



### **E&O Committee**

T. Smith, Chair  
Vacant, Vice Chair  
R. Apodaca  
S. Blois  
M. Camacho  
D. De Jesus  
L. Dick  
S. Faessel  
R. Lefevre  
J. Morris  
G. Peterson  
H. Repenning  
H. Williams

### **Engineering and Operations Committee**

Meeting with Board of Directors \*

**December 13, 2021**

**10:00 a.m.**

**Monday, December 13, 2021  
Meeting Schedule**

**09: 00 a.m. - C&L  
10:00 a.m. - E&O  
11:30 a.m. - Break  
12:00 p.m. - WP&S**

Teleconference meetings will continue through the end of the year. Live streaming is available for all board and committee meetings on [mwdh2o.com](http://mwdh2o.com) ([Click Here](#))

A listen only phone line is also available at 1-800-603-9516; enter code: 2176868#. 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 (404) 400-0335 and enter Code: 9601962.

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

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\* 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 OTHER ITEMS -- ACTION \*\***

### **2. CONSENT CALENDAR OTHER ITEMS - ACTION**

- A. Approval of the Minutes of the Meeting of the Engineering and Operations Committee held November 8, 2021

[21-673](#)

**Attachments:** [12132021 EO 2A Minutes](#)

### **3. CONSENT CALENDAR ITEMS - ACTION**

- 7-1** Amend the Capital Investment Plan for fiscal years 2020/2021 and 2021/2022 to include 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 [21-657](#)

**Attachments:** [12142021 EO 7-1 B-L](#)  
[12142021 EO 7-1 Presentation.pdf](#)

- 7-2** Award a \$11,499,000 contract to J.F. Shea Construction, Inc. for the seismic upgrade of the Casa Loma Siphon Barrel No. 1; and authorize \$1,100,000 increase to an agreement with Carollo Engineers Inc., for a new not-to-exceed total of \$3.6 million, for technical support during construction; the proposed action is in furtherance of a project that was previously determined to be exempt or otherwise not subject to CEQA [21-658](#)

**Attachments:** [12142021 EO 7-2 B-L](#)  
[12142021 EO 7-2 Presentation.pdf](#)

- 7-3** Award a \$32,824,000 contract to J.F. Shea Construction, Inc. to upgrade the domestic water treatment systems at the five Colorado River Aqueduct pumping plants; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA [21-659](#)

**Attachments:** [12142021 EO 7-3 B-L](#)  
[12142021 EO 7-3 Presentation.pdf](#)

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

**4. OTHER BOARD ITEMS - ACTION**

None

**5. BOARD INFORMATION ITEMS**

None

**6. COMMITTEE ITEMS**

- a.** Capital Investment Plan Quarterly Report for period ending September 2021 [21-698](#)

**Attachments:** [12132021 EO 6a Report](#)  
[12132021 EO 6a Presentation.pdf](#)

- b. Regional Recycled Water Program Quarterly Update [21-699](#)

**Attachments:** [12132021 EO 6b Presentation.pdf](#)

## 7. MANAGEMENT REPORTS

- a. Water System Operations Manager's Report [21-700](#)

**Attachments:** [12132021 EO 7a Presentation.pdf](#)

- b. Engineering Services Manager's Report [21-701](#)

**Attachments:** [12132021 EO 7b Presentation.pdf](#)

## 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.

# **THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA**

## **MINUTES**

### **ENGINEERING AND OPERATIONS COMMITTEE**

**November 8, 2021**

Chair Smith called the teleconference meeting to order at 11:30 a.m.

Members present: Chair Smith, Directors Blois, De Jesus, Dick, Faessel, Lefevre, Morris, Peterson, and Williams (entered after roll call)

Members absent: Director Apodaca, Camacho, and Repenning

Other Board members present: Directors Abdo, Ackerman, Butkiewicz, Cordero, De Jesus, Dennstedt, Dick, Erdman, Fellow, Goldberg, Gray, Hawkins, Jung, Kurtz, McCoy, Ramos, Record, and Tamaribuchi

Committee staff present: Bednarski, Hagekhalil, Lahouti, Parsons, Scully, Upadhyay, and Yamasaki

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

None

#### **CONSENT CALENDAR OTHER ITEMS – ACTION**

#### **2. CONSENT CALENDAR OTHER ITEMS – ACTION**

- A. Approval of the Minutes of the Meeting of the Engineering and Operations Committee held October 11, 2021.

#### **3. CONSENT CALENDAR ITEMS – ACTION**

- 7-2      Subject:      Award a \$1,477,000 contract to Minako America Corporation (dba Minco Construction) for replacement of ozone power supply units at the Joseph Jensen Water Treatment Plant and authorize an agreement with CDM Smith Inc. in an amount not to exceed \$800,000 for engineering services to support the Jensen ozone generation system rehabilitation; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Presented by:      Rajen Budhia, Engineer, Engineering Services



- Motion:
- a. Award a \$1,477,000 contract to Minako America Corporation (dba Minco Construction) for replacement of ozone power supply units at the Jensen plant.
  - b. Authorize an agreement with CDM Smith Inc. in the amount not to exceed \$800,000 for engineering services to support Jensen ozone generation system rehabilitation.

The following Directors provided comments or asked questions:

1. Peterson
2. Blois
3. Smith

Staff responded to the Directors' comments or questions.

- 7-3          Subject:          Award a \$9.2 million contract to CSI Electrical Contractors, Inc. for Stage 2 electrical upgrades at the Henry J. Mills Water Treatment Plant; authorize: (1) granting of a permanent easement to Riverside Public Utilities; and (2) an increase of \$830,000 to an agreement with Lee & Ro, Inc., for a new not-to-exceed amount of \$1,927,000 for engineering support; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA
- Presented by:      No presentation given
- Motion:
- a. Award a \$9.2 million contract to CSI Electrical Contractors, Inc. for Stage 2 electrical upgrades at the Mills plant.
  - b. Authorize the General Manager to grant permanent easement to Riverside Public Utilities.
  - c. Authorize an increase of \$830,000 to the agreement with Lee & Ro, Inc. for a new not-to-exceed amount of \$1,927,000.
- 7-4          Subject:          Adopt the CEQA determination that the proposed action has been previously addressed in the certified 2015 Final EIR and related CEQA documents; and award a \$6,044,896.76 procurement contract to Northwest Pipe Company for steel pipe to rehabilitate a portion of the Etiwanda Pipeline
- Presented by:      Wayne Thilo, Senior Engineer, Engineering Services
- Motion:
- Award a \$6,044,896.76 contract to Northwest Pipe Company to furnish 1,300 feet of welded steel pipe and fittings to rehabilitate a portion of the Etiwanda Pipeline.

The following Directors provided comments or asked questions:

1. Faessel
2. Blois

Staff responded to the Directors' comments or questions.

- 7-5            Subject:            Award a \$3,280,920 contract to J.F. Shea, Construction, Inc. for lining of the Cholla Wash cut-and-cover conduit at Mile Marker 126 on the Colorado River Aqueduct; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA
- Presented by:        Ish Singh, Program Manager, Engineering Services
- Motion:                Award \$3,280,920 contract to J.F. Shea Construction, Inc. for the lining of Cholla Wash cut-and-cover conduit along the Colorado River Aqueduct.

The following Directors provided comments or asked questions:

1.        Morris
2.        Peterson

Staff responded to the Directors' comments or questions.

After completion of the presentations, Director Morris made a motion, seconded by Director Blois, to approve the consent calendar consisting of items 2A, 7-2, 7-3, 7-4 and 7-5.

The vote was:

- Ayes:                Directors Blois, De Jesus, Dick, Faessel, Lefevre, Morris, Peterson, Smith, and Williams
- Noes:                None
- Abstentions:        None
- Absent:              Directors Apodaca, Camacho, and Repenning

The motion for Items 2A, 7-2, 7-3, 7-4 and 7-5 passed by a vote of 9 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:           Overview of Planned Facility Upgrades at La Verne Site  
Presented by:   Steven Burkhead, Senior Engineer, Engineering Services

Mr. Burkhead reported on the following:

- Seismic upgrade program and seismic drivers
- Water Quality Lab, Administration, and Field Engineering buildings improvements
- La Verne Shops Stage 4
- Wheeler Gate improvements
- Basins 5-8 rehabilitation

The following Directors provided comments or asked questions:

1.       Peterson

Staff responded to the Director's comments or questions.

- b.           Subject:           Salinity Management Update  
Presented by:   Maria Lopez, Purification Unit Manager, Water System Operations

Ms. Lopez reported on the following:

- What salinity is and why it matters
- Salinity in Metropolitan Supplies
- Highlights of Metropolitan's Colorado River Basin and State Water Project salinity control efforts
- Statewide salinity management efforts, study, impacts, and goals
- Efforts moving forward

The following Directors provided comments or asked questions:

1.       Lefevre
2.       Peterson

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 operational conditions
- Safety Culture Assessment for Metropolitan
- Staff efforts to repair roads and critical infrastructure after October storms
- Preparing for Emergencies – Shake Out 2021

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
- Garvey Reservoir drainage and erosion project
- Headquarters building improvements overview
- 2021 E&O virtual field inspection trip

## **8. FOLLOW-UP ITEMS**

None

## **9. FUTURE AGENDA ITEMS**

None

Next meeting will be held on December 13, 2021.

Meeting adjourned at 1:08 p.m.

Tim Smith  
Chair



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

12/14/2021 Board Meeting

7-1

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**Subject**

Amend the Capital Investment Plan for fiscal years 2020/2021 and 2021/2022 to include 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

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**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 preserves limited SWP supplies for West Branch SWP member agencies in times of drought. This action amends the Capital Investment Plan to include infrastructure improvements that would enhance water delivery capabilities to member agencies that can only receive State Project Water (SPW). Initial work on this project will involve planning and design activities for the related infrastructure improvements. Staff will return to the Board in the future to award construction contracts, or report on the award of any contracts by the General Manager pursuant to his authority under the Drought Emergency Resolution adopted November 9, 2021. As this project was not included in the Capital Investment Plan (CIP) budget for fiscal years 2020/21 and 2021/22, this action amends the current CIP to include this project.

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**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 is unable to access the water stored in DVL due to infrastructure and operational constraints, as well as hydraulic limitations.

The Rialto Pipeline water supply reliability improvements that are the subject of this letter consists of three project components: Wadsworth Pumping Plant Bypass Pipeline, Inland Feeder Rialto Pipeline Intertie, and Inland Feeder/San Bernardino Valley Municipal Water District (SBVMWD) Pump Station Intertie. These incremental infrastructure improvements coupled with major existing infrastructure would greatly increase operational flexibility and enhance the water supply availability to member agencies with service connections on the Rialto Pipeline. The three project components are as follows:

1. Wadsworth Pumping Plant Bypass Pipeline – This project component involves the addition of a bypass pipeline at DVL's Wadsworth Pumping Plant to increase operational flexibility. Currently, water is being sent from DVL into the Inland Feeder by gravity to the Mills Water Treatment Plant. The Wadsworth Pumping Plant could also be used to pump DVL water from the DVL forebay into the Inland Feeder

toward the Rialto Feeder area, which is at a much higher elevation than the Mills Plant. However, once the forebay is emptied, pumping to Inland Feeder must stop so that the forebay can be refilled with DVL water. The bypass will allow the forebay to be filled continuously from DVL without disrupting the pumping operation. In the future, it is possible that this alternative could be used to pump Colorado River water to the Mills and Rialto areas, if quagga mussel challenges can be appropriately addressed. As currently envisioned, the bypass pipeline is approximately eight feet in diameter and 600 feet long and will connect the Wadsworth Pumping Plant discharge pipeline directly to the Inland Feeder. Once constructed, the bypass line will allow water from DVL to continuously flow in a northerly direction along the Inland Feeder to SBVMWD's/DWR's Citrus and Foothill Pump Stations near the community of Redlands. These pump stations are needed for the final lift of water into the Rialto Pipeline.

2. Inland Feeder/Rialto Pipeline Intertie – The second component of this project constructs an intertie between the Inland Feeder and Rialto Pipeline just south of DWR's Devil Canyon Afterbay (Afterbay). The intertie would be approximately eight feet in diameter and 200 feet long. This additional infrastructure will allow for the direct transfer of water supplies from the Inland Feeder to the Rialto Pipeline. With the current infrastructure configuration, water must be pumped through the Inland Feeder into the Afterbay, and then released into the Rialto Feeder. This operation requires close coordination with DWR. By eliminating the need to pump into the Afterbay, any potential operational limitations due to coordination efforts with DWR are eliminated. Additionally, the recommended project may allow for more energy-efficient deliveries of water by eliminating the need to lift the water an additional 100 feet up to the Afterbay.
3. Inland Feeder/SBVMWD Pump Station Intertie – The two improvement projects discussed above will provide a pathway for alternative water supplies to be introduced into the Rialto Feeder through a series of water exchanges with the SBVMWD and DWR. The third project component of the overall recommended improvements will permit the direct delivery of water from DVL to the Rialto Pipeline. This objective will be accomplished by connecting the Inland Feeder to either SBVMWD's/DWR's existing Citrus or Foothill pump stations. Water will then be lifted at the pump station to a hydraulic grade sufficient to supply the Rialto Pipeline. This component of the recommended improvements will require agreements with both agencies, as well as physical infrastructure, including piping, isolation valves, valve structures, and potentially surge protection devices.

The recommended improvements would be completed in two stages. Stage 1 work includes design and construction of the first two project components discussed above. Staff currently envisions that the physical implementation of these first two components is relatively straightforward as both projects consist of pipe connections between existing Metropolitan pipelines. Construction of the new infrastructure is anticipated to be completed in early 2023 and will allow for the delivery of up to 60 cubic feet per second (cfs) to the Rialto Pipeline service area. SBVMWD and DWR, through new water exchange agreements, would supply these flows by pumping local groundwater or by exchanging their SWP supplies. Metropolitan would return water to the agencies from DVL or from SWP supplies at a later date. Water exchange agreements will need to be executed in order to implement this approach.

Stage 2 work is detailed in the third project component as described above. These improvements are more complex when compared to the Stage 1 work, as they will require physical interconnections between Metropolitan's pipeline infrastructure and pump stations that are owned and operated by either SBVMWD or DWR, as well as operational agreements between the agencies. To successfully implement these improvements, detailed investigations and design and construction activities will be undertaken by Metropolitan, SBVMWD, and DWR. This collaborative effort between the agencies will include an agreement with SBVMWD and DWR to use their pump station to convey DVL supplies. Currently, staff envisions that these improvements can be completed by mid-2025. Upon completion of Stage 2 improvements, up to 160 cfs of DVL water can be delivered to the Rialto Pipeline.

### **Benefits of Current and Future Actions**

In collaboration with member agencies, staff identified 132 actions to mitigate the impact of current and future regional droughts. Staff evaluated the feasibility of these actions and recommends proceeding with the subject projects, which have near and long-term benefits. As the Stage 1 components of the subject projects consist of

relatively short pipe connections between existing Metropolitan pipelines, the project can be implemented in the near term to provide alternate sources of water (DVL or Colorado River Aqueduct) to the Rialto Pipeline service area. This improvement in the Eastern Region will leave more of Metropolitan's limited allocation of SPW available to the Western Region, so the current action benefits SWP reliant service areas in both Metropolitan's Eastern and Western Regions. The current action will expedite completion of the most critical work, reduce the impact of the current drought, and provide future system flexibility. Staff recommends amending the CIP at this time to include the Rialto Pipeline water supply reliability improvements.

Metropolitan staff is also progressing study-level evaluations of several other potential infrastructure improvement options to enhance water reliability for SWP reliant service areas in Metropolitan's Western and Eastern Regions. In the Western Region, staff is evaluating new pump stations at Venice and Sepulveda pressure control facilities or expansion of the Greg Avenue Pump Station. In the Eastern Region, staff is evaluating new pump stations at the Etiwanda Reservoir, the Inland Feeder Pressure Control Facility (PC-1), and Live Oak Reservoir. The new pump station could pump Colorado River Aqueduct or DVL water to the Rialto Pipeline service area and utilize the current action Stage 1 improvements. However, these long-term projects could not be designed and constructed in time for the ongoing drought. A new pump plant requires rigorous environmental documentation, long lead time equipment procurement, negotiation, construction of a dedicated power supply from the local power supplier, and extensive engineering analysis. Staff will return to the Board at a later date for authorization to include additional selected infrastructure improvements in the CIP.

In April 2020, the Board appropriated funds and authorized the General Manager to initiate or proceed with work on all capital projects identified in the CIP, subject to any limits on the General Manager's authority and CEQA requirements. This action amends the CIP to include the Rialto Pipeline Water Reliability Improvements. It is not anticipated that the addition of this project to the CIP will increase CIP expenditures in the current biennium beyond those which have been previously approved by the Board. Funds required for work to be performed pursuant to the subject contract after fiscal year 2021/22 will be budgeted within the Capital Investment Plan Appropriation for Fiscal Years 2022/23 and 2023/24. This project has been reviewed in accordance with Metropolitan's CIP prioritization criteria and were approved by Metropolitan's CIP Evaluation Team to be included in the System Reliability Program.

### **Rialto Pipeline Water Supply Reliability Improvements – Design Activities**

Planned design activities include: field investigations including geotechnical analyses and aerial topographic survey; hydraulic analysis; establishing design criteria; evaluation of the connection pipeline alignments; preparation of drawings and specifications for procurement of pipe and valves; preparation of drawings and specifications for construction package; shutdown planning with member agencies; acquiring temporary right-of-way for the contractor staging and work areas; preparation of environmental documentation and permitting; development of a construction cost estimate; receipt of bids; and all other activities in advance of award of the procurement and construction contracts. Staff will return to the Board at a later date to award construction contracts or report on the award of any contracts by the General Manager pursuant to his authority under the Drought Emergency Resolution adopted November 9, 2021.

A total of \$2,960,000 is required for these activities. Allocated funds for Metropolitan staff activities include \$532,000 for engineering studies and investigations, including utility investigations; \$1,432,000 for engineering design; \$120,000 for hydraulic analysis to be performed by a specialty firm under a contract planned to be executed under the General Manager's Administrative Code authority to award contracts of \$250,000 or less; \$73,000 for preparation of temporary right-of-way acquisition documentation needed for the contractor staging and work areas; \$350,000 for environmental permitting, contracts bidding, project controls and project management; and \$453,000 for remaining budget.

As described above, all work will be performed by Metropolitan staff and specialized consultants. 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 8.3 percent of the total construction costs. The total estimated cost of construction for the first and second components of this project is anticipated to range from \$17.0 million to \$18.5 million.

**Attachment 1** provides the allocation of the required funds for this work. The total estimated cost of the Rialto Pipeline Water Supply Reliability Improvements, including the funds allocated for the work described in this action and future construction costs for Stage 1 components, is anticipated to range from \$22.5 million to \$24.5 million.

### **Summary**

This action amends the current CIP to include necessary supply availability improvements to the Rialto Pipeline that depends exclusively on raw water deliveries from the East Branch of the SWP.

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

### **Project Milestones**

April 2022 – Completion of design of Rialto Pipeline Water Supply Reliability Improvements - Stage 1

June 2022 – Completion of preliminary investigations of Rialto Pipeline Water Supply Reliability Improvements Stage 2

### **Policy**

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Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

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

### **California Environmental Quality Act (CEQA)**

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#### **CEQA determination for Option #1:**

Amending the Capital Investment Plan (CIP) and authorizing work to proceed under the CIP, subject to the limits described above, is not defined as a project and is not subject to the CEQA, because it involves the creation of a general funding mechanism and general policy and procedure making with no commitment to proceed with any specific project at this time (Sections 15378(b)(2) and 15378(b)(4) of the State CEQA Guidelines). Furthermore, the proposed action involves feasibility or planning studies for possible future actions which the agency, commission or board has not yet approved, adopted or funded. Accordingly, the proposed action qualifies as a Statutory Exemption (Section 15262 of the State CEQA Guidelines). In addition, the proposed actions also involve basic data collection and resource evaluation activities that do not result in a serious or major disturbance to an environmental resource. This may be strictly for information gathering purposes, or as part of a study leading to an action, which a public agency has not yet approved, adopted, or funded. Accordingly, the proposed action qualifies as a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

#### **CEQA determination for Option #2:**

None required

### **Board Options**

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#### **Option #1**

Amend current CIP to include projects to improve water supply reliability in the Rialto Pipeline service area.

**Fiscal Impact:** Expenditure of \$2.96 million in capital funds. Approximately \$2.96 million will be incurred in the current biennium and has 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. The remaining funds from this action and for future construction costs will be accounted for and appropriated under the next biennial budget.

**Business Analysis:** These projects will enhance the reliability of water deliveries to member agencies with connections to the Rialto Pipeline.



**Option #2**

Do not proceed with the project at this time.

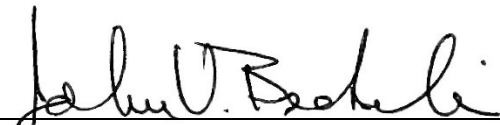
**Fiscal Impact:** None

**Business Analysis:** This option would forego improving the reliability of service to those member agencies with connections to the Rialto Pipeline.

**Staff Recommendation**

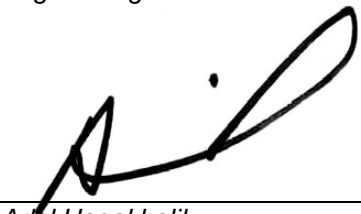
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Option #1

  
\_\_\_\_\_  
John V. Bednarski  
Manager/Chief Engineer  
Engineering Services

11/29/2021

Date

  
\_\_\_\_\_  
Adel Hagekhalil  
General Manager

12/1/2021

Date

**Attachment 1 – Allocation of Budgeted Funds**

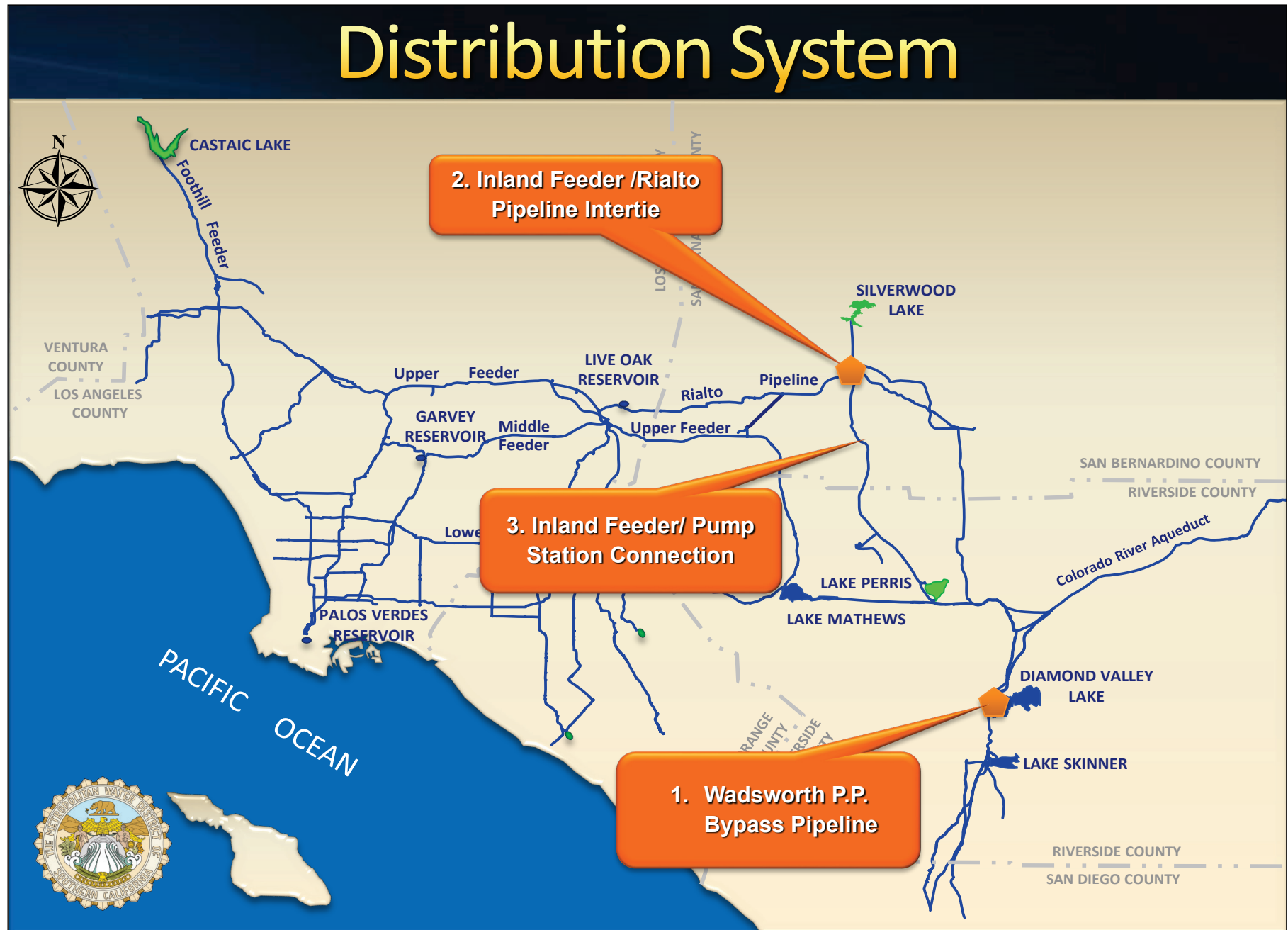
**Attachment 2 – Location Map**

Ref# es12679016

### Allocation of Funds for Rialto Pipeline Water Supply Reliability Improvements

	<b>Current Board Action (Dec. 2021)</b>
Labor	
Studies & Investigations	\$ 532,000
Final Design	1,432,000
Owner Costs (Program mgmt., contract admin., envir. monitoring)	350,000
Real Property	73,000
Submittals Review & Record Drwgs.	-
Fabrication Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	120,000
Equipment Use	-
Contracts	-
Remaining Budget	453,000
<b>Total</b>	<b>\$ 2,960,000</b>

This is the initial action for the Rialto Pipeline Water Supply Reliability improvements. The total estimated cost to complete Stage 1 improvements, including the amount appropriated to date, and funds allocated for the work described in this action, is anticipated to range from \$22.5 million to \$24.5 million.





# Rialto Pipeline Water Reliability Improvements

Engineering and Operations Committee

Item 7-1

December 13, 2021

For illustration purposes only

VENTURA

LOS ANGELES

San Bernardino

RIVERSIDE

ORANGE

SAN DIEGO

PACIFIC OCEAN

SWP

Agency Shift

Greg Ave Pumping

Agency Shift

F.E. Weymouth Water Treatment Plant

Robert B. Diemer Water Treatment Plant

Henry J. Mills Water Treatment Plant

Robert A. Skinner Water Treatment Plant

DVL to Mills

CRW

DVL to Lakeview

Conserving roughly  
140 - 180 TAF of SWP supplies

# Maximizing reliability with extraordinary operational drought actions



# Evaluating New Drought Actions for the Near- and Long-Term

Collaboration and idea generation across Metropolitan and Member Agencies

- Generated 132 creative ideas
- About 50 ideas selected for further study and potential development

## Project Categories



*System  
and Operations*



*Shift Timing  
of Deliveries*



*Increase Local  
Supplies*



*Increase  
Conservation*



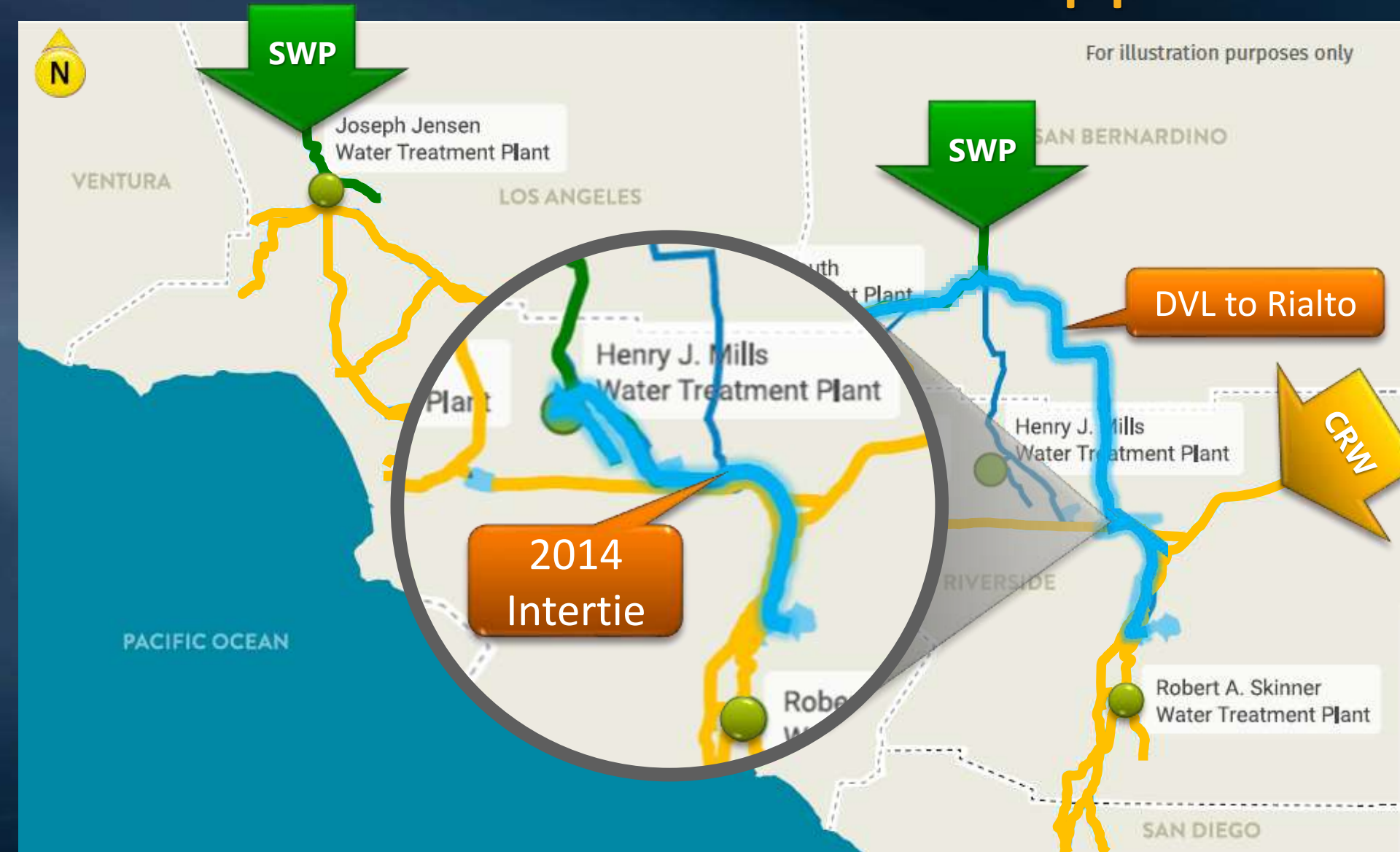
*Expand  
Supply Programs*

# Long-Term Opportunities to Further Reduce Demands for Limited SWP Supplies



- Projects require significant planning and capital investments
- Continue investigating long-term project opportunities

# Long-Term Opportunities to Further Reduce Demands for Limited SWP Supplies



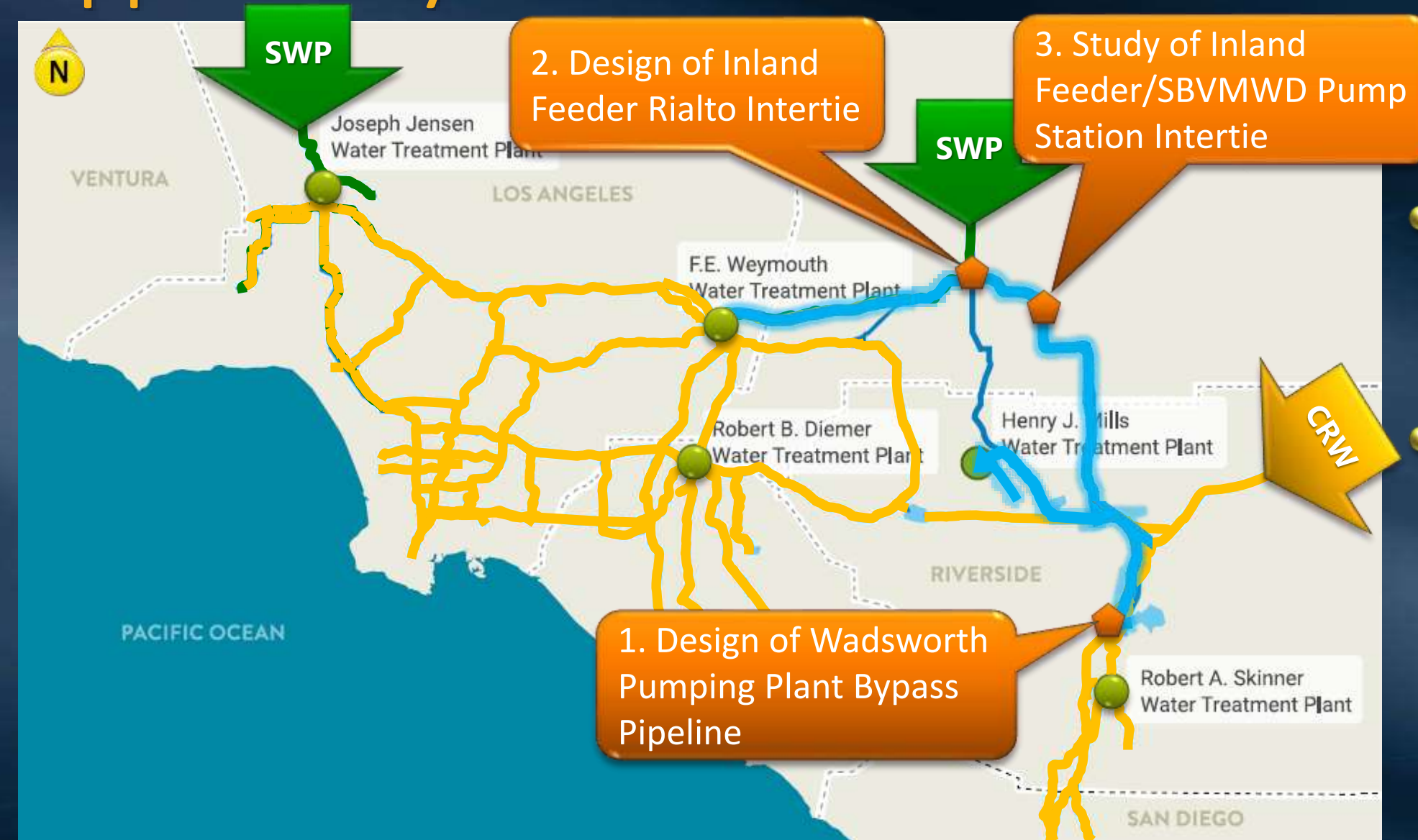
- Low-cost incremental improvement
- Takes advantage of existing pump stations and other infrastructure



# Inland Feeder / Lakeview Pipeline Intertie



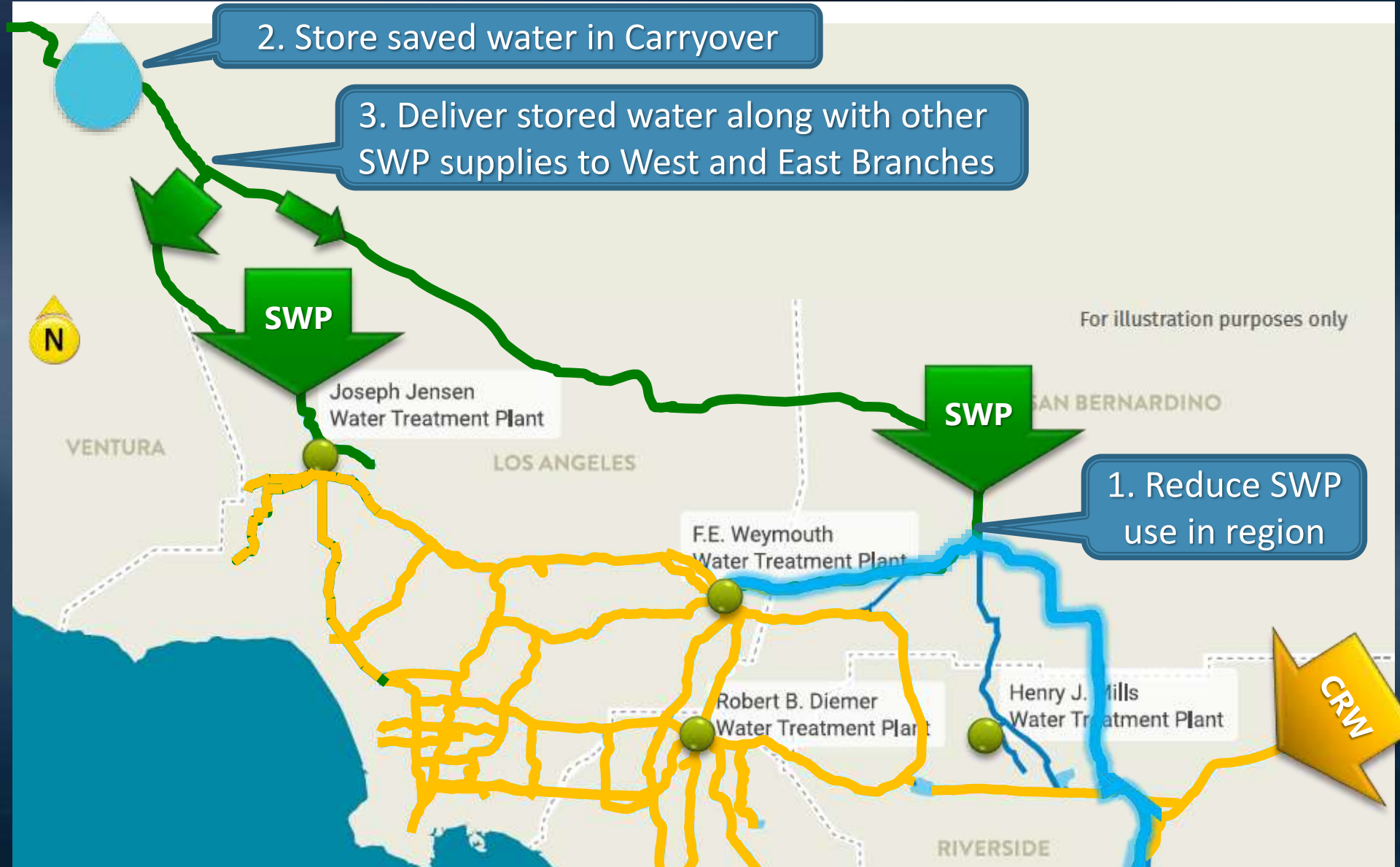
# Recommended Next Steps on the DVL to Rialto Opportunity



- Low-cost incremental improvement
- Takes advantage of existing pump stations and other infrastructure



# A Drop of SWP Water Saved Anywhere... is a Drop that can be used Everywhere



- Connected System: All drought actions work together to benefit the region
- Saved water delivered to area of need

# Current Action

- Amend the Capital Investment Plan for fiscal years 2020/2021 and 2021/2022 to include water supply reliability improvements in the Rialto Pipeline service area
- Allows work to begin on:
  - Design of Wadsworth Pumping Plant Bypass Pipeline
  - Design of Inland Feeder Rialto Intertie
  - Study of Inland Feeder/SBVMWD Pump Station Intertie
- General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

# 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
  - Storage reserve to help meet member agency demands under normal, drought, and emergency conditions
- The Rialto Pipeline is unable to access water stored in DVL or from the CRA due to infrastructure & operational constraints
  - Quagga mussel management is required for CRA water



# Project Components

Rialto Pipeline

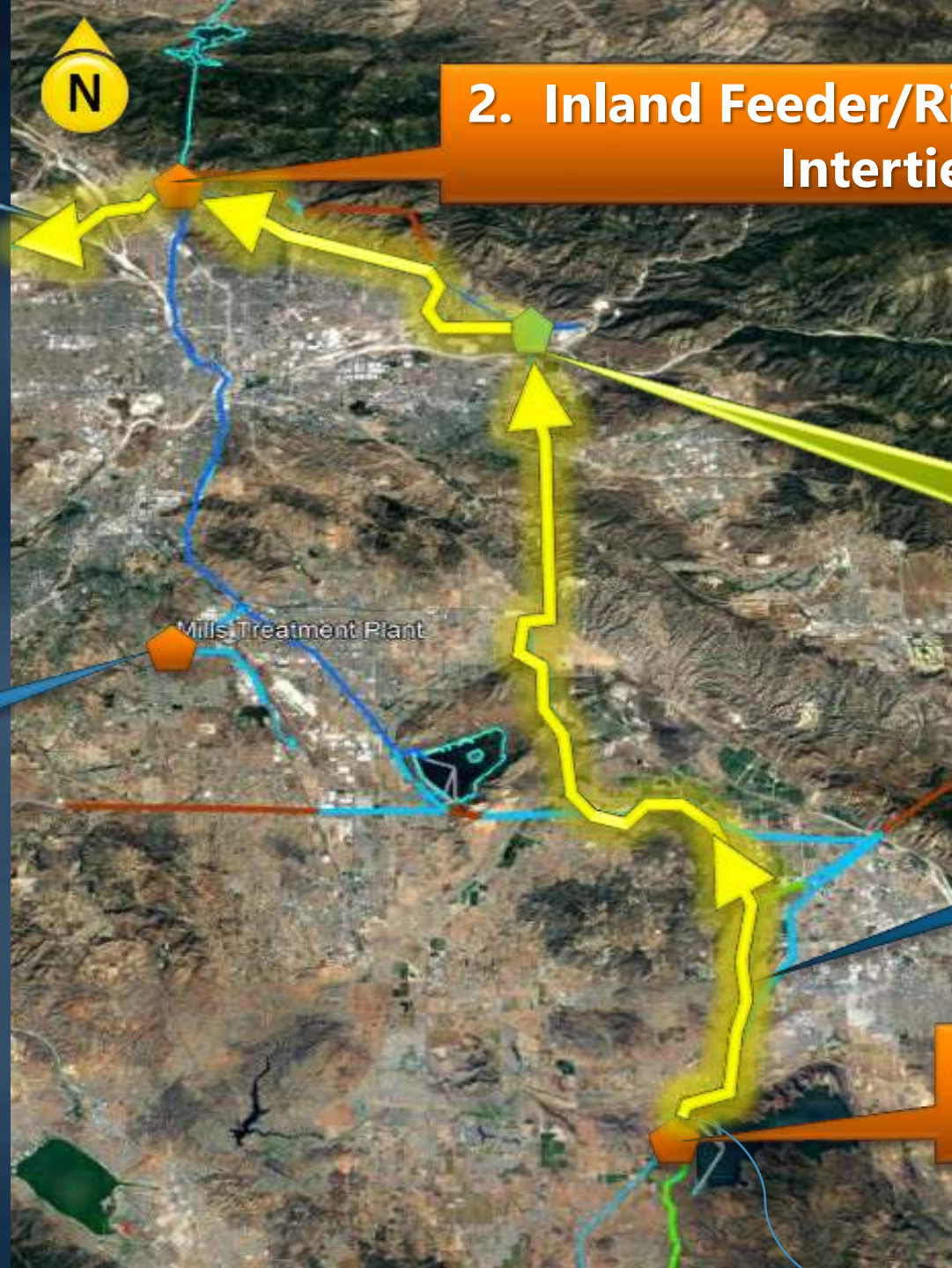
2. Inland Feeder/Rialto Pipeline Intertie

3. SBVMWD Foothill Pump Station Intertie

Mills Treatment Plant

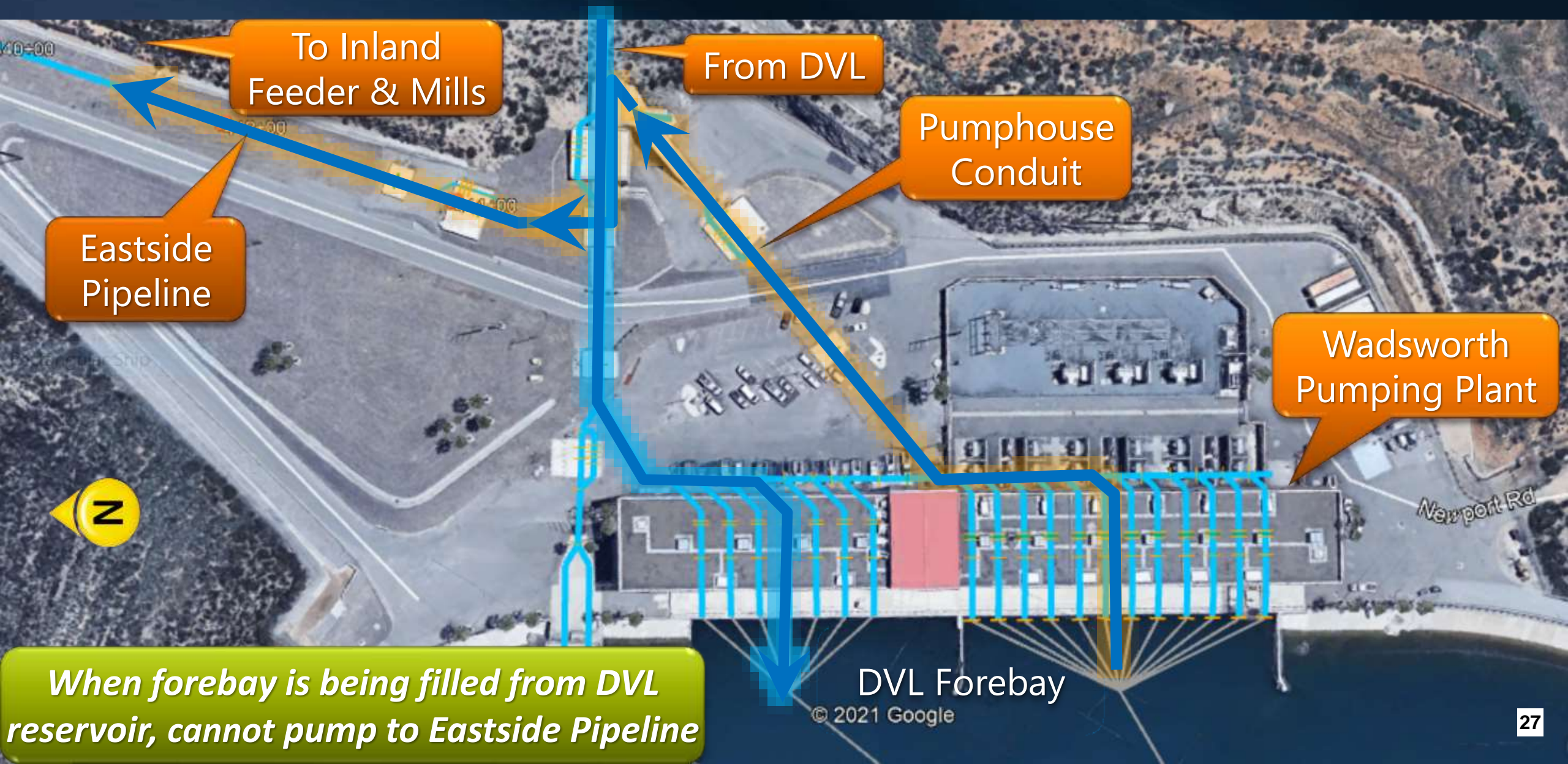
Inland Feeder

1. Wadsworth Pumping Plant Bypass



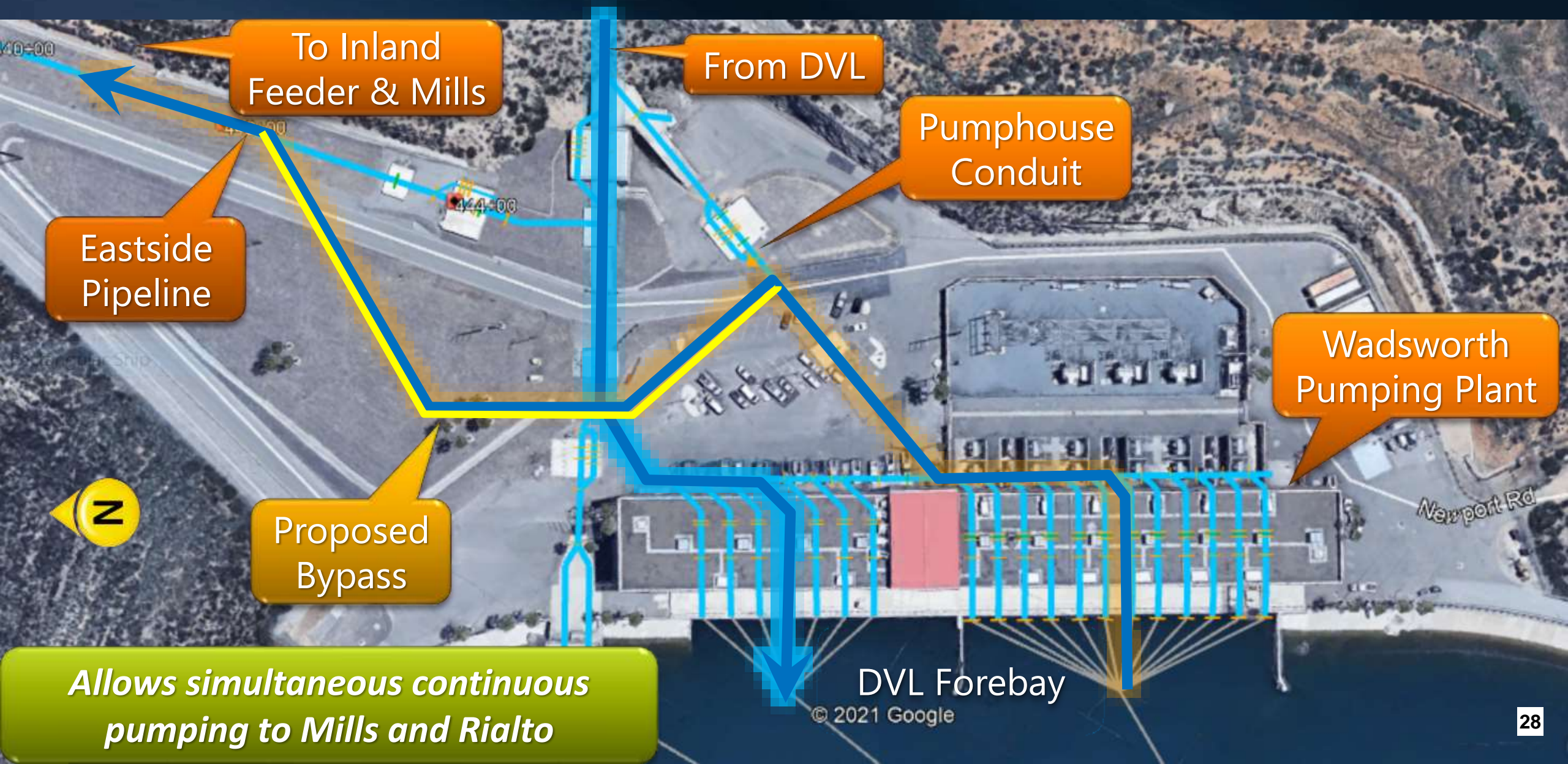


# 1. Wadsworth P.P. – Current Operation





# 1. Wadsworth P.P. – With Proposed Bypass





# 1. Bypass Components

- Approximately 600 feet of 96" diameter pipe
- Tee pipe fitting to tie into Wadsworth Pump house Conduit
  - Inland Feeder has an existing wye for tie-in
- Isolation valve structure
  - 84" isolation valve
  - Bypass valving and pipe
  - SCADA monitoring
- Estimated cost range of project: \$12 to \$12.5 million

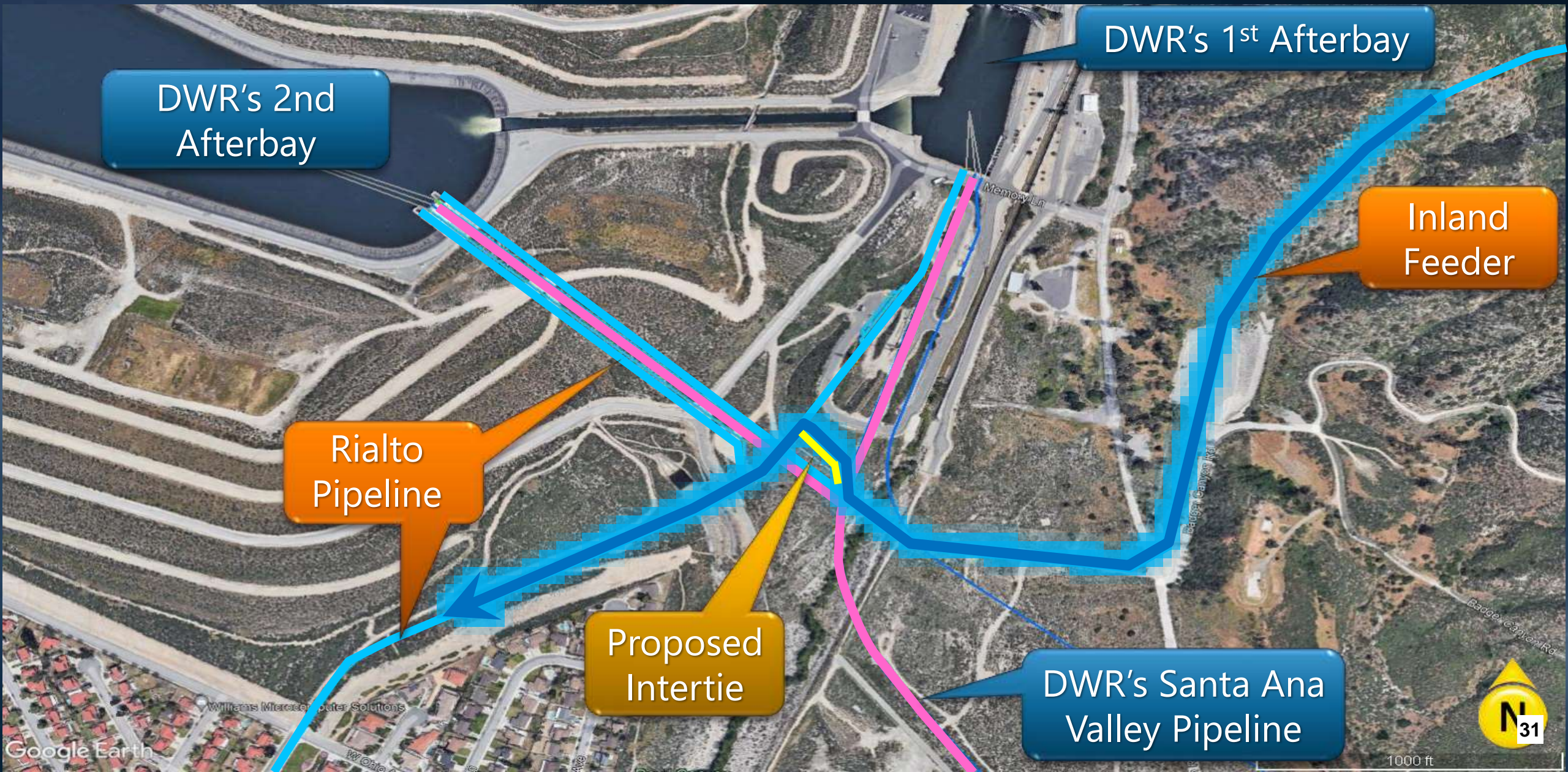


## 2. Inland Feeder Rialto Pipeline – Normal Ops.





## 2. Inland Feeder Rialto Pipeline - Intertie





## 2. Intertie Components

- Approximately 200 feet of 96" diameter pipe
- Tee pipe fitting to tie into Inland Feeder & Rialto Pipeline
- Isolation valve structure
  - 84" isolation valve
  - Bypass valving and pipe
  - SCADA monitoring
- Estimated cost range of project: \$10.5 to \$11.5 million

### 3. Pump Station Intertie

- Connects Inland Feeder to either of SBVMWD's/DWR's Citrus Reservoir or SBVMWD's Foothill Pump Station
- Permits delivery of DVL water to Rialto Pipeline by providing final lift needed to reach Rialto Pipeline
- Exchange agreement with SBVMWD allowing utilization of pump stations is similar to other agreements with SBVMWD
- Intertie components
  - Intertie piping, valves & valve structures
  - Surge protection
  - Flow meter & SCADA monitoring
- Estimated cost range of project: \$16 to \$26 million

# Scope of Work

- Components 1, 2, & 3
  - Conduct field invests., Geotech & hydraulic analyses, & survey
  - Establish design criteria
  - Evaluate infrastructure configurations
- Components 1 & 2 Only
  - Prepare drawings, specifications & cost estimates
  - Procure pipe & valves
  - Conduct shutdown planning with member agencies
  - Prepare environmental documentation & permitting
  - Acquire necessary rights-of-way

# Allocation of Budgeted Funds

## Rialto Pipeline Water Reliability Improvements

### Labor

Studies & Investigations	\$532,000
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Final Design	1,432,000
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Program mgmt. & contract admin.	350,000
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Real Property	73,000
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Materials & Incidentals	0
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### Professional Services

Consultants	120,000
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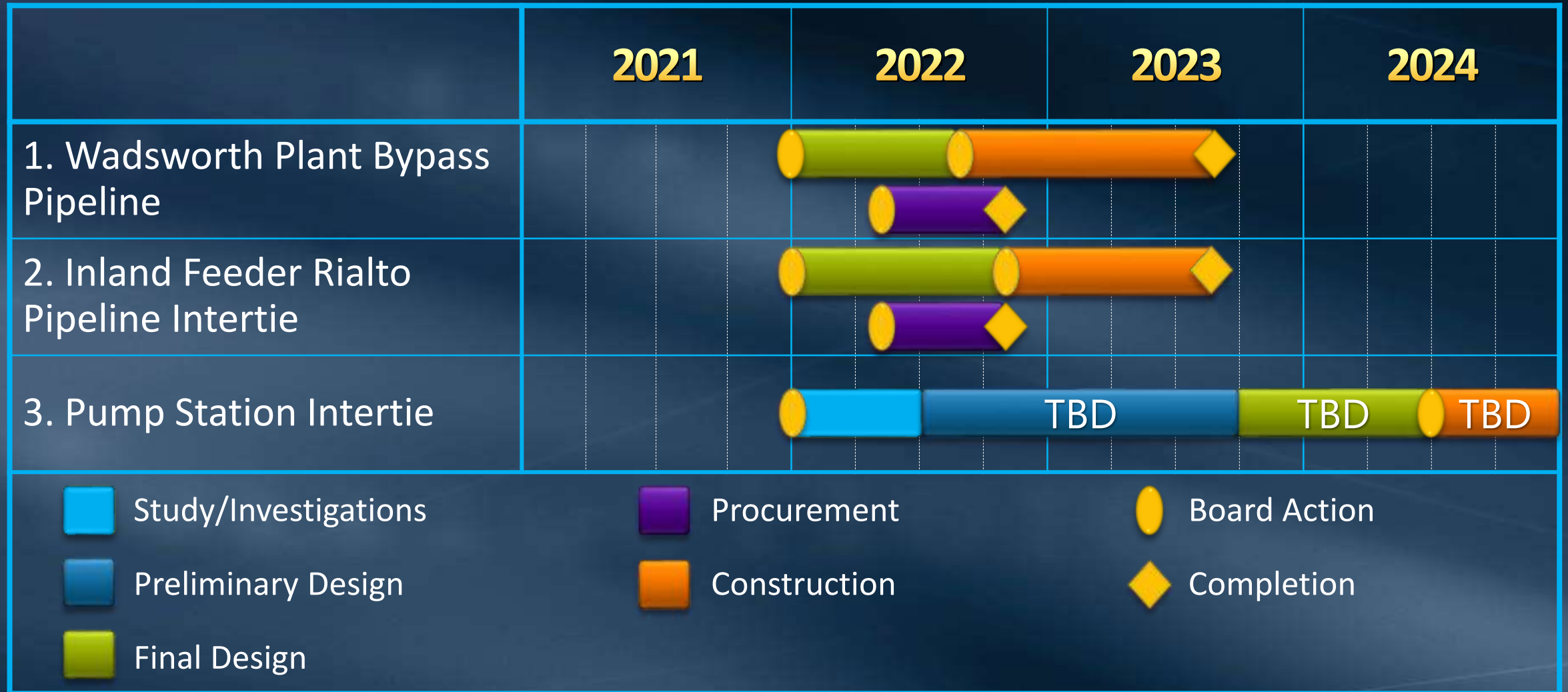
Remaining Budget	453,000
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Total	\$2,960,000
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*Est. Construction Cost - Components 1 & 2: \$17 M to \$18.5 M*

# Project Schedule





# Board Options

- Option #1
  - Amend current CIP to include projects to improve water supply reliability in the Rialto Pipeline service area.
- Option #2
  - Do not proceed with the projects at this time.

# Staff Recommendation

- Option #1





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

12/14/2021 Board Meeting

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**7-2**

**Subject**

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Award a \$11,499,000 contract to J. F. Shea Construction, Inc. for the seismic upgrade of the Casa Loma Siphon Barrel No. 1; and authorize \$1,100,000 increase to an agreement with Carollo Engineers Inc., for a new not-to-exceed total of \$3.6 million, for technical support during construction; the proposed action is in furtherance of a project that was previously determined to be exempt or otherwise not subject to CEQA

**Executive Summary**

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Casa Loma Siphon Barrel No. 1, which is located near the city of Hemet, is a key portion of the Colorado River Aqueduct (CRA) system. The siphon crosses the Casa Loma Fault and is vulnerable to significant deformation and potential rupture from a seismic event. In addition, the pipeline has deformed over time due to ongoing localized ground subsidence, and, as a result, the pipeline has experienced recurring leaks since the 1960s. Numerous repairs have been attempted over the years; however, intermittent leaks continue to occur. This project will mitigate leaks associated with long-term ground subsidence and improve the overall seismic resilience of this portion of the CRA.

This action awards a contract to replace a portion of Barrel No. 1 of the Casa Loma Siphon at the fault crossing with earthquake-resistant pipe. This action also authorizes an increase to an existing agreement for technical support during construction.

**Details**

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**Background**

Casa Loma Siphon Barrel No. 1 was constructed in 1935 as a component of the CRA. The siphon extends west from the San Jacinto Diversion Structure to the Bernasconi Tunnel near Lake Perris; a distance of five miles. The siphon was originally constructed of 148-inch-diameter concrete pipe. In the early 1960s, cracks and leakage developed in the pipe as a result of ground movement due to subsidence where the siphon crosses the Casa Loma Fault. In 1968, 300 feet of the concrete pipe was replaced with 148-inch-diameter steel pipe, joined by external sleeve type couplings. These couplings were installed across the fault to permit minor, movement of pipe segments without leaking. However, since that time, continued ground subsidence has caused leaks in that section of the pipeline, which have required numerous repairs.

Metropolitan has an extensive seismic reliability program, which periodically reassesses seismic risks to its infrastructure. This program conducted a geologic hazard evaluation of the area surrounding the Casa Loma Siphon Barrel No. 1. This evaluation indicated that a potential horizontal ground displacement of up to 13 feet is possible due to fault rupture at this location. In addition, an internal survey of the pipeline confirmed that an 800-foot-long portion of the siphon has experienced vertical displacement of more than five feet over 84 years due to ongoing non-seismic settlement of the ground surface.

In light of these unique site conditions, staff investigated innovative solutions to make this section of the siphon more resilient to seismic events and ground subsidence. Staff concluded that Earthquake-Resistant Ductile Iron Pipe (ERDIP) is a viable and superior alternative to other methods to enhance reliability and seismic resiliency of the siphon. ERDIP is a type of pipe with flexible joints that can accommodate relatively large ground displacements. Traditional welded steel pipe will be used to transition between the ERDIP and the existing concrete pipe.

In May 2018, Metropolitan's Board authorized design to replace a portion of the Casa Loma Siphon Barrel No. 1 with ERDIP. In December 2019, due to the long lead-time needed to procure these pipes and fittings and the timing of the project to meet the CRA shutdown, Metropolitan's Board authorized procurement of the pipe. Both the ERDIP and welded steel pipe have been fabricated and are currently in storage near the project site. Staff recommends award of a construction contract at this time.

In accordance with the April 2020 action on the biennial budget for fiscal years 2020/21 and 2021/22, the General Manager will authorize staff to proceed with seismic upgrade of the Casa Loma Siphon Barrel No. 1, pending board award of the contract described below. Based on the current Capital Investment Plan (CIP) expenditure forecast, funds for the work to be performed pursuant to this action during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Years 2020/21 and 2021/22 (Appropriation No. 15517). Funds required for work to be performed pursuant to the subject contract after fiscal year 2021/22 will be budgeted within the Capital Investment Plan Appropriation for Fiscal Years 2022/23 and 2023/24. 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 Distribution System Reliability Program.

### **Casa Loma Siphon Barrel No. 1 Seismic Upgrade – Construction**

The scope of construction includes replacing approximately 1,200 linear feet of 148-inch diameter steel and concrete pipe crossing the Casa Loma Fault Zone with two parallel barrels of Metropolitan-furnished 104-inch diameter ERDIP, installing 148-inch diameter Metropolitan-furnished steel pipe and fittings to connect the ERDIP and existing siphon, and applying cement-mortar lining. In addition, Metropolitan forces will shut down the pipeline, establish clearances, perform water quality testing, and return the pipeline to service.

A total of \$16.2 million is required for this work. In addition to the amount of the contract described below, other funds to be allocated include \$110,000 for Metropolitan force construction, as described above; \$1,602,000 for construction management and inspection; \$562,000 for submittal review and preparation of record drawings; \$1,100,000 for technical support during construction by Carollo Engineers Inc., as described below, \$403,000 for contract administration, environmental support, and project management; and \$924,000 for remaining budget.

**Attachment 1** provides the allocation of the required funds. The total estimated cost to complete the Casa Loma Siphon Barrel No. 1 Seismic Upgrade, including the amount allocated to date and funds allocated for the work described in this action, is \$37.2 million. Approximately \$21 million has been expended on this project to date.

### ***Award of Construction Contract (J. F. Shea Construction, Inc.)***

Specification No. 1958 for the Seismic Upgrade of Casa Loma Siphon Barrel No. 1 was advertised for bids on September 24, 2021. As shown in **Attachment 2**, seven bids were received and opened on November 16, 2021. The low bid from J. F. Shea Construction, Inc, in the amount of \$11,499,000, complies with the requirements of the specifications. The other bids ranged from \$12,982,500 to \$20,425,706, while the engineer's estimate for this project was \$16.1 million. For this contract, Metropolitan established a Small Business Enterprise (SBE) participation level of at least 20 percent of the bid amount. J. F. Shea Construction, Inc. has agreed to meet this level of participation. The subcontractors for this contract are listed in **Attachment 3**. This action awards an \$11,499,000 contract to J. F. Shea Construction, Inc. for Seismic Upgrade of Casa Loma Siphon Barrel No. 1.

As described above, Metropolitan staff will perform construction management and inspection. Additionally, the ERDIP manufacturer, Kubota Corporation, will provide field support, including hands-on training, joint testing, and ERDIP installation inspections. These services were included in the ERDIP procurement contract. Engineering Services' performance metric target range for inspection of projects with construction greater than \$3 million is 9 to 12 percent. For this project, the performance metric goal for inspection is 7.5 percent of the total construction cost. The metric is derived from the total cost of inspection and the total value of the construction and procurement costs for the project. The total cost of inspection for this project is \$2.07 million, which includes inspection of the subject pipe installation (\$1,602,000) and pipe fabrication (\$470,000); funds for the pipe fabrication inspection were previously allocated. The total cost of construction for this project is \$27.6 million, which includes the subject installation contract (\$11,499,000), previously procured Metropolitan-furnished pipe (\$15,991,000), and Metropolitan force work (\$110,000).

### **Technical Support During Construction (Carollo Engineers Inc.) – Amendment to Agreement**

Carollo Engineers Inc. (Carollo) performed the design and provided technical support during pipe procurement for the Casa Loma Siphon Barrel No. 1 Seismic Upgrade under a board-authorized agreement. As the engineer of record for the design, Carollo is recommended to provide technical support during construction. The planned activities include review of submittals, responding to requests for information from the contractors, and advising staff on technical issues as they arise. The estimated cost for these services is \$1.1 million.

This action authorizes an increase of \$1.1 million to the existing agreement with Carollo for a new not-to-exceed amount of \$3.6 million to provide technical support during construction for the Casa Loma Siphon Barrel No. 1 Seismic Upgrade. For this agreement, Metropolitan has established an SBE participation level of 25 percent. Carollo has agreed to meet this level of participation. The subconsultants for this work are Degenkolb Engineers, Inc., Hushmand Associates, Inc., JDH Corrosion Consultants, Inc., and Lettis Consultants International, Inc.

### **Alternatives Considered**

During planning and design of this project, staff considered replacing the existing Casa Loma Siphon Barrel No. 1 with conventional steel pipe. On a short-term basis, this option would address the persistent leakage issues at the siphon. However, this approach would not provide the pipeline flexibility necessary to accommodate the continuing settlement displacement that is expected to occur over time, nor the significant displacement from a potential seismic event. Taken collectively, the alternative to use only steel pipe for the siphon/fault crossing would not increase the overall resiliency of this portion of the CRA. Staff evaluated multiple configurations and sizes of ERDIP and steel pipe and determined that a combination of ERDIP and steel pipe is the most cost-effective and reliable option.

### **Summary**

This action awards a \$11,499,000 construction contract to J. F. Shea Construction, Inc. for Casa Loma Siphon Barrel No. 1 Seismic Upgrade and authorizes an increase in an agreement with Carollo Engineers Inc. for technical support during construction. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Abstract of Bids, **Attachment 3** for the listing of Subcontractors for Low Bidder, and **Attachment 4** for the Location Map.

### **Project Milestone**

June 2023 – Complete construction for Casa Loma Siphon Barrel No. 1 seismic upgrade

### **Policy**

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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 51196, dated May 8, 2018, the Board authorized design to replace Casa Loma Siphon Barrel No. 1

By Minute Item 51830 dated December 10, 2019, the Board authorized procurement of pipe materials to replace Casa Loma Siphon Barrel No. 1

By Minute Item 51963, dated April 13, 2020, the Board appropriated a total of \$500 million for projects identified in the Capital Investment Plan for Fiscal Years 2020/21 and 2021/22.

### **California Environmental Quality Act (CEQA)**

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#### **CEQA determination for Option #1:**

The proposed action was previously determined to be exempt under the provisions of CEQA and the State CEQA Guidelines. The Casa Loma Siphon Barrel No. 1 project was found by the Board to be statutorily exempt under Section 21080.21(a) of the California Public Resources Code and Section 15282(k) of the State CEQA Guidelines and categorically exempt under Class 1 and Class 2 Categorical Exemptions (Sections 15301 and 15302 of the



State CEQA Guidelines) on May 8, 2018. With the current board action, there is no substantial change proposed since the original project was first approved in 2018. Hence, the previous environmental documentation in conjunction with the project fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation is necessary for the Board to act with regard to the proposed action.

**CEQA determination for Option #2:**

None required

**Board Options**

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**Option #1**

- a. Award \$11,499,000 contract to J. F. Shea Construction, Inc. for Casa Loma Siphon Barrel No. 1 Seismic Upgrade.
- b. Authorize a \$1.1 million increase to an agreement with Carollo Engineers Inc. for a new not-to-exceed amount of \$3.6 million.

**Fiscal Impact:** Expenditure of \$16.2 million in capital funds. Approximately \$1.5 million will be incurred in the current biennium and has been previously authorized.

**Business Analysis:** This option will resolve long-term leakage and settlement issues with the Casa Loma Siphon, reduce the risk of unplanned outages and costly urgent repairs, and enhance the delivery reliability of the CRA.

**Option #2**

Do not proceed with the project at this time.

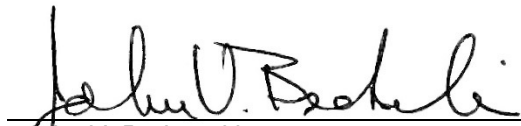
**Fiscal Impact:** None

**Business Analysis:** This option would forgo an opportunity to increase the seismic resilience of the CRA. Staff would continue to monitor the siphon and make repairs when leaks are found.

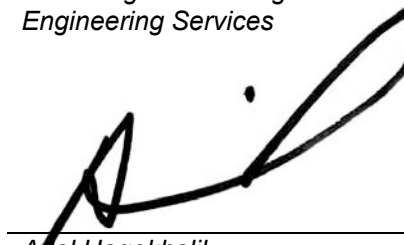
**Staff Recommendation**

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Option #1

  
\_\_\_\_\_  
John V. Bednarski  
Chief Engineer/Manager  
Engineering Services

11/22/2021  
Date

  
\_\_\_\_\_  
Adel Hagekhalil  
General Manager

12/2/2021  
Date

**Attachment 1 – Allocation of Funds**

**Attachment 2 – Abstract of Bids**

**Attachment 3 – Subcontractors for Low Bidder**

**Attachment 4 – Location Map**

Ref# es12684519

### **Allocation of Funds for Casa Loma Siphon Barrel No. 1 Seismic Upgrade**

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	<b>Current Board Action (Dec. 2021)</b>
Labor	
Studies & Investigations	\$ -
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	403,000
Submittals Review & Record Drwgs.	562,000
Construction Inspection & Support	1,602,000
Metropolitan Force Construction	110,000
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	-
Carollo Engineers Inc.	1,100,000
Right-of-Way	-
Equipment Use	-
Contracts	-
J. F. Shea Construction, Inc.	11,499,000
Remaining Budget	924,000
<b>Total</b>	<b><u>\$ 16,200,000</u></b>

The total amount expended to date for the Casa Loma Siphon Barrel No. 1 Seismic Upgrade is approximately \$21 million. The total estimated cost to complete this project, including the amount appropriated to date and funds allocated for the work described in this action, is \$37.2 million.



## The Metropolitan Water District of Southern California

### Abstract of Bids Received on November 16, 2021 at 10:00 A.M.

#### Specifications No. 1958 Casa Loma Siphon Barrel No. 1 Seismic Upgrade

The work includes replacing approximately 1,200 linear feet of 148-inch diameter steel and concrete pipe crossing the Casa Loma Fault Zone with two parallel barrels of Metropolitan-furnished 104-inch diameter ERDIP, installing 148-inch diameter Metropolitan-furnished steel pipe and fittings to connect the ERDIP and existing siphon, welding, applying cement mortar lining, and site restoration.

Engineer's estimate: \$16,100,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE <sup>1</sup>
J. F. Shea Construction, Inc. Walnut, CA	\$11,499,000	\$2,910,975	25%	Yes
Steve P. Rados, Inc. Santa Ana, CA	\$12,982,500	-	-	-
Mladen Buntich Construction Co., Inc, Upland, CA	\$13,397,000	-	-	-
James W. Fowler Co. Dallas, OR	\$14,505,000	-	-	-
Blois Construction, Inc. Oxnard, CA	\$14,974,000	-	-	-
Kiewit Infrastructure West Co. Poway, CA	\$15,474,000	-	-	-
ARB, Inc. Lake Forest, CA	\$20,425,706	-	-	-

<sup>1</sup> Small Business Enterprise (SBE) participation level established at 20% for this contract.

**The Metropolitan Water District of Southern California****Subcontractors for Low Bidder****Specifications No. 1958  
Casa Loma Siphon Barrel No. 1 Seismic Upgrade**

Low bidder: J. F. Shea Construction, Inc.

<b>Subcontractor and Location</b>
Amber Steel Co. Rialto, CA
Geo-Cell Solutions Fresno, CA
Marina Landscape, Inc. Orange, CA
Matrix Environmental Long Beach, CA
Dean's Certified Welding Temecula, CA
Miller Pipeline, LLC Indianapolis, IN





# Casa Loma Siphon Barrel No. 1 Seismic Upgrade

Engineering and Operations Committee

Item 7-2

December 13, 2021

# Current Action

- Award \$11,499,000 contract to J. F. Shea Construction, Inc. for the seismic upgrade of the Casa Loma Siphon Barrel No. 1
- Authorize \$1,100,000 increase to an existing agreement with Carollo Engineers Inc. to provide technical support during construction

# Distribution System





# Location Map





# Background

- 148-in concrete pipe constructed in 1935
- Vulnerable to fault displacement and ground subsidence



# Alternatives Considered

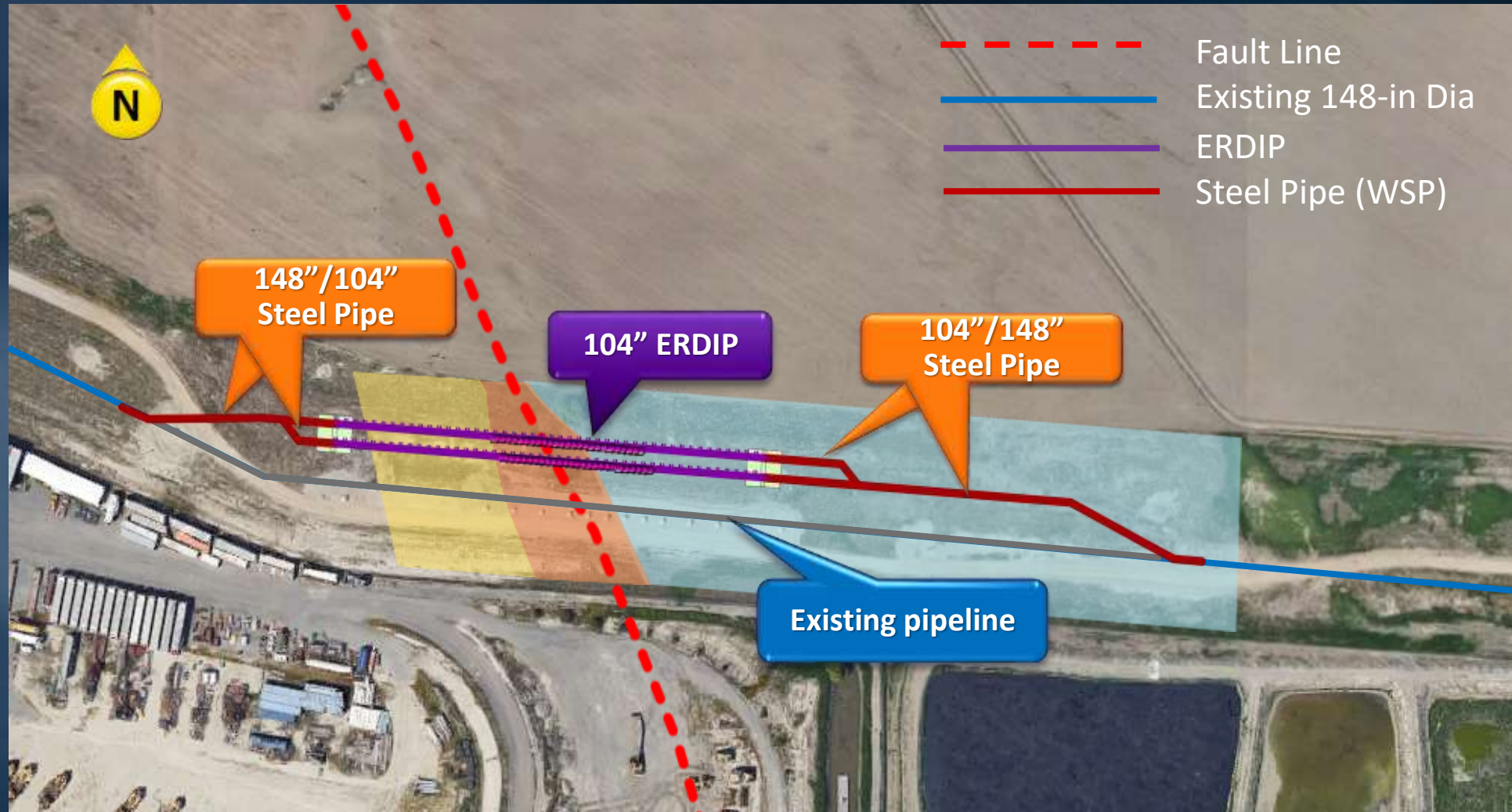
- Replace with steel pipe
  - Addresses persistent leakage short term
  - Inadequate flexibility for continuing settlement & significant displacement from a potential seismic event
- Replace with Earthquake Resistant Ductile Iron Pipe (ERDIP) & steel pipe combination
  - Optimized design to determine the most cost-effective option and reliable configuration
  - Selected approach



**ERDIP**



# Project Scope



# Contractor Scope

- Install Metropolitan-furnished pipe:
  - ERDIP & specialty pieces
    - 954 ft of 104-inch diameter
  - Steel pipe & fittings
    - 500 ft of 148-inch diameter
    - 100 ft of 104-inch diameter
- Abandon-in-place existing pipe
  - Filled with light-weight concrete



*ERDIP and steel pipe in storage at DVL*



# Metropolitan Scope

- Dewatering & refilling
- Construction inspection
- Contract admin., outreach & PM
- Review of submittals
- Preparation of record drawings



# Bid Results

## Specifications No. 1958

Bids Received	November 16, 2021
No. of Bidders	7
Low Bidder	J. F. Shea Construction, Inc.
Low Bid	\$11,499,000
Range of Higher Bids	\$12,982,500 to \$20,425,706
Engineer's estimate	\$16,100,000
SBE Participation*	25%

\*SBE (Small Business Enterprise) participation level set at 20%

# Agreement Amendment - Carollo Engineers Inc.

- Engineer of record for project
- Previously selected via Request for Qualifications No. 1131
- Scope of work
  - Provide technical support during construction
  - Review and respond to submittals
  - Review and respond to RFIs on as-needed basis
- Requested increase amount: \$1,100,000
- Agreement amendment to an amount NTE \$3.6 M
- SBE participation: 25%



# Allocation of Budgeted Funds

## Contract

J. F. Shea Construction, Inc.	\$11,499,000
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## Labor

Program mgmt. & contract admin.	403,000
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Const. Inspection & support	1,602,000
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Force Construction	110,000
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Submittal review & record drwgs.	562,000
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## Professional Services

Carollo Engineers Inc.	1,100,000
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Remaining Budget	924,000
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Total	\$16,200,000
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*Total Construction Cost including Metropolitan-furnished pipe: \$27,600,000*

# Project Schedule



# Board Options

- Option #1

- Award \$11,499,000 contract to J. F. Shea Construction, Inc. for Casa Loma Siphon Barrel No. 1 Seismic Upgrade.
- Authorize a \$1.1 million increase to an agreement with Carollo Engineers Inc. for a new not-to-exceed amount of \$3.6 million.

- Option #2

- Do not proceed with the project at this time.

# Staff Recommendation

- Option #1







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

12/14/2021 Board Meeting

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7-3

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## **Subject**

Award a \$32,824,000 contract to J. F. Shea Construction, Inc. to upgrade the domestic water treatment systems at the five Colorado River Aqueduct pumping plants; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

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## **Executive Summary**

The Colorado River Aqueduct (CRA) pumping plants and villages are isolated facilities that rely on local domestic water treatment systems for the supply of potable water. These water treatment systems have been in operation for nearly 30 years. While all of the systems are currently functioning as originally intended, major components of these aging systems are deteriorating and require frequent repairs and adjustments. In order to maintain long-term compliance with drinking water regulations, reduce the frequency of repairs, and maintain reliable operation, the systems need to be replaced. This action awards a construction contract to upgrade the domestic water treatment systems at the five CRA pumping plants.

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## **Details**

### **Background**

The CRA is a 242-mile-long conveyance system that transports water from the Colorado River to Lake Mathews. It consists of five pumping plants, 124 miles of tunnels, 63 miles of canals, and 55 miles of conduits, siphons, and reservoirs. The aqueduct was constructed in the late 1930s and was placed into service in 1941. The CRA pumping plants are located in remote areas of Riverside and San Bernardino Counties, where municipal water supplies are not available.

The CRA pumping plants and villages are isolated facilities that rely on local domestic water systems for the supply of potable water. Water from the aqueduct is initially pumped to the on-site domestic water system for treatment to meet potable water standards. The domestic water systems contain water treatment units that include membrane filtration, activated carbon adsorption, and sodium hypochlorite feed systems for disinfection. Following treatment, the water is then pumped to a concrete storage tank located on the hill above each pump house. From this location, water is conveyed by gravity through distribution piping to the pump house, guest lodge and kitchen, employee houses, and support buildings. The largest treatment system can process up to 30,000 gallons per day. Metropolitan staff regularly monitors and tests water quality within the domestic water networks to ensure compliance with state Division of Drinking Water requirements.

The existing water treatment systems are early-generation membrane filtration units, which were installed in 1993. While still fully functional today, system components are deteriorating, and the systems require frequent repairs and adjustments. Replacement parts are difficult to obtain as the original equipment supplier no longer produces spare parts. In addition, the original granular activated carbon (GAC) units were installed outside and are continuously exposed to the heat and desert environment. During periods of low system demand, the combination of intense summer heat with low or no flow through the GAC units causes low chlorine residual which leads to bacterial growth inside the GAC vessels. Currently, increasing the chlorine dosage requires manual adjustments to the sodium hypochlorite feed rate, which is a labor-intensive task. The domestic water treatment systems are critical components of the infrastructure that supports the CRA pumping plants. In order to

maintain compliance with drinking water regulations, reduce the frequency of repairs, and maintain reliable operation, the systems need to be replaced.

In April 2020, Metropolitan's Board authorized procurement of six water treatment units: one for each of the five CRA pumping plants and one spare unit. The existing water treatment units will be replaced with new systems that include strainers to protect the filtration unit; chlorine-tolerant, high-pressure membrane filtration systems; and disinfection equipment. The water treatment systems will fully comply with state and federal drinking water regulations, and the planned capacities will be consistent with projections of current and future demands at each plant. Based on the nearly 30 years of operational experience with this water treatment processes, the new systems will include climate-controlled buildings for both the GAC and disinfection equipment to improve operations and reduce maintenance requirements. Finally, due to the labor-intensive nature of the current system's operations, significant portions of the new systems will be automated to reduce the necessity for staff to make process adjustments.

In July 2018, Metropolitan's Board authorized design to upgrade the domestic water treatment systems at all five pumping plants, including replacement of the water treatment units. Design is complete, and staff recommends proceeding with award of a construction contract at this time to upgrade the water treatment systems at the five CRA pumping plants.

In accordance with the April 2020 action on the biennial budget for fiscal years 2020/21 and 2021/22, the General Manager will authorize staff to proceed with construction to upgrade the domestic water treatment systems at the five CRA pumping plants, pending board award of the construction contract described below. Based on the current Capital Investment Plan (CIP) expenditure forecast, funds for the work to be performed pursuant to this action during the current biennium are available within the CIP Appropriation for Fiscal Years 2020/21 and 2021/22 (Appropriation No. 15517). Funds required for work to be performed pursuant to the subject contract after fiscal year 2021/22 will be budgeted within the Capital Investment Plan Appropriation for Fiscal Years 2022/23 and 2023/24. 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 CRA Reliability Program.

### **CRA Domestic Water Treatment System Upgrades – Construction**

At each plant, the scope of the construction contract includes replacing the existing membrane filtration units with new Metropolitan-furnished equipment; replacing water quality monitoring instrumentation and laboratory equipment; upgrading electrical and instrumentation and controls systems for the disinfection system; and construction of a temperature-controlled, pre-engineered metal building with two rooms to house GAC vessels and disinfection equipment, each in a separate room.. This climate-controlled building, which will be equipped with automated features, will reduce equipment maintenance and the temperature of drinking water at desert facilities. Metropolitan force activities will include installing new duct banks for electrical and fiber optic cables; connecting the new instruments to new data collection systems; constructing new power systems; and integrating these systems with Metropolitan's Supervisory Control and Data Acquisition system.

A total of \$42.3 million is required for this work. In addition to the amount of the contract described below, other allocated funds for the construction phase include: \$2,273,000 for Metropolitan force activities, which includes \$1,653,000 for labor and \$620,000 for materials and supplies. Other construction support activities include: \$3,074,000 for construction management and inspection; \$1,912,000 for submittals review, responding to requests for information, technical support during construction, and preparation of record drawings; \$1,370,000 for contract administration, environmental monitoring, and project management; and \$847,000 for remaining budget. **Attachment 1** provides the allocation of the required funds.

### ***Award of Construction Contract (J. F. Shea, Construction, Inc.)***

Specifications No. 1949 for the upgrades of the domestic water systems at the CRA pumping plants was advertised for bids on September 24, 2021. As shown in Attachment 2, four bids were received and opened on November 16, 2021. The low bid from J. F. Shea Construction, Inc. in the amount of \$32,824,000 complies with the requirements of the specifications. The other bids ranged from approximately \$35.2 million to \$36.1 million, while the engineer's estimate was \$24,047,000. Staff investigated the difference between the engineer's estimate and the low bid. The key differences are attributed to increased costs for specialized electrical equipment such as transformers, control panels, and pressure, flow, and process measuring systems. Additionally, contractor staffing

levels proposed by the bidders to complete construction at five sites within the three-year construction timeframe is greater than estimated by staff. Finally, due to the remote location of the work sites, the contractor's bids included higher than anticipated lodging and pay incentives for meals and incidental expenses. The contract duration is approximately three years. For this contract, Metropolitan established a Small Business Enterprise participation level of at least 25 percent of the bid amount. J. F. Shea Construction, Inc. has committed to meet this level of participation. The subcontractors for this contract are listed in **Attachment 3**. This action awards a \$32,824,000 contract to J. F. Shea Construction, Inc. to upgrade the domestic water system at the CRA pumping plants.

As described above, construction management and inspection will be performed by Metropolitan staff. Engineering Services' performance metric target range for inspection of projects with construction greater than \$3 million is 9 to 12 percent. For this project, the performance metric goal for inspection is 8.9 percent of the total construction cost. The metric is derived from the total cost of inspection and the total value of the construction and procurement costs for the project. The total cost of inspection for this project is \$3,223,000, which includes inspection of the work under the subject contract (\$3,074,000) and fabrication inspection of the water treatment system units (\$149,000); funds for fabrication inspection of the water treatment system units were previously allocated. The total cost of construction for this project is \$36,303,535, which includes the amount of the contract (\$32,824,000), Metropolitan force activities (\$2,273,000), and previously procured water treatment system units (\$1,206,535).

### **Alternatives Considered**

During planning and design of this project, staff considered rehabilitation and upgrading of deteriorating components of the existing skid-mounted water treatment systems. This approach would allow for the continued use of the existing membrane filtration systems. However, this would not address the reduced availability or reliability of membrane modules and other spare parts compatible with the existing system.

Additionally, staff evaluated multiple alternative treatment technologies to determine the most cost-effective and reliable solution. The treatment technologies considered included: (1) conventional treatment with GAC; (2) polymeric microfiltration (MF) membranes with GAC; (3) ceramic MF membranes with GAC; and (4) nanofiltration membranes. Due to its proven ability to reliably and cost-effectively meet water quality objectives, chlorine-tolerant, high-pressure MF units with GAC were selected as the recommended treatment technology to be installed with the new equipment, as described herein.

### **Summary**

This action awards a \$32,824,000 contract to J. F. Shea Construction, Inc. for the upgrades to the domestic water system at the CRA pumping plants. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Abstract of Bids, **Attachment 3** for the listing of Subcontractors for Low Bidder, and **Attachment 4** for the Location Map.

### **Project Milestone**

January 2025 – Completion of construction of CRA domestic water treatment systems upgrades

### **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 50356, dated January 12, 2016, the Board authorized preliminary design to replace the domestic water systems at the CRA pumping plants.

By Minute Item 51250, dated July 10, 2018, the Board authorized final design to replace the CRA domestic water systems at the CRA pumping plants.

By Minute Item 51959, dated April 14, 2020, the Board authorized the procurement of water treatment equipment for the domestic water systems at the CRA pumping plants.



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

### **California Environmental Quality Act (CEQA)**

---

#### **CEQA determination for Option #1:**

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action involves operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use and no possibility of significantly impacting the physical environment. In addition, the proposed action includes the replacement and reconstruction of existing structures and facilities where the new structure will be located on the same site and as the structure replaced and will have the same purpose and capacity as the structure replaced. Lastly, the proposed action includes minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes. Accordingly, the proposed action qualifies under Class 1, Class 2, and Class 4 Categorical Exemptions (Sections 15301, 15302, and 15304 of the State CEQA Guidelines).

#### **CEQA determination for Option #2:**

None required

### **Board Options**

---

#### **Option #1**

Award a \$32,824,000 contract to J. F. Shea Construction, Inc. to upgrade the domestic water treatment systems at the five CRA pumping plants.

**Fiscal Impact:** Expenditure of \$42.4 million in capital funds. Approximately \$6 million will be incurred in the current biennium and has been previously authorized.

**Business Analysis:** This option will enhance critical infrastructure that supports efficient operation and reliability of the CRA pumping plants.

#### **Option #2**

Do not proceed with the project at this time.

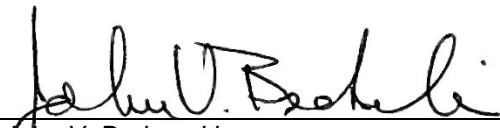
**Fiscal Impact:** None.

**Business Analysis:** This option would forego an opportunity to improve reliability of the domestic water treatment systems, which may lead to costly urgent repairs.

## Staff Recommendation


---

Option #1

  
\_\_\_\_\_  
John V. Bednarski  
Manager/Chief Engineer  
Engineering Services

11/19/2021

*Date*

  
\_\_\_\_\_  
Adel Hagekhalil  
General Manager

12/1/2021

*Date*

**Attachment 1 – Allocation of Funds**

**Attachment 2 – Abstract of Bids**

**Attachment 3 – Subcontractors for Low Bidder**

**Attachment 4 – Location Map**

Ref# es12142021

### Allocation of Funds for CRA Domestic Water Treatment System Upgrades

	<b>Current Board Action (Dec. 2021)</b>
Labor	
Studies & Investigations	\$ -
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	1,370,000
Submittals Review & Record Drwgs.	1,912,000
Construction Inspection & Support	3,074,000
Metropolitan Force Construction	1,653,000
Materials & Supplies	620,000
Incidental Expenses	-
Professional/Technical Services	-
Right-of-Way	-
Equipment Use	-
Contracts	-
J. F. Shea Construction, Inc.	32,824,000
Remaining Budget	847,000
<b>Total</b>	<b>\$ 42,300,000</b>

The total amount expended to date for the CRA Domestic Water Treatment System Upgrades is approximately \$6.5 million. The total estimated cost to complete this project, including the amount appropriated to date, and funds allocated for the work described in this action, is \$48.8 million.

**The Metropolitan Water District of Southern California**

**Abstract of Bids Received on November 16, 2021, at 2:00 P.M.**

**Specifications No. 1949  
Colorado River Aqueduct Pumping Plants  
Domestic Water Treatment System Upgrades**

This project will replace the domestic water treatment systems at five pumping plants including installation of Metropolitan-furnished membrane filtration units, granular activated carbon vessels, sodium hypochlorite tanks and disinfection equipment, water quality monitoring instrumentation, and construction of temperature-controlled pre-engineered metal buildings.

Engineer's estimate: \$24,047,000

<b>Bidder and Location</b>	<b>Total</b>	<b>SBE \$</b>	<b>SBE %</b>	<b>Met SBE<sup>1</sup></b>
J. F. Shea Construction, Inc. Walnut, CA	<b>\$32,824,000</b>	<b>\$12,930,485</b>	<b>39.4%</b>	<b>Yes</b>
Steve P. Rados, Inc. Santa Ana, CA	\$35,186,000	-	-	-
Myers & Sons Construction, LLC Sacramento, CA	\$35,200,000	-	-	-
Kiewit Infrastructure West Co. Santa Fe Springs, CA	\$36,149,000	-	-	-

<sup>1</sup> Small Business Enterprise (SBE) participation level established at 25% for this contract.

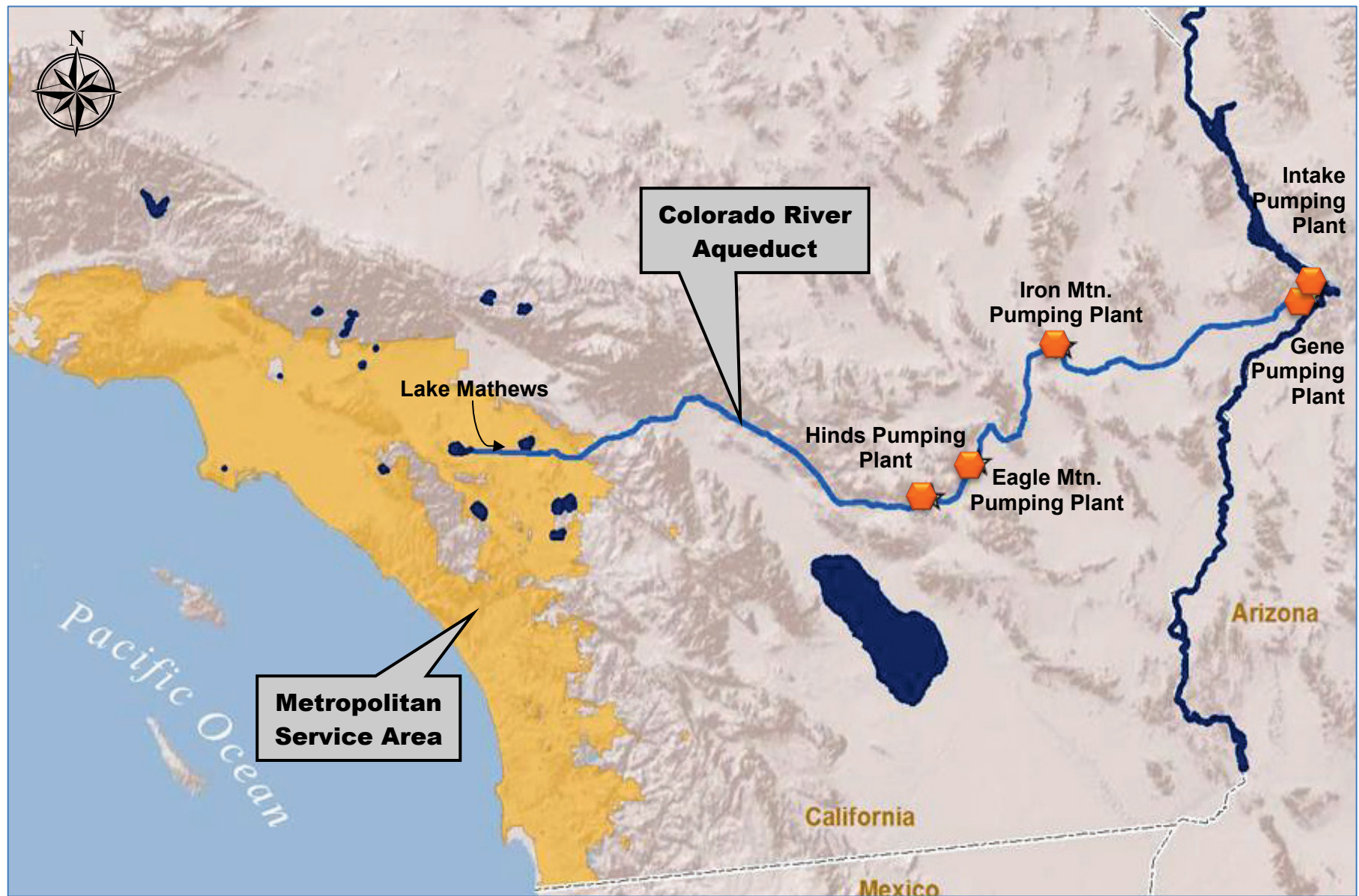


**The Metropolitan Water District of Southern California****Subcontractors for Low Bidder****Specifications No. 1949  
Colorado River Aqueduct Pumping Plants  
Domestic Water Treatment System Upgrades**

Low bidder: J. F. Shea Construction, Inc.

<b>Subcontractor and Location</b>
LA Steel Services, Inc. Corona, CA
LEED Electric Santa Fe Springs, CA
ACCO Engineered Systems, Inc. Pasadena, CA
Murphy Industrial Coatings, Inc. Signal Hill, CA
Facility Builders & Erectors, Inc. Anaheim, CA
Dean's Certified Welding Temecula, CA
Matrix Environmental, Inc. Long Beach, CA

# Location Map





# Domestic Water Treatment Systems Upgrades at the Colorado River Aqueduct Pumping Plants

Engineering and Operations Committee

Item 7-3

December 13, 2021

# Current Action

- Award a \$32,824,000 contract to J. F. Shea Construction, Inc. to upgrade the domestic water treatment systems at the five Colorado River Aqueduct pumping plants



# Location Map



# Upcoming Desert Projects

- District Housing Improvements
- Village Enhancements
  - Kitchens
  - Guest lodges
  - Recreation spaces
- Village Utility Upgrades
  - Water
  - Sewer
  - Roadways
- Domestic Water Upgrades

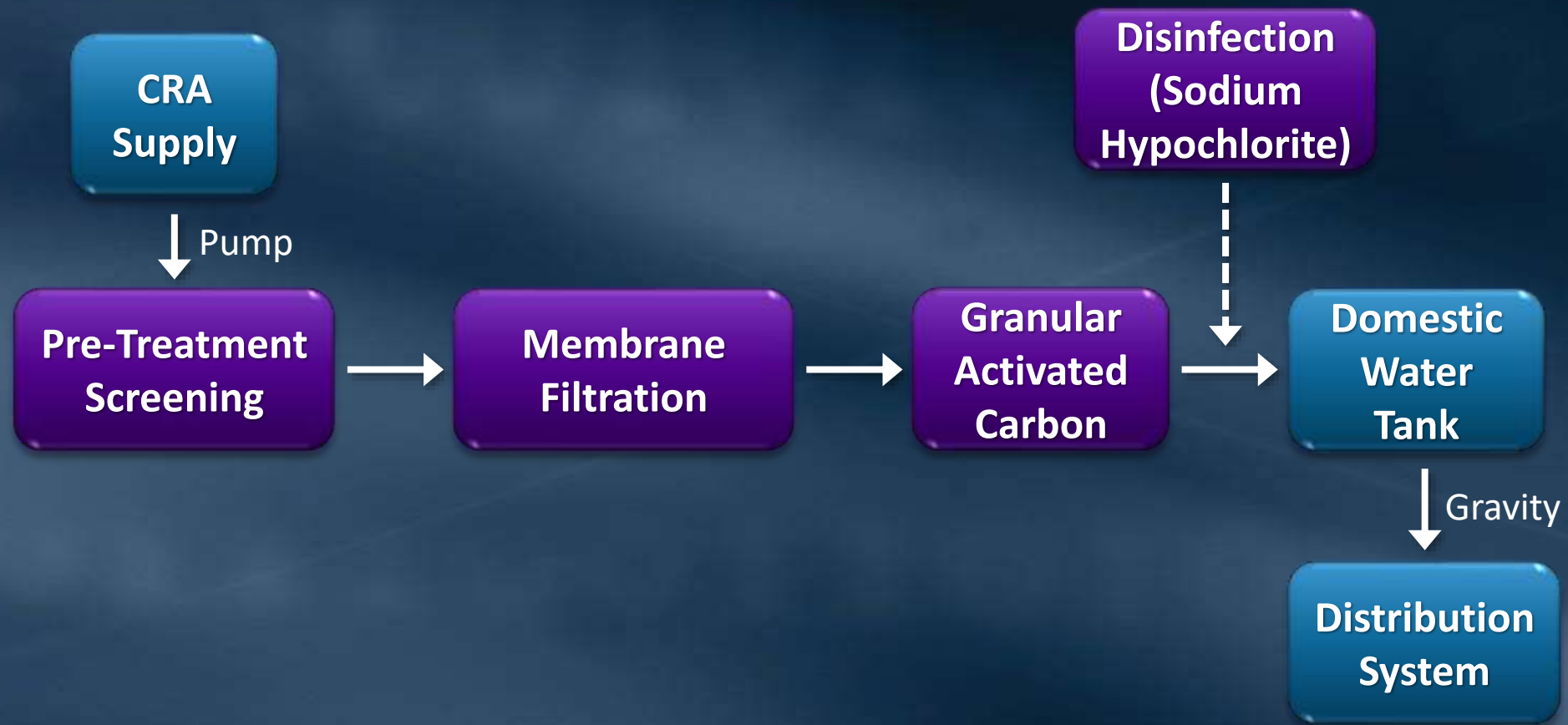


Housing



Guest Lodge

# Typical Desert Water Treatment System





# Background

- Original treatment systems installed in 1993
  - Maintain compliance with drinking water regulations
  - First systems approved by DDW for these purposes
- Equipment is deteriorating
  - Frequent repairs are required
  - Replacement parts are difficult to obtain





# Background

- Existing GAC units
  - Installed outdoors
  - Periods of low demand & intense summer heat cause bacterial growth inside units
- Existing disinfection systems
  - Require manual adjustments of the chlorine dosage
  - Labor intensive process for desert plant staff



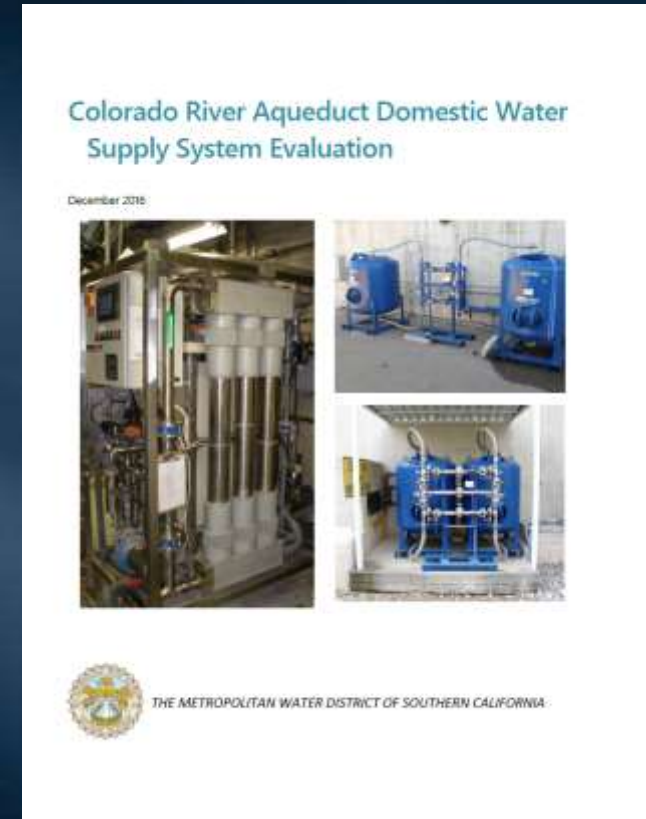
GAC Tanks



Sodium Hypochlorite Tank

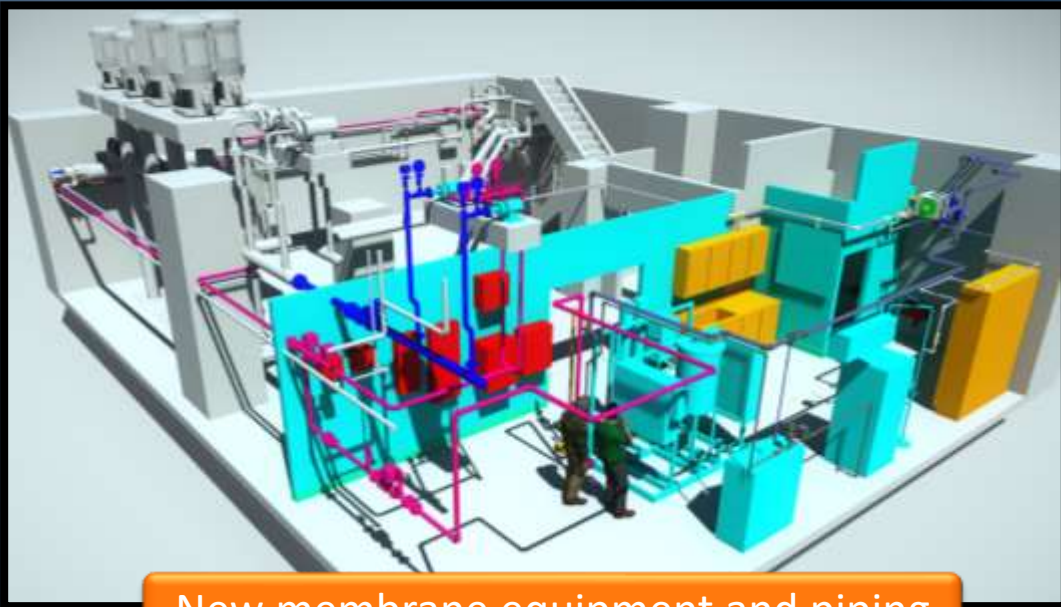
# Alternatives Considered

- Rehabilitate deteriorating components of existing water treatment systems
- Evaluated multiple alternative treatment technologies
  - Conventional treatment: with Granular Activated Carbon (GAC)
  - Polymeric microfiltration membranes with GAC
  - Ceramic microfiltration membranes with GAC
  - Nanofiltration membranes
- Selected alternative
  - Polymeric microfiltration membranes with GAC
    - High pressure, reliable & cost-effective system that meets water quality requirements



# Contractor Scope

- Replace membrane filtration units & piping
- Construct temperature-controlled buildings
  - GAC units
  - Sodium hypochlorite tanks



New membrane equipment and piping



New climate-controlled building



# Contractor Scope (Cont'd)

- Upgrade water quality instrumentation & laboratory equipment
- Replace electrical & water conduits
- Upgrade & automate disinfection system
- Perform tie-ins & start-up testing



Water Quality Equipment



Conduits

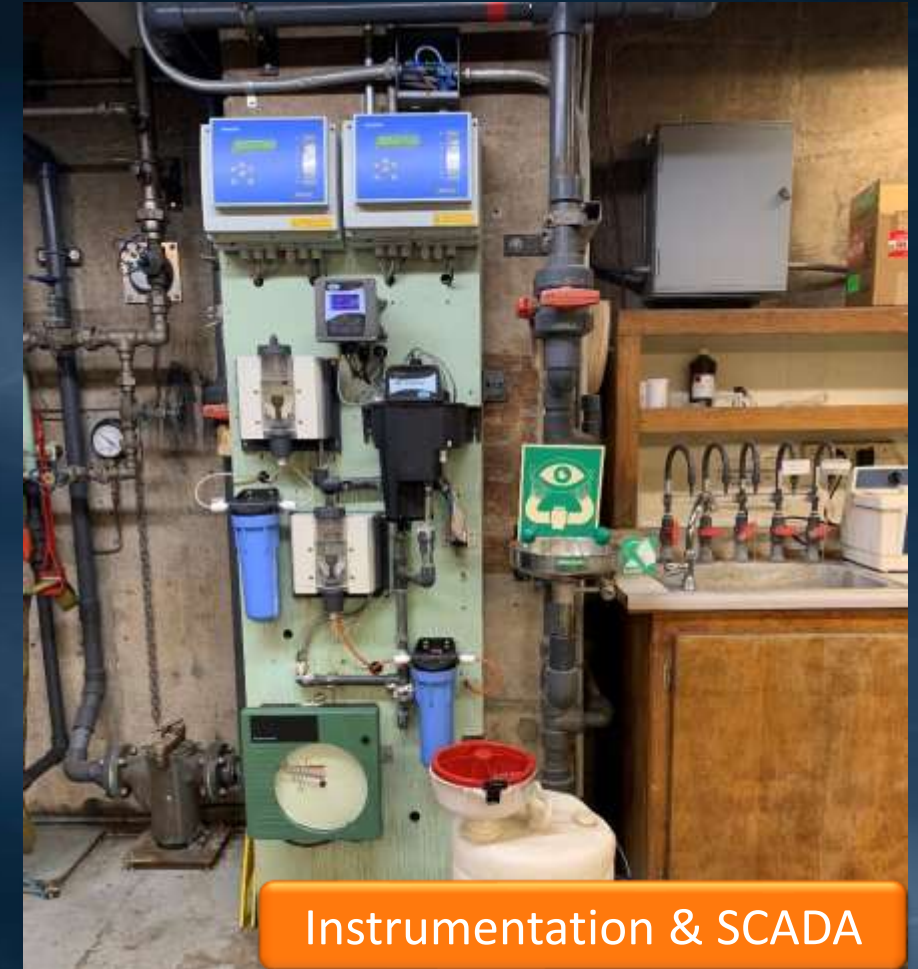


Disinfection



# Metropolitan Scope

- District-force construction
  - Install new duct banks for electrical & fiber optic cables
  - Connect new instruments to data collection system
  - Construct new power systems & integrate with SCADA system
- Other support
  - Construction Inspection
  - Contract Administration & PM
  - Submittal Review & Record Drawings



# Bid Results

## Specifications No. 1949

Bids Received

November 16, 2021

No. of Bidders

4

Low Bidder

J. F. Shea Construction, Inc.

Low Bid

\$32,824,000

Range of Higher Bids

\$35,186,000 to 36,149,000

Engineer's estimate

\$24,047,000

SBE Participation\*

36.6%

\*SBE (Small Business Enterprise) participation level set at 25%

# Allocation of Budgeted Funds

## Contract

J. F. Shea Construction, Inc.	\$32,824,000
-------------------------------	--------------

## Metropolitan Labor

Force Construction	1,653,000
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Construction Inspection	3,074,000
-------------------------	-----------

Submittals Review & Record Drawings	1,912,000
-------------------------------------	-----------

Contract Administration & PM	1,370,000
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Materials & Incidentals	620,000
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Remaining Budget	847,000
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Total	\$42,300,000
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*Total Construction Cost: \$34,477,000*

# Project Schedule





# Board Options

- Option #1
  - Award a \$32,824,000 contract to J. F. Shea Construction, Inc. to upgrade the domestic water treatment systems at the five CRA pumping plants.
- Option #2
  - Do not proceed with the project at this time.

# Staff Recommendation

- Option #1





## ● **Capital Investment Plan Quarterly Report for period ending September 30, 2021**

### **Summary**

---

The attached report provides a summary of actions and accomplishments on the Capital Investment Plan (CIP) during fiscal years 2020/21 and 2021/22. It also provides updates on the status of capital projects and capital expenditures to date, and information regarding service connections and relocations authorized by the General Manager during the reporting period of July to September 2021, the first quarter of fiscal year 2021/22, and the fifth quarter of the fiscal years 2020/21 and 2021/22 biennium.

### **Purpose**

---

Administrative Code Requirement Section 2720(a)(1): General Manager's Quarterly Reports

Section 2720 of Metropolitan's Administrative Code requires the General Manager to report quarterly to the Engineering and Operations Committee on the Capital Investment Plan.

Sections 4700-4708 of Metropolitan's Administrative Code requires the General Manager to report on service connections approved by the General Manager with the estimated cost and approximate location of each.

Section 8122(c) of Metropolitan's Administrative Code requires the General Manager to report on the execution of any relocation agreement under the General Manager's authority involving an amount in excess of \$100,000.

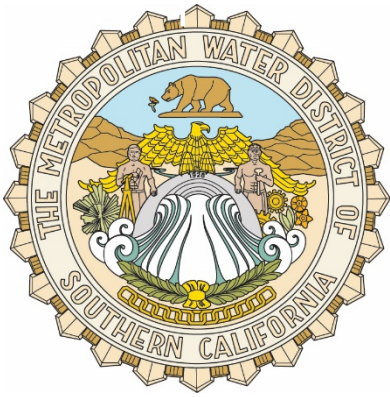
Highlights of progress and major milestones on selected projects are presented in the attached report grouped by CIP program.

### **Attachments**

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Capital Investment Plan quarterly report for period ending September 2021

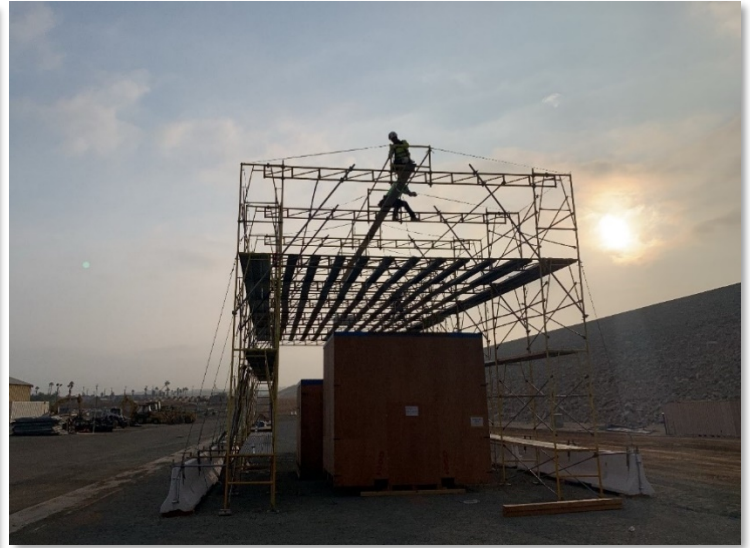




# CAPITAL INVESTMENT PLAN

Quarterly Report

July – September 2021



## THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

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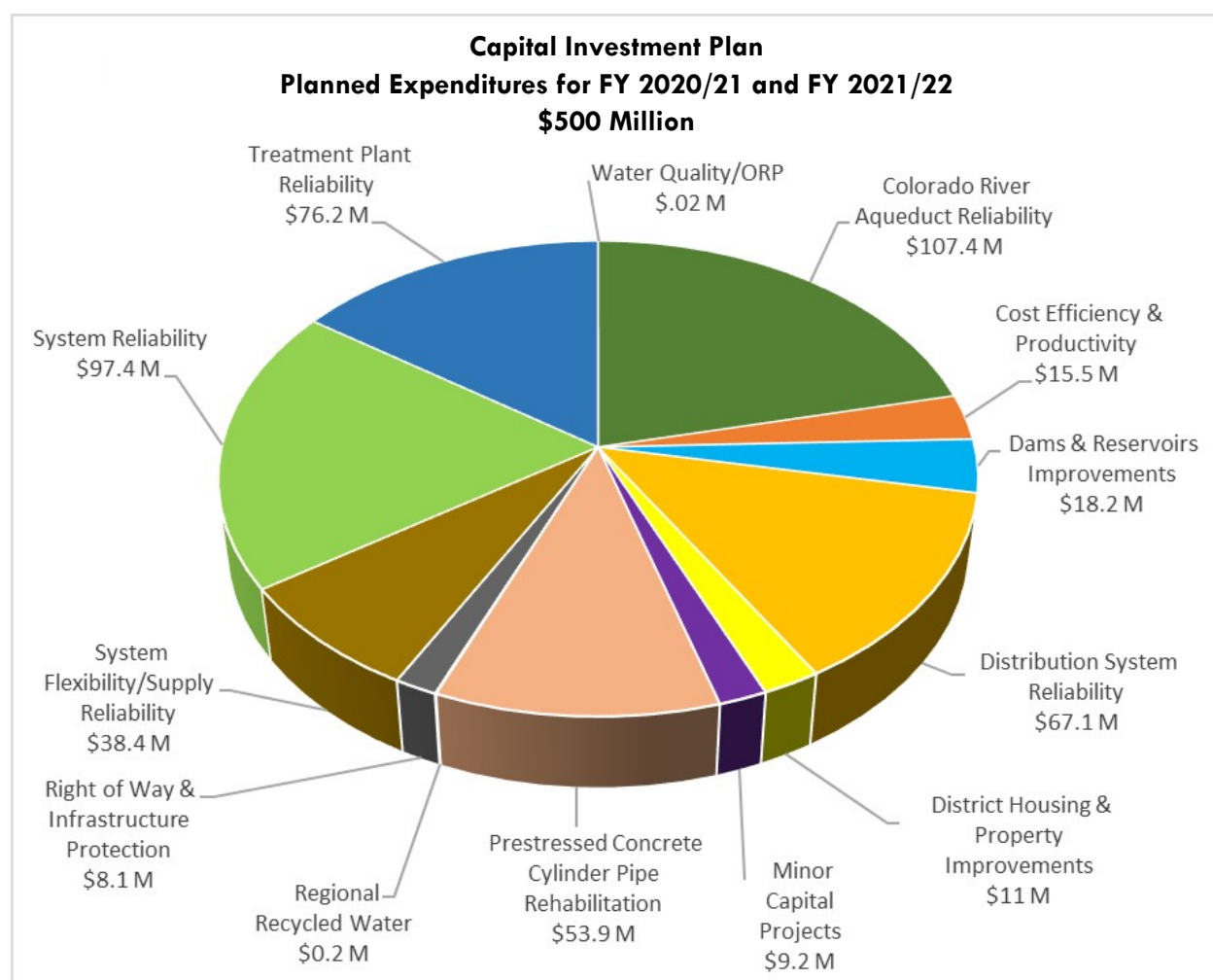
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## CAPITAL INVESTMENT PLAN FOR FISCAL YEARS 2020/21 & 2021/22

Metropolitan's total Capital Investment Plan (CIP) planned expenditures for Fiscal Years (FYs) 2020/21 and 2021/22 are \$500 million appropriated by the Board in April 2020, and are shown in Figure 1 below in relation to their associated programs. In the same board meeting, the Board also delegated authority to the General Manager, subject to both CEQA requirements and the General Manager's authority as addressed in Metropolitan's Administrative Code, to initiate or proceed with work on all planned capital projects identified in the CIP for FYs 2020/21 and 2021/22.

Figure 1: CIP for FY 2020/21 and FY 2021/22 by Program



[Cover photos: (left to right): Headquarters Building Physical Security Improvements - dust control for rotunda modifications; Lake Mathews Facility – Second Lower Feeder PCCP conical plug valve temporary storage canopy installation]

## FIRST QUARTER SUMMARY

Biennial expenditures through September 2021 totaled \$297.8 million (details shown in Table 15), and expenditures for the 1<sup>st</sup> Quarter of Fiscal Year 2021/22, July through September 2021, totaled \$36.2 million for all capital programs.

During the 1<sup>st</sup> Quarter, board actions heard in open session included six project-specific actions summarized in Table 1 below. These actions awarded two contracts totaling approximately \$12.1 million, authorized four new professional/technical services agreements totaling a not-to-exceed amount of approximately \$6.6 million, and authorized an increase to three existing agreements totaling a not-to-exceed amount of \$3.8 million. Information on the awarded contracts can be found in Table 10 of this report. The table below excludes information on board items heard in closed session.

Table 1: 1<sup>st</sup> Quarter Board Actions

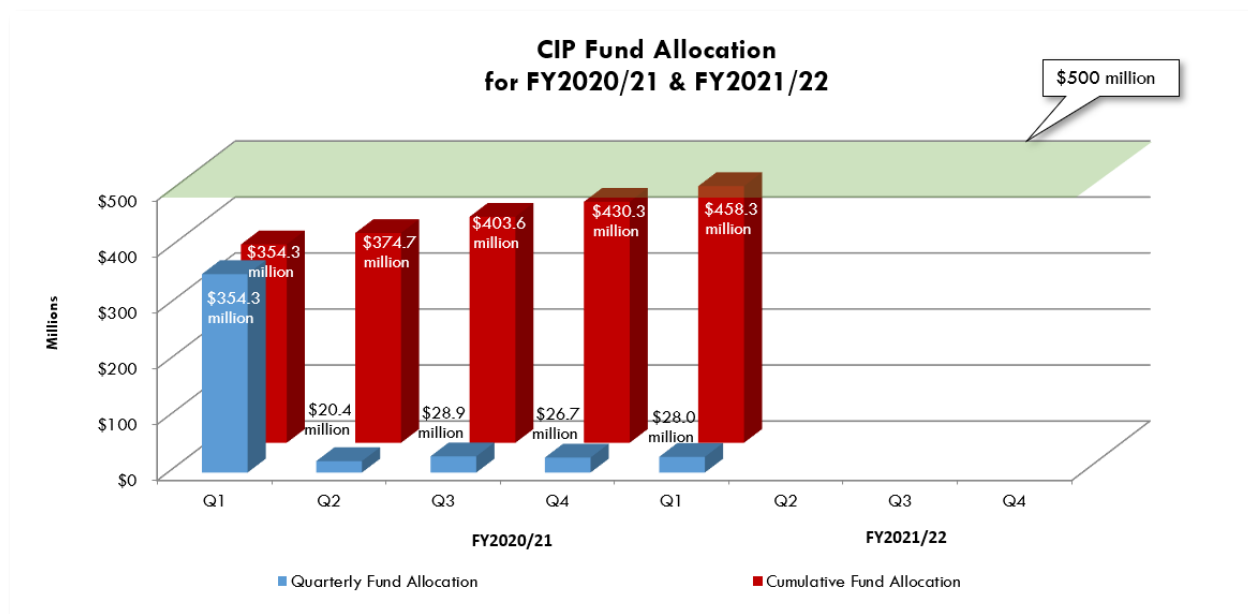
Month	Board Letter Item No.	Project	Action taken
July	7-3	Desert Wide Area Network Upgrade	Authorized an agreement not-to-exceed \$5,297,000; authorized an increase of \$250,000 to an existing agreement
July	7-3	Gene Communication System Upgrade	Authorized an unplanned project; authorized an agreement not-to-exceed \$275,000
July	7-6	District Housing and Property Improvements Program	Authorized an increase of \$3,000,000 to an existing agreement
August	7-2	Mills Ozone Control System Upgrades	Awarded \$492,440 procurement contract; authorized an agreement not-to-exceed \$430,000
September	7-2	Battery Energy Storage Systems at Jensen & Skinner Water Treatment Plants	Awarded \$11,604,521 construction contract; authorized an increase of \$550,000 to an existing agreement
September	7-3	Black Metal Mountain 2.4 kV Electrical Power Upgrade	Authorized an agreement not-to-exceed \$635,000

The previously referenced April 2020 board action appropriated \$500 million to perform work on planned capital projects through the current biennium. In order to be considered a planned project, the project must be identified and described in the Capital Investment Plan Appendix for the two-year budget cycle. Consistent with this action, all requests to allocate funds and proceed with planned capital projects are reviewed and approved by the Chief Engineer acting under the General Manager's authority. Unplanned projects, those which are not already identified in the CIP Appendix, require a separate board authorization. Upon board approval of an unplanned project, requested funds are then transferred from the \$500 million (Appropriation No. 15517) to the pertinent capital appropriation under which the project is budgeted. During the 1<sup>st</sup> Quarter, one unplanned capital project, the Gene Communication System Upgrade, was authorized by the Board.

During the 1<sup>st</sup> Quarter, the total amount of Appropriation No. 15517 funds authorized by the General Manager for the current biennium (FYs 2020/21 and 2021/22) through management actions including the funds for the projects shown in Table 1 is approximately \$28.0 million. Details of these management actions which occurred during the 1<sup>st</sup> Quarter can be found in the **Project Actions** section of this report.

Figure 2 shows the allocation of the funds from Appropriation 15517 for this quarter and total for the current biennium through the quarter, which is approximately \$458.3 million, leaving approximately \$41.7 million available to be allocated during the remainder of the current biennium.

Figure 2: CIP Fund Allocation from Appropriation No. 15517 – FY 2020/21 and FY 2021/22



Information on construction and procurement contracts activities for the 1<sup>st</sup> Quarter of FY 2021/22 is summarized in Table 2 on the following page, and presented in further detail in the **Construction and Procurement Contracts** section of this report. Progress payments for these contracts in the 1<sup>st</sup> Quarter totaled approximately \$10.5 million, and primarily reflect construction progress on Joseph Jensen Water Treatment Plant Electrical Upgrade - Stage 2, CRA Pumping Plants – Sump Rehabilitation, Headquarters Building Physical Security Improvements, Gene Wash Reservoir Discharge Valve Replacement, and Headquarters Building Fire Alarm & Smoke Control Improvements.



Table 2: 1<sup>st</sup> Quarter Contract Action

Contract Actions during Q1 for FY 2021/2022, July 2021 through September 2021	
Contracts Awarded	1 construction contract totaling \$11.60 million (Table 10)
Total Payments Authorized	\$10.48 million
Construction Contracts Completed	Notice of Completion was filed for 2 construction contracts (Table 9)
Active Contracts at end of Q1 <sup>1</sup>	14 construction contracts, totaling \$159.53 million (Table 11)
	15 procurement contracts, totaling \$61.23 million (Table 12)
	\$220.76 million total value

## IMPACTS OF COVID-19

In response to the Governor's and General Manager's emergency declarations resulting from the COVID-19 pandemic, all active construction contracts were suspended in late March 2020. Since then all contracts, except on-site work for CRA Pumping Plant Sump Rehabilitation, resumed construction activities. Staff and the contractor have negotiated a resolution to the aforementioned CRA Pumping Plant Sump Rehabilitation contract. Metropolitan will take possession of key equipment and will receive a credit for the deleted equipment installation work and equipment not provided. Currently, it is anticipated that the CRA Pumping Plant Sump Rehabilitation project will be re-advertised in 2022. Equipment and materials procured under the existing contract will be included as Metropolitan-furnished equipment for the next contractor.

<sup>1</sup> Active contracts at the end of the 1<sup>st</sup> Quarter are those that are ongoing at the end of September 2021. In other words, contracts completed during the reporting quarter are excluded.

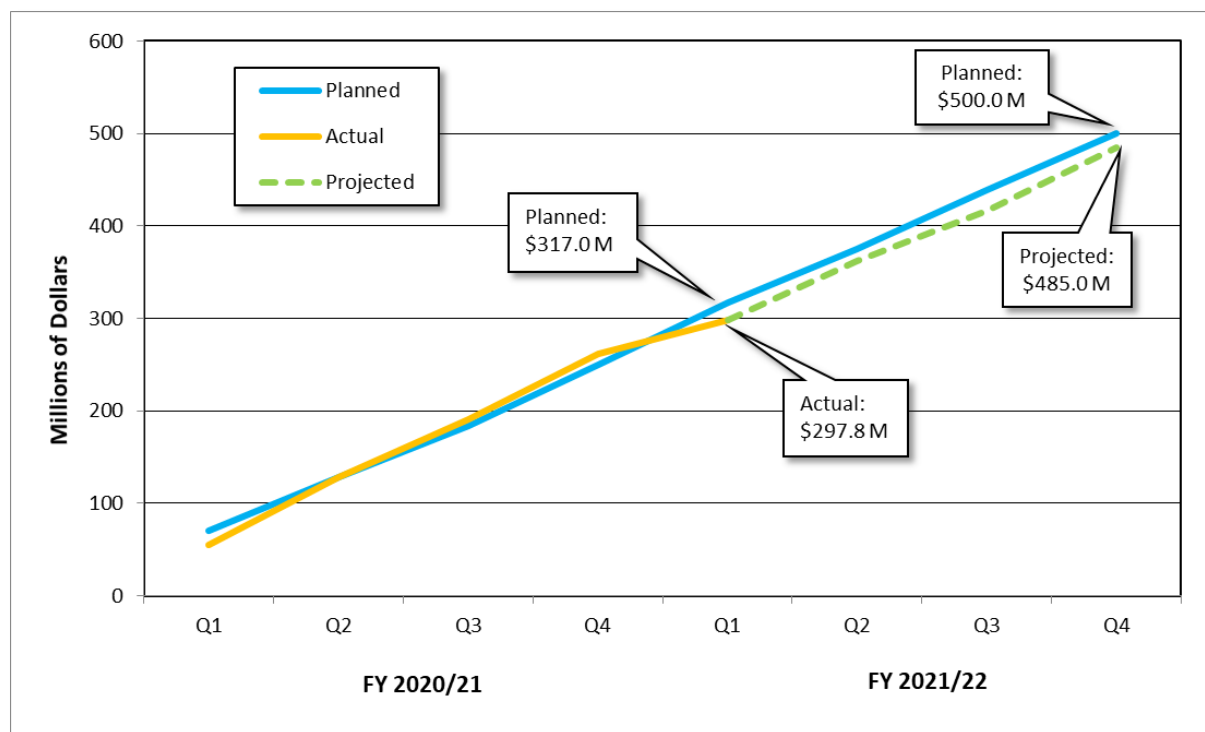
## PLANNED EXPENDITURE AND BUDGET

Table 3 and Figure 3 below show planned and actual expenditures for the biennium through the end of the 1<sup>st</sup> Quarter of FY 2021/22, and the forecast of expenditures through the end of the current biennium, against planned expenditures for the same time interval. Actual expenditures through the 1<sup>st</sup> Quarter of FY 2021/22 were approximately 94% of planned expenditures.

Table 3: Current Biennium: Planned & Actual Expenditures for FYs 2020/21 & 2021/22

Quarter	Planned Expenditures (millions)	Actual Expenditures (millions)
FY 2020/21 Q1	\$70.4	\$55.6
Q2	\$58.5	\$72.2
Q3	\$55.0	\$63.6
Q4	\$66.1	\$70.2
FY 2021/22 Q1	\$67.0	\$36.2
<b>Totals</b>	<b>\$317.0</b>	<b>\$297.8</b>

Figure 3: Current Biennium – Planned, Actual & Forecasted Expenditures



As shown in Figure 3, the total planned expenditures in the current biennium are \$500.0 million. The projected expenditures for the biennium are currently approximately \$485.0 million with the actual expenditures lower than the planned expenditures during the 1<sup>st</sup> Quarter of FY 2021/22 and are projected to stay under the planned expenditures through the end of the biennium.

This negative variance below the planned expenditures starting in the reporting quarter is due to several factors including delays in awarding some construction and procurement contracts due to the difficulties in obtaining permits within the planned timeline and securing materials and equipment due to manufacturing and supply chain issues attributed to the COVID-19 pandemic.

## **MAJOR CAPITAL PROGRAMS OVERVIEW**

Metropolitan's CIP is structured into three levels. In descending order, they are:

- Program
- Project Group/Appropriation
- Project

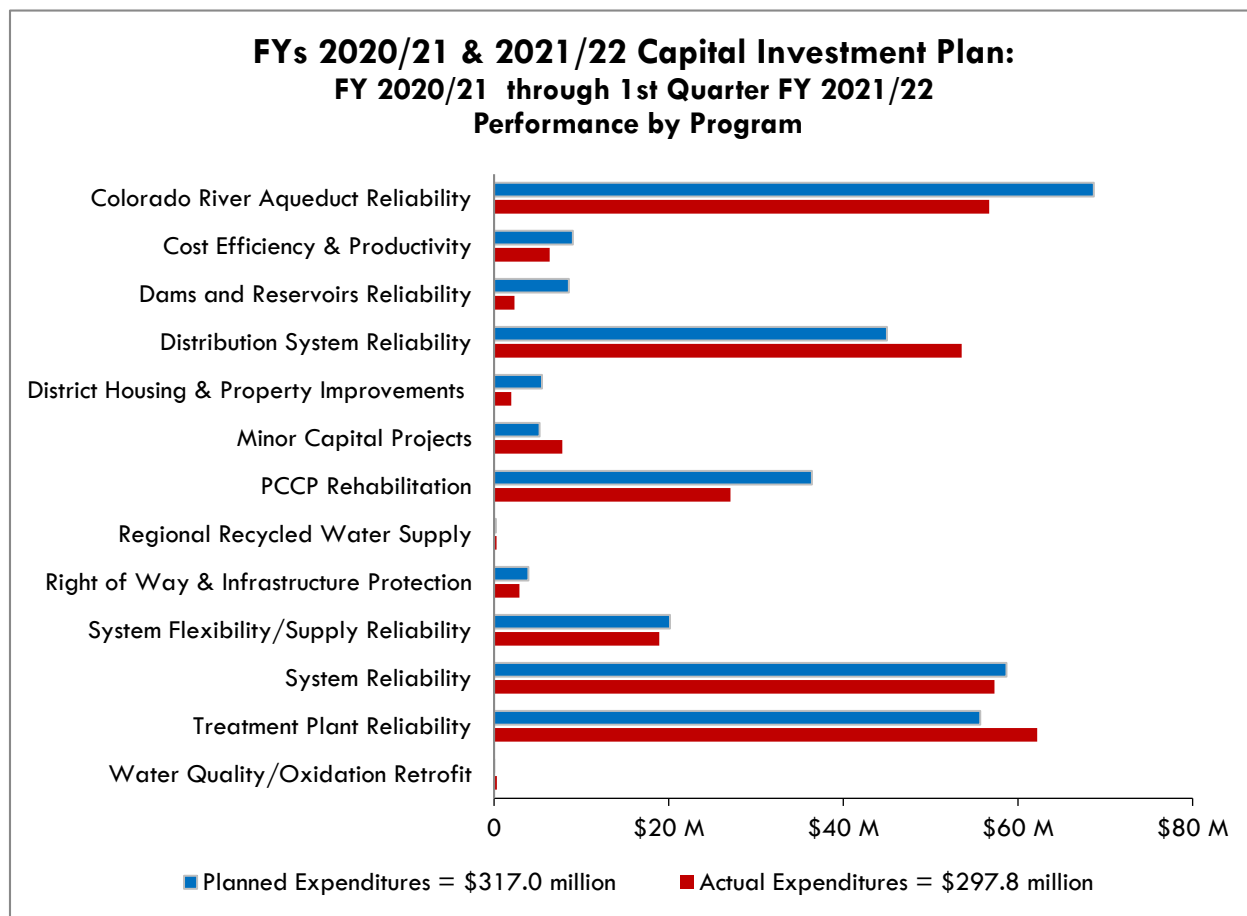
Metropolitan's CIP is comprised of 13 programs, which capture all projects within the CIP. The 13 capital programs are listed below in alphabetical order. Programs are comprised of one or more project groups/appropriations, and project group/appropriations are comprised of one or more projects. The status of each of the programs is provided later in this section of the report.

- Colorado River Aqueduct (CRA) Reliability
- Cost Efficiency & Productivity
- Dams & Reservoirs Improvements
- Distribution System Reliability
- District Housing & Property Improvements
- Minor Capital Projects
- Prestressed Concrete Cylinder Pipe (PCCP) Reliability
- Regional Recycled Water Supply
- Right-of-Way and Infrastructure Protection
- System Flexibility/Supply Reliability
- System Reliability
- Treatment Plant Reliability
- Water Quality/Oxidation Retrofit

For the current biennium, there are over 37 project groups, 72 planned appropriations, and 435 planned projects (excluding Minor Capital Projects) within the CIP. The list of appropriations that make up each of the programs, along with planned expenditures and actual costs to date for those appropriations, are provided in Table 15 at the end of this report.

Figure 4 below shows actual versus planned expenditures for the 13 capital programs for 1<sup>st</sup> Quarter of FY 2021/22.

Figure 4: Biennium-to-date Expenditures (Actuals vs. Planned) through 1<sup>st</sup> Quarter FY 2021/22



Variances between planned and actual expenditures for each program are primarily due to shifts in spending on current and planned construction work. The following information on the top ten capital projects provides examples of activities that contributed to such variances.



The top ten project list in Table 4 below reflects the ten projects in the CIP with the highest level of planned expenditures in the current biennium. The planned versus actual expenditures through the end of the 1<sup>st</sup> Quarter of FY 2021/22 are also shown in this table.

*Table 4: Top Ten Planned Capital Projects  
Planned and Actual Expenditures*

Project	Planned (FY 2020/21 through FY 2021/22) (millions)	Planned July 2020 to September 2021 (millions)	Actuals July 2020 to September 2021 (millions)
Headquarters Building Improvements	\$31.3	\$19.9	\$27.2
Casa Loma Siphon Barrel No. 1 Seismic Upgrade	\$30.0	\$19.1	\$16.0
CRA Pump Plant Sump System Rehabilitation	\$28.0	\$17.8	\$7.6
Perris Valley Pipeline - Tunnels	\$27.8	\$10.3	\$1.6
CRA Discharge Line Isolation Coupling Assemblies	\$23.0	\$20.9	\$18.2
Second Lower Feeder PCCP Rehabilitation - Reach 8	\$22.0	\$10.3	\$6.9
Jensen Electrical Upgrades - Stage 2	\$15.2	\$10.6	\$14.1
Diemer West Basin & Filter Building Rehabilitation	\$14.2	\$14.0	\$15.4
Second Lower Feeder PCCP Rehabilitation – Reach 2	\$13.0	\$13.0	\$5.0
Orange County Feeder Relining - Reach 3	\$12.5	\$7.9	\$0.7
<b>Total*</b>	<b>\$217.1</b>	<b>\$143.8</b>	<b>\$112.7</b>

\* Numbers may not sum due to rounding.

The cumulative expenditure variance for the top ten projects through the 1<sup>st</sup> Quarter of FY 2021/22 reflects a mix of over- and under-spending on projects relative to their planned expenditures. Positive or negative variances do not mean that the projects are over or under budget, it simply reflects variances in timing of expenditures when compared to original budget plans. The following are the variance explanations for the top ten projects where actual expenditures exceeded planned expenditures through the current reporting quarter for the biennium.

- **Headquarters Building Improvements:** The actual expenditures were more than planned because of the following: (1) the approval of additional change orders to complete needed work while the building is lightly occupied due to the COVID-19 pandemic; and (2) the contractor was able to accelerate completion of some work elements as the building has been lightly occupied.
- **Jensen Electrical Upgrades - Stage 2:** Project expenditures for the biennium are higher than originally planned through the 1<sup>st</sup> Quarter because the contractor's work activities were expedited after the COVID-19 work suspension to meet the scheduled 2022 shutdown dates.

- **Diemer West Basin & Filter Building Rehabilitation:** Project expenditures for the biennium are higher than originally planned through the 1st Quarter because the contractor's work activities were expedited to meet the the scheduled completion date.

The following are the variance explanations for the top ten projects with negative variances (under-spending projects).

- **Casa Loma Siphon Barrel No. 1 Seismic Upgrade:** The actual vs. planned variance is due to a shift in timing of the pipe installation contract award. Final design of the pipe installation is complete and construction bid package advertised. The construction contract is anticipated to be awarded in December 2021. All pipes, except for the steel closure pieces, have been delivered to the Diamond Valley Lake (DVL) yard as a part of the two pipe procurement contracts, which are still underway. The pipes will be stored at the DVL yard until the construction contract is awarded. Delivery of the closure pieces is anticipated in 2022.
- **CRA Discharge Line Isolation Coupling Assemblies:** The actual expenditures were less than planned due to the contractor completing more work than planned during the 2020 shutdown.
- **CRA Pump Plant Sump System Rehabilitation:** The actual vs. planned variance is due to the suspension of the on-site work due to the COVID-19 pandemic starting in March 2020, which led to cancellation of the construction portion of the contract. Resolution of outstanding submittal comments has also caused a delay in the delivery of equipment and materials to the site.
- **Perris Valley Pipeline – Tunnels:** The actual vs. planned expenditure variance is due to postponing the start of construction from November 2020 to early 2022 due to the discovery of contaminants at the work site that requires additional field and laboratory investigations, which resulted in the modification of the specifications to account for the contaminants. Additionally, complex right-of-way issues needed to be resolved prior to the advertisement of this project for construction bids.
- **Second Lower Feeder PCCP Rehabilitation – Reach 2:** The actual vs. planned variance is due to shifts in the timing of construction completion, which was completed approximately five months earlier than planned and under budget leaving less work for the current biennium. Early completion of this work can be attributed to extensive preconstruction planning and permitting, successful community outreach efforts, and better than expected relining production by the contractor.
- **Second Lower Feeder PCCP Rehabilitation – Reach 8:** This project involved relining approximately 2,900 feet of PCCP pipeline in the City of Placentia, which is a portion of the original length of the Reach 8 project. Construction work was completed in September 2020. The planned expenditures for this biennium were based on relining 17,000 feet of PCCP but during design the scope was reduced to prioritize the most at-risk, 2,900-foot portion of the feeder. The remaining 14,100 feet of PCCP will be included in a future PCCP rehabilitation contract.
- **Orange County Feeder Relining - Reach 3:** The actual vs. planned expenditure variance is due to postponing the start of construction from September 2020 to April 2022 in order to reduce expenditures in this biennium. The final contract, for Reach 3, is now planned to be advertised for construction bids in January 2022 to ensure that there is sufficient capacity in the current CIP budget to accommodate expenditures from this project in the biennium.

## MAJOR CAPITAL PROGRAMS – HIGHLIGHTS

The section that follows provides 1<sup>st</sup> Quarter highlights for the 12 Major Capital Programs; the Minor Capital Program is highlighted in its own section of this report. Status is provided for selected projects within each Major Capital Program. The selected projects typically achieved major milestones during the 1<sup>st</sup> Quarter of FY 2021/22, or are scheduled to achieve major milestones in the next quarter.

Program	Project
Colorado River Aqueduct (CRA) Reliability	Gene Wash Reservoir Discharge Valve Rehabilitation
Cost Efficiency & Productivity	Battery Energy Storage System
Dams and Reservoirs Improvements	Garvey Reservoir Rehabilitation
Distribution System Reliability	Casa Loma Siphon No. 1 Seismic Upgrades
District Housing & Property Improvements	Program highlights only
Prestressed Concrete Cylinder Pipe (PCCP) Reliability	Second Lower Feeder PCCP Rehabilitation – Reach 3
Regional Recycled Water Supply	Program highlights only
Right-of-Way & Infrastructure Protection	Right of Way & Infrastructure Protection Improvements of the Western San Bernardino County Region – Stage 1
System Flexibility/Supply Reliability	Perris Valley Pipeline – Tunnels (I-215 Crossing)
System Reliability	Headquarters Building Improvements
Treatment Plant Reliability	Weymouth Basins 5-8 Rehabilitation
Water Quality/Oxidation Retrofit	Program highlights only

## Colorado River Aqueduct (CRA) Reliability Program

**Program Information:** The CRA Reliability Program is composed of projects to replace or refurbish facilities and components of the CRA system in order to reliably convey water to Southern California.

### Planned Biennium-to-date Expenditures (July 2020 through September 2021)

\$68.70 million

### Actual Biennium-to-date Expenditures (July 2020 through September 2021)

\$56.70 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

#### Status

Expenditures for this program are less than planned through September 2021 due to schedule adjustments in order to optimize the construction activities of multiple contracts within the same CRA shutdown and to accommodate delays of site work activities and suspension of construction contracts under Metropolitan's response to COVID-19 as well as various drought-related initiatives.

#### Accomplishments

- Completed construction of CRA Radial Gates Replacement in August 2021
- Continued construction activities for the following contract:
  - Gene Wash Reservoir Discharge Valve Structure Rehabilitation
    - i. Completed installation of an underwater isolation device at the base of the dam and coating of the valve house interior walls
    - ii. Began installation of reinforcing steel and formwork for the electrical equipment concrete pad at the crest of the dam
    - iii. Continued lining the valve house sluiceway, and installation of electrical equipment and panels at the crest of the dam
- Continued submittals for the CRA Pumping Plants Overhead Cranes Rehabilitation
- Continued submittals for the CRA Mile 12 Flow Meter Upgrades
- Continued submittals for the water treatment equipment procurement for domestic water treatment systems at all CRA pumping plants, estimated first delivery in June 2022 to coincide with the Domestic Water Treatment Systems Replacement construction schedule
- Continued final design of Domestic Water Treatment Systems Replacement at all five CRA pumping plants
- Under Metropolitan's response to COVID-19, suspended on-site construction for the CRA Pumping Plant Sump System Rehabilitation and continued submittals and fabrication activities
  - Continued fabrication of new pumps, piping, and other materials that are to be furnished
  - Delivery of new pumps began in September 2021
- Continued evaluating and establishing the course of action and construction repackaging options of the remaining outstanding contract work items for CRA 6.9 kV Power Cable Replacement.
- Continued final design of CRA Storage Building Replacement at Hinds, Eagle Mountain, and Iron Mountain
- Continued preliminary design of CRA Desert Region Security Improvements



- Continued preliminary design of Hinds Pumping Plant Discharge Valve Platform Replacement
- Continued preliminary design and preparation of procurement package for the CRA Main Transformer Replacement
- Completed study and began preliminary design of Black Metal Mountain 2.4 kV Electrical Power Upgrades
- Began final design of Gene Communication Reliability Upgrades
- Continued the CRA main pump rehabilitation efforts at all five pumping plants
- Began project, completed design and advertised the construction package of CRA Cholla Wash Conduit Protection & Lining
- Continued feasibility study to install variable frequency drive pumps at Gene and Intake Pumping Plants

#### Upcoming Activities

Upcoming work for the next quarter will include:

- Continue construction activities planned for the following contracts:
  - CRA Pumping Plants Overhead Crane Replacement
  - Gene Wash Reservoir Discharge Valve Structure Rehabilitation
  - Mile 12 Flow Meter Upgrade
- Continue fabrication activities for CRA Pumping Plant Sump System Rehabilitation and begin final design of the sump system installation contract
- Continue the CRA main pump rehabilitation efforts at all five pumping plants
- Continue preliminary design of CRA Desert Region Security Improvements
- Continue final design of CRA Storage Building Replacement at Hinds, Eagle Mountain, and Iron Mountain
- Award construction contract and issue Notice to Proceed for CRA Cholla Wash Conduit Protection & Lining
- Award construction contract and issue Notice to Proceed for Domestic Water Treatment Systems Replacement at all five CRA pumping plants
- Continue final design of Gene Communication Reliability Upgrades
- Continue preliminary design of Black Metal Mountain 2.4 kV Electrical Power Upgrades
- Continue study of CRA 2.3 kV Switchrack Rehabilitation at all five CRA pumping plants
- Continue preliminary design and preparation of procurement package for the CRA Main Transformer Replacement
- Continue preliminary design of Hinds Pumping Plant Discharge Valve Platform Replacement

**Construction Completion Date:**  
**November 2021**

**Total Project Estimate:**  
**\$11.7 million**

**Current Phase Estimate:**  
**\$9.8 million**

**Cost to Date for Current Phase:**  
**\$5.8 million**

### **CRA Reliability Program: Gene Wash Reservoir Discharge Valve Rehabilitation**

The project scope includes replacement of the existing discharge valve and actuator with Metropolitan-furnished equipment; refurbishment of the existing slide gate valve, discharge pipeline interior, and valve house at the base of the dam; upgrades of associated electrical systems; and design, fabrication, and installation of a temporary underwater device to isolate the reservoir from the discharge structure to allow the rehabilitation work.

Phase	Construction & Closeout
% Complete for Construction	73%
Construction Contract Awarded	December 2019
Appropriation Number	15373
Contract Number	1878

The contractor installed isolation device, completed coating of the gate valve and the valve house interior, and began installation of discharge valve and electrical equipment in the valve house. In the upcoming quarter, the contractor plans to complete installation work and begin testing.



Diver prepares for underwater work to finalize the installation of the isolation device and perform the final seal adjustments

## Cost Efficiency and Productivity Program

**Program Information:** The Cost Efficiency and Productivity Program is composed of projects to upgrade, replace, or provide new facilities, software applications, or technology, which will provide economic savings that outweigh project costs through enhanced business and operating processes.

### Planned Biennium-to-date Expenditures (July 2020 through September 2021)

\$9.02 million

### Actual Biennium-to-date Expenditures (July 2020 through September 2021)

\$6.36 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

Status	Biennium expenditures for this program are less than planned through September 2021 due to shifts in timing of the work, with expenditures offset by schedule delays of several other projects in the remaining appropriations within this program.
Accomplishments	<ul style="list-style-type: none"> <li>• Awarded contract to construct battery energy storage systems at the Jensen and Skinner plants</li> <li>• Continued final design of battery energy storage system at the Weymouth plant</li> <li>• Went live with the main homepage site of mwdh2o.com</li> <li>• Went live with the Budget System Replacement System</li> <li>• Completed file migrations associated with Water System Operations as part of Enterprise Content Management Phase 1</li> </ul>
Upcoming Activities	<p>Upcoming work for the next quarter will include:</p> <ul style="list-style-type: none"> <li>• Begin construction of battery energy storage systems at the Jensen and Skinner plants</li> <li>• Continue final design of battery energy storage system at the Weymouth plant</li> <li>• Continue Real Property Group Business System Replacement</li> <li>• Continue WINS Water Billing System Upgrade</li> <li>• Award agreement and begin Services Procurement &amp; iSupplier Portal</li> <li>• Complete file migrations associated with Chief Financial Office as part of Enterprise Content Management Phase 1</li> </ul>

**Final Design Completion Date  
for Weymouth site:**  
**November 2021**

**Total Project Estimate:**  
**\$25.6 million**

**Final Design Phase Estimate:**  
**\$1.0 million**

**Cost to Date for Final Design  
Phase:**  
**\$0.9 million**

### Cost Efficiency & Productivity Program: Battery Energy Storage System

This project will install battery energy storage systems (BESS) at the following three locations: (1) one-megawatt (MW) BESS at the Jensen plant, (2) one-MW BESS at the Skinner plant, and (3) one-MW BESS at the Weymouth plant. The project is eligible for participation in the Self-Generation Incentive Program (SGIP).

Phase	Final Design
% Complete for Current Phase	85%
Final Design Authorized	October 2020
Appropriation Number	15521

A construction contract for the Jensen and Skinner plants was awarded in September 2021. In the upcoming quarter, construction will begin at the Jensen and Skinner plants. Also, final design will be completed and the construction contract advertised for the Weymouth plant.



Proposed BESS site location at the Skinner plant



## Dams and Reservoirs Improvements Program

**Program Information:** The Dams and Reservoirs Improvements Program is composed of projects to upgrade or refurbish Metropolitan's dams, reservoirs, and appurtenant facilities in order to reliably meet water storage needs and regulatory compliance.

**Planned Biennium-to-date Expenditures**  
(July 2020 through September 2021)

\$8.57 million

**Actual Biennium-to-date Expenditures**  
(July 2020 through September 2021)

\$2.34 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

#### Status

Biennium expenditures for this program are less than planned through September 2021 due to schedule variances associated with the Dam Monitoring System Upgrades Projects.

#### Accomplishments

- Diamond Valley Lake Dam Monitoring System Upgrades
  - Conducted workshop for vendors to present their solutions for dam real-time monitoring and communications for early warning signs of dam distress
- Lake Mathews and Lake Skinner Dam Monitoring System Upgrades
  - Continued to identify area of need and prioritize instrumentation replacement at both reservoirs
- Lake Skinner Outlet Tower Seismic Upgrade
  - Prepared an RFP for detailed structural analysis of the outlet tower
- Garvey Reservoir Rehabilitation
  - Continued preliminary design

#### Upcoming Activities

Upcoming work for the next quarter will include:

- Diamond Valley Lake Dam Monitoring System Upgrades
  - Issue an RFP for vendors/consultants of the dam real-time monitoring system
- Garvey Reservoir Rehabilitation
  - Continue preliminary design
- Lake Skinner Outlet Tower Seismic Upgrade
  - Prepare interim dewatering plans
  - Issue RFP for detailed seismic analyses of the outlet tower

### Dams & Reservoirs Improvements Program: Garvey Reservoir Rehabilitation

This project will refurbish aging facilities at the Garvey Reservoir site and restore them to reliable operating condition.

**Estimated Preliminary Design  
Completion Date:**  
June 2022

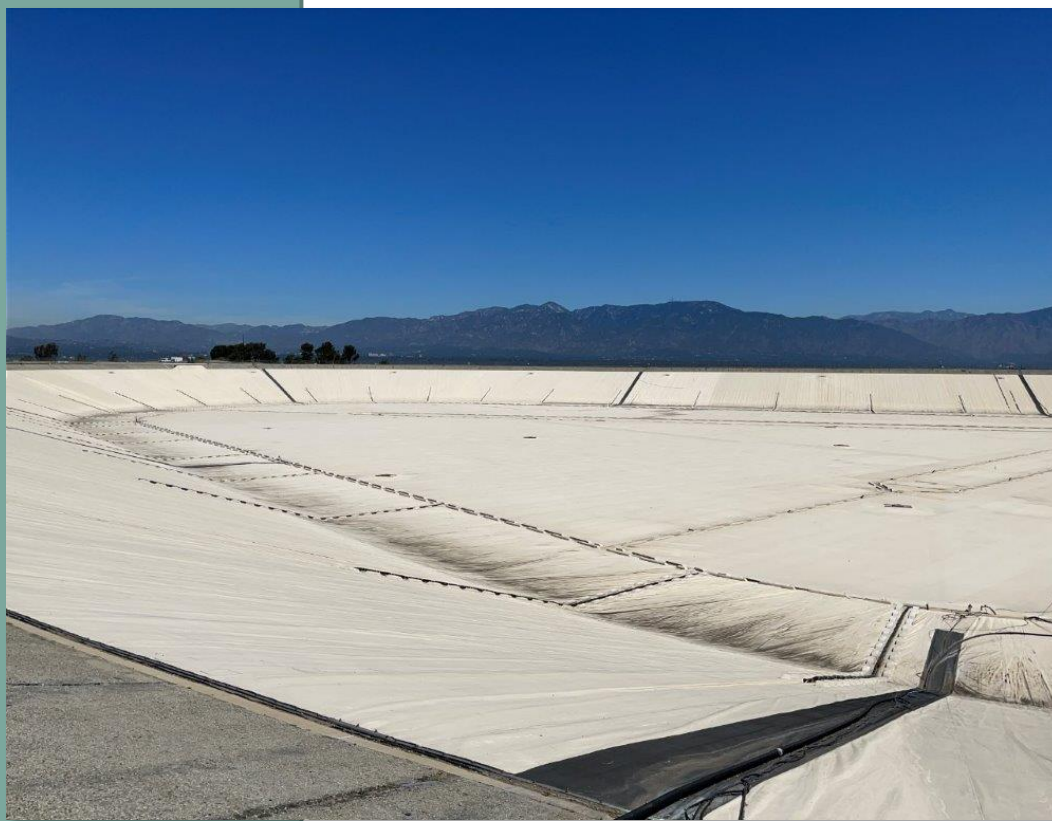
**Total Project Estimate:**  
\$68.5 million

**Current Phase Estimate:**  
\$3.9 million

**Cost to Date for Current  
Phase:**  
\$0.3 million

Phase	Preliminary Design
% Complete for Current Phase	20%
Preliminary Design Authorized	March 2021
Appropriation Number	15417

MWD staff and consultant conducted preliminary design, which will continue in the upcoming quarter.



Floating cover at Garvey reservoir

## Distribution System Reliability Program

**Program Information:** The Distribution System Reliability Program is comprised of projects to replace or refurbish existing facilities within Metropolitan’s distribution system, including reservoirs, pressure control structures, hydroelectric power plants, and pipelines, in order to reliably meet water demands.

### Planned Biennium-to-date Expenditures (July 2020 through September 2021)

\$44.99 million

### Actual Biennium-to-date Expenditures (July 2020 through September 2021)

\$53.55 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

Status	Biennium expenditures for this program are more than the planned expenditures through September 2021 due to differences in timing between planned and actual payments for projects such as the Orange County Region Service Center, Middle Feeder Relocation, Lake Perris Bypass Pipeline Relining, West Valley Feeder No.1 De Soto Valve Replacement, Lakeview Pipeline Relining – Stage 2, and Lakeview Pipeline Improvements.
Accomplishments	<ul style="list-style-type: none"> <li>Completed design for the Casa Loma Siphon Barrel No. 1 Seismic Upgrades</li> <li>Continued construction of the Garvey Reservoir Drainage and Erosion Control Improvements – Zones 6 to 8, 10, &amp; 11</li> <li>Continued construction of the Garvey Sodium Hypochlorite Feed System Upgrades</li> </ul>
Upcoming Activities	<p>Upcoming work for the next quarter will include:</p> <ul style="list-style-type: none"> <li>Award a construction contract for the Lake Mathews Wastewater System Replacement</li> <li>Award a pipe procurement contract for the Etiwanda Pipeline Relining – Stage 3</li> <li>Award a construction contract for the Casa Loma Siphon Barrel No. 1 Seismic Upgrades</li> </ul>

**Estimated WSP Delivery  
Completion Date:**  
**December 2022**

**Total Project Estimate:**  
**\$35 million**

**Current Phase Estimate:**  
**\$17.5 million**

**Cost to Date for Current  
Phase:**  
**\$15.0 million**

### **Distribution System Reliability Program: Casa Loma Siphon No. 1 Seismic Upgrades**

This project will retrofit the Casa Loma Siphon Barrel No. 1 with earthquake resistant ductile iron pipe (ERDIP) for the estimated Casa Loma Fault seismic displacement, and non-tectonic ground subsidence.

Phase	Pipe Procurement
% Complete for Current Phase	88%
Pipe Procurement Authorized	December 2019
Appropriation Number	15480
ERDIP Contract Number	1968
WSP Contract Number	1978

The ERDIP and welded steel pipe (WSP), except for the WSP closure pieces, were delivered and stored at the DVL yard. A pipe protection program is in place to protect the pipe. In the upcoming quarter, a construction contract will be awarded in December 2021 to install these pipes.



ERDIP and WSP at Diamond Valley Lake storage yard



## District Housing & Property Improvements Program

**Program Information:** The District Housing & Property Improvements Program is composed of projects to refurbish or upgrade workforce housing at Metropolitan to enhance living conditions to attract and retain skilled employees

### Planned Biennium-to-date Expenditures (July 2020 through September 2021)

\$5.48 million

### Actual Biennium-to-date Expenditures (July 2020 through September 2021)

\$1.98 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

#### Status

Biennium expenditures for this program are less than planned through September 2021 as additional underground utilities verification was necessary within the four villages prior to proceeding with the geotechnical field investigations.

#### Accomplishments

- Board authorized to extend an agreement for preliminary design in support of this program
- Completed development of a relocation study for housing improvements
- Initiated topographic surveys in support of the preliminary design activities.

#### Upcoming Activities

Upcoming work for the next quarter will include:

- Initiate geotechnical work and preparation of environmental documentation for preliminary design activities in support of this program
- Complete topographic surveys and geotechnical work at all four villages.

## Prestressed Concrete Cylinder Pipe (PCCP) Reliability Program

**Program Information:** The PCCP Reliability Program is composed of projects to refurbish or upgrade Metropolitan’s PCCP feeders to maintain water deliveries without unplanned shutdowns.

### Planned Biennium-to-date Expenditures (July 2020 through September 2021)

\$36.40 million

### Actual Biennium-to-date Expenditures (July 2020 through September 2021)

\$27.08 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

#### Status

Biennium expenditures for this program are less than the planned expenditures through September 2021 due to a delay in permitting and subsequent rescheduling of construction contract award for Second Lower Feeder Reach 3.

#### Accomplishments

- Second Lower Feeder Reach 3 – Continued design and work to obtain permit approvals from local agencies for approximately 4.8 miles of Second Lower Feeder from the intertie with Sepulveda Feeder south to the Palos Verdes Reservoir, through the cities of Torrance, Lomita, Los Angeles, and Rolling Hills Estates
- Allen-McColloch Pipeline – Continued preliminary design for rehabilitation, including identification of proposed pipe access excavation pits for approximately 9 miles of PCCP
- Sepulveda Feeder Preliminary Design – Continued evaluations of proposed sectionalizing valve sizes, utility potholing, and steel liner thickness design for the southern portion of Sepulveda Feeder from the Venice Pressure Control Station to the intertie with Second Lower Feeder
- Sepulveda Feeder Reach 1 – Initiated final design to rehabilitate approximately 3 miles of Sepulveda Feeder from just north of the Inglewood Lateral south to the West Coast Feeder, through the cities of Inglewood and Hawthorne, and unincorporated Los Angeles County. Work includes preparation of final design drawings, traffic control plans, and permitting.
- Sepulveda Feeder Reach 2 – Initiated final design to rehabilitate approximately 3.8 miles of Sepulveda Feeder from the Dominguez Gap Channel crossing south to the intertie with Second Lower Feeder, through the cities of Torrance and Los Angeles. Work includes preparation of final design drawings, traffic control plans, and permitting.
- Second Lower Feeder Valve Procurement – Received the first two of thirteen large-diameter conical plug valves with actuators
- Lake Mathews PCCP Valve Storage Building – Initiated design of a new valve storage building at Lake Mathews to safely store large-diameter valves and actuators to support the PCCP Reliability Program

## Upcoming Activities

Upcoming work for the next quarter will include:

- Second Lower Feeder Reach 3 – Continue final design and continue seeking construction permit approvals
- Sepulveda Feeder Reaches 1 and 2 – Continue developing final designs and initiate permitting process for long-lead permits
- Second Lower Feeder Isolation Valve Procurement – Continue inspection of valve fabrication process and receipt of the third large-diameter conical plug valves
- Lake Mathews PCCP Valve Storage Building – Complete design and advertise for bids
- Allen-McColloch Pipeline – Solicit input from member agencies on shutdown durations and sequencing. Incorporate inputs into the final preliminary design documents.
- Calabasas Feeder Preliminary Design – Solicit proposals for preliminary design services from Metropolitan’s pool of pre-qualified conveyance and distribution system design consultants

**Estimated Reach 3A Final  
Design Completion Date:**  
January 2022

**Estimated Reach 3B Final  
Design Completion Date:**  
August 2022

**Total Project Estimate:**  
\$90.0 million

**Current Phase Estimate:**  
\$7.5 million

**Cost to Date for Current  
Phase:**  
\$6.6 million

### PCCP Reliability Program: Second Lower Feeder PCCP Rehabilitation – Reach 3

This project will rehabilitate approximately 4.8 miles of PCCP segments of the Second Lower Feeder with steel liner and replace three existing 48-inch diameter sectionalizing valves in two stages. The first stage will reline Reach 3A, which stretches approximately 1.2 miles at the southern end of the Reach 3. The second stage will reline Reach 3B, which is approximately 3.6 miles of northern portion of the Reach 3.

Phase	Final Design
% Complete for Final Design Phase – Reach 3A	97%
% Complete for Final Design Phase – Reach 3B	90%
Design Phase Authorized	January 2015
Appropriation Number	15497

Final design continued. In the upcoming quarter, permits will be acquired for Reach 3A.



Aerial map of Second Lower Feeder Reach 3



## Regional Recycled Water Supply Program

**Program Information:** The Regional Recycled Water Supply Program includes the design and construction of the Advanced Water Treatment Demonstration Plant, which represents the initial step in development of a potential regional recycled water system for recharge of groundwater basins within Southern California.

### Planned Biennium-to-date Expenditures (July 2020 through September 2021)

\$0.21 million

### Actual Biennium-to-date Expenditures (July 2020 through September 2021)

\$0.28 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

#### Status

Biennium expenditures for this program are consistent with the planned expenditures through September 2021.

#### Accomplishments

- Continued membrane challenge testing which involves cutting the membrane fibers of the membrane bioreactor unit to “challenge” the system, and collecting test results accordingly
- Continued warranty repairs on equipment and post-contract system improvements to enhance safety and operational reliability
- Continued record drawing preparation of the AWT Demonstration Facility
- Completed O&M and standard operating procedure manuals
- Selected an engineering consulting firm to provide services to operate, test, and monitor demonstration facility for next testing phase

#### Upcoming Activities

Upcoming work for the next quarter will include:

- Complete membrane challenge testing for Phase 1 Testing, which includes validating the effectiveness of membranes and combined ultra-violet/Advance Oxidation Process (UV/AOP) to achieve regulatory requirements and reliable operation
- Continue system configuration and site improvements along with engineering support to enhance safety and reliability; optimize on-going testing process; and prepare for next testing phase
- Authorize an agreement for testing services and coordinate with the new consulting firm to prepare for next testing phase
- Prepare quarterly report on demonstration testing for State Water Resources Control Board as part of the grant funding requirements
- Finalize record drawings of the AWT Demonstration Facility

## Right-Of-Way and Infrastructure Protection Program

**Program Information:** The Right of Way Infrastructure Protection Program (RWIPP) is comprised of projects to refurbish or upgrade above-ground facilities and right-of-way along Metropolitan’s pipelines in order to address access limitations, erosion-related issues, and security needs.

### Planned Biennium-to-date Expenditures (July 2020 through September 2021)

\$3.92 million

### Actual Biennium-to-date Expenditures (July 2020 through September 2021)

\$2.91 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

#### Status

Biennium expenditures for this program are consistent with the planned expenditures through September 2021.

#### Accomplishments

- Continued Western San Bernardino County Region - Stage 1 final design
- Reviewed sites for Los Angeles County Region and shortlisted Stage 1 sites for final design

#### Upcoming Activities

Upcoming work for the next quarter will include:

- Complete final design and advertise Western San Bernardino County Region - Stage 1 bid documents
- Begin final design for Western San Bernardino County Region - Stage 2
- Finalize preliminary design report for Los Angeles County Region – Stage 1 and begin final design

### Right-Of-Way and Infrastructure Protection Program: Right of Way & Infrastructure Protection Improvements of the Western San Bernardino County Region – Stage 1

This project will address access and right-of-way issues throughout the distribution system and protect facilities from erosion. The project also includes reconstructing accessways, clearing vegetation, and installing security fencing. The first stage consists of three project sites.

Phase	Final Design
% Complete for Current Phase	99%
Final Design Authorized	August 2014
Appropriation Number	15474

Completed 99% final design. In the upcoming quarter, the design package will be completed and the construction contract will be advertised.

*Estimated Final Design  
Completion Date:  
October 2021*

*Total Project Estimate:  
\$5.8 million*

*Current Phase Estimate:  
\$0.9 million*

*Cost to Date for Current  
Phase:  
\$0.8 million*



Site along Inland Feeder to be cleared of debris, graded,  
and have erosion measures installed

## System Flexibility/Supply Reliability Program

**Program Information:** The System Flexibility/Supply Reliability Program is comprised of projects to increase the capacity and flexibility of Metropolitan’s water supply and delivery infrastructure to meet service demands.

**Planned Biennium-to-date Expenditures  
(July 2020 through September 2021)**

\$20.15 million

**Actual Biennium-to-date Expenditures  
(July 2020 through September 2021)**

\$18.92 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

<b>Status</b>	Biennium expenditures for this program are less than the planned expenditures through September 2021 due to differences between the planned and actual start of construction for the Perris Valley Pipeline Tunnels.
<b>Accomplishments</b>	<ul style="list-style-type: none"> <li>Continued record surveys of properties associated with the Verbena Land Acquisition</li> </ul>
<b>Upcoming Activities</b>	<p>Upcoming work for the next quarter will include:</p> <ul style="list-style-type: none"> <li>Continue design of the Perris Valley Pipeline Tunnels</li> <li>Continue record surveys of properties associated with the Verbena Land Acquisition</li> </ul>



### System Flexibility/Supply Reliability Program: Perris Valley Pipeline - Tunnels (I-215 Crossing)

This project will connect northern and southern reaches of Perris Valley Pipeline by micro-tunneling and installing approximately 3,000 feet of steel pipe.

Phase	Final Design
% Complete for Current Phase	99%
Current Phase Authorized	January 2010
Appropriation Number	15425

Work was performed towards obtaining the necessary easements and permits. In the upcoming quarter, design will be completed.

*Estimated Final Design*

*Completion Date:*

*December 2021*

*Total Project Estimate:*

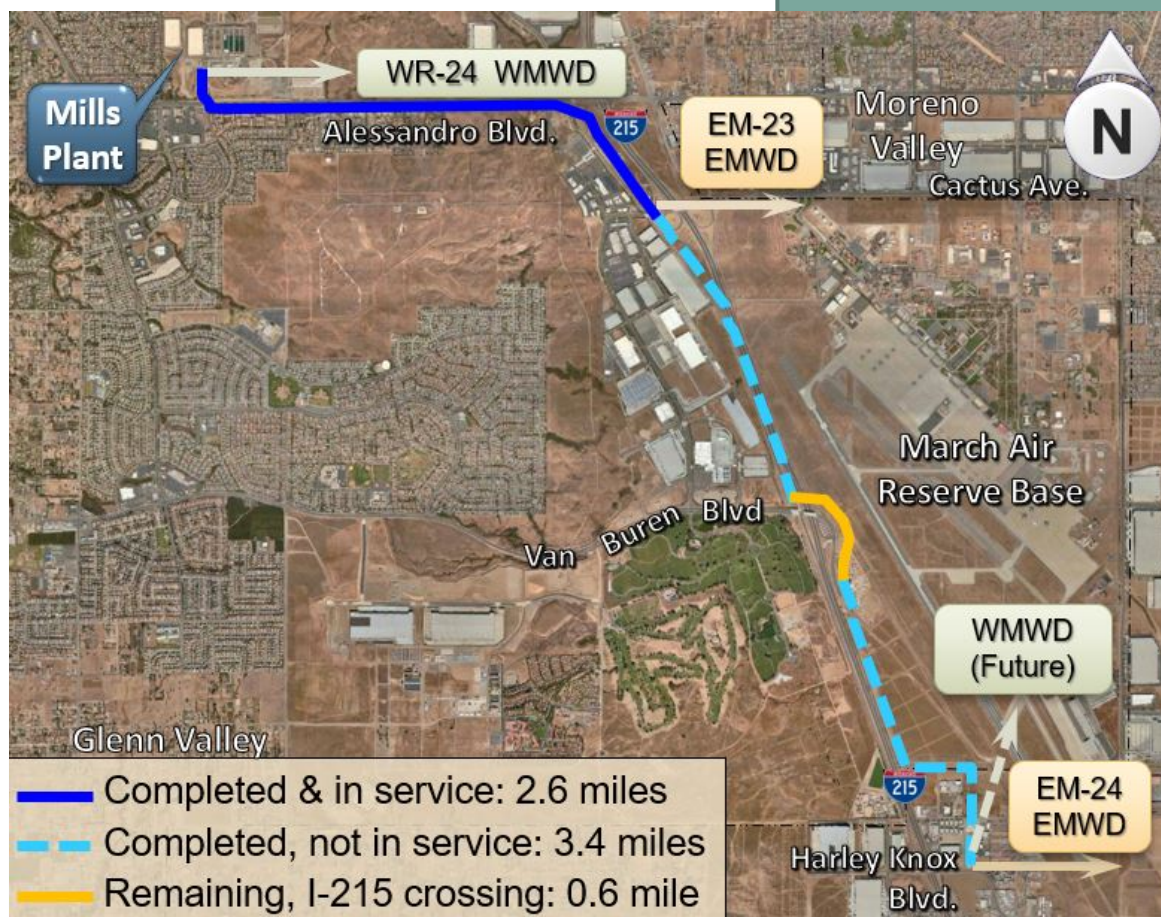
*\$66.0 million*

*Current Phase Estimate:*

*\$5.6 million*

*Cost to Date for Current Phase:*

*\$5.4 million*



Aerial view of I-215 crossing area next to March Air Reserve Base

## System Reliability Program

**Program Information:** The System Reliability Program is comprised of projects to improve or modify facilities located throughout Metropolitan’s service area in order to utilize new processes and/or technologies, and improve facility safety and overall reliability. These include projects related to Metropolitan’s Supervisory Control and Data Acquisition (SCADA) system and other Information Technology projects.

### Planned Biennium-to-date Expenditures (July 2020 through September 2021)

\$58.68 million

### Actual Biennium-to-date Expenditures (July 2020 through September 2021)

\$57.31 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

#### Status

Biennium expenditures for this program are consistent with the planned expenditures through September 2021

#### Accomplishments

- Skinner Facility Area Paving – completed final design in September 2021
- Maximo Upgrade – went live in August 2021
- Datacenter Modernization Upgrade – initiated primary site server installation
- Headquarters Building Improvements and Boardroom Technology Upgrade – completed final systems integration testing and inspections of committee room installations
- MWD Cyber Security Upgrade
  - Yubikey, identity USB hardware key – distribution to all MWD employees completed
- Lake Mathews IT Disaster Recovery Upgrade – project close-out completed
- WiFi Upgrade – La Verne facility design initiated

#### Upcoming Activities

Upcoming work for the next quarter will include:

- Skinner Facility Area Paving – advertise for bids
- Headquarters Building Improvements and Boardroom Technology Upgrade – initiate and complete user acceptance testing and signoff
- WiFi Upgrade – advertise for bids for Union Station headquarters building
- MWD Cyber Security Upgrade
  - Deploy secure web gateway software to MWD-owned workstations and laptops
  - Deploy privileged access management software to MWD-owned workstations, laptops, and servers

### System Flexibility/Supply Reliability Program: Headquarters Building Improvements

This project will provide seismic strengthening of Metropolitan's Headquarters building, as well as making other necessary upgrades to this 20-year old building.

Phase	Construction & Closeout
% Complete for Construction	95%
Construction Contract Authorized	November 2018
Appropriation Number	15473
Contract Number	1905

The contractor began installing power door assist mechanisms at exit doors. In the upcoming quarter, the contractor will complete installation of power door assist mechanisms at all remaining exit doors.



Installation of power door assist mechanisms

*Estimated Construction*

*Completion Date:*

*July 2022*

*Total Project Estimate:*

*\$78.5 million*

*Current Phase Estimate:*

*\$67.2 million*

*Cost to Date for Current*

*Phase:*

*\$57.0 million*

## Treatment Plant Reliability Program

**Program Information:** The Treatment Plant Reliability Program is comprised of projects to replace or refurbish facilities and components of Metropolitan's five water treatment plants in order to continue to reliably meet treated water demands.

### Planned Biennium-to-date Expenditures (July 2020 through September 2021)

\$55.67 million

### Actual Biennium-to-date Expenditures (July 2020 through September 2021)

\$62.19 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

Status	Biennial expenditures for this program are more than planned through September 2021 due to shifts in timing of the work.
Accomplishments	<ul style="list-style-type: none"> <li>Completed construction of Diemer West Basin &amp; Filter Building Rehabilitation</li> <li>Completed final design of: <ul style="list-style-type: none"> <li>Jensen Ozone PSU Replacement</li> <li>Mills Electrical Upgrades - Stage 2</li> </ul> </li> <li>Continued construction of: <ul style="list-style-type: none"> <li>Diemer Water Sampling System Improvements</li> <li>Jensen Electrical Upgrades - Stage 2</li> <li>Weymouth Chlorine System Upgrade</li> <li>Weymouth Water Quality Instrumentation Improvements</li> <li>Mills Module Nos. 3 and 4 Flash Mix Chemical Containment Upgrades</li> </ul> </li> <li>Continued procurement of power supply units (PSU) and dielectrics for Jensen ozone generators</li> <li>Continued final design of Weymouth Basins 5-8 Rehabilitation</li> </ul>
Upcoming Activities	<p>Upcoming work for the next quarter will include:</p> <ul style="list-style-type: none"> <li>Complete construction of: <ul style="list-style-type: none"> <li>Diemer Water Sampling System Improvements</li> <li>Weymouth Chlorine System Upgrade</li> <li>Weymouth Water Quality Instrumentation Improvements</li> </ul> </li> <li>Complete final design of: <ul style="list-style-type: none"> <li>Weymouth Basins 5-8 Rehabilitation</li> </ul> </li> <li>Continue procurement of power supply units and dielectrics for Jensen ozone generators</li> <li>Continue construction of: <ul style="list-style-type: none"> <li>Jensen Electrical Upgrades - Stage 2</li> <li>Mills Module Nos. 3 and 4 Flash Mix Chemical Containment Upgrades</li> </ul> </li> </ul>



### Treatment Plant Reliability Program: Weymouth Basins 5-8 Rehabilitation

This project will rehabilitate and replace the Weymouth Water Treatment Plant's Basins 5-8 mechanical equipment and auxiliary systems, along with seismic upgrades to the basin inlet channels and needed improvements. The project will also replace basin inlet gates for Basins 1-8.

Phase	Final Design
% Complete for Current Phase	85%
Current Phase Authorized	August 2020
Appropriation Number	15440

Performed value engineering and constructability review workshop. In the upcoming quarter, final design will be completed.

*Estimated Final Design*

*Completion Date:*

*December 2021*

*Total Project Estimate:*

*\$61.0 million*

*Current Phase Estimate:*

*\$3.5 million*

*Cost to Date for Current*

*Phase:*

*\$3.0 million*



Example of major mechanical equipment to be replaced including rotating circular rake at Basin 5 of the Weymouth plant

## Water Quality/Oxidation Retrofit Program

**Program Information:** The Water Quality/Oxidation Retrofit Program (ORP) is comprised of projects to add new facilities to ensure compliance with water quality regulations for treated water, located at Metropolitan’s treatment plants and throughout the distribution system.

### Planned Biennium-to-date Expenditures (July 2020 through September 2021)

\$0.02 million

### Actual Biennium-to-date Expenditures (July 2020 through September 2021)

\$0.33 million

### PROGRAM HIGHLIGHTS (1<sup>st</sup> Quarter)

Status	Biennial expenditures and progress are consistent with the plan for this program
Accomplishments	<ul style="list-style-type: none"> <li>Weymouth Enhanced Bromate Control Facilities – Completed record drawings and project closeout</li> </ul>
Upcoming Activities	<p>Upcoming work for the next quarter will include:</p> <ul style="list-style-type: none"> <li>Continue final design of Mills Enhance Bromate Control Facilities</li> </ul>

## MINOR CAPITAL PROGRAM

The Minor Capital Projects (Minor Cap) Program is authorized biennially to enable staff to expedite small capital projects. At the commencement of each biennium, the Board had appropriated the entire two-year budget for the program. For the current biennium, the minor cap budget was included in the CIP appropriation. In order to be considered for inclusion in the Minor Cap Program, a project must have a planned budget of less than \$400,000. The \$400,000 project budget cap was first established by the June 2018 board action Item 8-3 and the same cap is applied for the new minor caps that are approved for the current biennium. Prior to that action, the budget cap for minor cap projects was \$250,000.

The duration of minor capital projects typically ranges from a few months to three years. Since many of these projects require rapid response to address unanticipated failures, safety or regulatory compliance concerns, or to take advantage of shutdown opportunities, the Minor Cap Program authorizes the General Manager to execute projects that meet defined criteria without seeking additional board approval.

For the past two bienniums, the two-year budgets for the Minor Cap Program have been \$10 million, and \$15.5 million respectively. In April 2020, the Board appropriated funds for the projects identified in the CIP appendix for the current biennium, FYs 2020/21–2021/22, including the Minor Cap Program. \$15 million has currently been allocated for the current biennium.

### Minor Cap Program Historical Summary

The following table provides the overall status of the Minor Cap appropriations for the fiscal years 2016/17–2017/18 through 2020/21–2021/22.

	Fiscal Year			Totals
	2016/17– 2017/18	2018/19– 2019/20	2020/21– 2021/22	
Amount Appropriated	\$10M	\$15.5M	\$15M	\$40.5M
Expenditures (through September 2021)	\$7.2M	\$10.2M	\$2.8M	\$20.2M
Number of Projects Approved	41	49	35	125
Number of Projects Completed (through September 2021)	40	23	0	63
Percent of Work Complete	99%	75%	27%	N/A
Number of Projects with Durations of Over 3 Years	1	2	0	0

Through September 2021, 63 of the 125 projects have been completed, and three active projects have exceeded three years in duration, as described below.

- The Gene Pool Refurbishment has experienced delays due to shortage of local contractors for this type of work due to increased construction activity in the region. Staff will continue reaching out to contractors to complete the remaining work by December 2021.
- Upgrades to the emergency generator underground storage tanks at the Diemer plant and Metropolitan Headquarters were completed in July 2021, but additional time was required to process permit fees and to complete record drawings. These projects are scheduled to be completed by November 2021.

Planned biennium expenditures to date (July 2020 through September 2021) for the Minor Capital Projects Program were \$5.22 million, while actual biennium expenditures for the same period were \$7.81 million.

## Minor Cap Projects, 1<sup>st</sup> Quarter

### Authorized Projects

Six projects were authorized under the Minor Cap Program during the 1<sup>st</sup> Quarter of fiscal year 2021/22 (July through September 2021):

- CRA Lakeview Siphon Leak Repair – This project will procure and install internal pipe seals to repair a leak discovered in the first barrel of the CRA Lakeview Siphon. The project budget is \$366,000.
- District UVC & Air Disinfection HVAC Upgrade – This project will install high-efficient particulate air (HEPA) filtration and Ultraviolet-C (UVC) disinfection technology at approximately 100 locations throughout the district, consistent with Cal/OSHA recommendations to improve indoor air quality enhance worker safety from COVID-19. The project budget is \$392,000.
- Jensen WWRP No. 2 Flocculator Rehabilitation – This project will rehabilitate components of the flocculation basins at the Jensen plant's Washwater Reclamation Plant No. 2, including bearings, stuffing box, flocculator paddles, and baffle walls. The project budget is \$386,000.
- Ramona PCS Rehabilitation – This project will improve electrical, mechanical, and security systems at the Ramona Pressure Control Structure by replacing four electrical motor actuators and controls, upgrading an operator control panel in the control room, and extending the existing fence to encompass all individual structures. The project budget is \$387,000.
- Service Connection CA-01 Isolation Gate – This project will modify the existing east portal structure and add second isolation slide gate at Calleguas MWD Santa Susana Tunnel. The second slide gate will ensure complete isolation of Metropolitan's system at this service connection to ensure safe working conditions during system maintenance. The project budget is \$375,000.
- West OC Feeder Drain Line – This project will rehabilitate an 18-inch corrugated metal drain pipe at a blowoff structure on the West Orange County Feeder located in the city of Buena Park. The project budget is \$170,000.



**Completed Projects**

Six projects were completed under the Minor Cap Program during the 1<sup>st</sup> Quarter of fiscal year 2021/22 (July through September 2021):

- Eagle Mountain & Iron Mountain Switch House Doors Replacement
- Eagle Rock Security Fencing and Lighting
- Iron Mountain Equipment Parking Canopy
- Security Upgrades at Washington Street PCS and Dominguez Pressure Relief Structure
- Service Connection Flowmeter Replacement
- Skinner Ammonia Analyzers Replacement

**Cancelled Projects**

One project was cancelled under the Minor Cap Program during the 1<sup>st</sup> Quarter of fiscal year 2021/22 (July through September 2021):

- The San Diego Canal Panel Repairs – This project was originally initiated in the FYs 2016/17 and 2017/18 minor cap appropriation, and has been canceled to be addressed by the San Diego and Auld Valley Canals Concrete Liner Repair project, which is scheduled to be completed by June 2022.

## PROJECT ACTIONS

Table 5 lists capital project actions authorized by the Board and the General Manager along with funding allocation amounts during the 1<sup>st</sup> Quarter of FY 2020/21, through the authority delegated by the Board in April 2020. The total funding amount authorized by the General Manager during the 1<sup>st</sup> Quarter is \$28,017,011, through twenty six management actions. In some cases listed below, the Total Amount Authorized may differ from the Amount Authorized for Current Biennium when the work authorized is scheduled to extend beyond the current biennium. In these cases, it is anticipated that staff will request sufficient funds to be allocated from the CIP Appropriation for the next biennium to cover the planned remaining future-year costs of the project. When the Amount Authorized for Current Biennium is equal to the Total Amount Authorized, the authorized work is planned to be completed within the current biennium. Table 5 excludes any board items heard in closed session.

*Table 5: Capital Projects Funded by General Manager Authorization*

Project Authorized	Activity Authorized	Amount Authorized for Current Biennium	Total Amount Authorized
Applications-Servers Upgrade from Old Windows Operating Systems	Design, Deveopment, & Deployment	\$550,000	\$3,590,609
Battery Energy Storage System (BESS) at Jensen & Skinner Water Treatment Plants	Ductbank Construction at Skinner Plant	\$275,000	\$275,000
Battery Energy Storage System (BESS) at Jensen & Skinner Water Treatment Plants	Construction	\$6,801,479	\$16,400,000
Black Metal Mountain 2.4 kV Power Upgrade	Construction	\$1,167,000	\$1,700,000
Desert Housing Improvements	Preliminary Design	\$2,350,000	\$2,350,000
Desert Microwave Tower Sites Upgrades (Phase 1 of 2) <sup>2</sup>	Final Design & Procurement	\$0	\$5,120,818
Eagle Lift and Eagle West Siphons Seismic Improvement	Initial Study	\$125,000	\$125,000
Eagle Mountain 230 kV Physical and Cyber Security Upgrades	Final Design & Construction	\$248,000	\$248,000
Employee Village Enhancement	Preliminary Design	\$2,650,000	\$2,650,000
Flow Meter Asset Management and Replacement	Preliminary Design	\$1,410,000	\$1,410,000
Fuel Management System Upgrade	Design, Development, & Deployment	\$1,365,000	\$1,365,000

<sup>2</sup> Since the Board authorization of agreements for equipment procurement and design support in July 2021, the need for additional funds are not necessary at this time due to postponement of issuing the procurement and design support agreements as a result of manufacturing and supply chain issues due to COVID-19 effect. This project has sufficient funds that were previously authorized to perform work through the end of this biennium.

Project Authorized	Activity Authorized	Amount Authorized for Current Biennium	Total Amount Authorized
Gene Communication System Upgrade	Preliminary Design & Final Design	\$665,000	\$665,000
Headquarters HVAC System Equipment Upgrades – Phase 1	Final Design & Construction	\$1,040,000	\$1,040,000
Jensen Control Room Wildfire Smoke Mitigation System	Preliminary Design	\$371,400	\$371,400
Mills Ozone Generator PLC Control & Communication Equipment Upgrade	Final Design, Procurement, & Installation	\$2,093,000	\$2,093,000
Rio Hondo Pressure Control Structure Valve Replacement	Study	\$25,000	\$25,000
Sepulveda Feeder PCCP Rehabilitation - Reach 2	Final Design	\$2,055,132	\$3,400,000
Six minor cap projects	Design & Construction	\$2,076,000	\$2,076,000
Skinner Dry Polymer Building Roof Replacement	Construction	\$290,000	\$290,000
	<b>Total</b>	<b>\$25,557,011</b>	<b>\$45,194,827</b>

Table 6 lists a project that received additional funds for change orders from the CIP Appropriation for Fiscal Years 2020/21 and 2021/22, Appropriation No. 15517, during the 1<sup>st</sup> Quarter to complete authorized work. Additional funds were authorized to revise the design document to address new contract changes and to rebid the construction package.

*Table 6: General Manager Actions for Change Orders to Allocate Funds from Appropriation 15517*

Project	Activity Authorized	Amount Authorized for Current Biennium	Total Amount Authorized
CRA Pumping Plants Sump Rehabilitation	Final Design	\$2,460,000	\$2,460,000
	<b>Total:</b>	<b>\$2,460,000</b>	<b>\$2,460,000</b>

## **CEQA DETERMINATIONS**

Consistent with CEQA, the Board delegated this authority to the General Manager in April 2020. Adoption of Negative Declarations and Mitigated Negative Declarations, and certification of Environmental Impact Reports will continue to require action by Metropolitan’s Board. Other than those capital projects that were presented to the Board, no CEQA exemption determinations were made by the General Manager during the 1<sup>st</sup> Quarter. This excludes information on board items heard in closed session.



## CONSTRUCTION AND PROCUREMENT CONTRACTS

The table below summarizes the status of all active construction and procurement contracts that were awarded by the Board during the reporting quarter. Total contract earnings for the 1<sup>st</sup> Quarter were approximately \$10,481,619.

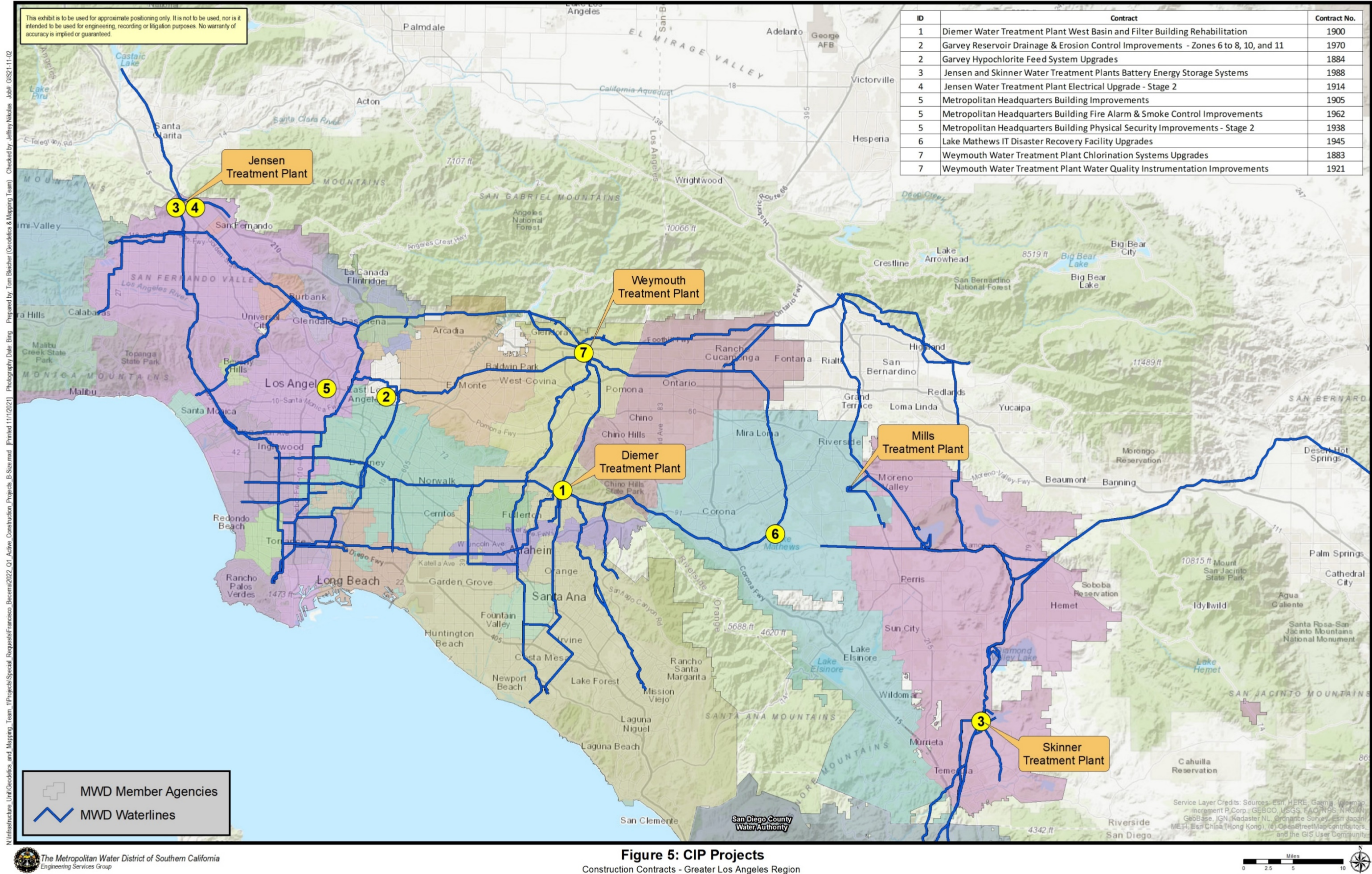
*Table 7: Summary of Construction and Procurement Contracts during 1<sup>st</sup> Quarter  
(July through September 2021)*

Summary	Construction	Procurement
Number of Contracts Active during this Quarter <sup>3</sup>	16	15
Total Contract Amount of Active Contracts	\$210,142,704	\$61,226,195
Number of Contracts Completed this Quarter <sup>4</sup>	2	0
Number of Contracts Awarded this Quarter	1	1
Total Contract Amount of Contracts Awarded this Quarter	\$11,604,521	\$492,440
Contract Earnings <sup>5, 6, 7</sup> this Quarter	\$9,643,002	\$838,617

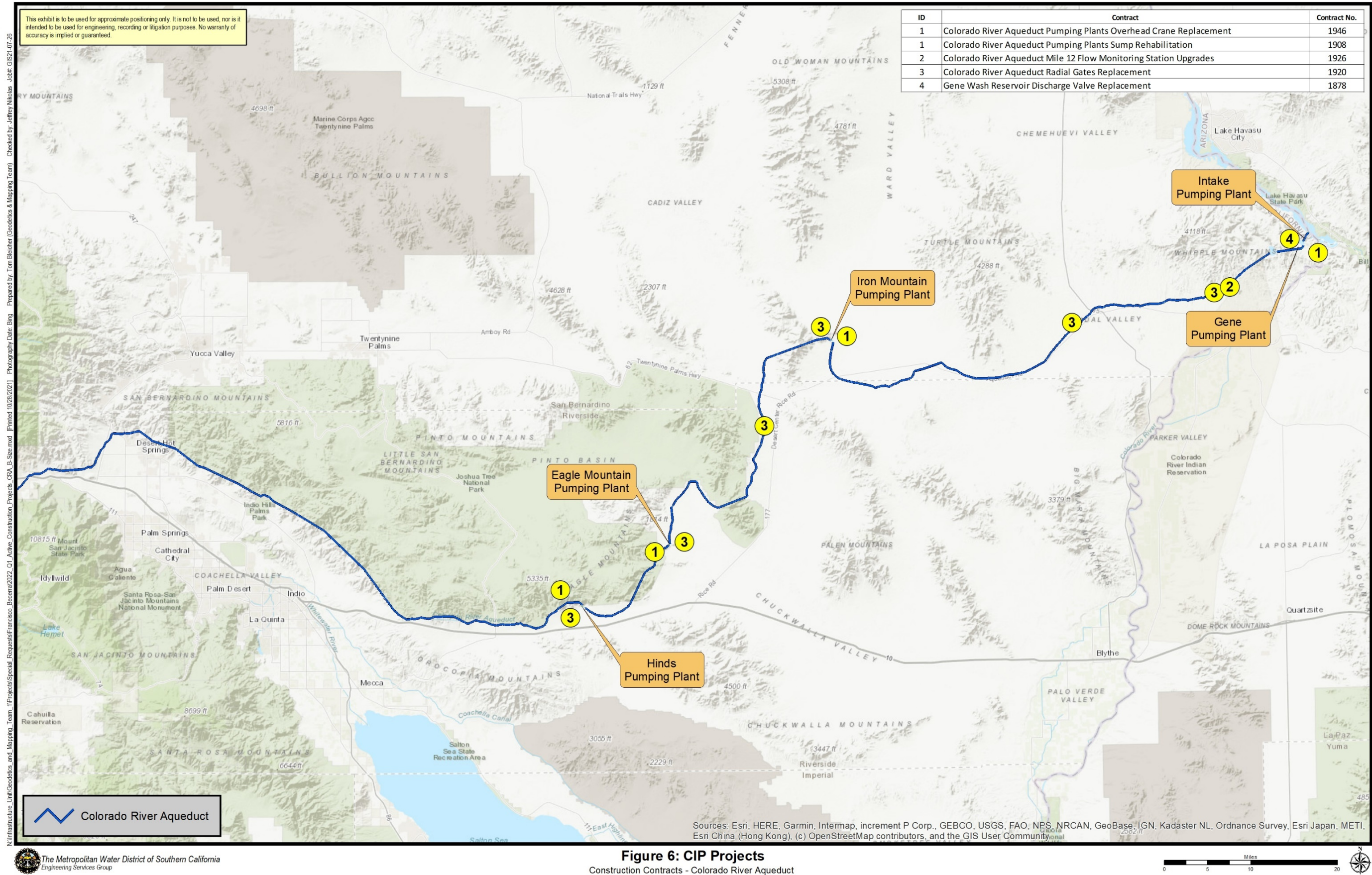
The figures on the next two pages show the locations of the sixteen active construction contracts during the 1<sup>st</sup> quarter.

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- <sup>3</sup> Number of Contracts Active during this Quarter includes those that were underway as well as those that were completed during the 1<sup>st</sup> Quarter.
- <sup>4</sup> Completed construction contracts are those which Metropolitan has accepted as physically complete and has filed Notice of Completion during the 1<sup>st</sup> Quarter. Completed procurement contracts are those which Metropolitan has received complete delivery and use of field services during the 1<sup>st</sup> Quarter. No procurement contracts have been completed during the 1<sup>st</sup> Quarter.
- <sup>5</sup> Contract earnings reflected in this report represent the value of the work performed by the contractor by the 25<sup>th</sup> day of the month. Contract earnings include contract retention and other similar deductions for the amounts earned by the contractor, but otherwise required to be withheld by Metropolitan by law or by contract.
- <sup>6</sup> Contract payments are typically made by Metropolitan in the month following performance of the work.
- <sup>7</sup> For the reasons listed above in the preceding two footnotes, contract payments in Metropolitan's financial system may be less than the earnings until the final payment has been made to the contractor.











Metropolitan's Administrative Code authorizes the General Manager to execute change orders on construction contracts in an aggregate amount not to exceed five percent of the original amount of the contract or \$250,000, whichever is greater. If changes occur on a construction contract that will exceed this total, additional authorization from the Board is required. In addition, the General Manager is authorized to execute change orders on procurement contracts in an amount not to exceed \$250,000. In the 1<sup>st</sup> Quarter, the Board did not authorize any increases to the General Manager's change order authority.

### **Notices of Completion during 1<sup>st</sup> Quarter:**

The following table shows the two contracts for which Metropolitan accepted the contract as completed during the 1<sup>st</sup> Quarter of FY 2021/22 and filed a Notice of Completion (NOC) with the county where the work was performed. In accordance with Section 9204 of the Civil Code of the State of California, an NOC is filed within 15 days of acceptance by Metropolitan of completion of construction by the contractor.

*Table 8: Notices of Completion Filed This Quarter*

Contract No.	Contract	Notice of Completion	Original Bid Amount	Final Contract Costs	Change Order	Change Order %
1900	Diemer Water Treatment Plant West Basin and Filter Building Rehabilitation	July 2021	\$38,539,196	\$40,075,700	\$1,536,504	4%
1920	Colorado River Aqueduct - Radial Gates at Seven Facilities	August 2021	\$10,439,354	\$10,534,817	\$95,463	1%
<b>Totals:</b>			<b>\$48,978,550</b>			

For the 1<sup>st</sup> Quarter, the total amount of completed contracts was approximately \$49 million.

The final contract costs can differ from the original bid amount due to change orders and actual costs incurred on unit price or other various bid items. The rolling average of change orders on completed contracts during the preceding 12-month period (October 2020 through September 2021) is 1.58 percent<sup>8</sup>.

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<sup>8</sup> Original amount of contracts completed (Oct. 2020 through Sept. 2021) = \$206,926,209  
Change orders for completed contracts (Oct. 2020 through Sept. 2021) = \$3,275,374  
Change order percentage for (Oct. 2020 through Sept. 2021) = 1.58%



**Contracts Awarded during 1<sup>st</sup> Quarter:**

During the period of July through September 2021, one construction contract totaling \$11,604,521 and one procurement contract totaling \$492,440, were awarded by the Board.

*Table 9: Construction and Procurement Contracts Awarded This Quarter*

<b>Construction Contracts</b>	
<b>Joseph P. Jensen &amp; Robert A. Skinner Water Treatment Plants Battery Energy Storage Systems</b>	
Contract Number	1998
Contractor	Ameresco, Inc.
Amount	\$11,604,521
<b>Procurement Contracts</b>	
<b>Furnishing Equipment to Upgrade the Ozone Control System at the Henry Mills Water Treatment Plant</b>	
Contract Number	PO TBD
Contractor	Royal Industrial Solutions
Amount	\$492,440

The table on this page lists the 14 ongoing construction contracts through the end of the 1<sup>st</sup> Quarter. Metropolitan is negotiating a settlement with the contractor on Construction Contract No. 1908 to remove the remaining construction portion of the contract, which was suspended due to Metropolitan's response to COVID-19. As part of the settlement, Metropolitan is procuring materials and equipment from the contractor for a future construction contract.

*Table 10: Active Construction Contracts at the End of 1<sup>st</sup> Quarter*

	Cont. No.	Contract Title	Contractor	Contract Amount <sup>9</sup>	Earnings Through September 2021	Start Date	Est. Completion Date	Est. Percent Complete
1	1878	Gene Wash Reservoir Discharge Valve Replacement	Gracon, LLC	\$5,319,066	\$3,856,359	1/21/20	11/21	73%
2	1883	F. E. Weymouth Water Treatment Plant Chlorination Systems Upgrades	J.F. Shea Construction, Inc.	\$8,756,264	\$8,436,219	1/28/19	11/21	96%
3	1884	Garvey Reservoir Sodium Hypochlorite Feed System Upgrades	Metro Builders & Engineers Group, Ltd.	\$2,418,149	\$424,743	4/9/21	7/22	18%
4	1905	Metropolitan Headquarters Building Improvements	Bernards Bros. Inc.	\$49,049,878	\$48,988,167	1/14/19	7/22	95%
5	1908	CRA Pumping Plants – Sump Rehabilitation	Michels Corp dba Michels Pipeline Construction	\$27,146,814	\$7,733,584	1/24/19	7/22	28%
6	1914	Joseph Jensen Water Treatment Plant Electrical Upgrade - Stage 2	Helix Electric, Inc.	\$15,099,119	\$13,341,117	8/14/19	8/22	88%
7	1921	F. E. Weymouth Water Treatment Plant Water Quality Instrumentation Improvements	Mehta Mechanical Company, Inc. dba MMC, Inc.	\$2,980,956	\$2,916,281	9/16/19	12/21	98%
8	1926	CRA Mile 12 Flow Monitoring Station Upgrades	R2 Engineering dba R2Build	\$2,022,000	\$41,952	6/16/21	7/22	2%
9	1938	MWD HQ Bldg. Physical Security Improvements	Bernards Bros. Inc.	\$5,843,525	\$3,970,369	9/22/20	2/22	58%
10	1945	Lake Mathews IT Disaster Recovery Facility Upgrades	MCL Constructors, Inc.	\$448,900	\$261,380	2/10/21	4/22	58%

<sup>9</sup> The Contract Amount may differ from the original bid amount due to periodic change orders approved by the General Manager or, if required, by the Board.

Cont. No.		Contract Title	Contractor	Contract Amount <sup>9</sup>	Earnings Through September 2021	Start Date	Est. Completion Date	Est. Percent Complete
11	1946	Colorado River Aqueduct Pumping Plants - Overhead Crane Replacement	J.F. Shea Construction, Inc.	\$13,419,000	\$404,000	10/14/20	9/23	3%
12	1962	MWD HQ Building Fire Alarm & Smoke Control Improvements	Bernards Bros. Inc.	\$14,085,744	\$3,526,916	9/24/20	1/23	25%
13	1970	Garvey Reservoir Drainage and Erosion Improvements - Areas 6, 7, 8, 10, and 11	Kaveh Engineering & Construction, Inc	\$1,338,252	\$853,532	11/20/20	11/21	64%
14	1998	Jensen and Skinner Water Treatment Plants Battery Energy Storage Systems	Ameresco, Inc.	\$11,604,521	\$0	10/7/21	10/22	0%
Total contract value for active construction contracts:				\$159,532,188				

The following table lists the 15 ongoing procurement contracts through the end of the 1<sup>st</sup> Quarter.

*Table 11: Active Procurement Contracts at the End of 1<sup>st</sup> Quarter*

Cont. No.	Contract	Contractor	Contract Amount <sup>10</sup>	Earnings Through September 2021	Start Date	Est. Delivery Completion Date	Est. Percent Complete <sup>11</sup>
1 1851	Furnishing Horizontal Axially Split Centrifugal Pumps for the Greg Avenue Pump Station	Xylem Water Solutions U.S.A., Inc.	\$1,734,103	\$1,293,982	5/16/17	D <sup>12</sup>	75%
2 1861	Furnishing Lubricated Plug Valves for Second Lower Feeder	Southwest Valve & Equipment, Inc.	\$2,380,909	\$2,362,968	9/11/17	D <sup>12</sup>	99%
3 1867 <sup>13</sup>	Furnishing Butterfly Valves for the Weymouth Water Treatment Plant – Schedule 1	Crispin Valve, LLC	\$5,016,067	\$200,857	12/18/17	12/22	4%
4 1868	Furnishing Butterfly Valves for the Weymouth Water Treatment Plant – Schedule 2	DeZurick, Inc.	\$771,984	\$760,384	12/18/17	1/22	98%
5 1873	Furnishing One Hydraulic Shear System for the La Verne Maintenance Shops	Landmark Solutions, LLC	\$151,870	\$146,970	3/21/18	D <sup>12</sup>	97%
6 1912	Furnishing Large-Diameter Conical Plug Valves	Ebara Corporation	\$23,750,060	\$5,193,406	12/24/18	6/23	22%
7 1922	Furnishing One Double Column Vertical Machining Center for the La Verne Maintenance Shops	Gosiger Machine Tools, LLC (Gosiger West)	\$2,193,356	\$2,100,295	9/17/18	D <sup>12</sup>	96%
8 1948	Refurbishing Valve Actuators for the Diemer Water Treatment Plant	Flowserve Limatorque	\$3,532,700	\$1,554,636	2/16/19	9/21	44%
9 1955	Furnishing Membrane Filtration Systems for the CRA Domestic Water Treatment Systems	Wigen Water Technologies	\$1,206,535	\$0	5/28/20	7/25	0%
10 1965	Furnishing Equipment for the Jensen Ozone Power Supply Units Upgrades	Suez Treatment Solutions, Inc.	\$4,100,000	\$354,309	3/30/20	3/22	9%

<sup>10</sup> The Contract Amount may differ from the original bid amount due to periodic change orders approved by the General Manager or, if required, by the Board.

<sup>11</sup> Estimated Percent Complete is based on contract payments and may not reflect actual progress of fabrication. The contract will be 100% complete upon delivery of fabricated items and field services.

<sup>12</sup> All items were delivered but contract remains open pending use of manufacturer field services.

<sup>13</sup> Contract 1867 includes tariff and work on Furnishing Butterfly Valves for the Weymouth Water Treatment Plant - Schedule 1 per extra work directed in the November 2020 Board Letter, Item 7-1.



	Cont. No.	Contract	Contractor	Contract Amount <sup>10</sup>	Earnings Through September 2021	Start Date	Est. Delivery Completion Date	Est. Percent Complete <sup>11</sup>
11	1968	Furnishing Earthquake-Resistant Ductile Iron Pipe for the Casa Loma Siphon Barrel No. 1	Kubota Corporation	\$9,237,782	\$9,021,862	2/12/20	D <sup>12</sup>	98%
12	1969	Furnishing Inlet Valve Gearboxes for Skinner Module No. 7	R&B Automation, Inc.	\$192,185	\$0	4/29/20	1/22	0%
13	1978	Furnishing Steel Pipe for the Casa Loma Siphon Barrel No. 1	Northwest Pipe Company	\$6,134,208	\$5,365,992	1/16/20	12/23	87%
14	PO 188 876	Furnish Two Sodium Hypochlorite Storage Tanks to Replace Existing Tanks at Lake Mathews	Pacific Mechanical Supply	\$331,996	\$0	5/20/19	1/22	0%
15	PO TBD	Furnish Equipment to Upgrade the Ozone Control System at the Mills Water Treatment Plant	Royal Industrial Solutions	\$492,440	\$0	1/1/22 <sup>14</sup>	12/22 <sup>14</sup>	0%
Total contract value for active procurement contracts:				\$61,226,195				

<sup>14</sup> As of the date of this report, a Notice to Proceed has not been finalized and as such, dates marked with an asterisk are estimates only.

## PERFORMANCE METRICS

In order to measure project performance efficiency and to identify areas for continuous improvements, Metropolitan's Engineering Services Group has established two primary performance metrics for projects that will result in construction activities. These metrics serve as performance targets for Metropolitan staff for both final design and inspection activities. The inspection metric includes fabrication and construction inspection, as well as construction management services.

Separate performance targets have been established for two categories of project size; those with projected construction costs greater than \$3 million, and those with projected construction costs less than \$3 million.

Metropolitan's **performance metric targets** for the two categories of construction projects are listed below:

Project Category	Final Design, % of Construction	Inspection % of Construction
Projects with Construction Costs > \$3 Million	9% to 12%	9% to 12%
Projects with Construction Costs < \$3 Million	9% to 15%	9% to 15%

Prior to proceeding with final design or construction, budgets are established for design and inspection that best provide a quality and timely product. Efforts are made to optimize staff and consultant hours based on project complexity and location. The calculated values for the design and inspection costs, as a percentage of total construction costs, in almost all cases lie within or below the metric target ranges. In rare cases, the calculated values may exceed the metric target ranges.

Once a project phase is complete, either final design or construction, staff's performance against these metrics is then calculated and compared to the target metrics. Table 13 and Table 14 on the following page summarize the comparison between the target metrics and the actual performance metrics for each project category for the current reporting period. In cases where the actual performance exceeded the target metric, explanations for the variance are provided. Actual performance for in-house construction projects and minor capital projects are not reported in this section, since the efforts required for final design and inspection are different.

Table 12: Performance Metric Actuals, Projects &gt; \$3 Million

Project	Metric	Actual Cost of Metric	Construction Cost	Target Range	Actual %
Jensen and Skinner Water Treatment Plants Battery Energy Storage Systems	Final Design	\$903,120	\$12,459,521	9-12%	7.2%
Diemer Water Treatment Plant West Basin & Filter Building Rehabilitation	Inspection	\$4,496,339	\$41,685,528	9-12%	10.8%
Colorado River Aqueduct – Installation of Radial Gates at Seven Facilities	Inspection	\$890,705	\$10,557,473	9-12%	8.4%

Table 13: Performance Metric Actuals, Projects &lt; \$3 Million

Project	Metric	Actual Cost of Metric	Construction Cost	Target Range	Actual %
Skinner Dry Polymer Building Roof Replacement	Final Design	\$27,933	\$164,700	9-15%	17.0% <sup>15</sup>

<sup>15</sup> Final design costs for Skinner Dry Polymer Building Roof Replacement were higher than the target range due to the level of effort required to prepare a final design package regardless of the project's size.

## **SERVICE CONNECTIONS AND RELOCATIONS**

### **Service Connections**

No new agreements for service connections were approved by the General Manager pursuant to Sections 4700-4708 during the reporting period (July through September 2021).

### **Relocations**

One new relocation agreement involving an amount in excess of \$100,000 was approved under the authority of Section 8122(c) during the reporting period.

Agency: City of Carson

Description: The City of Carson is widening 223<sup>rd</sup> Street, requiring relocation of Metropolitan's vent stack to a new sidewalk location. The vent stack is located near the intersection of 223<sup>rd</sup> Street and Wilmington Avenue Street and tied to a sectionalizing valve structure on Long Beach Lateral.

Estimated Amount: \$73,319

## **PROJECTS EXPENSED TO OVERHEAD**

There are no expensed projects to report during the first quarter of fiscal year 2020/21 (July through September 2021).



## PROGRAM/APPROPRIATION STATUS

The following table provides the program and appropriation level budget versus cost-to-date and biennium planned expenditures versus actuals-to-date.

Table 14: Program and Appropriation Budget vs. Cost and Planned Expenditures vs. Actuals

Capital Programs/Appropriations	Appn. No.	Total to Date		Biennium to Date	
		Appn. Amount (\$1,000's)	Costs thru September 2021 (\$1,000's)	Biennium to Date Planned Expenditures (\$1,000's)	Biennium Actual Expenditures (\$1,000's)
<b>Colorado River Aqueduct Reliability Program</b>	<b>Total</b>	<b>\$451,357</b>	<b>\$372,493</b>	<b>\$69,043</b>	<b>\$56,703</b>
Cabazon Radial Gate Facility Improvements	15320	\$716	\$646	\$0	\$20
White Water Siphon Protection <sup>16</sup>	15341	\$15,585	\$14,541	\$0	\$51
CRA - Conveyance Reliability	15373	\$117,828	\$112,793	\$9,520	\$5,295
CRA - Electrical/Power Systems Reliability	15384	\$55,765	\$45,581	\$3,777	\$4,742
CRA – Discharge Containment	15385	\$8,129	\$7,944	\$0	\$365
CRA - Reliability for FY2006/07 through FY2011/12	15438	\$150,194	\$111,542	\$24,528	\$16,759
CRA Main Pump Reliability	15481	\$65,730	\$48,756	\$24,639	\$21,133
CRA - Reliability for FY2012/13 through FY2017/18	15483	\$31,227	\$27,653	\$6,569	\$6,525
CRA - Reliability for FY2018/19 through FY2023/24	15507	\$6,183	\$3,037	\$10	\$1,812

<sup>16</sup> Approximately \$2.85 million reimbursement from Federal Emergency Management Agency (FEMA) for construction of Whitewater Erosion Protection Structure Rehabilitation was credited in Q4 of FY 2020/21. The credited work was completed prior to the current biennium and has been reversed in this table to account all capital work performed in the current biennium.

Capital Programs/Appropriations	Appn. No.	Total to Date		Biennium to Date	
		Appn. Amount (\$1,000's)	Costs thru September 2021 (\$1,000's)	Biennium to Date Planned Expenditures (\$1,000's)	Biennium Actual Expenditures (\$1,000's)
<b>Cost Efficiency &amp; Productivity Program</b>	<b>Total</b>	<b>\$226,733</b>	<b>\$176,828</b>	<b>\$9,065</b>	<b>\$6,362</b>
DVL Recreation Facilities <sup>17</sup>	15334	\$87,004	\$63,821	\$1,408	-\$100
Power Reliability and Energy Conservation	15391	\$54,795	\$52,842	\$0	\$0
Information Technology System - Business, Finance, and HR	15411	\$22,468	\$22,387	\$362	\$47
Yorba Linda Power Plant Modifications	15446	\$17,125	\$17,070	\$30	\$57
Business Operations Improvement	15484	\$15,396	\$8,647	\$6,118	\$1,961
Project Controls and Reporting System	15490	\$6,440	\$6,289	\$0	\$335
Enterprise Content Management	15500	\$3,600	\$2,960	\$93	\$1,359
DVL Recreation Rehabilitation & Refurbishment	15515	\$1,030	\$755	\$1,054	\$645
Energy Sustainability Improvements	15521	\$18,875	\$2,057	\$0	\$2,057
<b>Dams and Reservoirs Reliability Program</b>	<b>Total</b>	<b>\$72,554</b>	<b>\$63,526</b>	<b>\$8,613</b>	<b>\$2,337</b>
Reservoir Cover and Replacement	15417	\$61,614	\$54,160	\$5,376	\$1,645
Dam Rehabilitation & Safety Improvements	15419	\$10,940	\$9,365	\$3,236	\$693
<b>Distribution System Reliability Program</b>	<b>Total</b>	<b>\$374,040</b>	<b>\$340,141</b>	<b>\$45,217</b>	<b>\$53,551</b>
Conveyance and Distribution System - Rehabilitation	15377	\$102,686	\$97,075	\$11,219	\$3,633
Conveyance and Distribution System - Rehabilitation for FY2006/07 through FY2011/12	15441	\$110,299	\$106,250	\$2,633	\$2,733
Hydroelectric Power Plant Improvements	15458	\$19,378	\$16,571	\$72	\$1,867
Conveyance and Distribution System - Rehabilitation for FY2012/13 through FY2017/18	15480	\$117,607	\$104,927	\$20,054	\$34,047
Pipeline Rehabilitation and Replacement	15482	\$1,143	\$1,028	\$0	\$824
Conveyance and Distribution System - Rehabilitation for FY2018/19 through FY2023/24	15503	\$22,927	\$14,291	\$11,239	\$10,447

<sup>17</sup> Approximately \$107K was credited from the sales of DVL properties per the November 2005 Board Letter, Item 7-3 and the March 2020 Board Letters, Item 8-2 in Q4 of FY 2020/21.

Capital Programs/Appropriations	Appn. No.	Total to Date		Biennium to Date	
		Appn. Amount (\$1,000's)	Costs thru September 2021 (\$1,000's)	Biennium to Date Planned Expenditures (\$1,000's)	Biennium Actual Expenditures (\$1,000's)
<b>District Housing &amp; Property Improvements Program</b>	<b>Total</b>	<b>\$10,607</b>	<b>\$2,906</b>	<b>\$5,511</b>	<b>\$1,977</b>
Employee Village Enhancement	15513	\$10,607	\$2,906	\$5,511	\$1,977
<b>Minor Capital Projects Program</b>	<b>Total</b>	<b>\$48,500</b>	<b>\$26,880</b>	<b>\$5,248</b>	<b>\$7,812</b>
Capital Program for Projects Costing Less Than \$250,000 for FY2014/15 through FY2015/16	15489	\$8,000	\$6,709	\$0	\$16
Capital Program for Projects Costing Less Than \$250,000 for FY2016/17 through FY2017/18	15498	\$10,000	\$7,169	\$839	\$410
Capital Program for Projects Costing Less Than \$400,000 for FY2018/19 through FY2019/20	15504	\$15,500	\$10,178	\$1,576	\$4,562
Capital Program for Projects Costing Less Than \$400,000 for FY2020/21 through FY2021/22	15518	\$15,000	\$2,824	\$2,833	\$2,824
<b>Prestressed Concrete Cylinder Pipe Rehabilitation Program</b>	<b>Total</b>	<b>\$310,527</b>	<b>\$247,325</b>	<b>\$36,588</b>	<b>\$27,075</b>
PCCP Rehabilitation and Replacement	15471	\$24,243	\$21,698	\$1,522	\$1,241
Sepulveda Feeder PCCP Rehabilitation	15496	\$30,525	\$25,216	\$509	\$2,190
Second Lower Feeder PCCP Rehabilitation	15497	\$240,627	\$190,890	\$32,611	\$17,260
Allen-McColloch Pipeline, Calabasas Feeder, and Rialto Pipeline PCCP Rehabilitation	15502	\$15,132	\$9,521	\$1,946	\$6,383
<b>Regional Recycled Water Supply Program</b>	<b>Total</b>	<b>\$22,150</b>	<b>\$21,212</b>	<b>\$210</b>	<b>\$284</b>
Demonstration-Scale Recycled Water Treatment Plant <sup>18</sup>	15493	\$22,150	\$21,212	\$210	\$284
<b>Right of Way &amp; Infrastructure Protection Program</b>	<b>Total</b>	<b>\$29,815</b>	<b>\$25,887</b>	<b>\$3,943</b>	<b>\$2,908</b>
Right of Way & Infrastructure Protection	15474	\$29,815	\$25,887	\$3,943	\$2,908

<sup>18</sup> \$1 million grant from the California State Water Resources Control Board for the construction of Advanced Water Treatment Demonstration Facility was credited in Q3 of FY 2020/21. The credited work was completed prior to the current biennium and has been reversed in this table to account all capital work performed in the current biennium.

Capital Programs/Appropriations	Appn. No.	Total to Date		Biennium to Date	
		Appn. Amount (\$1,000's)	Costs thru September 2021 (\$1,000's)	Biennium to Date Planned Expenditures (\$1,000's)	Biennium Actual Expenditures (\$1,000's)
<b>System Flexibility/Supply Reliability Program</b>	<b>Total</b>	<b>\$661,160</b>	<b>\$635,059</b>	<b>\$20,250</b>	<b>\$18,917</b>
Hayfield and Lake Perris Groundwater Recovery	15402	\$1,500	\$1,060	\$0	\$203
Perris Valley Pipeline	15425	\$130,800	\$129,791	\$10,335	\$1,605
Water Delivery System Improvements	15488	\$67,860	\$65,269	\$9,915	\$15,780
Verbena Property Acquisition	15492	\$264,000	\$261,526	\$0	\$1,047
Delta Wetlands Properties (Delta Islands)	15494	\$197,000	\$177,413	\$0	\$282
<b>System Reliability Program</b>	<b>Total</b>	<b>\$363,088</b>	<b>\$282,937</b>	<b>\$58,977</b>	<b>\$57,308</b>
Information Technology System - Infrastructure	15376	\$51,306	\$47,121	\$481	\$1,408
Information Technology System - Security	15378	\$12,351	\$10,154	\$1,786	\$1,922
La Verne Shop Facilities Upgrade	15395	\$46,480	\$46,098	\$6,225	\$608
Water Operation Control	15467	\$51,414	\$41,181	\$1,632	\$1,861
Union Station Headquarters Improvements	15473	\$107,845	\$76,888	\$19,917	\$27,907
IT Infrastructure Reliability	15487	\$47,423	\$32,887	\$15,664	\$16,193
Operations Support Facilities Improvement	15495	\$19,088	\$17,318	\$5,227	\$529
Metropolitan Security System Enhancements	15499	\$15,910	\$7,661	\$3,805	\$4,903
Infrastructure Reliability Information System	15501	\$5,440	\$2,499	\$2,460	\$994
System-Wide Paving & Roof Replacements for FY 2020/21 through FY 2021/22	15516	\$1,100	\$628	\$766	\$481
System-Wide Paving & Roof Replacements for FY2020/21 through FY2023/24	15519	\$1,041	\$496	\$0	\$496
Enterprise Data Analytics	18910	\$3,690	\$7	\$1,014	\$7



Capital Programs/Appropriations	Appn. No.	Total to Date		Biennium to Date	
		Appn. Amount (\$1,000's)	Costs thru September 2021 (\$1,000's)	Biennium to Date Planned Expenditures (\$1,000's)	Biennium Actual Expenditures (\$1,000's)
<b>Treatment Plant Reliability Program</b>	<b>Total</b>	<b>\$937,266</b>	<b>\$885,422</b>	<b>\$55,953</b>	<b>\$62,193</b>
Chlorine Containment and Handling Facilities	15346	\$162,370	\$160,536	\$0	\$89
Weymouth Water Treatment Plant Improvements	15369	\$190,910	\$184,495	\$4,257	\$2,793
Jensen Water Treatment Plant Improvements	15371	\$47,062	\$46,633	\$43	\$49
Diemer Water Treatment Plant Improvements	15380	\$213,657	\$205,386	\$16,758	\$16,235
Mills Water Treatment Plant Improvements	15381	\$5,525	\$5,277	\$0	\$0
Skinner Water Treatment Plant Improvements for FY2006/07 through FY2011/12	15435	\$3,860	\$2,142	\$0	\$33
Diemer Water Treatment Plant Improvements for FY2006/07 through FY2011/12	15436	\$70,939	\$63,842	\$1,646	\$1,547
Weymouth Water Treatment Plant Improvements for FY2006/07 through FY2011/12	15440	\$24,079	\$21,714	\$2,580	\$2,953
Jensen Water Treatment Plant Improvements for FY2006/07 through FY2011/12	15442	\$91,376	\$80,707	\$16,571	\$21,641
Mills Water Treatment Plant Improvements for FY2006/07 through FY2011/12	15452	\$22,652	\$21,918	\$480	\$2,524
Weymouth Water Treatment Plant Improvements for FY2012/13 through FY2017/18	15477	\$76,989	\$75,563	\$5,979	\$10,045
Diemer Water Treatment Plant Improvements for FY2012/13 through FY2017/18	15478	\$1,425	\$1,336	\$0	\$330
Mills Water Treatment Plant Improvements for FY2012/13 through FY2017/18	15479	\$1,094	\$595	\$0	\$141
Skinner Water Treatment Plant Improvements for FY 2012/13 Through FY 2017/18	15485	\$1,990	\$1,729	\$0	\$6
Jensen Water Treatment Plant Improvements for FY2012/13 through FY2017/18	15486	\$8,339	\$7,439	\$0	\$678

Capital Programs/Appropriations	Appn. No.	Total to Date		Biennium to Date	
		Appn. Amount (\$1,000's)	Costs thru September 2021 (\$1,000's)	Biennium to Date Planned Expenditures (\$1,000's)	Biennium Actual Expenditures (\$1,000's)
Weymouth Water Treatment Plant Improvements for FY2020/21 through FY2023/24	15505	\$685	\$244	\$468	\$20
Jensen Water Treatment Plant Improvements for FY2020/21 through FY2023/24	15508	\$7,109	\$2,066	\$5,694	\$1,744
Diemer Water Treatment Plant Improvements for FY2020/21 through FY2023/24	15510	\$745	\$549	\$764	\$167
Skinner Water Treatment Plant, Improvements For FY 2020/21 Through FY 2023/24	15512	\$3,831	\$3,190	\$483	\$1,137
Mills Water Treatment Plant Improvements for FY2020/21 through FY2023/24	15520	\$2,631	\$62	\$231	\$62
<b>Water Quality/Oxidation Retrofit Program</b>	<b>Total</b>	<b>\$631,914</b>	<b>\$628,233</b>	<b>\$19</b>	<b>\$329</b>
Diemer Water Treatment Plant Oxidation Retrofit	15389	\$370,192	\$370,024	\$0	\$0
Weymouth Water Treatment Plant Oxidation Retrofit	15392	\$251,482	\$248,594	\$19	\$18
Enhanced Bromate Control	15472	\$10,240	\$9,615	\$0	\$312
<b>Total CIP</b>		<b>\$4,139,712</b>	<b>\$3,708,850</b>	<b>\$318,637</b>	<b>\$297,759</b>

Notes on above table:

- Numbers may not sum due to rounding.
- \$0 under **Planned Expenditures** indicate that while no expenditures are planned during the reporting period, expenditures may be planned during upcoming periods
- Negative actual expenditures indicate the result of cost transfers, write-offs, or credits greater than actual costs for this biennium through the reporting quarter

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# Capital Investment Plan Quarterly Report for Period Ending September 2021

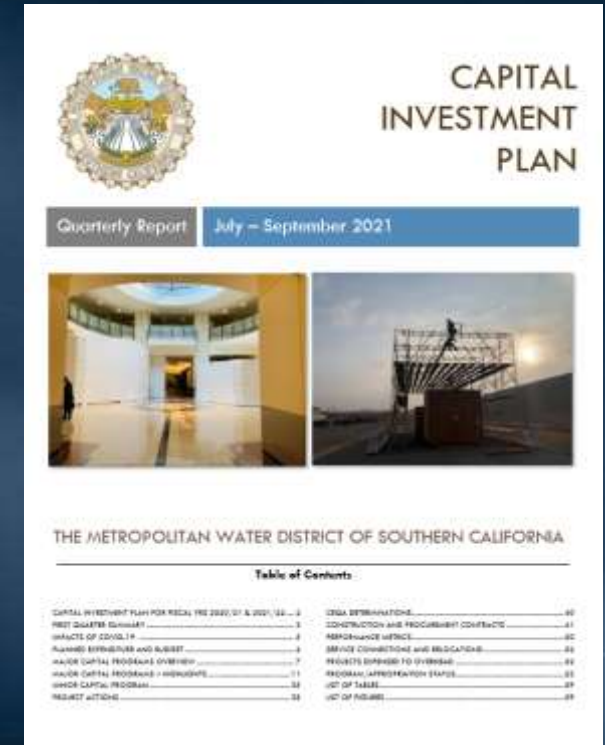
Engineering and Operations Committee  
Item 6a  
December 13, 2021



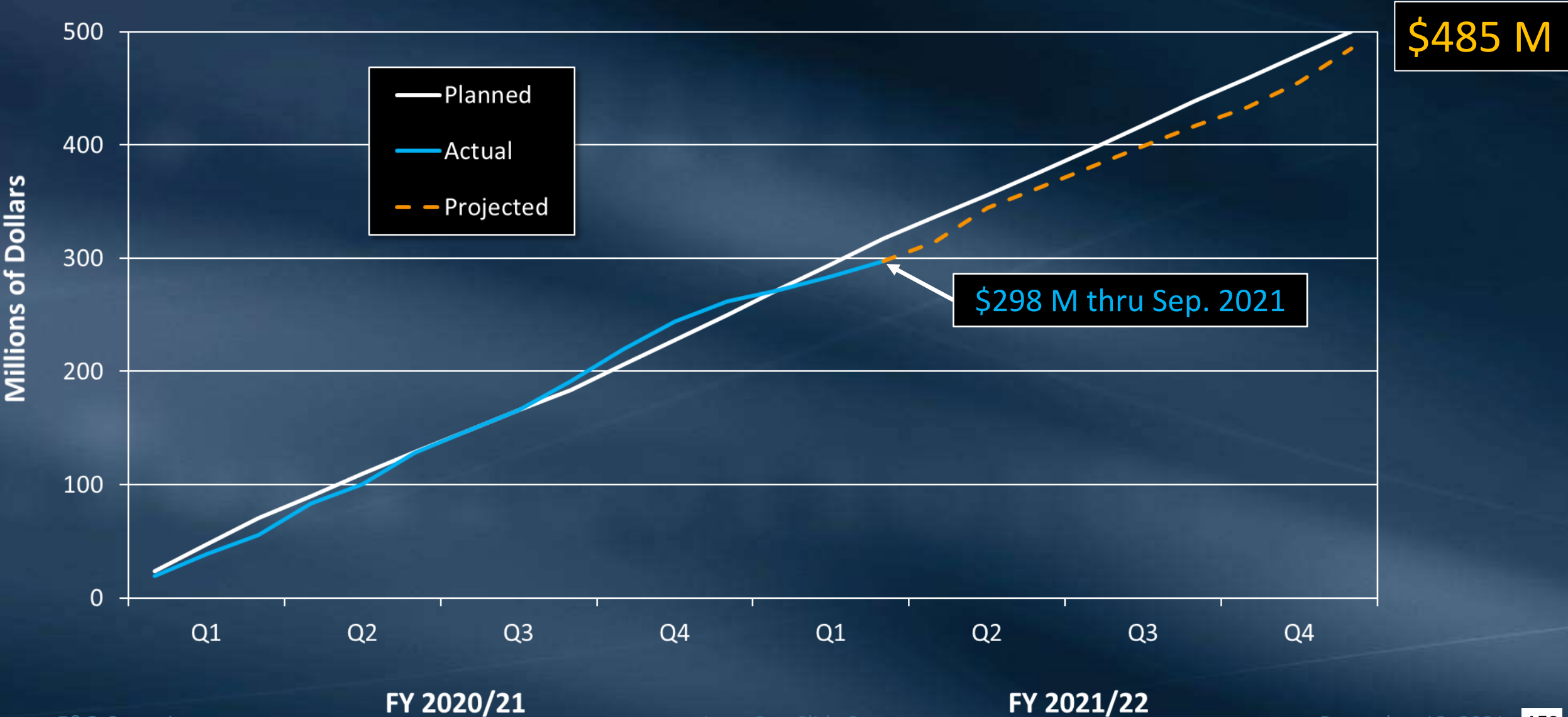
# Capital Investment Plan

## 1<sup>st</sup> Quarter Summary for FY 2021/22

- 1 Construction contract awarded - \$11.6 M
- 1 Procurement contract awarded - \$0.5 M
- 7 Professional service agreements authorized - \$10.4 M
- Contracts currently underway - \$220.7 M
  - 14 construction - \$159.5 M
  - 15 procurement - \$61.2 M
- CIP fund authorization - \$500 M biennial budget
  - \$28.0 M authorized for projects in Q1
  - \$458.3 M total authorized through Q1
  - \$41.7 M available



# CIP Performance - FYs 2020/21 & 2021/22



# Gene Wash Reservoir Discharge Valve Rehabilitation

- Contract awarded in December 2019
  - Expected completion in March/April 2022
- Current Phase Estimate: **\$9.8 M**
- Actual for Current Phase: **\$5.8 M**



Floating platform for underwater work  
inset photo: diver preparing to work on isolation device



# Jensen & Skinner Battery Energy Storage Systems



Proposed BESS site location at the Skinner plant

- Jensen & Skinner plants contract awarded in September 2021
  - Estimated to complete in December 2022
- Current Phase Estimate: **\$16.4 M**
- Actual for Current Phase: **\$0.1 M**



# CRA Radial Gates Replacement

- Contract awarded in August 2019
  - Completed in August 2021
- Current Phase Estimate: **\$15.0 M**
- Actual for Current Phase: **\$13.2 M**



Completed radial gate in operation  
at Iron Mountain Wasteway

# Contract Completion and Change Orders

Contract	Original Contract Amount	Contract Change Orders	Change Order %
Diemer Water Treatment Plant West Basin & Filter Building Rehabilitation	\$38,539,196	\$1,536,504	4.0%
Colorado River Aqueduct – Radial Gates at Seven Facilities	\$10,439,354	\$95,463	0.9%
Total	\$48,978,550		

12-month rolling average change order percent = 1.6%

# Performance Metrics – 1<sup>st</sup> Quarter of FY 2021/22

## Projects w/ Construction Costs < \$3 Million

	Final Design % of Construction	Inspection % of Construction
Target Performance Range	9% to 15%	9% to 15%
Actual Performance	17%	N/A*

## Projects w/ Construction Costs > \$3 Million

	Final Design % of Construction	Inspection % of Construction
Target Performance Range	9% to 12%	9% to 12%
Actual Performance	7.2%	10.3%

\* No projects were completed in this category during the 1<sup>st</sup> quarter

# Minor Capital Projects

Fiscal Year Appropriation	2016/17 2017/18	2018/19 2019/20	2020/21 2021/22
Amount Appropriated	\$10 M	\$15.5 M	\$15.0 M
Amount Allocated	\$8.3 M	\$15.5 M	\$11.7 M
Expenditures Through September 2021	\$7.2 M	\$10.2 M	\$2.8 M
# of Projects Approved	41	49	35
# of Projects Completed Through September 2021	40	23	0
% of Work Complete	99%	75%	27%

3 projects exceeded 3 years in duration







# Regional Recycled Water Program Quarterly Update

Engineering and Operations Committee  
Item 6b  
December 13, 2021

# Agenda

- RRWP efforts in 2021
  - Demonstration Plant testing
  - Environmental planning phase activities
  - Agency coordination
  - Grants and funding
  - Public outreach
- Upcoming RRWP efforts
  - Continue environmental planning efforts
  - Next steps in the Cost of Service process
  - Potential early-start projects
  - Potential early delivery of water



# Demonstration Plant Testing

- Successfully completed tMBR test phase
  - Preparing Summary Report
- Next phase of testing (sMBR)
  - Planning test phase activities
  - Selected specialized consultant
- Additional testing underway by LACSD
  - Concentrate and residuals characterization
  - GHG quantification
- ISAP/Regulatory meetings
  - Next meetings: January 2022





# Environmental Planning Phase Activities

- CEQA

- Planning CEQA schedule and deliverable milestones
- Coordinating data needs with Conveyance and AWT engineering

- Advanced Water Treatment

- Investigating distributed plants, alternative sites, phasing/flows
- Developing DPR framework response & DPR implementation white paper
- LACSD received approval of FORCO site-closure plan by Regional Board

- Conveyance

- Developing project risk register
- Identifying preferred pipeline alignment for CEQA

# Agency Coordination

- Continued LACSD coordination
  - Nitrogen Management Study
  - Nitrogen bench and pilot scale testing
  - Monitoring for source control/waste residuals
- Completed LOIs and Agreements
- Boron study to investigate assimilative capacity
- Discussing nitrogen limits for Orange County
- SNWA coordination workshops





# Grants and Funding

*Provide multiple benefits,  
including water  
supply reliability benefits  
for drought-stricken States  
and communities*

- Federal – \$450 M total grant fund to be spent over 5 years in the approved Federal infrastructure bill
- State – \$700 M in drought funding
- Investigating opportunities to accelerate the RRWP schedule to position Metropolitan for grant funding



# Public Outreach

- Stakeholder outreach meetings
- Outreach to Spanish-speaking audiences
- Brochures/fact sheets/press releases
- Conferences and Demo Plant Tours



Stakeholder Meetings

**UNA NUEVA FUENTE DE AGUA PARA EL SUR DE CALIFORNIA**

El agua es demasiado valiosa para usarla una sola vez. Así que el Metropolitan Water District of Southern California está haciendo una inversión importante en un proyecto potencial de reciclaje de agua que reutilizará el agua que, hasta el momento, se desecha al océano.

Tome un recorrido virtual en vivo por el Centro Regional Avanzado de Purificación de Agua Reciclada

Regístrese en [MWDh2o.com/AguaReciclada](https://www.mwdh2o.com/AguaReciclada)

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Regional Recycled Water Advanced Purification Center



LOS ANGELES COUNTY SANITATION DISTRICTS  
Connecting People and Resources

Supporting local, sustainable resources and the economy

## The Benefits of the Regional Recycled Water Program

### A Pioneering Project

The Regional Recycled Water Program is a partnership between The Metropolitan Water District of Southern California and the Los Angeles County Sanitation Districts. The program would create a new water supply to help meet the region's needs by providing up to 150 million gallons of water daily or 168,000 acre-feet-year, enough for 1.5 million people. The water could replenish groundwater basins, be used by industries, and potentially be integrated into Metropolitan's existing drinking water treatment and delivery system.


#### 1. Water Supply Benefits: A New Source of Water for Southern California

- Provides a drought proof supply of water. The program would purify water used from homes, businesses and industries to create a new water supply for the region that is readily available, rain or shine.
- Replenishes groundwater basins. Groundwater basins in the region provide 30% of Southern California's water supply and have seen levels drop to historic lows in recent years. The program would produce a high quality water to refill these basins.
- Creates a local supply of water. New water resources could save imported water supplies from the Colorado River and Sierra Nevada for other uses.
- Increases water resiliency. The program would diversify water supplies and ensure reliability especially due to climate change. It also would prepare the region in case of an earthquake or other emergency that could disrupt these supplies.

**About Metropolitan**  
The Metropolitan Water District of Southern California is a state-established cooperative of 23 member agencies -- cities and public water agencies -- that serve 19 million people in six counties. Metropolitan imports water from the Colorado River and Northern California to supplement local supplies and helps its members develop improved water conservation, recycling, storage and other resource management programs.

**About LACSD**  
The Sanitation Districts are a regional public agency that serves the wastewater and solid waste management needs of 8.6 million people in 78 cities and unincorporated areas of Los Angeles County. The agency protects public health and the environment and, in so doing, converts waste into resources: the recycled water, green energy and recycled materials.

**BE INFORMED. BE INVOLVED.**  
[www.mwdh2o.com](https://www.mwdh2o.com)  
#mwdh2o





# Next Steps in the Cost of Service Process

- Review the RRWP considering Metropolitan's services
  - Refine the assessment of how the Program meets Metropolitans needs
  - Preparing a Program specific document with current information
- Prepare and publish cost functionalization in support of the Cost of Service analysis
  - How is the project paid for?
  - How will the costs be allocated?
- Conduct Board discussions to get feedback
- Complete assessment in 2022

# Potential RRWP Early Start Projects

- Engineering studies, preliminary and final designs prior to RRWP CEQA approval

## LACSD

- Enhanced treatment of solids return flows
- Modifications for nitrogen reduction

## AWT

- Demo plant expansion for DPR testing
- Early site grading/prep
- Early water deliveries

## Conveyance

- Geotechnical investigations
- Preliminary design for tunnels
- West Coast Basin pipeline

## Other

- Additional demo plant testing
- Alternative Delivery contract docs

# Potential RRWP Early Start Projects

Project	Description	Estimated Cost
DPR Expansion of the Demonstration Plant	Provide facilities to test potential processes for suitability and regulatory acceptance for DPR	± \$19 M
JWPCP Sidestream Deammonification Project Preliminary Design	Perform preliminary design for process system to reduce the nitrogen in the Centrate Underflow, reducing AWT chemicals & increasing water quality.	< \$5 M
Preliminary Design for Early Start Projects	Projects TBD, but could include treatment, pump stations, pipelines, tunnels or other RRWP projects	< \$10 M
Preliminary Design for Early Delivery of Water	Potential near-term AWT at the JWPCP for demands in vicinity of the plant	< \$15 M

# Potential Early Delivery of Water

- Work with stakeholder agencies to determine demands that could benefit from the early delivery of water
- Potential demands that could benefit from early delivery
  - West Coast Basin replenishment water (by 2026)
  - Harbor area(s) demands
  - Local industrial demands
- Exact scope and nature of projects TBD
- Projects would be consistent with the future full-scale project
- Potential utilization of an Alternative Delivery Approach
- Coordinate with agencies on delivery amounts and schedules



# Program Schedule



Environmental  
Planning

**IN PROGRESS**



Design and  
Construction

**FUTURE**



Start-up and  
Operations

**FUTURE**





# Water System Operations Manager's Report

Engineering and Operations Committee  
Item 7a

December 13, 2021

# Current Operational Conditions

- 2021 SWP Allocation is 5%
- SWP blend targets are 0% at Weymouth, Diemer, and Skinner plants
- CRA is at 7-pump flow
- DVL to Mills drought operation continues to perform well
- Managing storage based on WSDM principles
- November 2021 deliveries of 144 TAF were 21 TAF higher than November 2020

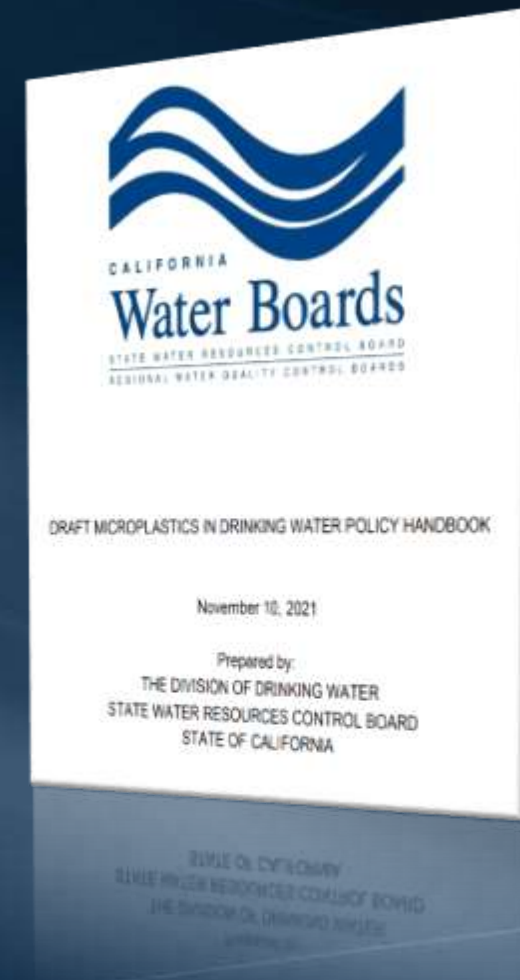


# Ensuring Continued System Reliability



# Monitoring for Microplastics

- SB 1422 (2018): Safe Drinking Water Act, Microplastics
  - Standardized analytical method
  - Four years of monitoring and reporting
- Nov. 10, 2021: SWRCB's Draft Microplastics in Drinking Water Policy Handbook
  - Phase 1 monitoring: microplastics  $\geq 20 \mu\text{m}$  in source waters
    - 2 years starting summer 2022
    - Wholesale providers and large water systems
  - Phase 2: microplastics of all sizes in treated drinking water
    - Details TBD





# Metropolitan Actions on Microplastics

- Participated in inter-laboratory methods evaluation study (2019-21)
- Providing input on SWRCB's Microplastics Policy Handbook
  - Oral comments provided during Nov. 17 SWRCB workshop
  - Written comments to be submitted by Dec. 22
    - Increased time and funding for utilities to prepare for monitoring
    - Exploratory phase to properly develop and validate methods
    - Guidance on public messaging of monitoring results
- Developing in-house monitoring expertise; analytical equipment budgeted for FY 2022/23









# Engineering Services Manager's Report

Engineering and Operations Committee  
Item 7b  
December 13, 2021

# Construction and Procurement Contracts

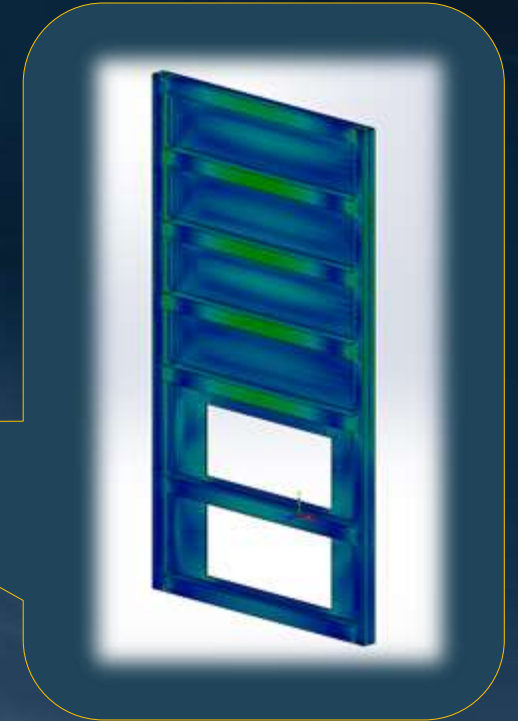
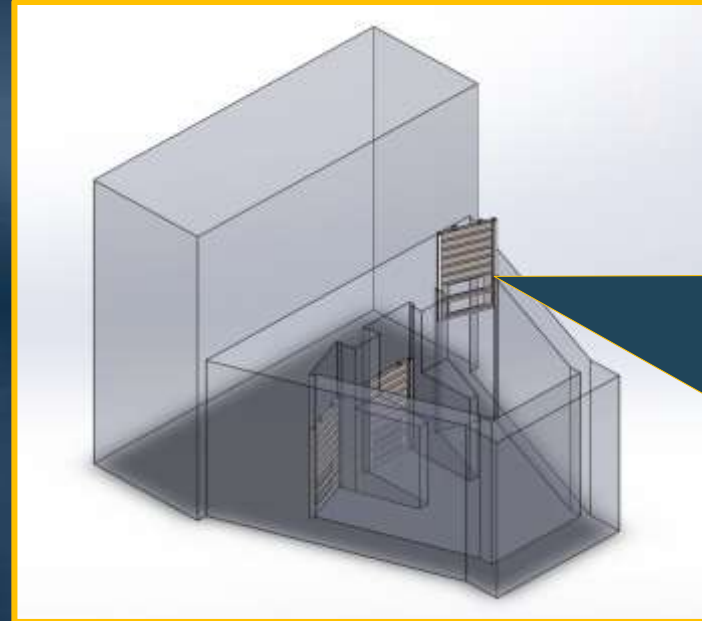
## October 2021

Construction & Procurement Contracts Through October 2021	
Number of Contracts at end of October 2021	35
Total Bid Amount of Contracts in Progress at end of October 2021	\$253.5M
Contracts Awarded in October 2021	2
Contracts With Notice To Proceed Issued in October 2021	2
Contracts Completed in October 2021	0
Contract Gross Earnings in October 2021	\$2.8M

# Climate Action Plan (CAP) Update

- Climate Action Plan and Program Environmental Impact Report released for public review November 18, 2021
  - Both documents are available at [www.mwdh2o.com/CEQ](http://www.mwdh2o.com/CEQ) under the *Environmental Impact Report* tab
- Public Engagement workshop was held on December 1, 2021
- Public Review period runs through January 7, 2022
- Staff will return to the Board in Spring 2022 to adopt the CAP and certify the CEQA document

# CRA 8-Pump Flow Projects



Modified Flow Control Gates at Hinds Pumping Plant



# CRA Transformers Replacement Project

- Scope:
  - Replace 35 main power transformers
- Completed Tasks:
  - Received 7 SOQs from vendors
  - Developed shutdown procedures & construction options
- Upcoming Tasks:
  - Staff workshop to review vendor SOQs and design criteria
  - PCB sampling underneath transformer areas

# Installation of UVC Lights in LAHQ HVAC System



UVC light installation, 5th floor wing



UVC controls in Mechanical Room, 1st Floor

# Staff participation in American Academy of Environmental Engineers and Scientists (AAEES)



Yvette Hanna



Cheng Su



Gloria Lai-Bluml



Adel Hagekhalil



