



- **Board of Directors**
Engineering, Operations, and Technology Committee

2/13/2024 Board Meeting

7-3

Subject

Authorize an agreement with Stantec Consulting Services Inc. in an amount not to exceed \$1 million for preliminary design to rehabilitate the solids removal systems at the Joseph Jensen and Henry J. Mills Water Treatment Plants; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

Sedimentation is a critical unit process within the overall treatment scheme at Metropolitan's water treatment plants. Each of the sedimentation basins at the Joseph Jensen Water Treatment Plant (Jensen plant) and the Henry J. Mills Water Treatment Plant (Mills plant) rely on a system that conveys solids from the bottom of each basin to an adjacent solid handling facility at each plant. Critical components of these systems have exceeded their recommended operational life and require improvements and rehabilitations to improve operational functionality and reliability.

This action authorizes an agreement with Stantec Consulting Services Inc. (Stantec) in an amount not to exceed \$1 million to provide preliminary design services for the rehabilitation of the sedimentation basins solids removal systems at the Jensen and Mills plants. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the List of Subconsultants, and **Attachment 3** for the Location Map.

Proposed Action(s)/Recommendation(s) and Options

Staff Recommendation: Option #1

Option #1

Authorize an agreement with Stantec Consulting Services Inc. in an amount not to exceed \$1 million for preliminary design to rehabilitate the sedimentation basins solids removal systems at the Joseph Jensen and Henry J. Mills Water Treatment Plants.

Fiscal Impact: Expenditure of \$2.3 million in capital funds. Approximately \$100,000 in capital funds will be incurred in the current biennium and have been previously authorized. The remaining funds for this action will be accounted for in the Capital Investment Plan (CIP) budget for the next biennium following board approval of the budget.

Business Analysis: This option will improve the reliability and efficiency of the sedimentation basin's solids removal systems at the Mills and Jensen plants, maintain treated water quality, and enhance flexibility within the distribution system to meet member agency demands.

Option #2

Do not proceed with the project at this time.

Fiscal Impact: None

Business Analysis: Under this option, staff would continue to inspect and perform localized repairs to the sedimentation basin solids removal system equipment, as required. If damage to equipment can no longer be reliably repaired, the system will be removed from service until the equipment is replaced.

Alternatives Considered

Alternatives considered to complete the preliminary design for sedimentation basin solids removal systems at the Jensen and Mills plants included assessing the availability and capability of in-house Metropolitan staff to complete 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) utilize consultants for long-term rehabilitation projects, when resource needs exceed available in-house staffing or require specialized technical expertise.

Staff has determined that specialized technical expertise is required to complete the preliminary design for the replacement of the end-wheels and motor drive systems for the Jensen traveling bridges and the control upgrades required for the Mills traveling bridges. Metropolitan staff does not routinely perform detailed design of this equipment. After assessing the current workload for in-house staff, the relative priority of this project, and the specialized technical expertise required, staff recommends the use of a professional services agreement to complete the subject project. This approach will allow for the 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.

Applicable 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

Related Board Action(s)/Future Action(s)

By Minute Item 49704, dated March 11, 2014, the Board authorized preliminary design to rehabilitate the traveling bridges at Jensen Modules Nos. 2 and 3 at the Joseph Jensen Water Treatment Plant.

By Minute Item 52778, dated April 12, 2022, the Board appropriated a total of \$600 million for projects identified in the CIP for Fiscal Years 2022/2023 and 2023/2024.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action consists of basic data collection and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource. This 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. Accordingly, the proposed actions qualify for a Class 6 Categorical Exemptions (Class 6, Section 15306 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Details and Background

Background

Located in the community of Granada Hills, the Jensen plant was placed into service in 1972 and treats water from the West Branch of the State Water Project (SWP). Located within the city of Riverside, the Mills plant was placed into service in 1978, and treats water from the East Branch of the SWP and occasionally from Diamond Valley Lake. Both plants use a multi-step water treatment process consisting of pre-oxidation and disinfection with ozone, coagulation, flocculation, sedimentation, granular media filtration, and chlorine-ammonia disinfection. Following ozonation and initial chemical addition, water enters the plant's treatment basins to start the flocculation process, which is designed to gently mix small particles and colloids in the water so that they

agglomerate to form settleable or filterable particles that can be subsequently removed by sedimentation and filtration.

Sedimentation is a critical unit process within a conventional water treatment plant. The sedimentation basins at Jensen Modules Nos. 2 and 3 and Mills Modules Nos. 3 and 4 share a similar design approach and similar configuration. The Jensen basins are 104 feet wide by 425 feet long, and the Mills basins are 105 feet wide by 365 feet long. Each of these basins is equipped with a traveling bridge that spans the width of the basin and moves along its length. The bridges have wheels that ride on metal rails mounted on top of the basin walls. Each bridge carries a high-torque, slow-speed motor and drive system that moves the bridge, pumps, sweep arms, and other equipment necessary for the vacuum removal of settled solids from the sedimentation basin floor.

Jensen plant staff has reported a continuing series of misalignment problems with the traveling bridges at Modules Nos. 2 and 3. As the equipment continues to age, the frequency of misalignment problems is increasing in frequency, resulting in increased maintenance, reduced solids removal efficiency, and potentially reduced plant capacity as the basins are removed from service for repairs. In March 2014, Metropolitan's Board authorized preliminary design to rehabilitate the traveling bridges at Jensen Modules Nos. 2 and 3 sedimentation basins. To date, staff has reviewed corrective maintenance records and incidents, and performed assessments of the existing bridge mechanical and electrical components, instrumentation and control processes, and current solids removal efficiency. Specialized technical expertise is required to further evaluate replacement alternatives for the Jensen traveling bridges end-wheels and the existing motor drive system, and then conduct preliminary design of the recommended alternative.

At the Mills plant, solids removed from each sedimentation basin are discharged to the on-site retention basins. However, the discharge flow cannot be adequately controlled with existing equipment, and excessive amounts of water are often inadvertently siphoned to the retention basins. The excess water in the removed solids then causes increased solids drying time and reduced retention basin capacity. In recent years, staff performed a comprehensive assessment of critical components of the traveling bridges at Mills Modules No. 3 and 4, including their pump technology, electrical features, and instrumentation and control processes. The assessment recommended that the controls and equipment for the bridges be upgraded to enhance the efficiency of the solids removal process.

To enhance the solids removal efficiency at the Jensen and Mills plants, misalignment of the Jensen traveling bridges and upgrades to the control equipment of the Mills bridges need to be fully addressed. Staff recommends that the preliminary design to rehabilitate the Jensen and Mills basins solids removal systems be conducted by a specialized consultant under a new professional services agreement, which is the subject of this action.

Jensen and Mills Basins Solids Removal System Rehabilitation – Preliminary Design

Planned activities to complete preliminary design to rehabilitate the Jensen and Mills basins solids removal systems include: (1) detailed field inspections of existing equipment; (2) evaluation of industry standards and characteristics of recommended assemblies and replacement equipment; (3) development of final design criteria; (4) preparation of preliminary design drawings and three-dimensional models; (5) development of construction cost estimates and schedules for the upgraded basins solids removal system at each plant; and (6) preparation of preliminary design reports for each facility. These activities will be performed by Stantec as discussed below. Metropolitan staff will prepare the piping and instrumentation diagrams, perform overall project management and control system design, conduct surveys, provide technical oversight, and review the consultant's work.

A total of \$2.3 million is required for this work. Allocated funds include \$1 million for preliminary design activities by Stantec under a new agreement as described below. Allocated funds for Metropolitan staff activities include \$364,000 for the design services described above, and technical oversight and review of consultant's work; \$482,000 for project management, environmental support, and project controls; and \$246,000 for remaining budget. Other allocated funds include \$208,000 for value engineering and environmental services, which will be performed by specialty firms under contracts planned to be executed under the General Manager's Administrative Code authority. **Attachment 1** provides the allocation of the required funds. The total estimated cost to complete this project, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from \$43 million to \$47 million.

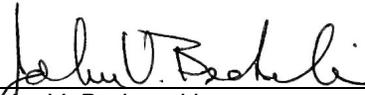
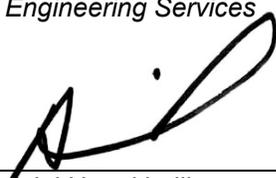
Engineering Services (Stantec Consulting Services Inc.) – New Agreement

Stantec is recommended to complete preliminary design for the rehabilitation of the basin solids removal systems at the Jensen and Mills plants, as described above. Stantec was selected through a competitive process under Request for Proposals No. 1355. Stantec was selected for this project based on their staff qualifications, experience in the design of similar projects, and technical approach and methodology.

This action authorizes an agreement with Stantec for a not-to-exceed amount of \$1 million to provide engineering services to complete preliminary design for the rehabilitation of the basin solids removal systems at the Jensen and Mills plants. For this agreement, Metropolitan has established a Small Business Enterprise participation level of 25 percent. Stantec has agreed to meet this level of participation. See **Attachment 2** for a listing of the subconsultants.

Project Milestone

May 2025 – Completion of preliminary design of Jensen and Mills basins solids removal system rehabilitation

	1/23/2024
_____ John V. Bednarski Manager/Chief Engineer Engineering Services	Date
	1/23/2024
_____ Adel Hagekhalil General Manager	Date

Attachment 1 – Allocation of Funds

Attachment 2 – Listing of Subconsultants

Attachment 3 – Location Map

Ref# es12694339

Allocation of Funds for Jensen and Mills Basins Solids Removal System Rehabilitation

	Current Board Action (Feb. 2024)
Labor	
Studies & Investigations	\$364,000
Final Design	-
Owner Costs (Program mgmt., envir. support)	482,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	-
Stantec Consulting Services Inc.	1,000,000
Value Engineering	160,000
Environmental Services	48,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	246,000
Total	\$ 2,300,000

The total amount expended to date to rehabilitate the Jensen and Mills basins solids removal systems is approximately \$750,000. The total estimated cost to complete this project, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from \$43 million to \$47 million.

The Metropolitan Water District of Southern California

**Subconsultants for Agreement with Stantec Consulting Services Inc.
Jensen and Mills Basins Solids Removal System Rehabilitation**

Subconsultant and Location	Service Category; Specialty
DRP Engineering Inc. Monterey Park, California	CAD and Drafting
Paul Hansen Engineering LLC El Segundo, California	Cost Estimating and Scheduling

Distribution System

