



- Board of Directors  
*Engineering and Operations Committee*

4/9/2019 Board Meeting

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**8-2**

## **Subject**

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Award a contract to Elite Earthworks & Engineering in an amount not to exceed \$3.7 million for repair of erosion control features along the Colorado River Aqueduct; authorize design activities to rehabilitate the Whitewater erosion protection structure; and amend an existing agreement with HELIX Environmental Planning, Inc.; the General Manager has determined that the proposed actions are exempt or otherwise not subject to CEQA

## **Executive Summary**

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This action: (1) awards a construction contract for repair of erosion control features along the Colorado River Aqueduct (CRA); (2) authorizes design activities to rehabilitate the Whitewater erosion protection structure; and (3) amends an existing agreement with HELIX Environmental Planning, Inc. (HELIX) to rehabilitate the Whitewater erosion protection structure.

## **Timing and Urgency**

The 2018-19 winter storms caused significant damage to erosion control features along the CRA and to the Whitewater erosion protection structure. This action awards a unit price contract to repair existing erosion control facilities along a nine-mile portion of the CRA, just west of the Hinds Pumping Plant. The CRA erosion control repairs adjacent to the Hinds Pumping Plant will be completed with operating budget funds, which are available for fiscal years 2018/19 and 2019/20.

The Whitewater Erosion Protection Structure Rehabilitation work will be performed with capital funds. This project was not included in the Capital Investment Plan (CIP) budget for fiscal years 2018/19 and 2019/20. Any project not included in the CIP budget requires specific board authorization to proceed. This project has been reviewed in accordance with Metropolitan's CIP prioritization criteria and is now recommended to be included in the CRA Reliability Program.

## **Details**

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### **Background**

The CRA is a 242-mile-long conveyance system that transports water from the Colorado River to Lake Mathews. It consists of five pumping plants; 124 miles of tunnels, siphons, and reservoirs; 63 miles of canals; and 55 miles of cut-and-cover conduits. The aqueduct was constructed in the late 1930s and was placed into service in 1941.

In most locations along the CRA, a system of erosion control facilities was constructed along with the original CRA construction to protect the CRA conduit from rock and debris flows. At narrow ravine crossings, heavy storm events often erode the soil and expose the conduits. Once exposed, the unreinforced CRA conduits are vulnerable to structural damage from the rock and debris flows, and to undermining of the conduit foundation.

This action authorizes two projects to address erosion damage as a result of the 2018-19 winter storms. These projects will enhance the reliability of the CRA delivery system and reduce the risk of damage during future storm events.

**Project No. 1 – CRA Conduit Erosion Control Repairs – Construction (\$4,500,000)**

In October 2018, significant storms caused extensive erosion over the cut-and-cover conduits at 36 sites along a nine-mile stretch of the CRA, west of Hinds Pumping Plant. The storms exposed the cut-and-cover CRA conduit at 26 locations. The exposed lengths of the CRA in these locations varied from 15 feet to 150 feet in length, and up to 11 feet in depth. The storms also damaged patrol roads, earthen berms, and drainage channels.

Metropolitan forces typically perform repairs of such erosion damage on an as-needed basis with existing O&M funds.

During the past four months, Metropolitan forces have re-established patrol roads and restored ground cover over the cut-and-cover conduit. This work has temporarily restored the integrity of the CRA in storm conditions. This recent grading work identified the urgent need to reestablish the original berms and drains that historically served to channel storm flows safely across the CRA conduit. The repair of these earthen berms and drainage channels will result in a deposit of fill material into waters of the United States, and therefore requires a permit from the U.S. Army Corps of Engineers (Army Corps) to perform this work. The emergency permit was obtained on February 4, 2019, and is set to expire on April 30, 2019. Metropolitan staff has applied for an extension until June 30, 2019.

Contractor assistance is required to ensure that the erosion repairs are completed prior to the expiration of the extended permit deadline because Metropolitan forces are fully occupied during the ongoing March 2019 CRA shutdown. Additionally, Metropolitan forces will be occupied repairing more recent storm damage at other sites within Metropolitan's distribution system. Staff recommends award of a unit price construction contract to complete the remaining erosion control repairs within the term of the extended permit deadline.

The scope of the construction contract includes restoring approximately 3.5 miles of existing earthen berm; re-establishing approximately nine miles of existing diversion channel, and grading as necessary in an area of the CRA referred to as the Cottonwood reach. The urgency of the work and the time constraints imposed by the Army Corps permit prevented Metropolitan staff from performing a detailed topographic survey. As a result, precise estimates of the volumes of earthwork were not available at the time of bid, and staff determined that a unit price bidding methodology was the preferable bidding approach under the circumstances. Although Metropolitan typically bids construction projects and awards associated contracts on a lump sum basis, unit pricing has been used where, as here, the quantity of work is unknown. Work is performed in the manner and quantity directed by the resident engineer, and the contractor is paid only for the amount of work completed.

A total of \$4,500,000 in operating budget funds is required for the recommended erosion repair activities. The following section and **Attachment 1** provides the allocation of the planned costs.

***Award of Construction Contract (Elite Earthworks & Engineering)***

Specifications No. 1956 for the CRA Conduit Erosion Control Repairs was advertised for bids on March 7, 2019. The specifications required each bidder to submit a base bid amount which consisted of unit pricing on estimated quantities associated with the major grading operation, bidders were required to submit unit prices for re-establishing diversion ditches and berms, stripping topsoil, and constructing drain relief areas, as well as daily overhead and administrative costs. For bid evaluation purposes, the low bid was determined by multiplying the unit prices by the minimum estimated quantity of work stated in the specifications.

As shown in **Attachment 2**, three bids were received and opened on March 21, 2019. The apparent low bidder did not meet the requirements outlined in the bid documents, so that bid was deemed to be non-responsive. The second low bid from Elite Earthworks & Engineering in the amount of \$3,200,100 complies with the requirements of the specifications. The remaining bid was \$3,358,000, while the engineer's estimate was \$1.919 million. Staff investigated the difference between the Engineer's estimate and the low bid and attributed the difference to the greater than expected number of equipment and staff required to complete construction within the term of the permit deadline. Due to the urgent nature of the work, no Small Business Enterprise participation level was established for this work. The subcontractors for this contract are listed in **Attachment 3**.

An additional \$500,000 in contract authority is recommended for this contract due to the uncertainty of the earthwork quantities that may be encountered during construction. The final contract price will depend on the actual quantities required to complete the work, up to an amount not to exceed \$3.7 million. This increased contract authority will allow use of the contract to assist Metropolitan forces with repair of additional storm

damage caused by the recent February 2019 storms, if necessary. This approach results in a lower overall construction cost for Metropolitan, decreases risks for Metropolitan and the contractor, and eliminates a potentially contentious negotiation because the contract terms are defined in advance.

This action awards a contract to Elite Earthworks & Engineering for a not-to-exceed amount of \$3.7 million for erosion control repairs along the CRA. A total of \$4.5 million has been budgeted for this work and the allocation of those funds is described below and shown in **Attachment 1**. In addition to the amount of the contract, allocated funds include: \$390,000 for construction management and inspection; \$150,000 for environmental compliance monitoring; \$35,000 for submittals review; \$100,000 for aerial photogrammetry mapping services by Geospatial Professional Solutions, Inc. under an existing board-authorized agreement; and \$125,000 for contract administration and project management.

For this project, the anticipated cost of inspection is approximately 10.5 percent of the total construction cost. Construction inspection will be performed by Metropolitan staff. Engineering Services' target for inspection of construction greater than \$3 million is 9 to 12 percent.

### ***Project No. 2 - Whitewater Erosion Protection Structure Rehabilitation – Design (\$500,000)***

The CRA's Whitewater Siphons were originally constructed in 1941 and are located north of the city of Palm Springs. The double-barreled siphons are 2,200-foot-long reinforced concrete conduits with diameters of 133 inches and 156 inches. The CRA siphons pass under the Whitewater River and have been subject to erosion damage for many years. In November 2019, Metropolitan completed construction of an erosion protection structure to reduce the risk of damage to the siphons from erosion caused by storm flows.

The erosion protection structure featured east and west gabion berms, an access road, a gabion drop structure and mattress, and placement of cellular concrete to prevent overloading of the CRA siphon. On February 14, 2019, a significant rainfall event in the Whitewater watershed area greatly increased river flows, which in turn caused significant damage to the new gabion control structure, including eroding approximately 3,200 cubic yards of gabion cages, and riprap. Staff recommends urgent work be conducted to stabilize the Whitewater River erosion protection structure before the 2019/2020 winter storm season.

Design-phase activities are required for the urgent near-term repairs and include: (1) conducting field investigations; (2) establishing final design criteria, preparing drawings and specifications, and developing a construction cost estimate for the urgent rehabilitation work; and (3) performing technical review, project management, and preparation of environmental documentation, and permitting support. Design activities will be performed by Hazen and Sawyer under an existing agreement. Environmental documentation and permitting support will be performed by HELIX as described below. Possible potential urgent repairs stemming from these investigations and design efforts include filling the void in the gabion structure with rock and stockpiling surplus rock riprap materials.

A total of \$500,000 has been budgeted for these design-phase activities. Allocated funds include: \$125,000 for consultant design activities and technical assessments; \$43,000 for technical review by Metropolitan staff; \$150,000 for consultant preparation of environmental documentation and permitting support as described below; \$142,000 for project management, project controls, environmental review, and receipt of bids; and \$40,000 for remaining budget. See **Attachment 1** for the Allocation of Funds. Staff will return to the Board for award of a construction contract.

The anticipated cost of final design is approximately 8.4 percent of the total construction cost. Engineering Services' target for design of projects with construction less than \$3 million is 9 to 15 percent. The total estimated cost of construction for this project is anticipated to range from \$2,000,000 to \$2,500,000.

### **Specialized Environmental Support (HELIX Environmental Planning Inc.) – Amendment to Agreement**

HELIX will perform environmental planning activities under an existing professional services agreement. Under the existing agreement, HELIX provides surveys, prepares technical reports, conducts construction monitoring and reporting, and provides specialized expertise, as required by permitting agencies and as specified in the existing permits. The planned scope of work includes conducting surveys of sensitive animal and plant species; monitoring for compliance; meeting with regulatory agencies, preparing regulatory permit applications; and providing general permitting, monitoring and CEQA support. The estimated cost for these activities is \$150,000.

This action authorizes an increase of \$150,000 to the existing agreement with HELIX for a new not-to-exceed total of \$465,000. HELIX is an SBE firm and thus achieves 100 percent SBE participation.

### **Summary**

This action: 1) awards a construction contract for erosion control repairs along the CRA; 2) authorizes design activities to rehabilitate the Whitewater erosion protection structure; and 3) amends an existing agreement with HELIX. See **Attachment 1** for the Allocation of Budgeted Funds, **Attachment 2** for the Abstract of Bids, **Attachment 3** for the listing of Subcontractors for the Low Bidder, and **Attachment 4** for the Location Map.

In accordance with the provisions of the Governmental Accounting Standards Board, Metropolitan's work associated with CRA Conduit Erosion Control Repairs must be conducted with O&M funds instead of a capital appropriation. The total cost of construction for this project is \$4.188 million, which includes the amount of the contract (\$3,700,000) and previous Metropolitan force activities (\$488,000). Funds for this action are available within Metropolitan's operating budget funds for fiscal years 2018/19 and 2019/20.

A total of \$500,000 in capital funds is required for the urgent Whitewater River rehabilitation work. This project was not included in the CIP budget for fiscal years 2018/19 and 2019/20. Any project not included in the CIP budget requires specific board authorization to proceed. This project has been reviewed in accordance with Metropolitan's CIP prioritization criteria and is now recommended to be included in the CRA Reliability Program. Based on the current CIP expenditure forecast, no additional appropriation of funds is necessary to complete this work.

### **Project Milestones**

May 2019 – Completion of design to rehabilitate the Whitewater erosion protection structure

June 2019 – Completion of erosion repairs along the CRA

### **Policy**

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

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.

### **California Environmental Quality Act (CEQA)**

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#### **CEQA determination for Option #1:**

The proposed actions are exempt under the provisions of CEQA and the State CEQA Guidelines. For the CRA Conduit Erosion Control Repairs, the proposed action includes the immediate remedial repair of existing pipelines with the same purpose and capacity. Accordingly, the proposed action qualifies under a statutory exemption (Sections 21060.3 and 21080(b) of the California Public Resources Code and Section 15269 of the State CEQA Guidelines). For the Whitewater Erosion Protection Structure Rehabilitation design, the proposed action includes a project involving only feasibility or planning studies for possible future actions which the agency, board or commission has not approved, adopted or funded and does not require the preparation of an Environmental Impact Report or Negative Declaration but does require consideration of environmental factors. Accordingly, the proposed action qualifies under a statutory exemption (Sections 21060.3 and 21080(b) of the California Public Resources Code and Section 15262 of the State CEQA Guidelines).

#### **CEQA determination for Option #2:**

None required

## Board Options

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### Option #1

- a. Award contract to Elite Earthworks & Engineering in an amount not to exceed \$3.7 million;
- b. Amend current CIP to include the rehabilitation of the Whitewater erosion protection structure;
- c. Authorize design activities to rehabilitate the Whitewater erosion protection structure; and
- d. Authorize an increase of \$150,000 to an agreement with HELIX Environmental Planning Inc., for a new not-to-exceed amount of \$465,000.

**Fiscal Impact:** \$4.5 million in operating budget funds and \$500,000 in capital funds

**Business Analysis:** This option will enhance the safety and reliability of the CRA delivery system, reduce the risk of damage during storm events, and provide uninterrupted delivery of water.

### Option #2

Do not proceed with the projects at this time.

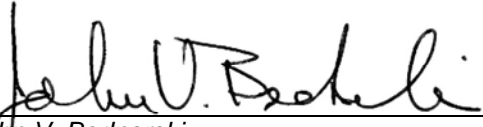
**Fiscal Impact:** None

**Business Analysis:** This option would forego an opportunity to reduce the risk of damage from storm events to the CRA.

## Staff Recommendation

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### Option # 1

  
 3/25/2019  


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 John V. Bednarski  
 Manager/Chief Engineer  
 Engineering Services  
 Date

  
 3/28/2019  


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 Jeffrey Nightlinger  
 General Manager  
 Date

**Attachment 1 – Allocation of Funds**

**Attachment 2 – Abstract of Bids**

**Attachment 3 – Subcontractors for Low Bidder**

**Attachment 4 – Location Map**

Ref# es12667640

### Allocation of Operating Budget Funds for CRA Erosion Control Repairs

	<b>Current Board Action (Apr. 2019)</b>
Labor	
Studies & Investigations	\$ -
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	255,000
Submittals Review	35,000
Construction Inspection & Support	390,000
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	20,000
Professional/Technical Services	
Geospatial Professional Solutions, Inc.	100,000
Equipment Use	-
Contracts	-
Elite Earthworks & Engineering	3,700,000
Remaining Budget	-
<b>Total</b>	<b>\$ 4,500,000</b>

The total estimated cost to complete this project, including the amount spent to date and current funds requested with this action is \$5 million. No future funding requests are currently anticipated for this project.

### Allocation of Funds for Whitewater Erosion Protection Structure Stabilization

	<b>Current Board Action (Apr. 2019)</b>
Labor	
Studies & Investigations	\$ -
Final Design	43,000
Owner Costs (Program mgmt., envir. monitoring)	142,000
Submittals Review	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	
Hazen and Sawyer	125,000
HELIX Environmental Planning, Inc.	150,000
Equipment Use	-
Contracts	-
Remaining Budget	40,000
<b>Total</b>	<b>\$ 500,000</b>

The total estimated cost to complete this project, including the amount appropriated to date, current funds requested, and future construction costs, is anticipated to range from \$2 million to \$2.5 million.

**The Metropolitan Water District of Southern California**

**Abstract of Bids Received on March 21, 2019 at 2:00 P.M.**

**Specifications No. 1956**

**Colorado River Aqueduct Erosion Control Repairs**

The work includes restoring approximately 3.5 miles of existing earthen diversion berm; re-establishing approximately 9 miles of existing diversion channel; and grading as necessary.

Engineer's estimate: \$1.919 million

<b>Bidder and Location</b>	<b>Total</b>
Bosco Contractors, Inc <sup>2</sup> . Chatsworth, CA	\$3,125,000
<b>Elite Earthworks &amp; Engineering</b> <b>Corona, CA</b>	<b>\$3,200,100</b>
Southern California Grading, Inc.	\$3,357,398.74

<sup>1</sup> Due to the urgent nature of repairs, no Small Business Enterprise (SBE) participation was established for this contract.

<sup>2</sup> Non-responsive bid



**The Metropolitan Water District of Southern California**

**Subcontractors for Low Bidder**

**Specifications No. 1956**

**Colorado River Aqueduct Erosion Control Repairs**

Low bidder: Elite Earthworks & Engineering

<b>Subcontractor and Location</b>
Adkan Engineering Riverside, CA
BMP Contractors Moreno Valley, CA

### Location Map

