



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

7/11/2017 Board Meeting

8-3

Subject

Adopt CEQA determination and appropriate \$2 million; award \$13,856,000 contract to Kiewit Infrastructure West Co. to construct an advanced water treatment demonstration plant; and authorize increase of \$300,000 to an agreement with Stantec Consulting, Inc. (Appropriation No. 15493)

Executive Summary

This action awards a contract to construct an advanced water treatment demonstration plant that will be located on the grounds of the Los Angeles County Sanitation Districts' (Sanitation Districts') Joint Water Pollution Control Plant in Carson. The demonstration plant will generate information needed for regulatory acceptance and to optimize treatment processes for a potential regional recycled water system. This action also authorizes an increase in the amount of a professional services agreement to provide specialized technical support during construction of the plant.

Timing and Urgency

The potential regional recycled water program presents a significant opportunity to develop a new resource that would help to maintain groundwater recharge and storage within Metropolitan's service area. Despite the recent record rainfall in California, the unprecedented drought conditions during the past decade have resulted in significant reductions in local surface supplies and groundwater production, and have increased the need for recharge supplies to groundwater and surface reservoirs to improve their sustainable yields and operating integrity. The challenges of drought, climate change uncertainties, and the hydrologic variability of imported water supplies, demonstrate the value in accelerating the development of additional water resources.

The advanced water treatment demonstration plant will provide important information needed for the potential regional recycled water program, and will assist with regulatory approval of the proposed advanced treatment process. The 0.5 million gallon per day (mgd) demonstration plant will serve as a proof-of-concept for the treatment process that was previously investigated with a pilot plant from 2010 to 2012. The demonstration plant will confirm treatment costs and provide the basis for future technical recommendations concerning design, operation, and optimization of the full-scale regional recycled water program.

The demonstration project has been reviewed with Metropolitan's Capital Investment Plan prioritization criteria and is included in capital Appropriation No. 15493, the Demonstration-Scale Recycled Water Treatment Plant Appropriation. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2017/18.

Details

Background

In November 2015, Metropolitan's Board authorized staff to proceed with a demonstration project as an initial step in development of a potential regional recycled water program. The demonstration project consists of three components:

- Design, construction, and operation of an advanced water treatment demonstration plant. The plant will verify design criteria for a full-scale facility. Based on the source water quality, it will confirm and optimize the advanced treatment processes needed to purify water for groundwater recharge.
- Technical feasibility studies of the potential recycled water delivery system to identify the facilities, routing, capacity, environmental and regulatory requirements, phasing, and timing options to recharge various groundwater basins within Metropolitan's service area.
- A financial and economic evaluation to assess the viability of a full-scale regional program.

The Board action in November 2015 appropriated \$15 million for implementation of the advanced water treatment demonstration plant. The Board also authorized an agreement with County Sanitation District No. 2 of Los Angeles County, the administrative District for the Sanitation Districts, to establish the roles and responsibilities for both Metropolitan and the Sanitation Districts related to design, construction, and operation of the plant.

The advanced water treatment demonstration plant will be located at the Sanitation Districts' Joint Water Pollution Control Plant in Carson. The 0.5 mgd demonstration plant will test the effectiveness of various advanced water treatment processes for approximately one year to gather the required technical data for regulatory approval of the potential regional recycled water program. The demonstration plant will also establish design criteria and confirm treatment costs for a full-scale facility, and will support the program's public outreach effort. Based on the information generated by the plant, an engineering report will be prepared and submitted to the state Division of Drinking Water (DDW) for regulatory acceptance of the potential project and to support the ultimate permitting of a full-scale facility. In April 2017, staff submitted a technical memorandum to DDW describing the proposed demonstration testing strategy, and the approach for achieving regulatory acceptance of the proposed advanced water treatment processes. In June 2017, Metropolitan received a letter from DDW providing guidance on the proposed testing plan.

Staff has been actively pursuing grants and other outside funding for the potential program. In May 2017, Metropolitan received four \$75,000 planning grants from the State Water Resources Control Board (SWRCB), totaling \$300,000, under the Water Recycling Funding Program for groundwater studies. These grants will help offset a portion of the cost for the potential full-scale regional recycled water program. Staff has also submitted an application and anticipates receiving an additional \$1 million in grant funding from the SWRCB in late 2017 for construction of the advanced water treatment demonstration plant. The SWRCB has agreed that the technologies tested in the demonstration plant will potentially advance the current state-of-knowledge in the area of advanced water treatment. Additional state and federal grant funding opportunities will continue to be pursued for both the demonstration project and the potential full-scale regional recycled water program.

The total estimated cost to complete the advanced water treatment demonstration plant is \$17 million. Any grant funds received for the plant, such as the pending \$1 million grant noted above, will be used to defray Metropolitan's expenditures on the project.

The advanced water treatment demonstration plant represents a critical first step in development of the potential full-scale regional program. Final design of the demonstration plant has recently been completed, and staff recommends proceeding with construction at this time.

Advanced Water Treatment Demonstration Plant – Construction (\$2,000,000)

Specifications No. 1879 to construct an advanced water treatment demonstration plant was advertised for bids on March 21, 2017. As shown in [Attachment 2](#), five bids were received and opened on May 10, 2017. The low bid from Kiewit Infrastructure West Co. in the amount of \$13,856,000 complies with the requirements of the specifications. The four higher bids ranged from approximately \$15.3 million to \$16.6 million, while the engineer's estimate was \$11.8 million. Staff investigated the difference between the engineer's estimate and the low bid, and attributes the difference to several factors: (1) the complexity of construction associated with the instrumentation, controls, and electrical requirements for the demonstration plant; and (2) the specialized nature of the process equipment. For this contract, Metropolitan established a Small Business Enterprise (SBE)

participation level of at least 5 percent of the bid amount. Kiewit Infrastructure West Co. has committed to meet this level of participation. The subcontractors for this contract are listed in [Attachment 3](#).

This action awards a \$13,856,000 contract to Kiewit Infrastructure West Co. and appropriates \$2 million for construction of the advanced water treatment demonstration plant. All other funds required for design and construction of the plant were previously appropriated.

Construction management and inspection of the demonstration plant will be performed by Metropolitan staff. Some on-site and technical assistance may be provided by the Sanitation Districts, if mutually beneficial to both agencies. Specialized technical support will be provided by the project's designer, Stantec Consulting, Inc., as described below.

Amendment to Agreement with Stantec Consulting, Inc. (No funds required)

Final design of the advanced water treatment demonstration plant was performed by Stantec Consulting, Inc. (formerly MWH Americas, Inc.) under a board-authorized agreement. Stantec Consulting, Inc. was selected through a competitive process based on its technical qualifications, previous experience, and proposed implementation plan. As the engineer of record, Stantec Consulting, Inc. is recommended to provide technical support during construction which includes review of shop drawings, responding to requests for information from the contractor, and preparing record drawings. Amendment of the existing agreement with Stantec Consulting, Inc. is consistent with the planned approach for project implementation.

For this agreement, Metropolitan has established an SBE participation level of 10 percent. Stantec Consulting, Inc. has agreed to meet this level of participation. The planned subconsultants under this agreement are Carollo Engineers, Inc., Trussell Tech, Inc., DDB Engineering, Inc., Katz & Associates, and William R. Mills & Associates.

This action authorizes an increase of \$300,000 to the existing agreement with Stantec Consulting, Inc., for a new not-to-exceed total of \$1.5 million, to provide specialized technical support during construction of the advanced water treatment demonstration plant. No additional funds need to be appropriated for this agreement, as sufficient funds were previously appropriated.

Summary

This action appropriates \$2 million, awards a \$13,856,000 contract to Kiewit Infrastructure West Co. to construct the advanced water treatment demonstration plant, and authorizes an amendment to an existing agreement with Stantec Consulting, Inc. This project is included within capital Appropriation No. 15493, which was initiated in November 2015. With the present action, the total funding for Appropriation No. 15493 will increase from \$15 million to \$17 million.

The total estimated cost to complete the advanced water treatment demonstration plant, including the funds appropriated to date and current funds requested, is \$17 million. See [Attachment 1](#) for the Financial Statement, [Attachment 2](#) for the Abstract of Bids, [Attachment 3](#) for the List of Subcontractors for Low Bidder, and [Attachment 4](#) for the Location Map.

Project Milestone

November 2018 – Completion of construction of the advanced water treatment demonstration plant

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

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

Metropolitan Water District Administrative Code Section 8121(a): General Authority of the General Manager to Enter Contracts – Contracts over \$250,000

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

This project was previously determined to be categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The Board found this project to be exempt under Class 1, Class 3, Class 4, and Class 6 of the State CEQA Guidelines on November 10, 2015. A Notice of Exemption (NOE) was filed at that time and the statute of limitations has ended. With the current action, there are no substantial changes proposed to the project since the original NOE was filed. Hence, the previous environmental documentation previously prepared 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.

The CEQA determination is: Determine that the proposed action has been previously addressed in the 2015 NOE (Class 1, Section 15301, Class 3, Section 15303, Class 4, Section 15304 and Class 6, Section 15306 of the State CEQA Guidelines) and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination that the proposed action has been previously addressed in the 2015 NOE and that no further environmental analysis or documentation is required, and

- a. Appropriate \$2 million;
- b. Award \$13,856,000 contract to Kiewit Infrastructure West Co. to construct an advanced water treatment demonstration plant; and
- c. Authorize increase of \$300,000 to an agreement with Stantec Consulting, Inc., for a new not-to-exceed total of \$1.5 million, to provide specialized technical support.

Fiscal Impact: \$2 million of capital funds under Appropriation No. 15493

Business Analysis: The advanced water treatment demonstration plant will generate important information needed for regulatory acceptance and process optimization for a potential regional recycled water system.

Option #2

Do not proceed with the advanced water treatment demonstration plant at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to develop a significant new water resource for the region.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer
Engineering Services

6/20/2017
Date



Jeffrey Kightlinger
General Manager

6/28/2017
Date

- Attachment 1 – Financial Statement**
- Attachment 2 – Abstract of Bids**
- Attachment 3 – Subcontractors for Low Bidder**
- Attachment 4 – Location Map**

Ref# es12653708

Financial Statement for Demonstration-Scale Recycled Water Treatment Plant Appropriation

A breakdown of Board Action No. 2 for Appropriation No. 15493 for the advanced water treatment demonstration plant¹ is as follows:

	Previous Total Appropriated Amount² (Nov. 2015)	Current Board Action No. 2 (July 2017)	New Total Appropriated Amount²
Labor			
Owner Costs	\$ 491,000	\$ -	\$ 491,000
Submittals Review & Record Drwgs	48,000	-	48,000
Construction Inspection and Support	396,000	-	396,000
Metropolitan Force Construction	-	-	-
Materials and Supplies	-	-	-
Incidental Expenses	15,000	-	15,000
Professional/Technical Services	1,550,000	-	1,550,000
Contracts (Kiewit Infrastructure West)	11,856,000	2,000,000	13,856,000
Remaining Budget	644,000	-	644,000
Total	\$ 15,000,000	\$ 2,000,000	\$ 17,000,000

Funding Request

Appropriation Name:	Demonstration-Scale Recycled Water Treatment Plant		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15493	Board Action No.:	2
Requested Amount:	\$2,000,000	Budget Page No.:	N/A
Total Appropriated Amount:	\$17,000,000	Total Appropriation Estimate:	\$17,000,000

¹ The total amount expended to date on this project is approximately \$1.7 million.

² The distribution of funds reflects the final cost estimate for completion of the advanced water treatment demonstration plant.

The Metropolitan Water District of Southern California

Abstract of Bids Received on May 10, 2017 at 2:00 P.M.

Specifications No. 1879

Advanced Water Treatment Demonstration Plant

The work consists of furnishing and installing membrane bioreactors with biological treatment basins and membrane modules, a reverse osmosis system, an advanced oxidation system, and chemical storage and handling facilities; excavation, grading and paving; connections to existing utilities; and system start-up and commissioning.

Engineer's Estimate: \$11,800,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE¹
Kiewit Infrastructure West Co. Santa Fe Springs, CA	\$13,856,000	\$3,700,000	26.7%	Yes
J. F. Shea, Inc. Walnut, CA	\$15,303,100	-	-	-
W. M. Lyles Co. Temecula, CA	\$16,010,285	-	-	-
PCL Construction, Inc. Corona, CA	\$16,156,230	-	-	-
Balfour Beatty Infrastructure Irvine, CA	\$16,634,500	-	-	-

¹ SBE (Small Business Enterprise) participation level was established at 5 percent for this contract.

The Metropolitan Water District of Southern California

Subcontractors for Low Bidder

**Specifications No. 1879
Advanced Water Treatment Demonstration Plant**

Low Bidder: Kiewit Infrastructure West Co.

Subcontractor and Location
Calmex Engineering / Bloomington, CA
Murphy Industrial Coatings / Signal Hill, CA
CMC / Etiwanda, CA
LEED Electrical / Santa Fe Springs, CA

Distribution System

