



- Board of Directors
Engineering and Operations Committee

7/14/2015 Board Meeting

7-2

Subject

Authorize increase in change order authority for construction contracts at the Joseph Jensen Water Treatment Plant and the Etiwanda Pipeline (Approps. 15441 and 15442)

Executive Summary

This action authorizes an increase in the General Manager's authority to execute change orders for two construction contracts: (1) the Jensen Module No. 1 Filter Surface Wash Upgrades; and (2) the Etiwanda Pipeline Lining Repairs, Phase 1. On each of these rehabilitation and repair (R&R) projects, the contractor has encountered unexpected interferences or more deteriorated conditions of existing facilities than had been anticipated. Staff has negotiated the resulting contract changes with each contractor, and recommends that the change order authority be increased so the contracts can be completed expeditiously.

Timing and Urgency

The Jensen Module No. 1 Filter Surface Wash Upgrades contract includes installation of eight service water pumps that were prepurchased by Metropolitan and furnished to the contractor. These units will replace existing pumps that have reached the end of their service life. Due to utility interferences found in the service water pump area, the contractor was required to relocate several electrical conduits and to modify pipe alignments. In addition, as a result of current operating constraints at the plant due to the ongoing drought, the contractor was required to modify the testing and commissioning plan for the pumps.

The contract for the initial phase of lining repairs on the Etiwanda Pipeline includes replacement of the deteriorated cement mortar lining in approximately 2,800 feet of the line. The new polyurethane lining is durable and will have a superior ability to withstand the pipeline's fluctuating internal pressure. During the construction, after the contractor had completely removed the existing mortar with abrasive blasting, it was discovered that corrosion and pitting of the steel pipe cylinder beneath the mortar was more severe than had been anticipated. Additional labor was required by the contractor to remove the corrosion and repair the pitting, before applying the polyurethane coating.

Metropolitan's construction contracts are typically completed with final change order amounts falling well within the General Manager's Administrative Code authority. The changes required to complete the subject contracts are more extensive than would typically be needed for new construction. Use of the on-site contractors to perform the additional work represented the most cost-effective and expeditious means to complete the rehabilitation work. No additional funds are requested in this action, as sufficient funds were previously appropriated and are available in each capital appropriation.

Details

Background

Metropolitan's Administrative Code authorizes the General Manager to execute change orders on construction contracts in an aggregate amount not to exceed five percent of the initial amount of the contract or \$250,000, whichever is greater. If changes occur on a construction contract that will exceed this total, additional

authorization from Metropolitan's Board is required. At this time, two construction contracts have experienced changes that will exceed the General Manager's Administrative Code authority.

Jensen Module No. 1 Filter Surface Wash Upgrades – Increase in Change Order Authority (No funds required)

The Jensen plant was placed into service in 1972 and was expanded to its current capacity of 750 mgd in the early 1990s. The Jensen plant treats water from the West Branch of the State Water Project and delivers it to Metropolitan's Central Pool and to exclusive service areas on the west side of the distribution system. The facility is located in Granada Hills.

Jensen Module No. 1 has a total of 20 granular tri-media filters which were constructed as part of the original treatment facility. Following over 40 years of continuous operation, the steel pipes in the filter surface wash system had become corroded. In addition, the service water pumps were deteriorating and had become increasingly less reliable.

In January 2013, Metropolitan's Board awarded a \$9,983,091 contract (Contract No. 1761) to J. F. Shea Construction, Inc. to upgrade the filter surface wash system at Jensen Module No. 1. The contract includes the addition of a new fixed-nozzle surface wash system featuring new steel pipe headers, replacement of equipment, and installation of eight Metropolitan-furnished service water pumps. These pumps are essential for supplying water to the plant's chlorine disinfection process.

During installation of the service water pumps, a number of underground interferences were encountered with existing electrical conduits and concrete-encased pipes in the service water pump area. The contractor had to relocate several electrical conduits and modify pipe alignments. In addition, revisions to the pump testing and commissioning plan were needed to add specific tests to troubleshoot each unit under the Jensen plant's current operating conditions. These conditions stem from the low flowrates being treated at the plant due to the ongoing drought. The upgrades to the Module No. 1 filter surface wash system, including pump installation, commissioning and testing, were completed in May 2015.

Per Metropolitan's Administrative Code, the General Manager has the authority to execute change orders for the Jensen Module No. 1 Filter Surface Wash Upgrades contract up to a maximum of \$499,155. To date, staff has executed a total of \$470,000 in change orders. In order to fully resolve the construction challenges described above, staff recommends that the change order authority be increased by \$80,000, for a new maximum amount of \$579,155.

This action authorizes an increase in the General Manager's authority to execute change orders on Contract No. 1761 from \$499,155 to an aggregate amount not to exceed \$579,155. No additional funds are requested, as sufficient funds were previously appropriated and are available within the capital appropriation.

Etiwanda Pipeline Lining Repairs, Phase 1 – Increase in Change Order Authority (No funds required)

The Etiwanda Pipeline was constructed in 1993 to convey untreated water from the Rialto Pipeline to the Upper Feeder. This 6.4-mile-long welded steel pipeline is 144 inches in diameter. The northern portion of the pipeline, which is 5.4 miles long, conveys high-pressure water to the Etiwanda Power Plant. From that facility, the southern portion of the pipeline continues for one mile to an interconnection with the Upper Feeder. The pipeline is located within the cities of Fontana and Rancho Cucamonga.

The Etiwanda Pipeline was constructed with a ¾-inch-thick interior mortar lining to prevent corrosion of its steel pipe cylinder. Internal inspections of the pipeline conducted by Metropolitan staff revealed that approximately 37 percent of the northern portion of the line has missing or delaminated mortar lining. While the pipeline remains in service and its structural integrity remains sound, the corrosion will continue to advance unless the lining is repaired.

In December 2013, Metropolitan's Board awarded a \$3,725,000 contract (Contract No. 1780) to Mladen Buntich Construction Company, Inc. to replace 2,800 feet of mortar lining in the Etiwanda Pipeline. This work represented Metropolitan's first use of polyurethane to reline an existing large-diameter pipe under field

conditions. By performing this work on a relatively short length of the feeder, staff was able to confirm the production rates and efficiencies of the lining process prior to commencing the full-scale effort.

During the construction, after the contractor completely removed the existing mortar with abrasive blasting, it was discovered that the extent of corrosion was greater than anticipated. The interior steel surfaces were heavily pitted, which created several unique constructability challenges due to the widespread nature and substantial size of many of the damaged areas. As a result, the contractor was required to expend additional labor, time, and materials to prepare the surface for the polyurethane lining. Staff informed the Engineering and Operations Committee of these changed conditions in October 2014, and Contract No. 1780 was completed in December.

Based on Metropolitan's Administrative Code, the General Manager has the authority to execute change orders for this contract up to a maximum of \$250,000. To date, staff has executed a total of \$240,000 in change orders. To address the construction challenges described above, staff recommends that the change order authority be increased by \$320,000, for a new maximum of \$570,000.

This action authorizes an increase in the General Manager's authority to execute change orders on Contract No. 1780 for the Etiwanda Pipeline Phase 1 Lining Repairs from \$250,000 to an aggregate amount not to exceed \$570,000. No additional funds are requested, as sufficient funds were previously appropriated and are available within the capital appropriation.

Summary

This action authorizes an increase in the General Manager's authority to execute change orders on Contract No. 1761 for the Jensen Module No. 1 Filter Surface Wash Upgrades, and on Contract No. 1780 for the Etiwanda Pipeline Lining Repairs. Both projects have been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2015/16 capital expenditure plan. See [Attachment 1](#) for the Location Map.

Project Milestone

August 2015 – Completion of the filter surface wash upgrades at Jensen Module No. 1, and the initial phase of lining repairs on the Etiwanda Pipeline

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The Etiwanda Pipeline Phase 1 Lining Repairs was previously determined to be exempt under the provisions of CEQA and State CEQA Guidelines. The Board found this project to be statutorily exempt under Section 21080.21 of the California Public Resources Code and Section 15282(k) of the State CEQA Guidelines on December 10, 2013.

The Jensen Module No. 1 Filter Surface Wash Upgrades was previously determined to be exempt under the provisions of CEQA and the State CEQA Guidelines. The Board found this project to be categorically exempt under Sections 15301, 15303, and 15304 of the State CEQA Guidelines on March 10, 2009.

The fiscal action of a change order is not subject to CEQA because it involves other government fiscal activities which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed actions have been previously exempted and that the fiscal aspect of a change order is not subject to CEQA (Section 15378(b)(4) of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination that the proposed actions have been previously exempted and that the fiscal aspect of a change order is not subject to CEQA, and

- a. Authorize increase of \$80,000 in change order authority for the Jensen Module No. 1 Filter Surface Wash Upgrades, up to an aggregate amount not to exceed \$579,155; and
- b. Authorize increase of \$320,000 in change order authority for the Phase 1 Etiwanda Pipeline Lining Repairs, up to an aggregate amount not to exceed \$570,000.

Fiscal Impact: None. Funds are available within the remaining budget of each appropriation.

Business Analysis: This option will allow timely completion of the two contracts while minimizing impacts and delays to the contractors.

Option #2

Do not authorize an increase in change order authority at this time, and direct staff to revisit the amount negotiated with each contractor for the additional work.

Fiscal Impact: Unknown

Business Analysis: This option is unlikely to result in lower costs for the extra work performed, and may cause further project delays.

Staff Recommendation

Option #1


 _____ 6/18/2015
 Gordon Johnson Date
 Manager/Chief Engineer
 Engineering Services


 _____ 6/26/2015
 Jeffrey Kightlinger Date
 General Manager

Attachment 1 – Location Map

Distribution System

