



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

12/10/2019 Board Meeting

8-4

Subject

Award two procurement contracts for the seismic upgrade of the Casa Loma Siphon Barrel No. 1: (1) \$9,237,782 procurement contract to Kubota Corporation to provide Earthquake Resistant Ductile Iron Pipe; and (2) \$6,134,207.50 procurement contract to Northwest Pipe Company to provide steel pipe; and authorize \$300,000 increase to an agreement with Carollo Engineers Inc., for a new not-to-exceed total of \$2.5 million, for technical support during procurement; the proposed action is in furtherance of a project that was previously determined to be exempt or otherwise not subject to CEQA

Executive Summary

This action awards two procurement contracts for: (1) Earthquake Resistant Ductile Iron Pipe (ERDIP); and (2) welded steel pipe, to replace a portion of Barrel No. 1 of the Casa Loma Siphon on the Colorado River Aqueduct (CRA). This action also authorizes an increase to an existing agreement with Carollo Engineers Inc., for technical support during procurement. This project will mitigate leaks associated with long-term ground subsidence and will improve seismic resilience of the siphon as it crosses the Casa Loma Fault.

The Casa Loma Siphon Barrel No. 1 has experienced recurring leaks since the 1960s where it crosses the Casa Loma Fault. Numerous repairs have been attempted over the years, including replacement of the pipe, installation of external flexible couplings, and installation of internal seals. These efforts have not been successful in eliminating leaks, and the pipeline remains vulnerable to seismically induced ground movements and subsidence. In May 2018, the Board authorized design of long-term repairs that will replace the siphon with a type of pipe with flexible joints that can accommodate relatively large ground displacements.

Details

Background

Casa Loma Siphon Barrel No. 1 was constructed in 1935 as a component of the CRA. The siphon extends for five miles, west from the San Jacinto Diversion Structure to the Bernasconi Tunnel near Lake Perris. The siphon was originally constructed of 148-inch-diameter concrete pipe. In the early 1960s, cracks and leakage developed in the pipe as a result of ground movement due to subsidence where the siphon crosses the Casa Loma Fault. In 1968, 300 feet of the concrete pipe were replaced with 148-inch-diameter steel pipe, joined by external sleeve type couplings. These couplings were installed across the fault to permit minor movement of pipe segments without leaking. However, since that time, the ground movement in the form of subsidence has continued to cause leaks in that section of the pipeline, which have required numerous repairs.

Metropolitan has an extensive seismic reliability program, which periodically reassesses seismic risks to its infrastructure. Through this program, a geologic hazard evaluation was conducted on the area surrounding the Casa Loma Siphon Barrel No. 1. This evaluation indicated that a potential horizontal ground displacement of up to 13 feet is possible due to fault rupture at this location. In addition, an internal survey of the line confirmed that an 800-foot-long portion of the siphon has experienced vertical displacement of more than five feet over a period of 84 years, due to ongoing non-tectonic settlement of the ground surface. These unique site conditions have required that staff investigate innovative solutions to make this section of the siphon more resilient to seismic events and ground subsidence.

Staff has investigated available alternatives and concluded that Earthquake Resistant Ductile Iron Pipe (ERDIP) is a viable and superior alternative to other methods for meeting project needs at the site. ERDIP is a type of pipe with flexible joints that can accommodate relatively large ground displacements. In May 2018, Metropolitan's board authorized design to replace a portion of the Casa Loma Siphon Barrel No. 1 with ERDIP under a sole source contract to be negotiated with Kubota Corporation (Kubota). At present, there are no other ductile iron pipe manufacturers that offer a comparable product for large pipes that have a similar capability for flexibility and displacement at the pipe joint. Traditional welded steel pipe will be used to transition and connect between the ERDIP and the existing concrete pipe.

Due to the long lead-time needed to procure these pipes and fittings, and the timing of the project to meet the 2021 CRA shutdown, award of the pipe procurement contracts should proceed at this time. This will allow timely delivery of the pipes and appurtenances for installation prior to the planned CRA shutdown. It is anticipated that staff will return to the Board in June 2020 to award a construction contract to install the procured pipe.

In October 2018, the Board appropriated funds and authorized the General Manager to initiate or proceed with work on all capital projects identified in the Capital Investment Plan (CIP), subject to any limits on the General Manager's authority and CEQA requirements. This project has been reviewed with Metropolitan's CIP prioritization criteria and was approved by Metropolitan's CIP Evaluation Team to be included in the Distribution System Reliability Program.

In accordance with the October 2018 action, the General Manager will authorize staff to proceed with the procurement activities for Casa Loma Siphon Barrel No. 1, pending board award of the procurement contracts described below. Based on the current CIP expenditure forecast, funds for the work to be performed pursuant to the subject procurement contracts and agreement during the current biennium are available within the Capital Investment Plan Appropriation for fiscal years 2018/19 and 2019/20 (Appropriation No. 15509). Funds required for work to be performed after fiscal year 2019/20 will be appropriated after adoption of the next biennial budget.

Casa Loma Siphon Barrel No. 1 Seismic Upgrade – Procurement

The scope of the two procurement contracts includes furnishing: (1) 954 feet of 104-inch-diameter ERDIP pipe, (2) 500 feet of 148-inch-diameter welded steel pipe, (3) 150 feet of 104-inch-diameter welded steel pipe, and (4) associated fittings and accessories. A total of \$17,500,000 is required to perform this work. In addition to the amount of the contracts, the allocated funds include \$584,029.30 for the State of California sales and use tax; \$647,000 for fabrication inspection; \$300,000 for submittals review, technical support, and responding to manufacturer requests for information by Carollo Engineers Inc., as discussed below; \$44,000 for design support; \$40,000 for contract administration and project management; and \$512,981.20 for remaining budget.

Attachment 1 provides the allocation of required funds. The total estimated cost to complete the Casa Loma Siphon Barrel No. 1 Seismic Upgrade, including the amount appropriated to date, funds allocated for the work described in this action, and all future actions is expected to range between \$32 million and \$35 million. Approximately \$3.5 million has been expended on this project to date.

Award of Procurement Contract (Kubota Corporation)

Specifications No. 1968 for furnishing 954 feet of 104-inch-diameter ERDIP and appurtenances for the Casa Loma Siphon Barrel No. 1 Seismic Upgrade was completed on November 30, 2019. With Kubota Corporation as the only manufacturer and distributor of the large-diameter ERDIP pipe in the United States, competitive procurement is impracticable, and, under Metropolitan's Administrative Code Section 8140(1)(d), competitive procurement is not required. Staff has negotiated a contract with Kubota Corporation for the new ERDIP. The contract is consistent in price with other agencies, including the Los Angeles Department of Water and Power and the Santa Clara Valley Water District, that have recently procured this type of pipe for similar projects, and the other terms and conditions of the contract are consistent with those in Metropolitan's competitively-bid procurements.

This action awards a \$9,237,782 contract to Kubota Corporation to procure 954 feet of ERDIP, appurtenances, and technical support. Due to the specialized nature of the equipment, no Small Business Enterprise (SBE) participation level was established for the contract. As a procurement contract, there are no subcontracting opportunities.

Award of Procurement Contract (Northwest Pipe Company)

Specifications No. 1978 for furnishing 500 feet of 148-inch-diameter and 150 feet of 104-inch-diameter steel pipe and appurtenances for the Casa Loma Siphon Barrel No. 1 was advertised for bids on October 17, 2019. As shown in **Attachment 2**, two bids were received and opened on November 6, 2019. For bid evaluation purposes, bidders who qualified as an SBE or Disabled Veteran Business Enterprise received a five percent bid-price reduction credit. In addition, bidders who qualified as a Regional Business Enterprise (RBE) received a five percent bid-price reduction credit. However, under current program guidelines, the maximum reduction credit shall not exceed \$25,000. As a procurement contract, there are no subcontracting opportunities.

The bid from Northwest Pipe Company in the amount of \$6,134,207.50, complies with the requirements of the specifications. This amount includes all sales and use taxes imposed by the State of California. The budgetary estimate for this material, based on a survey of vendors, ranged from \$5.5 million to \$6.6 million.

This action awards a \$6,134,207.50 procurement contract to Northwest Pipe Company to furnish 650 feet of steel pipe and appurtenances.

Technical Support during Procurement (Carollo Engineers Inc.) – Amendment to Agreement

Carollo Engineers Inc. performed the design for the Casa Loma Siphon Barrel No. 1 Seismic Upgrade under a board-authorized agreement. As the engineer of record for the design, Carollo is recommended to provide technical support during procurement. The planned activities include review of submittals, responding to requests for information from the manufacturers, and advising staff on technical issues as they arise. The estimated cost for these services is \$300,000.

This action authorizes an increase of \$300,000 to the existing agreement with Carollo for a new not-to-exceed amount of \$2.5 million, to provide technical support during procurement of pipe for the Casa Loma Siphon Barrel No. 1 Seismic Upgrade. For this agreement, Metropolitan has established an SBE participation level of 25 percent. Carollo has agreed to meet this level of participation. The subconsultant for this work is Ultra Engineering Contractors Inc.

Alternatives Considered

During planning and design of this project, staff considered replacing the existing Casa Loma Siphon Barrel No. 1 with conventional steel pipe. On a short-term basis, this option would address the persistent leakage issues at the siphon. This approach would also avoid the need for a sole source procurement contract for the ERDIP pipe. However, this approach would not provide the pipeline flexibility necessary to accommodate the continuing settlement displacement that is expected to occur over time, nor the significant displacement from a potential seismic event. Taken collectively, the alternative to use only steel pipe for the siphon/fault crossing, would not increase the overall resiliency of this portion of the CRA. Finally, staff evaluated multiple configurations and sizes of ERDIP and steel pipe to determine the most cost-effective and reliable option. The results of these analyses comprise the recommended approach as described in this board letter.

Summary

This action awards a \$9,237,782 procurement contract to Kubota Corporation to furnish ERDIP, awards a \$6,134,207.50 procurement contract to Northwest Pipe Company to furnish steel pipe for the Casa Loma Siphon Barrel No. 1 Seismic Upgrade, and amends an existing agreement with Carollo Engineers Inc.

See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Abstract of Bids, and **Attachment 3**, for the Location Map.

Project Milestones

August 2020 – Delivery of steel pipe

July 2020 – Delivery of ERDIP

Policy

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

Metropolitan Water District Administrative Code Section 8140: Competitive Procurement

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

By Minute Item 51353, dated October 9, 2018, the Board appropriated a total of \$290 million for projects identified in the Capital Investment Plan for Fiscal Years 2018/19 and 2019/20

By Minute Item 51196, dated May 8, 2018, the Board authorized design to replace Casa Loma Siphon Barrel No. 1

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action was previously determined to be exempt under the provisions of CEQA and the State CEQA Guidelines. The Casa Loma Siphon Barrel No. 1 project was found by the Board to be statutorily exempt under Section 21080.21(a) of the California Public Resources Code and Section 15282(k) of the State CEQA Guidelines and categorically exempt under Class 1 and Class 2 Categorical Exemptions (Sections 15301 and 15302 of the State CEQA Guidelines) on May 8, 2018. With the current board action, there is no substantial change proposed since the original project was first approved in 2018. 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 regard to the proposed action.

CEQA determination for Option #2:

None required

Board Options

Option #1

- a. Award \$9,237,782 procurement contract to Kubota Corporation to furnish ERDIP;
- b. Award \$6,134,207.50 procurement contract to Northwest Pipe Company to furnish welded steel pipe; and
- c. Authorize a \$300,000 increase to an agreement with Carollo Engineers Inc., for a new not-to-exceed amount of \$2.5 million.

Fiscal Impact: Expenditure of \$17.5 million in capital funds. Approximately \$200,000 will be incurred in the current fiscal year and has been previously authorized. The remaining funds from this action and for future construction costs will be accounted for and appropriated under the next biennial budget.

Business Analysis: This option will resolve long-term leakage and settlement issues with the Casa Loma Siphon, reduce the risk of unplanned outages and costly urgent repairs, and enhance the delivery reliability of the CRA.

Option #2

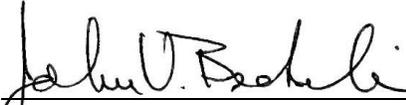
Do not proceed with this project at this time.

Fiscal Impact: None

Business Analysis: This option would forgo an opportunity to increase the seismic resilience of the CRA. Staff would continue to monitor the siphon and make repairs when leaks are found.

Staff Recommendation

Option #1



John V. Bednarski
Manager/Chief Engineer
Engineering Services

11/26/2019
Date



Jeffrey Kightlinger
General Manager

12/3/2019
Date

Attachment 1 – Allocation of Funds

Attachment 2 – Abstract of Bids

Attachment 3 – Location Map

Ref# es12667468

Allocation of Funds for Casa Loma Siphon Barrel No. 1 Seismic Upgrade

	Current Board Action (Dec. 2019)
Labor	
Studies & Investigations	\$ -
Final Design	-
Owner Costs (Program mgmt., contract administration)	40,000.00
Submittals Review & Record Drwgs.	44,000.00
Fabrication Inspection & Support	647,000.00
Metropolitan Force Construction	-
Materials & Supplies (Sales Tax)	584,029.30
Incidental Expenses	-
Professional/Technical Services	-
Carollo Consultants, Inc.	\$ 300,000.00
Right-of-Way	-
Equipment Use	-
Contracts	-
Kubota Corp.	\$ 9,237,782.00
Northwest Pipe Company	6,134,207.50
Remaining Budget	512,981.20
Total	\$ 17,500,000.00

The total amount expended to date to upgrade the Casa Loma Siphon Barrel No. 1 is approximately \$3.5 million. The total estimated cost to complete the Casa Loma Siphon Barrel No. 1 Seismic Upgrade, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from \$32 million to \$35 million.

The Metropolitan Water District of Southern California
Abstract of Bids Received on November 6, 2019, at 2:00 P.M.
Specifications No. 1978
Furnishing Steel Pipe for Casa Loma Siphon Barrel No. 1

The work includes furnishing steel pipe for the Casa Loma Siphon Barrel No. 1.

Estimated Range of Cost: \$5.5 million to \$6.6 million

Bidder and Location	Base Bid Price Total¹	Small Business or Disabled Veteran Business (Y/N)	Regional Business (Y/N)	Bid Price Reduction for SBE/DVBE or RBE²	Total Evaluated Bid Price
Northwest Pipe Company	\$6,134,207.50	N	Y	(\$25,000)	\$6,109,207.50
Mid America Pipe ³	\$6,113,534.59	N	N	\$0	\$6,113,534.59

¹ Includes sales and use taxes of 7.75 percent imposed by the state of California, which took effect on October 1, 2018.

² For bid evaluation purposes, bidders who qualified as a Small Business Enterprise (SBE) or Disabled Veteran Business Enterprise (DVBE) received a five percent bid-price reduction credit. In addition, bidders who qualified as a Regional Business Enterprise (RBE) received a five percent bid-price reduction credit. The total reduction credit shall not exceed \$25,000.

³ Bid deemed non-responsive

Distribution System

