

- **Board of Directors**
Engineering and Capital Programs Committee

July 8, 2008 Board Meeting

8-1

Subject

Authorize increase in change order authority for Metropolitan-requested work for the Skinner ORP construction contract

Description

This action authorizes the General Manager to execute Metropolitan-requested change orders for the Skinner Oxidation Retrofit Program (ORP) construction contract. These changes are beneficial to Metropolitan and primarily represent additions to the contract scope that are natural extensions of the contractor's existing work. Three of the four changes are cost-neutral or represent a savings to Metropolitan; the work is planned and budgeted, and funds are available from different appropriations. The fourth change represents additional ORP scope based on updated health and safety regulations and newly available equipment upgrades. The four change orders are:

1. Solar Power Generation Facility Site Work – This change provides an overall cost savings to Metropolitan.
2. Incoming Electrical Service – This change is cost-neutral.
3. Pass-through of Backcharge for Pipe Procurement – This change is cost-neutral.
4. Added Safety Features Based on Updated Codes and Ozone Equipment Upgrades – This change represents new scope added to the ORP contract.

No funds are requested in this action, as sufficient funds are available within the various project appropriations. The Skinner ORP is categorized as a Water Quality project and is budgeted within Metropolitan's Capital Investment Plan.

Background

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

The Skinner plant has undergone a major construction program over the past five years; a total of four major construction contracts have been underway. Three of these contracts are complete, while the fourth contract for the Skinner ORP is approximately 82 percent complete. A fifth "wrap-up" contract is planned after the Skinner ORP is completed. During the course of this major construction program, additional capital projects have been identified and are now underway at the Skinner plant, including the Skinner Solar Power Generation Facility and the new 33kV Incoming Electrical Service. Whenever new projects such as these are identified, Metropolitan staff evaluates the most cost-effective and expeditious means to execute this work. In some instances, the most beneficial approach is to add a portion of the new work as additional scope to construction contracts already underway.

On the Skinner ORP construction contract, several change orders have been initiated by Metropolitan staff, as identified below, because they increase overall project efficiency, benefit other planned construction projects, or reduce the risk of claims. Since the ORP contract has a large amount of complex construction still remaining to

be performed, staff recommends restoring change order authority by an amount equal to the Metropolitan-requested work, in order to handle other unanticipated issues, which may arise as the contract is finalized.

Increase in Change Order Authority for Skinner ORP Construction Contract (No Funds Required)

In June 2005, Metropolitan's Board awarded a \$184.65-million contract to Shimmick/Obayashi, A Joint Venture, for the Skinner ORP project (Specifications No. 1483). This project involves the construction of a complete ozonation system to treat the full Skinner plant capacity of 630 mgd, a washwater reclamation plant, and numerous support facilities. The Skinner ORP construction contract is scheduled to be completed in mid-2009.

Per Metropolitan's Administrative Code, the General Manager has the authority to execute change orders on the ORP contract up to a maximum of \$9,232,500 (which is 5 percent of the original contract amount).

Approximately \$8,080,000 (4.38 percent of the original contract amount) in change orders has been executed to date, including \$1,348,000 of Metropolitan-requested work (0.73 percent) and \$6,732,000 of other changes (3.65 percent). These other changes involved differences in existing conditions from what had been shown on record drawings; upgrades or enhancements to the contract drawings made after construction began; and changes to correct discrepancies or errors in the design documents that were discovered in the field. As a result of these changes to date, approximately \$1,152,500 in change order authority (0.62 percent of the original contract amount) remains. The ORP contract still has approximately 18 percent of the work remaining to be performed, including some of the most complex items within the contract: a majority of the electrical scope; final installation of mechanical and Supervisory Control and Data Acquisition (SCADA) systems; trouble-shooting; and start-up. Staff recommends restoring change order authority by an amount equal to the Metropolitan-requested work, in order to handle other unanticipated issues, which may arise as the contract is finalized. The four Metropolitan-requested change orders to the Skinner ORP construction contract are described below:

ITEM	DESCRIPTION	BUDGETED COST	FUNDING PROGRAM	OVERALL COST IMPACT
1	Solar Power Generation Facility Site Work	\$2,548,000	Power Reliability and Energy Conservation Program (Approp. 15391)	Cost Savings
2	Incoming Electrical Service	\$663,000	Skinner Oxidation Retrofit Program (Approp. 15388)	Cost Neutral
3	Pass-through of Backcharge for Pipe Procurement	\$450,000	Skinner Oxidation Retrofit Program (Approp. 15388)	Cost Neutral
4	Added Safety Features Based on Updated Codes, and Ozone Equipment Upgrades	\$2,384,000	Skinner Oxidation Retrofit Program (Approp. 15388)	Cost Increase
	TOTAL	\$6,045,000		

1. Solar Power Generation Facility Site Work (\$2,548,000): The work included in this item is an element of the Skinner Solar Power Generation Facility, and is funded under that project through a separate board action this month. By adding the solar facility's site work to the Skinner ORP construction contract, staff estimates that Metropolitan will realize an overall savings of at least \$200,000. The amount of the ORP change order is projected to be \$2,548,000.

In November 2007, Metropolitan's Board authorized final design of the Skinner Solar Power Generation Facility, which will construct a one-megawatt solar power plant in an area currently occupied by the Skinner ORP contractor, Shimmick/Obayashi, for equipment storage, material stockpiles, and maintenance activities. To qualify for approximately \$5 million in rebate incentives through the Governor's California Solar Initiative (CSI), Metropolitan must complete the Skinner Solar Power Generation Facility by March 2009. Prior to construction of the solar power generation facility, preparation of the site is recommended to be performed by Shimmick/Obayashi. The main fabrication and installation of solar panels, tracking mechanisms, and power inverters are recommended to be constructed separately from the civil and electrical site work, which will connect

to the Skinner plant's existing infrastructure. Award of a contract to construct the Solar Power Generation Facility, along with funding for the civil and electrical site work, is the subject of a separate board action this month.

Site preparation work will include grading, extension of electrical duct banks, and provision of electrical switchgear. Performance of this work by the ORP contractor is the most cost-effective and expedient method to prepare the site for the solar contractor. By adding the solar facility's site work to the Skinner ORP construction contract, based on the engineer's estimate, staff estimates that Metropolitan will realize an overall savings of at least \$200,000. Shimmick/Obayashi's current obligation is to return the temporary storage site back to its pre-existing condition. However, with this change, Metropolitan saves time and money by directing Shimmick/Obayashi to prepare and leave the site ready for the next phase of construction. Staff has also taken the opportunity to reduce costs for the solar power plant by modifying equipment in the ORP Switchgear Building and by expanding the electrical duct banks for future electrical tie-ins from the solar power plant. Similar to the civil site work, this electrical work represents a small addition to the electrical scope of the ORP contract and is a natural extension of the work already underway. Due to the CSI Program's completion deadline of March 2009, even a three-month delay of the solar power plant construction work could impact receipt of the \$5 million rebate incentive. Using Shimmick/Obayashi for this work minimizes the opportunity for construction delays due to their occupancy of the construction site, and helps ensure that the power generation facility will be completed on schedule.

2. Incoming Electrical Service (\$663,000): The work included in this item is an element of the Skinner plant's new 33kV Incoming Electrical Service, and is funded under that project. This is a cost-neutral change to Metropolitan, which represents a shift of work between two projects to reduce the risk of contractor interferences and delays. The work was originally planned to be performed by Southern California Edison (SCE), but has been transferred to Shimmick/Obayashi's scope of work. By adding the electrical work to the ORP construction contract, Metropolitan avoided a potential delay by SCE, which was not able to align its schedule to coincide with ORP construction sequencing on the plant site. The amount of the ORP change order to execute this work is projected to be \$663,000.

In February 2007, Metropolitan's Board authorized design and construction of a new 33 kV Incoming Electrical Service to the Skinner plant. This project will extend a new SCE 33 kV transmission line approximately 4.5 miles to the plant boundary, and add an additional 1,800 feet within the plant, terminating at an SCE switchyard. This new 33 kV service must be operational for the Skinner ozonation facilities to commence operation. In order to avoid interferences in overlapping contractor work areas, Metropolitan has transferred scope from the SCE contract to Shimmick/Obayashi's ORP contract at zero net cost. By taking this action, staff has ensured that the work will be completed within the time frame required and will minimize interferences, reducing the possibility of claims. The scope of work transferred from SCE to Shimmick/Obayashi includes construction of SCE's electrical equipment foundations and service duct banks under the Skinner plant's main entrance road; site grading work and driveways to the new equipment; and installation of SCE's substation conduits and ground fault protection system. This work is a natural extension of the original scope of work of Shimmick/Obayashi's contract.

3. Pass-through of Backcharge for Pipe Procurement (\$450,000): The work included in this item is an element of the Skinner ORP, and is funded under that project. This is a cost-neutral change to Metropolitan which represents the pass-through of a backcharge to Ameron International, a pipe supplier, which recompenses Shimmick/Obayashi for delays caused by Ameron's late delivery of pipe. By paying the Skinner ORP contractor to re-sequence work due to the delayed pipe delivery, staff guaranteed that the construction work could proceed without delay. The amount of the pass-through ORP change order is \$450,000.

In 2004, Metropolitan staff recognized that procurement and fabrication of 3,200 linear feet of 144-inch-diameter pipe for the plant inlet piping would be a long lead item that could potentially delay the ORP schedule; therefore, staff recommended that the pipe be pre-purchased. In February 2005, Metropolitan's Board awarded a procurement contract to Ameron to furnish the pipe for installation by Shimmick/Obayashi. Ameron did not meet its contractual delivery date for the pipe sections. Staff worked with Shimmick/Obayashi to re-sequence its work, allowing for late delivery of the piping. A change order was issued to Shimmick/Obayashi in the amount of

\$450,000 to accommodate the re-sequencing of its work. The installation of the pipe was part of the original contract, and this change was necessary for Shimmick/Obayashi to complete the original scope. After paying Shimmick/Obayashi, Metropolitan backcharged Ameron and has recovered the full amount of this change order.

4. Added Safety Features Based on Updated Codes, and Ozone Equipment Upgrades (\$2,384,000): The work included in this item is an element of the Skinner ORP, and is funded under that project. This change increases the cost of the ORP construction contract by adding new elements of scope, such as additional safety features, and modifying existing scope items to take advantage of new advancements in ozone generation technology. This change responds to recent updates in regulations and technology that were not available when the Skinner ORP commenced construction in 2005. By adding ozone system safety features and ozone equipment upgrades to the ORP construction contract at this time, there is an opportunity to avoid future rework, and to reduce power consumption during the ozone generation process.

After commencement of Skinner ORP construction, updated codes were released that are applicable to safety and alarm systems for oxygen and ozone systems. After reviewing the new codes, staff identified needed upgrades to the safety alarms and signals for the oxygen and ozone systems, and proceeded to incorporate these upgrades into the Skinner ORP work. These same improvements have been incorporated into the Diemer and Weymouth ORP designs, and will be retrofitted at a later date into the Jensen and Mills plants' ozonation systems. The Skinner ORP contract also includes installation of the Metropolitan-furnished ozone equipment, which was fabricated by Ozonia North America. As with the updated codes, following commencement of the Skinner ORP construction, Ozonia introduced new technology upgrades, which allow the ozone generator power supply units (PSUs) to operate at reduced power consumption levels during periods of reduced ozone production. This newer technology has also been incorporated into the designs of the upcoming Diemer and Weymouth ORP projects. This upgrade will allow Metropolitan to improve plant operability and reliability while consuming less power and reducing greenhouse gas emissions, thus reducing Metropolitan's carbon footprint.

Summary

The total of these four Metropolitan-requested change orders is \$6,045,000, which is 3.27 percent of the original ORP contract amount. Staff recommends increasing the change order authority for the Skinner ORP contract by an amount equal to the Metropolitan-requested work in order to handle other unanticipated issues, which may arise as the contract is finalized.

This action authorizes an increase in the General Manager's authority to execute change orders with Shimmick/Obayashi from \$9,232,500 (which is 5 percent of the original contract, per Metropolitan's Administrative Code) to an aggregate amount not to exceed \$15,277,500 (8.27 percent of the original contract amount). No additional funds are requested, as sufficient funds are available within the various project appropriations. For this contract, Metropolitan has established a Small Business Enterprise participation level of at least 20 percent of the total bid. Shimmick/Obayashi has committed to meet this requirement.

See [Attachment 1](#) for the Location Maps.

This project is consistent with Metropolitan's goals for sustainability by protecting water quality and enhancing the reliability of the existing treatment system, in order to maintain reliable water deliveries in the future.

Project Milestones

Mid-2009 – Completion of Skinner ORP Construction

Policy

Metropolitan Water District Administrative Code Section 8121(a): Contracts over \$250,000

Metropolitan Water District Administrative Code Section 8123: Authority of the General Manager to Amend Contracts

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The environmental effects from the funding, design, procurement of equipment, construction, and operation of the Skinner Module No.7, Oxidation Retrofit Program, Chemical systems Modifications, and Wastewater Reclamation Plant programs (Program) were evaluated in the "Robert A. Skinner Filtration Plant Reliability and Quality Program Final Program Environmental Impact Report (Final PEIR). The Final PEIR was certified by the Board on July 8, 2003. The Board also approved the Findings of Fact (Findings), the Statement of Overriding Considerations (SOC), the Mitigation Monitoring and Reporting Program (MMRP), and the Program itself. Subsequent to the certification of the 2003 Final PEIR for the Program, to comply with CEQA and the State CEQA Guidelines, Metropolitan as the Lead Agency prepared a Mitigated Negative Declaration (MND) entitled "Robert A. Skinner Filtration Plant Reliability and Quality Program, Additional Construction Use Area and Creek Crossing" to address the environmental impacts of establishing an additional construction use area for the Program. The MND was adopted by the Board on May 11, 2004. Additionally, further refinements were found to be required thus modifying the original Program description. Metropolitan prepared a Negative Declaration (ND) entitled "Robert A. Skinner Filtration Plant Reliability and Quality Program Refinements to the Program" to address these refinements. The ND was adopted by the Board on November 9, 2004. Addendum No.1 to the MND was prepared in July 2006, for installation and use of a temporary metal storage building during Program construction. The current proposed action would not result in any new significant environmental impacts, nor result in substantial changes to the approved Program. Hence, the previously adopted environmental documentation in conjunction with the current board action fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further environmental documentation is necessary for the Board to act on with respect to the proposed action.

The CEQA determination is: Determine that the proposed action has been previously addressed in the certified 2003 Final PEIR and related documents, the adopted 2004 MND and 2006 Addendum No.1 to the MND, and the adopted 2004 ND, 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 authorize an increase of \$6,045,000 in change order authority for the Skinner ORP contract, for a new total of \$15,277,500.

Fiscal Impact: None, as sufficient funds are available within the appropriations for the Skinner ORP and the Skinner Solar Power Generation Facility.

Business Analysis: Increasing the General Manager's change order authority for the Skinner ORP construction contract will provide sufficient change order authority to address unanticipated construction issues which may arise. It will also allow Metropolitan to complete the Skinner Solar Power Generation Facility in the most cost-effective and efficient manner.

Option #2

Do not authorize the increase in change order authority.

Fiscal Impact: Unknown, but likely to increase construction costs that could be saved by performing work while Shimmick/Obayashi is still mobilized and prepared to perform work.

Business Analysis: By not authorizing the increase in change order authority, staff's ability to address future Skinner ORP contract change issues in a timely manner will be impacted. Site work for the Skinner Solar Power Generation Facility would be performed by another contractor; completion of the solar power plant would be delayed until a new site work contract could be completed, potentially jeopardizing the power plant's eligibility to receive rebate incentives.

Staff Recommendation

Option #1



Roy L. Wolfe
Manager, Corporate Resources

6/16/2008

Date



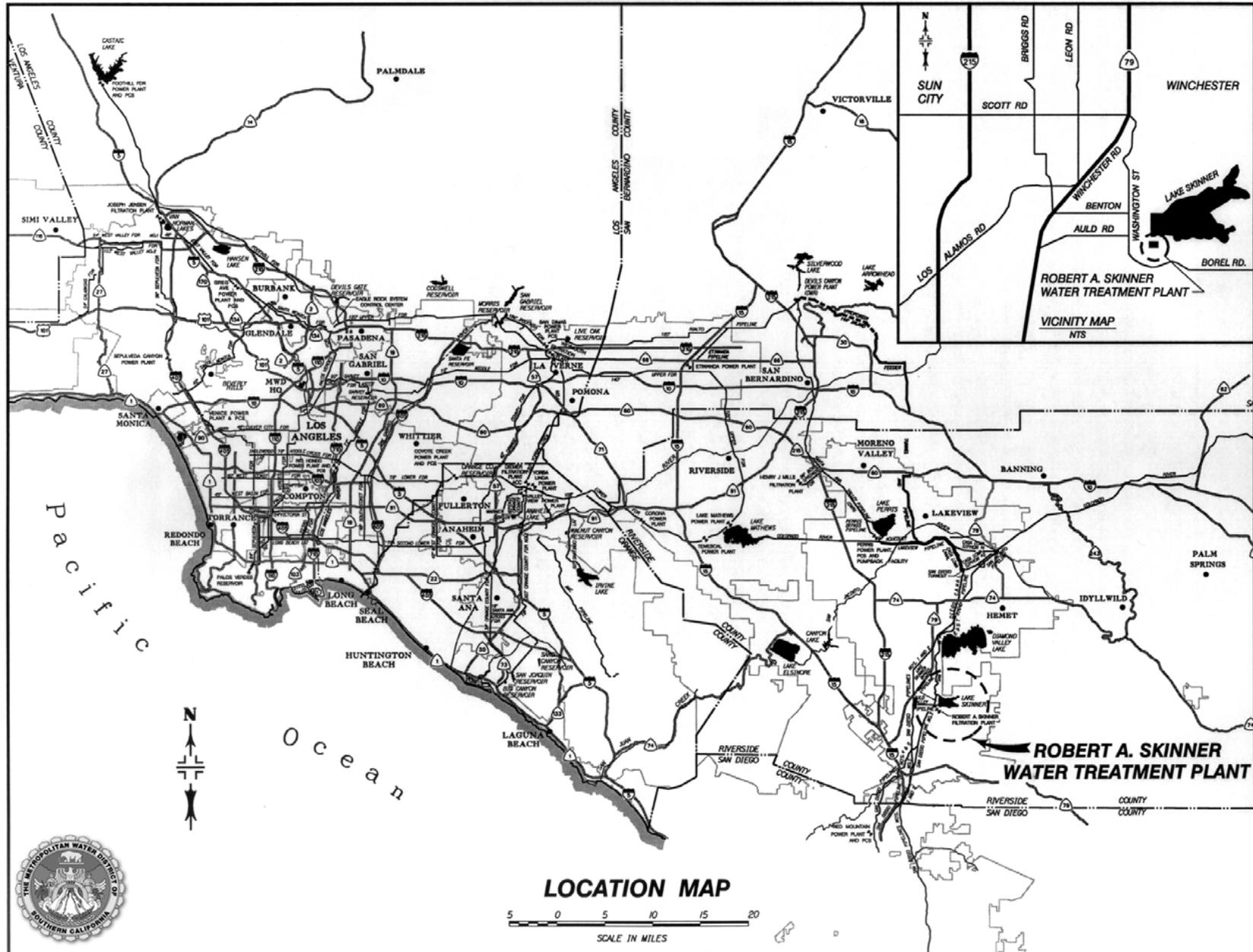
Jeffrey Lightlinger
General Manager

6/19/2008

Date

Attachment 1 – Location Maps

BLA #6023



Skinner Water Treatment Plant

