



- Board of Directors
Engineering and Operations Committee

3/12/2013 Board Meeting

7-6

Subject

Appropriate \$580,000; and authorize final design of erosion protection measures for the Whitewater Siphons on the Colorado River Aqueduct (Approp. 15341)

Executive Summary

This action authorizes final design of improvements to control structures which protect siphons on the Colorado River Aqueduct (CRA) from erosion by the Whitewater River. The existing structures have deteriorated from 20 years of stream flow erosion and require improvements for continued protection in the future. This action also adopts environmental documentation which will enable permit acquisition to proceed for three CRA projects.

Timing and Urgency

The CRA passes beneath the Whitewater River via double-barreled reinforced concrete siphons, which are buried from 4 feet to 15 feet beneath the river bed. The conduits are protected by a concrete slab located at the ground surface. Over time, the stream flows have eroded the soils supporting the slab, resulting in a 40-foot-wide, 30-foot-long, and 15-foot-deep depression directly downstream of the concrete slab. Flows over successive winter seasons will eventually undermine the foundation of the siphons, which could lead to an unplanned shutdown of the CRA to perform emergency repairs. In order to protect the siphons, staff recommends moving forward with final design of erosion protection measures at this time.

This project has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria, and is categorized as an Infrastructure Rehabilitation and Replacement project. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2012/13.

Details

Background

The CRA's Whitewater Siphons are located north of the city of Palm Springs and west of the city of Desert Hot Springs. The Whitewater Siphons are double-barreled reinforced concrete conduits which are approximately 2,200 feet long, with diameters of 133 inches and 156 inches. The distance between the two conduits is 125 feet where they cross the Whitewater River. At this crossing, the channelized portion of the river is typically less than 150 feet wide during normal flow conditions, but the width may grow to over 700 feet during a 100-year storm event. In the deepest part of the river, the conduits are buried 15 feet below the river bed surface. Along the shallower edges near the river banks, the conduits are buried only 4 feet below the river bed. In March 1993, a moderate storm event eroded soils over the downstream siphon, exposing the upper three feet of the conduit. After the flood waters receded, Metropolitan forces backfilled the eroded area and constructed a 25-foot-wide by 250-foot-long concrete slab approximately 12 feet above the siphon to protect it from future flood flows. As an added protection, a 6-foot-wide by 760-foot-long earthen diversion berm was constructed to redirect flows over the protective slab.

Over the years, the soils supporting the slab have eroded away, creating a 40-foot-wide by 30-foot-long by 15-foot-deep depression adjacent to the concrete slab. Flows over successive winter seasons will eventually undermine the foundation of the siphons, which could lead to an unplanned shutdown of the CRA for repairs. The existing earthen diversion berm directs normal levels of flow over the protective slab, but is too small to handle larger flood flows. This was observed during recent storms when the berm was close to being overtopped. Had the earthen diversion berm failed, significant sections of the siphons could have been damaged. Final design is recommended to move forward to improve the erosion control structures that protect the Whitewater Siphons from flood damage.

Staff has completed preparation of an Environmental Impact Report (EIR) for three nearby projects on the CRA, in compliance with the California Environmental Quality Act (CEQA). The three projects include: (1) erosion protection measures for the Whitewater Siphons, which is the subject of this action; (2) remediation of the Whitewater mining pit, which is located adjacent to the Whitewater Siphons; and (3) improvements to the Cabazon Radial Gate facility. An EIR was necessary due to these projects' potential to cause one or more significant effects on the physical environment. The EIR evaluated the environmental impacts of the proposed projects, and incorporated measures to either mitigate potential impacts or reduce them to a level less than significant. Upon certification of the EIR under this action, staff will commence the acquisition of permits for these projects. Permitting agencies will include the California Department of Fish and Game, Regional Water Quality Control Board, the U. S. Army Corps of Engineers, and the County of Riverside. Staff will return to the Board for future action on each of these three projects.

Whitewater Siphons Erosion Protection – Final Design Phase (\$370,000)

Planned erosion protection measures for the Whitewater Siphons include grading of the eroded area downstream of the concrete slab to prevent undermining, repairing damaged concrete sections, increasing the depth of the slab at specific locations for improved scour protection, and replacing the earthen diversion berm with a larger gabion structure. The gabion structure will consist of rock-filled cages approximately 760-feet-long, 12-feet-wide, and 12-feet high, with a scour toe extending three feet below grade.

Planned final design phase activities include preparation of drawings and specifications, detailed hydraulic modeling, acquisition of permits for erosion control structure improvements, advertisement and receipt of bids, development of a construction cost estimate, and all other activities in advance of construction. All final design activities will be performed by Metropolitan staff.

This action appropriates \$370,000 and authorizes final design of erosion protection measures for the Whitewater Siphons. The requested funds include: \$208,000 for preparation of drawings and specifications; \$17,000 for field surveying and mapping; \$63,000 for receipt of bids and project management; and \$82,000 for remaining budget.

The final design cost as a percentage of the estimated construction cost is approximately 9 percent. Engineering Services' goal for design of projects with construction cost less than \$3 million is 9 to 15 percent. The construction cost for the erosion protection measures is anticipated to range from \$2.3 million to \$2.8 million.

Environmental Permitting (\$210,000)

A series of permits are required to enable the three projects addressed in the EIR to move forward. Permitting agencies include the California Department of Fish and Game, Regional Water Quality Control Board, the U. S. Army Corps of Engineers, and the county of Riverside. Specialized assistance in acquisition of these permits is recommended to be provided by HELIX Environmental, as discussed below. Staff will return to the Board for future action on each of the three projects.

This action appropriates \$210,000 and authorizes the acquisition of permits for erosion protection measures for the Whitewater Siphons, for remediation of the Whitewater Mining Pit, and for improvements to the Cabazon Radial Gate facility. The requested funds include: \$103,000 for consulting assistance for the acquisition of permits from federal, state, and county agencies; \$66,000 for anticipated permit fees for the Whitewater Siphon and Cabazon Radial Gate projects; and \$41,000 for anticipated permit fees for the Whitewater mining pit.

Environmental Permitting Support - HELIX Environmental (No Action Required)

Environmental services for permitting of the erosion protection improvements are recommended to be provided by HELIX Environmental under a new professional services agreement. The planned scope of work includes preparing permit applications; consulting with federal, state, and county resource agencies; preparing wetland delineation plans; providing support for permit public notifications; and assisting in pre-consultation for potential endangered species take under Section 7 of the Federal Endangered Species Act, including preparation of the Biological Opinion to be submitted by the U. S. Army Corps of Engineers to the U. S. Fish and Wildlife Service. The estimated cost for these services is \$103,000.

HELIX Environmental was selected through a competitive process via Request for Qualifications No. 956. For this agreement, Metropolitan has established a Small Business Enterprise participation level of 18 percent. The agreement is planned to be awarded under the General Manager's Administrative Code authority.

Summary

This action appropriates \$580,000 and authorizes final design phase activities to improve erosion control structures at the Whitewater Siphons, and permitting activities for three CRA projects. These projects have been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in the fiscal year 2012/13 capital expenditure plan. See **Attachment 1** for the Financial Statement, **Attachment 2** for the Location Map, **Attachment 3** for the Draft EIR, **Attachment 4** for the Appendices, **Attachment 5** for the Final EIR, and **Attachment 6** for the Mitigation Monitoring and Reporting Program. (Attachments 3, 4, 5, and 6 are available for review in the Board Executive Secretary's Office.)

This work is included within capital Appropriation No. 15341, the Whitewater Siphons Protection Program, which was initiated in fiscal year 2001/02. Past board actions under Appropriation No. 15341 include acquisition of the 115-acre Whitewater mining pit, which is located adjacent to the Whitewater Siphons. The mining pit was purchased to prevent expansion of mining operations, thus protecting the siphons from accelerated stream erosion. With the present action, the total funding for Appropriation No. 15341 will increase from \$2,255,000 to \$2,835,000.

Project Milestone

March 2014 – Completion of final design of erosion protection measures for the Whitewater Siphons

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

As required under CEQA and the State CEQA Guidelines, a Notice of Preparation (NOP) was circulated for public review on July 15, 2005. The NOP indicated that the proposed project had the potential to cause one or more significant effects on the physical environment and that Metropolitan would prepare a Draft EIR. The 30-day public review period for the NOP ended on August 15, 2005. During the review period, comments and input were solicited from federal, state and local government agencies that may have an interest in the proposed project. The NOP is included as Appendix A of the Draft EIR.

Subsequently, a revised NOP was recirculated for public review on October 19, 2010. The NOP was revised to include another proposed CRA project to be analyzed in the Draft EIR. The revised NOP described three projects; two of the improvements would protect CRA siphons from scour effects caused by erosion. The third improvement would prevent over-pressurization of the CRA in case the San Jacinto Tunnel becomes blocked. The revised NOP indicated that the proposed project had the potential to cause one or more significant effects on the physical environment and that Metropolitan would prepare a Draft EIR. The 30-day public review period for the revised NOP ended on November 17, 2010. During the review period, comments and input were solicited from federal, state and local government agencies that may have an interest in the proposed project. The revised NOP is included as Appendix B of the Draft EIR.

On May 23, 2012, Metropolitan released the Draft EIR for public review for a period of 45 days and filed the Notice of Completion. The Notice of Availability of the Draft EIR was published in the Press-Enterprise on May 18, 2012, and copies of the Draft EIR were provided to Metropolitan's Reference and Research Center and the Banning Public Library. Moreover, Metropolitan distributed approximately 33 copies of the Draft EIR to responsible agencies, trustee agencies, and affected public agencies. Nearby property owners and other interested public groups were sent copies of the Notice of Availability directing them to the Metropolitan webpage with the posted documents. The public review period ended on July 6, 2012. Metropolitan received five letters commenting on the Draft EIR. These comment letters and responses to comments are included in the Final EIR.

During the certification process, the Board must certify that the Final EIR has been completed in compliance with CEQA and the State CEQA Guidelines. The Board also must certify that it has reviewed and considered the information presented in the Final EIR. Finally, the Board must certify that the Final EIR reflects Metropolitan's independent judgment and analysis.

CEQA requires that public agencies adopt a mitigation monitoring and reporting program (MMRP) when they approve a project that contains mitigation measures to reduce or avoid significant environmental impacts (Public Resources Code § 21081.6). The Final EIR evaluated potentially significant environmental impacts and proposed feasible mitigation measures. Hence, feasible mitigation measures were prepared and included in the MMRP. Metropolitan staff will be responsible for administering the MMRP. With respect to impact analyses for the Final EIR, all impacts can be reduced by adoption of the MMRP to a less than significant level. The Board will need to adopt the Findings of Fact (findings) and the MMRP.

See **Attachment 3** for the Draft EIR; **Attachment 4** for the Appendices; **Attachment 5** for the final EIR (Responses to Comments and clarifications to the Draft EIR); and **Attachment 6** for the MMRP. Attachments 3, 4, 5, and 6 are available for review in the Board Executive Secretary's Office. Other documentation that constitute the record of proceedings upon which the Lead Agency decision is based have been and will be on file at Metropolitan's headquarters located at 700 North Alameda Street, Los Angeles, CA 90012.

The CEQA determination is: Certify that the Final EIR has been completed in compliance with CEQA and the State CEQA Guidelines; certify that the Board has reviewed and considered the information presented in the Final EIR; certify that the Final EIR reflects Metropolitan's independent judgment and analysis; and adopt the findings and the MMRP.

CEQA determination for Option # 2:

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Appropriate \$580,000;
- b. Authorize final design of erosion protection measures for the Whitewater Siphons; and
- c. Authorize environmental permitting activities for three CRA projects.

Fiscal Impact: \$580,000 of capital funds under Approp. 15341

Business Analysis: This project will protect Metropolitan assets and enhance reliability of the CRA.

Option #2

Do not proceed with the project at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to enhance reliability of the CRA.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer
Engineering Services
2/20/2013
Date



Jeffrey Kightlinger
General Manager
2/25/2013
Date

Attachment 1 – Financial Statement

Attachment 2 – Location Map

Attachment 3 – Draft Environmental Impact Report

Attachment 4 – Appendices

Attachment 5 – Final Environmental Impact Report

Attachment 6 – Mitigation Monitoring and Reporting Program

Ref# es12622482

Financial Statement for Whitewater Siphons Protection Program

A breakdown of Board Action No. 4 for Appropriation No. 15341 for the Whitewater Siphons Erosion Protection program¹ is as follows:

	Previous Total Appropriated Amount (June 2001)	Current Board Action No. 4 (Mar. 2013)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 367,600	\$ -	\$ 367,600
Final Design	-	225,000	225,000
Owner Costs (Program mgmt., environ. permitting, bidding)	353,900	63,000	416,900
Materials & Supplies	-	-	-
Incidental Expenses (Permit fees)	-	106,000	106,000
Professional/Technical Services	718,500	-	718,500
HELIX Environmental	-	103,000	103,000
Right-of-Way & Land Acquisition	815,000	-	815,000
Contracts	-	-	-
Remaining Budget	-	83,000	83,000
Total	\$ 2,255,000	\$ 580,000	\$ 2,835,000

Funding Request

Program Name:	Whitewater Siphons Protection Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15341	Board Action No.:	4
Requested Amount:	\$ 580,000	Capital Program No.:	15341-I
Total Appropriated Amount:	\$ 2,835,000	Capital Program Page No.:	342
Total Program Estimate:	\$ 12,010,000	Program Goal:	I-Infrastructure Reliability

¹ The total amount expended to date on the Whitewater Siphons Erosion Protection program is approximately \$2,255,000. Past board actions under Appropriation No. 15341 include the acquisition of the 115-acre Whitewater mining pit, which is located adjacent to the Whitewater Siphons

Location Map

