



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

3/8/2022 Board Meeting

7-2

Subject

Authorize two professional services agreements to support radial gates replacement projects: (1) an agreement with Hazen and Sawyer in an amount not to exceed \$890,000; and (2) an agreement with LEE + RO, Inc. in an amount not to exceed \$904,000; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

Radial gates are used to control flows along the Colorado River Aqueduct (CRA) and the San Diego Canal. Professional services agreements are recommended for two projects, which have been established to replace aging radial gates.

- Project No. 1 – Cabazon Radial Gate Facility Upgrades – This project replaces two radial gates and makes security, access, and instrumentation upgrades to the Cabazon Radial Gate Facility along the CRA. This action authorizes an agreement with Hazen and Sawyer for design activities to make improvements to the Cabazon Radial Gate Facility.
- Project No. 2 – San Diego Canal Radial Gates Replacement – This project replaces radial gates at the inlets to Lake Skinner and the San Diego Canal. This action authorizes an agreement with LEE + RO, Inc. for design activities to replace the radial gates along the San Diego Canal.

These projects will ensure continued water supply delivery reliability for the member agencies.

Details

Background

The Cabazon Radial Gate Facility is located on the CRA in the city of Cabazon within Riverside County and is approximately one mile upstream of the San Jacinto Tunnel. This facility was constructed in 1936 and consists of two radial gates: one gate in-line with the flow of the aqueduct; and one gate perpendicular to the water flow. Due to the infrequent need to operate these two gates, routine maintenance has extended their useful life to more than 80 years. However, staff is now recommending replacement of these gates for the reasons stated below. The gates have a width of 17 feet and a height of 16 feet and are designed to isolate and divert flow on an as-needed basis.

The San Diego Canal is used to supply raw water to Lake Skinner and the San Diego County Water Authority. Radial gates, V-06 and V-08, are a key part of the San Diego Canal system and are used to regulate flows into downstream components of the conveyance and distribution system. Gate V-06 controls flow from the San Diego Canal into Lake Skinner and has been in continuous service since its original installation more than 45 years ago. During that time, the gate has received routine maintenance. Gate V-08 is the turnout radial gate that conveys Colorado River water from the Casa Loma Canal to the San Diego Canal. This gate was originally installed 45 years ago and was completely replaced during the San Diego Canal Enlargement Project in the early 1990s. However, due to its continuous operation over the last 30 years, replacement of the gate is recommended. Gate V-06 has a width of 30 feet and a height of 15 feet, while gate V-08 has a width of 15 feet and a height of 15 feet.

The radial gates that are the subject of this letter are used to shut down, isolate, and divert flows along the aqueduct and canal. Each gate is constructed of a steel framework that resembles a slice of pie, with a curved

plate that rotates to block flow when the gate is in the closed position. An electric motor actuator is used to pivot the gate upward from the closed to the open position. The electric motor, hoisting mechanism, and radial gate are mounted on a concrete structure.

Recent inspections have identified that the four gates are corroded and require replacement. Protective coatings on various components of the gates have begun to fail. Several of the gates have a fiberglass laminate applied to the face of the curved plate that is in contact with water. This laminate is deteriorating and has pulled away from the curved plate in several instances. Significant metal loss has occurred on portions of the steelwork and mounting brackets. The existing motor actuators, which are used to open and close the gates, have also deteriorated.

Inspections have also identified additional upgrades that are needed at the Cabazon Radial Gate Facility. Required upgrades include: (1) replacement of outdated monitoring equipment including three entry alarms, as well as water level, turbidity, and pH meters; (2) installation of a standby generator to allow operation of the facility in the event of power loss; (3) upgrades to the radial gate structure including replacement of the metal roof covers and new handrails; and (4) installation of additional security cameras.

Two professional service agreements are recommended at this time to design the four new radial gates, as described below. These projects will protect Metropolitan's assets, enhance operational reliability, and reduce the risk of costly emergency repairs.

In accordance with the April 2020 action on the biennial budget for Fiscal Years 2020/21 and 2021/22, the General Manager will authorize staff to proceed with the actions described herein, pending board authorization of the design services agreement described below. Based on the current Capital Investment Plan (CIP) expenditure forecast, funds for the work to be performed pursuant to this action during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Years 2020/21 and 2021/22 (Appropriation No. 15517). Funds required for work performed after fiscal year 2021/2022 will be appropriated after adoption of the next biennial budget. This project has been reviewed in accordance with Metropolitan's CIP prioritization criteria and was approved by Metropolitan's CIP Evaluation Team to be included in the Conveyance and Distribution System Rehabilitation and Colorado River Aqueduct Reliability Programs.

Project No. 1 - Cabazon Radial Gate Facility Upgrades – Preliminary and Final Design

Planned upgrades involve the replacement of two radial gates located in the Cabazon Radial Gate Facility, including motor actuators and the gates' electrical and control equipment. Additional upgrades include new sensors to monitor water levels and water quality, new metal roof covers with a locking mechanism, a new standby generator, and upgrades to the site's security system. Design activities will be conducted with a hybrid effort of consultant and Metropolitan staff as described below. Metropolitan staff will perform design of the instrumentation and control system, consultant oversight, overall project management, advertisement, and receipt of competitive bids.

A total of \$1.74 million is required for this work. Allocated funds include \$890,000 for design activities, which includes \$340,000 for preliminary investigation, technical assessments, and analyses, and \$550,000 for final design activities, by Hazen and Sawyer, under a new agreement, as described below; and a total of \$45,000 for a constructability workshop. The constructability workshop will be performed by a specialty firm under a contract planned to be executed under the General Manager's Administrative Code authority to award contracts of \$250,000 or less. Allocated funds for Metropolitan staff activities include \$399,000 for design, technical oversight, and review of consultant's work; \$247,000 for surveying, project management, and project controls; and \$159,000 for remaining budget.

As described above, final design will be performed by Hazen and Sawyer and Metropolitan staff. Engineering Services' performance metric target range for final design with construction greater than \$3 million is 9 to 12 percent. For this project, the performance metric goal for final design is 11.8 percent of the total construction costs. The estimated cost of final design is \$710,000, which includes \$550,000 for Hazen and Sawyer and \$160,000 for Metropolitan staff. The estimated cost of construction for this project is anticipated to range from \$6 million to \$6.5 million.

Engineering Services (Hazen and Sawyer) – New Agreement

Hazen and Sawyer is recommended to provide engineering services for the design of the Cabazon Radial Gate Facility Upgrades. Hazen and Sawyer was prequalified to provide design services via Request for Qualifications No. 1215 and was selected for this project based on the firm's technical approach and its experience with similar projects. In addition, Hazen and Sawyer performed the study phase of the project and has in-depth familiarity with project requirements. Due to the straightforward nature of the design work, staff recommends moving forward with both preliminary and final design at this time.

The planned activities for Hazen and Sawyer include: (1) detailed design; (2) preparation of drawings and specifications; (3) development of construction cost estimates; and (4) technical support during the bidding period.

This action authorizes an agreement with Hazen and Sawyer for a not-to-exceed amount of \$890,000 to provide engineering design services for the Cabazon Radial Gate Facility. For this agreement, Metropolitan has established a Small Business Enterprise (SBE) participation level of 25 percent. Hazen and Sawyer has agreed to meet this level of participation. The planned subconsultant for this work is The Terrazas Group LLC.

Project No. 2- San Diego Canal Radial Gate Replacement – Preliminary and Final Design

Planned upgrades involve replacement of two radial gates located along the San Diego Canal. The motor actuators and electrical and control equipment for each gate will also be replaced. Design activities will be conducted with a hybrid effort of consultant and Metropolitan staff as described below. Metropolitan staff will perform design of the instrumentation and control systems for both sites, consultant oversight, overall project management, and advertisement and receipt of competitive bids.

A total of \$1.96 million is required for this work. Allocated funds include \$904,000 for design activities (includes \$319,000 for preliminary investigations, technical assessments, and hydraulic analysis, and \$585,000 for final design activities) by LEE + RO, Inc., under a new agreement, as described below, and a total of \$100,000 for value engineering and constructability review workshops. The workshops will be performed by a specialty firm under a contract planned to be executed under the General Manager's Administrative Code authority to award contracts of \$250,000 or less. Allocated funds for Metropolitan staff activities include \$460,000 for design, technical oversight and review of consultant's work; \$291,000 for surveying and site investigations, project management, and project controls; and \$205,000 for remaining budget.

As described above, final design will be performed by LEE + RO, Inc. and Metropolitan staff. Engineering Services' performance metric target range for final design with construction greater than \$3 million is 9 to 12 percent. For this project, the performance metric goal for final design is 9.8 percent of the total construction costs. The estimated cost of final design is \$835,000, which includes \$585,000 for LEE + RO, Inc. and \$250,000 for Metropolitan staff. The estimated cost of construction for this project is anticipated to range from \$8.5 million to 9 million.

Engineering Services (LEE + RO, Inc.) – New Agreement

LEE + RO, Inc. is recommended to provide engineering services for design of the San Diego Canal Radial Gates Replacement. LEE + RO, Inc. was prequalified via Request for Qualifications No. 1215. LEE + RO, Inc. was selected for this project based on the firm's technical approach, and experience with similar projects. LEE + RO, Inc. previously performed design for the CRA Radial Gate Replacement project; construction for this project was completed in 2021. Due to the straightforward nature of the design work, staff recommends moving forward with preliminary and final design at this time.

The planned activities for LEE + RO, Inc. include: (1) development of design criteria; (2) detailed design, preparation of plans, and specifications; (3) preparation of a fluid-structure interaction evaluation; (4) development of construction cost estimates; and (5) technical support during the bidding period.

This action authorizes an agreement with LEE + RO, Inc. for a not-to-exceed amount of \$904,000 to provide engineering design services for the San Diego Canal Radial Gate Replacement. For this agreement, Metropolitan has established an SBE participation level of 25 percent. LEE + RO, Inc. is an SBE firm and thus achieves 100 percent SBE participation. The planned subconsultant for this work is Flow Science, Inc.

Alternatives Considered

Alternatives considered for completing design activities for the Cabazon Radial Gate Facility Upgrades and the San Diego Canal Radial Gate Replacement included utilizing in-house Metropolitan staff to conduct this work. Metropolitan's staffing strategy for utilizing consultants and in-house Metropolitan staff has been: (1) to assess current work assignments for in-house staff to determine the potential availability of staff to conduct this work; and (2) to use project-specific professional services agreements when resource needs exceed available in-house staffing or require specialized technical expertise in order to provide a concentrated engineering effort over an extended duration.

This strategy relies on the assumption that in-house engineering staff will handle the baseload of work on capital projects, while professional services agreements are selectively utilized to handle projects above this baseload or where specialized needs are required. This strategy allows Metropolitan's staff to be strategically utilized on projects to best maintain key engineering competencies and to address projects with special needs or issues. After assessing the current workload for in-house staff, and the relative priority of this project, staff recommends utilizing a hybrid effort of consultant and Metropolitan staff for performance of this work. Metropolitan staff will perform design for the instrumentation and controls, while professional services agreements will be used for the remaining design efforts, such as mechanical, civil, and structural design. This approach will allow for completion of not only this project, but also other budgeted capital projects within their current schedules and ensure that the work is conducted in the most efficient manner possible.

Summary

This action authorizes agreements with: (1) Hazen and Sawyer for a not-to-exceed amount of \$890,000 to provide design services to improve the Cabazon Radial Gate Facility; and (2) LEE + RO, Inc. for a not-to-exceed amount of \$904,000 to provide design services to replace two radial gates along the San Diego Canal.

These projects have been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2020/21 capital expenditure plan. See **Attachment 1** for the Allocation of Funds and **Attachment 2** for the Location Map.

Project Milestones

December 2023 – Completion of final design of the San Diego Canal Radial Gate replacements

August 2023 – Completion of final design of the Cabazon Radial Gate Facility upgrades

Policy

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 43053, dated July 14, 1998 the Board appropriated a total of \$456,000 for design services to add a weir structure to the Cabazon Radial Gate Structure.

By Minute Item 51963, dated April 14, 2020 the Board appropriated a total of \$500 million for projects identified in the Capital Investment Plan for Fiscal Years 2020/21 and 2021/22.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is not defined as a project under CEQA because it involves only feasibility or planning studies for possible future actions which the Board has not approved, adopted or funded (Section 15262 of the State CEQA Guidelines). In addition, the proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines because the proposed action involves basic data collection and research activities which do not result in a serious or major disturbance to an environmental resource, which may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded (Class 6, Section 15306 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

- a. Authorize an agreement with Hazen and Sawyer for a not-to-exceed amount of \$890,000 for design to upgrade the Cabazon Radial Gate Facility.
- b. Authorize an agreement with LEE + RO, Inc. for a not-to-exceed amount of \$904,000 for design to replace radial gates along the San Diego Canal.

Fiscal Impact: \$3,700,000 in capital funds for design. Approximately \$300,000 in capital funds will be incurred in the current biennium and have been previously authorized. The remaining capital expenditures will be funded from future CIP budgets following board approval of those budgets.

Business Analysis: This option will allow for completion of not only this project, but also other budgeted capital projects within their current schedules.

Option #2

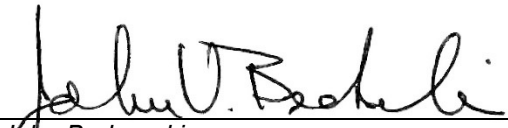
Do not proceed with the agreements at this time.

Fiscal Impact: None

Business Analysis: This option may delay the completion of design for the radial gates replacement projects. Further deterioration of any of the gates could lead to excessive leakage, more extensive repairs, and increased costs.

Staff Recommendation

Option #1

	2/14/2022
John Bednarski	Date
Manager/Chief Engineer	
Engineering Services	
	2/17/2022
Adel Hagekhalil	Date
General Manager	

Attachment 1 – Allocation of Funds**Attachment 2 – Location Map**

Ref# es12680423

Allocation of Funds for Cabazon Radial Gate Facility Upgrades

	Current Board Action (Mar. 2022)
Labor	
Studies & Investigations	\$ 239,000
Final Design	160,000
Owner Costs (Program mgmt., envir. planning)	237,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	10,000
Professional/Technical Services	-
Hazen and Sawyer	890,000
Constructability Review Consultant	45,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	159,000
Total	\$ 1,740,000

The total amount expended to date to improve the Cabazon Radial Gate Structure is approximately \$651,000. The future construction contract is estimated to range from \$6 million to \$6.5 million.

Allocation of Funds for San Diego Canal Radial Gates Replacement

	Current Board Action (Mar. 2022)
Labor	
Studies & Investigations	\$ 210,000
Final Design	250,000
Owner Costs (Program mgmt., envir. planning)	281,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	10,000
Professional/Technical Services	-
Lee & Ro, Inc.	904,000
Value Engineering Consultant	60,000
Constructability Review Consultant	40,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	205,000
Total	\$ 1,960,000

The total amount expended to date replace the San Diego Canal radial gates is approximately \$572,000. The future construction contract is estimated to range from \$8.5 million to \$9 million.

Distribution System

