year-old generator to meet up-to-date air quality regulations.

In April 2010, Metropolitan's Board authorized final design and generator procurement to replace the Hinds pumping plant's standby generator. Final design has now been completed, and the generator has been manufactured and delivered. Construction is recommended to move forward at this time.

Planned improvements under the project include relocation and installation of a new 400 kilowatt (kW) generator and transformer to replace the existing 300kW unit. The larger capacity is needed to power current auxiliary loads at Hinds Pumping Plant. The replacement generator will have the appropriate alarms, valves, meters, and a control system capable of automatic startup upon loss of primary power, automatic transfer back to primary power once the normal source is reestablished, and remote status monitoring. The new generator will be housed in a weatherproof enclosure. A step-up transformer is required to increase the generator's voltage to match the driven equipment at the pumping plant. The transformer is necessary because small generators are no longer manufactured in the higher voltages used by the existing pumping plant equipment.

The Hinds pumping plant's standby generator is the second unit to be addressed in this program. Replacement of the generator at Eagle Mountain Pumping Plant has been completed, and final design for the Iron Mountain Pumping Plant generator is scheduled for completion by December 2012. Staff will return to the Board at a later date for authorization of final design and generator procurement for Intake and Gene Pumping Plants.

Hinds Pumping Plant Standby Generator Replacement – Construction (\$1,680,000)

Specifications No. 1711 for the Hinds Pumping Plant Standby Generator Replacement project was advertised for bids on May 4, 2012. As shown in **Attachment 2**, four bids were received and opened on June 12, 2012. The low bid from Dahl, Taylor & Associates, in the amount of \$1,053,900 complies with the requirements of the specifications. The three higher bids ranged from \$1,144,496 to \$2,265,000. The engineer's estimate was \$1,291,000. For this contract, Metropolitan established a Small Business Enterprise (SBE) participation level of at least 23 percent of the bid amount. Dahl, Taylor & Associates is an SBE firm, and thus achieves 100 percent participation.

This action appropriates \$1.68 million and awards a \$1,053,900 construction contract to Dahl, Taylor & Associates. In addition to the amount of the contract, the appropriated funds include \$156,000 for Metropolitan forces to relocate equipment and provide electrical clearances, and to shut down and return the aqueduct to service. The total amount of construction for the relocation, housing, and installation of the standby generator is \$1,334,900, which includes \$125,000 for the standby generator which has already been procured. Requested funds also include \$202,000 for construction inspection; \$90,000 for submittals review and technical support by Metropolitan design staff; \$62,000 for local agency permitting and project management; \$18,000 for preparation of record drawings; and \$98,100 for remaining budget.

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

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2012/13 capital expenditure plan. This work is included within capital appropriation No. 15438, the CRA Reliability Program – Phase 2, which was initiated in fiscal year 2006/07. Other projects authorized under Appropriation No. 15438 include the CRA 6.9 kV Disconnect Switches Replacement and the Iron Mountain Pumping Plant Standby Generator Replacement. With the present action, the total funding for Appropriation No. 15438 will increase from \$29,944,000 to \$31,624,000. See **Attachment 1** for the Financial Statement, **Attachment 2** for the Abstract of Bids, and **Attachment 3** for the Location Map.

Project Milestone

August 2013 – Completion of construction

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Sections 8121 and 8122(g): General Authority of the General Manager to Enter Contracts

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The projects were previously determined to be categorically exempt under the provisions of CEQA and State CEQA Guidelines. The Board found these projects to be exempt under Class 1, Section 15301; Class 2, Section 15302; Class 3, Section 15303; and Class 4, Section 15304 of the State CEQA Guidelines on January 16, 2009. A Notice of Exemption (NOE) was filed on the projects at that time and the statute of limitations has ended. With the current board actions, there are no substantial changes proposed to the projects since the original NOE was filed. Hence, the previous environmental documentation in conjunction with the projects 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 actions.

The CEQA determination is: Determine that the proposed actions have been previously addressed in the 2009 NOE (Class 1, Section 15301; Class 2, Section 15302; Class 3, Section 15303; and Class 4, Section 15304 of the State CEQA Guidelines) and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Appropriate \$1.68 million; and
- b. Award \$1,053,900 contract to Dahl, Taylor & Associates to replace the standby generator at Hinds Pumping Plant.

Fiscal Impact: \$1.68 million of budgeted funds under Approp. 15438

Business Analysis: This project will enhance CRA reliability, protect Metropolitan's assets, and reduce the risk of costly repairs.

Option #2


Do not award the construction contract and readvertise in an attempt to receive more favorable bids.

Fiscal Impact: None

Business Analysis: This option may or may not result in more favorable bids, and would forego an opportunity to replace the standby generator during a scheduled shutdown. The continued use of the 50-year-old generator would increase operational risk for the CRA during disruption of power service and emergencies.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer
Engineering Services

6/20/2012
Date



Jeffrey Kightlinger
General Manager

6/27/2012
Date

Attachment 1 – Financial Statement

Attachment 2 – Abstract of Bids

Attachment 3 – Location Map

Ref# es12618123

Financial Statement for CRA Reliability Program - Phase 2

A breakdown of Board Action No. 20 for Appropriation No. 15438 for replacement of the Hinds Pumping Plant Standby Generator¹ is as follows:

	Previous Total Appropriated Amount (Mar. 2012)	Current Board Action No. 20 (July 2012)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 1,396,800	\$ -	\$ 1,396,800
Final Design	2,136,900	-	2,136,900
Owner Costs (Program mgmt. & permitting)	2,514,090	60,000	2,574,090
Submittals Review & Record Drwgs	393,600	108,000	501,600
Construction Inspection & Support	1,858,000	202,000	2,060,000
Metropolitan Force Construction	3,062,700	156,000	3,218,700
Materials & Supplies	2,592,405	-	2,592,405
Incidental Expenses	130,800	2,000	132,800
Professional/Technical Services	1,607,000	-	1,607,000
Equipment Use	25,505	-	25,505
Contracts	12,951,440	1,053,900	14,005,340
Remaining Budget	1,274,760	98,100	1,372,860
Total	\$ 29,944,000	\$ 1,680,000	\$ 31,624,000

Funding Request

Program Name:	CRA Reliability Program - Phase 2		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15438	Board Action No.:	20
Requested Amount:	\$ 1,680,000	Capital Program No.:	15438-I
Total Appropriated Amount:	\$ 31,624,000	Capital Program Page No.:	46
Total Program Estimate:	\$ 64,826,000	Program Goal:	I-Infrastructure Reliability

¹ The total amount expended to date on the Hinds Pumping Plant Standby Generator Replacement project is approximately \$668,000.

The Metropolitan Water District of Southern California

Abstract of Bids Received on June 15, 2012 at 2:00 P.M.

Specifications No. 1711

**Hinds Pumping Plant
Standby Diesel Engine Generator Replacement Project**

The Hinds Pumping Plant Standby Generator Replacement project consists of removal and disposal of the existing generator, fuel tank, and accessories, and replacement with a new generator. The project will relocate the generator and add a fuel unloading area with spill containment, alarms, valves and meters.

Engineer's Estimate: \$1,291,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE*
Dahl, Taylor & Associates - Constructors, Inc., Santa Ana, CA	\$ 1,053,900	\$1,053,900	100%	Yes
J.F. Shea Construction, Inc., Walnut, CA	\$ 1,144,496	-	-	-
Stronghold Engineering, Inc., Riverside, CA	\$ 1,507,127	-	-	-
Acuna Corp., Whittier, CA	\$ 2,265,000	-	-	-

*SBE (Small Business Enterprise) participation was established at 23% for this contract

Location Map

