THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

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

9/11/2018 Board Meeting

7-4

Subject

Adopt CEQA determination and award $420,000 contract to Southern Contracting Company for replacement of 15 kV circuit breakers at Hiram W. Wadsworth Pumping Plant (Appropriation No. 15467)

Executive Summary

This action awards a construction contract to replace circuit breakers and upgrade the electrical bus at Hiram W. Wadsworth Pumping Plant at Diamond Valley Lake (DVL). This work is needed to support the ongoing project to replace the control and electrical protection system for the pump/turbine units.

Timing and Urgency

The automated control system that operates the pump/turbine units at Wadsworth pumping plant has been in continuous service for 17 years and is currently being upgraded. New 15 kV circuit breakers are required to maintain full operation of the pumping plant following completion of the control system project. Staff recommends award of the subject construction contract to replace circuit breakers at this time.

This project has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria and is included in the System Reliability Program. No funds are requested in this action. Funds for this work were previously appropriated and are included in Metropolitan's capital expenditure plan for fiscal year 2018/19.

Details

Background

DVL is Southern California's largest surface water reservoir, with a maximum storage capacity of 810,000 acre-feet. DVL was completed in 2000 and is located south of the city of Hemet in Riverside County. Wadsworth pumping plant, which is located adjacent to DVL, controls flows between DVL, the Inland Feeder, and the San Diego Canal, and additionally generates power from its turbine/generators. The pumping plant has three primary purposes: (1) pumping water into DVL; (2) controlling reservoir outflow by generating power with the pump/turbine units; and (3) controlling reservoir outflow using pressure-reducing sleeve valves. A complex control system that is unique to this facility operates all aspects of the pump/turbine units, along with the electrical equipment that protects against electrical faults or hydraulic surges. The pumping plant's control system also interfaces with Metropolitan's system-wide Supervisory Control and Data Acquisition (SCADA) network, enabling the facility to be remotely operated from the Operations Control Center in Eagle Rock.

The pump/turbines at Wadsworth pumping plant are designed to be operated only by the automated control system. While manual operation may be possible in limited circumstances, the complexity of the facility would create a significant risk of damage to the mechanical and electrical equipment. As a result, manual operation of the pump/turbine units is not recommended. The bypass sleeve valves that release water from the lake are also designed to be operated automatically, but are capable of manual operation if necessary. Water may, therefore, be withdrawn from the lake under manual mode.

Following completion of the Inland Feeder in September 2009, DVL has been filled exclusively with water from the East Branch of the State Water Project, flowing by gravity through the Inland Feeder. Water withdrawn from DVL has primarily been released into the San Diego Canal through the pump/turbine units. The power generated

by Wadsworth pumping plant was certified in 2010 as renewable energy and is sold under contract to the state Department of Water Resources through 2020. For calendar years 2012 through 2016, the average annual revenue from hydroelectric generation at Wadsworth pumping plant was approximately $2.27 million.

Following completion of a pilot project to upgrade the controls of one pump/turbine unit in 2017, Metropolitan's Board authorized upgrades to the control and electrical protection system for the remaining nine pump/turbine units. This action awards a construction contract to install 12 new 15 kV circuit breakers and perform upgrades to the plant's electrical bus in support of the control and electrical protection upgrade project. Staff will return to the Board in 2019 for the final action on that project, to award a procurement contract for an uninterruptible power supply (UPS) system.

Wadsworth Pumping Plant Control and Electrical System Upgrades – Replacement of Circuit Breakers – Construction (No funds required)

The scope of the construction contract includes performing upgrades to existing 15 kV indoor metal-clad switchgear; installing 12 new 15 kV 1200 A circuit breakers; and upgrading switchgear interrupting ratings. Metropolitan staff will perform inspection of the construction.

Award of Construction Contract (Southern Contracting Company)

Specifications No. M-3006 for the Wadsworth Pumping Plant Control and Electrical Protection Upgrades was advertised for bids on July 2, 2018. As shown in **Attachment 1**, three bids were received and opened on July 19, 2018. The low bid was deemed to be non-responsive. The second low bid from Southern Contracting Company in the amount of $420,000 complies with the requirements of the specifications. The third bid was $465,988. Due to the limited potential for subcontracting opportunities and the highly specialized nature of the work, no Small Business Enterprise (SBE) participation was established for this contract. No subcontractors were identified by Southern Contracting Company.

This action awards a $420,000 construction contract for electrical bus upgrades and replacement of circuit breakers at Wadsworth pumping plant. The total estimated cost to complete the control and electrical protection system upgrades, including the amount appropriated to date, current funds requested, and future completion costs is approximately $37.7 million.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in the fiscal year 2018/19 capital expenditure plan. See **Attachment 1** for the Abstract of Bids and **Attachment 2** for the Location Map. This project is included within capital Appropriation No. 15467, the Water Operations Control Appropriation, which was initiated in fiscal year 2010/11. No funds are requested in this action, as sufficient funds were previously appropriated and are available within Appropriation No. 15467.

Project Milestone

February 2020 – Completion of upgrades to the control and electrical protection system at Wadsworth pumping plant

Policy

Metropolitan Water District Administrative Code 8121: General Authority of the General Manager to Enter Contracts

By Minute Item 50792 dated April 11, 2017, the Board authorized full-scale control and electrical system upgrades at Hiram W. Wadsworth Pumping Plant.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action consists of awarding a construction contract and minor alterations and replacement of existing public facilities with negligible or no expansion of use and no possibility of significantly impacting the physical environment. In addition, the activities may involve a check for performance of an operation, or quality, health,

or safety of a project. Accordingly, the proposed action qualifies under Class 1, Class 2, and Class 9 Categorical Exemptions (Sections 15301, 15302, and 15309 of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is categorically exempt under Class 1, Section 15301, Class 2, Section 15302, Class 9, Section 15309 of the State CEQA Guidelines.

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination that the proposed action is exempt, and

Award $420,000 contract to Southern Contracting Company for replacement of circuit breakers at Hiram W. Wadsworth Pumping Plant.

Fiscal Impact: None. Funds for this work were previously appropriated.
Business Analysis: This option is needed to support the control and electrical protection upgrade project which is currently underway at Wadsworth pumping plant.

Option #2

Do not replace the circuit breakers at this time.
Fiscal Impact: None initially.
Business Analysis: This option would delay the restoration of full operational capability for Wadsworth pumping plant, and may result in delay costs for the control system upgrade project that is currently underway. Operational restrictions would remain in place until the control system upgrades are completed.

Staff Recommendation

Option #1

8/27/2018
Michael J. Rojas *Date*
Interim Manager/Chief Engineer
Engineering Services

8/28/2018
Jeffrey Kightlinger *Date*
General Manager

Attachment 1 – Abstract of Bids

Attachment 2 – Location Map

Ref# es12658182

The Metropolitan Water District of Southern California

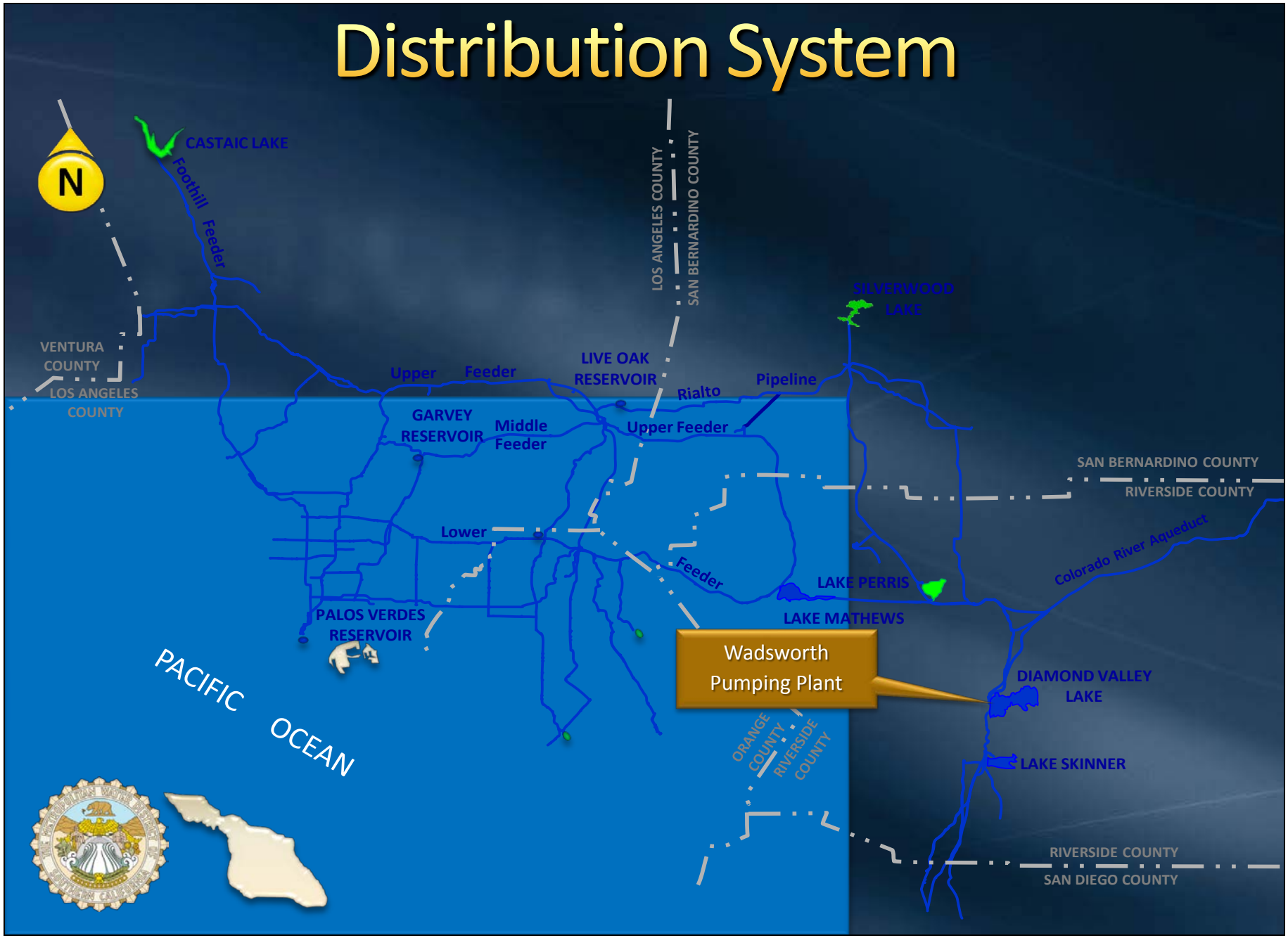
Abstract of Bids Received on July 19, 2018 at 2:00 P.M.

Specifications No. M-3006
Wadsworth Pumping Plant Control and Electrical Protection Upgrades

The work consists of upgrades to existing 15 kV, 1200 A, 18 kA-interrupting capacity metal-clad switchgear; installation of new 15 kV, 1200 A, 40 kA-interrupting capacity breakers; modification of breaker compartments; and upgrade of the switchgear interrupting rating to 40 kA at 15 kV.

Bidder and Location	Total
Polar Electrical Company[1] Vista, CA	$411,553
Southern Contracting Company **San Marcos, CA**	**$420,000**
ABB, Inc. Anaheim, CA	$465,988

[1.] The low bid was non-responsive.


Distribution System
N
CASTAIC LAKE
Foothill Feeder
VENTURA COUNTY
LOS ANGELES COUNTY
LOS ANGELES COUNTY
SAN BERNARDINO COUNTY
SILVERWOOD LAKE
Upper Feeder
LIVE OAK RESERVOIR
Rialto Pipeline
GARVEY RESERVOIR
Middle Feeder
Upper Feeder
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY
Lower
Feeder
Colorado River Aqueduct
LAKE PERRIS
LAKE MATHEWS
PALOS VERDES RESERVOIR
Wadsworth Pumping Plant
DIAMOND VALLEY LAKE
PACIFIC OCEAN
ORANGE COUNTY
RIVERSIDE COUNTY
LAKE SKINNER
RIVERSIDE COUNTY
SAN DIEGO COUNTY