

**NOTICE OF REGULAR MEETING  
OF THE  
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY  
ENGINEERING COMMITTEE**

**February 8, 2024  
8:30 a.m.**

NOTICE IS HEREBY GIVEN that a Regular Meeting of the South Orange County Wastewater Authority (SOCWA) Engineering Committee was called to be held on **February 8, 2024, at 8:30 a.m.** SOCWA staff will be present and conducting the meeting at the SOCWA Administrative Office located at 34156 Del Obispo Street, Dana Point, California.

THE SOCWA MEETING ROOM IS WHEELCHAIR ACCESSIBLE. IF YOU REQUIRE ANY SPECIAL DISABILITY RELATED ACCOMMODATIONS, PLEASE CONTACT THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY SECRETARY'S OFFICE AT (949) 234-5452 AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE SCHEDULED MEETING TO REQUEST SUCH ACCOMMODATIONS. THIS AGENDA CAN BE OBTAINED IN ALTERNATE FORMAT UPON REQUEST TO THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY'S SECRETARY AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE SCHEDULED MEETING. MEMBERS OF THE PUBLIC HAVE THE OPTION TO PARTICIPATE IN AND MAY JOIN THE MEETING REMOTELY VIA VIDEO CONFERENCE FOR VISUAL INFORMATION ONLY (USE ZOOM LINK BELOW) AND BY TELECONFERENCE FOR AUDIO PARTICIPATION (USE PHONE NUMBERS BELOW). THIS IS A PHONE-CALL MEETING AND NOT A WEB-CAST MEETING, SO PLEASE REFER TO AGENDA MATERIALS AS POSTED ON THE WEBSITE AT [WWW.SOCWA.COM](http://WWW.SOCWA.COM). ON YOUR REQUEST, EVERY EFFORT WILL BE MADE TO ACCOMMODATE PARTICIPATION. FOR PARTIES PARTICIPATING REMOTELY, PUBLIC COMMENTS WILL BE TAKEN DURING THE MEETING FOR ORAL COMMUNICATION IN ADDITION TO PUBLIC COMMENTS RECEIVED BY PARTIES PARTICIPATING IN PERSON. COMMENTS MAY BE SUBMITTED PRIOR TO THE MEETING VIA EMAIL TO ASSISTANT SECRETARY DANITA HIRSH AT [DHIRSH@SOCWA.COM](mailto:DHIRSH@SOCWA.COM) WITH THE SUBJECT LINE "REQUEST TO PROVIDE PUBLIC COMMENT." IN THE EMAIL, PLEASE INCLUDE YOUR NAME, THE ITEM YOU WISH TO SPEAK ABOUT, AND THE TELEPHONE NUMBER YOU WILL BE CALLING FROM SO THAT THE COORDINATOR CAN UN-MUTE YOUR LINE WHEN YOU ARE CALLED UPON TO SPEAK. THOSE MAKING PUBLIC COMMENT REQUESTS REMOTELY VIA TELEPHONE IN REAL-TIME WILL BE ASKED TO PROVIDE YOUR NAME, THE ITEM YOU WISH TO SPEAK ABOUT, AND THE TELEPHONE NUMBER THAT YOU ARE CALLING FROM SO THE COORDINATOR CAN UN-MUTE YOUR LINE WHEN YOU ARE CALLED UPON TO SPEAK. ONCE THE MEETING HAS COMMENCED, THE CHAIR WILL INVITE YOU TO SPEAK AND ASK THE COORDINATOR TO UN-MUTE YOUR LINE AT THE APPROPRIATE TIME.

AGENDA ATTACHMENTS AND OTHER WRITINGS THAT ARE DISCLOSABLE PUBLIC RECORDS DISTRIBUTED TO ALL, OR A MAJORITY OF, THE MEMBERS OF THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY ENGINEERING COMMITTEE IN CONNECTION WITH A MATTER SUBJECT FOR DISCUSSION OR CONSIDERATION AT AN OPEN MEETING OF THE ENGINEERING COMMITTEE ARE AVAILABLE FOR PUBLIC INSPECTION IN THE AUTHORITY ADMINISTRATIVE OFFICE LOCATED AT 34156 DEL OBISPO STREET, DANA POINT, CA ("AUTHORITY OFFICE") OR BY PHONE REQUEST MADE TO THE AUTHORITY OFFICE AT 949-234-5452. IF SUCH WRITINGS ARE DISTRIBUTED TO MEMBERS OF THE ENGINEERING COMMITTEE LESS THAN SEVENTY-TWO (72) HOURS PRIOR TO THE MEETING, THEY WILL BE AVAILABLE IN THE RECEPTION AREA OF THE AUTHORITY OFFICE AT THE SAME TIME AS THEY ARE DISTRIBUTED TO THE ENGINEERING COMMITTEE AND SENT TO ANY REMOTE PARTICIPANTS REQUESTING EMAIL DELIVERY OR POSTED ON SOCWA'S WEBSITE. IF SUCH WRITINGS ARE DISTRIBUTED IMMEDIATELY PRIOR TO, OR DURING, THE MEETING, THEY WILL BE AVAILABLE IN THE MEETING ROOM OR IMMEDIATELY UPON VERBAL REQUEST TO BE DELIVERED VIA EMAIL TO REQUESTING PARTIES PARTICIPATING REMOTELY.

**THE PUBLIC MAY PARTICIPATE REMOTELY BY VIRTUAL MEANS. FOR AUDIO OF MEETING USE  
THE CALL IN PHONE NUMBERS BELOW AND FOR VIDEO USE THE ZOOM LINK BELOW.**

Join Zoom Meeting  
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AGENDA

1. Call Meeting to Order
2. Public Comments

*THOSE WISHING TO ADDRESS THE ENGINEERING COMMITTEE ON ANY ITEM LISTED ON THE AGENDA WILL BE REQUESTED TO IDENTIFY AT THE OPENING OF THE MEETING AND PRIOR TO THE CLOSE OF THE MEETING. THE AUTHORITY REQUESTS THAT YOU STATE YOUR NAME WHEN MAKING THE REQUEST IN ORDER THAT YOUR NAME MAY BE CALLED TO SPEAK ON THE ITEM OF INTEREST. THE CHAIR OF THE MEETING WILL RECOGNIZE SPEAKERS FOR COMMENT AND GENERAL MEETING DECORUM SHOULD BE OBSERVED IN ORDER THAT SPEAKERS ARE NOT TALKING OVER EACH OTHER DURING THE CALL.*

PAGE NO.

3. Approval of Minutes..... 1
  - Engineering Committee Minutes of January 18, 2024

**Recommended Action:** Staff requests that the Engineering Committee approve the subject Minutes as submitted.

4. Operations Report..... 5

**Recommended Action:** Information Item.

5. Budgeted Flow and Solids FY 2024-25 [Project Committees 2, 12, 15, and 17] ..... 6

**Recommended Action:** Staff recommends approval of the CY 2023 flows and solids for use in the FY 24-25 budget.

6. Capital Improvement Construction Projects Progress and Change Order Report (February) [Project Committees 2 and 15] ..... 11

**Recommended Action:** Information Item.

7. Coastal Treatment Plant (CTP) Funding Strategy and Implementation Update [Project Committee 15]..... 14

**Recommended Action:** Committee Discussion/Direction/Action.

8. J.B. Latham Treatment Plant (JBL) Advanced Treatment Evaluation Update [Project Committee 2]..... 43

**Recommended Action:** Committee Discussion/Direction/Action

9. Effluent Transmission Main (ETM) Trail Bridge Crossing Project Update [Project Committee 21, Reach D]..... 44

**Recommended Action:** Committee Discussion/Direction/Action.

10. Capital Improvement Program (CIP) Budget Update .....72

**Recommended Action:** Information Item.

Adjournment

I hereby certify that the foregoing Notice was personally emailed or mailed to each member of the SOCWA Engineering Committee at least 72 hours prior to the scheduled time of the Regular Meeting referred to above.

I hereby certify that the foregoing Notice was posted at least 72 hours prior to the time of the above-referenced Engineering Committee meeting at the usual agenda posting location of the South Orange County Wastewater Authority and at [www.socwa.com](http://www.socwa.com).

Dated this 2nd day of February 2024.



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Danita Hirsh, Assistant Secretary  
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

# Agenda Item

3

**Engineering Committee Meeting**

**Meeting Date:** February 8, 2024

**TO:** Engineering Committee

**FROM:** Roni Grant, Associate Engineer

**SUBJECT:** Approval of Minutes

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## Overview

Minutes from the following meetings are included for review and approval by the Engineering Committee:

- January 18, 2024

**Recommended Action:** Staff recommends that the Engineering Committee approve the Minutes as submitted.



**MINUTES OF SPECIAL MEETING  
OF THE  
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY**

**Engineering Committee**

**January 18, 2024**

**DRAFT**

The Special Meeting of the South Orange County Wastewater Authority (SOCWA) Engineering Committee Meeting was held on January 18, 2024, at 8:30 a.m. in-person and via teleconferencing from the Administrative Offices located at 34156 Del Obispo Street, Dana Point, California. The following members of the Engineering Committee were present:

MARC McAVOY	City of Laguna Beach
HANNAH FORD	El Toro Water District
DAVE LARSEN	Moulton Niguel Water District
DON BUNTS	Santa Margarita Water District
MARC SERNA	South Coast Water District
MIKE DUNBAR	Emerald Bay Service District

Absent:

DAVE REBENS DORF	City of San Clemente
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Staff Present:

JIM BURROR	Acting General Manager/Director of Operations
RONI GRANT	Associate Engineer
MATT CLARKE	IT Administrator
MARY CAREY	Finance Controller
DINA ASH	HR Administrator
ANNA SUTHERLAND	Accounts Payable
JEANETTE COTINOLA	Procurement/Contracts Manager
DANITA HIRSH	Executive Assistant

Also Present:

ADRIANA OCHOA	Procopio Law
TARYN KJOLSING	South Coast Water District
SHERRY WANNINGER	Moulton Niguel Water District
ROGER BUTOW	Clean Water Now (CWN)

1. Call Meeting to Order

Ms. Roni Grant, Associate Engineer, called the meeting to order at 8:32 a.m.

2. Public Comments

None.

3. Approval of Minutes

- Engineering Committee Minutes of November 9, 2023.

ACTION TAKEN

A motion was made by Mr. Bunts and seconded by Mr. Serna to approve the Engineering Committee Minutes for November 9, 2023, as submitted.

Motion carried:      Aye 6, Nay 0, Abstained 0, Absent 1  
Mr. McAvoy              Aye  
Ms. Ford                Aye  
Mr. Dunbar              Aye  
Mr. Larsen              Aye  
Mr. Bunts               Aye  
Mr. Serna                Aye  
Mr. Rebensdorf        Absent

4. Operations Report

Mr. Jim Burror, Acting General Manager/Director of Operations, reported on the schedule and timeline for the FY 2024-25 budget preparation. He stated that the budget assumptions were presented to the Finance Committee for feedback and direction. Mr. Burror also reported on behalf of Ms. Amber Baylor, Director of Environmental Compliance, that she was attending the 2<sup>nd</sup> workshop held by NWRI on ocean acidification modeling efforts to ensure future regulations associated with the process had meaningful impacts on the environment. An open discussion ensued.

This was an information item; no action was taken.

5. J.B. Latham Treatment Plant Package B Project [Project Committee 2]

An open discussion ensued regarding Olsson's response to Butier's TIA analysis. A meet and confer has been requested to discuss options.

This was an information item; no action was taken.

6. Capital Improvement Construction Projects Progress and Change Order Report (January) [Project Committee 2]

Ms. Grant updated the committee on the JBL Centrate Line project upgrades and the CTP Diffusers Replacement project timelines. An open discussion ensued.

This was an information item; no action was taken.

7. Contract Award for Aliso Creek Ocean Outfall and San Juan Creek Ocean Outfall Ballast Maintenance Project [Project Committee 5 and 24]

ACTION TAKEN

A motion was made by Mr. Dunbar and seconded by Mr. Bunts that the PC 5 and PC 24 Boards; i. Find that the Aliso Creek Ocean Outfall and San Juan Creek Ocean Outfall Ballast Maintenance Project is statutorily exempt; ii. Approve a budget amendment for Project 34241O (ACOO Ballast Repair) to increase the Project budget by \$30,000 to \$280,000; and iii. Approve the contract to Subsea Global Solutions, Inc., for a total amount of \$370,000 for the ACOO and SCJOO Ballast Maintenance Project with a contingency of \$37,000 (10% of the contract).

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Motion carried:      Aye 6, Nay 0, Abstained 0, Absent 1  
Mr. McAvoy              Aye  
Ms. Ford                 Aye  
Mr. Dunbar              Aye  
Mr. Larsen              Aye  
Mr. Bunts                Aye  
Mr. Serna                Aye  
Mr. Rebensdorf         Absent

Adjournment

There being no further business, Ms. Grant adjourned the meeting at 8:57 a.m.

I HEREBY CERTIFY that the foregoing Minutes are a true and accurate copy of the Minutes of the Special Meeting of the South Orange County Wastewater Authority Engineering Committee of January 18, 2024, and approved by the Engineering Committee and received and filed by the Board of Directors of the South Orange County Wastewater Authority.

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Danita Hirsh, Assistant Board Secretary  
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

# Agenda Item

4

**Engineering Committee Meeting**

**Meeting Date:** February 8, 2024

**TO:** Engineering Committee

**FROM:** Jim Burror, Acting General Manager/Director of Operations

**SUBJECT:** Operations Report

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## Overview

Verbal update on operations and maintenance activities.

**Recommended Action:** Information Item.

# Agenda Item

5

Engineering Committee Meeting

Meeting Date: February 8, 2024

**TO:** Engineering Committee

**STAFF CONTACT:** Amber Baylor, Director of Environmental Compliance

**SUBJECT:** Budgeted Flow and Solids FY 2024-25  
[Project Committees 2, 12, 15, and 17]

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## Summary

The FY 2024-25 budget includes a calendar year review of 2023 flows and a three-year period for solids at PC 2. The intent of this agenda item is to review the methodology per project committee (PC), which is presented to the Engineering Committee members on an annual basis for review, comment, and approval for use in the annual budget for FY 2024-25.

## Results

Captured herein are the methodologies employed and the results by member agency based on the raw and calculated data, which have been distributed to Engineering Committee members for review and comment. Please note that PC 5 and PC 24 are attributed to fixed costs.

### **PC 2**

Member agency average flows for the calendar year (CY) were used in the flow allocation and applied proportionally from the total combined flow from each tributary trunk line. The PC 2 CY flows and three-year CY average solid loadings to reconcile the budgeted amounts. Solids loadings are calculated by adding the average FY biochemical demand (BOD) and total suspended solid (TSS) and dividing by 2, then multiplying the result by the flow and the 8.34 pounds conversion factor.

In March 2018, PC 2 members Moulton Niguel Water District (MNWD) and Santa Margarita Water District (SMWD) came to an agreement on how to allocate solids for budgeting and use audit purposes. The new method captures the influent loading at Plant 3A as it was recognized that this allocation would isolate MNWD's solids contributions to JBL to a single variable. SMWD solids to JBL is then the balance of solids contributed by the Oso Creek Water Reclamation Plant, 3A, and any other discharges to the Oso Trabuco line to J.B. Latham Treatment Plant (JBL).

Summary results for PC 2 are included in Table 1. The total sum of the metered flows on the line influent into the J.B. Latham facility was 8.02mgd. The percentage difference between metered and billing flows was 8.5%.

<b>PC 2 - JB Latham Plant</b>					
<b><u>Liquids Summary (mgd)</u></b>					
	<b>CY 2023</b>	<b>CY 2023</b>	<b>CY 2023</b>	<b>FY 2024-2025</b>	<b>FY 2024-2025</b>
<b><u>Member Agency</u></b>	<b><u>Budgeted Flow (mgd)</u></b>	<b><u>Budgeted Percent</u></b>	<b><u>Total Avg. Flow (mgd)</u></b>	<b><u>Total Billing Flow (mgd)</u></b>	<b><u>Total Billing (%)</u></b>
San Juan Trunkline <sup>(1)</sup>	2.11		2.24		
MNWD <sup>(2)</sup>	Constant	18.26 %	Constant	1.40	19.08 %
SCWD	1.60	20.85 %	1.74	1.74	23.75 %
Oso-Trabuco Trunkline/SMWD <sup>(1),(2),(3)</sup>	3.96	60.89 %	3.36	4.20	57.17 %
	7.67	100.00 %	7.34	7.34	100.00 %
<b><u>Solids Summary Loading (mgd)</u></b>					
<b>Member</b>	<b>CY 2023</b>	<b>CY 2023</b>	<b>CY 2023</b>	<b>FY 2024-2025</b>	<b>FY 2024-2025</b>
<b>Member Agency</b>	<b>Budgeted Solids (pounds)</b>	<b>Budgeted Percent (%)</b>	<b>Total Solids (pounds)</b>	<b>Billing Solids (pounds)</b>	<b>Total Billing (%)</b>
San Juan Trunkline <sup>(1)</sup>	6202.26		6712.79		
MNWD <sup>(2)</sup>	Constant	17.12 %	Constant	5134.17	19.29 %
SCWD	5692.98	18.80 %	6279.59	6279.59	23.59 %
Oso-Trabuco Trunkline/SMWD <sup>(1),(2),(3)</sup>	18383.53	64.08 %	13628.10	15206.71	57.12 %
	30278.77	100.00 %	26620.47	26620.47	100.00%
(1) San Juan Trunkline was previously allocated to the City of San Juan Capistrano (CSJC). With the acquisition of CSJC's flow by SMWD, the flows are included in SMWD's total flows					

and solids loading and included for clarity in total flows and solids contribution due to sharing of the Oso-Trabuco line by SMWD and MNWD.
(2) Please refer to the MNWD & SMWD Agreement from 2018 for flow/solids splitting in the Oso-Trabuco line.
(3) SMWD Includes Flow from San Juan Creek trunkline flow plus Oso Trabuco flow split minus the 1.4mgd flow constant from MNWD

Table 1: PC 2 Liquids and Solids Summary Table

**PC 12**

The PC 12 method of production is detailed by member agency in the following narrative. City of San Juan Capistrano (CSJC) is the acre-foot sum of the Rosebaum well, the Mission Street Well, and the total reclaimed water from the SMWD/CSJC intertie. For MNWD, it is the amount of reclaimed water produced from the Regional Treatment Plant (RTP) and the 3A Treatment Plant (split with SMWD). South Coast Water District (SCWD) is the total reclaimed water produced from the Coastal Treatment Plant (CTP). The Santa Margarita Water District (SMWD) is the combined sum of reclaimed water produced from the 3A Treatment Plant (proportionally split of influent reported with MNWD due to no separate recycled water meters), the Oso Creek Water Reclamation Plant (OCWRP), the Chiquita Water Reclamation Plant (CWRP), and the Nichols Water Reclamation Plant (NWRP). The Trabuco Canyon Water District (TCWD) is reclaimed water produced from the Robinson Ranch Water Reclamation Plant (RRWRP). Summary results for PC12 are included in Table 2.

<b>PC 12 Recycled Water</b>		
<b>Master Recycled Water Permit</b>		
<b>CY 2023</b>		
<b>Member Agency</b>	<b>Region 9 Recycled Production 2023 acft</b>	<b>% RW Produced 2023 %</b>
MNWD	5037	39.16%
SCWD	618	4.81%
SMWD	6750	52.48%
TCWD	457	3.55%
<b>Total</b>	<b>12862</b>	<b>100.00%</b>

Table 2: PC 12 Liquids and Solids Summary Table

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**PC 15**

Due to the lack of solids handling capacity at the Coastal Treatment Plant (CTP), allocation methodology is based on flows to the treatment plant. In addition, there are no current flow meters installed to account for any flow sent to CTP from MNWD, so no flow is being accounted for in this PC flow allocation methodology. The City of Laguna Beach (CLB) is the average annual flow into CTP (metered). The Emerald Bay Services District (EBSB) is the average annual flow into CTP (calculated from monthly meter read from the lift station divided by the days in the month). The South Coast Water District (SCWD) is the average annual flow into CTP (metered). The meter calibration is performed annually in June. Summary results for PC15 are included in Table 3.

<b>PC 15 Actual Flows</b>		
<b>2023</b>		
<b>Coastal Treatment Plant</b>		
<b>Member Agency</b>	<b>Plant Flows MGD</b>	<b>Plant Flow Percent</b>
<b>CLB</b>	<b>1.65</b>	<b>56.62%</b>
<b>EBSB</b>	<b>0.07</b>	<b>2.24%</b>
<b>SCWD</b>	<b>1.20</b>	<b>41.14%</b>
<b>MNWD</b>	<b>0.00</b>	<b>0.00%</b>
<b>Total</b>	<b>2.92</b>	<b>100.00%</b>

Table 3: PC 15 Liquids and Solids Summary Table

**PC 17**

PC 17 has liquids and solids contribution. The liquid flow allocation is based on influent flow to the plant. The influent flow is solely contributed by the MNWD. Due to no liquid flow from CTP, the centrate flow is summed to create a total liquid flow to the RTP. The flows are then distributed on a proportional basis. The solids contribution is based on the total daily average pounds contributed by each agency distributed proportionally. Additional El Toro Water District (ETWD) solids samples are being used for this report. The meter calibration is performed annually in June. Summary results for PC17 are included in Tables 4 & 5.

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<b>PC 17 Liquids</b> <b>Regional Treatment Plant</b> <b>CY 2023</b>				
Member Agency	Plant Flow (MGD)	Centrate Flow (MGD)	Total Flow (MGD)	Liquid Flow (%)
CLB	0.000	.0131	.0131	0.1737%
EBSD	0.000	.0006	.0006	0.0074%
SCWD	0.000	.0097	.0097	0.1296%
ETWD	0.000	.0169	.0169	0.2247%
MNWD	7.410	.0683	7.4783	99.4647%
<b>Total</b>	<b>7.410</b>	<b>.1086</b>	<b>7.5186</b>	<b>100.0000%</b>

Table 4: PC17 Liquids Summary Table

<b>PC 17 Solids</b> <b>Regional Treatment Plant</b> <b>CY 2023</b>		
Member Agency	#/Day	%
CLB	4311.10	12.02%
ETWD	5680.89	15.84%
EBSD	186.66	0.52%
MNWD	22468.41	62.65%
SCWD	3214.62	8.96%
<b>Total</b>	<b>35861.68</b>	<b>100.00%</b>

Table 5: Solids Summary Table

**Previous Committee Review**

This is the first time the CY 2023 flows and solids used for FY 24-25 will be before the Engineering Committee for discussion and comment.

**Recommended Action:** Staff recommends approval of the CY 2023 flows and solids for use in the FY 24-25 budget.

**Attachment(s)**

CY 2023 Flows and Solids distributed under separate cover.

# Agenda Item

# 6

**Engineering Committee Meeting**

**Meeting Date:** February 8, 2024

**TO:** Engineering Committee

**FROM:** Roni Grant, Associate Engineer

**SUBJECT:** Capital Improvement Construction Projects Progress and Change Order Report (February) [Project Committee Nos. 2 and 15]

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## Overview

This agenda item provides an update on projects in construction, including any change orders. Attached are the updated CIP reports.

## Project Updates

### JBL Centrate Line Upgrades

The notice to proceed (NTP) has been issued to SS Mechanical. Staff is working with the contractor to procure valves and piping for this project.

### CTP Diffusers Replacement

The NTP has been issued to Filanc. Staff is working with the contractor to start the project.

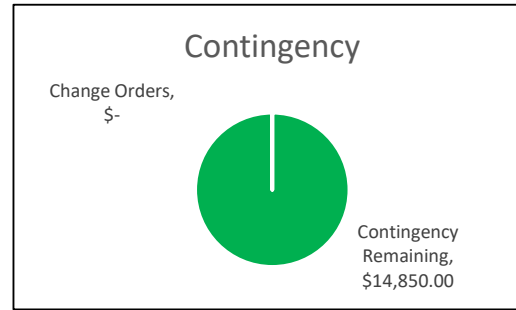
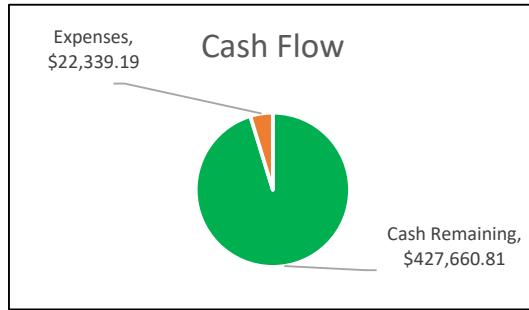
**Recommended Action:** Information Item.

**Project Financial Status**

**Data Last Updated**

Project Committee	2
Project Name	Centrate Line Upgrades - 3234
Project Description	Removal and replacement of centrate drain piping, non-potable water piping in the Solids Dewatering Building

February 1, 2024
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**Cash Flow**

Collected	\$ 450,000.00
Expenses	\$ 22,339.19

**Project Completion**

Schedule	0%
Budget	10%

**Contracts**

Company	PO No.	Original	Change Orders*	Total	Invoiced
S&S Mechanical	19635	\$ 148,455.00		\$ 148,455.00	
Kleinfelder	14234	\$ 71,374.00	\$ -	\$ 71,374.00	\$ 1,299.00
SOCWA Staff Time	3234				\$ 21,040.19
		<b>\$ 219,829.00</b>	<b>\$ -</b>	<b>\$ 219,829.00</b>	<b>\$ 22,339.19</b>

*\*Values include change orders to be reviewed by Engineering Committee*

**Contingency**

Area	Project Code	Amount	Change Orders*	Total Remaining	Percent Used
Solids	3234	\$ 14,850.00		\$ 14,850.00	0.0%
		<b>\$ 14,850.00</b>	<b>\$ -</b>	<b>\$ 14,850.00</b>	<b>0.0%</b>

*\*Values include change orders to be reviewed by Engineering Committee*

**Change Orders**

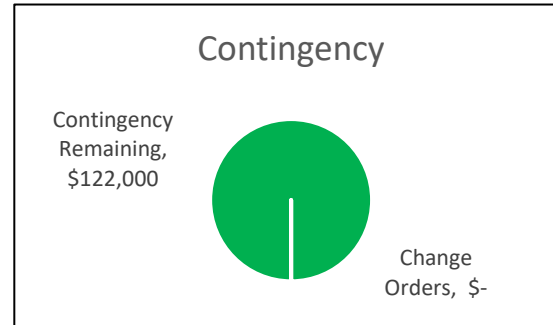
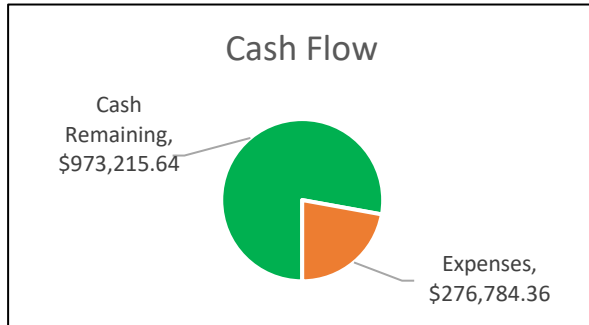
Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
						\$ -

**Project Financial Status**

Project Committee	15
Project Name	CTP Diffusers Replacement
Project Description	Replacement of diffusers in the aeration basins

**Data Last Updated**

February 1, 2024



**Cash Flow**

Collected	\$ 1,250,000.00
Expenses	\$ 276,784.36

**Project Completion**

Schedule	0%
Budget	20%

**Construction Contracts**

Company	PO No.	Original	Change Orders	Amendments	Total	Invoiced
Filanc	19640	\$ 1,022,250.00			\$ 1,022,250.00	\$ -
EDI	16620	\$ 250,490.00			\$ 250,490.00	\$ 250,490.00
Hazen	17256 & 19641	\$ 93,578.00			\$ 93,578.00	\$ -
SOCWA Staff Time	35228L					\$ 26,294.36
		<b>\$ 1,366,318.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,366,318.00</b>	<b>\$ 276,784.36</b>

*\*Values include change orders to be reviewed by Engineering Committee and deductive change orders*

**Construction Contingency**

Area	Project Code	Amount	Change Orders	Total Remaining	Percent Used
Liquids	35228L	\$ 122,000.00		\$ 122,000.00	0.0%
		<b>\$ 122,000.00</b>	<b>\$ -</b>	<b>\$ 122,000.00</b>	<b>0.0%</b>

**Change Orders**

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
						\$ -

# Agenda Item

7

**Engineering Committee Meeting**

**Meeting Date:** February 8, 2024

**TO:** Engineering Committee

**FROM:** Roni Grant, Associate Engineer

**SUBJECT:** Coastal Treatment Plant (CTP) Funding Strategy and Implementation Plan  
[Project Committee 15]

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## Overview

SOCWA has been working with Hazen to develop the CTP funding strategy and implementation plan. The draft report is attached here. Hazen will be at the Engineering Committee meeting to present the findings.

**Recommended Action:** Committee Discussion/Direction/Action.

January 29, 2024

To: South Orange County Wastewater Authority  
From: Lisa Hulette, Hazen and Sawyer, West Funding Lead  
cc: Dave Jones, P.E., Hazen and Sawyer, Vice President

**Re: South Orange County Wastewater Authority - Funding Strategy Plan Development for the Coastal Treatment Plant – Resiliency and Water Quality Improvements**

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## INTRODUCTION

South Orange County Wastewater Authority (SOCWA) is anticipating a 4 million gallon per day (MGD) upgrade to its Coastal Treatment Plant to improve the plant's resiliency and water quality. At SOCWA's request, Hazen and Sawyer (Hazen) will identify potential funding opportunities for this program related to the following Bipartisan Infrastructure Law (BIL). In addition, Hazen will explore grant-related money offered by the following:

- California Department of Water Resources (DWR),
- Federal Emergency Management Agency (FEMA),
- U.S. Bureau of Reclamation (Reclamation),
- U.S. Environmental Protection Agency's Water Infrastructure Finance and Innovation Act (WIFIA) program, and the
- State Water Resources Control Board Clean Water State Revolving Fund (CWSRF) program.





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## **FUNDING BACKGROUND**

The Bipartisan Infrastructure Law (BIL) was signed by President Biden in November 2021. It includes over \$50 Billion of funding (above baseline federal funding) to improve the availability, quality and resilience of water and wastewater infrastructure across the country, especially in historically underserved communities. The availability of BIL funding over the next 4-5 years, combined with new regulatory drivers and aging infrastructure has increased competition for project funding across the state and the nation, necessitating the establishment of informed funding strategies to increase owners' ability to leverage BIL funding.

Key to accessing BIL and other federal funding sources is the ability to demonstrate a project's benefits to historically underserved communities. Passed as part of President Joseph Biden's Executive Order 14008, Justice40 requires that at least 40 percent of the overall benefits from federal climate and infrastructure investments go toward disinvested and overburdened communities. The executive order is particularly beneficial for communities in California where the state's use of median household income (MHI) as an indicator is not as comprehensive for identifying disadvantaged communities that may be positively impacted by a project.

While the infusions of federal funding into existing funding programs are largely beneficial, these funding sources also include some drawbacks that must be considered as part of a project's comprehensive funding strategy. Primary among them is the Build American, Buy American Act (BABA). BABA requires that every federally funded public works project use domestically produced construction materials, iron, and steel. BABA intensifies the supply chain issues occurring locally and nationally and introduces potential for significant project schedule and cost implications for all infrastructure projects, particularly for federally funded projects that are not eligible for a BABA waiver.

The goal of this memorandum was to review the potential benefits and risks of leveraging alternative funding mechanisms to finance SOCWA's Coastal Treatment Plant (CTP) – Resiliency and Water Quality Improvement Program (Program) rather than conventional financing means (i.e., by using bonds and/or revenues alone). By evaluating feasible funding options, the project could potentially provide a greater return on investment with a reduced payback period, and lower rate-payer impacts. As such, this memorandum provides SOCWA with recommendations to inform the most beneficial, viable pathway to financing the CTP Program. The information included in this memorandum considers SOCWA's goals and outlines state and federal funding opportunities. Requirements of each funding source are also summarized.

## **PROJECT DESCRIPTION**

The Coastal Treatment Plant (CTP) is in Laguna Beach, Orange County and has a capacity of 6.7 MGD. The CTP has a recycled water production of up to 1.5 MGD and incorporates preliminary, primary, and secondary treatment processes upstream of the advanced water treatment processes that produce the recycled water. SOCWA is currently exploring alternative treatment alternatives for the CTP as part of a 4 MGD upgrade. A comprehensive Future Alternatives Feasibility Study was completed to analyze treatment alternatives that prepare SOCWA for potential future considerations including regulations for enhanced effluent quality as well as impacts to the Advanced Water Treatment Plant (AWTP) to produce recycled water. Five alternative treatment options were evaluated in the study, where three treatment methods were shortlisted. The three treatment alternatives consist of Biological Nutrient Removal (BNR),



Membrane Bioreactor (MBR), and Aerobic Granular Sludge (AGS). Each short-listed alternative was further developed with site-specific comparative capital costs, operation and maintenance cost impacts, site layouts, and construction sequencing challenges.

Short-term benefits for the project include improvements to the water quality discharged to the ocean, a reduction of PFAS, 1,4-Dioxane, Contaminants of Emerging Concern (CEC's), microplastics, and pathogens as well as an increase to recycled water capacity, and achieving more rigorous overall standards for water recycling. Long-term benefits include an elevated level of treatment, overall reduction of discharge to the ocean, and multiple-barrier treatment options to better provide for potential potable reuse.

In addition to integrating the 4 MGD upgrade to the CTP with the shortlisted treatment alternatives mentioned above, the CTP's current infrastructure will also need repairs, rehabilitation, and replacements over the upcoming years leading up to the upgrade. This will necessitate extra funding.

The primary focus of this document is to provide a comprehensive funding strategy and implementation plan to plot a course to obtain and administer the best available funding opportunities. This document outlines various potential funding sources, offering the needed flexibility to adjust to new funding programs and assisting SOCWA in capitalizing on existing programs to secure capital investment.

**Figure 1. SOCWA Service Area**



## 0. WATER INFRASTRUCTURE FINANCE TERMINOLOGY

### Congressional Earmarks

The term earmark has been used historically to describe distinct types of congressional spending actions, in the 110th Congress (2007-2008), the House and Senate each codified a formal definition of earmark into their respective chamber rules. The Senate codified the definition of

earmark as a “Congressionally directed spending item – a provision or report language included primarily at the request of a Senator providing, authorizing or recommending a specific amount of discretionary budget authority, credit authority, or other spending authority for a contract, loan, loan guarantee, grant, loan authority, or other expenditure with or to an entity, or targeted to a specific State, locality or congressional district, other than through a statutory or administrative formula driven or competitive award process.”<sup>1</sup>

In 2012, the 112<sup>th</sup> Congress (2011-2012), the House and Senate began observing what has been referred to as an “earmark moratorium” or “earmark ban.” The moratorium did not exist in House or Senate rules, however, and therefore was not enforced by points of order. Instead, the moratorium was established by party rules and committee protocols and was enforced by chamber and committee leadership through their agenda-setting power. For example, the Rules of the House Republican Conference for the 112<sup>th</sup> Congress (2011-2012) included a standing order labeled Earmark Moratorium that stated, “It is the policy of the House Republican Conference that no Member shall request a congressional earmark, limited tax benefit, or limited tariff benefit, as Lifting the Earmark Moratorium: Frequently Asked Questions Congressional Research Service 2 such terms have been described in the Rules of the House.”<sup>2</sup>

In a February 26, 2021, press release, the House Appropriations Committee announced that for FY 2022, Members may submit up to 10 requests for Community Project Funding across all the appropriations bills. The total amount available for designation is limited to 1% of discretionary spending<sup>3</sup>. In 2022, President Joseph Biden signed a revision to the Water Resources and Development Act (WRDA), described in greater detail below. SOCWA may want to consider WRDA as a viable funding approach for Coastal Treatment Plant projects.

## **Federal Justice40 Initiative**

The Justice40 Initiative requires that a minimum of 40% of the benefits from specific federal investments be directed to underserved communities. This initiative represents a comprehensive approach involving the entire government and is collaboratively overseen by the Council on Environmental Quality (CEQ), the Office of Management and Budget (OMB), and the White House Office of Domestic Climate Policy. Additionally, the White House Environmental Justice Interagency Council, convened by the CEQ, plays a key role in its implementation. This differs from a State Disadvantaged Community (DAC) which is defined as a community with an annual median household income (MHI) that is less than 80% of the Statewide annual MHI (PRC Section 75005(g)) and those census geographies with an annual MHI less than 60% of the Statewide annual MHI are considered “Severely Disadvantaged Communities” (SDAC).

This particularly matters in communities in California where the use of MHI as an indicator of disadvantage would not fully highlight disadvantages where the data can skew or not include non-monetary forms of disadvantages (i.e., environmental justice communities/underrepresented communities). A Justice 40 Map is required for all federal funding opportunities.

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<sup>1</sup> House and Senate Appropriations Committees, “House and Senate Appropriations Committees Announce Additional Reforms in Committee Earmark Policy.

<sup>2</sup> House Republican Conference, “Conference Rules of the 115th Congress,” Standing Orders for the 115th Congress, <https://www.gop.gov/115th-rules/>.

## Federal Crosscutters

This section discusses the typical federal cross-cutting requirements that apply primarily to project construction activities supported by federal funds, regardless of funding program and type of project. Programs subject to federal cross-cutting requirements include California state funding programs bolstered by federal money (e.g., State Revolving Fund or iBank). The potential burden of federal cross-cutting compliance must be taken into consideration relative to project cost, schedule, and reporting requirements and any related ground-disturbing investigations implemented in the project area.

1. **National Environmental Policy Act (NEPA).** The National Environmental Policy Act (NEPA) was signed into law on January 1, 1970. Most federally funded projects/programs require compliance with NEPA, including water and wastewater projects. Detailed documents are assembled surrounding the project that include information on how the project will promote efforts to prevent, minimize, or eliminate adverse impacts to the environment and stimulate the health and welfare of people, ecological systems, and natural resources. These detailed documents are submitted to the federal agency for review by various cross-cutting federal departments and the public.

For replacement or rehabilitation projects, NEPA compliance could be limited to completing a Categorical Exclusion<sup>4</sup>. However, the extent of NEPA review would be made by the U.S. Bureau of Reclamation (Reclamation) or other federal agency (acting as the federal Lead Agency). At a minimum, the NEPA process may add 3-6 months to the implementation schedule for documentation review, a coordinated review with other federal agencies, and a public comment period.

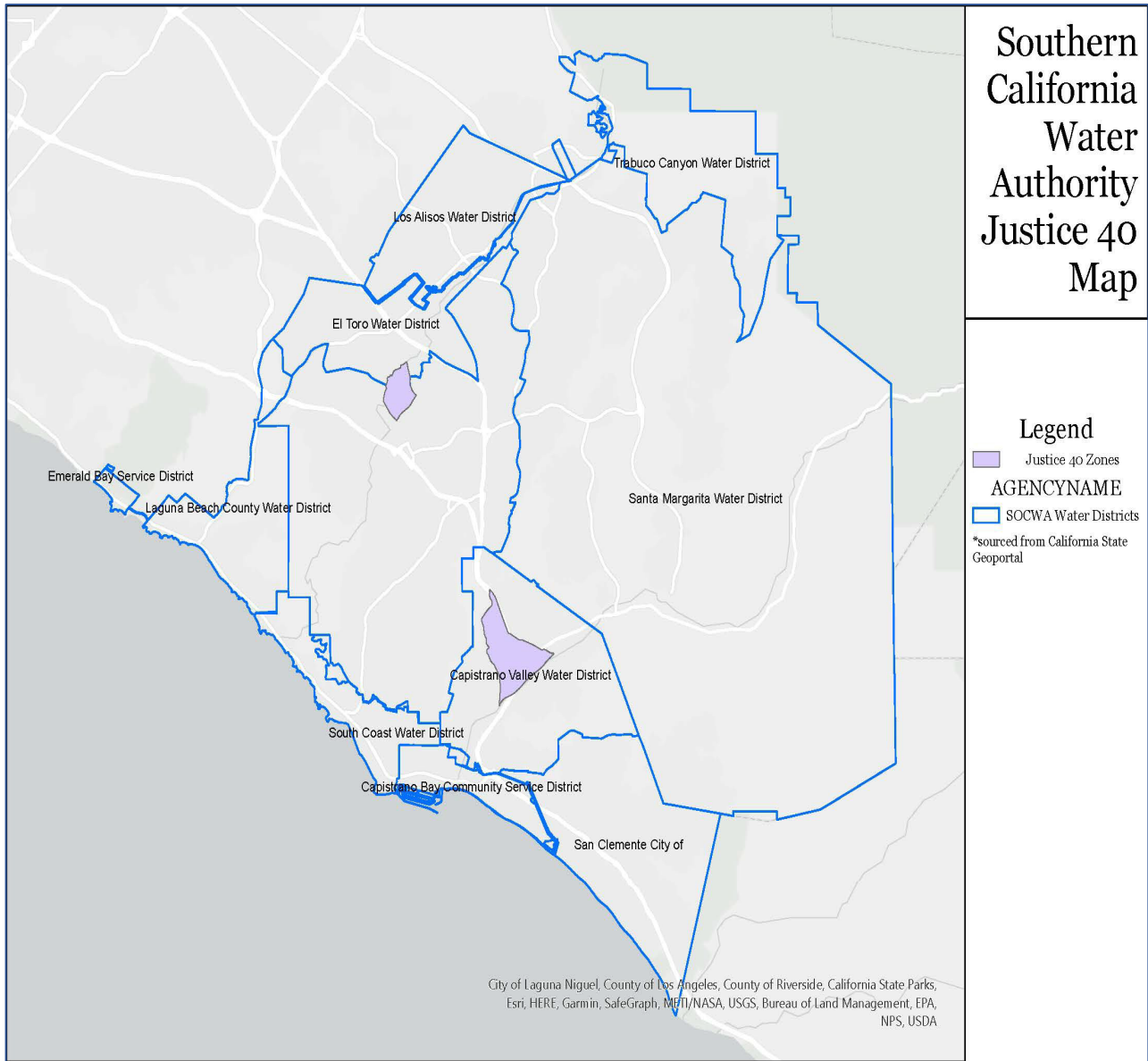
2. **Labor Requirements and Davis-Bacon Related Acts (DBRA).** The Davis-Bacon Act of 1931 was put in place to strengthen working conditions for laborers and mechanics, primarily through the establishment of prevailing wage regulations. As a result of the Great Recession that began in 2007 and ended in June of 2009, the American Recovery and Reinvestment Act (ARRA) and the Water Resources Reform and Development Act (WRRDA) of 2014 made the Davis-Bacon Act and related acts (DBRA) part of the SRF program for construction projects. DBRA only applies to construction or ground-breaking projects where a construction contractor is procured and will be paid for with federal funds. To comply with DBRA, construction contractors must be procured through the requirements in the Federal Code of Regulations (2CFR200.317- 2CFR200.318).
3. **American Iron and Steel (AIS).** As part of the Consolidated Appropriations Act of 2014, the American Iron and Steel (AIS) requirement was put into effect. The AIS requirement is associated with programs that provide funding assistance to and make it mandatory to use iron and steel products that are produced in the United States for the construction, alteration, maintenance, or repair of public water systems or treatment works. Therefore, AIS would apply to the Lead Service Line (LSLR) replacement projects only. The programs that are impacted by this requirement include WIFIA, SRF, and other federally funded projects. This requirement has the potential to increase the cost of construction and could delay the replacement due to ongoing supply chain shortages of iron and steel components.
4. **Build America, Buy America (BABA).** The Build America, Buy America Act (BABA) expands the AIS requirement beyond iron and steel to manufactured products and construction materials used in infrastructure projects funded by federal assistance. BABA

requires all federal agencies to ensure that no federal financial assistance for infrastructure projects is provided unless all the iron, steel, manufactured products, and construction materials used in the project are produced in the United States. (FEMA, 2023)<sup>3</sup> Technical assistance, management costs, planning, engineering, and debris removal projects are not subject to BABAA requirements.

A federal agency may waive the application of a domestic preference under a financial assistance program if the Administrator in charge of the financial assisting program finds that (EPA, 2023):

- Application of the BABAA requirements would be inconsistent with the public interest (“public interest waiver”)
  - Types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality (a “nonavailability waiver”); or
  - The inclusion of iron, steel, manufactured products, or construction materials produced in the United States would increase the cost of the overall project by more than 25% (an
5. **Additional Requirements.** Additional requirements of alternative funding mechanisms can include monitoring and audit requirements and site visits. These items can increase the total project costs if additional consultants are needed to perform these services. While they do not have an impact on the construction schedule, they may impact the overall project timeline.

**Figure 2. Justice 40 Map**



## FUNDING OPPORTUNITIES AND RECOMMENDATIONS

This section summarizes an investigation of funding opportunities and presents preliminary funding recommendations for SOCWA’s CTP Resiliency and Water Quality Improvement Program. The focus of this evaluation was identifying funding sources (e.g., grants, bonds, and loans) with funding eligibility criteria, timing and budget that may potentially align with the schedule for implementation of the CT Resiliency and Water Quality Improvement Program, or discrete projects within the larger program.

Table 1 lists the funding sources that were preliminarily identified to align with Hazen’s understanding of the project scope.

<b>Table 1. Applicable Sources of Infrastructure Funding</b>
<b>Federal</b>
American Rescue Plan Act – State and Local Fiscal Recovery Funds
Bipartisan Infrastructure Law (BIL)
Department of Energy (DOE) Grants
Federal Emergency Management Agency (FEMA) Grants
EPA – Water Infrastructure Financing and Innovation Act (WIFIA)
EPA – Water & Climate Resiliency Grants
Inflation Reduction Act (IRA)
US Bureau of Reclamation (Reclamation) -WaterSmart Grants
<b>State</b>
CA State Drinking Water Revolving Fund (DWSRF)
CA Department of Water Resources

### 1.1.1 THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)

#### 1.1.1.1 Water Infrastructure Finance and Innovation Act (WIFIA)

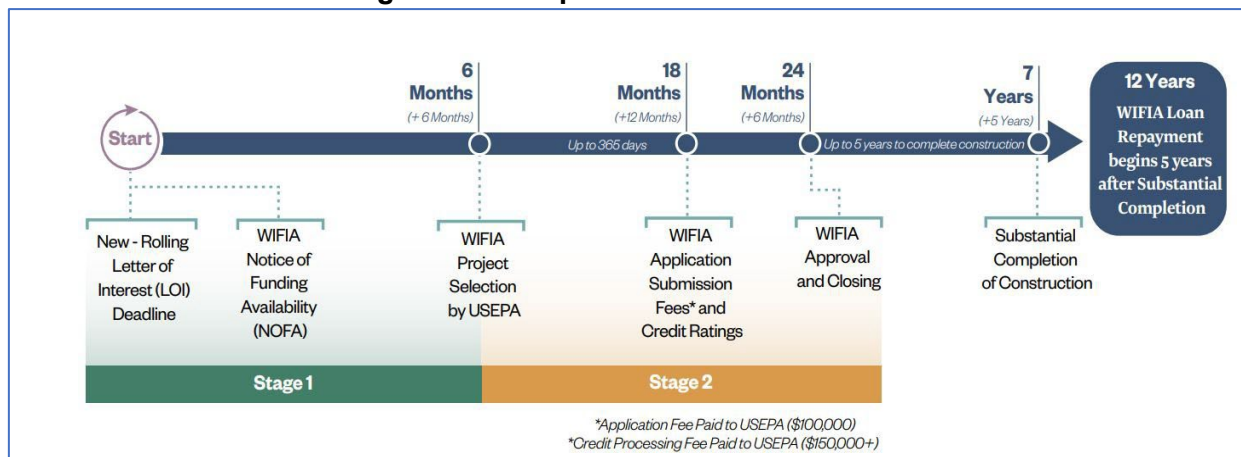
**Description and Intent.** The Water Infrastructure Finance and Innovation Act of 2014 (WIFIA) established the WIFIA program, a federal credit program administered by EPA for eligible water and wastewater infrastructure projects. WIFIA and the WIFIA implementation rule outline the eligibility and other requirements for prospective borrowers. The benefits of the WIFIA program increase as the project size increases. By strategically scoping the inventory and implementation SOCWA can optimize WIFIA funding to enhance return on investment, however this may also add some complexity to the application and to overall loan administration.

**Estimated Funding Opportunity Window.** The WIFIA program sets its interest rate based on the U.S. Treasury rate on the date of loan closing. The rate is calculated using the weighted average life (WAL) of the loan rather than the loan maturity date. The WAL is generally shorter than the loan’s actual length, resulting in a lower interest rate. WIFIA loan applications are accepted on a rolling basis. Interest rate will be equal to or greater than the U.S. Treasury rate of



a similar maturity. **Figure 3** is a sample schedule that may be truncated or expanded based on the project approach and timeline.

**Figure 3: Example WIFIA Loan Schedule**



- Minimum Project Size \$20 million
- Minimum Project Size for Small Communities (25,000 or less): \$5 million
- Maximum portion of eligible project costs that WIFIA can fund: 49%

**Recommendation.** Consider developing a programmatic WIFIA loan agreement for the entirety of The Coastal Treatment Plant – Resiliency and Water Quality Improvement Program. This can also be accomplished by each of the member cities as stand-alone loan agreements and/or use a multi-city/utility approach. If a WIFIA agreement is pursued, then note that the maximum federal funding that can go to the project(s) are 80% of total project cost.

## 1.1.2 CALIFORNIA STATE WATER RESOURCES CONTROL BOARD (SWRCB)

### 1.1.2.1 Clean Water State Revolving Fund (CWSRF)

**Description and Intent.** The CWSRF program assists public water systems in financing the cost of water Reclamation infrastructure projects needed to achieve or maintain compliance with Clean Water Act requirements, administered by the State Water Resources Control Board (SDWA) requirements. The State Water Resources Control Board’s interest rate for Clean Water State Revolving Fund financing is 50 percent of California’s average general obligation bond rate obtained by the State Treasurer for the previous calendar year. The FY23/24 CWSRF Intended Use Plan has added incentives for “New consolidation incentives to encourage the regionalization of wastewater service (State Water Resources Control Board, 2023).” Priorities for CWSRF include Disadvantaged Communities (DACs) and Small Severely Disadvantaged Communities (SDACs); Onsite Wastewater Treatment Systems; San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta); and Sustainability and Climate Change projects .



The CA CWSRF interest rates are at or near 2.10%. Below are the steps detailing the CWSRF process:

1. Contact SWRCB's Division of Financial Assistance (Division) to coordinate your application with the project schedule.
2. Complete the below packages and submit via the SWRCB's Financial Assistance Application Tool (FAAST). Example SRF packages can be available to SOCWA upon request.
  - a. Potential Red Flags Worksheet
  - b. General Project Information Worksheet
  - c. Technical Application Package
  - d. Environmental Package
  - e. Financial Security Package

**Estimated Funding Opportunity Window.** The estimated funding opportunity for CWSRF is ongoing and awards are given out on a rolling basis and must be submitted by 12/31 to be considered for funding in the next fiscal year as prioritized in the CWSRF Intended Use Plan (IUP).

**Recommendation.** Consider developing a programmatic or project specific CWSRF loan agreement for the entirety of The Coastal Treatment Plant – Resiliency and Water Quality Improvement Program led by SOCWA or, for stand-alone project, led by each member city, as appropriate. Given the ongoing high loan demand on the CWSRF compared to the funds available, the State Water Board will not be able to fund all projects currently requesting loan funding in SFY 2023-24 or anticipated in 2024-2025. If SOCWA is considering utilizing this type of loan interest loan for funding, then consultation with SWRCB early in the process is recommended.

### 1.1.3 FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

#### 1.1.3.1 Hazard Mitigation Grant Program (HMGP)

**Description and Intent.** FEMA's Hazard Mitigation Grant Program provides funding to state, local, tribal, and territorial governments so they can develop hazard mitigation plans and rebuild in a way that reduces, or mitigates, future disaster losses in their communities. This grant funding is available after a presidentially declared disaster.

- Minimum Project Cost: \$ 100,000
- Maximum Grant: \$5,000,000

**Estimated Funding Opportunity Window.** FEMA HMGP only opens after a Presidential Declaration of Disaster. The first step of the application is a Notice of Intent, which establishes eligibility and then the sub-applicant has about 3 months to submit application to the California Office of Emergency Services (CalOES). CalOES is the applicant, and SOCWA would be the sub-applicant.



**Recommendation.** HMGP is an excellent source of grant funding for infrastructure projects. Since the Notice of Funding Opportunity is only released after a Presidential Declaration of Disaster and the Benefit-Cost Analysis component of the grant sub-application is tied to disaster economics before and after mitigation, SOCWA may want to consider preparing a task order for the development of a project specific sub-application to prepare for this future grant opportunity.

### 1.1.3.2 *Building Resilient Infrastructure and Communities (BRIC)*

**Description and Intent.** BRIC is a nationally competitive mitigation grant program designed provide states, local communities, tribes, and territories to address high-level future risks to natural disasters such as wildfires, drought, hurricanes, earthquakes, extreme heat, and

increased flooding to foster greater community resilience and reduce disaster suffering. The program's guiding principles are supporting communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large infrastructure projects; maintaining flexibility; and providing consistency.

**Estimated Funding Opportunity Window.** FEMA BRIC releases its Notice of Funding Opportunity (NOFO) through the CalOES, usually around August of each year. The first step of the application is a Notice of Intent, which establishes eligibility and then the sub-applicant has about 3 months to submit application to the California Office of Emergency Services (CalOES). CalOES is the applicant, and SOCWA would be the sub-applicant.

- Minimum Project Size \$250,000
- Maximum Federal Share: \$50,000,000

**Recommendation.** This grant opportunity has an emphasis on building resilient communities using nature-based solutions and stakeholder inclusion. This grant application has a strong emphasis on economics and pre & post-mitigation costs, which required in the Benefit-Cost Analysis. SOCWA should consider a project within the larger CTP Program that has these elements, develop a list of projects that can be pre-screened through BRIC's scoring criteria and then choose a project, no later than July to be ready for the release of the NOFO in August.

## 1.1.4 **UNITED STATES BUREAU OF RECLAMATION (Reclamation)**

### 1.1.4.1 *WaterSMART Water and Energy Efficiency Grants*

**Description and Intent.** On-the-ground water management improvement projects, including projects that conserve water and address water supply reliability. Up to \$500,000 for projects to be completed within two years; up to \$2 million for projects to be completed within three years; and up to \$5 million for large projects to be completed within three years.

Benefits related to the upgrades to the CTP which would align with this grant include improving water discharged to the ocean, increased recycled water capacity, and meeting stringent water reuse requirements which would support and address overall water supply reliability.

## Estimated Funding Opportunity Window

- Calendar Year 2024 Application Due Date: February 22, 2024
- Cost Share: 50 percent or more of total project costs.
- No minimum set
- Maximum Award: \$5,000,000

**Recommendation.** This grant program requires a Drought Management Plan (DMP) and/or a Water Conservation Plan that meets Reclamation requirements. For cities that have a DMP, this is an underutilized funding opportunity that SOCWA would have a high chance of grant success. The first steps would be to contact Reclamation staff and initiate a pre-grant consultation to determine eligibility and pathway to success.

### 1.1.4.2 *WaterSMART Drought Resiliency Projects*

**Description and Intent.** Drought Resiliency can be defined as the capacity of a community to cope with and respond to drought. Under this element of the program, RECLAMATION will provide funding for projects that will help communities prepare for and respond to drought. Typically, these types of projects are referred to as "mitigation actions" in a drought contingency plan. RECLAMATION will fund projects that will build resiliency to drought by:

- Increasing the reliability of water supplies
- Improving water management
- Providing benefits for fish and wildlife and the environment

Benefits related to the upgrades to the CTP which would align with this grant include having advanced treatment processes required to meet current drinking water standards which would support and address overall water supply reliability which would support recycled water capacity for SOCWA's service area.

## Estimated Funding Opportunity Window.

- Application Due Date: The 2024 Funding Opportunity was posted August 7, 2023. Applications received by November 7, 2023, are currently under review. Selections are expected around mid- March 2024. A NOFO for federal FY 24/25 is expected to be released August 2024.
- Cost Share: 50 percent or more of total project costs.
- Minimum Award: \$25,000
- Maximum Award: \$5,000,000

**Recommendation.** This grant program requires a Drought Management Plan (DMP) and/or a Water Conservation Plan that meets Reclamation requirements. This is a highly competitive grant opportunity for cities that rely on either the Colorado River or the State Water Project. The first steps would be to contact Reclamation staff and initiate a pre-grant consultation to determine eligibility and pathway to success.

### 1.1.4.3 *WaterSMART Environmental Water Resources Projects*

**Description and Intent.** WaterSMART Environmental Water Resources Projects is a category of



funding to support projects focused on environmental benefits and that have been developed as

part of a collaborative process to help conduct an established strategy to increase the reliability of water resources. Applicants are invited to leverage their money and resources by cost sharing with Reclamation on Environmental Water Resources Projects, including water conservation and efficiency projects that result in quantifiable and sustained water savings and benefit ecological values or watershed health; water management or infrastructure improvements to benefit ecological values or watershed health; and watershed restoration projects benefitting ecological values or watershed health that have a nexus to water resources or water resources management.

Benefits related to the upgrades to the CTP which would align with this grant include the short-term benefit of improving water discharged to ocean as well as the overall long-term benefit of reducing discharge to the ocean which would support ecological values. The upgrades to CTP would also result in multiple barrier treatment that would make overall improvements to ocean water discharge and provide improved treatment for potential potable reuse.

### **Estimated Funding Opportunity Window**

- Selections for the FY23 Environmental Water Resources Projects funding opportunity were announced November 15, 2023. Reclamation releases NOFO's for this grant type on an annual basis and is expected to release a FY24 NOFO in spring 2024.
- Cost Share: 25 percent or more of total project costs.
- Minimum Award: No minimum set
- Maximum Award: \$3,000,000

**Recommendation.** This grant program requires a Drought Management Plan (DMP) and/or a Water Conservation Plan that meets Reclamation requirements. This is a highly competitive grant opportunity for cities that rely on either the Colorado River or the State Water Project. The first steps would be to contact Reclamation staff and initiate a pre-grant consultation to determine eligibility and pathway to success.

#### *1.1.4.4 WaterSMART Planning and Project Design Grants*

**Description and Intent.** New for 2023, Project Design Grants offers cost sharing with Reclamation for the site-specific final design of medium and large-scale on-the ground water supply construction (including domestic water supply projects for Tribes, insular areas, and disadvantaged communities), water management construction, and restoration projects. This grant has funding for both Water Strategy Grants and Project Design Grants as well as Drought Contingency Planning.

Benefits related to the upgrades to the CTP which would align with this grant include having long-term drivers for advanced treatment and potable reuse in the region.

### **Estimated Funding Opportunity Window**

- Calendar Year 2024 Application Due Date: April 2, 2024.
- Cost Share: 0 percent, 25 percent, or 50 percent, depending on the project type.
- Minimum Award: \$100,000.00 (Planning & Design)

- Maximum Award: \$400,000.00 (Planning & Design)
- Minimum Award: \$25,000 (Drought Contingency Planning)
- Maximum Award: \$400,000 (Drought Contingency Planning)

**Recommendation.** A first step for receiving Reclamation funding for any opportunities that fall under the WIIN Act is to develop a feasibility study. SOCWA should consider applying for this funding to develop a Congressionally Authorized Feasibility Study for the entirety of the CTP Program. The first step is to consult with Reclamation to determine which components of SOCWA's program can be included in a Reclamation funded feasibility study.

#### 1.1.4.5 *WaterSMART Water Recycling and Desalination*

**Description and Intent.** Water recycling and desalination are essential tools for stretching limited water supplies in the Western United States. Reclamation provides cost-shared funding on a competitive basis for planning, design, and construction of water recycling and desalination projects. Funding is made available for projects through the Title XVI Water Reclamation and Reuse Program, the Desalination Construction Program, and the Large-Scale Water Recycling Program.

Benefits related to the upgrades to the CTP which would align with this grant include long term advanced treatment and reuse in the region as well as short-term drivers for improved recycled water capacity.

#### **Estimated Funding Opportunity Window**

- Calendar Year 2024 Application Due Date: September 30, 2024.
- Cost Share: 75 percent or more of total project costs.
- Minimum Award: No minimum set
- Maximum Award: Up to \$200 Million. The Federal Award Amount is based on a max of 25% of the expected total project cost.

**Recommendation.** This funding source requires a Congressionally Authorized Title XVI Feasibility Study. The first step for this funding is to work with Reclamation, either through a funding agreement or other federal nexus, to develop a Reclamation approved study for consideration by Congress.

#### 1.1.4.6 *WaterSMART Large-Scale Water Recycling Project*

**Description and Intent.** The program will provide \$450 million over the next five years to projects in Reclamation states that have a total project cost greater than or equal to \$500,000,000, at 25% Federal cost share, with no per-project maximum. Large-scale recycled water projects will play a key role in helping communities develop local, drought-resistant sources of water supply by turning currently unusable water sources into a new source of water supply that is less vulnerable to drought and climate change.

Benefits of the upgrades to the CTP include long term drivers that would reduce dependence on traditional water supplies and increase resiliency efforts which would align with this program.

## Estimated Funding Opportunity Window

- Calendar Year 2024 Application Due Date: September 30, 2024.
- Cost Share: 75 percent or more of total project costs.
- Minimum Award: No minimum set
- Maximum Award: Up to \$180 Million. The Federal Award Amount is based on a max of 25% of the expected total project cost.

**Recommendation.** This funding source requires a Congressionally Authorized Title XVI Feasibility Study. The first step for this funding is to work with Reclamation, either through a funding agreement or other federal nexus, to develop a Reclamation approved study for consideration by Congress.

### 1.1.5 WaterSMART TITLE XVI

Title XVI of P.L. 102-575, as amended (Title XVI), provides authority for Reclamation's water recycling and reuse program, titled "Title XVI." Through the Title XVI program, Reclamation identifies and investigates opportunities to reclaim and reuse wastewater and impaired ground and surface water in the 17 Western States and Hawaii. Title XVI includes funding for the planning, design, and construction of water recycling and reuse projects in partnership with local government entities. Funding for implementation of projects must have a Congressionally Authorized Feasibility Report that has been approved by the Reclamation.

#### 1.1.5.1 Title XVI Congressionally Authorized Projects

**Description and Intent.** The objective of this program is to invite sponsors of congressionally authorized water Reclamation and reuse projects (Projects) to request cost-shared funding for the planning, design, and/or construction of those Projects. Benefits of the upgrades to CTP would include improving recycled water capacity, which would encourage water reuse. These benefits would align with this program.

#### Funding Opportunity Window.

- Calendar Year 2024 Application Due Date: September 30, 2024.
- Cost Share: 75% or more of total project costs.
- Minimum Award: None set
- Maximum Award: Up to \$20 Million unless otherwise specified by Congress.

**Recommendation.** This funding source requires a Congressionally Authorized Title XVI Feasibility Study. The first step for this funding is to work with Reclamation, either through a funding agreement or other federal nexus, to develop a Reclamation approved study for consideration by Congress.

#### 1.1.5.2 WaterSMART: Desalination Construction Projects Under the WIIN Act

**Description and Intent.** The Water Infrastructure Improvements for the Nation (WIIN) Act provides new authority to the Reclamation to develop a desalination construction program that will provide a path for ocean or brackish water desalination projects to receive Federal funding. Benefits of the upgrades to the CTP include conserving and enhancing recycled water capacity

for water reuse which would improve overall water supply which would align with this program. To be eligible for WIIN Act funding, the CTP project that SOCWA is seeking must have a completed Title XVI feasibility study submitted to the Reclamation. Completed feasibility studies must be found by Reclamation to meet all the requirements of WTR 11-01. If a feasibility study has been reviewed by Reclamation and found to meet the requirements of WTR 11-01, but the review findings have not yet been transmitted to Congress, Reclamation will transmit those findings to Congress either before project selections are made or concurrently with project selections.

## **Estimated Funding Opportunity Window.**

- Calendar Year 2024 Application Due Date: September 30, 2024.
- Cost Share: 75% or more of total project costs.
- Minimum Award: None set
- Maximum Award: Up to \$30 Million per project. The Federal Award Amount is based on a max of 25% of the expected total project cost.

**Recommendation.** This funding source requires that a Congressionally Authorized Title XVI Feasibility Study be submitted to and is in the review process by Reclamation. The study does not have to be authorized by Congress, but steps must be documented showing progress toward authorization. The first step for this funding is to work with Reclamation, either through a funding agreement or other federal nexus, to develop a Reclamation approved study for consideration by Congress.

### *1.1.5.3 WaterSMART: Title XVI WIIN Act Water Reclamation and Reuse Projects for Fiscal Years 2023 and 2024*

**Description and Intent.** Through the Title XVI Water Reclamation and Reuse Program (Title XVI), authorized by P.L. 102-575 in 1992, Reclamation provides financial and technical assistance to local water agencies for the planning, design, and construction of water Reclamation and reuse projects. Water recycling is a valuable tool used to stretch limited water supplies in the Western United States. Title XVI projects develop and supplement urban and irrigation water supplies through water reuse—thereby improving efficiency, providing flexibility during water shortages, and diversifying the water supply. These projects provide growing communities with new sources of clean water which increases water management flexibility and makes water supplies more reliable.

## **Estimated Funding Opportunity Window**

- Calendar Year Application Due Date: September 30, 2024.
- Cost Share: 75% or more of total project costs.
- Minimum Award: None set
- Maximum Award: Up to \$30 Million per project. The Federal Award Amount is based on a max of 25% of the expected total project cost.

**Recommendation.** This funding source requires that a Congressionally Authorized Title XVI Feasibility Study be submitted to and is in the review process by Reclamation. The study does not have to be authorized by Congress, but steps must be documented showing progress toward authorization. The first step for this funding is to work with Reclamation, either through a funding agreement or other federal nexus, to develop a Reclamation approved study for consideration by Congress.



## 1.1.6 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)

### 1.1.6.1 *Environmental Protection Agency (EPA) Midsize and Large Drinking Water Systems Infrastructure Improvement Grant & Sustainability Program*

**Description and Intent.** This grant program assists medium and generous size public water systems with protecting drinking water sources from natural hazards, extreme weather events, and cybersecurity threats. Funds may also be used for projects or programs that:

- Reduce extreme weather events and cybersecurity vulnerabilities.
- Conserve or enhance water supply through water reuse measures.
- Form regional water partnerships to address water shortages.

All public water systems that serve a community with a population of 10,000 or more. 50% of the program's appropriation will go to public water systems that serve a population of between 10,000 and 100,000, and 50% of the program's appropriation will go to public water systems that serve a population 100,000 or more.

#### **Estimated Funding Opportunity Window**

The Notice of Funding Opportunity (NOFO) for this grant is anticipated to be released in spring 2024.

**Recommendation** Benefits of the upgrades to the CTP include conserving and enhancing recycled water capacity for water reuse with long term benefits of improving advanced treatment and reuse in the region which would align with this program.

## **ALTERNATIVE FUNDING SOURCES**

### 2.1.1 **Water Resources Development Act (WRDA).**

The Water Resources Development Act (WRDA) is a pertinent legislation in the U.S., enabling the Army Corps of Engineers (USACE) to conduct studies, construct projects and research activities that can lead to the improvement of rivers and harbors of the United States. The U.S. Army Corps of Engineers (USACE) is a Department of Defense agency that develops water resource projects, principally to improve navigable channels, reduce flood and storm damage, and restore aquatic ecosystems. Congress often considers, on a biennial schedule, omnibus legislation to authorize USACE water resource activities. Congress regularly refers to this legislation as a Water Resources Development Act (WRDA). WRDAs are distinguished from each other by the year of enactment (e.g., WRDA 1986). Authorization is generally a precondition for USACE activities to be eligible for federal appropriations. To obtain WRDA funding, SOCWA will first need to contact the Southern Area Office in Los Angeles. The office contact information is: U.S. Army Corps of Engineers, 40015 Sierra Highway, Suite B145, Palmdale, CA, 93554 or by phone at (661) 265-7222.

### 2.1.2 **The Safe, Clean Water Program (Measure W).**

The Safe, Clean Water Program (SCWP), also known as Measure W, is funded by the local taxpayers and has many mechanisms for supporting transparency and accountability in the expenditure of those funds. The new parcel tax now mandates a 2.5 cent/square foot assessment

on all buildings located in Los Angeles County. Revenue generated from Measure W will help cities across the County meet obligations under the federal Clean Water Act and associated permits that are given out by the state. Funds are being used to pay for regional and municipal projects that improve water quality and may also increase water supply and provide community benefits such as parks or wetlands. This is especially critical as the region and the state needs to be more water resilient as we face the effects of climate change. Additionally, 10 percent of the revenue is earmarked for the L.A. County Flood Control District for administration. Measure W currently only provides funding for projects in Los Angeles County. ***This is not a viable option for SOCWA or projects in Orange County.***

### **2.1.3 Water rates and surcharges.**

Establishing cost-based rates, fees, and charges is a key component in a well-managed and operated water utility. Cost-based rates provide sufficient funding to allow communities to build, operate, maintain, and reinvest in their water system that provides the community with safe and reliable drinking water and fire protection. Properly and adequately funded water systems also allow for the economic development and sustainability of the local community. The purpose of this manual is to discuss standard practices in financial planning and rate making that a utility can use to establish cost-based rates, fees, and charges to recover the full costs associated with their water system. (American Water Works Association, 2021).

### **2.1.4 Municipal bonds.**

The current market and estimated bond rate. As of December 12, 2023, Interest rates have been trending down for the last 6 weeks as the market sees signs of a rebound from higher yields this year. The rally came after the Fed meeting in October 2023 with the markets predicting fed cuts in 2024. As of December 15, 2023, employment data was strong and the debt that is invested by the United States yields increased. For a 20-year tax-exempt water revenue rate, a good ballpark is 4.50%. As the market trends into 2024, Hazen can provide SOCWA with more information on Municipal Bonds and update on the impact to ratepayers. (NHA, 2023)

### **2.1.5 Private capital and Non-Governmental Organizations (NGO).**

In addition to federal and state resources, nonprofit foundations have provided funding for water infrastructure:

- **Pisces Foundation:** Pisces Foundation is based in San Francisco and has a large philanthropic focus on water issues throughout the west. Their water strategy is “We support local efforts in cities from coast-to-coast to implement One Water approaches, like green infrastructure, which can reduce water pollution, add parks and other amenities, reduce flooding, and augment water supply. We fund leaders who are bringing this new thinking and bold practice to the urgent task of ensuring safe, sufficient, and secure water, creating more resilient communities, healthier waters, and stronger economies.” (Pisces Foundation, 2022)

**Pisces Foundation Projects:** The Pisces Foundation does not accept unsolicited proposals; however, they have supported organizations throughout California to implement innovative solutions to protect and conserve water. The level of giving ranges from \$5,000 to \$2,000,000 and may be a good strategy for a partnership, but not for considerable water infrastructure project funding.



- **Ford Foundation:** The goal of the Ford Foundation with regards to Climate and the Environment is “Throughout the Global South, the extraction of natural resources—metals, minerals, forests, and fossil fuels—is growing rapidly, causing severe environmental damage and social harm, particularly to indigenous and rural communities. Added to that, weak governance and corruption mean that revenues from extraction disproportionately benefit big corporations, and all too commonly bypass the communities of origin entirely.

**Ford Foundation Projects:** Their philanthropic focus is in Central and South America. This potential funding source was reviewed but deemed not a good fit for SOCWA.

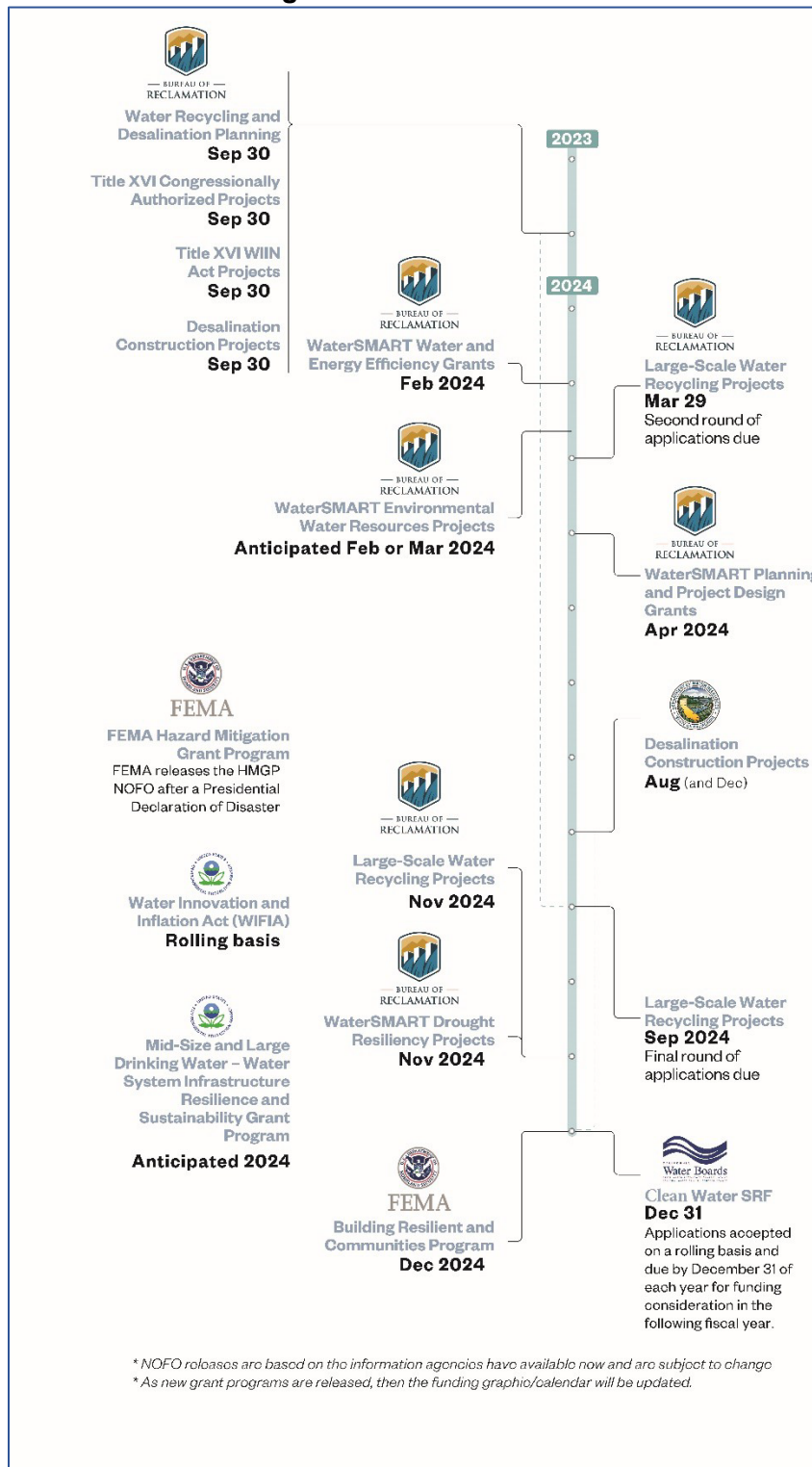
- **Walton Family Foundation:** The goal of the Walton Family Foundation (WFF) regarding water is “protecting water during climate change is one of the most important challenges of our time. Whether it is droughts, floods, wildfires, rising sea levels or changes in the ocean food chain – climate change affects every place we have water. We are in a water crisis, and we need to act like it. The foundation’s Environment strategy seeks lasting water solutions in three key geographies: The Colorado River Basin, the Mississippi River Basin, and our Oceans. Our goal is to make sure there is enough healthy, available water for people and nature to thrive together.” (Walton Family Foundation, 2023)

WFF does not seek unsolicited proposals; however, a relationship can be started if SOCWA has projects that reduce reliance on water from the Colorado River, protect beaches or lessen water quality impacts to the ocean.

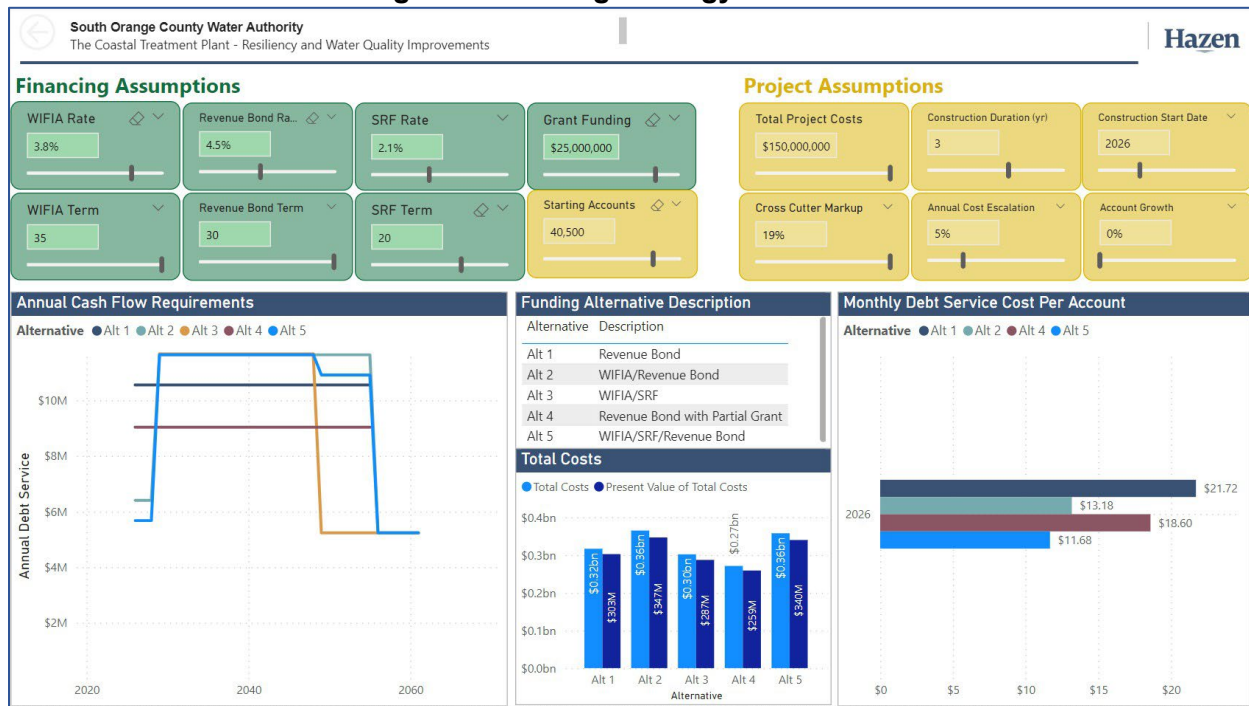
**WFF Projects:** United States funded projects have centered around reduction of reliance on Colorado River, and while WFF states that their geography spreads to California, examples projects are primarily research. This may not be a good fit for SOCWA unless there is an innovative research project, in partnership with UC Irvine or other universities, to be considered.

## FUNDING TIMELINE AND TOTAL COST DASHBOARD

Figure 4. Grant Timeline



**Figure 5. Funding Strategy Dashboard**



### 3.1.1 RECOMMENDATION SUMMARY

After completing a preliminary evaluation, Hazen has identified potential funding options for SOCWA. The following are options further assessed; however, there are several combinations that can be assembled to accomplish the mission of funding CIP water related projects.

#### Leveraging funding opportunities.

- Reviewing various aspects of a project to combine funding to offset loan amounts
- Optimizing components of projects that could be within a project and highlighting that aspect to create a portion that is fundable to grant programs.
- This could be an option for if the full scope of the program has not yet been formulated. Additional project investigation and agency conversations should be part of the vetting process.

The option of using the SRF with the WIFIA and offsetting debt with grant funding is the most valuable to the CTP Resiliency and Water Quality Improvement Program. This option has the potential for being partnered with other funding to offset the loan repayments.

Hazen has evaluated the recommended financing option, included a Funding Dashboard that can be utilized to weigh the potential financial fiscal impacts, project cost, interest rates, grant amounts, crosscutter requirements percentage increases, etc., and allow SOCWA to better evaluate the savings and impacts to rate payer that each funding option provides.

## PROPOSED NEXT STEPS

There are several circumstances that come into view due to the increasing cost because of federal requirements that have been placed into effect with the new legislation of the BIL and IRA. However, municipalities can capitalize on the benefits of lower interest rates, longer terms, and flexible cash flows. Additional workshops should be a consideration to best understand SOCWA's short and long-term financial goals and use the grant decision tree to determine which specific parts of the CTP Program are appropriate for funding, and then utilize the grant development timeline found in Appendix A to determine the timing of developing grant and or loan documents.

1. Determine the sequence for funding of projects of projects in SOCWA's Coastal Treatment Plant – Resiliency and Water Quality Improvements Program (CTP Program).
2. Develop project specific Funding Strategy Dashboard to determine effects of project cost on rates using various funding mechanisms (i.e., loans, bonds, grants)
3. Consider SRF and WIFIA as interim funding sources to kick-start CTP Program
  - a. Contact Department of Water Resources SRF staff to gauge projects best suited to meet CWSRF funding priorities
  - b. Contact WIFIA program staff to initiate the loan process
4. Contact the Reclamation to discuss the potential for the CTP Program, or individual projects, which may be suitable funding. If SOCWA or its member agencies do not have a Congressionally Authorized Feasibility Study or one in process being reviewed by Reclamation, then a Reclamation Planning Grant to develop should be considered a priority.
5. Apply for Title XVI grant funding through the following programs:
  - i. Planning and Design (Feasibility Study)
  - ii. Desalination Planning and Project
  - iii. Large-scale Water Recycling
  - iv. Drought Management
6. Apply for EPA grant funding in FY24 for EPA'S Large Drinking Water Systems Infrastructure Improvement Grant & Sustainability Program
7. Prepare to apply for FEMA's Building Resilient Infrastructure and Communities grant
8. Prepare to apply for FEMA's Hazard Mitigation Grant Program

## REFERENCES

1. American Water Works Association. (2021). *Principles of Water Rates, Fees, and Charges*. AWWA. NHA, I. (2023, December 12).
2. Pisces Foundation. (2022). Retrieved from <https://piscesfoundation.org/what-we-do/water/>
3. Walton Family Foundation. (2023). Retrieved from <https://www.waltonfamilyfoundation.org/our-work/environment-program>

## AGENCY SOURCES

1. U.S. Environmental Protection Agency. (n.d.). Midsize and large drinking water system infrastructure resilience and sustainability. EPA. Retrieved December 15, 2023, from <https://www.epa.gov/dwcapacity/midsize-and-large-drinking-water-system-infrastructure-resilience-and-sustainability>
2. U.S. Bureau of Reclamation. (n.d.). WaterSMART (Sustain and Manage America's Resources for Tomorrow). Retrieved December 15, 2023, from <https://www.Reclamation.gov/watersmart/index.html>
3. State Water Resources Control Board. (n.d.). Clean Water State Revolving Fund (CWSRF). California State Water Resources Control Board. Retrieved December 15, 2023, from [Clean Water State Revolving Fund | California State Water Resources Control Board](#)
4. U.S. Environmental Protection Agency. (n.d.). What is WIFIA? EPA. Retrieved December 15, 2023, from <https://www.epa.gov/wifia/what-wifia>
5. U.S. Army Corps of Engineers. (n.d.). Water Resources Development Act (WRDA). U.S. Army Corps of Engineers. Retrieved December 15, 2023, from <https://www.usace.army.mil/Missions/Civil-Works/Water-Resources-Development-Act/#LatestWRDA>

APPENDIX A  
FUNDING SOURCE

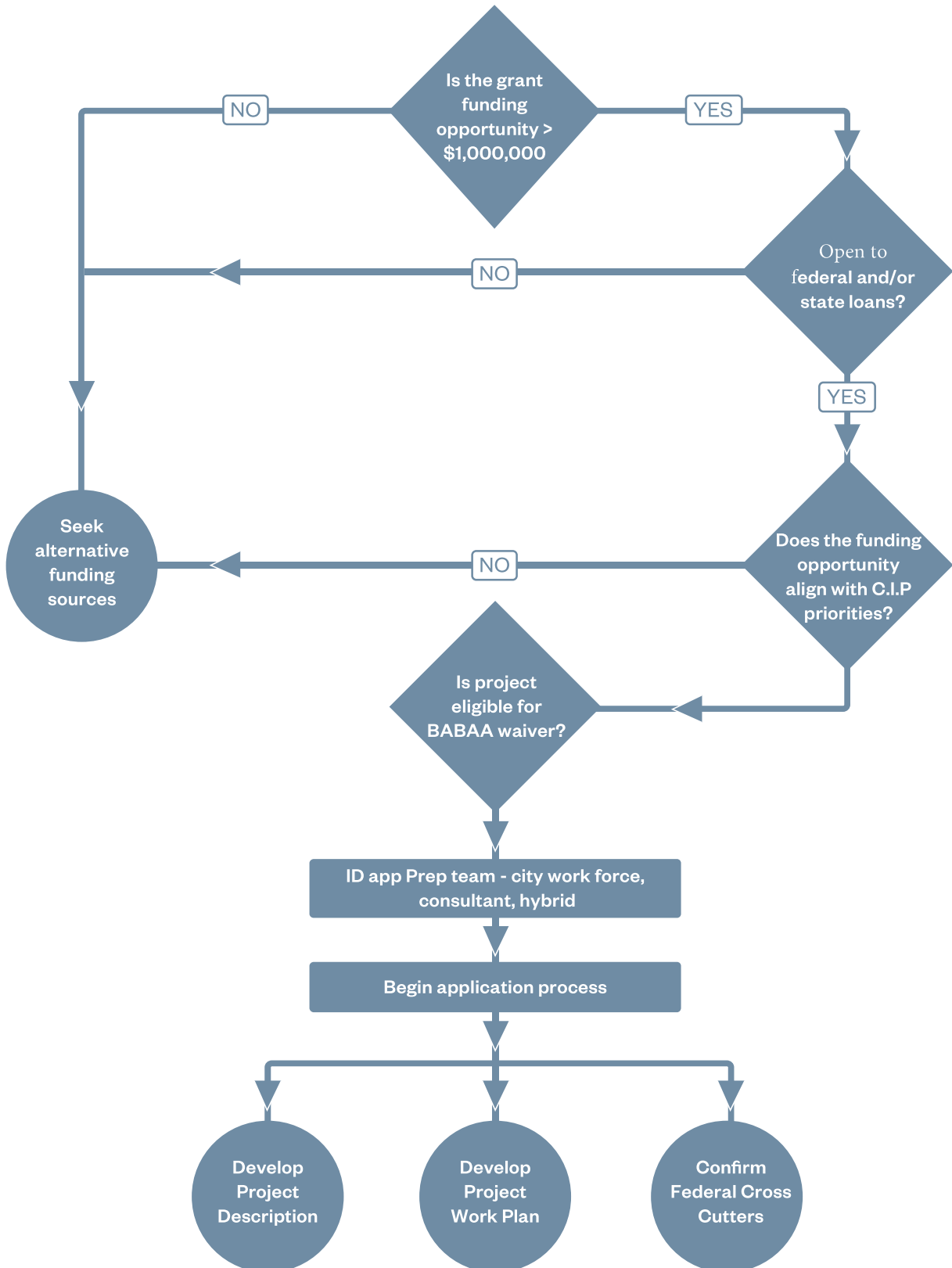
Agency	Funding Program	Maximum Award	NOFO Release Date	2024 Submittal Due Date	Description	Agency Requirements	Eligible Project Types
United States Environmental Protection Agency	Grant: Midsize and Large Drinking Water Systems Infrastructure Improvement Grant & Sustainability Program	\$5,000,000	Anticipated release in 2024	Not posted	This grant program assists medium and generous size public water systems with protecting drinking water sources from natural hazards	All public water systems that serve a community with a population of 10,000 or more. 50% of the program's appropriation will go to public water systems that serve a population of between 10,000 and 100,000, and 50% of the program's appropriation will go to public water systems that serve a population 100,000 or more.	Planning, design, construction, implementation, operation or maintenance projects that have a goal of enhancing drinking water system resilience
	Loan: Water Infrastructure Finance and Innovation Act (WIFIA)	Total project cost must be >\$20,000,000.	Rolling Basis	Rolling Basis	The Water Infrastructure Finance and Innovation Act of 2014 (WIFIA) established the WIFIA program, a federal credit program administered by EPA for eligible water and wastewater infrastructure projects.	Minimum Project Size for WIFIA is \$20 million	Projects that are eligible for Drinking Water SRF
						Federal Crosscutters apply	Energy efficiency projects at drinking water and wastewater facilities
						51% cost share from non-federal source	Brackish or desalination, aquifer recharge, alternative water supply and water recycling projects
					Two part application process	Drought prevention reduction or mitigation	
State Water Resources Control Board	Loan: Clean Water SRF	>\$100,000,000	Rolling Basis	Dec-24	Financing for publicly owned treatment facilities, nonpoint source projects, and estuary projects. The most common types of application are for wastewater treatment plants and sewer systems.	Federal Crosscutters apply. Preference given to Disadvantaged Communities. Interest rate is half of the most recent General Obligation Bond Rate.	Regionalization of wastewater service, water quality programs (e.g., emerging contaminants), onsite wastewater system upgrades, recycled water reuse, water conservation and promotion of low impact development
Federal Emergency Management Agency	Grant: Hazard Mitigation Grant Program (HMGP)	\$5,000,000	Following a Presidential Declaration of Disaster	TBD	The Notice of Funding Opportunity is released through DEMA following a Presidential Declaration of Disaster.	FEMA approved hazard mitigation plan & 25% non-federal cost share	Development of a Hazard Mitigation Plan
	Grant: Building Resilient Infrastructure and Communities (BRIC)	\$50,000,000	Jun-24	Dec-24	BRIC releases its Notice of Funding Opportunity through DEMA, usually around June of each year.	Reduces risk from hazards and demonstrates the cost of the project is greater than the cost of catastrophic loss of the facility.	Harden or rehabilitate infrastructure to reduce hazard risk to critical facilities, people & property (e.g., drought, flooding, wind, extreme heat)
						FEMA approved hazard mitigation plan, federal cross cutter compliance & 25% cost share	Phased projects which include design, environmental compliance and construction
						Reduces risk from hazards and demonstrates the cost of the project is greater than the cost of catastrophic loss of the facility.	Harden or rehabilitate infrastructure to reduce hazard risk to critical facilities, people & property (e.g., drought, flooding, wind, extreme heat)
					Incorporation of nature-based solutions and partnerships	Phased projects which include design, environmental compliance and construction	
United States Bureau of Reclamation	Grant: WaterSMART Water and Energy Efficiency Grants	\$5,000,000	12-Nov-23	28-Feb-24	On-the-ground water management improvement projects, including projects that conserve water and address water supply reliability.	Applicants must have a Drought Management Plan, a Water Conservation Plan or both. 50% cost share from non-federal source.	Water Conservation (e.g., Turf replacement, irrigation efficiency, and commercial cooling systems),
	Grant: WaterSMART Drought Resiliency Projects	\$5,000,000	7-Aug-23	30-Sep-24	This program will provide funding for projects that will help communities prepare for and respond to drought.	Applicants must have a Drought Management Plan, a Water Conservation Plan or both. 50% cost share from non-federal source.	Develop and update drought plans and implement projects that will build long-term resiliency to drought
	Grant: WaterSMART Environmental Water	\$3,000,000	Mar-24	5/30/2024	Projects focused on environmental benefits and that have been developed as part of a collaborative process to help conduct an established strategy to increase the reliability of water resources.	Applicants must have a Drought Management Plan, a Water Conservation Plan or both. 50% cost share from non-federal source.	Water supply drought resilience projects with a co-benefit of addressing an environmental issue (i.e., active stream or wetland restoration, instream water dedication, and riparian habitat improvements).



APPENDIX A  
FUNDING SOURCE

Agency	Funding Program	Maximum Award	NOFO Release	2024 Submittal Due Date	Description	Agency Requirements	Eligible Project Types
United States Bureau of Reclamation (Continued)	Grant: WaterSMART Planning and Project Design Grants	\$400,000	7-Aug-23	Apr-24	Funding for the site-specific final design of medium and large-scale on-the ground water supply construction, water management construction, and restoration projects. This funding can be used to develop a WIIN Act/Title XVI Feasibility Study and/or a Drought Management Plan.	Applicants must have a Drought Management Plan, a Water Conservation Plan or both. 50% cost share from non-federal source.	Funding for planning and design projects to support water management: (1) Water Strategy Grants to conduct planning activities to improve water supplies (e.g., water supplies to disadvantaged communities, water marketing, water conservation, drought resilience, and ecological resilience); (2) Project Design Grants to conduct project-specific design for projects to improve water management; and (3) Drought Contingency Plans.
	Grant: WaterSMART Water Recycling and Desalination	\$30,000,000	27-Sep-23	29-Mar-24	Water recycling and desalination are essential tools for stretching limited water supplies in the Western United States. Reclamation provides cost-shared funding on a competitive basis for planning, design, and construction of water recycling and desalination projects.	Applicant must have a Congressionally Authorized Feasibility Study and Report approved by Reclamation. 50% cost share	Water recycling desalination projects
	Grant: WaterSMART Large-Scale Water Recycling Project	< \$180,000,000	6-Sep-23	1-Nov-24	The program will provide \$450 million over the next five years to projects in Reclamation states that have a total project cost greater than or equal to \$500,000,000, at 25% Federal cost share, with no per-project maximum	Applicant must have a Congressionally Authorized Feasibility approved by Reclamation. 75% cost share	Water recycling and reuse projects that have a total project cost >\$500,000,000
	Grant: WaterSMART Title XVI Congressionally Authorized Projects	< \$20,000,000 unless otherwise specified by Congress.	28-Sep-23	30-Sep-24	Up to \$20 Million unless otherwise specified by Congress.	Applicant must have a Congressionally Authorized Feasibility Study approved by Reclamation. 50% cost share	Project identified in the approved and authorized feasibility study
	Grant: WaterSMART: Water Reclamation and Reuse	< \$30,000,000	28-Sep-23	1-Nov-24	Through the Title XVI Water Reclamation and Reuse Program (Title XVI), authorized by P.L. 102-575 in 1992.	Must have a Congressionally Authorized Feasibility Study approved by Reclamation or one that has been submitted for review 75% cost share	Water reclamation and reuse
<b>Non-Government Organization (NGO)</b>							
Non-governmental organization (NGO)	Private Philanthropic Funding: Walton Family Foundation	TBD	N/A	N/A	The Foundations Environment [Initiative] strategy seeks lasting water solutions in three key geographies: the Colorado River Basin, the Mississippi River Basin, and our Oceans. Our goal is to make sure there is enough healthy, available water for people and nature to thrive together.	The Walton Family Foundation does not accept unsolicited proposals.	To be discussed & determined through a collaborative process with WFF.

## Funding Decision Tree





FUNDING SOURCE OVERVIEW AND DEVELOPMENT TIMELINE					January					February				March				April					May				June				July					August				September					October				November				December				
					Week					Week				Week				Week					Week				Week				Week					Week				Week				Week													
Agency	Opportunity Title	Award Ceiling	NOFO Release Date	Submittal Deadline*	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5				
USEPA	Grant: Midsize and Large Drinking Water Systems Infrastructure Improvement Grant & Sustainability Program	\$5,000,000	FY 2024	TBD				Y/N		Select Project & Data Required					Project Description & Agency Coordination					Finalize Information Request, Collect Budget Information, Collect Water and Economic Data, Begin City Council Resolution					Write and Submit Grant Proposal					Agency Review and Request for Information					Notice of Award/No Award																						
USEPA	Loan: Water Infrastructure Finance and Innovation Act (WIFIA)	49% of Total Project Cost	Accepted throughout the calendar year	Dec-24				Y/N		Select Project & Data Required	Project Description & Agency Coordination	Meet with EPA, Begin Letter of Intent, City Resolution, and NEPA Process					Submit Letter of Intent and coordinate with EPA	Develop and submit Loan Documents to EPA					EPA Review and Request for Information					Potential Notice of Funding																													
SWRCB	Loan: Clean Water SRF State Revolving Fund	>\$100,000,000	Accepted throughout the calendar year	Dec-24				Y/N		Select Project & Data Required	Project Description & Agency Coordination	Develop Loan Documents					Develop and submit loan document packages					SWRCB Review																																			
FEMA	Grant: Hazard Mitigation Grant Program (HMGP)	\$5,000,000	Presidential Declaration of Disaster	TBD	Funding Timeline Based on Notice of Funding Opportunity Post Presidential Declaration of Disaster. Grant takes a minimum of 3 months, including the submittal of a Notice of Intent																																																				
FEMA	Grant: Building Resilient Infrastructure and Communities (BRIC)	\$50,000,000	Jun-24	Dec-24										Y/N	Project Description, DEMA Coordination & BCA Data Needs	Collect Data. Develop Grant Library and dry BCA run for eligibility	Potential release of DEMA NOFO & NOI development	Potential Sub-Applicant Development and submittal to DEMA; DEMA RFI period					DEMA Submittal to FEMA; Federal RFI period																																		
Reclamation	Grant: WaterSMART Water and Energy Efficiency Grants	\$5,000,000	Nov-23	Feb-24						Identify Project, City Resolution and Submit Application			Agency Review					Potential Notice of Funding																																							
Reclamation	Grant: WaterSMART Drought Resiliency Projects	\$5,000,000	Aug-23	Sep-24					Y/N		Project Description, Agency Coordination & Data Needs					Data Request, City Resolution and Resource Library	Meet with Reclamation, Develop & Submit Application					Agency Review					Potential Notice of Award																														
Reclamation	Grant: WaterSMART Environmental Water	\$3,000,000	Mar-24	May-24				Y/N		Select Project & Data Needs	Project Description & Agency Coordination	Data Request, City Resolution. and Resource Library	Develop and Submit Application					Agency Review					Potential Notice of Award																																		
Reclamation	Grant: WaterSMART Planning and Project Design Grants	\$400,000	Aug-23	Apr-24				Y/N		Select Project & Data Needs	Project Description & Agency Coordination	Data Request, City Resolution, and Resource Library	Develop and Submit Application					Agency Review					Potential Notice of Award																																		
Reclamation	Grant: WaterSMART Water Recycling and Desalination	\$30,000,000	Sep-23	Mar-24				Y/N		Select Project & Data Needs	Data Request & City Resolution	Develop and Submit Application					Agency Review					Potential Notice of Award																																			
Reclamation	Grant: WaterSMART Large-Scale Water Recycling Project	\$180,000,000	Sep-23	Nov-24										Y/N	Select Project & Data Needs	Project Description, Agency Coordination and Data Needs	Data Request, City Resolution, Resource Library & Water Economic Analysis					Develop and Submit Application					Agency Review																														
Reclamation	Grant: WaterSMART Title XVI Congressionally Authorized Projects	\$20,000,000	Sep-23	Sep-24				Y/N		Select Project & Begin Agency Coordination	Project Description, City Resolution and Agency Coordination					Data Request, City Resolution, Resource Library & Water Economic Analysis					Develop and Submit Application					Agency Review																															
Reclamation	Grant: WaterSMART: Water Reclamation and Reuse	\$30,000,000	Sep-23	Nov-24										Y/N	Select Project & Data Needs	Project Description, Agency Coordination and Data Needs	Data Request, City Resolution, Resource Library & Water Economic Analysis					Develop and Submit Application					Agency Review																														
Non Profit/ Foundation	Private Philanthropic Funding: Walton Family Foundation	TBD	N/A	N/A				Y/N		Select Project, Develop One-Pager & Initiate Conservation with WFF			Meet with WFF & Establish Alignment with WFF Philanthropic Initiative					To Be Determined Based on WFF Meetings, Next Steps and Schedule																																							

# Agenda Item

8

**Engineering Committee Meeting**

**Meeting Date:** February 8, 2024

**TO:** Engineering Committee

**FROM:** Jim Burror, Acting General Manager/Director of Operations  
Roni Grant, Associate Engineer

**SUBJECT:** J.B. Latham Treatment Plant (JBL) Advanced Treatment Evaluation Update  
[Project Committee 2]

---

## Overview

Santa Margarita Water District (SMWD) has contracted with Jacobs to prepare a preliminary evaluation of the advanced treatment alternatives for PC-2. Staff is requested that SMWD staff present their request for support from SOCWA at the February 8, 2024, Engineering Committee meeting.

**Recommended Action:** Committee Discussion/Direction/Action

# Agenda Item

# 9

**Engineering Committee Meeting**

**Meeting Date:** February 8, 2024

**TO:** Engineering Committee

**FROM:** Roni Grant, Associate Engineer

**SUBJECT:** Effluent Transmission Main (ETM) Trail Bridge Crossing Project Update [Project Committee 21, Reach D]

---

## Overview

In 2014, SOCWA retained Tetra Tech to prepare a technical memorandum that included a conceptual-level alternative design for the Trail Bridge ETM crossing site. In March 2018, Tetra Tech was awarded the contract to complete the design for the crossing protection project. The project was on hold in June 2022 due to new regulatory and permitting requirements to submit alternative options for the regulatory bodies to determine their preferred option for our project.

Amendment No. 3 was approved at the November 2023 Board Meeting for Tetra Tech to perform the additional work. The additional tasks were:

- Revisit the 2019 Report to update the existing ground measurement and prepare a memorandum to summarize the current status.
- Evaluate various failure modes and additional conceptual designs.
- Develop a monitoring plan to inspect and monitor the exposed portion of the Trail Bridge ETM crossing site.

The Addendum to the 2019 Technical Memorandum is attached here for review.

**Recommended Action:** Committee Discussion/Direction/Action.



# **Trail Bridge ETM Crossing Design Project**

**Orange County, California**

## **Addendum to 2019 Technical Memorandum**

**Draft Submittal**

**January 2024**



TETRA TECH  
17885 Von Karman Ave, Suite 500  
Irvine, California 92614

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**Trail Bridge ETM Crossing Design Project  
Orange County, California**

**Addendum  
To 2019 Technical Memorandum**

**Draft Submittal**

Prepared for:  
**Orange County**  
**South Orange County Wastewater Authority**

Prepared by:  
**Tetra Tech**  
17885 Von Karman Ave, Suite 500  
Irvine, California 92614  
(949) 809-5000

**January 2024**

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### A. Draft Monitoring Plan

# 1. INTRODUCTION

## 1.1 Description

The Trail Bridge effluent transmission main (ETM) crossing is a 24-inch reinforced concrete pipe (RCP) with a concrete encasement that diagonally crosses Aliso Creek approximately 80 feet southeast (downstream) of the pedestrian bridge (Figure 1.1). A boulder drop structure is located just under the bridge and extends upstream by 30 feet. This approximately 6-foot high drop structure provides protection for a buried utility line owned by South Coast Water District (SCWD), located upstream of the drop structure. There is a Moulton Niguel Water District (MNWD) utility crossing between South Orange County Wastewater Authority (SOCWA) line and the drop structure that is buried deeper in the creek bed with encasement (Figure 1.2). As of December, 2023, the top of encasement for the SOCWA line is exposed, and the creek bed immediately upstream and downstream of the encasement is scoured to a depth of more than 27 inches below the top of encasement.

## 1.2 Project History

In 2014, SOCWA along with Tetra Tech as the civil designer and Dudek as the environmental specialist performed a conceptual-level erosion protection design analysis for utility crossings at 4 individual sites along Aliso Creek between Moulton Parkway and Coastal Treatment Plant (CTP) Bridge. For the Trail Bridge site, Tetra Tech proposed riprap channel protection.

In 2018, SOCWA contracted Tetra Tech to develop a construction-level design that would provide stabilization and erosion protection to prevent undermining and exposure of the existing ETM line during a 100-year-level flood event. The scope of work also included field measurements of scour condition around the exposed encasement of the ETM line. The design must be feasible and constructible and address the flood risk, environmental and archeological components of the project site. Tetra Tech prepared and submitted to SOCWA the 90% level construction documents including construction plans, specifications, basis of design report, cost estimates, and other pertinent environmental permits on June 28, 2019. However, SOCWA made a decision to put the project on hold. No agency review comments were provided on the 90% submittal package.

In 2022, as an effort to kickstart the project again, SOCWA contacted Tetra Tech to continue the progress that has been on hold for the last 3 years. Given the age of the technical studies (90% level documents completed in 2019), a modification to the original contract was made for Tetra Tech to update the biological and cultural resource survey in order to complete the Mitigated Negative Declaration (MND) process and to support wetlands regulatory permitting services required for the project. However, near the end of 2022, SOCWA put the project on hold again based on its internal discussion and decision.

In July 2024, SOCWA indicated that the agency will no longer continue the project, based on its internal decision. Instead, SOCWA requested Tetra Tech to perform additional tasks to conclude the project “as-is” without providing any structural and permanent remediation and protection to the exposed Trail Bridge ETM encasement against existing risks. The additional tasks are described in Section 1.3, Purpose and Scope of Work. SOCWA indicated that while it is possible

that this project would be picked up in the future to be restarted, there is no immediate timetable or urgency to restart the project.

### **1.3 Purpose and Scope of Work**

The purpose and goal of the project are to perform additional studies, described below, before the construction-level design that would have provided stabilization and erosion protection to prevent undermining and exposure of the existing ETM lines is put on indefinite hold. SOCWA indicated that it is possible that this project would be picked up again in the future to be restarted.

The scope of work (SOW) is to perform the following additional tasks:

- Task 20 – Update existing ground measurement along the existing ETM encasement from the 2019 design report
- Task 21 – Evaluate various failure possibilities and additional conceptual approaches to mitigate the failures
- Task 22 – Develop a monitoring plan

No remaining work from the previous tasks will be completed as part of this report.

It is imperative to note that the existing Trail Bridge ETM crossing site was previously identified in the 2014 study by Tetra Tech as one location of the critical infrastructure in need of protection against potential channel scour and erosion (Tetra Tech 2014). However, on July 2024, SOCWA notified Tetra Tech of its internal decision not to pursue the permanent protection to the crossing site, but to implement a monitoring plan instead. There will be continued risk to this ETM crossing if permanent scour and erosion protection are not implemented. Additionally, while a monitoring plan is likely to provide some information on the progression of potential risk or the need for repair between flood events, it cannot replace the need for more permanent improvements and protection features at the project site.



**Figure 1.1 – Vicinity Map**



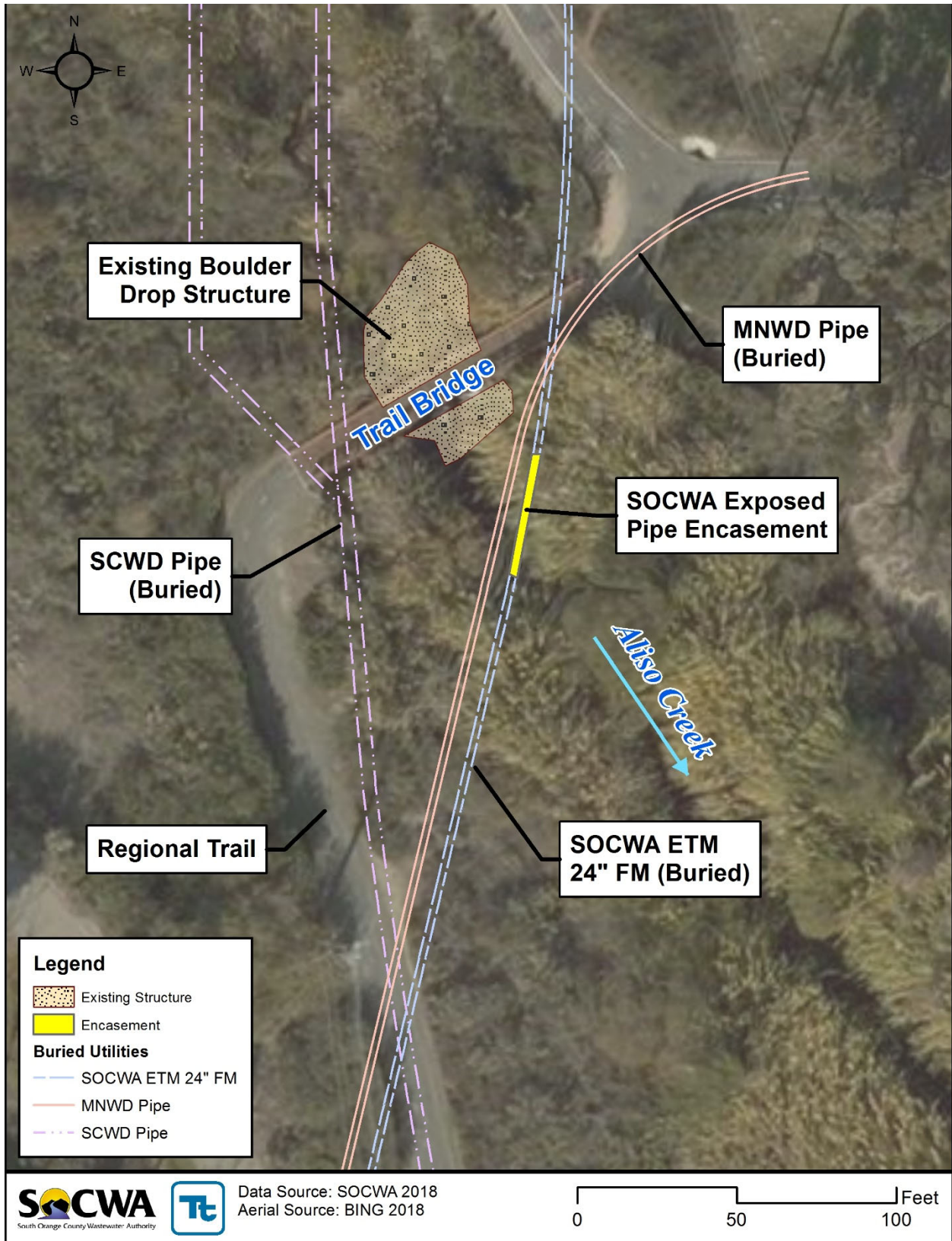


Figure 1.2 – Location Map



## 2. UPDATING 2019 EXISTING GROUND MEASUREMENT

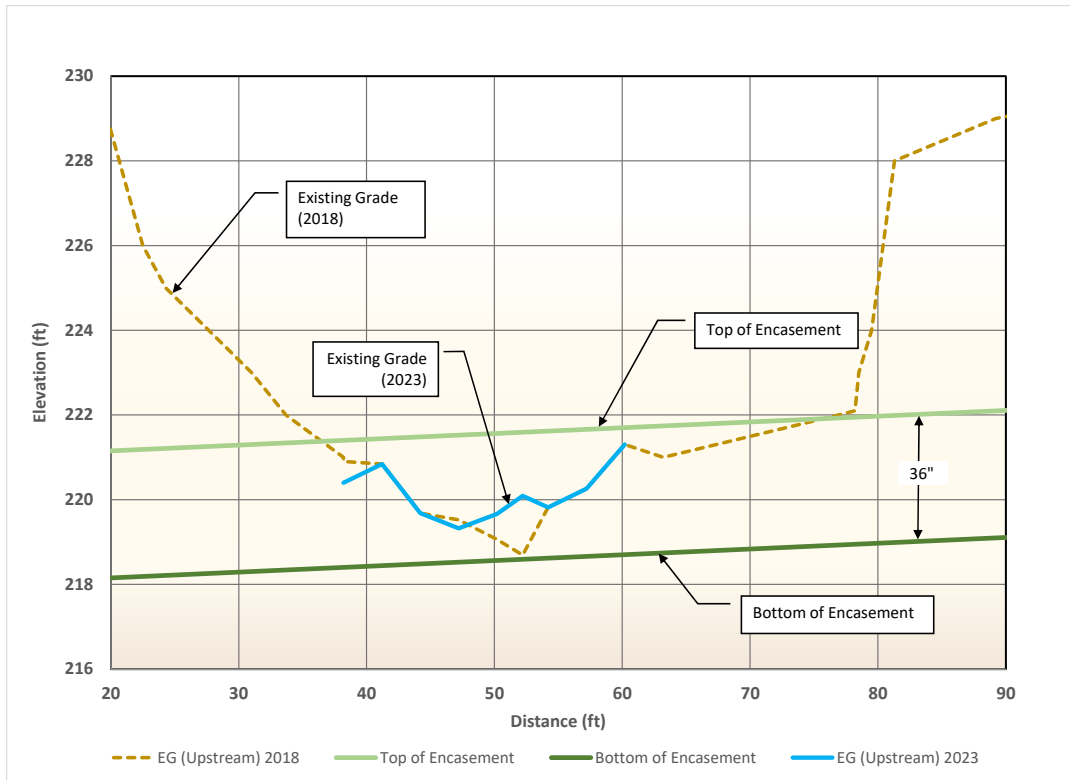
### 2.1 Updating the Measurement

During the 2018 field investigation, Tetra Tech staff measured the depth to the creek bottom from the top of encasement along both the upstream and downstream faces as shown in Figure 2.1. Measurement was taken within the active low-flow channel where the encasement was exposed. The purpose of the measurement was to assess the severity of the erosion now that the original 1979 erosion protection downstream of the encasement has been washed off.

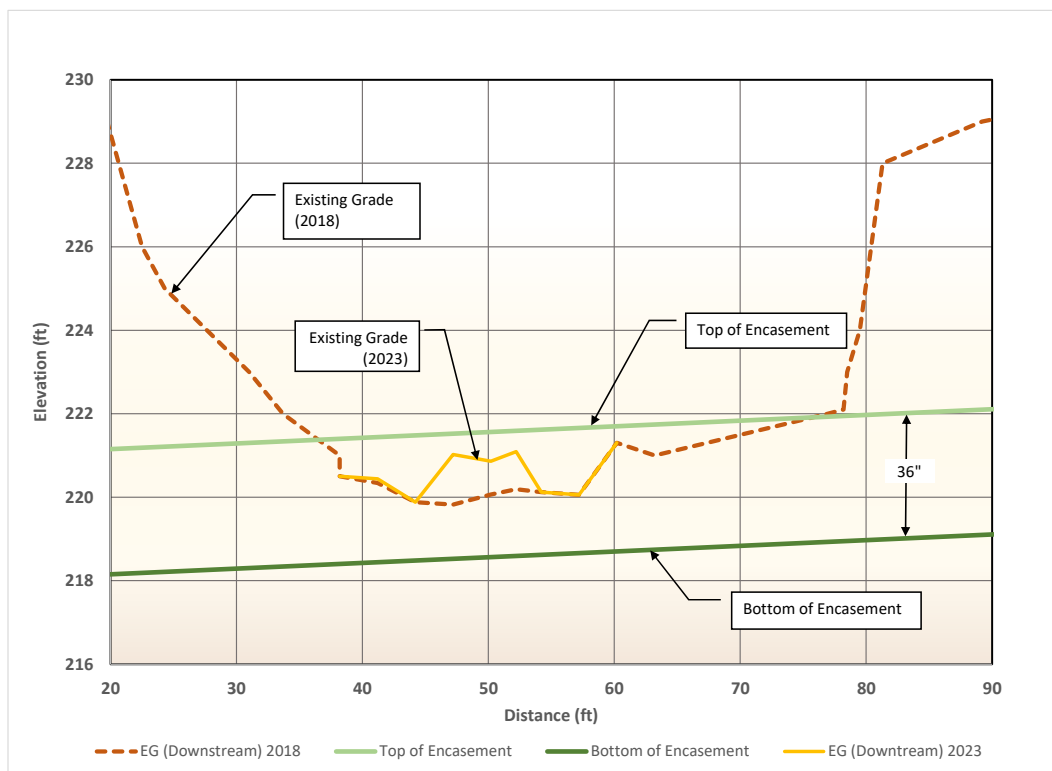
On December 14, 2023, Tetra Tech retook the measurements along the encasement in the field to determine whether any progression of erosion in the immediate vicinity of the encasement was taking place (Figure 2.1). The 2023 measurements along the upstream face and downstream face are compared to the 2018 measurements in Figure 2.2 and Figure 2.3, respectively.



**Figure 2.1 – Measuring the Creek Bottom along the ETM Encasement in 2023**



**Figure 2.2 – Cross Sections of Existing Ground along Encasement (Upstream)**



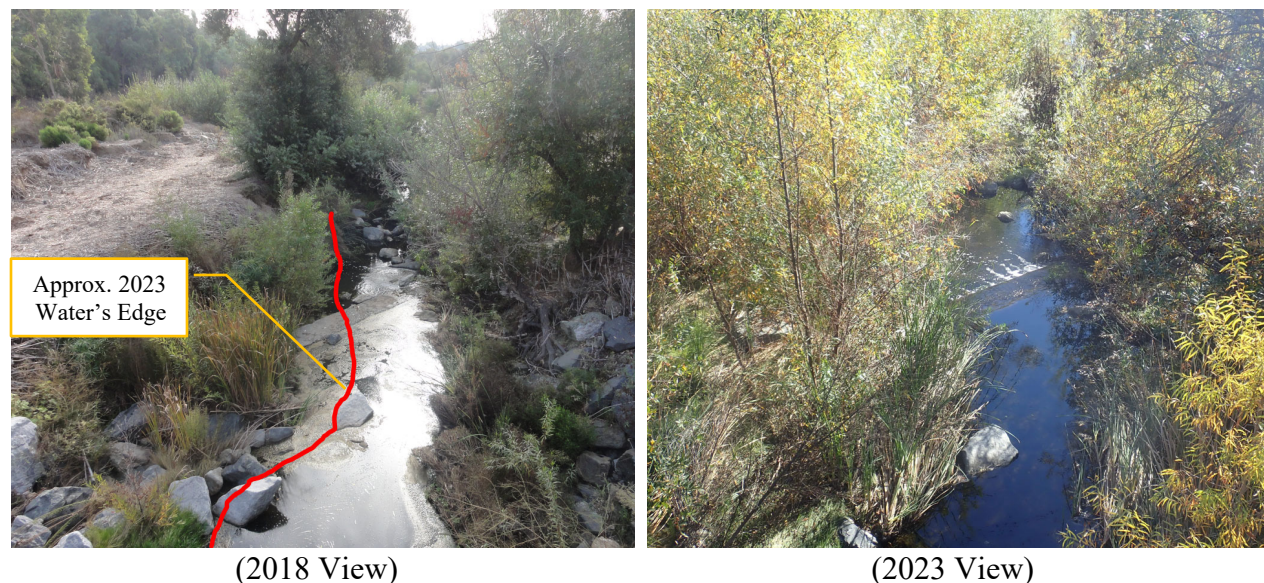
**Figure 2.3 – Cross Sections of Existing Ground along Encasement (Downstream)**



As seen on the figures, based on the field measurement, the scour holes in the immediate vicinity of the encasement did not appear to be exacerbated in the last 5 years. In some areas, it even looked like some of the scour holes had been filled. However, based on the type of material observed in the field, the filling of the scour holes is likely to have been created by the movement of materials during previous storm events and appears to be temporary. As described in the 2018 *Potential Risk of Failure* report by Tetra Tech, the scour holes in the vicinity of the encasement are likely to still experience the continuous cycles between erosion during the peak of a flood event, enlarging existing scour holes, and backfilling of the scour holes as the flood recedes (Tetra Tech 2018). It is even possible that the encasement may become free-spanning if the enlarged scour holes are deep enough to temporarily remove soil from underneath the encasement during a severe storm. The full extent of the scoured condition is not known during a post-event inspection.

## 2.2 Visual Assessment of the Project Site

The Tetra Tech team also conducted a visual assessment of the project area on the same day the above measurements were taken. The purpose for the assessment was to find any sign of erosion when compared to the 2018 condition. The picture of the exposed encasement view, taken from the pedestrian bridge in October 2018, was compared to the picture of the same location, taken in December 2023, in Figure 2.4 below.



**Figure 2.4 – Comparison of Exposed Encasement Views from 2018 and 2023**

Compared to 2018, the creek shows more vegetation encroaching into the active low-flow channel. Also, more vegetation appeared to be established on adjacent floodplains on both sides of the channel. With a narrower flow path for the creek flow and possibly due to recent rainy weather, the encasement looked to be fully submerged under creek flow (about 2 inches deep over the top of encasement). However, without assessment by a biologist in the field, it was not apparent whether the current vegetation was well-established enough to withstand the next significant flood event, by effectively reducing the length of the encasement that is exposed to the creek flow, compared to the 2018 condition.



The existing drop structure, located upstream of the encasement, appears to be in good condition with no apparent missing boulder of the drop structure (Figure 2.5). This means that the project encasement is likely to be still subjected to the same adverse hydraulic impacts of the drop structure: high flow velocity and plunging effects of the flow over the drop structure.



**Figure 2.5 – Existing Drop Structure**

In conclusion, the encasement is still subjected to the same risk of failure during a severe storm event, although the condition did not appear to be worsened from the 2018 condition. Without confirmation from a biologist, it is difficult to say whether any of the current vegetation that reduced the exposed length of the encasement would stay during the next significant storm event. It is Tetra Tech’s opinion that there will be continued risk to this ETM crossing if permanent scour and erosion protection are not implemented.

There was no structural analysis performed to determine the current structural condition of the encasement that may have experienced adverse hydraulic impacts of the drop structure over a long period time and potentially even a free-spanning condition during previous significant storm events.

### **3. EVALUATING VARIOUS FAILURE POSSIBILITIES AND ADDITIONAL CONCEPTUAL APPROACHES TO MITIGATE THE RISK OF FAILURES**

#### **3.1 Evaluating Various Failure Possibilities**

The Trail Bridge ETM crossing is subjected to the risk of failure without any permanent scour and erosion protection. Based on the hydraulic analysis of the 2019 design report, the original erosion protection design from 1979 appeared to be inadequate which was probably why it is currently washed out in the first place (Tetra Tech 2019). Without any protection and with the encasement exposed to the environment, the crossing is subjected to various failure possibilities.

The crossing is located approximately 60 feet downstream from the boulder drop structure. When the creek flow travels over the drop structure, not only does the flow velocity increase, but the flow experiences the plunging effect of flow from the 6-foot drop that creates local scouring in the area. With the crossing immediately downstream of the drop structure, the crossing is likely to be within this scouring zone. Additionally, the flow would hit the upstream face of the exposed encasement, creating even more turbulence that exacerbates a scouring condition between the drop structure and the crossing. The evidence of scour is very apparent in the field as shown in Figure 2.4 where the upstream reach of the crossing which is supposed to be filled with soil up to the top of encasement elevation now appears to be a small water pond that extends upstream all the way to the toe of the drop structure. Based on the field measurement, the upstream face of the encasement is currently exposed as much as 27 inches from the top of encasement as of December 2023. However, it is difficult to estimate how much additional scour would be happening during a storm event. It is even possible that the encasement may temporarily become free-spanning if the enlarged scour holes are deep enough to remove soil from underneath the encasement during a severe storm event. Because the encasement was not designed to be free-spanning, based on the rebar information on the as-built plans, the extended duration of free-spanning during a significant flood event or inadequate filling of scour hole underneath the encasement after a flood event is likely to stress and adversely impact the structural integrity of the reinforced concrete encasement. The stressed encasement would be more susceptible to structural damage in subsequent flood events. It should be noted that no structural analysis was performed to evaluate the current structural condition of the encasement.

With the upstream face exposed to the flow within the active low-flow channel, the encasement is exposed to any debris coming down the creek. The exposed encasement makes it susceptible to being damaged by significant debris that may be flowing within the channel. Large debris (such as shopping carts, fallen trees, etc.) is likely to be carried along the creek during significant storm events and could result in the object striking the encasement with enough force to cause damage as it descends the drop structure.

## 3.2 Additional Conceptual Approaches to Mitigate Risk of Failures

In the previous 2019 Design Report, to mitigate the risk of failure, a riprap channel around the exposed crossing was proposed to protect the facility against erosion. The riprap channel would tie into the existing drop structure at the upstream end and extend 160 feet downstream until the erosive hydraulic condition improves. This 2024 Addendum Report evaluated additional conceptual approaches, including a non-structural conceptual approach, to address the risk. The approaches were only developed to a conceptual level with an order of magnitude, and preliminary probable cost of construction for comparison. The comparison was performed in terms of total construction costs, constructability, potential environmental impacts/mitigation, and expected life of each approach. No additional environmental impact/mitigation study was performed but the conceptual approaches were only compared in terms of sizes of impacted areas. No water quality impact was analyzed. No structural or geotechnical analysis was performed.

Per the Scope of Work, the conceptual approaches evaluated included the following:

- Tunneling at a Different Pipe Location
- Sheet Pile with Concrete Cap
- Monitoring (Non-construction Approach)

### 3.2.1 Tunneling at a Different Pipe Location

A conceptual approach of tunneling or micro-tunneling was evaluated. Micro-tunneling will construct a new segment of the ETM line that will bypass the current exposed encasement portion. As shown in Figure 3.1, the 1,500-foot long, new segment will be likely located upstream of the current alignment and existing drop structure, placing the segment under a higher streambed elevation, resulting in a greater buried depth, and therefore eliminating a risk of exposing the line to channel erosion.

In micro-tunneling, a 20-foot by 40-foot launch pit and 16-foot by 16-foot receiving pit will be excavated from the surface all the way down to the top of the existing 24-inch ETM line at both upstream (launch pit) and downstream (receiving pit) ends of the new segment. The locations of vertical pits will be selected at the higher grounds outside of sensitive vegetation and an active flow area where impacts to the environment is negligible and access to the sites is relatively easier. Between the pits, a new pipe segment will be constructed by horizontally drilling a tunnel big enough to fit a new 72-inch diameter steel casing with a 24-inch diameter PVC ETM line inside.

After the launch and receiving pits are completed. A micro-tunnel boring machine will be lowered into the launch pit and begin tunneling at the desired horizontal and vertical alignment. The casing will be installed as the tunnel progresses forward. Once the tunnel is complete, the carrier pipe is installed. Excavated material can be used to backfill the pits and surplus material shall be disposed of per jurisdictional requirements.

Once a new segment is constructed in place, a connection to the existing line will be made with potential temporary service interruption of the ETM line. With the new segment in place, providing continuous service, the bypassed segment is likely to be abandoned in place per the requirements of the jurisdictional agencies. The exposed encasement of the now abandoned line in the creek



could be left in place or removed. The removal will likely require an environmental permit to work in the creek, while abandoning-in-place as is will likely continue the risk of its structural failure although the risk of sewage leakage into the creek after the failure no longer exists.



**Figure 3.1 – Approximate Alignment of Micro-tunneling Segment**

In constructability, there is a significant uncertainty in subsurface geological conditions that may affect the tunneling operation. The tunnel will be as deep as 20 feet below surface. A number of pre-construction geotechnical borings will be required to identify subsurface geological formations and the existence of bedrock within the proposed alignment of pipe drilling. Still, there is a chance that the tunneling may encounter geological formation where the progress of tunneling is significantly slowed down by hard rock and the drilling equipment may even be damaged. Also, since the new segment extends below Aliso Creek, a groundwater encounter and constant, costly

dewatering operation are very likely. With these risks, construction progress needs to be constantly monitored and subsurface conditions need to be constantly evaluated in the field.

The conceptual level preliminary cost estimate for micro-tunneling is summarized in Table 3.1. The preliminary probable cost of construction is approximately \$ 4,989,000. This cost is highly dependent on the availability and expertise of a micro-tunneling contractor. Based on the project experience, a highly competent contractor may not be found in the local area, which warrants a high contingency rate for the cost estimate, especially at this level of study.

This conceptual approach will result in the least amount of environmental impact and negligible mitigation cost.

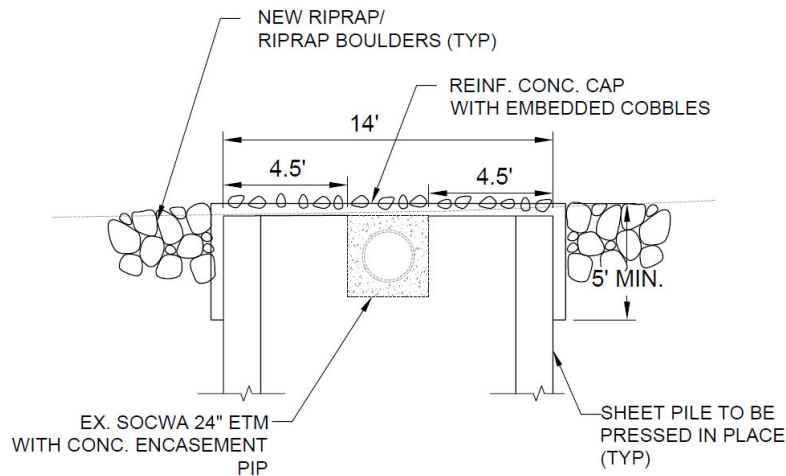
**Table 3.1 – Conceptual Level Preliminary Cost Estimate for Micro-Tunneling Approach**

	Contract Items	Unit	Quantity	Unit Cost	Total Cost
1	Mobilization	LS	1	\$200,000	\$200,000
2	Clearing and Grubbing	AC	0.1	\$10,500	\$1,050
3	Diversion, Control, & Dewatering of Water	LS	1.0	\$110,000	\$110,000
4	Micro-Tunneling				\$3,300,000
4.1	Construction Pit	EA	2	\$150,000	\$300,000
4.2	72” Steel Casing with 24” PVC Main	LF	1,500	\$2,000	\$3,000,000
5	Revegetation	Acre	0.1	\$30,107	\$3,011
6	Temporary Irrigation	Acre	0.1	\$37,633	\$3,763
Subtotal:					\$3,617,824
Construction Management					\$100,000
Geotechnical Analysis					\$120,000
Subtotal:					\$3,837,824
Contingencies (@ 30%)					\$1,151,347
<b>Construction Subtotal:</b>					<b>\$4,989,200</b>
7	Mitigation (Waters of the U.S.)	AC	0.00	\$140,000	\$0
<b>Grand Total:</b>					<b>\$4,989,000</b>

### 3.2.2 Sheet Pile with Concrete Cap

A conceptual approach of protecting the exposed encasement with sheet piles and a reinforced concrete cap was evaluated. This approach will include the installation of sheet piles at both the upstream and downstream faces of the exposed encasement. The sheet piles will be pressed in more than 4 feet away from the edge of the encasement to avoid damaging the encasement during the installation. Based on the preliminary scour depth calculation in the 2019 Design Report, the vertical height of each sheet pile is likely to be 20 feet deep, assuming a scour depth of 5 feet during a significant flood event. A reinforced concrete cap will be constructed between the sheet

piles to protect the encasement from scour and storm flow. Texturing the concrete cap or embedding the cap with cobbles could be considered to make it look more natural. The typical section of the alternative is shown in Figure 3.2.



**Figure 3.2 – Typical Section of Sheet Piles with Concrete Cap**

Riprap will be placed upstream and downstream of the sheet piles to reduce local scour near the sheet piles and provide a transition back to the natural channel section. The sheet pile and concrete cap will provide scour protection and prevent undermining of the pipeline during the maximum scour condition. However, considering the flow condition through the project area is very erosive due to the existing boulder drop structure, additional riprap would prevent the sheet piles from being exposed over time.

This alternative will require geotechnical analysis including a subsurface investigation to finalize the sheet pile design including its size and depth.

In terms of constructability, because the project site is directly under the power lines, the method of driving long standard sheet piles may not be feasible. Sheet piles in smaller segments will need to be pressed in with Geiken Piler in sequence one at a time in order to avoid extending a sheet pile or any equipment vertically in height. This requirement would increase the construction cost and duration.

The conceptual level preliminary cost estimate for sheet piles is summarized in Table 3.2. The preliminary probable cost of construction is approximately **\$ 1,685,000**. This conceptual approach will require less of a disturbance area than the 2019 design solution (riprap channel) which is beneficial for environmental permit purposes. Additionally, this alternative will protect in place the existing boulder drop structure, which appears to be stable, by not making any disturbance or connection to the structure.

**Table 3.2 – Conceptual Level Preliminary Cost Estimate for Sheet Pile with Concrete Cap Approach**

	Contract Items	Unit	Quantity	Unit Cost	Total Cost
1	Mobilization	LS	1	\$180,000	\$180,000
2	Clearing and Grubbing	AC	0.7	\$10,500	\$7,350
3	Diversion, Control, & Dewatering of Water	LS	1.0	\$70,000	\$70,000
4	Bank Protection				\$845,916
4.1	Removal of Interfering Portions of Ex. Riprap	CY	0	\$45.16	\$0
4.2	Excavation	CY	1,295	\$41.00	\$53,095
4.3	Compacted Backfill	CY	280	\$60.21	\$16,860
4.4	Riprap/Boulders	CY	1,035	\$188.17	\$194,752
4.5	Geotextile	SY	895	\$7.00	\$6,265
4.6	Soil Stabilization	SY	702	\$16.18	\$11,360
4.7	Sheet Pile	SF	5,376	\$84.00	\$451,584
4.8	Concrete Cap	CY	100	\$1,120.00	\$112,000
5	Revegetation	Acre	0.7	\$30,107	\$21,075
6	Temporary Irrigation	Acre	0.7	\$37,633	\$26,343
7	Daily Cultural Monitoring	Day	30.0	\$1,100	\$33,000
<b>Subtotal:</b>					<b>\$1,183,684</b>
Construction Management					\$70,000
Geotechnical Analysis					\$70,000
<b>Subtotal:</b>					<b>\$1,323,684</b>
Contingencies (@ 25%)					\$330,921
<b>Construction Subtotal:</b>					<b>\$1,654,000</b>
8	Mitigation (Waters of the U.S.)	AC	0.22	\$140,000	\$30,800
<b>Grand Total:</b>					<b>\$1,685,000</b>

### 3.2.3 Monitoring of Exposed Encasement

A conceptual approach of monitoring the exposed encasement by SOCWA staff was evaluated. This approach is considered a non-construction approach. A non-construction approach is not a solution supported by Tetra Tech since all current risks of failure will not be addressed without a permanent design solution to the exposed encasement. Currently, erosion around the exposed encasement has already progressed significantly as described in Section 2.2 of this report. It is Tetra Tech’s opinion that any significant storms in the future could initiate structural damage to the structure. It is also possible that a future structural evaluation may reveal that the structure is already under significant structural stress by being exposed to turbulent flow and floating debris hitting the side of the structure over time. In the absence of a structural solution, this monitoring

approach will allow SOCWA to evaluate whether there is elevated risk to the site over time. However, the monitoring plan does not replace the need for a design solution.

Without any construction, there is no constructability issue.

A monitoring plan has been developed and included as Attachment A. The monitoring plan includes recommendations of what to look for in the field during visual inspection and frequency and possible schedule of inspection activities.

Cost for this approach was assumed to be zero as the inspection and monitoring will be performed by a SOCWA O&M staff during regular facility inspections and maintenance activities without the need for any special field equipment.

### 3.2.4 Comparison of Conceptual Approaches

The conceptual approaches were compared to the 2019 design alternative in terms of construction costs, constructability, potential environmental impacts/mitigation, and expected life. The environmental impacts were only compared in terms of size of impacted areas.

For this comparison, the construction cost for the 2019 design (riprap channel) was adjusted to be the January 2024 price level by multiplying it by a multi-year inflation index.

For the conceptual approaches, a contingency of 25% or more was incorporated. This percentage is likely to decrease if these approaches are to be further developed into a higher design level. With the high contingency for conceptual approaches, the cost comparison to the 2019 design, which was developed to the 90% construction-level design, should not be used for a budgetary purpose.

The summary of the comparison between the different approaches to address the risk of failure is shown in Table 3.3.

**Table 3.3 – Comparison of Various Approaches**

	<b>Micro-Tunneling</b>	<b>Sheet Piles</b>	<b>Monitoring</b>	<b>Riprap Channel (2019 Design)</b>
Cost	\$ 4,989,000	\$ 1,685,000	N.A. <sup>1</sup>	\$ 1,453,000
Constructability	Difficult	Difficult	None <sup>2</sup>	Normal
Impacts/Mitigation	Low	Low/Mild	None	High
Expected Life	40-50 years	30-40 years	Uncertain <sup>3</sup>	30-40 years
Note: 1. The monitoring activity is assumed to be performed by a SOCWA O&M staff as part of regular maintenance activities and not be considered as an additional cost. 2. No construction is being performed as part of monitoring. The inspection and monitoring are not considered as a construction activity. 3. Evaluating life expectancy of monitoring is difficult as it is highly tied to the hydraulics of flow and debris it is carrying during a flood event. With a larger flood event, the risk becomes more significant. Any significant flood event in the future could generate a damaging impact to the facility.				



#### 4. REFERENCES

AWMA. 1979. As-built Plans. *Aliso Creek Effluent Transmission Main, Reach D, and M-NWD ID-2A Interceptor Sewer, Contract No.PC-2-B-78-B*. prepared for Aliso Water Management Agency (AWMA), April 1979.

Tetra Tech, Inc (Tetra Tech). 2014. *Buried Utility Protection along Aliso Creek, Phase I, Orange County, California, Technical Memorandum, Site 2 – Trail Bridge ETM Crossing*. Prepared for SOCWA, June, 2014.

Tetra Tech. 2018. *Technical Memorandum: SOCWA Trail Bridge Crossing – Potential Risk of Failure at Project Site, Orange County, California*. Prepared for SOCWA, November, 2018.

Tetra Tech. 2019. *Trail Bridge ETM Crossing Design Project, Technical Memorandum, Draft Submittal, 90% Level Completion, Orange County, California*. Prepared for SOCWA, June, 2019.

# **ATTACHMENT**

## **Monitoring Plan**

# SOCWA Trail Bridge Effluent Transmission Main Crossing

## INSPECTION AND MONITORING PLAN

### 1. Introduction

This monitoring plan was developed to provide guidance and recommendations in inspecting and monitoring the exposed portion of the Trail Bridge Effluent Transmission (ETM) Main crossing site at Aliso Creek, Aliso Viejo, California. As of December 2023, the existing concrete encasement for the ETM crossing, which was originally designed to be flushed with the creek bed, is partially exposed to the creek flow due to erosion over time at the bottom of the creek.

This monitoring plan aims to assess the site's evolving risk. The 2024 Addendum Report (Tetra Tech 2024) has already confirmed the risk of failure to the exposed encasement. This plan informs, but does not substitute, the need for a permanent design solution.

### 2. Access to Project Site

The Trail Bridge ETM crossing site is located approximately 0.3 miles west of the intersection between Moulton Parkway and Alicia Parkway. Access points to the site are described below and identified in Figure 1. All access points lead to the existing bike path which then leads to the Trail Bridge.

#### Identified Access Points

- Access Point 1 – via Laguna Ct off Alicia Parkway (near Creekside Laguna Apartments)
- Access Point 2 – via a bike path entrance at the intersection between Moulton Parkway and Indian Hill Lane
- Access Point 3 – via a bike path entrance at the end of Park Avenue (a cul-de-sac) near Aliso Viejo Middle School



Figure 1 – Access Point Map

### 3. Typical Section

Based on the 1979 as-built plans, titled “Aliso Creek Effluent Transmission Main, Reach D and M-NWD ID-2A Interceptor Sewer, Contract No. PC-2-B-78-B”, the typical section of existing reinforced concrete encasement for the SOCWA 24” RCP line at the crossing is as shown below:

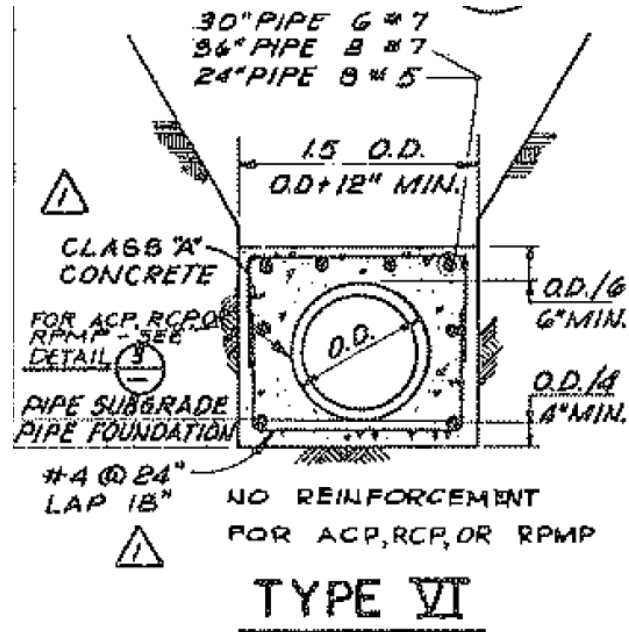


Figure 2 – Typical Section of Trail Bridge ETM Crossing

### 4. Recommended Inspection and Monitoring Activities

The following paragraphs outline the requirements and activities necessary to inspect and monitor the Trail Bridge ETM for any signs of erosion and/or structural damage to the encasement.

#### Visual Inspection

- Inspect amount of exposed encasement above creek bed, at both upstream and downstream faces of the encasement. Visual inspection must include field measurements using a survey rod or measuring stick that is long enough to reach the creek bed. Total height of existing encasement is approximately 3’-4”, based on the as-built plans.
- Inspect amount of exposed encasement monthly during rainy season (October to March) and three times during the dry season (end of rainy season, midway through dry season, prior to start of rainy season).
- Inspect amount of exposed encasement after significant rain events.



- If the height of exposed encasement from top of encasement reaches 2.5 feet over more than 3 feet of continuous width, perform survey monitoring (if not being performed already) and increase frequency of visual inspections to determine if water has undermined the encasement.
- After each inspection, document the field measurements and compare to previous measurements at the same locations to evaluate trends and severity of erosion around exposed encasement.
- Inspect for any structural damage to encasement, including spalling, scaling, and open cracking. Any damage to the encasement under water must be evaluated immediately by a structural engineer, even though the damage may not threaten the immediate integrity or performance of the structure. The structural evaluation must determine the need for any repair and repair measures.

### **Survey Monitoring**

- Set survey control points on each side of the Aliso Creek. Survey control points shall be set in concrete such that they are not disturbed by trail users.
- Set survey points on the exposed encasement at 10-foot intervals with water-proof markers or paint that will not penetrate or damage the concrete surface; a minimum of three points.
- Establish initial coordinates of encasement and top of encasement elevation.
- Measure depth from top of encasement to top of creek bed.
- Survey top of encasement and measure depth of creek bed monthly during rainy season (October to March) and three times during the dry season.
- Perform survey after significant rain events.

## **5. References**

Tetra Tech, Inc. 2024. Trail Bridge ETM Crossing Design Project, Orange County, California. Addendum to 2019 Technical Memorandum. Orange County, California. Prepared for SOCWA, January 2024.

# Agenda Item

# 10

**Engineering Committee Meeting**

**Meeting Date:** February 8, 2024

**TO:** Engineering Committee

**FROM:** Jim Burror, Acting General Manager/Director of Operations  
Roni Grant, Associate Engineer

**SUBJECT:** Capital Improvement Program (CIP) Budget Update

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## Overview

Engineering staff met with O&M staff over the past few weeks to identify and update the upcoming CIP Work Plan. The draft Work Plan will be presented at the Engineering Committee meeting.

**Recommended Action:** Information Item.