The Metropolitan Water District of Southern California

Agenda

The mission of the Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

EOT Committee
D. Erdman, Chair
M. Camacho, Vice Chair
D. Alvarez
G. Bryant
B. Dennstedt
S. Faessel
L. Fong-Sakai
R. Lefevre
J. McMillan
C. Miller
J. Morris
M. Petersen
K. Seckel
T. Smith

Engineering, Operations, and Technology Committee

Meeting with Board of Directors *

July 8, 2024

9:00 a.m.

Monday, July 8, 2024 Meeting Schedule
09:00 a.m. EOT
11:30 a.m. Break
12:00 p.m. LEG
01:30 p.m. Legal
03:30 p.m. OWS

Agendas, live streaming, meeting schedules, and other board materials are available here: https://mwdh2o.legistar.com/Calendar.aspx. Written public comments received by 5:00 p.m. (business days) before the meeting is scheduled will be posted under the Submitted Items and Responses tab available here: https://mwdh2o.legistar.com/Legislation.aspx.

If you have technical difficulties with the live streaming page, a listen-only phone line is available at 1-877-853-5257; enter meeting ID: 862 4397 5848.

Members of the public may present their comments to the Board on matters within their jurisdiction as listed on the agenda via in-person or teleconference. To participate via teleconference 1-833-548-0276 and enter meeting ID: 815 2066 4276 or click https://us06web.zoom.us/j/81520664276?pwd=a1RTQWh6V3h3ckFhNmdsUWpKR1c2Zz09

MWD Headquarters Building • 700 N. Alameda Street • Los Angeles, CA 90012

* The Metropolitan Water District's meeting of this Committee is noticed as a joint committee meeting with the Board of Directors for the purpose of compliance with the Brown Act. Members of the Board who are not assigned to this Committee may participate as members of the Board, whether or not a quorum of the Board is present. In order to preserve the function of the committee as advisory to the Board, members of the Board who are not assigned to this Committee will not vote on matters before this Committee.

1. Opportunity for members of the public to address the committee on matters within the committee's jurisdiction (As required by Gov. Code Section 54954.3(a))

**** CONSENT CALENDAR ITEMS -- ACTION ****

US2-456

2. CONSENT CALENDAR OTHER ITEMS - ACTION

A. Approval of the Minutes of the Engineering, Operations, and Technology Committee for June 10, 2024 (Copies have been submitted to each Director, any additions, corrections, or omissions) **21-3538**

Attachments: 07082024 EOT 2A (06102024) Minutes

3. CONSENT CALENDAR ITEMS - ACTION

7-1 Award a $2,197,460 contract to J.F. Shea Construction Inc. for the replacement of a section of steel pipe on the Rialto Pipeline and rehabilitation of Service Connection CB-11; and authorize an increase of $150,000 to an existing agreement with Brown and Caldwell for a new not-to-exceed amount of $395,000 to provide technical support during construction; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA **21-3523**

Attachments: 07092024 EOT 7-1 B-L

7-2 Authorize an agreement with Arcadis, U.S. Inc., in an amount not to exceed $1.525 million for Data Management and Data Analytics Consulting & Implementation Services to implement Phase 1 of the Data Analytics project; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA **21-3525**

Attachments: 07092024 EOT 7-2 B-L

**** END OF CONSENT CALENDAR ITEMS ****

4. OTHER BOARD ITEMS - ACTION

8-1 Authorize a $600,000 increase to an existing agreement with J.F. Shea Construction Inc. for a new not to exceed amount of $10.4 million to purchase long-lead equipment for the Sepulveda Feeder Pump Stations Project; the General Manager has determined the proposed action is exempt or otherwise not subject to CEQA (This action is part of a series of projects that are being undertaken to improve the supply reliability for State Water Project dependent areas) **21-3524**

Attachments: 07092024 EOT 8-1 B-L

5. BOARD INFORMATION ITEMS

9-2 Colorado River Housing Community Planning Update **21-3536**

6. COMMITTEE ITEMS

a. Value Engineering Program Update **21-3539**

b. Metropolitan Headquarters Construction Update **21-3540**

c. Artificial Intelligence Introduction **21-3541**

d. Ensuring Compliance with Water Quality Regulations **21-3542**

7. MANAGEMENT ANNOUNCEMENTS AND HIGHLIGHTS

a. Engineering Services activities **21-3543**
Information Technology activities
Water System Operations activities

Attachments: 07082024 EOT 7a Engineering Services Report
07082024 EOT 7a Water System Operations Report

8. SUBCOMMITTEE REPORTS AND DISCUSSION

a. Discuss and provide direction to Subcommittee on Pure Water Southern California and Regional Conveyance **21-3544**

9. FOLLOW-UP ITEMS

NONE

10. FUTURE AGENDA ITEMS

11. ADJOURNMENT

NOTE: This committee reviews items and makes a recommendation for final action to the full Board of Directors. Final action will be taken by the Board of Directors. Committee agendas may be obtained on Metropolitan's Web site https://mwdh2o.legistar.com/Calendar.aspx. This committee will not take any final action that is binding on the Board, even when a quorum of the Board is present.

Writings relating to open session agenda items distributed to Directors less than 72 hours prior to a regular meeting are available for public inspection at Metropolitan's Headquarters Building and on Metropolitan's Web site https://mwdh2o.legistar.com/Calendar.aspx.

Requests for a disability-related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting should be made to the Board Executive Secretary in advance of the meeting to ensure availability of the requested service or accommodation.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

MINUTES

ENGINEERING, OPERATIONS & TECHNOLOGY COMMITTEE

June 10, 2024

Chair Erdman called the meeting to order at 1:30 p.m.

Members present: Directors Alvarez, Bryant, Camacho, Dennstedt, Erdman, Faessel, Fong-Sakai, Lefevre (AB 2449 "just cause"), McMillan, Miller, Morris, Petersen (entered after roll call), and Seckel.

Director Lefevre stated he is participating under AB 2449 "just cause" because he is a caretaker for a family member. He stated that he was alone in the room.

Members absent: Director Smith.

Other Board Members present: Directors Abdo, Ackerman, Armstrong, Cordero, De Jesus (teleconference posted location), Dick, Garza, Goldberg, Kurtz, Ramos (teleconference posted location) and Sutley.

Committee staff present: Arakelian, Chapman, Hagekhalil, Parsons, Upadhyay, and Wheeler.

1. OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE COMMITTEE ON MATTERS WITHIN THE COMMITTEE'S JURISDICTION (As required by Gov. Code Section 54954.3(a))

None

CONSENT CALENDAR ITEMS – ACTION

2. CONSENT CALENDAR OTHER ITEMS – ACTION

A. Approval of the Minutes of the Engineering, Operations, and Technology Committee for May 13, 2024 (Copies have been submitted to each Director, any additions, corrections, or omissions).

3. CONSENT CALENDAR ITEMS – ACTION

7-2 Subject: Authorize on-call agreements with AECOM, Black & Veatch, and Hazen and Sawyer in amounts not to exceed $3 million each, for a maximum of three years for engineering services; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA.

Presented by: No Presentation

Motion: Authorize on-call agreements with AECOM, Black & Veatch, and Hazen and Sawyer in amounts not to exceed $3 million each, for a maximum period of three years for engineering services.

No Director comments or questions.

7-3 Subject: Award a $897,469 contract to Exaro Technologies Corporation to construct a cathodic protection system along the Santa Monica Feeder; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA.

Presented by: No Presentation

Motion: Award an $897,469 contract to Exaro Technologies Corporation for the construction of a cathodic protection system on the Santa Monica Feeder.

No Director comments or questions.

Director Fong-Sakai recused herself on Item 7-2 as it involves authorizing an agreement with AECOM, and she currently owns AECOM stock.

Director Fong-Sakai abstained on Item 2A as she was not present at the May 13, 2024 meeting.

Director Morris made a motion seconded by Director Dennstedt to approve Items 2A, 7-2 and 7-3.

The vote was:

Ayes:	Directors Alvarez, Bryant, Camacho, Dennstedt, Erdman, Faessel, Fong-Sakai, Lefevre, McMillan, Miller, Morris, and Seckel
Noes:	None
Abstentions:	Director Fong-Sakai (Item 2A)
Not Voting:	Director Fong-Sakai (Item 7-2)
Absent:	Directors Petersen and Smith

The motion for Items 2A and 7-2 passed by a vote of 11 ayes, 0 noes, 1 abstention/1 not voting, and 2 absent.

The motion for Item 7-3 passed by a vote of 12 ayes, 0 noes, 0 abstentions, and 2 absent.

Director Lefevre stated that he was alone in the room whilst casting his vote.

**** END OF CONSENT CALENDAR ITEMS ****

4. OTHER BOARD ITEMS – ACTION

8-1 Subject: Approve and appropriate an increase of $25 million to the Capital Investment Plan for fiscal years 2022/23 and 2023/24 for a new biennium amount of $625 million; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA.

Presented by: Michael Thomas, Capital Program Management Unit Manager, Engineering Services Group

Motion: Approve and appropriate an increase of $25 million to the Capital Investment Plan for FYs 2022/23 and 2023/24 budget for a new biennium amount of $625 million.

The following Directors provided comments or asked questions:

1. Miller
2. Dennstedt

Staff responded to the Directors' questions and comments.

After completion of the presentation, Director Morris made a motion seconded by Director Bryant to approve item 8-1.

The vote was:

Ayes:	Directors Alvarez, Bryant, Camacho, Dennstedt, Erdman, Faessel, Fong-Sakai, Lefevre, McMillan, Miller, Morris, and Seckel
Noes:	None
Abstentions:	None
Absent:	Directors Peterson and Smith

The motion for Item 8-1 passed by a vote of 12 ayes, 0 noes, 0 abstentions, and 2 absent.

Director Lefevre stated that he was alone in the room whilst casting his vote.

5. BOARD INFORMATION ITEMS

None

6. COMMITTEE ITEMS

a. Subject: Capital Investment Plan quarterly report for period ending March 30, 2024.

Presented by: Jeff Nikolas, Senior Engineer, Engineering Services Group

Mr. Nikolas reported on the following:

- Capital Investment Plan for the third quarter of fiscal year 2023/24, covering January 2024 through March 2024.
- Summary of key actions and accomplishments detailed in the report provided in the board packet.

The following Directors provided comments or asked questions.

1. Miller
2. Erdman

Staff responded to the Directors' questions and comments.

Vice Chair Camacho left the room at 1:56 p.m.

b. Subject: Celebrating the History of Water Quality at Metropolitan

Presented by: Dr. Paul Rochelle, Water Quality Section Manager, Treatment & Water Quality Group

Dr. Rochelle presented the following:

- Formation of Metropolitan's Water Quality and Research Branch in response to the passage of the Safe Drinking Water Act in 1974.
- 50-Year history of Water Quality Section.
- Research, innovation, and new analytical tools in response to increasing regulations and expanded needs.

The following Director provided comments or asked questions.

1. Seckel
2. Erdman

Staff responded to the Directors' questions and comments.

Director Petersen entered the room at 2:12 p.m.

c. Subject: Report on U.S. Environmental Protection Agency Climate Pollution Reduction Grant Memorandum of Agreement with Coalition Members to fund proposed Targeted Zero-Emission Vehicles and Infrastructure for Water Utilities Program

Presented by: Elizabeth Crosson, Chief Sustainability, Resiliency & Innovation Officer
Rosa Castro, Grants & Research Unit Manager, Office of Sustainability, Resiliency & Innovation

Ms. Crosson and Ms. Castro reported on the following:

- Grant funding opportunity for zero-emission vehicles and infrastructure for water utilities.
- U.S. EPA Climate Pollution Reduction Grant overview, proposal, and program benefits
- Coalition with member agencies and sub-agencies, including Memorandum of Agreement.

The following Directors provided comments or asked questions.

1. Fong-Sakai
2. Miller
3. Dick

Staff responded to the Directors' questions and comments.

Vice Chair Camacho returned to the room at 2:31 p.m.

7. MANAGEMENT ANNOUNCEMENTS AND HIGHLIGHTS

a. Subject: Engineering Services
Information Technology
Water System Operations Activities

Presented by: Deven Upadhyay, Executive Officer/Assistant General Manager, Water Resources
Shane Chapman, Assistant General Manager, Operations

Mr. Upadhyay reported on the following:

- Correction of recent Sepulveda Feeder PCCP Rehabilitation (Reach 9) Board letter erroneously referencing RFP 1168 rather than RFQ 1305.
- 9th Annual Engineering Services and Water System Operations Partnering Workshop.
- 2024 Member Agency Engineering Managers Annual Workshop.
- CRA Overhead Crane Replacement Project.

Mr. Chapman reported on the following:

- Current operational conditions and shutdowns.
- Upcoming Member Agency Water Quality Managers Nitrification Workshop.

Water System Operations alignment into three new Groups: Conveyance and Distribution Group, Treatment and Water Quality Group, and Integrated Operations, Planning and Support Services Group.

8. SUBCOMMITTEE REPORTS AND DISCUSSION

a. Discuss and provide direction to Subcommittee on Pure Water Southern California and Regional Conveyance.

The following Director provided comments or asked questions.

1. McMillan

Staff responded to the Directors' questions and comments.

Director Petersen confirmed at 2:53 p.m.

9. FOLLOW-UP ITEMS

NONE

10. FUTURE AGENDA ITEMS

NONE

11. ADJOURNMENT

The next meeting will be on July 8, 2024.

Meeting adjourned at 2:54 p.m.

Dennis Erdman
Chair

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

7/9/2024 Board Meeting

7-1

Subject

Award a $2,197,460 contract to J.F. Shea Construction Inc. for the replacement of a section of steel pipe on the Rialto Pipeline and rehabilitation of Service Connection CB-11; and authorize an increase of $150,000 to an existing agreement with Brown and Caldwell for a new not-to-exceed amount of $395,000 to provide technical support during construction; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

The Rialto Pipeline supplies untreated water from the East Branch of the State Water Project to the F.E. Weymouth Water Treatment Plant (Weymouth plant). This project will replace a deteriorated 35-foot-long segment of 120-inch diameter steel pipe on the Rialto Pipeline and rehabilitate Service Connection CB-11. Inspections have shown that the mortar lining is failing, and the steel pipe is corroding within the portion to be replaced. These improvements will enhance the reliability of water deliveries along the Rialto Pipeline.

This action awards a $2,197,460 contract to J.F. Shea Construction Inc. for replacement of 35 feet of steel pipe on the Rialto Pipeline and rehabilitation of Service Connection CB-11 during a planned 2024/2025 shutdown. This action also increases the amount of an existing agreement with Brown and Caldwell to provide technical support during construction. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Abstract of Bids, **Attachment 3** for the Subcontractors for Low Bidder, and **Attachment 4** for the Location Map.

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

Staff Recommendation: Option #1

Option #1

a. Award a $2,197,460 contract to J.F. Shea Construction Inc. for replacement of steel pipe on the Rialto Pipeline and rehabilitation of Service Connection CB-11.
b. Authorize an increase of $150,000 to an existing agreement with Brown and Caldwell for a new not-to-exceed amount of $395,000 to provide construction support services.

Fiscal Impact: Expenditure of $3,600,000 in capital funds. All costs will be incurred in the current biennium and have been previously authorized.
Business Analysis: This option will improve the operational reliability of the Rialto Pipeline and reduce the risk of unplanned outages.

Option #2

Do not proceed with the project at this time.
Fiscal Impact: None
Business Analysis: This option will forego an opportunity to improve the operational reliability of the Rialto Pipeline, which may lead to costly urgent repairs.

Alternatives Considered

During the planning phase of this project, staff considered different options to address the failure of mortar lining and corrosion within an approximately 35-foot-long segment of the Rialto Pipeline. Initially staff considered performing weld repairs and cement mortar re-lining of the existing pipeline using an existing accessway that is located over 700 feet from the repair site. Staff estimated that repairing the pipeline from the existing accessway would require cutting steel pipe segments into small strips, transporting them through the pipe, and reassembling them inside the 120-inch diameter pipe. The selected option to excavate and replace the 35-foot segment of pipe in its entirety can be completed more efficiently and cost-effectively during a shorter shutdown than repairing the existing pipe.

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 53141, dated February 13, 2023, the Board authorized the procurement of a triple offset valve to rehabilitate the CB-11 service connection.

By Minute Item 53494, dated January 9, 2024, the Board authorized the procurement of plug valves to be installed on the Foothill and Rialto Feeder.

By Minute Item 53598, dated April 9, 2024, the Board appropriated a total of $636.5 million for projects identified in the Capital Investment Plan for Fiscal Years 2024/25 and 2025/26.

Summary of Outreach Completed

Metropolitan has coordinated with the City of Upland to obtain approved plan check drawings and a noise variance for the proposed construction activities.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is exempt from CEQA because the action consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use and no possibility of significantly impacting the physical environment. In addition, the proposed action consists of replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced.

CEQA determination for Option #2:

None required

Details and Background

Background

The Rialto Pipeline was built in 1972 and conveys untreated water from California Department of Water Resources' Devil Canyon Powerplant afterbays in San Bernardino to Metropolitan's Live Oak Reservoir in La Verne and Metropolitan's nearby San Dimas Power Plant. The pipeline extends approximately 30 miles, supplying water to the Weymouth plant and serving three member agencies through 11 service connections.

Approximately 16 miles of the Rialto Pipeline are prestressed concrete cylinder pipe, while the remaining 14 miles are welded steel pipe. The pipeline ranges in diameter from 96 inches to 120 inches.

A December 2020 inspection of the Rialto Pipeline revealed severe corrosion and localized pitting in an approximately 35-foot-long segment of a 120-inch diameter steel pipe located in the City of Upland. Temporary repairs were made, and this section of pipe is currently structurally sound. Replacement of this segment is recommended due to the extent of damage and to ensure the long-term integrity of the pipeline. Replacement of the section of pipe will also allow for the rehabilitation of Service Connection CB-11, which is located in the vicinity of the damaged section of pipe.

The turnout structure for Service Connection CB-11, located in the City of Rancho Cucamonga, was originally constructed as a dewatering pump well under the original Rialto Pipeline construction contract. In 2005, the turnout was converted to a 40 cubic feet per second service connection to deliver water to recharge groundwater basins, and a 24-inch diameter butterfly valve was installed. Since that conversion, this turnout can no longer be used as a dewatering location on the pipeline. The existing butterfly valve has a disk in the flow path that obstructs lowering a pump through the valve and into the pipeline for dewatering activities.

The Rialto Pipeline is typically shut down and dewatered every five to seven years for inspections and maintenance. During the planned shutdown, the valve at Service Connection CB-11 will be replaced with a full-port triple offset valve that will allow staff to lower a dewatering pump into the pipeline at this location. The use of this location to dewater the pipeline will shorten the overall duration of future shutdowns of the pipeline by approximately 24 hours. In addition to replacing the turnout valve, piping adjacent to the turnout valve and six blowoff valves on the feeder have deteriorated and will also be replaced during the shutdown.

Final design is now complete for replacement of the deteriorated section of steel pipe on the Rialto Pipeline and rehabilitation of Service Connection CB-11. Due to the long lead time for the manufacture of large-diameter valves, a procurement contract was awarded in February 2023 by Metropolitan's Board for the 20-inch isolation valve. The valve has been delivered and is currently being stored at Metropolitan's La Verne facility. Staff recommends the award of a construction contract at this time.

Rialto Pipeline Rehabilitation – Construction

The scope of the construction contract consists of replacing a 35-foot segment of 120-inch diameter steel pipe on the Rialto Pipeline, replacement of the isolation valve at Service Connection CB-11 with a Metropolitan-furnished triple offset ball valve, and replacement of corroded piping. Metropolitan forces will dewater the pipelines, replace six deteriorating blowoff valves, establish clearances, and return the system to service. The work will be conducted during a planned twelve-day shutdown scheduled for February 2025.

A total of $3,600,000 is allocated for this work. In addition to the contract amount, $150,000 will be allocated for technical support during construction by Brown and Caldwell as described below. Allocated funds for work by Metropolitan staff include: $530,000 for Metropolitan force shutdown activities; $207,000 for construction management and inspection; $177,000 for submittals review, responding to requests for information, and preparation of record drawings; $144,000 for contract administration, environmental monitoring support, project management, and other owner's costs; and $194,540 for remaining budget. **Attachment 1** provides the allocation of the required funds.

Award of Construction Contract (J.F. Shea Construction Inc.)

Specification No. 2058 to rehabilitate the Rialto Pipeline was advertised for bids on May 3, 2024. As shown in **Attachment 2**, two bids were received and opened on June 6, 2024. The low bid from J.F. Shea Construction Inc. in the amount of $2,197,460 complies with the requirements of the specifications. The other bid was $2,433,000, while the engineer's estimate for this project was approximately $2,650,000. For this contract, Metropolitan established a Small Business Enterprise participation level of at least 25 percent of the bid amount. J.F. Shea Construction Inc. has agreed to meet this level of participation. The subcontractors for this contract are listed in **Attachment 3**.

This action awards a $2,197,460 contract to J.F. Shea Construction Inc. for the replacement of a 35 ft section of steel pipe on the Rialto Pipeline and the replacement of piping and an isolation valve located at Service Connection CB-11. As described above, Metropolitan staff will perform construction management and inspection. Engineering Services' performance metric target range for construction management and inspection of projects with construction less than $3 million is 9 to 15 percent. For this project, the performance metric goal for inspection, which includes previously allocated fabrication inspection ($70,000), is 8.2 percent of the total construction cost ($3,382,460), which includes the construction contract ($2,197,460), Metropolitan-furnished equipment ($655,000), and Metropolitan force construction ($530,000).

Construction Support (Brown and Caldwell) – Amendment to Existing Agreement

This action authorizes an increase of $150,000 to an existing agreement with Brown and Caldwell for a new not-to-exceed total of $395,000. Brown and Caldwell was prequalified via Request for Qualification No. 1215 based on its experience with pipeline projects through urban areas. Brown and Caldwell provided engineering support services during the project's final design phase and is the engineer of record.

Brown and Caldwell will review contractor submittals and requests for information, review the asbestos control plan prior to submittal to the South Coast Air Quality Management District, and provide asbestos abatement monitoring services. The increase in the Brown and Caldwell agreement supplements the existing agreement's capacity to cover costs for the construction phase of the Rialto Pipeline Rehabilitation project.

This action authorizes a $150,000 amendment to an existing agreement with Brown and Caldwell for a new, not-to-exceed total of $395,000 for technical support during construction for the rehabilitation of the Rialto Pipeline. The subconsultant planned for this agreement includes Aurora Industrial Hygiene.

Project Milestone

March 2025 – Completion of construction

6/26/2024
Mai Hattar *Date*
Interim Chief Engineer
Engineering Services

6/26/2024
Deven Upadhyay *Date*
Interim General Manager

Attachment 1 – Allocation of Funds

Attachment 2 – Abstract of Bids

Attachment 3 – Subcontractors for Low Bidder

Attachment 4 – Location Map

Ref# es12699997

Allocation of Funds for Rialto Pipeline Rehabilitation

	Current Board Action (Jul. 2024)
Labor	
Studies & Investigations	$ -
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	144,000
Submittals Review & Record Drwgs.	177,000
Construction Inspection & Support	207,000
Metropolitan Force Construction	500,000
Materials & Supplies	-
Incidental Expenses	30,000
Professional/Technical Services	-
Brown and Caldwell	150,000
Right-of-Way	-
Equipment Use	-
Contracts	-
J.F. Shea Construction, Inc.	2,197,460
Remaining Budget	194,540
Total	**$ 3,600,000**

The amount expended to date on the Rialto Pipeline Rehabilitation project is approximately $1 million. The total estimated cost to complete this project, including the funds allocated for the work described in this action, is $4.6 million.

The Metropolitan Water District of Southern California

Abstract of Bids Received on June 6, 2024, at 2:00 P.M.

Specifications No. 2058

Rialto Pipeline Rehabilitation

The work consists of replacement of a 35-foot section of steel pipe on the Rialto Pipeline and the replacement of a pipe spool and isolation valve located at service connection CB-11 for the Rialto Pipeline Rehabilitation project.

Engineer's estimate: $2,650,000

Bidder and Location	Total	SBE $	SBE %	Met SBE[1]
J.F. Shea Construction Inc. Walnut, CA	**$2,197,460**	**550,000**	**25**	**Yes**
Mladen Buntich Construction Co. Inc Upland, CA	$2,433,000	-	-	-

[1] Small Business Enterprise (SBE) participation level established at 25 percent for this contract.

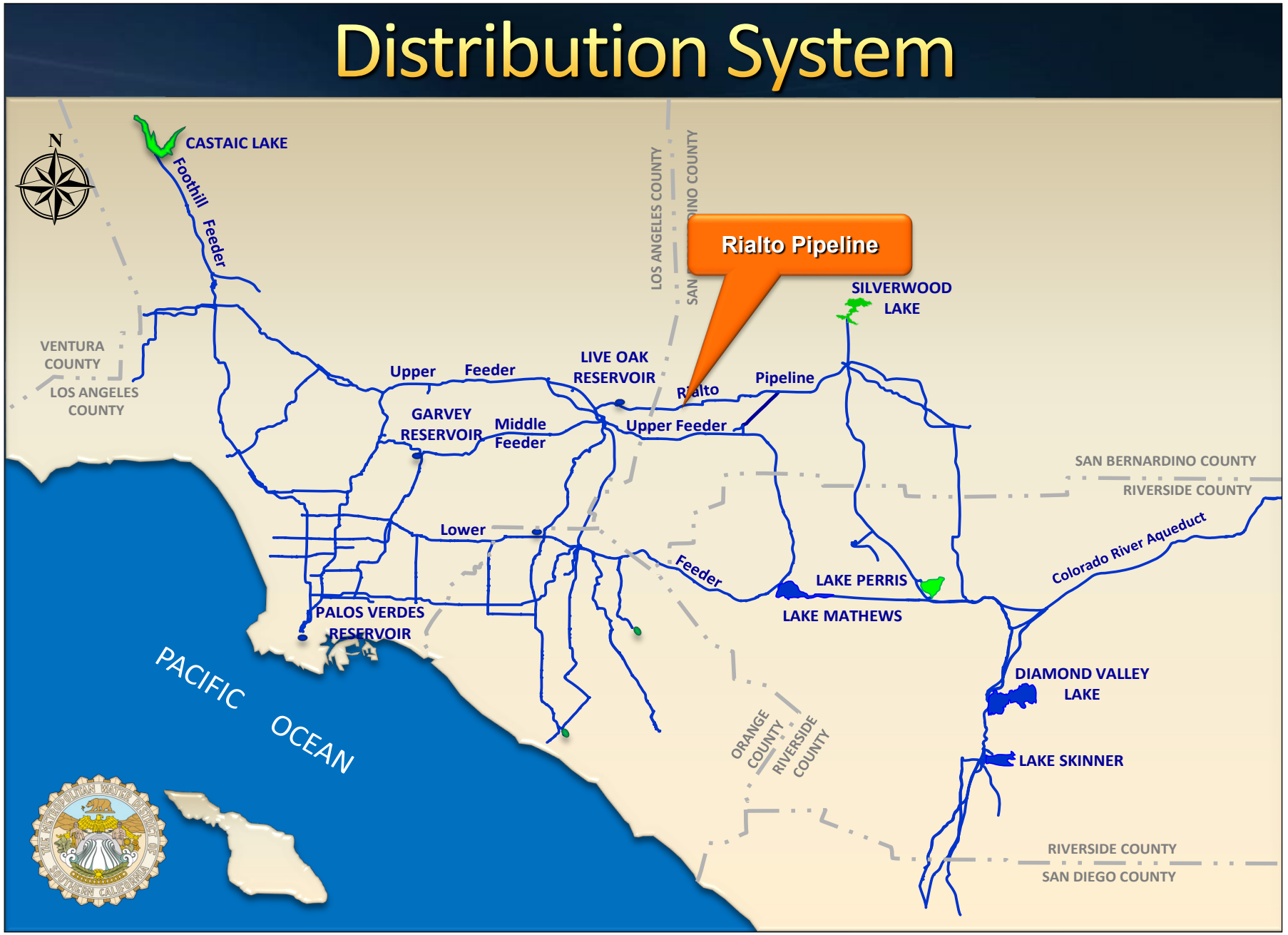
The Metropolitan Water District of Southern California

Subcontractors for Low Bidder

Specifications No. 2058
Rialto Pipeline Rehabilitation

Low bidder: J.F. Shea Construction Inc.

Subcontractor and Location	Service Category, Specialty
Western Paving Contractors Inc. Irwindale, CA	Paving
Environmental Construction Group Signal Hill, CA	Demolition/Abatement
Capital Industrial Coatings Huntington Beach, CA	Painting
Dean's Welding Temecula, CA	Furnish, Fitup & Weld Pipe


Distribution System
N
CASTAIC LAKE
Foothill Feeder
VENTURA COUNTY
LOS ANGELES COUNTY
LOS ANGELES COUNTY
SAN BERNARDINO COUNTY
Rialto Pipeline
SILVERWOOD LAKE
LIVE OAK RESERVOIR
Upper Feeder
Rialto Pipeline
GARVEY RESERVOIR
Middle Feeder
Upper Feeder
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY
Lower Feeder
Colorado River Aqueduct
LAKE PERRIS
LAKE MATHEWS
PALOS VERDES RESERVOIR
PACIFIC OCEAN
DIAMOND VALLEY LAKE
ORANGE COUNTY
RIVERSIDE COUNTY
LAKE SKINNER
RIVERSIDE COUNTY
SAN DIEGO COUNTY

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

7/9/2024 Board Meeting

7-2

Subject

Authorize an agreement with Arcadis, U.S. Inc., in an amount not to exceed $1.525 million for Data Management and Data Analytics Consulting & Implementation Services to implement Phase 1 of the Data Analytics project; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

This project will modernize Metropolitan's data analytics capabilities empowering staff (users) to access and analyze data to support decision-making and reporting more efficiently. Arcadis was chosen as the successful respondent to Request for Proposal (RFP) DH-1348, published on May 24, 2023. This project will establish a centralized standard data warehouse to facilitate efficient data-driven decision-making, reduce data quality issues and eliminate extensive manual report preparation.

During an extensive process, staff from all groups were interviewed, and 25 priority use cases were defined. A Data Analytics use case is the use of an automated processes to access multiple data sources to efficiently create useful information that informs decision-making and routine reporting. In addition to the design and implementation of the data warehouse that will support the 25 priority use cases, this first phase of the project will develop two of the 25 priority use cases including: (1) Developing an Automated Water Operations Dashboard and (2) Automating financial reporting activities.

Timing and Urgency

There is currently no centralized enterprise data warehouse that allows sharing and meaningful integration of data across the enterprise to serve quick business analytics for decision-makers and analytics users. Currently, significant staff time is dedicated to collecting data and generating reports every time certain data is requested because of the limited availability of a centralized enterprise data warehouse.

There are a few data marts currently managed by Metropolitan's Business Intelligence team which are used to generate some key analytics such as limited financials, project controls, water sales, etc. However, the data processes and data management techniques are outdated and need redesign, automation, and modernization due to the ever-increasing volume of business data and the introduction of new business-specific applications. Additionally, there are currently no fundamental data governance guidelines in place across the organization, at the enterprise level or at the business group level.

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

Staff Recommendation: Option #1

Option #1

Authorize an agreement with Arcadis, U.S. Inc., in an amount not to exceed $1.525 million for Data Management and Data Analytics Consulting & Implementation Services to implement Phase 1 of the Data Analytics project.

Fiscal Impact: Expenditures of $1.880 million in capital funds for 2024-2026

Business Analysis: This option would implement the prerequisite data management processes, including the design of the enterprise data warehouse and the development of reporting dashboards for two high-priority use cases.

Option #2

Authorize an agreement with Arcadis, U.S. Inc., in an amount not to exceed $945k for Data Management and Data Analytics Consulting & Implementation Services to implement a subset of Phase 1 of the Data Analytics project.

Fiscal Impact: Expenditures of $1.3 million in capital funds for 2024-2026

Business Analysis: This option would implement the prerequisite data management processes, including the design of the enterprise data warehouse and the development of reporting dashboards for one high-priority use case.

Option #3

Do nothing at this time

Fiscal Impact: No expenditures of capital funds

Business Analysis: Metropolitan will continue generating manual reports to support business decisions.

Alternatives Considered

Option #2 and Option #3

Applicable 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 11104: Delegation of Responsibilities

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

By Minute Item 52778, dated April 12, 2022, the Board appropriated a total of $600 million for projects identified in the Capital Investment Plan for Fiscal Years 2022/23 and 2023/2024.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is exempt from CEQA because there is no potential for the activity in question to have a significant effect on the environment. (State CEQA Guidelines Section 15061(b)(3).)

CEQA determination for Option #2 and Option #3:

None required

Details and Background

Background

Metropolitan has numerous data repositories within its enterprise systems, including Oracle Financials (EBS), Supervisory Control and Data Acquisition system, and Water Information System, among other enterprise applications.

Data from these systems should be optimized in order to be analyzed, retrieved, governed, stored, and shared across various business groups. As a prerequisite, there is a need to collect and integrate data from the applicable systems, design and develop new data marts, and develop an enterprise data warehouse which would facilitate implementation of various data analytics use cases, as well as enable self-service analytics and reporting.

RFP DH-1348 was issued for Data Management and Data Analytics Consulting & Implementation Services on May 24, 2023, and closed on July 7, 2023. Metropolitan received a total of nineteen responsive proposals from the competitive process. The Business Outreach participation goal designated for this solicitation was ten percent.

Proposals were reviewed by staff from the groups. After careful deliberation, the evaluation team chose Arcadis as the winner of the RFP. Arcadis has 30+ years of experience in delivering these types of services and is qualified as both a Small Business Enterprise and a Regional Business Enterprise. Based on their proposal, references, and experience, the RFP evaluation panel recommended this vendor be awarded all components of the work.

Scope of Work

The scope of work for this project includes:

- Analyze, review and assess the selected two use cases under Phase 1.
- Engage Metropolitan Stakeholders and business groups in multiple workshops/working sessions.
- Finalize and document requirements, data sources, and use case definitions.
- Build the technical foundation for the data analytics project to implement 25 use cases.
- Based on the updated data sources and other key use case components from these working sessions, design, architect and develop additional data marts that are not currently present but are needed for the selected use cases.
- Redesign the existing data marts to incorporate common/conformed facts and dimensions to allow the information to be combined with other data sources, upgrade data load processes, tune for performance, and enhance data integrity.
- Design, architect and implement the end-to-end solution for the selected use cases under Phase 1 (includes data models, automated data processes, and analytics dashboards).
- Provide knowledge transfer sessions for Metropolitan users.
- The technical foundation will result in reduced costs for the remaining use cases. Staff will return to the Board with a detailed plan for implementing the remaining priority use cases.

This action authorizes $1.880 million for the Data Management and Data Analytics Consulting and Implementation Services Project. The total project budget includes funds for awarding a new contract with Arcadis for $1.525 million for professional and technical services. Other costs included are $250k for internal labor costs by Metropolitan staff, including owner costs and project management, and $105k in contingency funds. Most of the costs will be used for building the data marts and integrations between systems in order to produce the data necessary for the two high-priority use cases. Less back-end development work will be required for the remainder of the 25 use cases. Upon completion of Phase I, future phases will be brought to the Board for authorization for the development of the remainder of the 25 use cases.

This project has been evaluated and recommended by Metropolitan's Capital Investment Plan Evaluation Team, and funds are available within the fiscal year 2022/24 capital expenditure plan. See **Attachment 1** for the Financial Statement.

6/24/2024
Charlie Eckstrom *Date*
Group Manager, Information Technology

6/28/2024
Deven Upadhyay *Date*
Interim General Manager

Attachment 1 – Financial Statement

Ref# IT12691559

Allocated Funds for Enterprise Data Analytics

	Current Board Action (July 2024)
Labor	
Studies & Investigations	$ -
Final Design	-
Owner Costs (Program mgmt.)	250,000
Submittals Review & Record Drwgs	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	1,525,000
Equipment Use	-
Contracts	-
Remaining Budget	105,000
Total	**$ 1,880,000**

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

7/9/2024 Board Meeting

8-1

Subject

Authorize a $600,000 increase to an existing agreement with J.F. Shea Construction Inc. for a new not-to-exceed amount of $10.4 million to purchase long-lead equipment for the Sepulveda Feeder Pump Stations Project; the General Manager has determined the proposed action is exempt or otherwise not subject to CEQA (This action is part of a series of projects that are being undertaken to improve the supply reliability for State Water Project-dependent areas)

Executive Summary

The Sepulveda Feeder pump stations consist of two new pump stations, one each located at the existing Venice and Sepulveda Pressure Control Facilities. The project will allow for water to be pumped from the Central Pool northward through the Sepulveda Feeder, thereby enabling greater deliveries of Colorado River Aqueduct (CRA) and Diamond Valley Lake (DVL) water supplies to State Water Project-dependent agencies in Metropolitan's western service area. The project will lessen the potential impacts of future low State Water Project (SWP) allocations on these agencies. The project utilizes progressive design-build (PDB) delivery to expedite the development of these pump stations.

An advantage of the PDB project delivery process is the ability to make early procurements of long-lead time equipment before the entire design of the facility is completed. The early procurement and delivery of critical equipment then allows for shortened construction/commissioning schedules for the overall project. The initial design of the pump stations under the Phase 1 PDB agreement with J.F. Shea Construction Inc. (J.F. Shea) has progressed to a point where electrical transformers for the two Sepulveda Feeder pump stations have been sized and bids received by the contractor. Procurement of this long-lead-time equipment by the PDB contractor is recommended at this time so that the planned 2026 operational date of the new facilities can be achieved.

This action authorizes a $600,000 increase to an existing agreement with J.F. Shea for a new not-to-exceed amount of $10.4 million to purchase long-lead equipment. See **Attachment 1** for the Allocation of Funds and **Attachment 2** for the Location Map.

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

Staff Recommendation: Option #1

Option #1

Authorize a $600,000 increase to an existing design-build services agreement with J.F. Shea Construction Inc. for a new not-to-exceed amount of $10.4 million to purchase long-lead equipment for the Sepulveda Feeder Pump Stations Project.

Fiscal Impact: Expenditure of $690,000 in capital funds. All costs will be incurred in the current biennium and have been previously authorized.

Business Analysis: The project will expand Metropolitan's ability to serve Diamond Valley Lake and Colorado River water to a portion of the distribution system that normally receives water from the State Water Project and will provide an alternate route to deliver treated water to the west service area during emergencies or when major feeders are removed from service for rehabilitation.

Option #2

Do not proceed with the procurement at this time.
Fiscal Impact: None
Business Analysis: This option would forego an opportunity for early procurement of long-lead equipment and may impact the project's ability to be ready for the planned 2026 completion.

Alternatives Considered

Alternatives for procuring long-lead equipment for the Sepulveda Feeder Pump Stations Project included using traditional procurement by Metropolitan staff in which drawings and specifications would be developed for advertisement and competitive bidding. It was determined that this traditional method would delay the completion of the project by two years when compared to having the PDB contractor procure equipment directly on a best-value basis. It is recommended that the PDB contractor procure the long-lead equipment identified in this board letter to expedite the project schedule.

Another alternative was to wait until the Guaranteed Maximum Price (GMP) was established and then start procuring equipment. The lead time for fabrication and delivery of some equipment can take up to 18 months, and the GMP will not be finalized until the fourth quarter of 2024. With this approach, there is a risk that equipment will not be delivered in time for the planned 2026 start-up and commissioning of the new facilities.

Staff determined that the recommended option to have the PDB contractor purchase long-lead equipment at this time will provide the earliest possible completion for the project.

Applicable Policy

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

Metropolitan Water District Administrative Code Section 8148: Alternative Project Delivery

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

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

By Minute Item 52703, dated February 8, 2022, the Board authorized the West Area Water Supply Reliability Improvements.

By Minute Item 53188, dated March 14, 2023, the Board authorized amendments to the Metropolitan Water District Administrative Code to provide for the implementation of new legislation authorizing the use of alternative project delivery methods.

By Minute Item 53377, dated September 12, 2023, the Board authorized an agreement for Phase 1 design-build services for the Sepulveda Feeder Pump Stations Project.

By Minute Item 53598, dated April 9, 2024, the Board appropriated a total of $636.6 million for projects identified in the Capital Investment Plan for Fiscal Years 2024/25 and 2025/26.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action does not constitute an approval of the project for the purposes of CEQA. Environmental review will be completed prior to any decision by the Board which commits Metropolitan to the project. (State CEQA Guidelines Section 15352.)

CEQA determination for Option #2:

None required

Details and Background

Background

Metropolitan's distribution system was initially constructed in the 1940s to deliver treated CRA supplies throughout its service area. The system was expanded in the 1970s to connect to and distribute SWP water supplies. The distribution system was designed to take advantage of the region's topography and primarily utilizes gravity to move water through the system. Completion of the SWP's West Branch allowed Metropolitan to serve water by gravity flow to areas further west than could be served by CRA water or stored water in DVL. While much of the service area benefits from access to both sources of supply and stored water in DVL, certain portions of the system can only receive limited DVL/CRA water due to inherent hydraulic limitations of the gravity-fed system. During multi-year droughts, as California recently experienced, SWP-dependent areas rely on stored SWP supplies, transfers, and exchange deliveries.

The west service area portion of Metropolitan's distribution system typically receives SWP water via the Jensen plant, Sepulveda Feeder, and connecting pipelines in the northwest portion of Metropolitan's system. During periods of low deliveries from the West Branch of the SWP, or when the Jensen plant is out of service, the west area can be served by the Weymouth plant through the East Valley Feeder and the Greg Avenue Pump Station. This backup system is limited to a maximum capacity of approximately 50 cubic feet per second (cfs). Throughout the recent statewide drought that ended in early 2023, the Greg Avenue Pump Station operated nearly full-time at its maximum capacity.

In February 2022, Metropolitan's Board approved planning efforts for the Sepulveda Feeder Pump Stations Project to increase delivery reliability in the west area. This project will enable Metropolitan to convey treated CRA and DVL water from its Central Pool northward along the Sepulveda Feeder to the west service area, supplementing deliveries from the Greg Avenue Pump Station. This concept requires two new pump stations along the Sepulveda Feeder: one each located adjacent to the existing Venice and Sepulveda Canyon Pressure Control Facilities. The project will be implemented in multiple stages. The initial stage of the project includes the construction of two pump stations capable of moving up to 30 cfs northward from the Central Pool to the west service area. However, once operational, the water supply benefits of the project to the west service area will total approximately 60 cfs of water supply as there will no longer be a need to send approximately 30 cfs of "operational water" southward on the Sepulveda Feeder from the Jensen plant during periods of low SWP demands. These operational water flows in the Sepulveda Feeder are currently necessary to maintain water quality during low SWP allocations. Therefore, once the initial phase of this project is complete, the operational flows from the Jensen plant into the Sepulveda Feeder can be diverted to the west service area.

The pump stations will not only enhance the reliability of water supplies in the west area in times of reduced SWP supplies, but they will increase overall system flexibility by enabling the Jensen exclusive area to receive flows when the Jensen plant is removed from service for maintenance and repairs. During the upcoming rehabilitation of prestressed concrete cylinder pipe (PCCP) portions of the Sepulveda Feeder, the pump stations will also aid in minimizing delivery impacts to member agencies as the PCCP lining work proceeds.

In September 2023, the Board authorized an agreement with J.F. Shea to begin Phase 1 of the PDB process. The agreement permits J.F. Shea, upon Metropolitan's approval, to commence procurement of required equipment during Phase 1, prior to agreement on the GMP. The design has progressed to a point where early work packages have been developed, and staff recommends procuring long-lead electrical transformers at this time to meet a planned 2026 shutdown. Since the not-to-exceed amount in the agreement does not include this equipment, an amendment to increase the existing not-to-exceed amount is necessary to allow for the procurement of equipment. It is anticipated that staff will return to the Board in late 2024 for additional amendments to the agreement to cover procurement of additional long-lead equipment and Phase 2 work, which includes completion of design and construction.

Sepulveda Feeder Pump Stations – PDB Phase 1 Agreement Amendment (J.F. Shea Construction Inc.)

The amended PDB agreement will enable J.F. Shea to procure electrical transformers for the two new pump stations at the Venice and Sepulveda Canyon PCS sites. These long-lead items can take up to 18 months to procure, and staff recommends procurement of this equipment at this time. J.F. Shea will lead the procurement effort, utilize a best-value competitive process to select the vendor, and store the equipment until needed for the Phase 2 construction work.

A total of $690,000 is allocated for this work. In addition to the agreement amendment amount, allocated funds include the following for Metropolitan staff: $24,000 for submittals review, technical support, and responding to manufacturer requests for information; and $66,000 for contract administration and project management. **Attachment 1** provides the allocation of the required funds. The total estimated cost to complete the work, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from $105 million to $115 million.

Proceeding with early procurement of the long-lead equipment at this time will enable the completion of the pump stations at the Venice and Sepulveda Canyon sites during a planned 2026 shutdown of the Sepulveda Feeder. This action authorizes a $600,000 increase to an existing agreement with J.F. Shea for a new not-to-exceed amount of $10.4 million to purchase long-lead equipment for the Sepulveda Feeder Pump Stations Project.

Project Milestones

November 2024 – Board award of a Phase 2 agreement for PDB services

December 2025 – Delivery of equipment

July 2026 – Completion of construction

6/24/2024
Mai Hattar *Date*
Interim Chief Engineer
Engineering Services

6/27/2024
Deven Upadhyay *Date*
Interim General Manager

Attachment 1 – Allocation of Funds

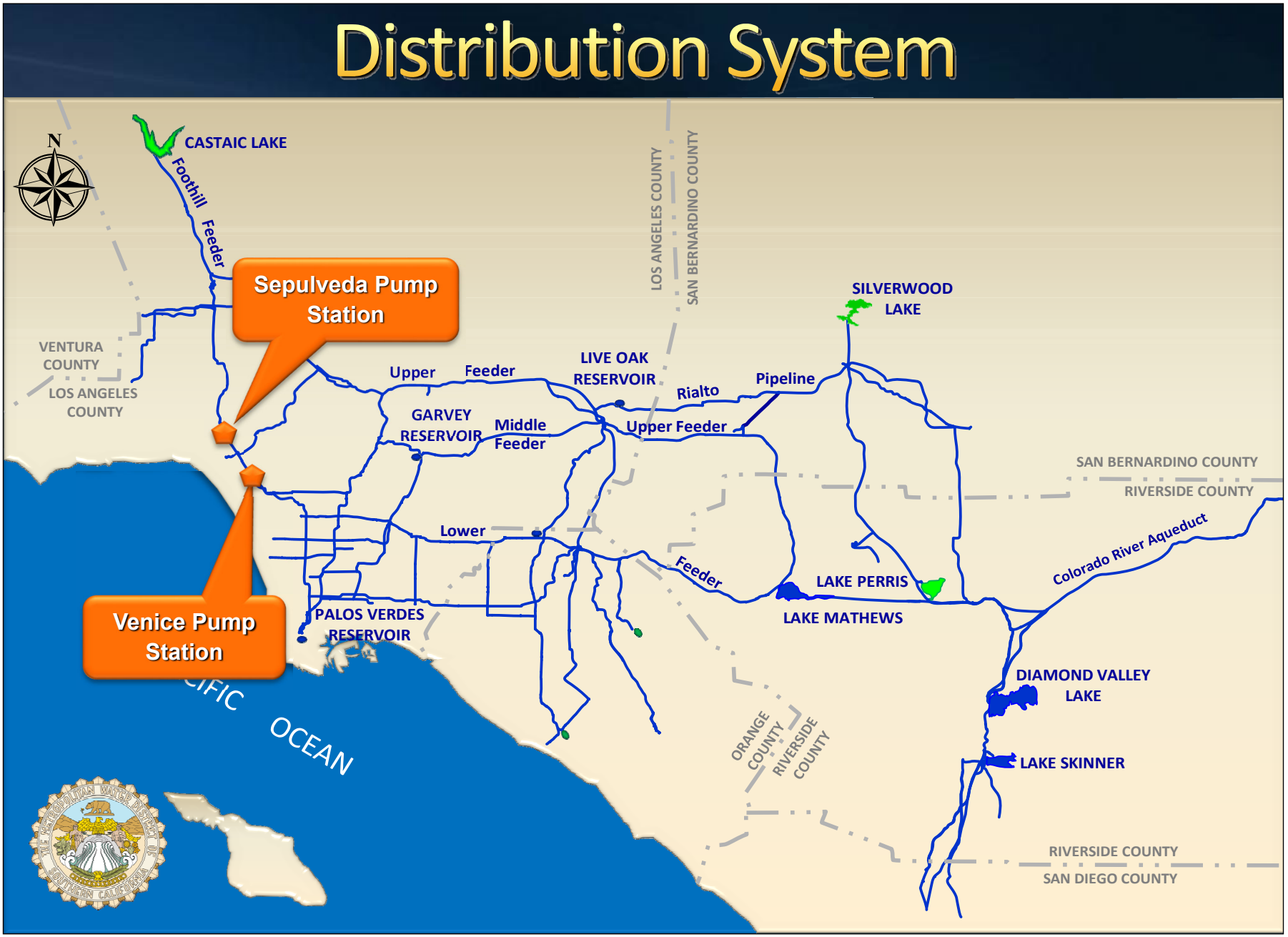
Attachment 2 – Location Map

Ref# es12700876

Allocation of Funds for Sepulveda Feeder Pump Stations

	Current Board Action (July 2024)
Labor	
Studies & Investigations	$ -
Final Design	
Owner Costs (Program mgmt.)	66,000
Submittals Review & Record Drwgs.	24,000
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	-
Right-of-Way	-
Equipment Use	-
Contracts	-
J.F. Shea Construction Inc.	600,000
Remaining Budget	-
Total	**$ 690,000**

The amount expended to date on the Sepulveda Feeder Pump Stations project is approximately $4.5 million. The total estimated cost to complete this project, including the funds allocated for the work described in this action is anticipated to range from $105 million to $115 million.


Distribution System
N
CASTAIC LAKE
Foothill Feeder
Sepulveda Pump Station
Venice Pump Station
VENTURA COUNTY
LOS ANGELES COUNTY
LOS ANGELES COUNTY
SAN BERNARDINO COUNTY
SILVERWOOD LAKE
LIVE OAK RESERVOIR
Upper Feeder
Rialto Pipeline
GARVEY RESERVOIR
Middle Feeder
Upper Feeder
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY
Lower Feeder
Colorado River Aqueduct
LAKE PERRIS
LAKE MATHEWS
PALOS VERDES RESERVOIR
DIAMOND VALLEY LAKE
ORANGE COUNTY
RIVERSIDE COUNTY
LAKE SKINNER
RIVERSIDE COUNTY
SAN DIEGO COUNTY
PACIFIC OCEAN

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Board Report

Engineering Services Group

- **ESG Monthly Activities Report for June 2024**

Summary

This monthly report provides a summary of Engineering Services Group activities for June 2024 in the following key areas:

- Colorado River Aqueduct (CRA) Program
- Dams & Reservoirs Program
- Distribution System Program
- Information Technology and Control Systems Program
- Additional Facilities and Systems Program
- Prestressed Concrete Cylinder Pipe (PCCP) Program
- Water Treatment Plants Program
- Pure Water Southern California
- Drought Mitigation – State Water Project Dependent Areas
- Value Engineering Program
- Community Outreach
- Mentoring Programs

Purpose

Informational

Attachments

Attachment 1: Detailed Report - Engineering Services Group's Monthly Activities for June 2024

Date of Report: 7/8/2024

Engineering Services Key Activities Report for June 2024

Engineering Services manages and executes projects within the Capital Investment Plan (CIP) to maintain infrastructure resiliency, ensure regulatory compliance, enhance sustainability, and provide flexibility in system operations to address uncertain water supply conditions. In addition, Engineering Services provides technical services to enhance reliable system operation and real property planning, valuation, acquisition, and disposition services to protect Metropolitan's assets. Engineering Services empowers our staff and partners with our business partners and the communities we serve to accomplish Metropolitan's mission.

Recent activities on CIP programs and other key engineering functions are described below.

Protect public health, the regional economy and Metropolitan's assets

Colorado River Aqueduct (CRA) Program

The CRA program is composed of CIP projects to replace or refurbish facilities and components of the CRA system to reliably convey water from the Colorado River to Southern California.

- CRA Storage Buildings—This project furnishes and installs storage buildings at Hinds, Eagle Mountain, and Iron Mountain pump plants. The contractor has mobilized at all three pumping plants, and concrete placement for the building footings and slabs is underway at all three plants. Construction is 33 percent complete and is scheduled to be complete in April 2026.
- Copper Basin Discharge—This project installs a new 54-inch fixed cone valve and actuator at the base of the dam, refurbishes a slide gate and the existing valve house, and upgrades all associated electrical systems and access ladders at the Copper Basin Reservoir. This project will also include the replacement of the access ladders at the Gene Wash Dam. Final design is complete, and the acquisition of environmental permits necessary to advertise the project is in progress.
- Eagle Mountain Utilities—This project will replace the existing potable water, non-potable water, and sewer lines at the Eagle Mountain Pump Plant housing village. Final design is 90 percent complete and is scheduled to be complete in October 2024.
- Hinds Discharge Valve Platform—This project will replace corroded steel members, such as ladders and floor grates at all nine discharge valve pits at the Hinds Pumping Plant. Preliminary design is 90 percent complete and is scheduled to be complete in October 2024.

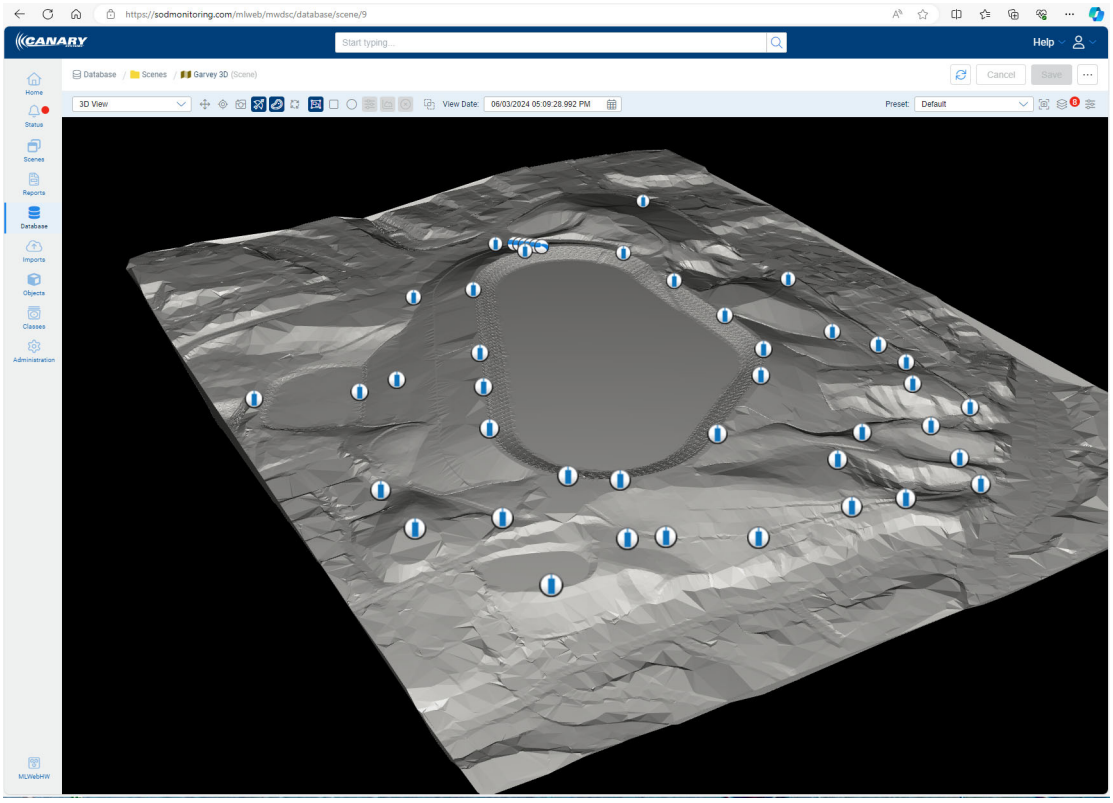
CRA Storage Buildings—Placing Concrete for Storage Building Slab at Eagle Mountain Pump Plant

Dams & Reservoirs Program

The Dams & Reservoirs Program is composed of CIP projects to upgrade or refurbish Metropolitan's dams, reservoirs, and appurtenant facilities to reliably meet water storage needs and regulatory compliance.

- Garvey Reservoir Dam Monitoring System Upgrade Project—This project was completed in June. New instrumentation was installed in 39 groundwater monitoring wells and three underdrain structures. A weather station and a seismic accelerograph were installed on the crest of the north embankment. The upgrade project also included a new automated data acquisition system and dashboard to allow for efficient monitoring of the performance of the reservoir liner and embankments.
- City of Monterey Park—Garvey Reservoir is located in the City of Monterey Park. In anticipation of upcoming projects at the reservoir site, Metropolitan staff provided a tour of the facilities to councilpersons from the City, along with city support staff.

New Automated Data Acquisition Equipment



Garvey Reservoir—New Monitoring System Dashboard

Bashar Sudah, Mai Hattar, Sam Mouawad and Lizeth Martinez with
Monterey Park City Councilmembers and city staff at Garvey Reservoir

Distribution System Program

The Distribution System Program is composed of CIP projects to replace, upgrade, or refurbish existing facilities within Metropolitan's distribution system, including pressure control structures, hydroelectric power plants, and pipelines, to reliably meet water demands.

- Foothill Hydroelectric Plant and Control Building Seismic Upgrade—This project strengthens the Foothill Hydroelectric Plant and Control Building to withstand a major earthquake and retain its functionality as an essential facility. The contractor completed the structural strengthening of the roof and continued installation of shoring soldier piles around the building. Construction is approximately 65 percent complete and is scheduled to be complete in December 2024.
- La Verne Shop Improvements—This project will complete the La Verne Shops building improvements and install Metropolitan-furnished shop equipment. The contractor continued installing electrical conduits for branch circuits, began installing reinforcing steel for the new blast booth foundation, continued installing maintenance holes for the new electrical ductbank, began installing concrete formwork for the blast booth pit walls, and began installing new underground natural gas lines. Construction is approximately 91 percent complete and is scheduled to be complete in August 2024.
- Service Connection OC-88 Chiller Replacement—This project replaces deteriorated cooling equipment including three chillers and two chilled water pumps that provide cooling for the pump station's pump motors and air conditioning system. The contractor has installed and commissioned the first new chiller and has begun demolition of the existing second chiller. Construction is approximately 70 percent complete and is scheduled to be complete in November 2024.
- Rialto Pipeline Rehabilitation—This project replaces a 35-foot long, 121.5-inch diameter section of welded steel pipe on the Rialto Pipeline in the city of Upland, where the mortar lining has failed. This project also replaces the deteriorating pipe spool and isolation valve at the CB-11 service connection. Final design is complete, and a board award of a construction contract is scheduled for July 2024.

- Perris Valley Pipeline—This project will complete construction of the Perris Valley Pipeline and provide service connections to Eastern and Western Municipal Water Districts. This project installs 3,000 linear feet of tunnel that crosses the Interstate 215 freeway. The contractor has excavated all four shafts and completed construction of two of the three tunnel reaches. Construction of the last tunnel reach, which crosses I-215 and the railroad tracks, is scheduled to commence in early July 2024. Overall construction is 60 percent complete and is scheduled to be complete in early 2025.

Perris Valley Pipeline—Hole-through TBM at second shaft

Information Technology and Control Systems Program

The Information Technology and Control Systems Program is composed of projects to replace, upgrade, or provide new facilities, software applications, or technology that will enhance cyber security, reliability, flexibility, and capability of information, communication, and control systems.

- SCADA System Upgrades—This project will upgrade Metropolitan's entire control system in incremental stages, spanning the Colorado River Aqueduct, the five water treatment plants, and the conveyance and distribution system. The first stage of this project replaces the control system at the Mills plant, starting with a pilot effort on one of the plant's remote terminal units to demonstrate the proposed technology and the consultant's approach to the plant and the overall project. Staff continued evaluating the results of the recently installed pilot equipment. The pilot phase is approximately 99 percent complete and is scheduled to be complete in July 2024. The system upgrades at the Mills plant are scheduled to be complete in October 2026.
- Gene Communications Upgrade—This project will construct a new fiber optic cable line from Parker Dam to Gene Pumping Plant. The new line is predominantly located within Metropolitan fee property on new power poles with a small underground portion of the alignment within the Bureau of Reclamation's property. The contractor has forwarded contract submittals to support the upcoming construction work. Construction is approximately 7 percent complete and is scheduled to be complete in October 2024.

Additional Facilities and Systems Program

The Additional Facilities and Systems Program is composed of CIP projects to refurbish, replace, upgrade, or provide new facilities and systems that support Metropolitan's business and district-wide operations.

- Headquarters Physical Security Upgrades—This project implements comprehensive security upgrades for the Metropolitan Headquarters Building. These upgrades are consistent with federally recommended best practices for government buildings. The work has been prioritized and staged to minimize rework and impacts on day-to-day operations within the building. Stage 1 work is complete and provides enhanced security related to perimeter windows and doors. Stage 2 work is complete and provides security system upgrades inside the building with a focus on the main entry rotunda area, boardroom, executive dining lounge, and security control room. Construction of Stage 3 improvements is underway and will provide security system upgrades around the perimeter of the building. The contractor continued installation of the ornamental fence around the courtyard and concrete placement for the fixed bollards. Construction is 85 percent complete and is scheduled to be complete in August 2024.
- Headquarters Building Fire Alarm and Smoke Control System Upgrades—This project upgrades the Metropolitan Headquarters Building fire life safety systems, which includes replacement of the fire detection and alarm system and HVAC system improvements for smoke control. The fire alarm and smoke control systems in Metropolitan's Headquarters Building provide detection, notification, and control of building functions so that occupants and visitors can safely exit in the event of a fire. The contractor continued final testing and sign-off of the fire alarm and smoke control systems by the LAFD and Los Angeles Department of Building and Safety. Construction is 99 percent complete and will be deemed complete upon final certification by these agencies.

Prestressed Concrete Cylinder Pipe (PCCP) Program

The PCCP Program is composed of CIP projects to refurbish or upgrade Metropolitan's PCCP feeders to maintain water deliveries without unplanned shutdowns.

- Allen-McColloch Pipeline Urgent PCCP Rehabilitation—This project will perform urgent relining of approximately three miles of distressed PCCP segments of the Allen-McColloch Pipeline (AMP) that were discovered during an inspection in 2023. Relining of the AMP is being performed in stages to minimize impacts to member agencies by installing a bulkhead and returning the northern portion of the pipeline to service while the southern portion remains under construction. Stage 1 includes carbon fiber reinforced polymer (CFRP) lining of four segments and steel relining of approximately 4,500 feet of pipeline. Construction of the CFRP and 2,100 feet of steel liner within the northern portion of the AMP was successfully completed in April 2024. The remaining 2,300 feet of steel liner installation in the southern portion is underway and will be completed by October 2024. The Stage 1 excavation of the site is complete, and steel pipe delivery is in progress. Stage 1 is approximately 50 percent complete. Stage 2 work consists of 12,600 feet of steel liner installation and appurtenant work. The Board awarded the Stage 2 contract in May 2024, and construction is planned to be complete by December 2024.
- Second Lower Feeder Valves—This procurement contract provides 13 conical plug valves for the Second Lower Feeder PCCP rehabilitation. Metropolitan's Board awarded a procurement contract for the valves in December 2018. Ten valves have been delivered as of January 2024. The eleventh and twelfth valves are scheduled to be shipped in the Fall of 2024. Fabrication of the final valve will be completed in late 2024 and delivery is projected for early 2025.
- Second Lower Feeder Reach 3B—This project installs steel lining and three conical plug valves (described above) along a 3.7-mile-long portion of the Second Lower Feeder that traverses the cities of Lomita, Los Angeles, and Torrance. The contractor is currently preparing for a shutdown in winter 2024. Construction is 49 percent complete and is scheduled to be complete in September 2025.
- Sepulveda Feeder Rehab Reach 1—This project rehabilitates PCCP segments of the Sepulveda Feeder. Reach 1 of the Sepulveda Feeder spans 4.7 miles through several cities including the cities of Hawthorne, Inglewood, and Los Angeles. Final design is approximately 75 percent complete and is scheduled to be complete in June 2025.

Allen-McColloch Pipeline Urgent Relining—New pipe liner installation

Water Treatment Plants Program

The Water Treatment Plants Program is composed of CIP projects to replace or refurbish facilities and components at Metropolitan's five water treatment plants and the chlorine unloading facility to continue to reliably meet treated water demands.

- Weymouth Basins 5–8 and Filter Building No. 2 Rehabilitation—This project rehabilitates major mechanical and structural components of Basins 5–8 and Filter Building No. 2 at the Weymouth plant, including the flocculation/sedimentation equipment, sludge pumps, baffle boards and walls, launders, inlet gates, and outlet drop gates. Rehabilitation work also includes seismic upgrades of basin walls and inlet channel, hazardous material abatement, and replacement of filter valves and actuators in Filter Building No. 2. The contractor completed all rehabilitation work in Basins 7 and 8, and continued construction activities in Basins 5 and 6 and Filter Building No. 2. Overall construction for this contract is approximately 65 percent complete and is scheduled to be complete in July 2025.
- Weymouth Administration Building Upgrades—This project upgrades the Weymouth Administration Building to withstand a significant earthquake. The planned upgrades include structural strengthening consistent with current seismic standards for essential facilities as well as accessibility and fire/life safety improvements, architectural modifications near the areas of structural upgrades, and improvements associated with the preservation of historic architectural features. Final design is approximately 50 percent complete and is scheduled to be complete in April 2025.

- Mills Electrical Upgrades—This project upgrades the electrical system with dual-power feeds to key process equipment to comply with current codes and industry practice, improve plant reliability, and enhance worker safety. Stage 1 construction is complete. Stage 2 improvements will add a second incoming 12 kV service from Riverside Public Utilities, reconfigure the existing 4160-volt switchgear, and replace the standby generator switchgear and the emergency generator programmable logic controller. The contractor completed installation of the fiber optic cable and electrical conduit installation and began bench testing of the switchgear doors inside the ORP Switchgear Building. Construction is approximately 65 percent complete and is scheduled to be complete in August 2025.
- Jensen Ozone PSUs Replacement—This project rehabilitates the ozone generation system at the Jensen plant by replacing four existing ozone power supply units (PSUs) and four sets of generator dielectrics. The project also makes required modifications to the associated electrical, control, and cooling water systems. Replacement of the PSUs had been staged to ensure continuous use of ozone during construction. The contractor has completed the replacement of all PSUs and the ozone generator dielectrics. Performance testing is underway. Construction is currently 99 percent and is scheduled to be complete in July 2024.

Weymouth Basins 5-8 and Filter Building No. 2 Rehabilitation—Weymouth Basin 5 Bridge Demolition

Pure Water Southern California

The Pure Water Southern California (PWSC) Program is a large regional recycled water project that will provide a new local source of safe and reliable drinking water for Southern California. PWSC currently focuses in four areas: demonstration testing, environmental planning, technical studies, and preliminary design of initial pipeline reaches. PWSC will produce 150 million gallons per day (mgd) of purified water from the Advanced Water Purification Facility (AWPF) in Carson, for indirect potable reuse (IPR) and direct potable reuse (DPR) applications, with the initial deliveries by 2030 and completion by 2035.

- Demonstration Testing: Demonstration testing began in 2019 with N-only tertiary membrane bioreactor (tMBR) testing completed in 2021 and secondary MBR (sMBR) testing completed in 2023. Modifications for tMBR optimization testing have been completed. The system is online and currently operating in the nitrification/denitrification mode.
- Environmental Planning: The Environmental Planning Phase began in 2020 with the goal of preparing an Environmental Impact Report (EIR) for approval in 2025. Various technical studies have been prepared to support the effort. The draft EIR is currently scheduled for publication in late 2024 or early 2025, with board certification of the document in the third quarter of 2025. Staff continues to review individual draft technical sections and prepare the remaining technical studies.
- Program Management: PWSC program management efforts lead the planning for the Program, including project controls, scheduling, budget development, risk management, coordination with Program partners and stakeholders, grants and funding, and preparation of various plans and studies.
    - Metropolitan hosted a grant award ceremony at the Napolitano Innovation Center (NIC) in Carson on May 28, 2024, for recipients of the U.S. Bureau of Reclamation (USBR) Large-Scale Water Recycling grant (LSWR), where the USBR announced they intend to grant Metropolitan $99,199,096 to advance the PWSC planning and design efforts. To receive funding, Metropolitan is required to contribute 75 percent in matching funds, or approximately $300 million, a portion of which would be met with contributing funds from program partners including the Los Angeles County Sanitation Districts (LACSD). Staff plans to provide an update to the Board in August and return to the Board in September to amend the agreement with LACSD and request authorization to adopt a resolution to receive and match the USBR grant funding.
    - A second grant application to the LSWR program was prepared and submitted to the USBR in May for up to $26 million dollars, or the difference between the initial grant request of $125 million and the amount awarded.
    - Staff from Metropolitan's and LACSD's Pure Water Southern California team participated in a well-attended panel session at this week's AWWA Annual Conference and Exposition in Anaheim. The focus of the panel was the risks and challenges with implementing a large

recycled water program. Bruce Chalmers gave an overview of the Program, Derek Zondervan from LACSD highlighted LACSD's work on nitrogen management processes, Gloria Lai-Bluml described the treatment and conveyance facilities, Heather Collins gave a strong argument for implementing DPR, and Rupam Soni provided background on Metropolitan's extensive public outreach efforts. Kim Wilson moderated the panel and handled questions from the audience.

  - The next PWSC/Regional Conveyance Subcommittee meeting will be in June 2024 and will include a Program update, grant status, and an agreement discussion.
  - Project management efforts include continuing development of program governance and applicable program management information systems. Technical studies are being prepared for support of a direct potable reuse white paper, treated water augmentation at the Diemer Water Treatment Plant, how to address PFAS compounds in the EIR, and development of program phasing options.

- Advanced Water Purification Facility: The AWPF will purify wastewater from LACSD's A.K Warren Water Resource Facility (Warren Facility) using membrane bioreactors (MBRs), reverse osmosis (RO), and ultraviolet/advanced oxidation (UV/AOP).
  - A draft conceptual facilities plan has been prepared to document key assumptions of AWPF components. The final draft plan is currently being prepared.
  - The progressive design build alternative delivery methodology will be employed to design and construct the treatment plant facilities.
  - A proposed Request for Qualifications (RFQ) from qualified firms to design and construct the AWPF is scheduled for the third quarter of 2024. Authorization of this procurement is planned for late 2024, pending acceptance of federal grant funds.
  - Metropolitan has finalized the Method of Services (MOS) study agreements with Southern California Edison (SCE) for SCE to evaluate SCE infrastructure needed to meet AWPF power requirements. The MOS investigation is anticipated to be complete later this year.
- Direct Potable Reuse (DPR): The California Division of Drinking Water (DDW) published the final DPR regulations in December 2023. Metropolitan has completed bench-scale testing to screen the potential DPR treatment processes that could be used for the program. Planning of pilot-scale testing is in progress. A technical workshop was held with the Independent Scientific Advisory Panel (ISAP) on March 5 and 6, 2024, to discuss bench-scale testing data and proposed DPR treatment train. A DPR white paper has been developed to establish Metropolitan's DPR implementation approach via the PWSC Program. Potential opportunities for treated water augmentation (TWA) are also investigated, and a technical memorandum is being prepared.

- Conveyance Pipeline System: The program's backbone conveyance system consists of over 40 miles of pipeline and two pump stations. Metropolitan's Board authorized consulting agreements for preliminary design of the first two pipeline reaches in March 2023, and both projects are on schedule to complete preliminary design by end of the year. A value engineering workshop was conducted for the design of the first two pipeline reaches during the week of May 20, 2024, with an independent panel of subject matter experts in the areas of pipeline and tunneling design and/or construction, geotechnical engineering, construction cost estimating, and traffic control. The results of the study will be reviewed by the project team to ensure that each design is providing the most value to Metropolitan.
    - Reach 1—This reach is approximately 6 miles long and runs through the city of Carson. Current work includes utility field investigation and geotechnical work, as well as the completion of the draft preliminary design report and associate engineering drawings. Preliminary design is 75 percent complete and is scheduled to be complete by Fall 2024.
    - Reach 2—This reach is approximately 8 miles long and runs through the cities of Long Beach and Lakewood. Current work includes utility field investigation and geotechnical work, as well as coordination with Caltrans and other permitting entities for the major tunnel crossing of the I-710 and Los Angeles River. Preliminary design is 30 percent complete and is scheduled to be complete by late 2024.

Bureau of Reclamation Grant Funding Event—
Bureau of Reclamation Commissioner Camille Touton (center)

Pure Water Southern California AWWA ACE 2024 Conference Presentation Pane—
Kimberly Wilson, Rupam Soni, Gloria Lai-Bluml, Heather Collins, Bruce Chalmers, and Derek Zondervan (LACSD) (left to right)

Drought Mitigation – State Water Project Dependent Areas

The Drought Mitigation—State Water Project (SWP) Dependent Areas Program is composed of CIP projects to replace, refurbish, upgrade, or construct new facilities, which are identified to mitigate the vulnerability experienced by specific member agencies that are affected during shortages of State Water Project supplies.

- Furnishing Butterfly Valves for the Wadsworth Bypass Pipeline, Inland Feeder-Rialto Intertie, and Badlands Tunnel Surge Tanks—This project furnishes three 84-inch diameter butterfly valves to improve the water supply reliability of the Rialto Pipeline. The fabrication of the three valves is complete, and they were shipped from the port of Osaka, Japan.
- Sepulveda Feeder Pumping Stations, Stage 1—This project installs new pump stations at the existing Venice and Sepulveda Canyon pressure control facilities, providing the ability to reverse flow in the Sepulveda Feeder and deliver 30 cubic feet per second from the Central Pool to portions of the Jensen plant-exclusive area. This project utilizes a progressive design-build (PDB) project delivery method. The Board awarded a Phase 1 PDB agreement in September 2023. The contractor and Metropolitan are coordinating with both Southern California Edison and the Los Angeles Department of Water and Power on upgrades to the incoming power service at both locations. Phase 1, which includes site investigation, design to the 70 percent level, environmental planning, and preparation of long-lead-item procurement documents, is scheduled to be complete in September 2024. Design work continues with the preliminary Basis of Design Report (BODR) being reviewed in June followed by the 30 percent design package review in July. A July board action is planned to amend the agreement for procurement of the transformers. A fall board action is planned for procurement of the remaining long-lead equipment.

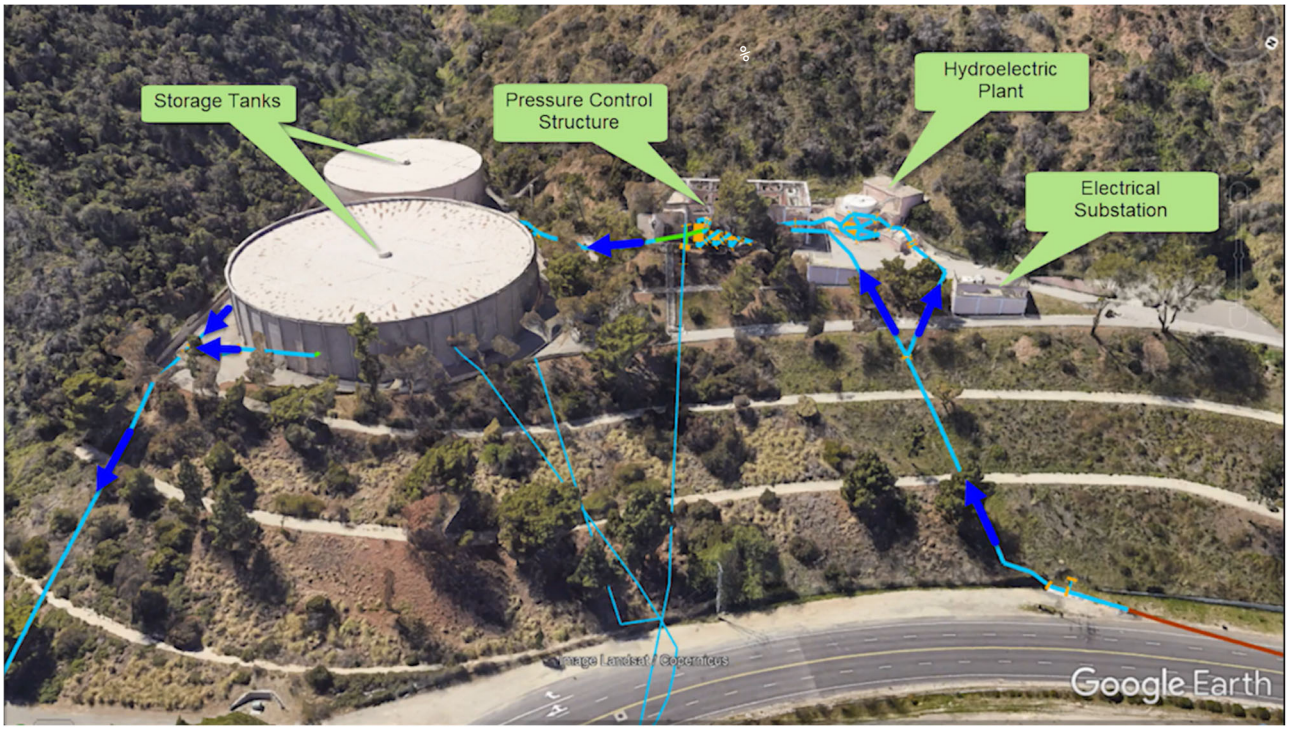
Sustain Metropolitan's mission with a strengthened business model

Value Engineering Program

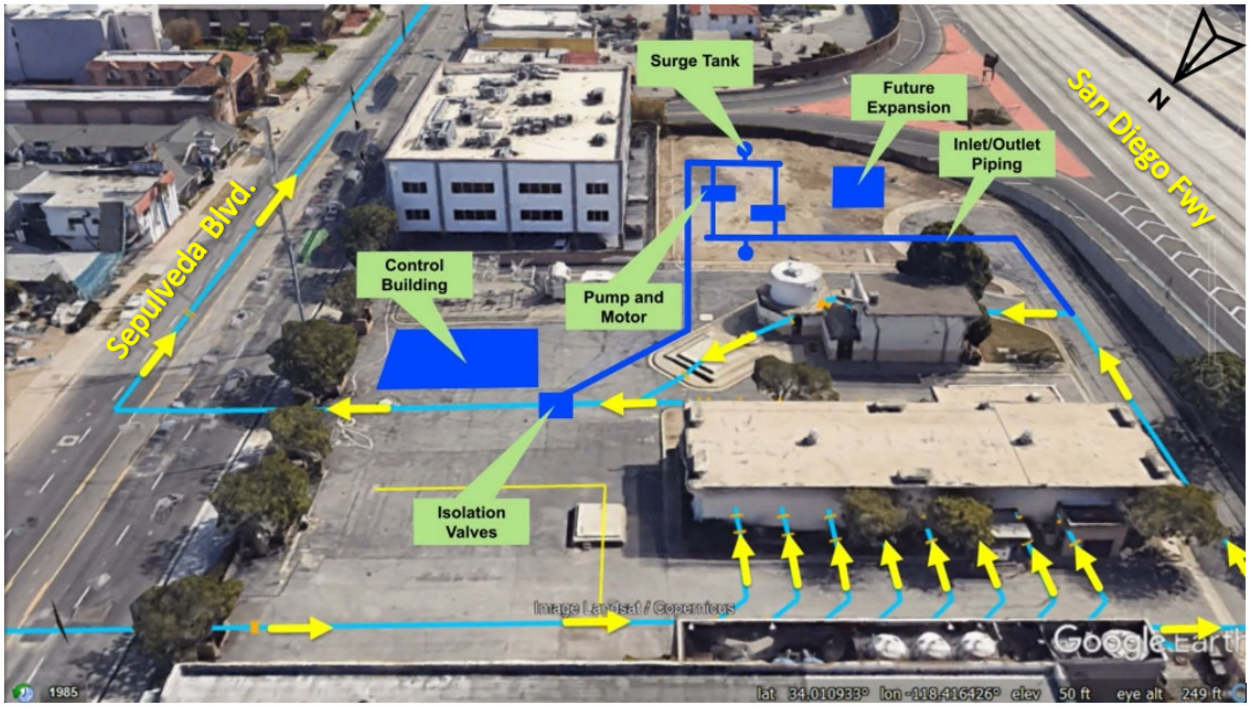
Engineering Services conducts a Value Engineering (VE) program to review capital projects and identify opportunities and alternatives to enhance project performance, optimize the use of funding for CIP projects, and demonstrate responsible use of public funds. The objective of the VE program is to improve the overall value of CIP projects by applying an industry-accepted assessment methodology to examine a project's function, design, equipment, material selections, and contracting approach. This comprehensive assessment is conducted at multiple stages in a project's life cycle.

Sepulveda Feeder Pump Stations—Value Engineering Workshop

A VE workshop for this project was completed in mid-June. The primary goal of the workshop was to develop a consensus on the selected design for the construction of pump stations at the Sepulveda Canyon and Venice Pressure Control Facilities. Once completed, this project will allow Metropolitan to deliver CRA supplies to the west service area during low SWP allocation periods. The four-day virtual workshop brought together Metropolitan staff and stakeholders, Metropolitan's progressive design build team, Value Engineering professionals, and consultant subject matter experts. The workshop focused on system hydraulics, project risks related to high-cost and long-lead items, O&M impacts, and options to expand pump station capacity in the future.



Sepulveda Canyon Pressure Control Structure Facility



Venice Pressure Control Structure Facility

Michael Thomas, Engineering Unit Manager, Presenting at IE Construction Network Event

Partner with interested parties and the communities we serve

Community Outreach

Engineering staff presented Metropolitan's upcoming contract opportunities and an update on Metropolitan's CIP at an Inland Empire construction networking event in Pomona, which was attended by contractors and design professionals. Eastern Municipal, Inland Empire Utilities Agency, and Western Water also presented their upcoming opportunities.

Empower the workforce and promote diversity, equity, and inclusion

Mentoring Programs

Engineering Services Mentoring Program—Flash Mentoring Event

The Engineering Services Mentoring Program held its 12th annual flash mentoring event in May. A cross-section of six Metropolitan Group and Section Managers—Francisco Becerra, John Bednarski, Mickey Chaudhuri, Liz Crosson, Mai Hattar, and Silvia Perez—participated in virtual speed mentoring sessions. There were approximately 50 participants consisting of mentees and mentors. The next mentoring module focuses on motivation and will include individual motivational assessments.

Engineering's Virtual Flash Mentoring Event

Engineering Management Mentoring Program

With nine individuals promoted to team manager this past year, Engineering launched a spinoff of its core mentoring program to focus on new engineering managers. The Engineering Management Mentoring Program seeks to provide increased support for these highly motivated leaders by helping these new managers navigate their new roles, optimally use resources to implement their goals, navigate the balance between leading people and performing technical work, and effectively lead and manage to achieve Engineering's and Metropolitan's mission. The mentees and mentors were matched to provide the new managers with an additional resource. A kickoff meeting and a subsequent module on HR transactions and the evaluation process were held. The next modules will include the Engineering Services Group's expectations, culture, and approaches to facilitating effective technical decision-making.

Engineering Management Mentoring Program Kickoff Meeting

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Board Report

Water System Operations Group

- **Operations Monthly Activities for June 2024**

Summary

This monthly report for the Water System Operations Group provides a summary of activities for June 2024 in the following key areas:

- Enhance Workforce Safety
- Ensure Accurate Billing and Support Revenue Generation
- Provide Reliable Water Deliveries and Manage Storage
- Develop New Supplies and Optimize System Flexibility
- Manage Power Resources and Energy Use in a Sustainable Manner
- Protect Source Waters and Ensure Water Quality Compliance
- Optimize Water Treatment and Distribution
- Protect Infrastructure and Optimize Maintenance
- Optimize Asset and Maintenance Management
- Prepare for Future Legislation and Regulations
- Advance Education and Outreach Initiatives
- Engage with Member Agencies and Other Stakeholders on Technical Matters

Purpose

Informational by the Water System Operations Group on a summary of key activities for the month of June 2024

Attachments

Attachment 1: Detailed Report – Water System Operations Group's Monthly Activities for June 2024

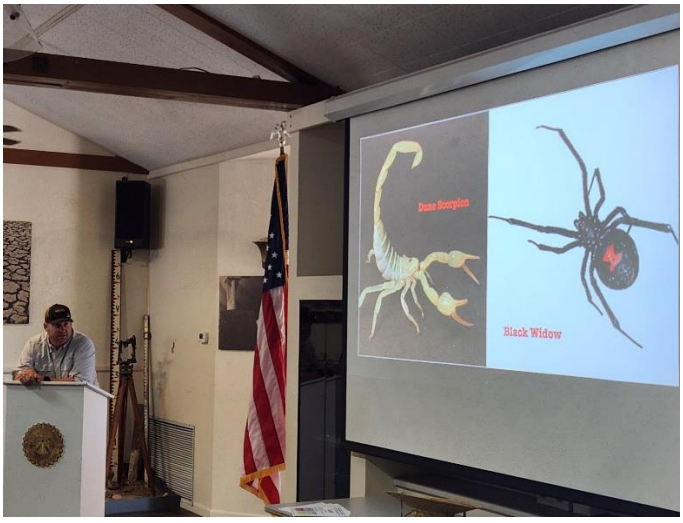
Date of Report: July 09, 2024

Water System Operations

Core Business Objectives

Enhance Workforce Safety

The Desert section held an all-hands employee safety event at the Gene Camp facility. This event featured speakers and presentations from the Safety Committee, SRT, Security, Environmental, Employee Relations, and Desert management. Demonstrations of new tools and warehouse items were available for review, and the teams were able to spend time collaborating across disciplines in a relaxed, safety-focused environment.



Staff participated in the June Safety Month Event at Gene Camp

Ensure Accurate Billing and Support Revenue Generation

Operations staff is working with Finance, Information Technology, and a consultant team to develop the WINS 2.0 application that will eventually replace the current application for invoicing member agencies' monthly water transactions. Staff has been testing the Automatic Meter Reading and Meter Maintenance modules and has been working with the project group to review various components. This month, workshops began for the new Water Programs module. The Water Programs module, along with the application's Rules Engine, will allow for an efficient setup and invoicing of water delivered under Metropolitan's various water programs.

Provide Reliable Water Deliveries and Manage Storage

Metropolitan member agency water deliveries were 101,600 acre-feet (AF) for June with an average of 3,400 AF per day, which was about 300 AF per day higher than in May. Metropolitan continued delivering water to the Cyclic and Conjunctive Use Programs. Treated water deliveries were 6,300 AF higher than in May for a total of 58,500 AF, or 58 percent of total deliveries for the month. The Colorado River Aqueduct (CRA) pumped a total of 96,000 AF in June. State Water Project (SWP) imports averaged 2,000 AF per day, totaling about 60,000 AF for the month. The target SWP blend is 25 percent for Weymouth, Diemer, and Skinner plants.

Metropolitan expects to have sufficient SWP and Colorado River supplies to meet demands in 2024. Water continues to be managed according to Water Surplus and Drought Management (WSDM) principles and operational objectives with an emphasis to position SWP supplies to meet future demands in the SWP-dependent area. Metropolitan has resumed deliveries to Desert Water Agency and Coachella Valley Water District because of the improved supply conditions. Metropolitan is continuing to minimize the use of Table A supplies this year to improve SWP carryover for next year.

Develop New Supplies and Optimize System Flexibility

During June, staff continued baseline monitoring for tertiary membrane bioreactor (MBR) nitrification-denitrification testing at the Pure Water Southern California Napolitano Innovation Center (NIC) demonstration plant and maintained stable MBR and reverse osmosis (RO) process performance at target operating conditions. The carbon dosing system was optimized to achieve MBR filtrate nitrate targets. Comprehensive monitoring at multiple process locations was completed to characterize performance of the treatment train. Metropolitan's SCADA personnel enhanced the plant's control system to enable automatic flow variation, aiming for a more precise simulation of full-scale operations while initiating stress tests on the bioreactors.

Electrical panel maintenance (left) and preparing ultrafilters for microbial sampling of the MBRs (right) at the NIC demonstration facility

Manage Power Resources and Energy Use in a Sustainable Manner

Energy markets in June trended upward because of the onset of summer weather but still reflect relatively plentiful natural gas supplies. Natural gas prices remained in the $2–5 per Metric Million British Thermal Unit (MMBtu) range. Renewable generation remained strong; however, increasing load caused overall electric power prices to increase, resulting in fewer hours with negative electricity prices. Careful scheduling of CRA load and Metropolitan's USBR generation allocations at Hoover and Parker did allow for several weeks in June with a net refund from the California ISO for CRA energy.

The California ISO hosted its annual summer readiness meeting on May 23, 2024. The CAISO reported that the system has added significant bulk energy storage (BES) capacity since the previous year, and they do not anticipate a significant risk of electric system disruptions for the upcoming summer operating season. Metropolitan resumed reporting weekly to the CAISO on the amount and duration of short-term load reduction available by reducing pumping at Gene and Intake pumping plants.

The CRA resumed full operation following the March shutdown, averaging about 7 pumps. Overall CRA pumping costs are trending below budget. The CRA energy cost budget for fiscal year 2023/24 is $82.6 million; the current cost forecast for the year is significantly lower at $41.7 million, because of reduced pumping earlier in the year and lower prices than forecast throughout the year. As we begin the next fiscal year, monthly costs are forecast to increase as energy prices increase for the summer.

Protect Source Waters and Ensure Water Quality Compliance

Metropolitan complied with all water quality regulations and primary drinking water standards during May 2024.

During the week of June 10, an external auditor assessed operations at the Water Quality Laboratory for compliance with drinking water laboratory accreditation requirements, ahead of a formal regulatory audit later in the year. The assessment showed that the laboratory conforms to required standards and is well-prepared for the regulatory audit. The auditor also provided mandatory annual Ethics and Data Integrity training for Water Quality staff.

Optimize Water Treatment and Distribution

The SWP target blend entering the Weymouth and Diemer plants was 25 percent during June. The SWP target blend entering Lake Skinner was 25 percent, while the blend leaving Lake Skinner was close to 20 percent. Flow-weighted running annual averages for total dissolved solids from April 2023 through March 2024 for Metropolitan's treatment plants capable of receiving a blend of supplies from the SWP and the CRA were 358, 445, and 466 mg/L for the Weymouth, Diemer, and Skinner plants, respectively.

Staff recently completed building a prototype sodium hypochlorite injection skid that can be deployed in multiple areas when chlorine boosting is needed to combat nitrification within the distribution system. This is a project that was done quickly to be able to be deployed this summer to assist in preventing potential nitrification events, if needed. The effort took coordination between Water Quality, Engineering, and C&D to design and construct. The need for such a system presented itself during last year's significant nitrification event.

Sodium hypochlorite injection skid prototype to manage nitrification in the distribution system

Staff recently installed a new 250 cfs flow orifice plate at the USG-03 service connection, located within the San Gabriel Mountains in Azusa Canyon. The USG-03 service connection branches from the 186-inch diameter Glendora Tunnel that receives raw water from the San Dimas PCS and the Rialto Pipeline downstream of East Branch of the SWP. For this service connection, flows are adjusted using manually installed orifice plates ranging from 25 cfs to 400 cfs. The newly installed 1-inch-thick stainless-steel orifice plate is approximately 54-inches in diameter and will control flow at about 250 cfs, in between the next closest orifice plates that control flow to about 200 cfs or 300 cfs. This new plate improves the ability to match downstream spreading basin capacity to maximize groundwater storage and help protect an SWP-Dependent Area from future droughts.

250 cfs flow orifice plate

Staff installing orifice plate at USG-03 service connection

Operations staff worked with Engineering to complete initial functional testing of two ozone generators at the Jensen plant. This work is part of refurbishment of the ozone generator system and power supply units and will provide Jensen with reliable ozone generation for the next 20 years. The generators will now undergo extended duration testing over the next month to further verify system operations.

Contractor installing new dielectrics for the ozone generators at the Jensen plant

Weymouth electricians replaced two Adjustable Speed Drive (ASD) controllers on the plant's return pumps in Filter Building No. 2. The ASDs were installed in the early 2000s and have recently been experiencing operational failures. The pumps are a critical part of the plant process to recycle the process water and return it to the ozone contactors. Electricians installed the ASDs and connected the wiring. Working with mechanical and control system staff, the work was completed in less than four hours, which allowed the plant to continue operation without any impacts to water quality or capacity.

Terminating cables and programming the new ASDs to control pumps at the Weymouth plant

Protect Infrastructure and Optimize Maintenance

The Desert section requires a specialized workforce to cover a large and geographically remote area of operations. One of these specialized crews is the Powerline Maintenance Team. This team performs high-voltage electrical work on a regular basis to maintain the Desert's legacy electrical transmission and distribution systems. Overhead electrical systems were repaired at Gene pumping plant as they can become damaged by regularly occurring high winds. Staff is trained and well equipped to make these critical repairs in the field.

Staff performing repairs to an overhead electrical bank at Gene Camp

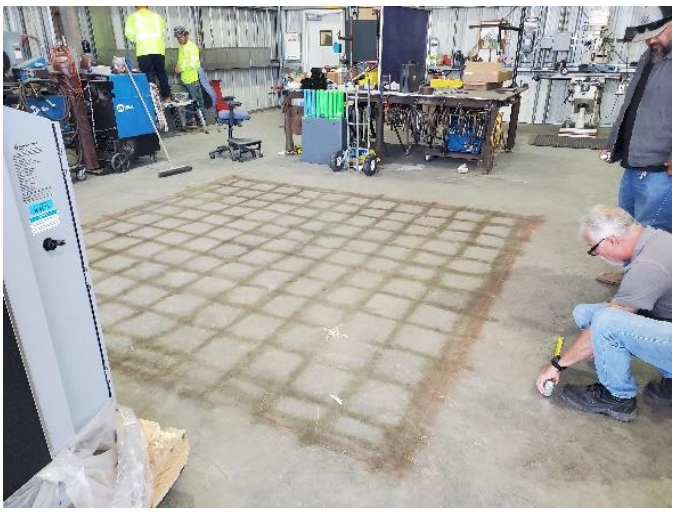
The Desert Aqueduct Maintenance Team completed excavation and grading for a new crane pad at Gene pumping plant. This project was important to gain better access for crane work at the Copper Basin outlet structure. The new pad will allow cranes to be parked closer to the work zone and require less reach for heavy lifts while repairing gates, motors, and other components.

New crane pad for better access to perform maintenance

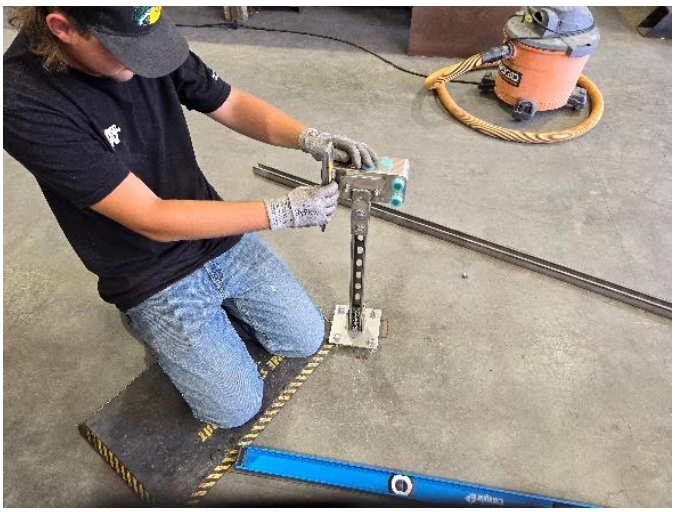
At the Gene pumping plant, disassembly and repair of the Unit 1 Discharge Valve continues. Before disassembly, an isolator fitting was installed to secure Unit 1 from the delivery line. Staff removed and stored the oil for the actuating mechanism and teardown. Assessment and refurbishment efforts are now in progress.

Discharge Valve repair at Gene pumping plant

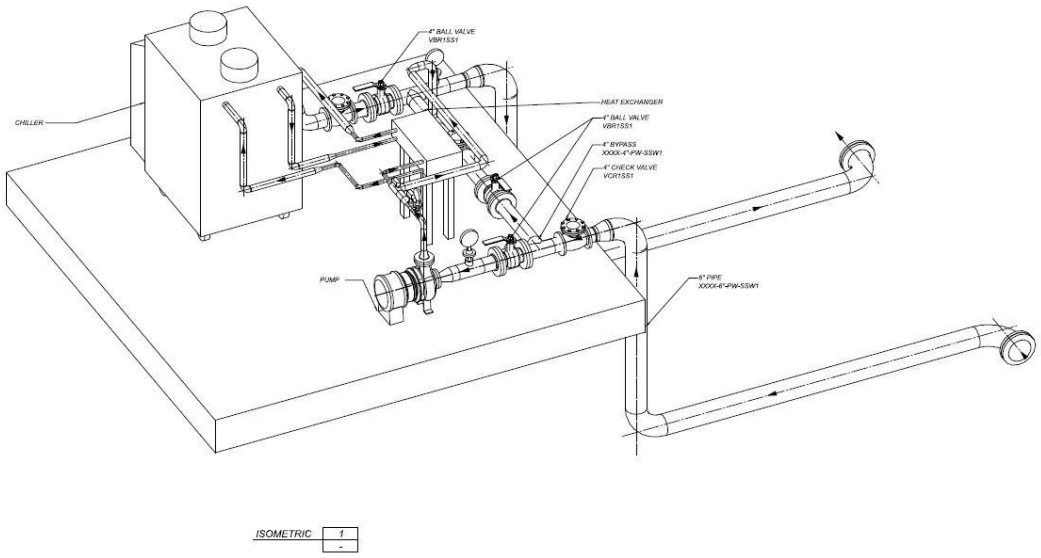
Staff began construction of the Eagle Mountain Village Domestic Water Loop Chiller System. The piping, controls, and components are being pre-assembled at the Lake Mathews facility to improve the efficiency of the system's installation. The system is designed to lower the temperature of the water main loop, which provides potable water to the residences at the facility.



Pad and rebar layout at Lake Mathews shop



Staff assembling chiller components



Chiller Loop Design

The Detention Peak communications site is a vital connection point to ensure reliable communications between the Desert facilities in the east and the Operations Control Center in the west. Redundant systems allow for backup in the event of a unit malfunctioning. One rectifier system recently failed, placing the Detention Peak communication site at a single point of failure. Staff successfully replaced the faulty rectifier system with a new unit, allowing the communication site to maintain the necessary redundancy.

Staff installing the new rectifier system at the Detention Peak communications site

Staff repaired a leaking 2-inch natural gas leak at the Weymouth plant. Staff reported a possible gas leak near the Ozone building. Staff completed the investigation and discovered that a steel riser had excessive corrosion, causing a small natural gas leak.

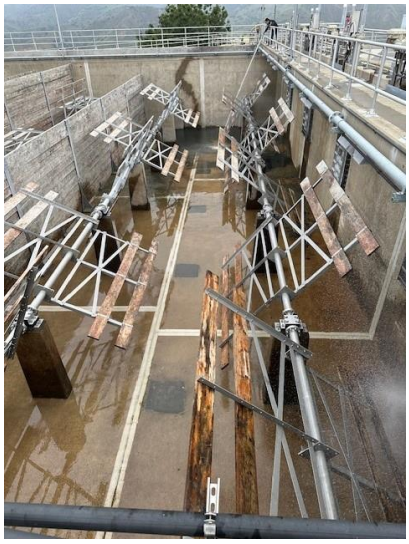
Staff excavating a gas line using Hydro-Excavation to prevent damage to utilities at the Weymouth plant

The La Verne Shops received a request to refurbish another 42-inch sleeve valve for the Auld Valley Pressure Control Structure. One sleeve valve was recently refurbished by the Shops and placed back in operation. A second sleeve was removed and sent to the Shops for assessment. This sleeve valve was recently disassembled and is being cleaned to assess its current condition before refurbishment.

Auld Valley PCS sleeve valve received at La Verne Shops for refurbishment

As received actuator (left) and disassembly of actuator (right) at the La Verne Shops for refurbishment

Staff recently cleaned and inspected the sedimentation basin and influent channel at the Diemer plant. The influent channel has been in service for several years, resulting in heavy algae growth and accumulation of solids at the bottom of the channel. Staff took this portion of the plant out of service, drained, cleaned, and performed preventative maintenance on the equipment.



Staff washing down the sedimentation basin and influent channel at the Diemer plant

Optimize Asset and Maintenance Management

Metropolitan staff across different groups and consultants collaborated to conduct a Constructability Review for several Diemer capital projects, including the Diemer Filter Rehabilitation Project and the Diemer Chemical Tank Farm Upgrade Project. This study was conducted over two weeks. Topics of discussion included lessons learned from the Weymouth Filter Rehabilitation Project, project risk mitigation, construction sequencing, construction schedule, and filter media selection.

Staff across multiple groups collaborated to conduct a Constructability Review for Diemer capital projects

Staff continues to implement best asset management approaches to develop a long-term 25-year renewal forecast that incorporates a transition of Metropolitan's fleet vehicles from internal combustion to zero emission. Options are being evaluated based on a careful balance between protecting Metropolitan's reliability, complying with regulations, and balancing costs. This is a collaborative effort with Finance staff to understand the benefits and impacts of various funding sources. Operations staff has been working collaboratively with Engineering to develop a long-term optimization model for the Capital Investment Plan. The model uses readily available software applications and considers stakeholder inputs, such as sponsor priority, risk, and other factors, to optimize capital spending and the sequencing of projects.

Prepare for Future Legislation and Regulations

On May 24, EPA published the final revisions to the Consumer Confidence Report (CCR) regulation. The regulation requires public water systems serving over 10,000 people to deliver CCRs twice a year, encourage modern electronic delivery options, clarify information regarding lead in drinking water, and provide translation for customers with limited English proficiency. The biennial requirement is only for community water systems that exceed a maximum contaminant level, health advisory, notification level, or response/action level, or have new Unregulated Contaminant Monitoring Rule (UCMR) results. As a wholesaler, Metropolitan is not required to do a CCR but will be required to provide water quality data to our member agencies twice per year. Staff worked with AMWA, AWWA, and CMUA on comments. Compliance with the new CCR content and delivery requirements begins April 1, 2025.

On June 11, Cal/OSHA released the final text for the Indoor Heat Illness Prevention Standard. The rule applies when indoor workplaces temperatures meet or exceed 82˚F while employees are present. The rule requires industry to develop written indoor heat illness prevention procedures, assess areas affected by excessive heat, and determine appropriate control measures (e.g., provide cooling, breaks, monitoring for signs of heat illness, and training). Staff is combining the existing Outdoor Heat Illness Prevention Standard with new requirements from the Indoor Heat Illness Prevention Standard into one Metropolitan Heat Illness Prevention Program. Cal/OSHA is scheduled to adopt the rule on June 20, 2024, with an effective date starting in July 2024.

Advance Education and Outreach Initiatives

Tours of the Water Quality Laboratory were provided on June 6 and June 28 for Metropolitan Directors and guests from their respective agencies and represented communities. These tours provide a broad summary of Water Quality's daily activities, regulatory monitoring requirements, and applied research to address emerging water quality challenges.

Engage with Member Agencies and Other Stakeholders on Technical Matters

On June 27, Metropolitan hosted a hybrid half-day workshop on nitrification and chloramine disinfection for Member Agency Water Quality Managers. The workshop provided a basic understanding of the causes, consequences, and control of distribution system nitrification. Key presentations by Metropolitan staff and an external industry expert included the microbiology of nitrification, a review of the 2023 nitrification event in Metropolitan's system, and a discussion on the various factors to consider in response to nitrification.