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.

E&O Committee
T. Smith, Chair
Vacant, Vice Chair
R. Apodaca
S. Blois
M. Camacho
D. De Jesus
L. Dick
S. Faessel
L. Fong-Sakai
R. Lefevre
J. Morris
G. Peterson
H. Repenning
H. Williams

Adjourned Engineering and Operations Committee

Meeting with Board of Directors *

August 15, 2022

10:30 a.m.

Monday, August 15, 2022 Meeting Schedule
09:30 a.m. Adj. F& I
10:30 a.m. Adj. E&O
12:30 p.m. Adj. C&L
01:00 p.m. Adj. WP&S
03:00 p.m. Adj. OWC

Teleconference meetings will continue until further notice. Live streaming is available for all board and committee meetings on mwdh2o.com (Click Here)

A listen only phone line is also available at 1-877-853-5257; enter meeting ID: 831 5177 2466. Members of the public may present their comments to the Board on matters within their jurisdiction as listed on the agenda via teleconference only. To participate call (833) 548-0276 and enter meeting ID: 815 2066 4276.

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 ****

2. CONSENT CALENDAR OTHER ITEMS - ACTION

A. Approval of the Minutes of the Engineering and Operations Committee held July 12, 2022 **21-1365**

Attachments: 08152022 EO 2A Minutes

3. CONSENT CALENDAR ITEMS - ACTION

Zoom Online

7-2 Determine that there is a need to continue the emergency action of executing a no bid contract for the Upper Feeder expansion joint replacement (Requires four-fifths vote of the Board); the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA **21-1349**

Attachments: 08162022 EO 7-2 B-L
08152022 EO 7-2 Presentation

7-3 Authorize the following new agreements with: (1) Pure Technologies U.S. Inc. in an amount not to exceed $7 million for inspection and monitoring services for prestressed concrete cylinder pipe; and (2) Brown and Caldwell in an amount not to exceed $900,000 for preliminary design to rehabilitate the prestressed concrete cylinder pipe Calabasas Feeder; authorize an increase of $6 million to an existing agreement with HDR Engineering, Inc. for preliminary design to rehabilitate the Sepulveda Feeder; and adopt CEQA determination that the Calabasas Feeder and Sepulveda Feeder rehabilitation project was previously addressed in the certified 2017 Prestressed Concrete Cylinder Pipe Rehabilitation Program Final Programmatic Environmental Impact Report. (This action is part of a series of projects that are being undertaken to improve the supply reliability for State Water Project dependent member agencies) **21-1377**

Attachments: 08162022 EO 7-3 B-L
08152022 EO 7-3 Presentation

7-4 Authorize a professional services agreement with HDR Engineering, Inc. in an amount not to exceed $1,300,000 for design of the Inland Feeder/San Bernardino Valley Municipal Water District Foothill Pump Station Intertie; the General Manager has determined the project to be 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 member agencies) **21-1348**

Attachments: 08162022 EO 7-4 B-L
08152022 EO 7-4 Presentation

7-5 Award a $5,647,405 procurement contract to Sojitz Machinery Corporation of America for three 84-inch diameter butterfly valves to be installed as part of water supply reliability improvements in the Rialto Pipeline service area; the General Manager has determined that 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 member agencies) **21-1378**

Attachments: 08162022 EO 7-5 B-L
08152022 EO 7-5 Presentation

7-6 Authorize annual increases of $200,000 to existing, five-year on-call agreements with RHA, LLC; Strategic Value Solutions, Inc.; and Value Management Strategies, Inc., for new annual not-to-exceed total of $440,000, for value engineering and other technical services in support of Capital Investment Plan projects; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA **21-1346**

Attachments: 08162022 EO 7-6 B-L
08152022 EO 7-6 Presentation

7-7 Authorize a five-year reimbursable agreement with the California Department of Water Resources to provide services for the State Water Project operations and maintenance activities for an amount not to exceed $3 million per year ($15 million total); the General Manager has determined that this action is exempt or otherwise not subject to CEQA **21-1358**

Attachments: 08162022 EO 7-7 B-L
08152022 EO 7-7 Presentation

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

4. OTHER BOARD ITEMS - ACTION

NONE

5. BOARD INFORMATION ITEMS

NONE

6. COMMITTEE ITEMS

a. Clean Air Fleet Initiatives **21-1366**

Attachments: 08152022 EO 6a Presentation

b. Reservoir Management Update **21-1417**

Attachments: 08152022 EO 6b Presentation

7. MANAGEMENT REPORTS

a. Water System Operations Manager's Report **21-1367**

Attachments: 08152022 EO 7a Presentation

b. Engineering Services Manager's Report **21-1368**

Attachments: 08152022 EO 7b Presentation

8. FOLLOW-UP ITEMS

NONE

9. FUTURE AGENDA ITEMS

10. 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. Agendas for the meeting of the Board of Directors may be obtained from the Board Executive Secretary. 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 http://www.mwdh2o.com.

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.

Zoom Online

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

MINUTES

ENGINEERING AND OPERATIONS COMMITTEE

July 12, 2022

Chair Smith called the teleconference meeting to order at 9:30 a.m.

Members present: Chair Smith, Directors Apodaca (entered after roll call), Blois, Camacho, De Jesus, Dick, Faessel, Fong-Sakai, Lefevre, Morris, and Peterson (entered after roll call)

Members absent: Directors Repenning and Williams

Other Board members present: Directors Abdo, Atwater, Dennstedt, Erdman, Goldberg, Gray, Jung, McCoy, Miller, Pressman, Record, Sutley and Tamaribuchi

Committee staff present: Bednarski, Chapman, Hagekhalil, Okano, Parsons, and Yamasaki

1. OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE COMMITTEE ON MATTERS WITHIN THE COMMITTEE'S JURISDICTION

None

Director Apodaca entered the meeting
Director Peterson entered the meeting

CONSENT CALENDAR ITEMS -- ACTION

2. CONSENT CALENDAR OTHER ITEMS - ACTION

A. Approval of the Minutes of the Engineering and Operations Committee held June 13, 2022

Director Apodaca left the meeting

3. CONSENT CALENDAR ITEMS – ACTION

7-1 Subject: Amend the Capital Investment Plan for fiscal years 2022/2023 and 2023/2024 to include the replacement of an expansion joint on the Upper Feeder at the Santa Ana River Bridge; and determine that there is a need to continue the emergency action of executing a no-bid contract for the expansion joint replacement (Requires four-fifths vote of the Board); the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Motion:

a. Amend the current CIP to include planning and implementation of infrastructure projects to replace an expansion joint on the Upper Feeder; and

b. Determine that there is a need to continue the emergency action of executing a no-bid contract for installation of a new expansion joint on the Upper Feeder. **(Requires four-fifths vote of the Board.)**

The following Director provided comments or asked questions:

1. Blois

Staff responded to the Directors' comments or questions.

7-2 Subject: Adopt the CEQA determination that the proposed action has been previously addressed in the certified 2015 Final EIR, related CEQA actions, and Addendum No. 3; and award $25,972,700 contract to Mladen Buntich Construction Company, Inc. for Stage 3 rehabilitation of the Etiwanda Pipeline

Motion: Adopt the CEQA determination that the proposed action has been previously addressed in the certified 2015 Final EIR, related CEQA actions and Addendum No. 3, and

a. Award $25,972,700 contract to Mladen Buntich Construction Company, Inc. to replace a portion of the interior lining of the Etiwanda Pipeline.

7-3 Subject: Authorize an agreement with Jacobs Engineering Group, Inc., for a not-to-exceed amount of $700,000 to perform final design of security upgrades at the Joseph Jensen Water Treatment Plant; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Motion: Authorize an agreement with Jacobs Engineering Group, Inc. for a not-to-exceed amount of $700,000 to perform final design for security upgrades at the Jensen plant.

No presentations were given, Director De Jesus made a motion, seconded by Director Peterson, to approve the consent calendar consisting of items 2A, 7-1, 7-2, and 7-3.

The vote was:

Ayes: Directors Blois, Camacho, De Jesus, Dick, Faessel, Fong-Sakai, Lefevre, Morris, Peterson, Smith

Noes: None

Abstentions: None

Absent: Directors Apodaca, Repenning and Williams

The motion for Items 2A, 7-1, 7-2, and 7-3 passed by a vote of 10 ayes, 0 noes, 0 abstentions, and 3 absent.

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

4. OTHER BOARD ITEMS - ACTION

NONE

5. BOARD INFORMATION ITEMS

NONE

6. COMMITTEE ITEMS

a. Subject: Update on Drought Initiatives for State Water Dependent Areas

Presented by: John Shamma, Section Manager, Engineering Services Group

Mr. Shamma reported on the following:

The effort to address impact of the drought on State Water Project dependent areas

- Decision-making process-
  - Comprehensive workshop process
  - Implementing near-term projects
  - Planning long-term solutions
  - Recommendations to Board
- East-side upcoming contract awards
- West-side ongoing studies
- Possible solutions:
  - Surface and groundwater storage
  - Infrastructure improvements
  - Agreements and exchanges
  - Flexibility programs and conservation
- Develop portfolio and test action plan against the IRP
- Return to Board with recommended actions including August 2022 commitment to action letter.

The following Directors provided comments or asked questions:

1. Peterson
2. Blois
3. Lefevre
4. Sutley
5. Miller

Staff responded to the Directors' comments or questions.

7. MANAGEMENT REPORTS

a. Subject: Water System Operations Manager's Report

Presented by: Brent Yamasaki, Water System Operations, Group Manager

Mr. Yamasaki reported on the following:

- Current operating conditions
- Adapting operations to minimize SWP water use, despite Upper Feeder constraints
- Preparing for September Upper Feeder shutdown, including collaborating with member agencies on conservation messaging
- Celebrating National Safety Month with safety awareness events
- Publication of the Annual 2022 Water Quality Report

b. Subject: Engineering Services Manager's Report

Presented by: John Bednarski, Engineering Services Group, Chief Engineer and Group Manager

Mr. Bednarski reported on the following:

- Construction and procurement contracts
- Update on Casa Loma siphon project
- Update on Skinner Paving Project
- Update on Pure Water Project: early start and delivery opportunities
- Internship Program

The following Director provided comments or asked questions:

1. Fong-Sakai

Staff responded to the Director's comments or questions.

8. FOLLOW-UP ITEMS

NONE

9. FUTURE AGENDA ITEMS

NONE

The next meeting will be held on August 15, 2022.

Meeting adjourned at 10:23 a.m.

Tim Smith
Chair

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

8/16/2022 Board Meeting

7-2

Subject

Determine that there is a need to continue the emergency action of executing a no-bid contract for the Upper Feeder expansion joint replacement **(Requires four-fifths vote of the Board)**; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

This action authorizes the continuation of an emergency contract executed by the General Manager to replace the damaged expansion joint on the Upper Feeder. Staff will provide regular progress updates to the Board on this work and obtain necessary board approvals until the completion of construction.

Details

Background

The Upper Feeder was constructed in 1936 as part of Metropolitan's original water delivery system. The 116-inch-diameter welded-steel pipeline extends approximately 60 miles from Lake Mathews to the Eagle Rock Control Facility in Los Angeles. The feeder conveys up to 750 cubic feet per second (cfs) of untreated water from Lake Mathews to the F. E. Weymouth Water Treatment Plant, and then delivers treated water to the Central Pool portion of the distribution system.

The Upper Feeder crosses the Santa Ana River with a 1,010-foot-long steel truss bridge in the cities of Jurupa Valley and Riverside. The feeder has an existing bellows-type expansion joint at the bridge's mid-span that allows for the pipeline's thermal expansion and contraction. The bellows expansion joint was installed in January 2018.

On April 13, 2022, a leak was discovered at the bellows expansion joint. A steel bracket was installed as a temporary measure to stop the leak, and flow in the pipeline was reduced to approximately 525 cfs to decrease the pipeline's internal pressure. Staff is regularly monitoring the crack length and effectiveness of the short-term repair. After initially observing that the crack length was increasing, the crack length has remained stable. However, both Metropolitan staff and the bellows manufacturer inspected the bellows expansion joint and concluded that the bellows joint should be replaced with a new slip-type joint, which Metropolitan staff are currently fabricating.

Due to the critical nature of the feeder, the location of the expansion joint above environmentally sensitive areas, and the historically low State Water Project (SWP) allocations, in June 2022, the General Manager executed an emergency contract with PCL Construction, Inc. for installation of the new joint consistent with Section 8122(b) of Metropolitan's Administrative Code. This section of the Administrative Code, which mirrors Sections 21567 and 22050 of the California Public Contract Code, allows for the General Manager to waive competitive bidding requirements and execute contracts over the amount of $250,000 in response to an emergency condition.

An emergency is defined as a sudden, unexpected occurrence that requires immediate action to prevent or mitigate the loss or substantial impairment of life, health, property, or essential public services. Executing an emergency contract was necessary to allow adequate time for the contractor to plan, staff, and mobilize for construction so that the repair can be made as soon as fabrication of the new sleeve joint is complete. Metropolitan is at risk of a prolonged, unplanned outage with the compromised bellows joint if the joint were to

rupture. In addition, the Upper Feeder is currently operating at a reduced flow, and the repair is needed to return the feeder to full flow and support drought actions and operational shifts that could save SWP supply use in 2022.

In July 2022, Metropolitan's board amended the Capital Investment Plan for fiscal years 2022/2023 and 2023/2024 to include replacement of an expansion joint on the Upper Feeder at the Santa Ana River Bridge; and approved the emergency action to execute a no-bid contract for the expansion joint replacement. The Board must determine by a four-fifths vote at subsequent meetings whether there is a need to continue the action or ratify the construction contract.

Upper Feeder Expansion Joint Replacement – Construction

The construction contract includes removal of bridge structural members to access the pipe and joint; removal of the existing bellows expansion joint; installation of the new slip-type expansion joint; removal and reinstallation of the steel cage that provides lateral restraint at the joint; and minor adjustments to the bridge truss isolators. PCL Construction, Inc. was selected to perform the work on a time-and-materials contract to conduct this work. To date, the contractor has prepared contract submittals, developed a work plan, and acquired key equipment. Metropolitan forces have completed grading, clearing, and grubbing adjacent to the bridge to allow access for installation of a crane and other construction activities. Metropolitan forces have also nearly completed the fabrication of the new slip-type expansion joint, which will be furnished to the contractor for installation.

Staff expects that the emergency contracting action will continue until the joint installation is completed in September; a shutdown has been scheduled for September for installation of the new expansion joint. Staff will return to the Board again in September to seek the Board's authorization to continue the emergency action and in October to request ratification of the contract. Each action will require a four-fifths vote of the Board.

Alternatives Considered

Metropolitan's staff could terminate the current contract and prepare a new contracting package for advertisement and board award rather than continue the emergency contracting provisions in the administrative code. However, even with an accelerated advertisement and award approach, construction work would not begin until December 2022. Staff determined that this is not an acceptable schedule considering the current flow restrictions that have been placed on the feeder. Continuation of an emergency contract with PCL Construction, Inc. allows timely completion of rehabilitation of a major pipeline that delivers Colorado River water into the central portion of Metropolitan's distribution system. It is a critical facility helping to reduce the impacts of the extreme drought conditions on the State Water Project. The selected option will reduce the risk of costly emergency repairs and enhance reliable deliveries to Metropolitan's member agencies.

Summary

This action authorizes the continuation of an emergency contract executed by the General Manager to replace the damaged expansion joint. See **Attachment 1** for the Location Map.

Project Milestone

September 2022 – Replacement of compromised expansion joint

Policy

Metropolitan Water District Administrative Code Section 8122: Emergency Contracts

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed actions are statutorily exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed actions include the immediate emergency repair of an existing pipeline with the same purpose and capacity to maintain service essential to the public health, safety, or welfare. Alternatively, the proposed actions involve the installation of a new pipeline or maintenance, repair, restoration, removal, or demolition of an existing pipeline that does not exceed one mile in length. Accordingly, the proposed actions are statutorily exempt and

qualifies under an emergency and other exemption for pipeline work less than one mile in length (Section 15269(b) and 15262(k) of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Determine that there is a need to continue the emergency action of executing a no-bid contract for construction of pipe joint repairs on the Upper Feeder. **(Requires four-fifths vote of the Board.)**

Fiscal Impact: Total cost for construction is currently unknown due to the structure of the emergency contract executed by the General Manager. All funds will be incurred in the current biennium and have been previously authorized. It is not anticipated that the addition of the project listed above to the CIP will increase CIP expenditures in the current biennium beyond those which have been previously approved by the Board.
Business Analysis: This project enhances delivery reliability to member agencies and reduces the risk of unplanned shutdowns of the Upper Feeder.

Option #2

Do not determine that there is a need to continue the emergency action.
Fiscal Impact: Unknown costs for work performed by the contractor to date
Business Analysis: This option would delay the replacement of the expansion joint. The delay would limit flow on the Upper Feeder and expose Metropolitan to a greater risk of pipe rupture, which would severely disrupt water deliveries to member agencies.

Staff Recommendation

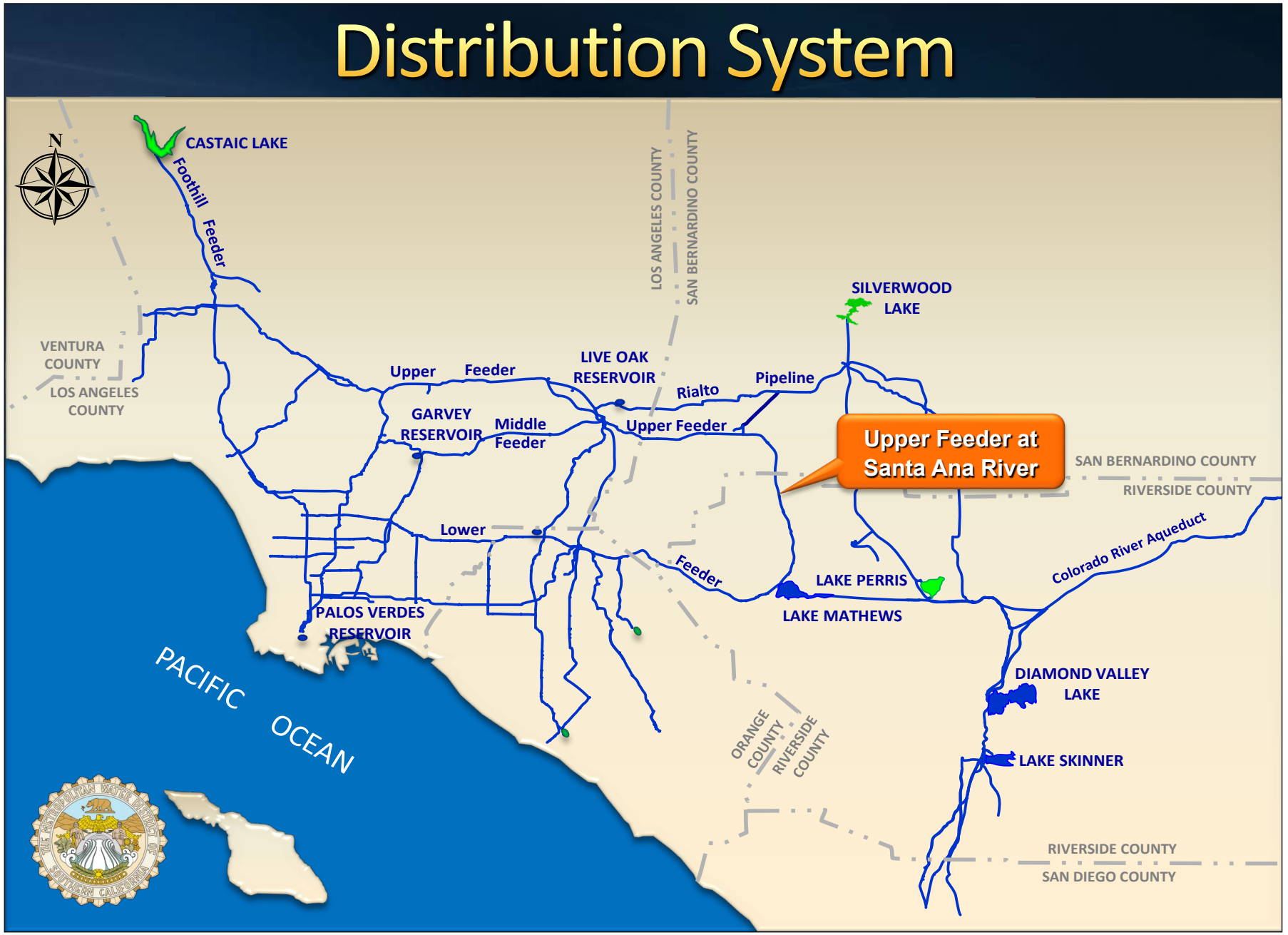
Option #1

7/21/2022
John V. Bednarski *Date*
Manager/Chief Engineer
Engineering Services

7/27/2022
Adel Hagekhalil *Date*
General Manager

Attachment 1 – Location Map

Ref# es12691220


Distribution System
N
CASTAIC LAKE
Foothill Feeder
VENTURA COUNTY
LOS ANGELES COUNTY
LOS ANGELES COUNTY
SAN BERNARDINO COUNTY
SILVERWOOD LAKE
Upper Feeder
LIVE OAK RESERVOIR
Rialto Pipeline
GARVEY RESERVOIR
Middle Feeder
Upper Feeder
Upper Feeder at Santa Ana River
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

Engineering & Operations Committee

Upper Feeder Expansion Joint Replacement

Item 7-2

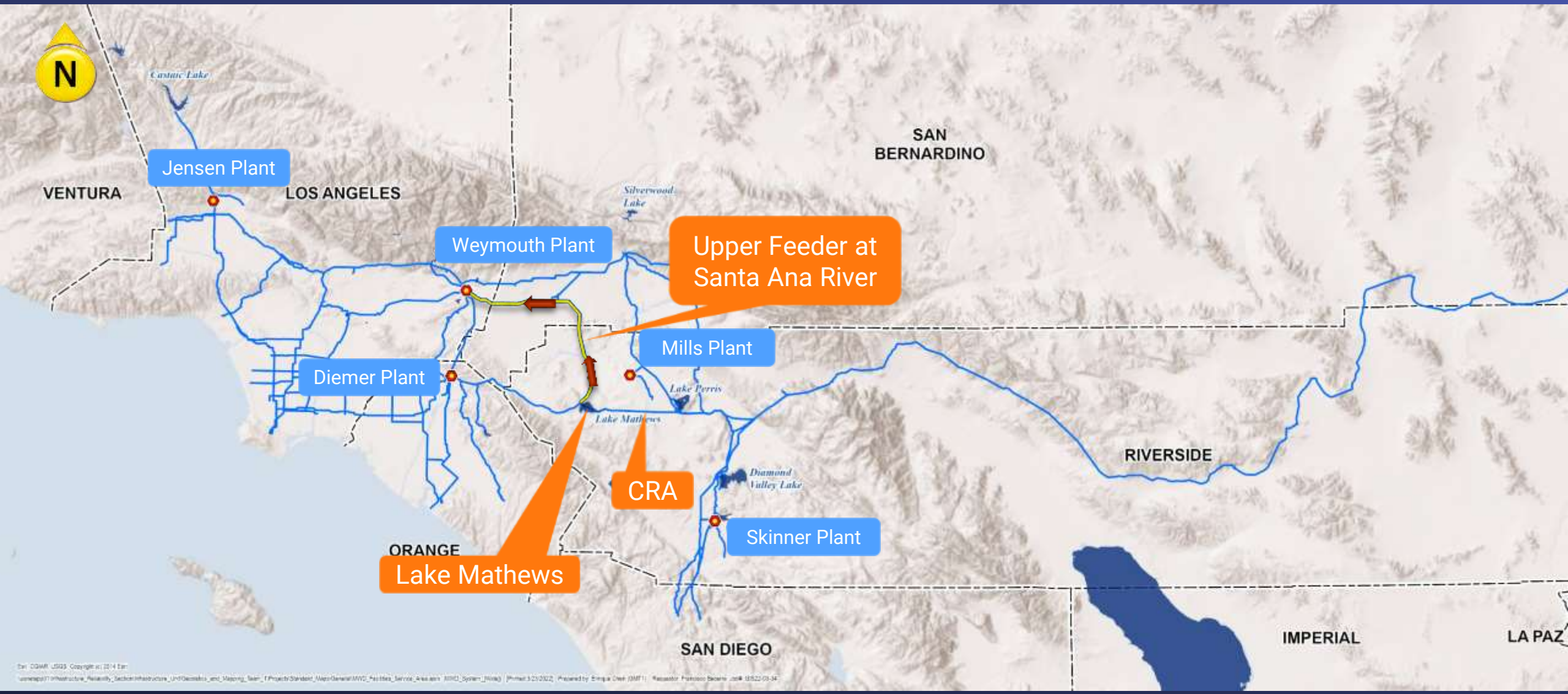
August 15, 2022

Upper Feeder Expansion Joint Replacement

Current Action

- Authorize the continuation of an emergency contract executed by the General Manager **(Requires four-fifths vote of the Board)**

Distribution System



Upper Feeder – Santa Ana River Crossing

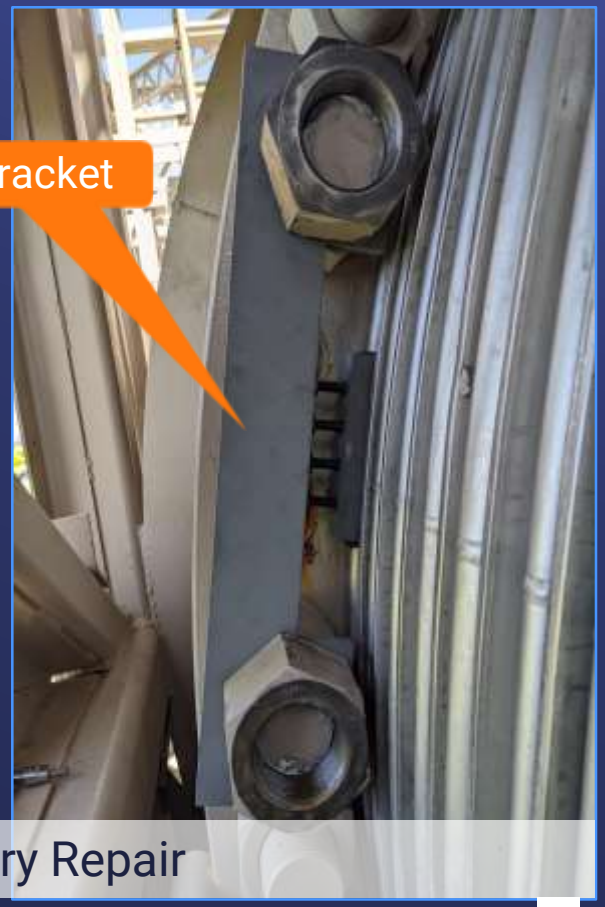
- Multi-span bridge with steel trusses & concrete piers
- 9’-8” ID steel pipe
- Pipeline design flow: 750 cfs
- Pipeline internal pressure: 200 psi
- Bellows expansion joint installed in 2018

Upper Feeder Expansion Joint Replacement

Bellows Expansion Joint Leak

- Discovered April 13, 2022
- Flow reduced
- Leak temporarily repaired April 21, 2022

Initial Leak



Temporary Repair

Upper Feeder Expansion Joint Replacement

Bellows Expansion Joint Inspection

- Bellows joint compromised; to be replaced with slip-type expansion joint
- No crack growth since mid-May
  - monitoring weekly
- Forensic analysis of bellows failure ongoing

Expansion Joint Replacement Urgency

- Current flow limited to 525 cfs
- Unplanned shutdown & catastrophic failure risk
- Upper Feeder needed to support new drought actions & operational shifts to save SPW
- Bellows joint to be replaced by Metropolitan-fabricated slip joint

Upper Feeder Expansion Joint Replacement

Quagga Filters for Dewatering

Upper Feeder Shutdown

- Planned start date: 9/6/22; Duration: 15 days
- CRW filtered prior to release to Santa Ana River
- Weymouth Treatment Plant to use 100% SPW during the shutdown
  - Approximately 1,000 AF/day (varies by demand)
- Member Agencies receiving water from Weymouth & Diemer have been asked to go to no outdoor watering during shutdown
- Metropolitan is coordinating with Member Agencies on outreach & messaging
  - Social media, earned media, & press releases

Upper Feeder Expansion Joint Replacement

Emergency Contract

- PCL is currently under an emergency time and materials contract to perform the work
  - Emergency declared June 8, 2022
  - GM awarded contract on June 28, 2022
  - Board authorized continuation of the emergency action to execute a no-bid contract for the expansion joint replacement on July 12, 2022
- Executed per Admin Code section 8122(b)
  - Monthly reporting to the Board required & continuation of contract activities determined by four-fifths vote
  - Board to ratify construction contract upon completion of construction activities

Upper Feeder Expansion Joint Replacement

Contractor Scope of Work

- Removal of bridge structural members & restraining cage for pipe access
- Removal of bellows joint
- Installation of new slip-type joint
- Reinstallation of bridge structural members & restraining cage

Upper Feeder Expansion Joint Replacement

Metropolitan Completed Activities

- ✓ Completed slip joint fabrication & installation design packages
- ✓ Installed 4-inch tap near expansion joint to facilitate construction
- ✓ Procured slip joint flanges, hardware & accessories
- ✓ Installed 6-inch dewatering valve
- ✓ Graded crane pad

Metropolitan Ongoing Activities

- Complete fabrication and assembly of new slip-type expansion joint
- Install new 36-inch accessway

New Slip Joint Fabrication @ La Verne Shops

Clearing and Grading for Crane Pad

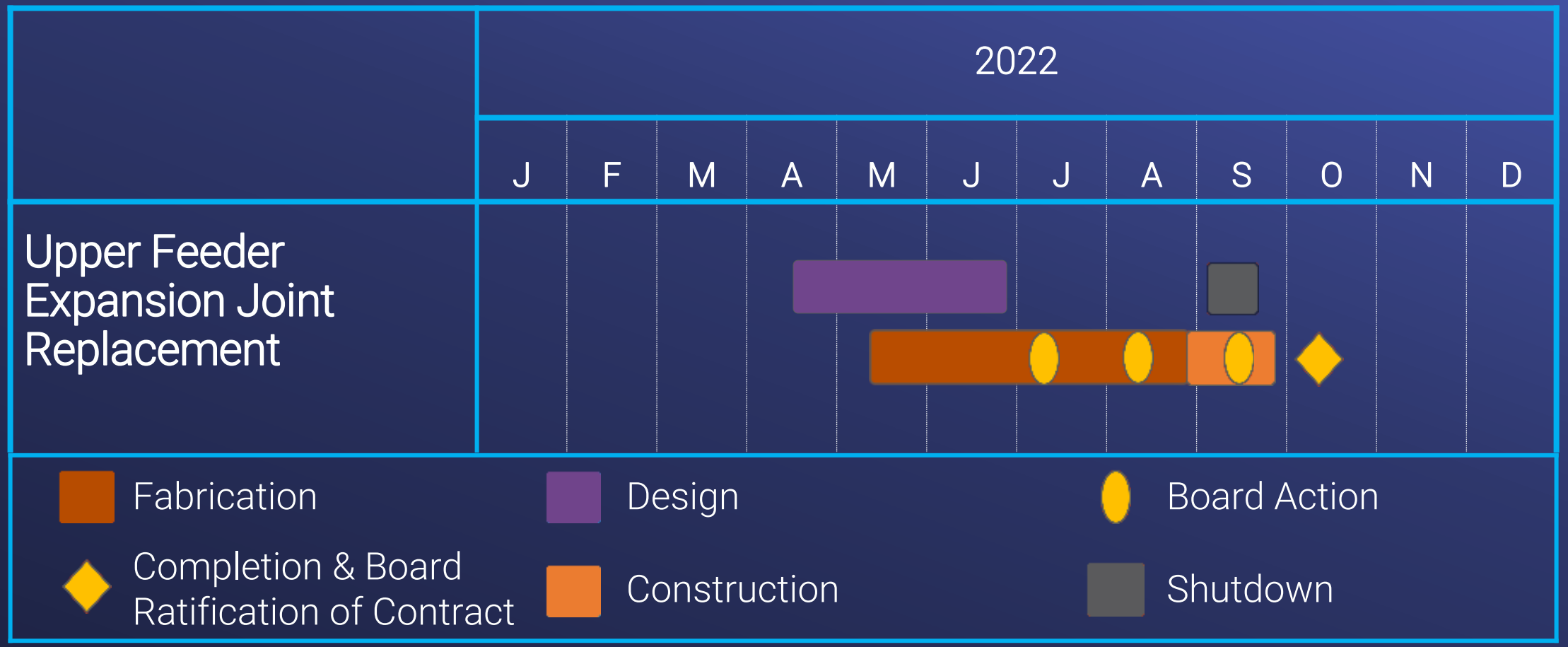
6-inch Valve Installation

Upper Feeder Expansion Joint Replacement

Alternatives Considered

- Board terminates emergency contract and awards competitively bid contract
  - Delays planned shutdown and start of construction to December 2022
  - Costs already incurred
  - Increased risk of catastrophic failure
- Selected option
  - Continue emergency contract with PCL Construction
  - Estimated start of on-site construction – August 2022

Project Schedule



Board Options

- Option #1

  Determine that there is a need to continue the emergency action of executing a no-bid contract for construction of pipe joint repairs on the Upper Feeder. **(Requires four-fifths vote of the Board.)**

- Option #2

  Do not determine that there is a need to continue the emergency action.

Staff Recommendation

- Option #1


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928

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

8/16/2022 Board Meeting

7-3

Subject

Authorize the following new agreements with: (1) Pure Technologies U.S. Inc. in an amount not to exceed $7 million for inspection and monitoring services for prestressed concrete cylinder pipe; and (2) Brown and Caldwell in an amount not to exceed $900,000 for preliminary design to rehabilitate the prestressed concrete cylinder pipe Calabasas Feeder; and authorize an increase of $6 million to an existing agreement with HDR Engineering, Inc. for preliminary design to rehabilitate the Sepulveda Feeder; and adopt CEQA determination that the Calabasas Feeder and Sepulveda Feeder rehabilitation project was previously addressed in the certified 2017 Prestressed Concrete Cylinder Pipe Rehabilitation Program Final Programmatic Environmental Impact Report (This action is part of a series of projects that are being undertaken to improve the supply reliability for State Water Project dependent member agencies)

Executive Summary

The Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program is a comprehensive, long-term effort to manage the rehabilitation of Metropolitan's PCCP feeders. This action authorizes a professional service agreement to provide inspection services for PCCP pipelines to enable monitoring and prioritization of PCCP rehabilitation work. This action also authorizes an engineering services agreement to complete preliminary design to rehabilitate the Calabasas Feeder, which consists entirely of PCCP, and authorizes an amendment to an existing consultant agreement to provide engineering design services to complete preliminary design to rehabilitate the PCCP and steel portions of the Sepulveda Feeder. The Sepulveda Feeder may play a key role in delivering Colorado River Water to the west side of Metropolitan's service area. As such, the design work for this scheduled rehabilitation effort is being advanced at the current time in anticipation of this future use.

Details

Background

In response to several PCCP failures experienced within the water industry, Metropolitan's Board authorized the PCCP Rehabilitation Program in September 2011 to develop a comprehensive, long-term plan for replacement or relining of Metropolitan's at-risk PCCP lines. Metropolitan's strategy for maintaining PCCP reliability consists of four coordinated elements: (1) continued assessment and monitoring of PCCP lines; (2) monitoring of stray currents near PCCP lines and installation of cathodic protection as necessary; (3) near-term repair of PCCP segments as needed; and (4) long-term rehabilitation of priority pipelines. This action authorizes consultant services agreements related to the first and fourth of these PCCP reliability strategies.

Metropolitan currently inspects all 146.4 miles of the PCCP lines within its distribution system every three to seven years. The frequency is based on the condition and history of repairs for each pipeline and operational constraints. The intent of these inspections is to allow staff to proactively monitor the condition of the PCCP lines, identify changes to the pipelines' baseline condition, track prestressing wire breakage over time, and identify distressed PCCP segments. These inspections are a critical component of efforts to prioritize the order of PCCP sections to be relined. At present, electromagnetic inspection continues to be the industry's primary technique for identification of PCCP wire breaks.

Metropolitan has been performing systematic inspections of its PCCP lines since the 1990s. In August 2017, Metropolitan's Board authorized the fourth cycle of PCCP inspections since the inception of the PCCP

Rehabilitation Program. Data from this current cycle of inspections has been used to prioritize and schedule PCCP rehabilitation work, including the recently completed rehabilitations along the Second Lower Feeder and the Allen-McColloch Pipeline. A new cycle of inspections is needed to continue monitoring PCCP conditions and prioritize future rehabilitation work in accordance with the latest available data.

Previous assessments of Metropolitan's 27 PCCP feeders led to five lines being identified as priority lines to be addressed under the PCCP Rehabilitation Program. These priority pipelines include: (1) Allen-McColloch Pipeline; (2) Calabasas Feeder; (3) Rialto Pipeline; (4) Second Lower Feeder; and (5) Sepulveda Feeder. These five lines were selected based on the number of wire breaks, pipeline characteristics, and operating pressures. A proactive, long-term program to rehabilitate these five feeders has been incorporated into Metropolitan's Capital Investment Plan (CIP). This proactive approach begins with preliminary designs to rehabilitate these pipelines, including site investigations, construction sequence planning, and preliminary design drawings. This action authorizes engineering services agreements for preliminary designs for two of these at-risk PCCP pipelines, Calabasas Feeder and Sepulveda Feeder, as discussed below. Due to the current and potential future water supply challenges on the State Water Project, the schedule for relining the north portion of the Sepulveda Feeder has been advanced from its original timeline. This schedule advancement will support the potential future pumping of water from Metropolitan's Central Pool to State Water Project dependent agencies in the San Fernando Valley and Ventura County.

In accordance with the April 2022 action on the biennial budget for fiscal years 2022/23 and 2023/24, the General Manager will authorize staff to proceed with the actions described below, pending board award of the agreements. Based on the current CIP expenditure forecast, funds for the work to be performed pursuant to this action during the current biennium are available within the CIP Appropriation for Fiscal Years 2022/23 and 2023/24. These projects have been reviewed in accordance with Metropolitan's CIP prioritization criteria and were approved by Metropolitan's CIP Evaluation Team to be included in the PCCP Reliability Program.

Electromagnetic Pipeline Inspections and Assessments

Planned activities for the electromagnetic inspections over the next five years include scheduling and coordinating pipeline shutdowns; conducting the electromagnetic inspections; conducting internal visual inspections; shutting down and dewatering the pipelines; returning the pipelines back to service; analyzing the inspection results; and preparing comprehensive inspection reports. The electromagnetic inspections will be performed by Pure Technologies U.S. Inc. (Pure Technologies), as discussed below. Metropolitan staff will conduct the remainder of the activities.

A total of $9.1 million is required for this work. Funds to be allocated include $7 million for the electromagnetic inspections by Pure Technologies; $870,000 for internal visual inspections by Metropolitan forces; $477,000 for shutdown planning and analysis of inspection results over the five-year period; $200,000 for traffic control drawings; $310,000 for local agency permitting and project management; and $243,000 for remaining budget. Traffic control drawings required for local agency permitting will be performed by a specialty firm on an as-needed basis under the General Manager's administrative authority to award contracts of $250,000 or less. See **Attachment 1** for the Allocation of Funds.

Pipeline Inspections (Pure Technologies) – New Agreement

Pure Technologies is recommended to perform electromagnetic inspections of Metropolitan's 146.4 miles of PCCP pipelines. Pure Technologies was prequalified via Request for Qualifications No. 1313 and was selected based upon its demonstrated expertise in this area. The scope of work includes conducting electromagnetic testing of four to six PCCP pipelines per year (averaging 25 miles per year) over a five-year period. After each inspection, the results will be analyzed and compared with previous inspection results to determine the condition of the pipeline based on the number of prestressing wire breaks. The estimated cost for Pure Technologies to perform electromagnetic testing of 125 miles of Metropolitan's PCCP lines over the five-year timeframe is $7 million.

This action authorizes an agreement with Pure Technologies, in an amount not to exceed $7 million, to perform inspections and assessments of PCCP pipelines over a five-year timeframe. Based on the specialized nature of the work, Metropolitan did not establish a Small Business Enterprise (SBE) participation level for this agreement. The planned subconsultant for this work is American Rescue Concepts, LLC.

Calabasas Feeder PCCP Rehabilitation – Preliminary Design

The Calabasas Feeder extends from Chatsworth to the city of Calabasas and delivers treated water to a Las Virgenes Municipal Water District service connection. This 54-inch diameter PCCP line was constructed in 1975, is approximately 9 miles long, and operates at pressures up to 210 pounds per square inch (psi).

In January 2018, Metropolitan's Board authorized preliminary design to rehabilitate the entire length of the Calabasas Feeder. Metropolitan staff initiated this effort and performed assessments of design alternatives, hydraulic analyses, field investigations, utility research, field surveys, and identification of access portal locations. Consultant services are required to finalize preliminary design, identify construction phasing opportunities, prepare construction cost estimates, and complete the preliminary design report.

Planned activities for completion of preliminary design to rehabilitate PCCP portions of the Calabasas Feeder will focus on identifying construction reaches, identifying isolation locations, determining construction packaging and sequencing, locating, and evaluating pipe access sites, developing shutdown requirements, and evaluating construction impacts to the community. These considerations will be addressed in a comprehensive preliminary design report and are recommended to be performed by Brown and Caldwell, as discussed below.

A total of $1.5 million is required for this work. Funds to be allocated include $900,000 for engineering services by Brown and Caldwell; $263,000 for technical review by Metropolitan staff; $254,000 for project management and permitting; $50,000 for value engineering; and $33,000 for remaining budget. See **Attachment 1** for the Allocation of Funds.

Engineering Services (Brown and Caldwell) – New Agreement

Brown and Caldwell is recommended to perform preliminary design for PCCP rehabilitation of the Calabasas Feeder. Brown and Caldwell was selected through a competitive process via Request for Proposal No. 1312 based on the firm's staff expertise, technical approach and methodology, and cost proposal. The planned activities include evaluating information provided by Metropolitan staff, performing calculations, initiating permitting with local agencies, finalizing preliminary design-drawings, developing construction cost estimates, and preparing a preliminary design report.

This action authorizes an agreement with Brown and Caldwell in an amount not to exceed $900,000 to perform preliminary design to rehabilitate the Calabasas Feeder. For this agreement, Metropolitan has established an SBE participation level of 25 percent. Brown and Caldwell has agreed to meet this level of participation. The planned subconsultants for this work are included in **Attachment 2**.

Sepulveda Feeder North Reach - Preliminary Design

The Sepulveda Feeder delivers treated water from the Jensen plant to an interconnection with the Second Lower Feeder in Torrance. This 84-inch to 150-inch diameter, 42-mile-long pipeline was installed in the early 1970s and operates at pressures up to 280 psi. Approximately 35 miles of the feeder is comprised of PCCP. The feeder crosses several freeways, roads, and flood control channels through urban areas of Los Angeles County, passing through areas of corrosive soils and crossing oil and gas pipelines with impressed current corrosion protection systems. Stray currents from cathodic protection systems and prestressed wire breaks are particularly concentrated in the southern 15 miles of the Sepulveda Feeder (South Reach), from Venice Pressure Control Structure (PCS) to the interconnection with the Second Lower Feeder.

In January 2018, Metropolitan's Board authorized preliminary design for Sepulveda Feeder PCCP Rehabilitation. A general preliminary design of the entire Sepulveda Feeder was completed in 2020, and a detailed preliminary design for the more at-risk South Reach was completed in 2021.

In February 2022, Metropolitan's Board authorized preliminary investigations for the West Area Water Supply Reliability Improvements. This project will evaluate the potential to develop two new pump stations along the Sepulveda Feeder (Westside Pump Stations) at the Venice PCS and the Sepulveda Canyon PCS. These pump stations would enable water deliveries north along Sepulveda Feeder, from Metropolitan's Central Pool to the West San Fernando Valley and Ventura County. Initial conclusions from the hydraulic analyses reveal that hydraulic pressures along 19.5 miles of the Sepulveda Feeder north of Venice PCS are likely to increase significantly, putting a greater strain on both existing PCCP and steel pipe sections. This conclusion has prompted a re-prioritization of PCCP rehabilitation work along the Sepulveda Feeder. Originally not planned

until later this decade, staff now recommends proceeding with a detailed evaluation and preliminary design for the northern 20-mile reach of the Sepulveda Feeder, including both steel and PCCP portions of the pipe and appurtenances. This proactive start of preliminary design will ensure that the Westside Pump Stations project does not result in adverse impacts to the Sepulveda Feeder, and that completion of the Westside Pump Stations would not be delayed by PCCP rehabilitation of the Sepulveda Feeder.

Planned activities include preliminary design and the preparation of a design report for the North Reach of the Sepulveda Feeder. Included in the design is the analysis of upgrades needed for the higher pressures if new pumping facilities are constructed for reverse pumping during drought conditions. The rehabilitation work will include relining or replacement of the pipeline, replacement of existing valves, flow meters, appurtenant structures and other work, and the addition of two new valves for seismic risk mitigation. The goal of the planned program is to restore the PCCP portion of the Sepulveda Feeder to a "like new" condition and to increase the structural integrity of the steel pipeline north of Venice PCS to withstand increased hydraulic pumping pressures.

A total of $8.5 million is required for this work. Funds to be allocated include $6 million for engineering services by HDR Engineering, Inc.; $930,000 for surveying, mapping, and technical review by Metropolitan staff; $120,000 for permit fees; $150,000 for shutdown planning; $523,000 for environmental planning, project controls, and project management; and $777,000 for remaining budget. See **Attachment 1** for the allocation of funds.

Preliminary Design Services (HDR Engineering, Inc.) – Agreement Amendment

HDR Engineering, Inc. performed the preliminary design for the South Reach of the Sepulveda Feeder and the final design for the Sepulveda Feeder Reach 2 under board-authorized agreements. HDR is recommended to perform preliminary design services for the 19.5-mile northern portion of the Sepulveda Feeder based on their familiarity with the project and performance to date.

HDR Engineering, Inc. was selected through a competitive process via Request for Proposals No. 1168 based on the firm's experience with PCCP and with large diameter pipelines, and specifically for their expertise in traffic control in dense urban settings and experience in permitting with multiple local agencies. The planned activities include preparation of a preliminary design report and associated drawings for the portion of the Sepulveda Feeder between the Jensen Water Treatment Plant and Venice PCS. The work will include evaluation of the steel portion of the pipeline between Venice PCS and the Santa Monica Feeder, and potential upgrade of previously lined PCCP sections needed to accommodate the higher pressures from the potential West Side Pump Station project.

This action authorizes an increase of $6 million to the existing agreement with HDR Engineering, Inc. for a new not-to-exceed amount of $12.5 million to provide engineering design services to rehabilitate PCCP portions of the Sepulveda Feeder. For this agreement, Metropolitan has established an SBE participation level of 25 percent. HDR Engineering, Inc. has agreed to meet this level of participation. The planned subconsultants for this work are included in **Attachment 2.**

Alternatives Considered

Alternatives considered for completing design activities for the PCCP Rehabilitation Program included assessing the availability of in-house Metropolitan staff to conduct this work. The PCCP Rehabilitation Program's staffing strategy for utilizing consultants and in-house Metropolitan staff has been: (1) to assess current work assignments for in-house staff to determine the potential availability of staff to conduct this work; and (2) for long-term rehabilitation projects, when resource needs exceed available in-house staffing or require specialized technical expertise, typically staff uses project-specific professional services agreements in order to provide a concentrated engineering effort over an extended duration.

This strategy relies on the assumption that in-house engineering staff will handle the baseload of work on capital projects, while professional services agreements are selectively utilized to handle projects above this baseload or where specialized needs are required. This strategy allows Metropolitan's staff to be strategically utilized on projects to best maintain key engineering competencies and to address projects with special needs or issues. After assessing the current workload for in-house staff and the relative priority of this project, staff recommends the use of a professional services agreement for the subject projects. This approach will allow for the completion of not

only these projects, but also other budgeted capital projects within their current schedules and ensure that the work is conducted in the most efficient manner possible.

Summary

This action authorizes two new agreements and authorizes an amendment to an existing agreement related to the PCCP Rehabilitation Program with: (1) Pure Technologies U.S. Inc. in an amount not to exceed $7 million to perform PCCP pipeline inspections and assessments; (2) Brown and Caldwell in an amount not to exceed $900,000 to provide engineering services to rehabilitate PCCP portions of Calabasas Feeder; and (3) an amendment to an existing agreement with HDR Engineering, Inc. in an amount not to exceed $12.5 million to provide engineering services to rehabilitate PCCP and steel portions of the Sepulveda Feeder. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for a Listing of Subconsultants, and **Attachment 3** for the Location Map.

Project Milestones

September 2023 – Completion of preliminary design to rehabilitate Calabasas Feeder

September 2028 – Completion of the fifth round of PCCP inspections

December 2023 – Completion of preliminary design to rehabilitate the Sepulveda Feeder North Reach

Policy

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

By Minute Item 48801, dated September 13, 2011, the Board authorized initiation of the PCCP Rehabilitation Program.

By Minute Item 50699, dated January 10, 2017, the Board certified the Final PEIR for the PCCP Rehabilitation Program, and approved the program for the Second Lower Feeder, Sepulveda Feeder, Calabasas Feeder, Rialto Pipeline, and AMP for the purposes of CEQA.

By Minute Item 50919, dated August 15, 2017, the Board authorized the fourth round of electromagnetic inspections of PCCP pipelines.

By Minute Item 51072, dated January 9, 2018, the Board authorized preliminary design to rehabilitate PCCP portions of Calabasas Feeder and Sepulveda Feeder.

By Minute Item 52703, dated February 8, 2022, the Board amended the current CIP to include planning and implementation of West Area Water Supply Reliability Improvements.

By Minute Item 52790, 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 2023/24.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1 and Option #2:

The environmental effects from the design, construction, and operation of the proposed project were evaluated in the Prestressed Concrete Cylinder Pipe Rehabilitation Program Final Programmatic Environmental Impact Report (SCH No. 2014121055), which was certified by the Board on January 10, 2017. The Board also approved the Findings of Fact (Findings), the Statement of Overriding Considerations, the Mitigation Monitoring and Reporting Program, and the Program itself. The current actions authorize an increase to the maximum amount payable for an existing agreement and enter into new agreements related to the existing projects, and do not result in any changes to the approved program itself. Hence, the previous environmental documentation acted on by the Board in conjunction with the proposed action fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation is necessary for the Board to act on the proposed action.

CEQA determination for Option #3:

None required

Board Options

Option #1

Adopt the CEQA determination that the Calabasas Feeder and Sepulveda Feeder rehabilitation projects were previously addressed in the certified 2017 Prestressed Concrete Cylinder Pipe Rehabilitation Program Final Programmatic Environmental Impact Report, and:

a. Authorize an agreement with Pure Technologies U.S. Inc. in an amount not to exceed $7 million to perform PCCP pipeline inspections.
b. Authorize an agreement with Brown and Caldwell in an amount not to exceed $900,000 to provide preliminary design engineering services to rehabilitate PCCP portions of Calabasas Feeder.
c. Authorize a $6 million increase to an agreement with HDR Engineering, Inc. for a new not-to-exceed amount of $12.5 million to rehabilitate PCCP and steel portions of the Sepulveda Feeder.

Fiscal Impact: Expenditures of $19.1 million in capital funds. Approximately $13 million will be incurred in the current biennium and has been previously authorized. The remaining capital expenditures will be funded from future CIP budgets following board approval of those budgets.
Business Analysis: This option will advance Metropolitan's long-term plan to rehabilitate PCCP portions of Calabasas and Sepulveda Feeders. This option will also enhance the reliability of Metropolitan's other PCCP feeders and reduce the risk of costly urgent repairs.

Option #2

Adopt the CEQA determination that the Calabasas Feeder and Sepulveda Feeder rehabilitation projects were previously addressed in the certified 2017 Prestressed Concrete Cylinder Pipe Rehabilitation Program Final Programmatic Environmental Impact Report, and:

a. Authorize an agreement with Pure Technologies U.S. Inc. in an amount not to exceed $7 million to perform PCCP pipeline inspections.
b. Do not authorize an agreement with Brown and Caldwell to provide engineering services to rehabilitate PCCP portions of Calabasas Feeder.
c. Do not authorize an amendment to an agreement with HDR Engineering, Inc. to rehabilitate PCCP and steel portions of the Sepulveda Feeder.

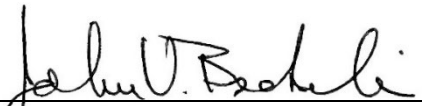
Fiscal Impact: Expenditures of $9.1 million in capital funds. Approximately $3.5 million will be incurred in the current biennium and has been previously authorized. The remaining capital expenditures will be funded from future CIP budgets following board approval of those budgets.
Business Analysis: This option will generally enhance the reliability of Metropolitan's PCCP feeders and reduce the risk of costly urgent repairs. However, this option will forego an opportunity to specifically enhance reliability and extend the service life of Calabasas and Sepulveda Feeders. This option could lead to higher repair costs and unplanned shutdowns and outages and could also result in potential delays to the operation of West Side Pump Stations.

Option #3

Do not proceed with PCCP inspections or engineering work to rehabilitate Calabasas Feeder or Sepulveda Feeder at this time.
Fiscal Impact: None
Business Analysis: This option would reduce the monitoring of PCCP pipelines for potential deterioration and would defer PCCP rehabilitation of Calabasas and Sepulveda Feeders, potentially increasing the risk of pipeline failures due to PCCP deterioration. This option could also result in potential delays to the operation of West Side Pump Stations.

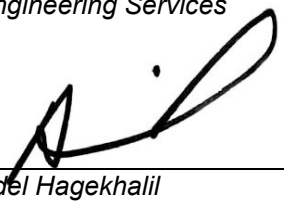
Staff Recommendation

Option #1



7/28/2022

John V. Bednarski *Date*
Manager/Chief Engineer
Engineering Services



8/2/2022

Adel Hagekhalil *Date*
General Manager

Attachment 1 – Allocation of Funds

Attachment 2 – Listing of Subconsultants

Attachment 3 – Location Map

Ref# ES12685020

Allocation of Funds for Electromagnetic Pipeline Inspection

	Current Board Action (Aug. 2022)	
Labor		
Studies & Investigations	$	1,247,000
Final Design		-
Owner Costs (Program mgmt., envir. monitoring)		310,000
Submittals Review & Record Drwgs.		-
Construction Inspection & Support		-
Metropolitan Force Construction		-
Materials & Supplies		50,000
Incidental Expenses		50,000
Professional/Technical Services		-
Pure Technologies US, Inc.		7,000,000
Traffic controls consultant		200,000
Right-of-Way		-
Equipment Use		-
Contracts		-
Remaining Budget		243,000
Total	**$**	**9,100,000**

The total amount expended since 2011 for electromagnetic pipeline inspections is approximately $9.6 million. The total estimated cost to complete three cycles of electromagnetic pipeline inspections, including the amount appropriated to date, funds allocated for the work described in this action is anticipated to range from $18 million to $19 million.

Allocation of Funds for Calabasas Feeder PCCP Rehabilitation

	Current Board Action (Aug. 2022)
Labor	
Studies & Investigations	$ 263,000
Final Design	-
Owner Costs (Program mgmt., permitting)	254,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	-
Brown and Caldwell	900,000
VE Consultant	50,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	33,000
Total	**$ 1,500,000**

The total amount expended to date to rehabilitate PCCP on the Calabasas Feeder is approximately $1.8 million. The total estimated cost to complete the rehabilitation of this pipeline, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from $122 million to $142 million.

Allocation of Funds for Sepulveda Feeder PCCP Rehabilitation

	Current Board Action (Aug. 2022)
Labor	
Studies & Investigations (survey, tech. oversight)	$ 930,000
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	523,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	150,000
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	120,000
Professional/Technical Services	-
HDR Engineering, Inc.	6,000,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	777,000
Total	**$ 8,500,000**

The total amount expended to date to rehabilitate PCCP on the Sepulveda Feeder is approximately $27.92 million. The total estimated cost to complete the rehabilitation of this pipeline, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from $700 million to $800 million.

The Metropolitan Water District of Southern California

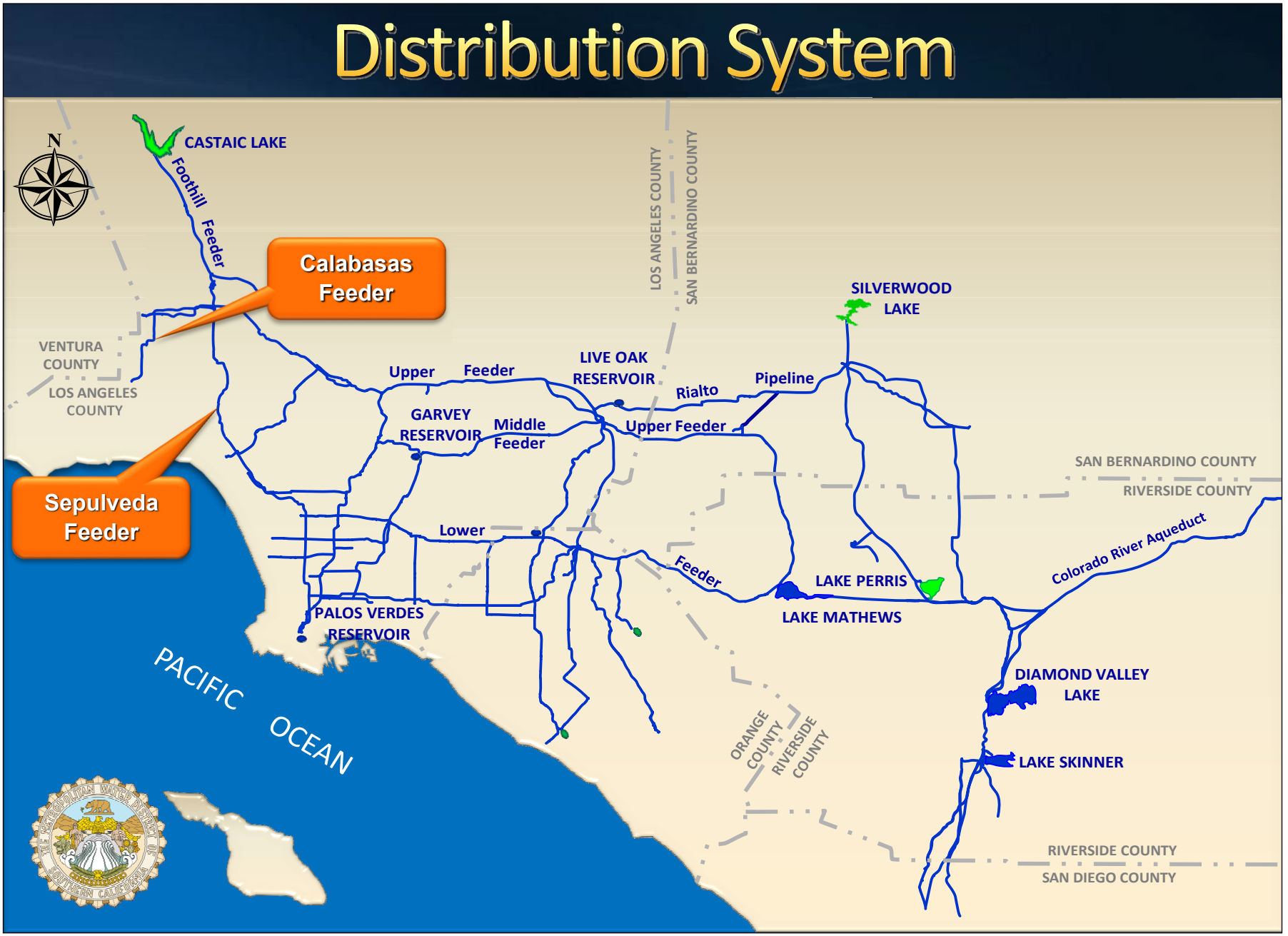
Subconsultants for Agreement with Brown and Caldwell
Calabasas Feeder PCCP Rehabilitation

Subconsultant
Boudreau Pipeline Corporation Corona, CA
Dewberry Long Beach, CA
DH Environmental Lake Forest, CA
DRP Engineering Monterey Park, CA
FPL & Associates Irvine, CA
Lettis Consultants International Valencia, CA
Ninyo & Moore Irvine, CA
Scott Foster Engineering La Canada, CA

The Metropolitan Water District of Southern California

Subconsultants for Agreement with HDR Engineering, Inc.
Sepulveda Feeder PCCP Rehabilitation

Subconsultant
Brierley Associates Corp. Denver, CO
C Below, Inc. Chino, CA
CDM Smith, Inc. Boston, MA
Cotton, Shires & Associates, Inc. Thousand Oaks, CA
DRP Engineering, Inc. Alhambra, CA
Henry H. Bardakjian Glendale, CA
KOA Corporation Monterey Park, CA
Scott Foster Engineering, Inc. La Canada Flintridge, CA
SC Solutions Sunnyvale, CA


Distribution System
N
CASTAIC LAKE
Foothill Feeder
Calabasas Feeder
Sepulveda Feeder
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
PACIFIC OCEAN
DIAMOND VALLEY LAKE
ORANGE COUNTY
RIVERSIDE COUNTY
LAKE SKINNER
RIVERSIDE COUNTY
SAN DIEGO COUNTY

Engineering & Operations Committee

PCCP Inspections, Sepulveda and Calabasas Feeders Rehabilitation

Item 7-3

August 15, 2022

PCCP Inspections Calabasas and Sepulveda Feeders Rehabilitation

Current Action

- Project 1 – Authorize an agreement with Pure Technologies U.S. Inc., in an amount not to exceed $7 million for inspection & monitoring services for prestressed concrete cylinder pipe
- Project 2 – Authorize an agreement with Brown and Caldwell in an amount not to exceed $900,000 for preliminary design to rehabilitate PCCP portions of Calabasas Feeder
- Project 3 – Authorize an increase of $6 million to an existing agreement with HDR Engineering, Inc. to rehabilitate the Sepulveda Feeder
  - Part of a series of projects to improve supply reliability for SWP dependent member agencies

Distribution System

Background

PCCP Reliability Management Strategy

- Regular inspections & monitoring
  - All PCCP / 5 to 7-year cycles
- Perform individual segment repairs as needed
  - No urgent repairs needed at this time
- Plan & execute long-term rehabilitation
  - Calabasas Feeder – Preliminary Design
  - Sepulveda Feeder – Preliminary Design

1. Background

PCCP Pipeline

Inspections

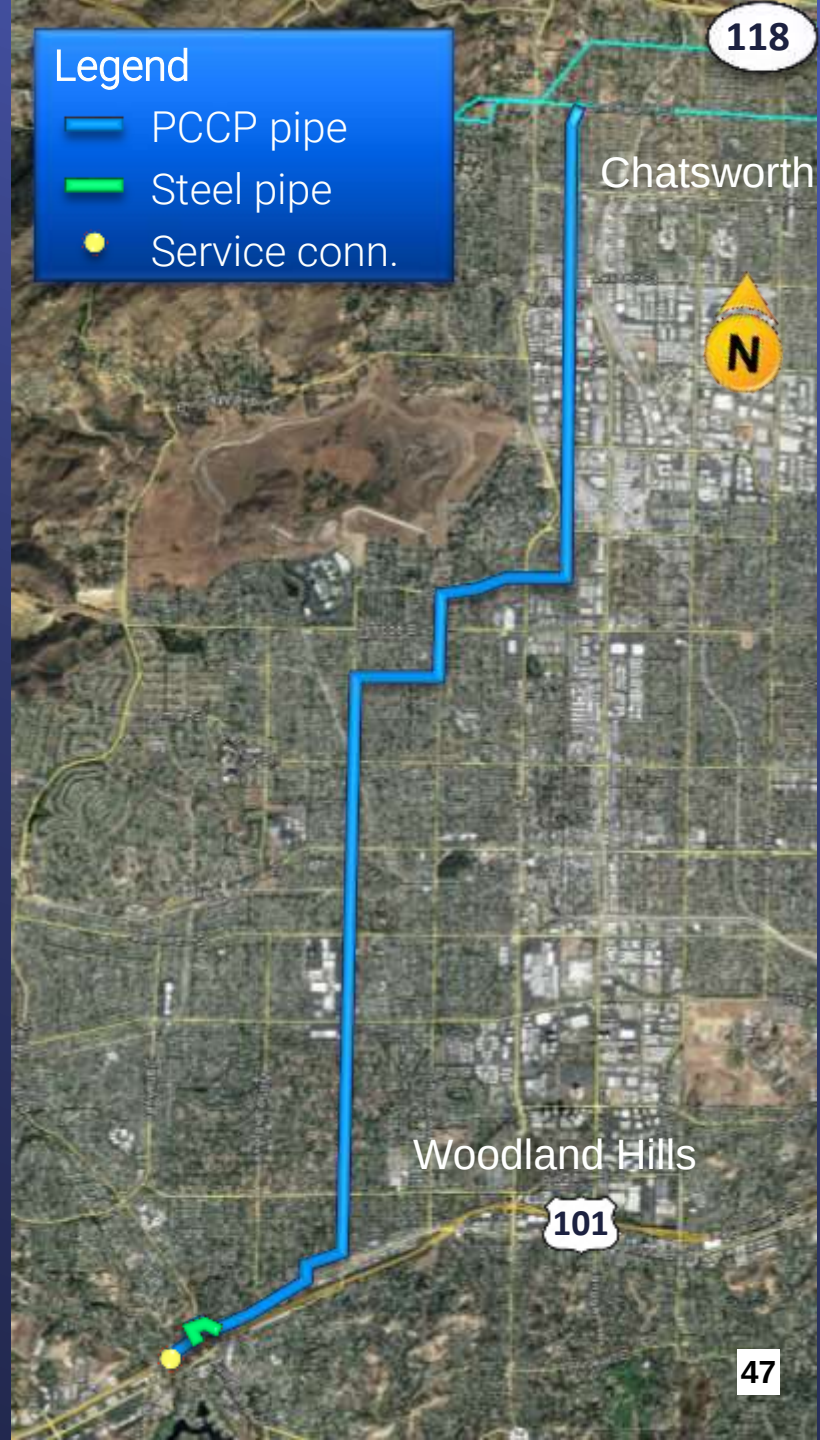
- Electromagnetic & visual inspections conducted annually
- 5 to 7-year inspection cycle
- 4 PCCP inspection cycles completed

2. Background

Calabasas Feeder

Preliminary Design

- 54-inch diam., 9.3 miles long
- Constructed in 1975
- Delivers treated water to the cities of Agoura Hills, Calabasas, Hidden Hills, Westlake Village, & areas of unincorporated western Los Angeles County



3. Background

Sepulveda Feeder - North Reach

Preliminary Design

- 84 to 150-inch diam. PCCP & welded steel pipe
- 42 miles long constructed in 1970s
- Crosses several freeways through urban areas
- Detailed Preliminary Design (PDR) for the more at-risk South Reach completed in 2021

3. Background – Sepulveda Feeder PCCP North Reach

- West Area Water Reliability Improvements studies authorized in Feb 2022
  - Deliver CRA Water to the west service area from the central pool
- Accelerate lining schedule to ensure feeder can sustain potential pressure increase from the Sepulveda Pump Stations
- Detailed PDR for the northern 19.5 miles required

PCCP

Inspections

1. New Agreement – Pure Technologies U.S. Inc.

- Prequalified under RFQ No. 1313
- Scope of work
  - Inspect 4 to 6 PCCP pipelines per year (averaging 25 miles per year)
  - Prepare reports
- NTE amount: $7,000,000
- No SBE required

Calabasas Feeder

Preliminary Design

2. New Agreement – Brown and Caldwell

- Selected under RFP No. 1312
- Scope of work
  - Evaluate information provided by Metropolitan staff, perform calculations, initiate permitting with local agencies, develop construction cost estimates
  - Conduct preliminary design
  - Complete preliminary design drawings
- SBE participation level: 25%
- NTE amount: $900,000

Sepulveda Feeder - North Reach

Preliminary Design

3. Agreement Amendment – HDR Engineering, Inc.

- Selected under RFP No. 1168
- Performed preliminary design for the South Reach
- Scope of Work
  - Preliminary design report & drawings
  - Evaluate previously lined PCCP & steel sections to accommodate higher pressure
  - Develop construction cost estimates
- SBE participation level: 25%
- Recommended increase to agreement: $6 M
- New NTE amount: $12.5 M

Calabasas & Sepulveda

Preliminary Design

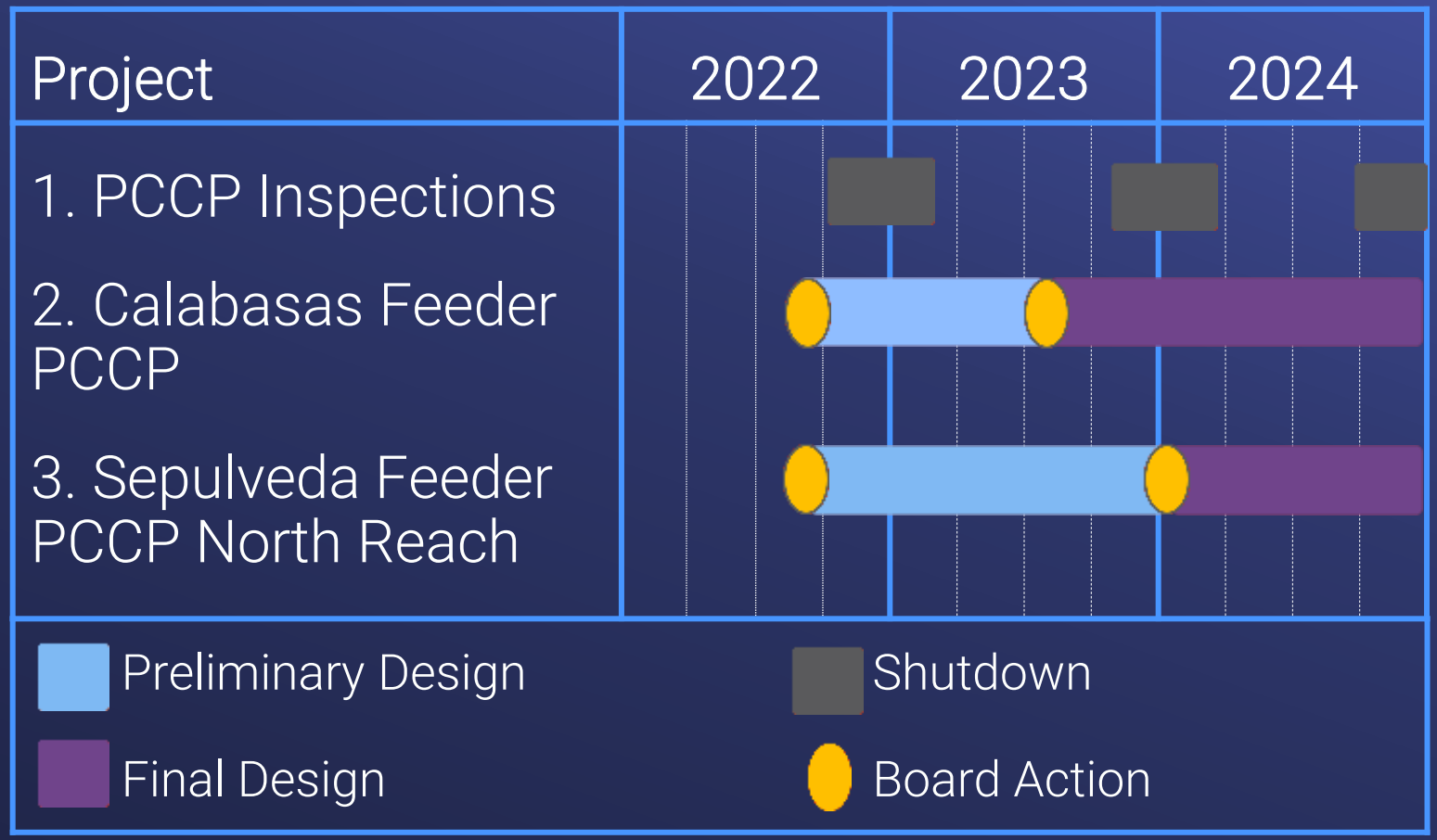
2. & 3. Metropolitan Scope

- Oversee consultant work
- Provide technical review
- Support environmental
- Permitting & PM

Allocation of Funds

	1. EM Inspections	2. Calabasas Feeder	3. Sepulveda Feeder
Metropolitan Labor			
Studies & Investigations	$1,247,000	$ 263,000	$ 930,000
Program mgmt. & Envir. Support	310,000	254,000	523,000
Construction Support			150,000
Materials and Supplies	100,000		120,000
Professional Services			
Pure Technologies US, Inc.	7,000,000		
Traffic Controls Consultant	200,000		
Brown and Caldwell		900,000	
VE Consultant		50,000	
HDR Engineering, Inc.			6,000,000
Remaining Budget	243,000	33,000	777,000
Total	$9,100,000	$1,500,000	$8,500,000

Project Schedule



Board Options

- Option #1

  Adopt the CEQA determination that the Calabasas Feeder and Sepulveda Feeder rehabilitation projects were previously addressed in the certified 2017 Prestressed Concrete Cylinder Pipe Rehabilitation Program Final Programmatic Environmental Impact Report, and:

  a. Authorize an agreement with Pure Technologies U.S. Inc. in an amount not to exceed $7 million to perform PCCP pipeline inspections.

  b. Authorize an agreement with Brown and Caldwell in an amount not to exceed $900,000 to provide preliminary design engineering services to rehabilitate PCCP portions of Calabasas Feeder.

  c. Authorize a $6 million increase to an agreement with HDR Engineering, Inc. for a new not-to-exceed amount of $12.5 million to rehabilitate PCCP and steel portions of the Sepulveda Feeder.

Board Options

- Option #2

  Adopt the CEQA determination that the Calabasas Feeder and Sepulveda Feeder rehabilitation projects were previously addressed in the certified 2017 Prestressed Concrete Cylinder Pipe Rehabilitation Program Final Programmatic Environmental Impact Report, and:

  a. Authorize an agreement with Pure Technologies U.S. Inc. in an amount not to exceed $7 million to perform PCCP pipeline inspections.

  b. Do not authorize an agreement with Brown and Caldwell to provide engineering services to rehabilitate PCCP portions of Calabasas Feeder.

  c. Do not authorize an agreement with HDR Engineering, Inc. to rehabilitate PCCP and steel portions of Sepulveda Feeder.

Board Options

- Option #3

  Do not proceed with PCCP inspections or engineering work to rehabilitate Calabasas Feeder or Sepulveda Feeder at this time.

Staff Recommendation

- Option #1


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928

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

8/16/2022 Board Meeting

7-4

Subject

Authorize a professional services agreement with HDR Engineering, Inc. in an amount not to exceed $1,300,000 for design of the Inland Feeder/San Bernardino Valley Municipal Water District Foothill Pump Station Intertie; the General Manager has determined the project to be 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 member agencies)

Executive Summary

The current state-wide drought and resulting low allocation of State Water Project (SWP) supplies by the California Department of Water Resources (DWR) have a direct impact on Metropolitan's ability to deliver water to the Rialto Pipeline service area. Expanding delivery of alternative supplies from Diamond Valley Lake (DVL) and possibly Colorado River water would benefit this area and would preserve limited SWP supplies for the West Branch SWP member agencies. This project is one of four associated projects which are currently underway to provide the ability to directly deliver water from DVL to the Rialto Pipeline through the Inland Feeder. This action authorizes a new agreement with HDR Engineering, Inc. for final design of the Inland Feeder/ San Bernardino Valley Municipal Water District Foothill Pump Station Intertie project.

Details

The Rialto Pipeline, constructed in 1972, is approximately 30 miles long with a diameter ranging from 96 to 144 inches. It conveys untreated water from DWR's Lake Silverwood to Metropolitan's Live Oak Reservoir in La Verne. Under normal conditions, the Rialto Pipeline relies on raw water deliveries from the East Branch of the SWP via DWR's Devil Canyon Afterbay. Member agencies with service connections on the Rialto Pipeline include the Inland Empire Utilities Agency, Three Valleys Municipal Water District, and the Upper San Gabriel Valley Municipal Water District.

Metropolitan's DVL provides emergency storage in the event of a major earthquake, carryover storage as a reserve for drought conditions, and seasonal storage to meet annual member agency demands. DVL is Metropolitan's largest reservoir, with a maximum storage capacity of 810,000 acre-feet. At this time, the Rialto Pipeline cannot access the water stored in DVL due to infrastructure and operational constraints.

In December 2021, the Board amended the Capital Investment Plan (CIP) for fiscal years 2020/2021 and 2021/2022 to include Rialto Pipeline water supply reliability improvements, which allow deliveries from DVL to the Rialto Pipeline. These reliability improvements consist of four separate projects: Wadsworth Pumping Plant Bypass Pipeline, Inland Feeder/Rialto Pipeline Intertie, Inland Feeder – Badlands Tunnel Surge Protection, and Inland Feeder/San Bernardino Valley Municipal Water District (SBVMWD) Foothill Pump Station Intertie. Together, these incremental infrastructure improvements will greatly increase operational flexibility and enhance the ability to move water from DVL, and potentially the Colorado River Aqueduct, into the Rialto Pipeline. In times of drought, operation of Metropolitan's system with these improvements will also allow for limited SWP supplies to be directed to West Branch SWP member agencies.

The Inland Feeder/Foothill Pump Station Intertie is an important component of this four-project effort. Without this project, the Rialto Pipeline water supply reliability benefits would be limited to a series of low-volume water exchanges between Metropolitan and SBVMWD. The Foothill Pump Station is located in the city of Highland

and is connected to SBVMWD's Foothill Pipeline, which usually delivers water for groundwater recharge during high SWP supplies and is therefore available in times of drought. This pump station will provide the lift needed to permit the direct delivery of approximately 107 cubic feet per second (cfs) from DVL to the Rialto Pipeline. A possible future phase could include construction of an additional 250 horsepower pump system which would increase the pumping capacity to approximately 120 cfs. Preliminary design of the initial phase is now complete, and staff recommends proceeding with final design.

In accordance with the April 2022 action on the biennial budget for fiscal years 2022/23 and 2023/24, the General Manager will authorize staff to proceed with the actions described below, pending board award of the design services agreement described below. Based on the current CIP expenditure forecast, funds for the work to be performed pursuant to this action during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Years 2022/23 and 2023/24. This project has been included in the System Flexibility and Supply Reliability Program of the CIP.

Inland Feeder/SBVMWD Foothill Pump Station Intertie – Final Design

The planned improvement includes pipeline interties and valve installations to connect Metropolitan's Inland Feeder to the existing in-line booster pumps at the Foothill Pump Station. Specific project components include construction of 450 feet of 54-inch bypass supply pipe; 800 feet of 54-inch bypass discharge line; isolation valves; temporary spool pieces and bulkheads; vaults to support the new valves; surge tanks to mitigate hydraulic surges; and associated electrical, instrumentation, piping system, and appurtenance to support the new equipment.

The final design phase activities will be conducted through a professional service agreement and Metropolitan staff. Planned consultant activities are described in further detail below. Metropolitan staff will perform detailed design of instrumentation and control systems, design review, hydraulics analysis, geotechnical support, consultant oversight, environmental support, and project management.

A total of $2.05 million is required for this work. Allocated funds include a total of $1,300,000 for final design activities by HDR Engineering, Inc. (HDR) under a new agreement as described below. Allocated funds for Metropolitan staff activities include $384,000 for detailed design as described above and review of consultant's work; $181,000 for environmental documentation, regulatory agency coordination, right-of-way support, project management, and project controls; and $185,000 for remaining budget.

As described below, final design will be performed by HDR and Metropolitan staff. Engineering Services' performance metric target range for final design with construction greater than $3 million is 9 to 12 percent. For this project, the performance metric goal for final design is 10.5 percent of the total construction costs. Currently, the cost of future construction is estimated to range from $16 million to $18 million. **Attachment 1** provides the allocation of the required funds.

Final Design Services (HDR Engineering, Inc.) – New Agreement

HDR is recommended to provide engineering services for the design of the Inland Feeder/Foothill Pump Station Intertie. HDR was prequalified via Request for Qualifications No. 1215 and performed the preliminary design under an existing board-authorized agreement. To allow for the expedited completion of design and construction, and to facilitate aligning this project's schedule with the other three related projects for the Rialto Pipeline water supply reliability improvements, staff recommends that HDR perform the final design.

The planned activities for HDR include preparation of detailed calculations and design, production of plans and specifications, participation in value engineering workshops, development of the engineer's estimate, and performing bid phase assistance.

This action authorizes an agreement with HDR for a not-to-exceed amount of $1,300,000 to provide engineering design services for the Inland Feeder/Foothill Pump Station Intertie. For this agreement, Metropolitan has established a Small Business Enterprise participation level of 13 percent. HDR has agreed to meet this level of participation. The planned subconsultant for this work is DRP Engineering, Inc.

Alternatives Considered

Several alternatives were considered to perform final design of the Inland Feeder/Foothill Pump Station Intertie, including utilizing in-house Metropolitan staff to perform all work components. Metropolitan's staffing strategy

for in-house Metropolitan staff has been: (1) to assess current work assignments for said staff and to determine the potential availability of staff to conduct this work; and (2) to use project-specific professional services agreements when resource needs exceed available in-house staffing or require specialized technical expertise in order to provide a concentrated engineering effort over an extended duration.

This strategy relies on the assumption that in-house engineering staff will handle the baseload of work on capital projects, while professional services agreements are selectively utilized to handle projects above this baseload or where specialized needs are required. This strategy allows Metropolitan's staff to be strategically utilized on projects to best maintain key engineering competencies and to address projects with special needs or issues.

After assessing the current workload for in-house staff, required expertise, and the relative priority of this project, staff has determined that insufficient engineering staff is available to ensure completion of the work in a timely manner. Staff recommends utilizing a consultant to perform final design work, and Metropolitan staff will provide needed site support and perform project reviews and oversight. This approach will allow for completion of not only this project, but also other budgeted capital projects within their current schedules and ensure that the work is conducted in the most efficient manner possible.

Summary

This action authorizes an agreement with HDR Engineering, Inc. for a not-to-exceed amount of $1,300,000 to provide engineering services for final design of the Inland Feeder/Foothill Pump Station Intertie. See **Attachment 1** for the Allocation of Funds and **Attachment 2** for the Location Map.

Project Milestones

October 2022 – Complete final design of Inland Feeder/Foothill Pump Station Intertie

February 2023 – Board action to award contract for the Inland Feeder/Foothill Pump Station Intertie

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

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 2023/24.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is exempt under Section 15262 of the State CEQA Guidelines because it involves planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded.

CEQA determination for Option #2:

None required

Board Options

Option #1

Authorize an agreement with HDR Engineering, Inc. for a not-to-exceed amount of $1,300,000 for final design of the Inland Feeder/Foothill Pump Station Intertie.

Fiscal Impact: Expenditure of $2.05 million in capital funds. All expenditures will be incurred in the current biennium and have been previously authorized.

Business Analysis: This option will improve water supply reliability in the Rialto Pipeline service area.

Option #2

Do not proceed with the project at this time.

Fiscal Impact: None

Business Analysis: This option would forego the opportunity to improve the reliability of service to those member agencies with connections to the Rialto Feeder.

Staff Recommendation

Option #1

7/21/2022

John V. Bednarski *Date*
Manager/Chief Engineer
Engineering Services

7/29/2022

Adel Hagekhalil *Date*
General Manager

Attachment 1 – Allocation of Funds

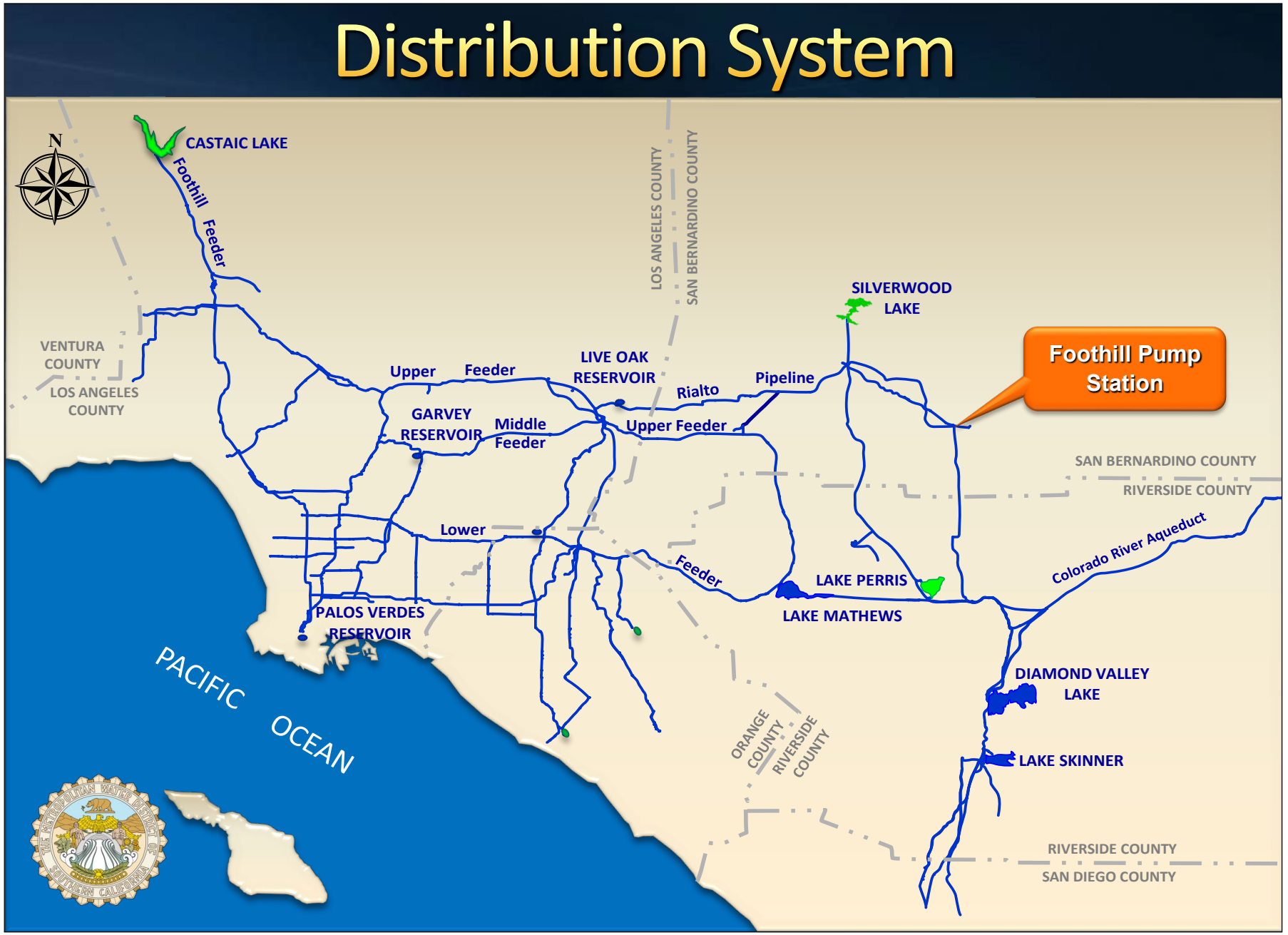
Attachment 2 – Location Map

Ref# es12688805

Allocation of Funds for Inland Feeder/SBVMWD Foothill Pump Station Intertie

	Current Board Action (Aug. 2022)
Labor	
Studies & Investigations	$ -
Final Design	384,000
Owner Costs (Program mgmt., envir. review)	181,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	-
HDR Engineering, Inc.	1,300,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	185,000
Total	**$ 2,050,000**

The total amount expended to date for the design of Inland Feeder/SBVMWD Foothill Pump Station Intertie is approximately $290,000. The total estimated cost to complete this project, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from $18.6 million to $20.6 million.


Distribution System
N
CASTAIC LAKE
Foothill Feeder
VENTURA COUNTY
LOS ANGELES COUNTY
LOS ANGELES COUNTY
SAN BERNARDINO COUNTY
SILVERWOOD LAKE
Foothill Pump Station
Upper Feeder
LIVE OAK RESERVOIR
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

Engineering & Operations Committee

Foothill Pump Station Intertie

Item 7-4

August 15, 2022

Foothill Pump Station Intertie

Current Action

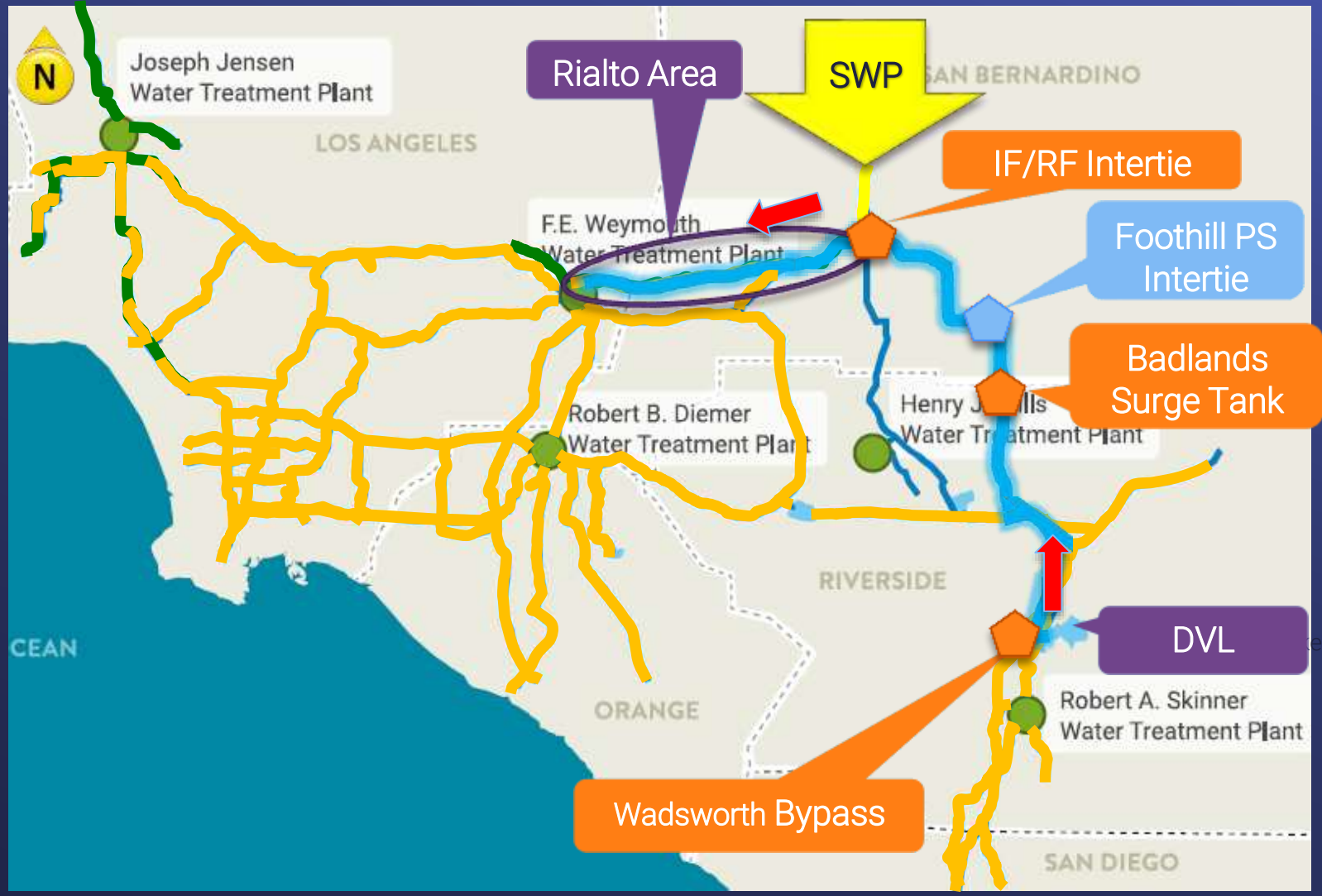
- Authorize a professional services agreement with HDR Engineering, Inc. in an amount not to exceed $1,300,000 for design of the Inland Feeder/San Bernardino Valley Municipal Water District Foothill Pump Station Intertie
- Part of a series of projects to improve supply reliability for SWP dependent member agencies

Background – On-going Water Supply Reliability Improvements

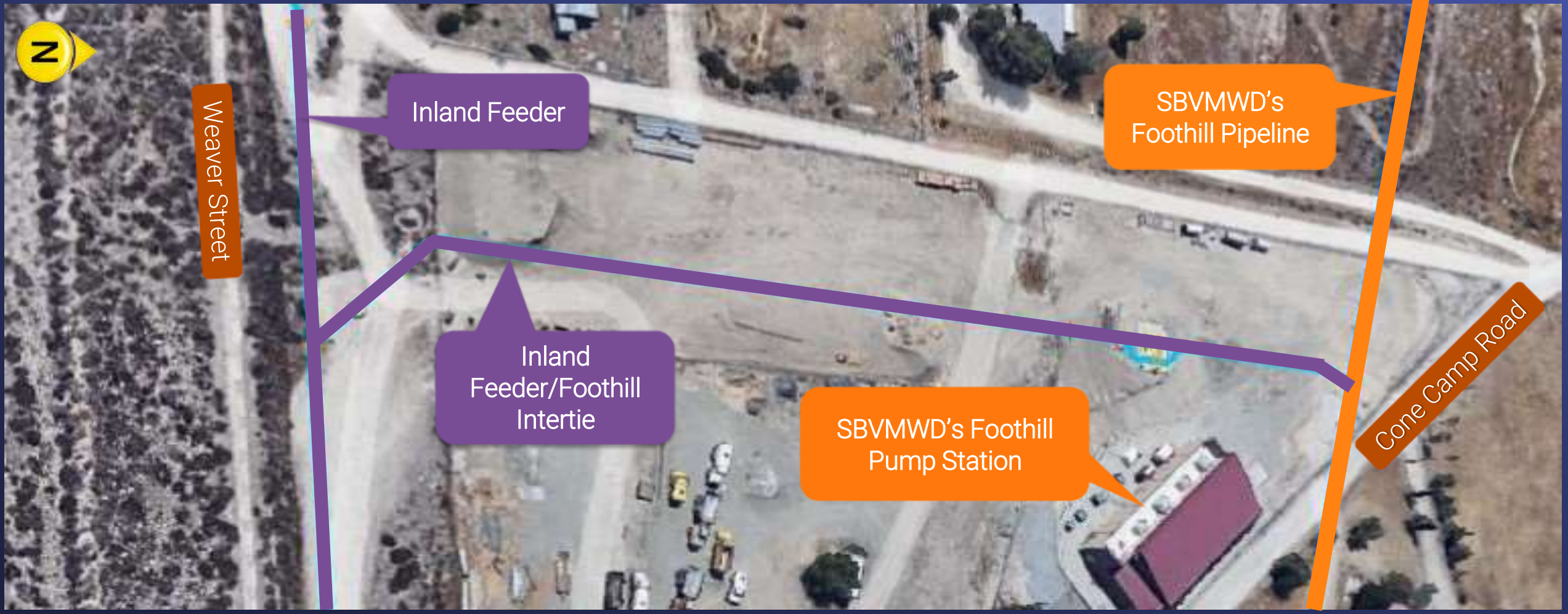
- Programs initiated to improve supply reliability of State Water Project dependent areas

Background-Rialto Area Water Supply Reliability Improvements

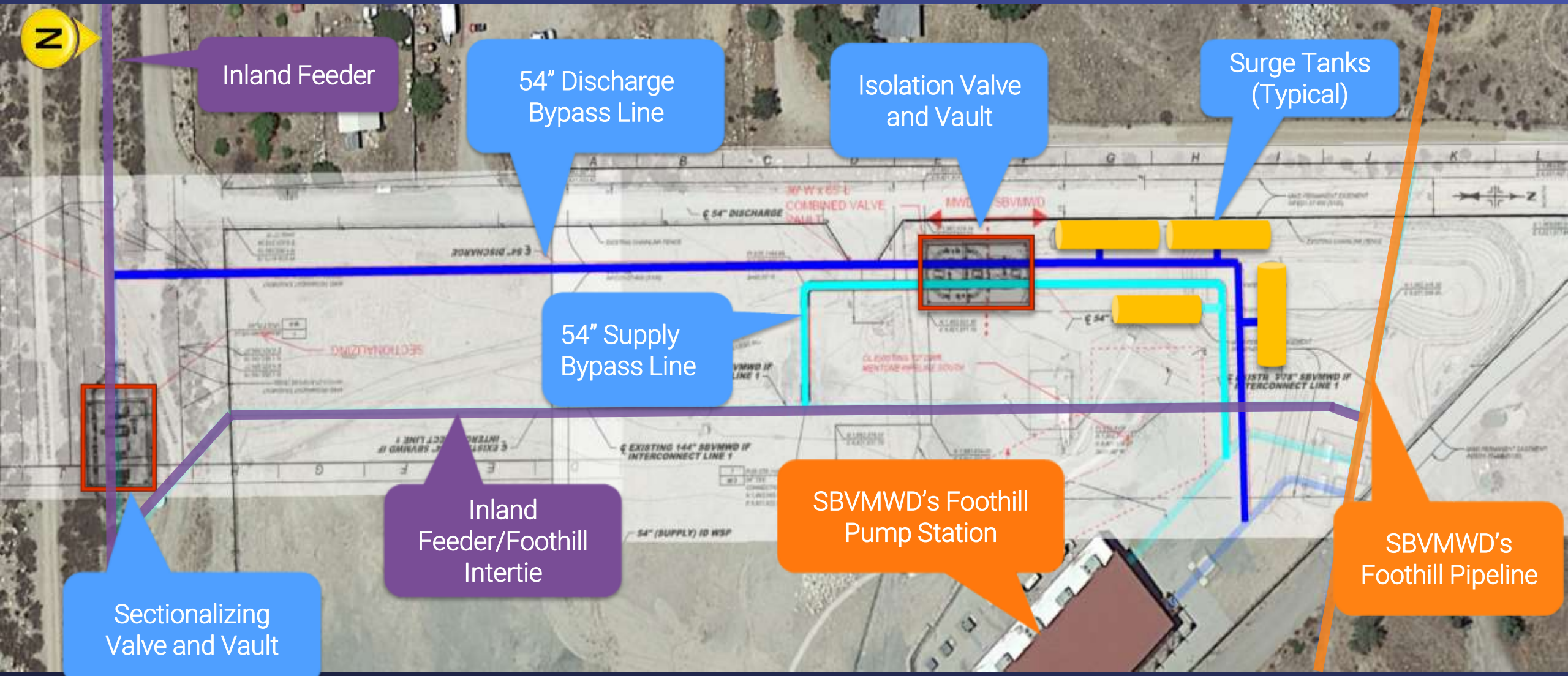
- Foothill Pump Station Intertie
  - 1 of 4 projects to deliver water from DVL to Rialto Pipeline via the Inland Feeder
  - Provides lift needed to deliver up to 107 cfs



Existing Site Infrastructure



Planned Work



Foothill Pump Station Intertie

Final Design

Alternatives Considered

- Utilize in-house Metropolitan staff to perform all work components
  - Assess current staff workload & availability
  - Use project-specific professional services agreements as required
- Selected Option
  - Utilize hybrid approach with consultant and Metropolitan staff jointly perform design

Foothill Pump Station Intertie

Final Design

HDR Agreement

- Prequalified via Request for Qualifications No. 1215
  - Completed project's preliminary design
- SBE participation level: 13%
- NTE amount: $1,300,000
- Scope of work
  - Prepare detailed calculations & design
  - Produce plans & specifications
  - Participate in value engineering workshops
  - Develop engineer's estimate
  - Perform bid phase assistance

Foothill Pump Station Intertie

Final Design

Metropolitan Scope

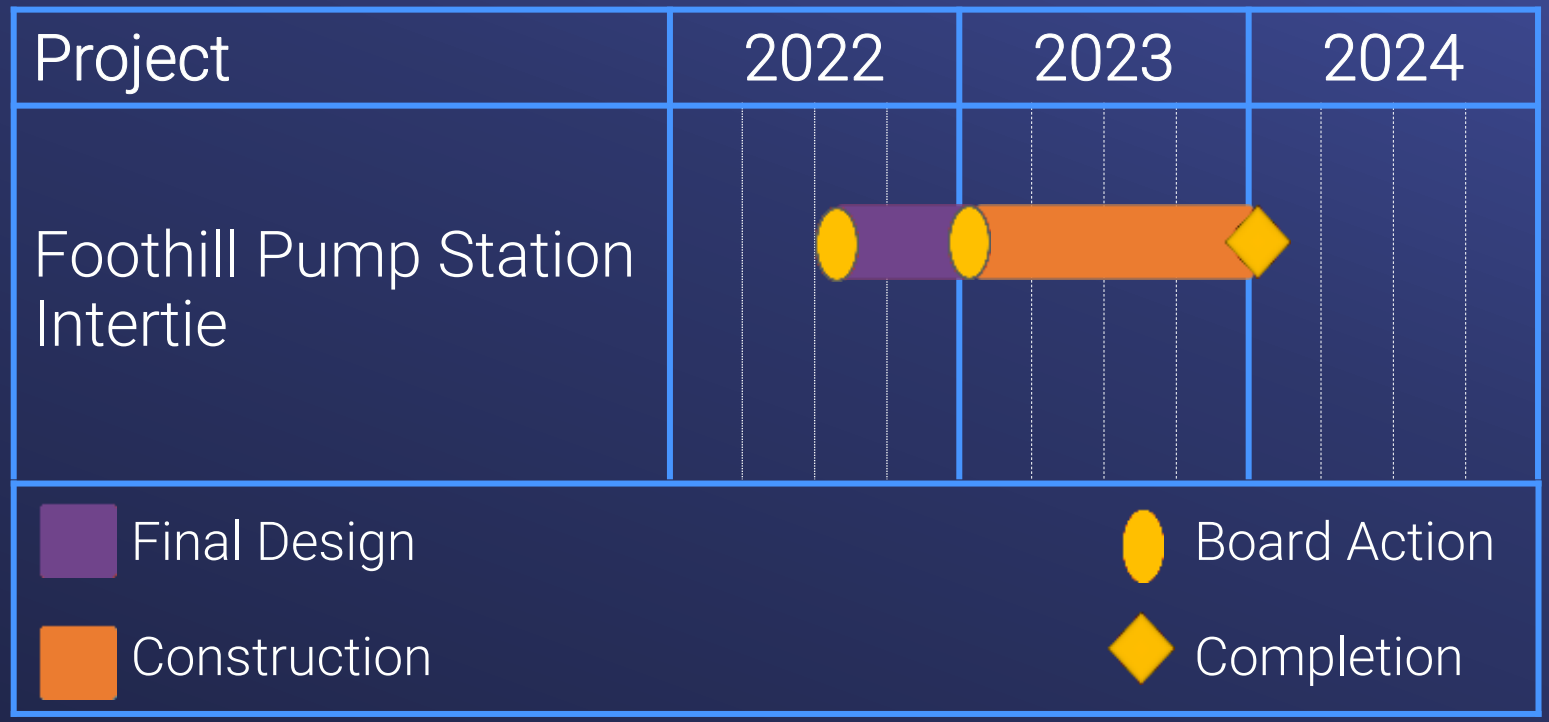
- Prepare detailed design of instrumentation & control systems
- Review consultant design
- Perform hydraulic analysis
- Support geotechnical investigation & analysis
- Provide consultant oversight, environmental support & project management

Allocation of Funds

Foothill Pump Station Intertie

Metropolitan Labor	
Final Design	$ 384,000
Program mgmt., contract admin. & envir. support	181,000
Professional Services	
HDR Engineering, Inc.	1,300,000
Remaining Budget	185,000
Total	$2,050,000

Project Schedule



Board Options

- Option #1

  Authorize an agreement with HDR Engineering, Inc. for a not-to-exceed amount of $1,300,000 for final design of the Inland Feeder/Foothill Pump Station Intertie.

- Option #2

  Do not proceed with the project at this time.

Staff Recommendation

- Option #1


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928

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

8/16/2022 Board Meeting

7-5

Subject

Award a $5,647,405 procurement contract to Sojitz Machinery Corporation of America for three 84-inch diameter butterfly valves to be installed as part of water supply reliability improvements in the Rialto Pipeline service area; the General Manager has determined that 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 member agencies)

Executive Summary

The current state-wide drought and resulting low allocation of State Water Project (SWP) supplies by the California Department of Water Resources (DWR) have a direct impact on Metropolitan's ability to deliver these supplies to the Rialto Pipeline service area. The provision of infrastructure additions to Metropolitan's system in this region will expand the potential to deliver alternative supplies from Diamond Valley Lake (DVL), and possibly the Colorado River Aqueduct (CRA), into the Rialto Pipeline. This alternative supply delivery approach will directly benefit this portion of the service area and will allow limited SWP supplies to be reallocated to West Branch SWP member agencies. This action awards a procurement contract for large-diameter butterfly valves. These valves will be installed in support of planned infrastructure improvements at multiple locations on the Inland Feeder and at DVL as part of upcoming construction contracts to enhance operational flexibility to deliver water from DVL, and potentially the CRA, to member agencies that are currently dependent on supplies from the SWP.

Details

Background

The Rialto Pipeline, constructed in 1972, is approximately 30 miles long with a diameter ranging from 96 inches to 144 inches. It conveys untreated water from DWR's Lake Silverwood to Metropolitan's Live Oak Reservoir in La Verne. Under normal conditions, the Rialto Pipeline relies on raw water deliveries from the East Branch of the SWP via DWR's Devil Canyon Afterbay. Member agencies with service connections on the Rialto Pipeline include the Inland Empire Utilities Agency, Three Valleys Municipal Water District, and the Upper San Gabriel Valley Municipal Water District.

Metropolitan's DVL provides emergency storage in the event of a major earthquake, carryover storage as a reserve for drought conditions, and seasonal storage to meet annual member agency demands. DVL is Metropolitan's largest reservoir, with a maximum storage capacity of 810,000 acre-feet. At this time, the Rialto Pipeline is unable to access the water stored in DVL due to infrastructure and operational constraints and hydraulic limitations.

In December 2021, the Board authorized amending the Capital Investment Plan (CIP) to include the water supply reliability improvements in the Rialto Pipeline service area. The improvements are being implemented in a staged approach. Stage 1 includes the Wadsworth Pumping Plant bypass pipeline, the Inland Feeder/Rialto Pipeline intertie, and the Inland Feeder Badlands Tunnel Surge Protection Facility. These infrastructure modifications will allow for the delivery of up to 60 cubic feet per second (cfs) from DVL to the Rialto Pipeline service area. Stage 2 of the improvements program includes making connections between the Inland Feeder and a San Bernardino Valley Municipal Water District pump station near the city of Highland. When both phases of the

Rialto Pipeline Water Supply Reliability Improvements are completed, up to 120 cfs of DVL water can be delivered to the Rialto Pipeline. These incremental infrastructure improvements, coupled with existing infrastructure, would significantly increase operational flexibility and enhance the water supply availability to member agencies with service connections on the Rialto Pipeline. This alternative supply delivery approach will directly benefit West Branch SWP member agencies by allowing limited SWP supplies to be reallocated to the West Branch of the SWP.

The implementation of the Stage 1 projects consists of pipe connections between existing Metropolitan pipelines, with bulkheads and spool pieces to isolate and direct flows. Design activities for these improvements are currently underway and are scheduled to be completed by the end of 2022. Construction of the new infrastructure is anticipated to be completed by late 2023. Large-diameter butterfly valves, which are the subject of this action, are included in these three projects to improve operational flexibility. Staff recommends moving forward with valve procurement at this time since the valves have a long fabrication and delivery cycle. Staff will return to the Board at a later date to award construction contracts for installation of these valves.

In accordance with the April 2022 action on the biennial budget for fiscal years 2022/23 and 2023/24, the General Manager will authorize staff to proceed with the procurement of the valves to improve the water supply reliability of the Rialto Pipeline, pending board award of the procurement contract described below. Based on the current CIP expenditure forecast, funds for the work to be performed pursuant to the subject contracts during the current biennium are available within the CIP Appropriation for Fiscal Years 2022/23 and 2023/24 (Appropriation No. 15488). This project has been reviewed in accordance with Metropolitan's CIP prioritization criteria and was approved by Metropolitan's CIP evaluation team to be included in the Supply Reliability Program.

Rialto Pipeline Water Supply Improvements – Procurement

The scope of the procurement contract includes furnishing three 84-inch diameter butterfly valves, associated fittings, and accessories. Metropolitan forces will receive, offload, and place the valves in storage at the Wadsworth Pumping Plant.

A total of $6,200,000 is required to perform this work. In addition to the amount of the contract, the allocated funds include $132,000 for factory fabrication inspection and functional testing; $33,000 for Metropolitan forces for activities described above; $63,000 for submittals review, technical support, and responding to manufacturer requests for information; $90,000 for contract administration and project management; and $234,595 for remaining budget.

Attachment 1 provides the allocation of required funds. The total estimated cost to complete the Rialto Pipeline Water Supply Improvement Project, including the amount appropriated to date, funds allocated for the work described in this action, and all future actions, is expected to range between $41 million and $45 million.

Award of Procurement Contract (Sojitz Machinery Corporation of America)

Specifications No. 2022 for furnishing butterfly valves for Rialto Pipeline Water Supply Improvement projects was advertised for bids on April 5, 2022. As shown in **Attachment 2**, two bids were received and opened on June 28, 2022. The bid from Anderson Supply Co. was deemed to be non-responsive due to exceptions taken by the bidder. The bid from Sojitz Machinery Corporation of America in the amount of $5,647,405 complies with the requirements of the specifications. This amount includes all sales and use taxes imposed by the State of California. The budgetary estimate for this material, based on a survey of vendors, ranged from $5 million to $5.5 million. As a procurement contract, there are no subcontracting opportunities.

This action awards a $5,647,405 procurement contract to Sojitz Machinery Corporation of America to furnish three 84-inch diameter butterfly valves to improve the water supply reliability of the Rialto Pipeline.

Alternatives Considered

During the planning phase of this project, staff considered using different types of valves for isolation, such as conical plug and spherical ball valves. These valves are robust and have a full port opening, thereby reducing pressure losses. However, these valves are larger, expensive, and take longer to fabricate. The much larger size of either the conical plug or spherical ball valve, and the actuator needed to operate the valve, would also result in a significantly larger structure to house the valve, increasing construction costs. These types of valves are utilized in situations where the valve controls the flow, or loss of pressure across the valve is an issue. In the current

application, where the valve is used solely for isolation, open or closed, and pressure losses are not an issue, butterfly valves are more appropriate and cost-effective. The recommended action allows Metropolitan to procure the valves needed for isolation in a timely and cost-effective manner.

Summary

This action awards a $5,647,405 procurement contract to Sojitz Machinery Corporation of America to furnish three 84-inch diameter butterfly valves to improve the water supply reliability of the Rialto Pipeline. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Abstract of Bids, and **Attachment 3** for the Location Map.

Project Milestone

June 2024 – Completion of valve fabrication and delivery

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

Metropolitan Water District Administrative Code Section 8140: Competitive Procurement

By Minute Item 52626, dated December 14, 2021, the Board amended the CIP to include projects to improve water supply reliability in the Rialto Pipeline service area.

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 2023/24.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines because it involves the funding, design, minor alterations, and replacement of existing public facilities with negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under Class 1 and Class 2 Categorical Exemptions (Sections 15301 and 15302 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Award a $5,647,405 contract to Sojitz Machinery Corporation of America to furnish three 84-inch diameter butterfly valves to improve the water supply reliability of the Rialto Pipeline.

Fiscal Impact: Expenditure of $5.97 million in capital funds. Approximately $275,000 will be incurred in the current fiscal biennium and has been previously authorized.
Business Analysis: This option will improve the operational reliability of water deliveries to member agencies with connections to the Rialto Pipeline.

Option #2

Do not proceed with this project at this time.
Fiscal Impact: None
Business Analysis: This option would forego improving the reliability of service to those member agencies with connections to the Rialto Pipeline.

Staff Recommendation

Option # 1

7/21/2022

John V. Bednarski *Date*
Manager/Chief Engineer
Engineering Services

7/27/2022

Adel Hagekhalil *Date*
General Manager

Attachment 1 – Allocation of Funds

Attachment 2 – Abstract of Bids

Attachment 3 – Location Map

Ref# es12686329

Allocation of Funds for Rialto Pipeline Water Supply Improvements

	Current Board Action (Aug. 2022)
Labor	
Studies & Investigations	$ -
Final Design	-
Owner Costs (Program mgmt.)	90,000
Support during construction & testing	-
Submittals Review & Record Drwgs.	63,000
Construction Inspection & Support	132,000
Force Construction	33,000
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	-
Right-of-Way	-
Equipment Use	-
Contracts	
Sojitz Machinery Corporation of America	5,647,405
Remaining Budget	234,595
Total	**$ 6,200,000**

The total amount expended to date on the Rialto Pipeline Water Supply Improvement project is approximately $2,700,000. The total estimated cost to complete this project, including the amount appropriated to date, funds allocated for the work described in this action, and all future actions, is expected to range between $41 million and $45 million.

The Metropolitan Water District of Southern California

Abstract of Bids Received on June 28, 2022 at 2:00 P.M.

Specifications No. 2022
Rialto Pipeline Water Supply Improvements

The work consists of procuring three 84-inch diameter butterfly valves to be installed as part of water supply reliability improvements in the Rialto Pipeline service area.

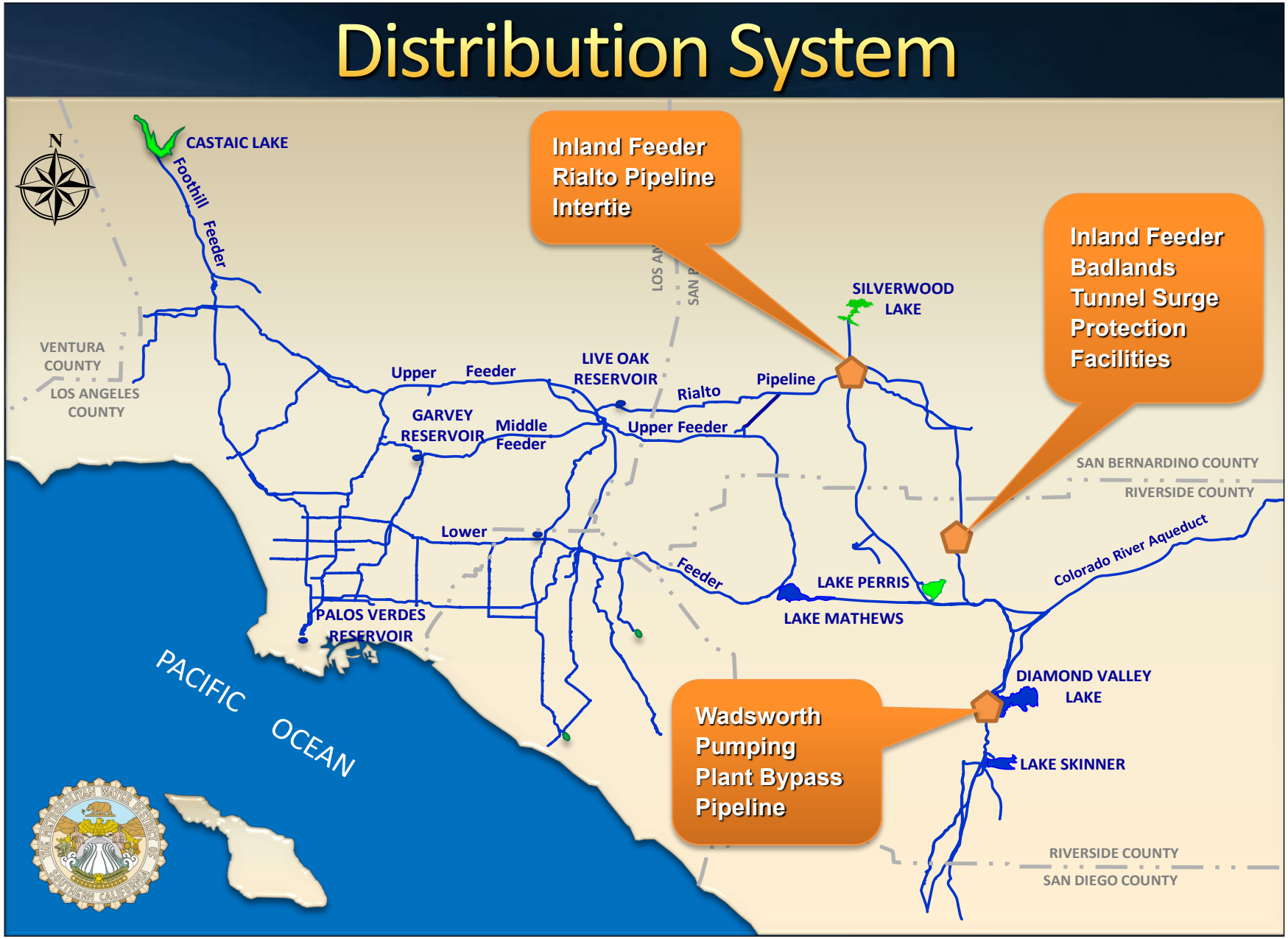
Estimated range of costs: $5,000,000 – $5,500,000

Bidder and Location	Base Bid Price Total[1, 2]
Anderson Supply Co. Gulfport, Mississippi	$2,087,603[3]
Sojitz Machinery Corporation of America **Farmington Hills, Michigan**	**$5,647,405**

[1] As a procurement contract, there are no subcontracting opportunities. For bid evaluation purposes, bidders who qualify as a small business enterprise, disabled veteran business enterprise, or regional business enterprise receive a bid-price reduction credit.

[2] Includes sales and use taxes of 7.75 percent imposed by the state of California

[3] Non-responsive bid


Distribution System
N
CASTAIC LAKE
Foothill Feeder
Inland Feeder
Rialto Pipeline
Intertie
Inland Feeder
Badlands
Tunnel Surge
Protection
Facilities
SILVERWOOD
LAKE
VENTURA
COUNTY
LOS ANGELES
COUNTY
Upper Feeder
LIVE OAK
RESERVOIR
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
Wadsworth
Pumping
Plant Bypass
Pipeline
LAKE SKINNER
RIVERSIDE COUNTY
SAN DIEGO COUNTY

Engineering & Operations Committee

Rialto Pipeline Water Supply Improvements Valve Procurement

Item 7-5

August 15, 2022

Rialto Pipeline Water Supply Improvements

Valve Procurement

Current Action

- Award a $5,647,405 procurement contract to Sojitz Machinery Corporation of America for three 84-inch diameter butterfly valves as part of water supply reliability improvements in the Rialto Pipeline service area
- Part of series of projects to improve supply reliability for SWP dependent member agencies

Background – On-going Water Supply Reliability Improvements

- Programs initiated to improve supply reliability of State Water Project dependent areas

Rialto Pipeline Water Supply Improvements

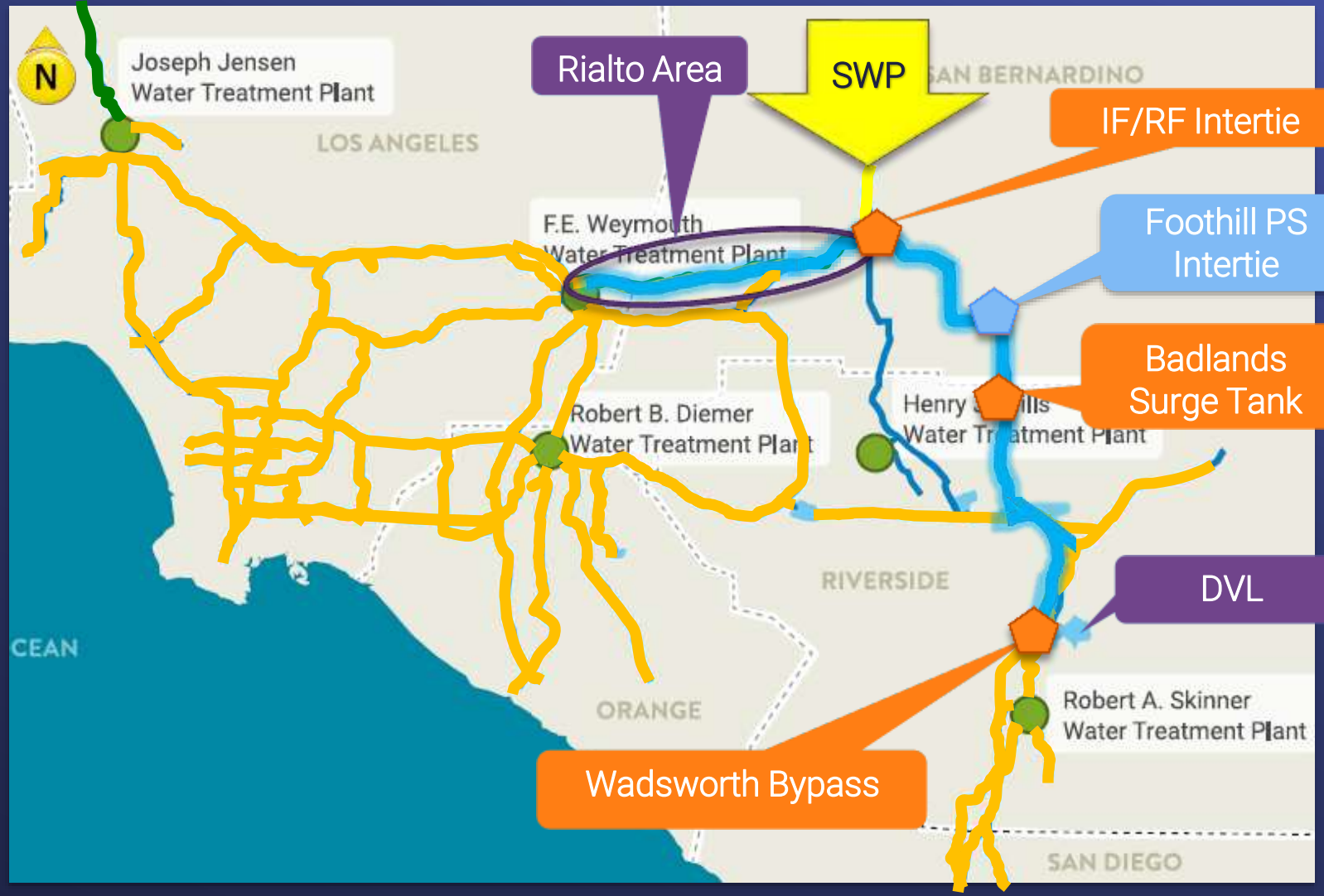
Valve Procurement

Background

- Rialto Pipeline is approx. 30 miles long & 96 to 144 inches in diameter
  - Conveys SWP to Inland Empire Utilities Agency, Three Valleys Municipal Water District & Upper San Gabriel Valley Municipal Water District
- Diamond Valley Lake (DVL) is Metropolitan's largest reservoir
  - Provides member agency demands, emergency storage & a reserve for drought conditions
- Rialto Pipeline is unable to access water stored in DVL or from the CRA due to infrastructure & operational constraints

Rialto Pipeline Area Drought Actions

- Rialto Pipeline service area is dependent on SWP
- Rialto Pipeline Water Supply Improvements:
  - Wadsworth P.P. Bypass
  - Badlands Tunnel Surge Protection Facility
  - Foothill Pump Station Intertie
  - Inland Feeder Rialto Pipeline Intertie
- Valve procurement recommended at this time



Rialto Pipeline Water Supply Improvements

Valve Procurement

Valve Procurement & Installation

- Valve fabrication & delivery can take up to two years
  - Delivery scheduled for summer 2024
- Project components will be operational by end of 2023
  - Utilize removable bulkheads for temporary isolation
- Valves to be installed during February 2025 shutdown
  - Under separate contract

Rialto Pipeline Water Supply Improvements

Valve Procurement

Alternatives Considered

- Different types of valves for isolation
  - Conical, spherical & butterfly valves were considered
  - Conical & spherical valves are larger, more expensive & take longer to fabricate
- Selected alternative
  - For situations requiring only isolation butterfly valves are more appropriate & cost-effective

Rialto Pipeline Water Supply Improvements

Valve Procurement

Scope of Work

- Contractor
  - Furnish three 84-inch butterfly valves
  - Deliver valves to Wadsworth Pumping Plant
- Metropolitan
  - Submittal review
  - Factory fabrication inspection
  - Off-load & store valves
  - Contract administration & project management

Bid Results
Specifications No. 2022

Bids Received	June 28, 2022
No. of Bidders	2
Lowest Responsible Bidder	Sojitz Machinery Corporation of America
Lowest Responsible Bid	$5,647,405
Range of Bids	$2.1 M* to $5.6 M
Estimated Range of Costs	$5.0 M to $5.5 M

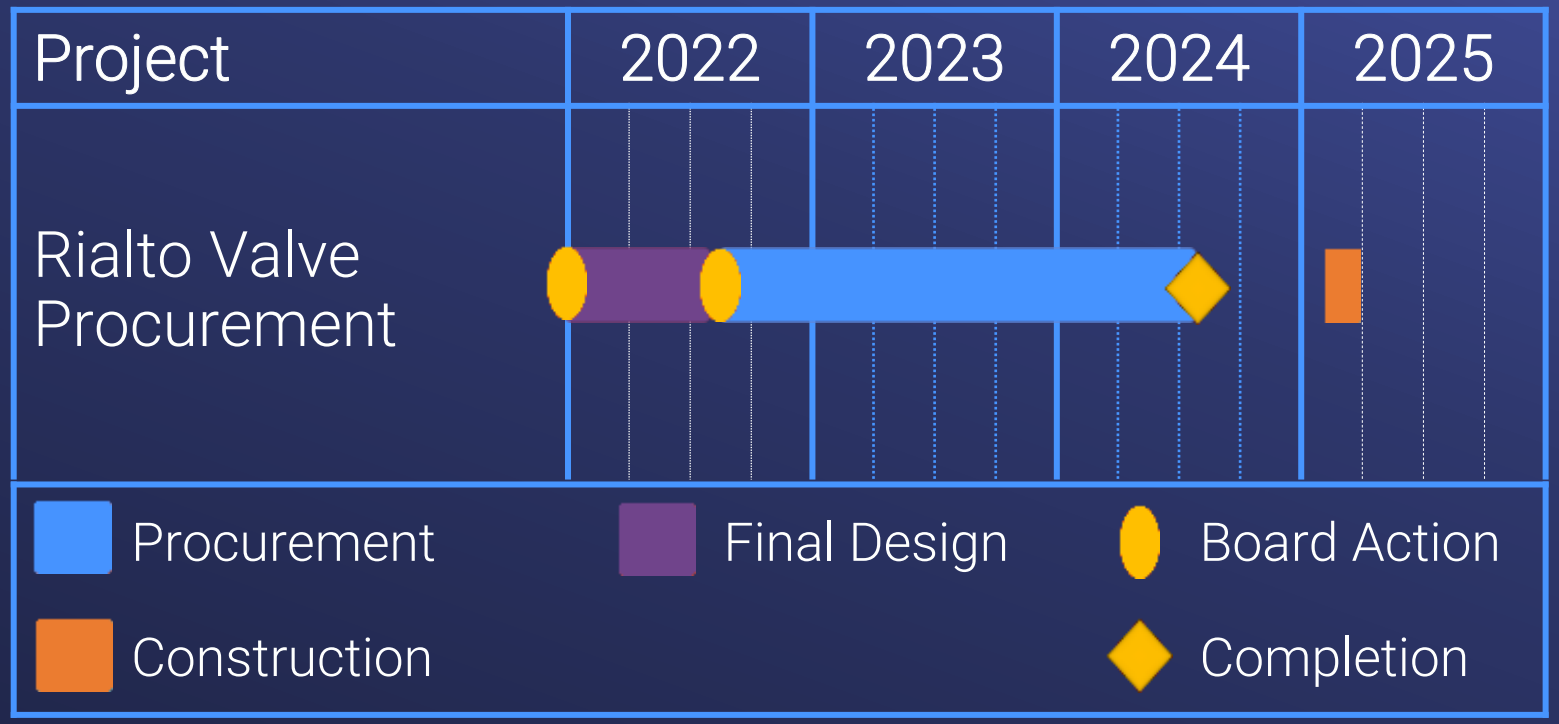
*Non-responsive bid

Allocation of Funds

Rialto Valve Procurement

Metropolitan Labor	
Program mgmt., contract admin. & envir. support	$ 90,000
Fabrication Inspection	132,000
Submittal review, technical support & record drwgs.	63,000
Force construction	33,000
Contract	
Sojitz Machinery Corporation of America	5,647,405
Remaining Budget	234,595
Total	$6,200,000

Project Schedule



Board Options

- Option #1

  Award a $5,647,405 contract to Sojitz Machinery Corporation of America to furnish three 84-inch diameter butterfly valves to improve the water supply reliability of the Rialto Pipeline.

- Option #2

  Do not proceed with this project at this time.

Staff Recommendation

- Option #1


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928

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

8/16/2022 Board Meeting

7-6

Subject

Authorize annual increases of $200,000 to existing, five-year on-call agreements with RHA, LLC; Strategic Value Solutions, Inc.; and Value Management Strategies, Inc. for a new annual not-to-exceed total of $440,000, for value engineering and other technical services in support of Capital Investment Plan projects; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

Metropolitan conducts value engineering workshops to improve the overall outcome of projects delivered through the Capital Investment Plan (CIP). These workshops apply industry-accepted best practices to ensure that projects are developed and implemented in a manner that balances functionality and life-cycle costs. These services are typically provided through on-call professional services agreements. The demand for these services has increased since three five-year on-call agreements were authorized by the General Manager in December 2019. Increases to the annual maximum agreement amounts are recommended for three firms at this time. This action authorizes annual increases of $200,000 to existing on-call agreements with RHA, LLC; Strategic Value Solutions, Inc.; and Value Management Strategies, Inc.

Details

Background

Metropolitan initiated a Value Engineering (VE) program in 1994 to enhance project performance, optimize the use of funding for CIP projects, and to 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, systems, equipment, and material selections. This comprehensive assessment is conducted at multiple stages in the project's life cycle. In the process, staff works to ensure the desired project exhibits functionality and costs that are consistent with the required performance, quality, reliability, and safety objectives. Metropolitan's standard is to provide VE workshops for all projects with construction contract estimates that exceed $5 million. A second assessment process, referred to as a constructability review, includes a workshop focused on reviewing the overall means and methods of constructing a project. This review is performed on projects with a construction contract estimate that exceeds $2 million.

Under the current CIP expenditure plan, Metropolitan does not have enough staff certified through the Society of American Value Engineers International (SAVE) to conduct both VE and constructability reviews on projects that meet the threshold requirement for assessment. Consequently, consultants are used to lead these activities on certain projects. This approach ensures that projects within the CIP continue to be effectively evaluated during their design development process. The supplemental technical services are typically provided through on-call agreements which provide certified facilitators as well as subject-matter experts to provide a third-party perspective of the project's composition and design approach. In December 2019, the General Manager authorized three on-call agreements for five years, with a maximum amount payable of $240,000 per agreement year, to provide VE services.

For the past 10 years, Metropolitan's Board has authorized planned expenditures on the CIP, which have averaged $250 million per year. In April 2022, the Board approved an increased budget for FYs 2022/23 and 2023/24 to $300 million per year. Staff recommended this increase so that core work on rehabilitation and replacement work

can continue while simultaneously advancing work on key additional initiatives like drought resiliency and flexibility, battery energy storage systems for energy sustainability, and desert housing and village enhancements. As a consequence of the planned increase to CIP expenditures, the number of requested VE workshops and constructability reviews has increased in order to support the continued efficient management of the CIP. Over the past decade, the VE program averaged about eight workshops per year. During the first six months of the current agreement year, 11 consultant-led workshops have been completed or are in the planning stages. Consequently, the current VE consultants are approaching their annual maximum agreement capacity much earlier than in previous years. This trend is expected to continue into the foreseeable future as these services are required to support the $600 million biennial CIP for fiscal years 2022/23 and 2023/24.

Value Engineering Services (RHA, LLC; Strategic Value Solutions, Inc.; and Value Management Strategies, Inc.) – Amendment to Agreements

In October 2019, Metropolitan issued Request for Qualifications (RFQ) No. 1229 to identified qualified firms to provide SAVE-certified VE and other similar engineering workshops. Following evaluation of the RFQ respondents, and based on Metropolitan's then-current needs, RHA, LLC (RHA); Strategic Value Solutions, Inc. (SVS); and Value Management Strategies, Inc. (VMS) were awarded agreements under the General Manager's authority. The General Manager awarded each firm an on-call agreement for five years with a maximum amount payable of $240,000 per agreement year to provide VE services. The agreements started on December 1, 2019, and will end on November 30, 2024.

Metropolitan uses these SAVE-certified VE consultants for a variety of services. Primarily, staff from these firms facilitate project-specific weeklong VE and constructability workshops with the project teams. The specialized expertise provided by these firms may also facilitate issue-specific project optimization sessions. Specific examples of upcoming or ongoing VE studies include: (1) the ongoing five-part workshops that seek to identify alternate sources of water for State Water dependent areas; and (2) the planned VE workshop to reduce overall project costs for the Colorado River Aqueduct Storage Building Replacement project. Past experience has demonstrated the value of these types of studies to ensure the efficient execution of the CIP.

This action authorizes an increase of $200,000 per agreement year for existing on-call agreements with RHA, SVS, and VMS for a new not-to-exceed total of $440,000 for VE, meeting facilitation, and technical engineering services. The new maximum payable amount will be in effect for the remainder of the agreement term.

Funds for the work assigned to the consultants under on-call agreements are available within Metropolitan's capital expenditure plan. No work is guaranteed to the consultants under these agreements. For each of the agreements, Metropolitan has established a Small Business Enterprise participation level of 25 percent.

Alternatives Considered

Alternatives considered for completing VE workshops included assessing the availability and capability of in-house Metropolitan staff to conduct this work. Metropolitan's staffing strategy for utilizing consultants and in-house Metropolitan staff has been: (1) to assess current work assignments for in-house staff to determine the potential availability of staff to conduct this work; and (2) for long-term rehabilitation projects when resource needs exceed available in-house staffing or require specialized technical expertise.

This strategy relies on the assumption that in-house engineering staff will handle the baseload of work on capital projects, while professional services agreements are selectively utilized to handle projects above this baseload or where specialized needs are required. This strategy allows Metropolitan's staff to be strategically utilized on projects to best maintain key engineering competencies and to address projects with special needs or issues. After assessing the current workload for in-house staff and the relative priority of this project, staff recommends the use of a professional services agreement for the VE workshops. This approach will allow for the completion of not only these workshops but also other budgeted capital projects within their current schedules. Furthermore, a third-party perspective is often a key element of a VE review.

Policy

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

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

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

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is not defined as a project under CEQA because it involves government funding mechanisms or other government fiscal activities which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State of CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Authorize annual increases of $200,000 to existing, five-year on-call agreements with RHA, LLC; Strategic Value Solutions, Inc.; and Value Management Strategies, Inc. for a new annual not-to-exceed total of $440,000, for value engineering and technical engineering services

Fiscal Impact: None; funding for the work to be assigned to the consultants under on-call agreements and performed this biennium is already authorized in the biennial budget. Future costs will be accounted for and appropriated under subsequent biennial budgets. In addition, no work is guaranteed to the consultants under these agreements.

Business Analysis: Approval will allow staff to continue to conduct value engineering workshops in support of Metropolitan's CIP program.

Option #2

Do not authorize an increase in the maximum amount payable under the value engineering agreements at this time.

Fiscal Impact: None

Business Analysis: Under this option, Metropolitan staff would facilitate the value engineering workshops. This option may result in delays to other projects in Metropolitan's CIP.

Staff Recommendation

Option #1

7/26/2022

John V. Bednarski *Date*
Manager/Chief Engineer
Engineering Services

7/27/2022

Adel Hagekhalil *Date*
General Manager

Ref# es12685441

Engineering & Operations Committee

Amend Agreements for Value Engineering and Other Technical Services

Item 7-6

August 15, 2022

Amend Value Engineering Agreements

Current Action

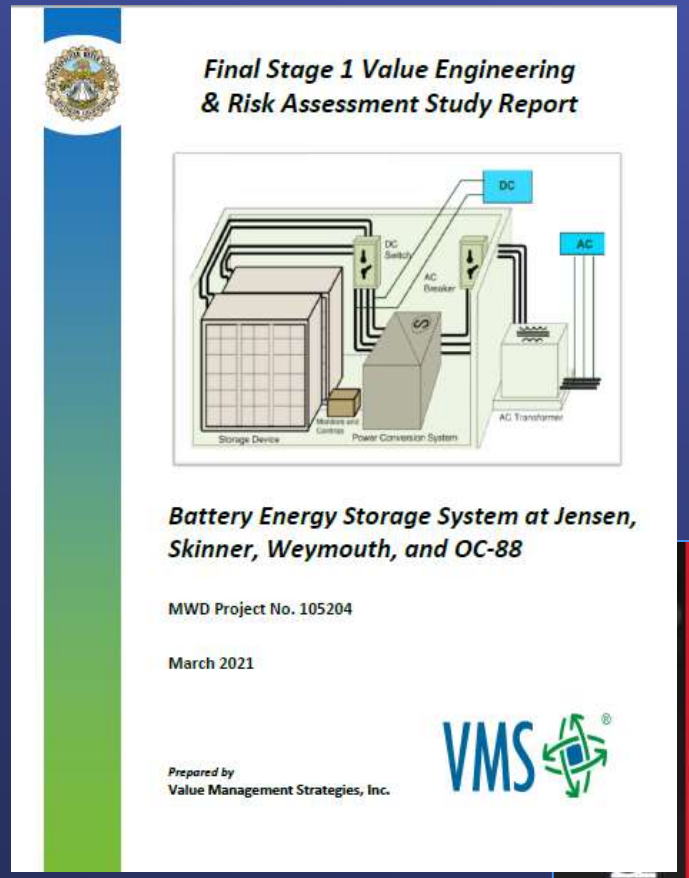
- Authorize annual increases of $200,000 to existing five-year on-call agreements with RHA, LLC; Strategic Value Solutions, Inc.; and Value Management Strategies, Inc., for new annual not-to-exceed totals of $440,000, for value engineering and other technical services in support of Capital Investment Plan projects

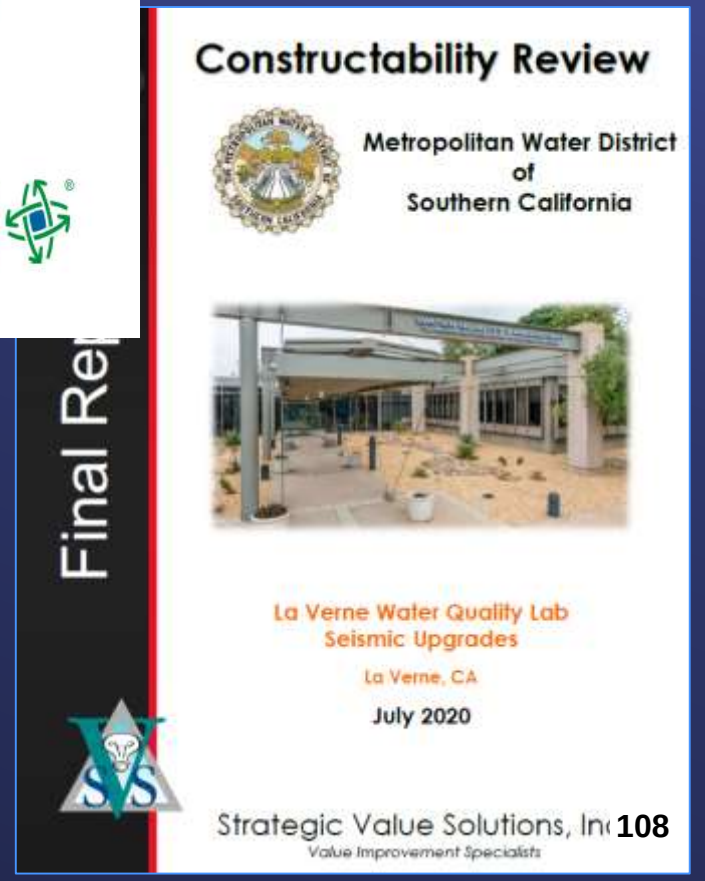
Background

- 1994: Value Engineering (VE) program initiated at Metropolitan
- Objective: To enhance project performance, optimize use of funding for CIP projects, & demonstrate responsible use of public funds
- Types of Studies: VE, constructability and ad hoc

Background (cont.)

- 2019: GM authorized three on-call agreements for five years, with a maximum amount payable of $240,000 per agreement year to provide value engineering services
  - RHA, LLC
  - Strategic Value Solutions, Inc.
  - Value Management Strategies, Inc.
- 27 workshops since 2019
- Potential Savings Identified: $24.1M





Background (cont.)

- Apr. 2022: Board approved $600M CIP budget for FYs 2022/23 & 2023/24
- Anticipated increase in VE & other workshops
- VE consultants approaching annual not-to-exceed amount earlier than anticipated

Amend Value Engineering Agreements

Alternatives Considered

- Assess availability & capability of in-house Metropolitan staff to conduct this work
  - Resource needs exceed available in-house staffing
  - In-house staff cannot provide third-party perspective, a key element of a value-engineering review
- Selected Alternative
  - Use consultants for VE services

Amend Value Engineering Agreements

Amendment to Agreements – RHA, LLC; Strategic Value Solutions, Inc.; and Value Management Strategies, Inc.

- Prequalified under RFQ No. 1229
- Scope of Work
  - Provide value engineering, meeting facilitation & technical engineering services
- SBE participation level: 25%
- New NTE amount: $440,000 per agreement

Board Options

- Option #1

  Authorize annual increases of $200,000 to existing, five-year on-call agreements with RHA, LLC; Strategic Value Solutions, Inc.; and Value Management Strategies, Inc., for a new annual not-to-exceed total of $440,000, for value engineering and technical engineering services.

- Option #2

  Do not authorize an increase in the maximum amount payable under the value engineering agreements at this time.

Staff Recommendation

- Option #1


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928

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

8/16/2022 Board Meeting

7-7

Subject

Authorize a five-year reimbursable agreement with the California Department of Water Resources to provide services for the State Water Project operations and maintenance activities for an amount not to exceed $3 million per year ($15 million total); the General Manager has determined that this action is exempt or otherwise not subject to CEQA

Executive Summary

This action authorizes an agreement to provide machining, fabrication, coating, and other maintenance work for State Water Project (SWP) equipment; crane testing, maintenance, and certification; engineering, consulting, and subcontracting services; and procurement of materials and equipment for the California Department of Water Resources (DWR).

Timing and Urgency

The SWP operates and maintains over 100 large hydroelectric generating and pumping units and supplies water to 29 State Water Contractors via the California Aqueduct. As a side benefit, strategically placed turbines and generators in the SWP produce electricity to offset pumping costs and provide overall power grid reliability.

DWR's power generation and pumping facilities require timely maintenance services. Controlling the SWP's costs depends on proper, timely, and sometimes urgent maintenance of this equipment. SWP equipment must be returned to service expeditiously in order to minimize expenses (power cost for pumping) and maximize revenue (unit availability for water deliveries, required regulatory operations, and grid reliability support).

As DWR sells both energy and ancillary services to wholesale customers in the California energy market, DWR must be positioned to respond with quick and on-time machine repairs to meet these challenges. For example, an SWP generator that is not repaired in a timely manner can result in lost generation and lost ability to provide energy and market ancillary services at peak times of the year. These costs can far exceed the cost of repairs. Additionally, it is imperative that these energy and auxiliary resources be available within the state during critical times, such as a prolonged heat wave.

Metropolitan supports the SWP's reliability by providing machining, fabrication, and coating services for critical repair and rehabilitation of SWP facilities under a reimbursable agreement with DWR. The current agreement, which Metropolitan renewed with DWR in 2017, expires on September 30, 2022.

Details

Background

DWR operates and maintains SWP equipment. Neither DWR nor any other state agency has the staff, facilities, or equipment to perform the required machine shop maintenance and repair services. Metropolitan operates a machine shop, a fabrication shop, and a coatings shop in La Verne. All the shops are staffed by highly trained and experienced personnel who can perform specialized repair on components from large motors, generators, pumps, turbines, and valves. The La Verne shops perform repairs on Metropolitan's own equipment and have the capacity to also provide these services for DWR's equipment.

For over three decades, Metropolitan has performed machining, fabrication, and coating services for critical repair and rehabilitation of SWP facilities under reimbursable agreements with DWR. Under these agreements,

Metropolitan shop services have supported DWR, at its request, to expedite repair and rehabilitation work required to maintain SWP delivery capabilities. Historical trends show an increase in the reimbursable agreement with DWR for the shops' services, with services averaging approximately $2 million per year in recent years (not accounting for the recent dip over the past two years due to COVID-19 restrictions and related impacts).

In July 1983, Metropolitan entered into Agreement No. B-54783 with DWR to perform machining, fabrication, and coating services for the benefit of the SWP. Since then, the reimbursable agreement has been amended numerous times. In 2006, Metropolitan entered a new service agreement with DWR, and, in 2011, the 2006 agreement was extended by one year to allow sufficient time to negotiate a successor agreement. The current agreement, which Metropolitan renewed with DWR in 2017, expires on September 30, 2022. The agreement covers a range of activities supporting operations and maintenance (O&M) for the SWP, including:

- Machining, fabrication, coating, and other maintenance work for SWP equipment.
- Crane testing, maintenance, and certification.
- Engineering, consulting, and subcontracting services.
- Procurement of materials and equipment.

Both agencies wish to renew the five-year reimbursable agreement. All costs incurred by Metropolitan under this agreement, including labor, materials, additives, overhead, and related subcontracts, would be reimbursed by DWR.

The renewed agreement would:

- Authorize the continuation of services to DWR through September 30, 2027.
- Continue the amount of service that Metropolitan can provide at $15 million over five years.
- Authorize Metropolitan to hire subcontractors and consultants as needed, not to exceed $1.5 million per year.

The services agreement has greatly benefited both Metropolitan and DWR. Both agencies recognize the importance of maintaining DWR's water delivery and electrical energy-producing facilities at a high level of reliability. As the largest SWP contractor, Metropolitan pays over 60 percent of the project's annual O&M costs. Providing services to DWR saves Metropolitan on annual O&M payments under the State Water Contract and also benefits the other State Water Contractors. These savings are passed on to Metropolitan's member agencies through lower annual revenue requirements. Furthermore, there are operational benefits associated with this reimbursable agreement, including increased water and power reliability and rapid response capabilities for both DWR and Metropolitan. In June 2000, Metropolitan and DWR signed a "Partnering Opportunities" memorandum of understanding to maximize ongoing efforts to improve SWP reliability and cost-effectiveness. This proposed five-year agreement with DWR would directly contribute to achieving those objectives.

Policy

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

Metropolitan Water District Administrative Code Section 8140-8149: Award of Contracts

Metropolitan Water District Administrative Code Section 9100(b): Objectives (Risk Management)

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines as it involves design, fabrication, machining, maintenance, and procurement of mechanical equipment at existing public facilities involving negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under a Class 1 Categorical Exemption (Section 15301 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Authorize a five-year reimbursable agreement with the California Department of Water Resources to provide services for the State Water Project operations and maintenance activities for an amount not to exceed $3 million per year ($15 million total).

Fiscal Impact: Reduced costs for maintenance and repair of SWP facilities
Business Analysis: This option will promote the continued system and supply reliability for the SWP and ensure that Metropolitan's La Verne shops are used to support the reliability of the SWP facilities. The machining, fabrication, coating, and support services could be provided to complete O&M work in a timely manner and at potentially reduced costs.

Option #2

Do not proceed with the authorization of the agreement at this time.
Fiscal Impact: Potential increases in State Water Contract O&M costs
Business Analysis: DWR would outsource more machine, fabrication, coating, and other support services, which would likely result in a longer lead time for completion of work and the potential for higher O&M costs for Metropolitan and other State Water Contractors. Metropolitan could experience reduced water and electrical reliability and increased power costs.

Staff Recommendation

Option #1

7/29/2022
Brent Yamasaki *Date*
Group Manager, Water System Operations

8/2/2022
Adel Hagekhalil *Date*
General Manager

Ref# wso12685828

Engineering & Operations Committee

Authorize new Shop Services Agreement with DWR

Item 7-7

August 15, 2022

Renewal of DWR Services Agreement

Current Action

- Authorizes a five-year reimbursable agreement with the California Department of Water Resources to provide services for State Water Project operations and maintenance activities for an amount not to exceed $3 million per year ($15 million total)

Agreement Background

- First agreement established in 1983
- Agreements leverage unique shop capabilities and staff expertise
- Current agreement expires September 30, 2022

Shop Capabilities

- Machining, fabrication, coating, and valve rehabilitation services for large and unique system components

- Subcontracting and procuring outside services, materials, and equipment such as large-scale water jet cutting, or other specialized services

La Verne Shops Primary Functions

- 24/7 emergency response
- O & M support
- Rehabilitation and repair projects
- Member agency support
- DWR support

Examples of Recent DWR Work

- John E. Skinner Delta Fish Protective Facility Wing Gate Refurbishment

Examples of Recent DWR Work

- Oso – Pump Plant Forebay Stop Log Gate Refurbishment

- California Aqueduct Radial Gate

New Agreement

- Manufacturing services
- Engineering design, project management, quality assurance, and quality control
- Emergency response assistance
- Subcontracting outside services
- Material procurement
- One-stop shop for planning, fabrication, machining, and coating

New Agreement Terms and Conditions

- Five-year agreement at $3M/yr ($15M total) expiring September 30, 2027
- La Verne Shops can support multiple scopes of work at one facility
- Reimbursable work
  - Direct labor and additives
  - Cost of materials and equipment usage fees
  - Sub-contracts for outside services and materials
  - Administrative overhead

Benefits of New Agreement

- Maintaining SWP reliability
- Facilitate timely repair and rehabilitation work
- Enhance emergency response capability
- Control SWP costs to Metropolitan through reduction of overall SWP maintenance costs

Board Options
Option #1

- Authorize a 5-year reimbursable agreement with DWR to provide services for SWP operations and maintenance activities in an amount not to exceed $3 million per year ($15 million total)
- Adopt the CEQA determination

Board Options
Option #2

- Do not proceed with the authorization of the agreement at this time

Staff Recommendation

- Option #1


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928

Engineering & Operations Committee

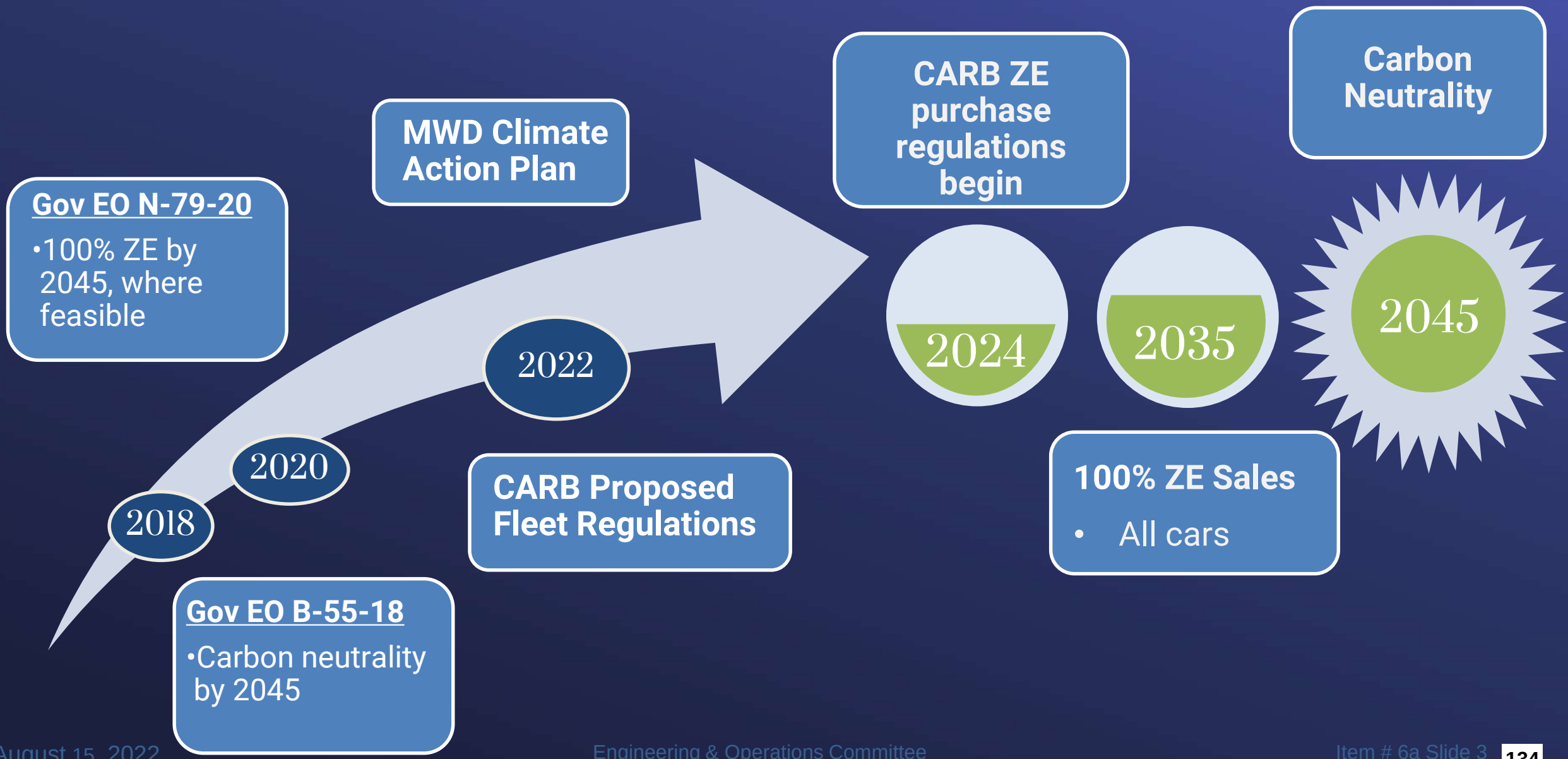
Clean Air Fleet Initiatives

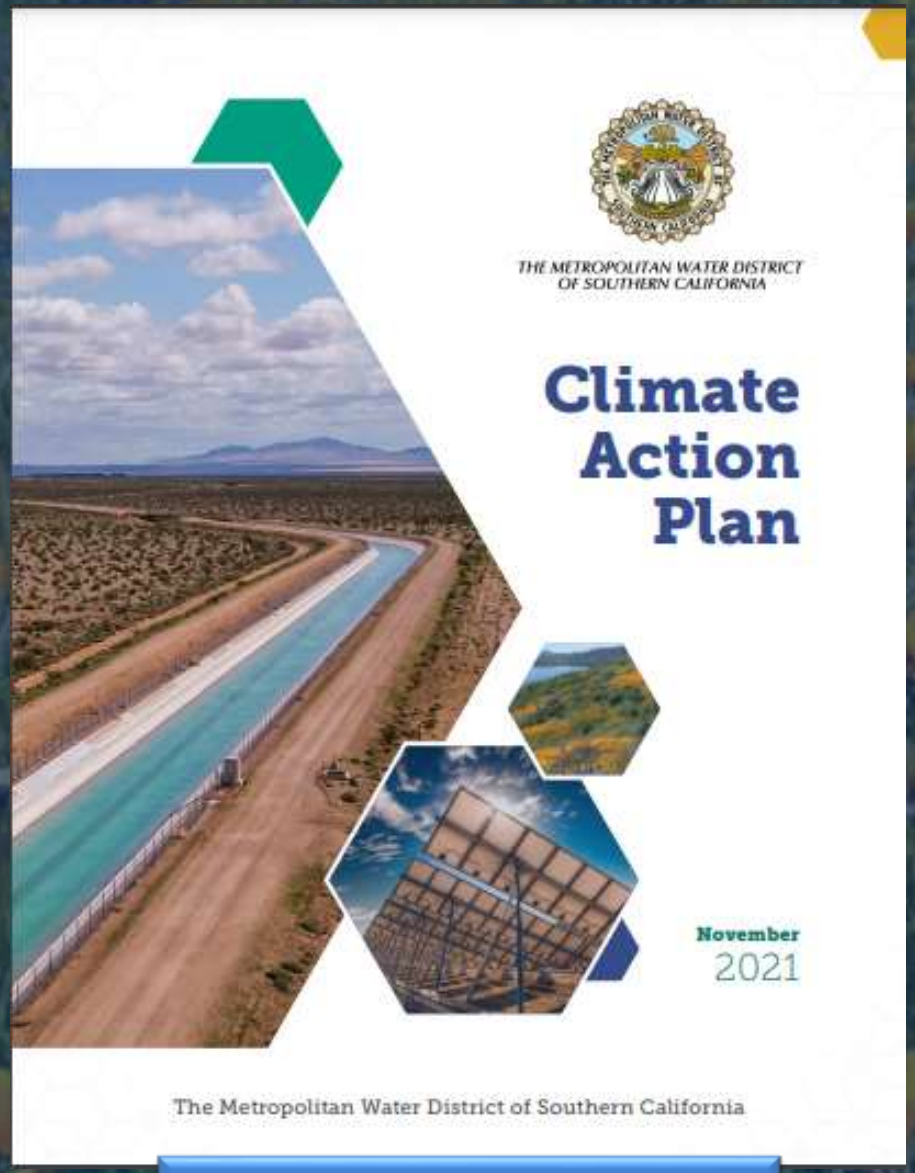
Item 6a
August 15, 2022

Outline

- Zero Emission Directives
- Climate Action Plan
- Fleet Overview
- Proposed CARB Regulations
- Transition Efforts
- Next Steps

California Zero Emission (ZE) Directives





Board Adopted May 2022

Objectives

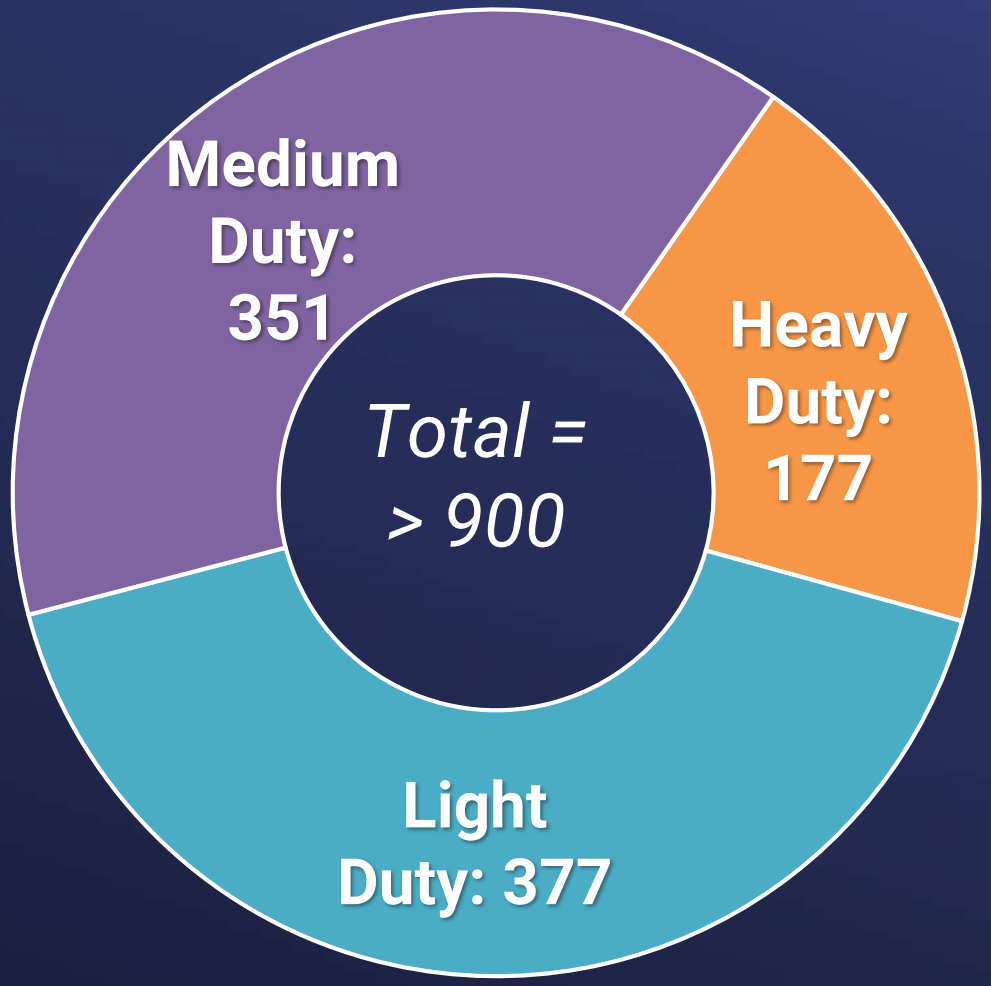
- Strengthen commitment to environmental sustainability
- Increase resiliency of operations
- Strategically achieve greenhouse gas (GHG) reduction goals
- Comply with CARB requirements

Climate Action Plan

Reduce “Direct Emissions” through the Transition to a Zero Emission Vehicle Fleet

- Transition of Light-Duty, Medium-Duty, and Heavy-Duty Vehicles
- Reduction from 7,000 MT CO_2e per year

Metropolitan Fleet Vehicle Overview



Light

- Sedans to Full-Size pickups

Medium

- 3/4 ton to 1-ton pickups, cargo vans

Heavy

- Heavy-Duty pickups, tankers, tractors

Metropolitan Fleet Service Areas

Metropolitan Fleet Transition Challenges

MWD maintains sufficient resources to respond to two simultaneous pipeline failures at any time

- **Fueling/Charging Infrastructure**
- **Asset Geographic Location**
- **Vehicle and Infrastructure Cost**
- **Vehicle Commercial Availability/ Suitability/Technology**
- **Workforce Adaptation**

Proposed CARB Regulations

Light-Duty Vehicles (377)

2026-2035 Increase to All ZE Sales

Medium-Duty Heavy-Duty Vehicles (528)

2024 - 50%; 2027-100% Public Fleet ZE Purchases

Diesel Construction Equipment (73)

2024-2028 Phaseout of 47 Units

Propane/Gas Forklifts (18)

2024-2031 Phaseout to ZE

ZE Transition – Actions Taken

Mobile Power Station charging Ford eTransit

Weymouth - 3-week Demo eTransit Van

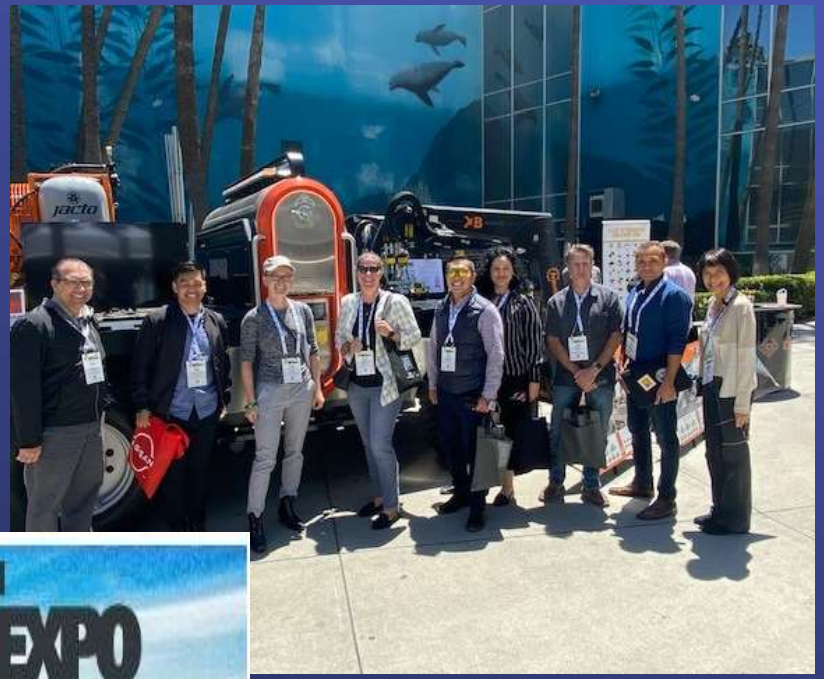
Lake Mathews – Renewable Diesel Refueling

Advocacy

- Partnered with ACWA, CMUA and other agencies to meet with CARB to achieve practical regulations
- Shared ZE technology knowledge & experience with other agencies

Technology & Incentives

- Demonstrated ZE Vehicles
- Applied for Incentive Voucher for ZE Mobile Power Station
- Piloted renewable diesel for vehicles & construction equipment to bridge the gap for the ZE transition



ACT EXPO
Advanced Clean Transportation Expo


STOP
MP5

ZE Transition – Actions Taken

Infrastructure

- Developed CIP for Districtwide ZE Fleet Infrastructure
- Initiated study to develop comprehensive transition plan for implementation in 2023

Vehicle Assessment

- Completed vehicle & power needs inventory and market assessment
- Created online fleet tool to screen ZE replacement vehicles

ZE Transition

Vehicle Replacement Scenario – Selecting the Cleanest Emissions Vehicle for the Job

Gasoline FORD F-250, Medium-Duty Pickup $41,000 (cost)			
	Current Daily Range (miles)	Power-Take-Off (hrs/day)	Battery Size Needed (kW)
1)	350	10	285
2)	100	None	50

POTENTIAL ZE REPLACEMENT			
	New ZE	Max Range (miles)	Upfront Cost
1)	None Available	NA	NA
2)	Electric F-150 Lightning	300	**$53,000**
	Electric Rivian R1T	300	**$68,000**

ZE Transition Critical Success Factors

- **Commercial Availability**
- **ZE Vehicle First Policy**
- **Infrastructure**
- **Funding**
- **CARB Regulations**

Next Steps


Develop Budget for ZE Vehicles and Infrastructure
Pursue Grants and Incentives
Purchase vehicles and equipment
Implement ZE Infrastructure CIP


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928

Engineering & Operations Committee

Reservoir Management Update

Item 6b

August 15, 2022

Large Regional Source Water Reservoirs

- Metropolitan Reservoirs
- Dept. Water Resources
- Bureau of Reclamation

Reservoir Challenges

Water quality issues can reduce operational flexibility

Water Quality Issues

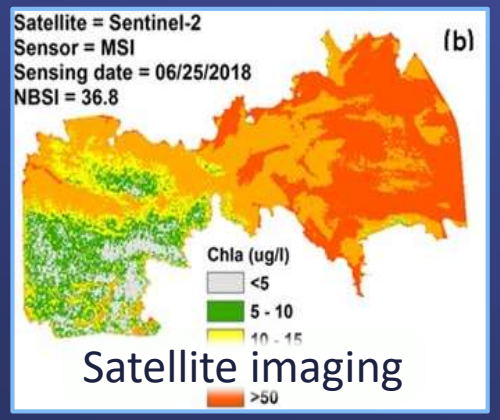
- Cyanobacteria "blooms"
  - Taste & odor (T&O) production
  - Toxin production
- Anoxia (low dissolved oxygen)
  - Elevated manganese
  - Hydrogen sulfide production
- Invasive quagga mussels
  - Restricts delivery options for infested CRW

Above the Lake, In the Lake, and In the Lab

Reservoir Monitoring Tools

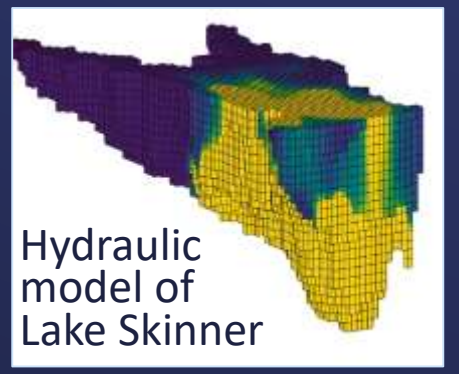
- Satellite monitoring of lake conditions
- Remote water quality sensors/probes
- Sampling and laboratory analyses
- Remotely operated vehicles (ROV)
- SCUBA diving
- Water quality models


Image credit: NASA



Satellite imaging


Microscopic cyanobacteria


Hydraulic model of Lake Skinner

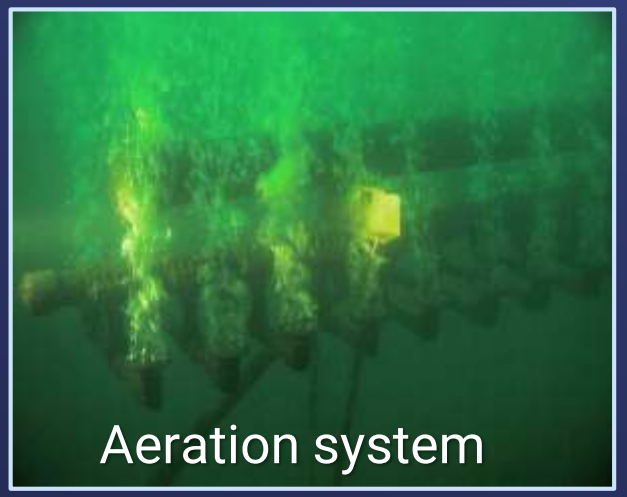
Lake Management Actions

Reservoir Management Toolbox

Managing lakes to ensure continued reliable water supply

- Cyanobacteria “blooms”
  - Tier change to avoid problem
  - Ozone at plants to reduce problem
  - Copper sulfate to eliminate problem
- Low dissolved oxygen (anoxia)
  - Aeration to mix water column
  - Deep water oxygenation (future)
- Quagga mussels (CRW)
  - Control through chlorination, cleaning, and controlled discharges

Copper sulfate treatment of cyanobacteria bloom



Aeration system

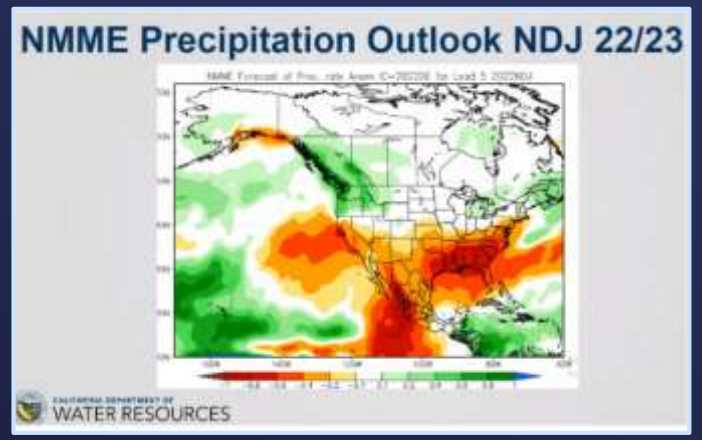
Historic Drought Operations

Water supply challenges:
- Constrain operations
- Require operational flexibility
- Impact water quality

California Precipitation (Water Year)

Period	Rainfall (inches)	Rank
1-year (2022)	16.65	13th driest
2-year (2021–22)	28.48	2nd driest
3-year (2020–22)	44.81	Driest by 4.45 inches


Lake Oroville



Low SWP allocation

- Third year of drought
- Record 3-year low SWP deliveries
- DVL supplying Mills Plant
- Dry conditions forecast to continue

Increased reliance on CRA

- Moving treated CRW farther into Metropolitan's system
- Operating the system in new and innovative ways

Diamond Valley Lake

810,000 acre-feet capacity
Only SWP supply since 2006

Typical water quality issues

- Cyanobacteria blooms
  - T&O, cyanotoxins (e.g., 2018)
- Anoxia and manganese

New Operation

- DVL supplying Mills Plant (2021-present)
- Over 75,000 AF delivered
- Tier changes when necessary to avoid water quality issues

Water Quality Issues and Operations

- Cyanobacteria blooms
- Low oxygen (anoxia)
- Manganese & sulfide


Lake Mathews Tower


Silverwood Lake


Castaic Lake Drawdown

- **Lake Skinner**
  - Tier changes to avoid deep-water manganese
- **Lake Mathews**
  - Outlet tower change for maintenance and cleaning
- **Silverwood Lake**
  - Supplies SWP water to member agencies on the Rialto Pipeline
  - Taste-and-odor issues
- **Castaic Lake**
  - Significant drawdown to support outlet tower seismic work

Quagga Mussel Discoveries in the State Water Project

- A few invasive quagga mussels discovered in SWP
  - Pyramid Lake- December 2016
  - Castaic Lake- August 2021
  - No veligers (larval stages) detected in routine monitoring of SWP- no evidence of widespread infestation
  - Currently no impact on water system operations

- Control measures still in place for all CRW sources
  - Chlorination, cleaning, controlled discharges

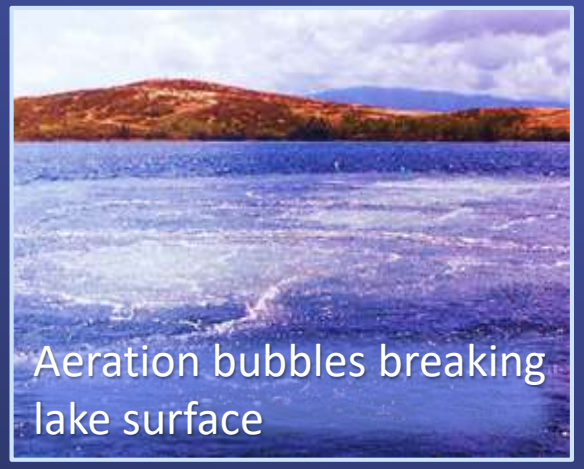
Photos courtesy of DWR

Improving Water Quality

Lake Perris

Water Quality Challenges
- Taste and odor
- Low oxygen (anoxia)

- Backup supply for Mills Plant when needed
- Current aeration system is inadequate
  - Does not prevent oxygen loss during summer and fall
- Engaging with DWR to design, construct and install new aeration system
  - Improve water quality
  - Increase operational flexibility



Aeration bubbles breaking lake surface

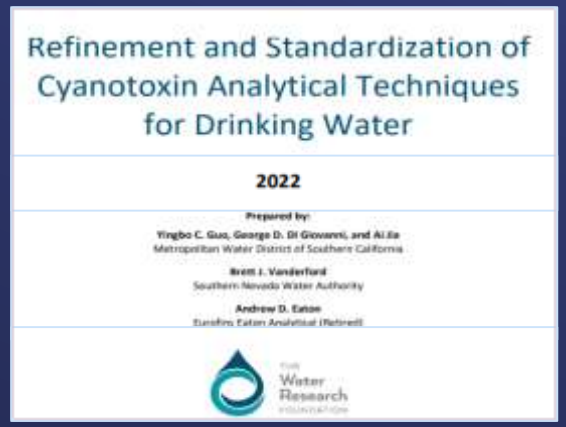
Aeration bar

Metropolitan's Monitoring and Research

- Year-round monitoring in source water reservoirs
- Event-specific monitoring when blooms develop
- Developing and improving detection methods

Cyanotoxins

- Not regulated in drinking water
- EPA Health Advisories
- State recommendations for notification levels
- Voluntary guidelines for recreational waters

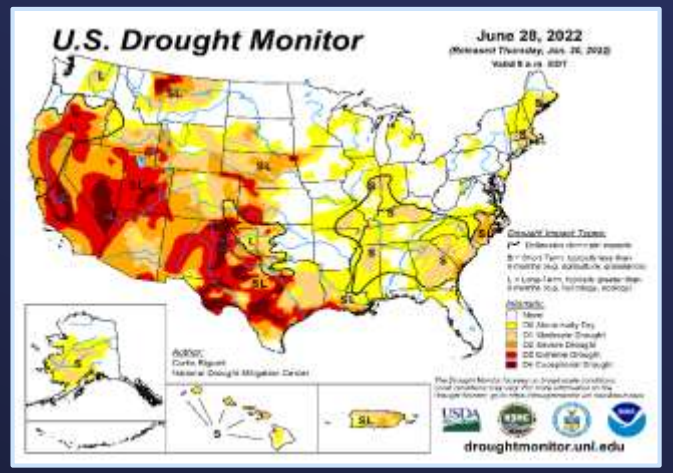


Recreational advisories typically do not impact drinking water

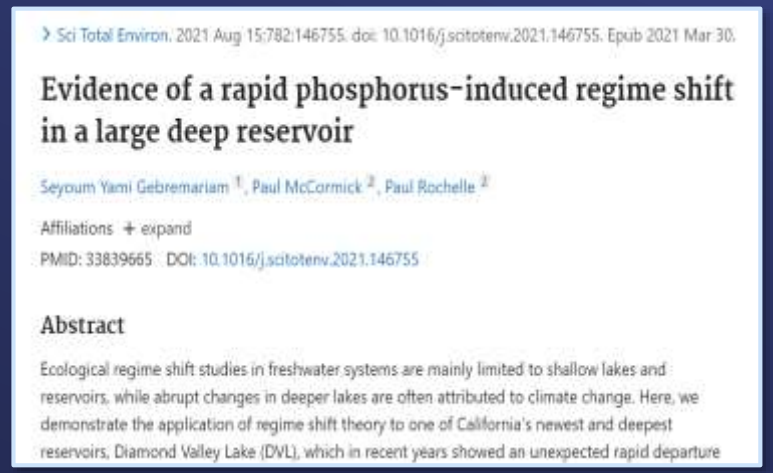
An Example of Things to Come?

- Recent climate volatility could continue
  - A warmer, drier climate; reduced snowpack/runoff
  - Extended droughts on the SWP and Colorado River
  - Increased extreme weather events
- Potential for increased water quality issues
  - Increased turbidity from wildfires and storm erosion
  - More frequent cyanobacteria blooms
  - Increased spread of invasive species

Current Drought Conditions



At the Forefront of Reservoir Management Science


> Sci Total Environ. 2021 Aug 15;782:146755. doi: 10.1016/j.scitotenv.2021.146755. Epub 2021 Mar 30.

Evidence of a rapid phosphorus-induced regime shift in a large deep reservoir

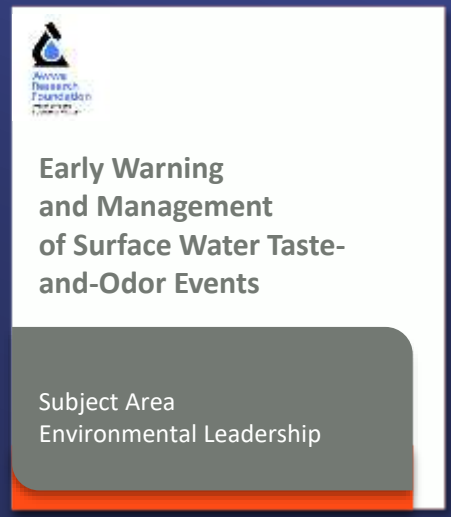
Seyoum Yami Gebremariam [1], Paul McCormick [2], Paul Rochelle [2]

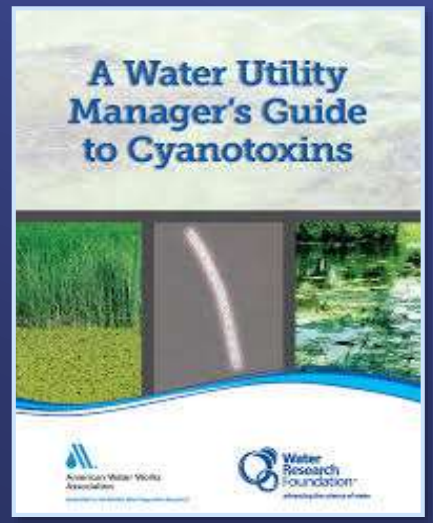
Affiliations + expand

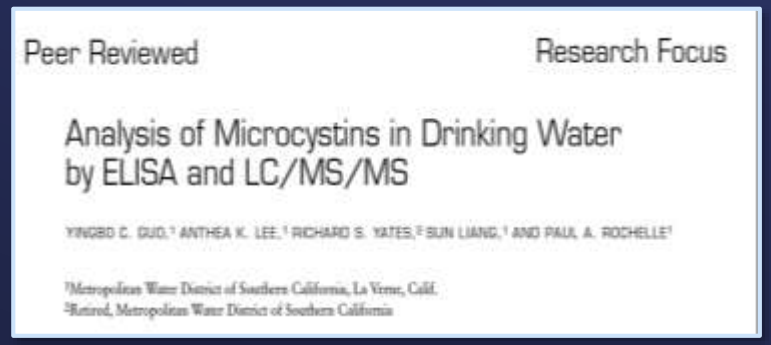
PMID: 33839665 DOI: 10.1016/j.scitotenv.2021.146755

Abstract

Ecological regime shift studies in freshwater systems are mainly limited to shallow lakes and reservoirs, while abrupt changes in deeper lakes are often attributed to climate change. Here, we demonstrate the application of regime shift theory to one of California's newest and deepest reservoirs, Diamond Valley Lake (DVL), which in recent years showed an unexpected rapid departure






Peer Reviewed Research Focus

Analysis of Microcystins in Drinking Water by ELISA and LC/MS/MS

YINGBO C. GUO,[†] ANTHEA K. LEE,[†] RICHARD S. YATES,[‡] SUN LIANG,[†] AND PAUL A. ROCHELLE[†]

[†]Metropolitan Water District of Southern California, La Verne, Calif.
[‡]Retired, Metropolitan Water District of Southern California

California Lake Management Society. July 23, 2019

Application of Satellite Remote Sensing for Routine Monitoring of Water Quality in Water-Utility Lakes and Reservoirs

Presenter: Seyoum Gebremariam, PhD, PE

An Assessment of the Impacts of Climate Change on the Quality of MWD Source Waters and Reservoirs

Seyoum Gebremariam and Paul McCormick

(in preparation)

Looking into the Future

Drought conditions highlight the need for enhanced operational flexibility and require innovation in reservoir management

- Enhance monitoring of source water quality
- Improve and expand remote sensing
- Increase modeling and prediction capabilities
- Prepare for climate impacts on water quality
- Continue adapting lake operations to ensure reliable delivery and increase resiliency


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928

Engineering & Operations Committee

Water System Operations Manager's Report

Item 7a

Monday, August 15, 2022
10:30 a.m.

Current Operational Conditions

Continuing Drought Operations

- 2022 SWP Allocation is 5%
- SWP blend targets are 0% at Weymouth, Diemer, and Skinner plants
- DVL to Mills drought operation continues to perform well
- Managing storage based on WSDM principles
- July 2022 deliveries of 156 TAF were 14 TAF lower than July 2021

CRA Operational Challenges

Working Hard to Maintain 8-Pump Flow

- Additional chlorination to control algae growth
- Scraping canal sections to remove sediment and growth that can restrict aqueduct flow
- Additional sand trap maintenance and cleaning
- Additional inspections and manual elevation readings
- Weekly reservoir cycling at Eagle Pump Plant
- Rapid repair response to maintain 8-pump flow and keep spare pumps available
- Increased coordination to manage operations

Hoover Dam Transformer Fire – July 19, 2022

Publicly available photo from media outlets

- Hoover Dam experienced an electrical transformer fire taking a hydro generation unit offline (Arizona-5 or A5)
  - No injuries and fire isolated to single transformer
  - One of 17 generation units at Hoover Dam unavailable
- Video of explosion and resulting fire captured by bystanders and reported by multiple media outlets
- USBR fire crews quickly responded to put out fire
- Unit A5 is currently out of service pending transformer repair or replacement
  - Unit A5 is nominally rated at 130 MW but derated to 73 MW due to low Lake Mead levels

Hoover Dam Electrical Transformer Fire

Publicly available photos from media outlets

Transformer fire at Hoover Dam

USBR fire crews extinguishing fire

Impact to Metropolitan

Temporary Reduction of Hoover Generation and Increased CRA Energy Costs

- No impact to CRA pumping operations
- CRA 8-pump flow requires ~300 MW total
- Loss of Unit A5 reduces Metropolitan's allocation of Hoover power by about 10 MW
- Procurement of additional supplemental energy and Resource Adequacy capacity required
- Estimated CRA energy cost increase of over $2 million for remainder of 2022
- Staff coordinating with USBR and WAPA on cause of failure, repair schedule, and lessons learned

Upper Feeder Leak Repair

Ready for Upper Feeder Shutdown

- Flange welding completed
- Slip joint completed
- Site prepped and contractor mobilizing
- Conservation outreach occurring
- 15-day shutdown scheduled for September 6th


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA

Engineering & Operations Committee

Engineering Services Manager's Report

Item 7b

August 15, 2022

Construction & Procurement Contracts June 2022

Construction & Procurement Contracts Through June 2022	
Number of Contracts at end of June 2022	43
Total Bid Amount of Contracts in Progress at end of June 2022	$425M
Contracts Awarded in June 2022	2
Contracts With Notice To Proceed Issued in June 2022	4
Contracts Completed in June 2022	0
Contract Gross Earnings in June 2022	$29.6M

Etiwanda Pipeline Relining Stage 3 – Steel Pipe Procurement Contract

- Contractor:
- Northwest Pipe

- Contract Amount:
  $6,044,896

- Paid to Date:
- 90.0%

Delivery of Pipe to Etiwanda Pipeline Site

West Region Drought Action

- Sepulveda/Venice Pump Stations Phase 1 (30 CFS)
- September Board Action

Project Labor Agreement Update

- Draft agreement transmitted to trades councils
  - July 2022
- First negotiation session
  - August 4, 2022
- Second negotiation session
  - August 24, 2022
- Additional negotiation sessions
  - If necessary
- Board action to consider approval of project labor agreement
  - October 2022

Edmonston Pump Plant Workshop

- 2-day workshop (August 3-4): Bakersfield, CA
- Participants: DWR, MWD and other SWP Contractors
- Subject: Challenges of large valve maintenance and rehabilitation

Engineering and Operations Inspection Trip - 2022

- Planned date: October 20, 2022
- One-day trip
- Planned itinerary:
  - AVEK storage program
  - Key West Branch SWP facilities
  - Jensen plant: 50-year anniversary
  - Sepulveda pumping projects

SWP Oso Pump Plant

SWP East/West Branch Bifurcation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