



**RESOLUTION NO. 2022-32**  
**RESOLUTION NO. PFA-02**  
**ORDINANCE NO. 2022-02**

## **AGENDA**

### **OUR MISSION**

Protect, enhance, and develop Calaveras County's water resources and watersheds to provide safe, reliable, and cost-effective services to our communities.

Regular Board Meeting  
Wednesday, March 23, 2022  
1:00 p.m.

Calaveras County Water District  
120 Toma Court  
San Andreas, California 95249

**Board Chambers are open to the public and the following alternative is available to members of the public who wish to participate in the meeting virtually:**

### **Microsoft Teams meeting**

**Join on your computer or mobile app**

[Click here to join the meeting](#)

**Or call in (audio only)**

[+1 323-647-8603,,605388082#](#)

Phone Conference ID: 605 388 082#

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Administration Office at 209-754-3028. Notification in advance of the meeting will enable CCWD to make reasonable arrangements to ensure accessibility to this meeting. Any documents that are made available to the Board before or at the meeting, not privileged or otherwise protected from disclosure, and related to agenda items, will be made available at CCWD for review by the public.

## **ORDER OF BUSINESS**

### **CALL TO ORDER / PLEDGE OF ALLEGIANCE**

1. **ROLL CALL**

2. **PUBLIC COMMENT**

**At this time, members of the public may address the Board on any non-agendized item. The public is encouraged to work through staff to place items on the agenda for Board consideration. No action can be taken on matters not listed on the agenda. Comments are limited to three minutes per person.**

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### **BOARD OF DIRECTORS**

Cindy Secada, President  
Bertha Underhill, Director

Scott Ratterman Vice President  
Russ Thomas, Director

Jeff Davidson, Director

**3. CONSENT AGENDA**

**The following items are expected to be routine / non-controversial. Items will be acted upon by the Board at one time without discussion. Any Board member may request that any item be removed for later discussion.**

- 3a Approval of Minutes for the Board Meeting of February 23, 2022  
(Rebecca Hitchcock, Clerk to the Board)
- 3b Report on the Monthly Investment Transactions for February 2022  
(Jeffrey Meyer, Senior Vice President Hilltop Securities Inc)
- 3c Re-Authorizing Remote Teleconference Meetings of the Board of Directors of The Calaveras County Water District for the Period of March 23 through April 14, 2022, Pursuant to AB 361  
(Rebecca Hitchcock, Clerk to the Board) **RES 2022-\_\_\_\_\_**

**4. NEW BUSINESS**

- 4a Presentation on the GASB 75 Valuation  
(Stacey Lollar, Human Resources Manager)
- 4b Discussion/Action regarding Bond Funding for Proposed FY 2022-23 through FY 2026-27 Capital Improvement Plan and Hiring of One New Construction Phase Staff  
(Michel Minkler, General Manager)
  - Initiate a Private Placement Process for Bond Funding **RES 2022-\_\_\_\_\_**
  - Amend the Fiscal Year 2021-22 Personnel Allocation **RES 2022-\_\_\_\_\_**
- 4c Discussion/Action regarding Award of Professional Services Agreement and Budget Adjustment for Design of the Jenny Lind Water System Tank A-B Transmission Pipeline Project, CIP #11088  
(Charles Palmer, District Engineer)
  - Award of Professional Services Agreement for Design of the Jenny Lind Water System Tank A-B Transmission Pipeline Project, CIP #11088 **RES 2022-\_\_\_\_\_**
  - Budget Adjustment for Design of the Jenny Lind Water System Tank A-B Transmission Pipeline Project, CIP #11088 **RES 2022-\_\_\_\_\_**

**5. REPORTS**

- 5a\* General Manager's Report  
(Michael Minkler)

**6.\* BOARD REPORTS / INFORMATION / FUTURE AGENDA ITEMS**

**7. NEXT BOARD MEETINGS**

- Wednesday, April 13, 2022, 1:00 p.m., Regular Board Meeting
- Wednesday, April 27, 2022, 1:00 p.m., Regular Board Meeting

\*No information included in packet

**8. CLOSED SESSION**

8a Conference with Legal Counsel-Anticipated Litigation  
Significant Exposure to Potential Litigation-Government Code Section 54956.9(d)(2)-2  
cases.

**9. REPORTABLE ACTION FROM CLOSED SESSION**

**10. ADJOURNMENT**



# CALAVERAS COUNTY WATER DISTRICT

## Board of Directors

District 1      Scott Ratterman  
District 2      Cindy Secada  
District 3      Bertha Underhill  
District 4      Russ Thomas  
District 5      Jeff Davidson

## Financial Services

Umpqua Bank  
US Bank  
Wells Fargo Bank

## CCWD Committees

\*Engineering Committee  
\*Finance Committee  
\*Legal Affairs Committee

## Joint Power Authorities

ACWA / JPIA  
CCWD Public Financing Authority  
Calaveras-Amador Mokelumne River Authority (CAMRA)  
Calaveras Public Power Agency (CPPA)  
Eastern San Joaquin Groundwater Authority  
Tuolumne-Stanislaus Integrated Regional Water  
Management Joint Powers Authority (T-Stan JPA)  
Upper Mokelumne River Watershed Authority (UMRWA)

## Other Regional Organizations of Note

Calaveras County Parks and Recreation  
Committee  
Highway 4 Corridor Working Group  
Mountain Counties Water Resources  
Association (MCWRA)  
Mokelumne River Association (MRA)  
Tuolumne-Stanislaus Integrated Regional Water  
Mgt. JPA Watershed Advisory Committee (WAC)  
Eastern San Joaquin Groundwater Authority-Technical  
Advisory Committee

## Legal Counsel

Matthew Weber, Esq.  
Downey Brand, LLP

## Auditor

Richardson & Company, LLP

## Membership\*\*

Thomas / Davidson (alt. Secada)  
Underhill / Secada (alt. Thomas)  
Davidson / Ratterman (alt. Thomas)

Ratterman (alt. Michael Minkler)  
All Board Members  
Ratterman / Underhill (alt. Secada)  
Michael Minkler (Alt. Brad Arnold)  
Thomas  
Secada (alt. Thomas)  
Davidson (alt. Ratterman)

Thomas (alt. Ratterman)

Thomas / Underhill  
All Board Members

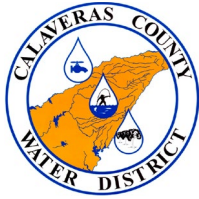
All Board Members  
Brad Arnold

Brad Arnold

\* Standing committees, meetings of which require agendas & public notice 72 hours in advance of meeting.

\*\* The 1<sup>st</sup> name listed is the committee chairperson.





## MINUTES

### CALAVERAS COUNTY WATER DISTRICT REGULAR BOARD MEETING

FEBRUARY 23, 2022

Directors Present: Cindy Secada, President  
Scott Ratterman, Vice President  
Bertha Underhill, Director  
Russ Thomas, Director  
Jeff Davidson, Director

Staff Present: Michael Minkler, General Manager  
Matt Weber Esq, General Counsel  
Rebecca Hitchcock, Clerk to the Board  
Damon Wyckoff, Director of Operations  
Jesse Hampton, Plant Operations Manager  
Pat Burkhardt, Construction and Maintenance Manager  
Mike Crank, Purchasing Agent  
Brad Arnold, Water Resources Manager  
Kevin Williams, Senior Civil Engineer  
John Griffin, Senior Civil Engineer  
Kate Jesus, Engineering Coordinator  
Tiffany Burke, Administrative Technician Sr.

Others Present: Jeffrey Meyer, Hilltop Securities

### ORDER OF BUSINESS

#### CALL TO ORDER / PLEDGE OF ALLEGIANCE

##### 1. ROLL CALL

Vice-President Ratterman called the Regular Board Meeting to order at 1:00 p.m. and led the Pledge of Allegiance. All Board members were present with President Secada in attendance virtually.

##### 2. PUBLIC COMMENT

There was no public comment.

##### 3. CONSENT AGENDA

**MOTION:** Directors Davidson/Ratterman-Approved Consent Agenda Items:  
3a, 3b, and 3c as presented

- 3a Approval of Minutes for the Board Meeting of January 26, 2022  
(Rebecca Hitchcock, Clerk to the Board)
- 3b Report on the Monthly Investment Transactions for January 2022  
(Jeffrey Meyer, Senior Vice President Hilltop Securities Inc)
- 3c Re-Authorizing Remote Teleconference Meetings of the Board of Directors of The Calaveras County Water District for the Period of February 23 through March 24, 2022 Pursuant to AB 361  
(Rebecca Hitchcock, Clerk to the Board) **RES 2022-24**

**AYES: Directors Davidson, Ratterman, Underhill, Thomas, and Secada**  
**NOES: None**  
**ABSTAIN: None**  
**ABSENT: None**

**4. NEW BUSINESS**

- 4a Discussion/Action to Approve the Purchase of a 2019, 14-Yard Freightliner Dump Truck  
(Damon Wyckoff, Director of Operations)

**MOTION: Directors Davidson/Thomas-Approved by Minute Order the Purchase of a 2019, 14-Yard Freightliner Dump Truck**

**DISCUSSION:** Mr. Wyckoff communicated to the Board that on January 26, 2022, a budget amendment was adopted to add a \$125,000 expenditure for the purchase of a used dump truck. He explained that this facilitates service line replacements and other construction projects throughout the District. The purchase price is slightly higher than the budgeted amount, but due to other cost savings there are funds available in the capital outlay budget to cover the difference with no additional budget adjustment. Staff inspected a 2019 with less than 46,000 miles for \$131,561 and a 2017 Freightliner with 72,888 miles for \$111,705. The 2017 has significantly more wear and tear than the 2019 and staff believe the 2019 is a better value that will last longer. Director Secada asked about the mileage the District can expect to get from this vehicle considering the State mandates on carbon emissions and time left on the tires. Mr. Wyckoff responded the District should expect at least 10 years out of this vehicle.

**PUBLIC COMMENT:** There was no public comment.

**AYES: Directors Davidson, Thomas, Underhill, Secada, and Ratterman**  
**NOES: None**  
**ABSTAIN: None**  
**ABSENT: None**

- 4b Discussion/Action to Approve the Purchase of a 2021 Ford F-550 4x4 Bucket Truck from Commerce Truck & Equipment Sales  
(Damon Wyckoff, Director of Operations)

**MOTION: Directors Underhill/Davidson-Approved by Minute Order the Purchase of a 2021 Ford F-550 4x4 Bucket Truck from Commerce Truck & Equipment Sales using existing budgeted funds in Capital Outlay**

**DISCUSSION:** Mr. Wyckoff reviewed the infrastructure that has been installed for the AMI network. There are 23 repeaters installed on 50-foot poles. In addition, District staff routinely must complete aerial work which requires a certified climber or renting a scissor lift or bucket truck. He explained that as part of the AMI project, USDA approved the expense of a bucket truck. This allows the District to roll the cost of the truck into the low interest loan from USDA. He also discussed that the brass meters replaced during the AMI project are being recycled at \$2.85 per pound. If all 13,000 meters are recycled, the District will receive \$182,286.00 which would be paid back to USDA. This would cover the cost of the truck which is \$137,187.59. There was significant discussion regarding the need for a bucket truck, the maintenance of the AMI components, and the repayment options. There was additional discussion regarding the payment options that would work best for the District. The motion was amended to include using existing budgeted funds in the Capital Outlay Funds for the purchase.

**PUBLIC COMMENT:** There was no public comment.

**AYES:** Directors Underhill, Davidson, and Ratterman  
**NOES:** Directors Thomas and Secada  
**ABSTAIN:** None  
**ABSENT:** None

**5. REPORTS**

5a General Manager’s Report  
(Michael Minkler)

Mr. Minkler reported on the following activities: 1) an update on the meter replacement and integration; 2) the Finance Committee Meeting; 3) a great deal of work is going into the CIP program and financing plan; 4) public notices for capacity fees and redistricting have been published for the March 9<sup>th</sup> Board meeting; 5) work at Sheep Ranch Water Tank; 6) Union Public Utility District has hired a new General Manager; and 7) the District has published the job recruitment for the Director of Finance vacancy.

**6. BOARD REPORTS / INFORMATION / FUTURE AGENDA ITEMS**

Director Underhill stated the District should always keep an eye out for items to submit to ACWA for Safety Awards.

Director Ratterman reported on the ACWA Local Government Committee meeting and the discussions regarding the teeter program. He will also be attending the ACWA Federal Affairs Committee meeting on March 1<sup>st</sup>.

Director Davidson had nothing to report.

Director Thomas had nothing to report.

Director Secada had nothing to report.

**7. NEXT BOARD MEETINGS**

- Wednesday, March 9, 2022, 1:00 p.m., Regular Board Meeting
- Wednesday, March 23, 2022, 1:00 p.m., Regular Board Meeting

**8. CLOSED SESSION**

The meeting adjourned into Closed Session at approximately 2:13 p.m. Those present were Board Members: Cindy Secada, Russ Thomas, Bertha Underhill, Jeff Davidson, and Scott Ratterman; staff member Michael Minkler, General Manager; and General Counsel, Matt Weber.

8a Conference with Real Property Negotiators Gov. Code § 54956.8  
Property: APN 055-051-008, Copperopolis  
Agency negotiators: M. Minkler  
Negotiating Parties: CV Developers  
Under negotiation: Price and/or terms of payment

8b Public Employee Performance Evaluation-Government Code §54957  
General Manager

**9. REPORTABLE ACTION FROM CLOSED SESSION**

The Board reconvened into Open Session at approximately 2:42 p.m. There was no reportable action.

**11. ADJOURNMENT**

With no further business, the meeting adjourned at 2:42 p.m.

Respectfully Submitted:

ATTEST:

\_\_\_\_\_  
Michael Minkler  
General Manager

\_\_\_\_\_  
Rebecca Hitchcock  
Clerk to the Board

# Agenda Item

DATE: March 23, 2022

TO: Michael Minkler, General Manager

FROM: Jeffrey Meyer, Senior Vice President, Hilltop Securities, Inc.

SUBJECT: Report on the Monthly Investment Transactions for February 28, 2022

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## RECOMMENDED ACTION:

For information only.

## SUMMARY:

Per the District's Investment Policy, staff will report the monthly investment activity for the preceding month. During February 2022 the following investment transactions occurred:

<b>Chandler Asset Management Activity:</b>	
<b>Book Value at 01/31/2022</b>	<b>2,005,638.60</b>
Security Purchases	244,652.10
Money Market Fund Purchases	11,576.96
Money Market Contributions	-
Money Market Fund Sales	(244,652.10)
Money Market Fund Withdrawals	(1,806.41)
Amortization/Accretion	(4,779.04)
<b>Book Value at 02/28/2022</b>	<b>2,010,630.11</b>
<b>Local Agency Investment Fund Activity:</b>	
<b>Book Value at 01/31/2022</b>	<b>11,907,995.00</b>
Interest Received for January - March 2022	-
Transfer from LAIF to Operating	-
<b>Balance at 02/28/2022</b>	<b>11,907,995.00</b>

LAIF (Local Agency Investment Fund) interest rates are 0.31% as of 02/28/2022. The LAIF rate has remained relatively low, and the majority of available funds are being invested through Chandler Asset Management.

**CALAVERAS COUNTY WATER DISTRICT  
INVESTMENT ACTIVITY**

FOR THE MONTH ENDING February 28, 2022

INVESTMENT TRUSTEE/TYPE	MARKET VALUE	INVESTMENT COST				CM INTEREST AND DIVIDEND RECVD
		COST	PAR (PRINC)	CPN RATE	DATE INVST	
Local Agency Investment Fund	11,907,995.00	11,907,995.00	11,907,995.00	0.230%	ongoing	-
Chandler Asset Management	19,493,601.44	20,010,630.11	19,888,247.77	0.530%	ongoing	<b>11,576.96</b>
<b>Totals</b>	<b>31,401,596.44</b>	<b>31,918,625.11</b>	<b>31,796,242.77</b>			<b>11,576.96</b>

<b>Chandler Asset Management Activity:</b>	
<b>Book Value at 01/31/2022</b>	<b>2,005,638.60</b>
Security Purchases	244,652.10
Money Market Fund Purchases	11,576.96
Money Market Contributions	-
Money Market Fund Sales	(244,652.10)
Money Market Fund Withdrawals	(1,806.41)
Amortization/Accretion	(4,779.04)
<b>Book Value at 02/28/2022</b>	<b>2,010,630.11</b>
<b>Local Agency Investment Fund Activity:</b>	
<b>Book Value at 01/31/2022</b>	<b>11,907,995.00</b>
Interest Received for January - March 2022	-
Transfer from LAIF to Operating	-
<b>Balance at 02/28/2022</b>	<b>11,907,995.00</b>

**CALAVERAS COUNTY WATER DISTRICT  
CHANDLER ASSET MANAGEMENT  
FOR THE MONTH ENDED FEBRUARY 28, 2022**

INVESTMENT TRUSTEE/TYPE	MARKET VALUE	INVESTMENT COST			Dividends Earned	Interest Earned	Net Income
		BOOK	PAR Value/Units	CPN RATE			
Asset Backed Security	942,248.26	959,929.28	960,000.00	0.55%		441.81	441.81
Agency Securities	2,347,021.60	2,412,533.55	2,400,000.00	0.36%		750.00	750.00
CMO	203,861.40	210,356.50	200,000.00	0.62%		445.00	445.00
Corporate Securities	3,678,997.23	3,776,936.80	3,710,000.00	0.80%		3,437.50	3,437.50
Money Market Fund (Cash)	148,247.77	148,247.77	148,247.77	0.01%	2.65		2.65
Negotiable CD	2,145,464.05	2,149,999.93	2,150,000.00	0.19%			-
Supernational Securities	1,083,041.53	1,121,445.69	1,120,000.00	0.65%			-
US Treasury	8,944,719.60	9,231,180.59	9,200,000.00	0.54%		6,500.00	6,500.00
<b>Totals</b>	<b>19,493,601.44</b>	<b>20,010,630.11</b>	<b>19,888,247.77</b>	<b>0.53%</b>	<b>2.65</b>	<b>11,574.31</b>	<b>11,576.96</b>

# Agenda Item

DATE: March 23, 2022

TO: Board of Directors

FROM: Rebecca Hitchcock, Clerk to the Board

SUBJECT: Re-Authorizing Remote Teleconference Meetings of the Board of Directors of The Calaveras County Water District for the Period of March 23 through April 14, 2022 Pursuant to AB 361

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## RECOMMENDED ACTION:

Motion: \_\_\_\_\_/\_\_\_\_\_ adopting Resolution No.2022-\_\_\_\_ Re-authorizing Remote Teleconference Meetings of the Board of Directors of The Calaveras County Water District for the Period of March 23 through April 14, 2022, Pursuant to AB 361.

## SUMMARY:

On October 26, 2021, the Board of Directors adopted Resolution 2021-79 ratifying the proclamation of a state of emergency on March 4, 2020 and authorizing remote teleconference meetings of the Board of Directors for the period of October 26 thru November 25, 2021 pursuant to AB 361.

After 30 days, the District is required to renew its resolution effecting the transition to the modified Brown Act requirements if it desires to continue meeting under those modified requirements.

Importantly, the ability to renew the resolution is subject to certain requirements and conditions. In order to renew the resolution, a local agency must:

1. Reconsider the circumstances of the state of emergency
2. Having reconsidered the state of emergency, determine that either
  - a. The state of emergency continues to directly impact the ability of the members to meet safely in person, or
  - b. State or local officials continue to impose or recommend measures to promote social distancing

## FINANCIAL CONSIDERATIONS:

None at this time.

Attachments: a) Resolution 2022-\_\_\_\_ Ratifying the Proclamation of a State of Emergency on March 4, 2020 and Authorizing Remote Teleconference Meetings of The Board of Directors of the Calaveras County Water District for the Pursuant to Brown Act Provisions



**RESOLUTION NO. 2022-**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CALAVERAS COUNTY WATER DISTRICT PROCLAIMING A LOCAL EMERGENCY PERSISTS, RE-RATIFYING THE PROCLAMATION OF A STATE OF EMERGENCY ON MARCH 4, 2020, AND RE-AUTHORIZING REMOTE TELECONFERENCE MEETINGS OF THE LEGISLATIVE BODIES OF THE BOARD OF DIRECTORS OF THE CALAVERAS COUNTY WATER DISTRICT FOR THE PERIOD MARCH 23 THROUGH APRIL 14, 2022 PURSUANT TO BROWN ACT PROVISIONS.**

**WHEREAS**, the Calaveras County Water District committed to preserving and nurturing public access and participation in meetings of the Board of Directors; and

**WHEREAS**, all meetings of Calaveras County Water District's legislative bodies are open and public, as required by the Ralph M. Brown Act (Cal. Gov. Code 54950 – 54963), so that any member of the public may attend, participate, and watch the District's legislative bodies conduct their business; and

**WHEREAS**, the Brown Act, Government Code section 54953(e), makes provisions for remote teleconferencing participation in meetings by members of a Board of Directors, without compliance with the requirements of Government Code section 54953(b)(3), subject to the existence of certain conditions; and

**WHEREAS**, a required condition is that a state of emergency is declared by the Governor pursuant to Government Code section 8625, proclaiming the existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by conditions as described in Government Code section 8558; and

**WHEREAS**, a proclamation is made when there is an actual incident, threat of disaster, or extreme peril to the safety of persons and property within the jurisdictions that are within the District's boundaries, caused by natural, technological, or human-caused disasters; and

**WHEREAS**, it is further required that state or local officials have imposed or recommended measures to promote social distancing, or, the Board of Directors meeting in person would present imminent risks to the health and safety of attendees; and

**WHEREAS**, the Board of Directors previously adopted a Resolution, 2021-79 on October 26, 2021, finding that the requisite conditions exist for the legislative bodies of Calaveras County Water District to conduct remote teleconference meetings without compliance with paragraph (3) of subdivision (b) of section 54953; and

**WHEREAS**, as a condition of extending the use of the provisions found in section 54953(e), the Board of Directors must reconsider the circumstances of the state of emergency that exists in the District, and the Board of Directors has done so; and

**WHEREAS**, such conditions now exist in the District, specifically, the State of Emergency declared by Governor Newsom on March 4, 2020, due to COVID-19; and

**WHEREAS**, the Board of Directors does hereby find that the rise in SARS-CoV-2 Delta Variant has caused, and will continue to cause, conditions of peril to the safety of persons within the District that are likely to be beyond the control of services, personnel, equipment, and facilities of the District, and desires to proclaim a local emergency and ratify the proclamation of state of emergency by the Governor of the State of California; and

**WHEREAS**, as a consequence of the local emergency, the Board of Directors does hereby find that the legislative bodies of Calaveras County Water District shall conduct their meetings without compliance with paragraph (3) of subdivision (b) of Government Code section 54953, as authorized by subdivision (e) of section 54953, and that such legislative bodies shall comply with the requirements to provide the public with access to the meetings as prescribed in paragraph (2) of subdivision (e) of section 54953; and

**WHEREAS**, The regular meetings of the Board, and any and all other meetings of the District's legislative bodies that are subject to the Brown Act, may be held via teleconference or other electronic means, in the manner set forth in the Virtual Public Meeting Protocols to this Declaration, which may be updated, from time to time, in the actual agenda notice for the meeting of the legislative body. All members of the public seeking to observe and/or to address the local legislative body may participate in the meeting telephonically or otherwise electronically in the manner set forth in the Virtual Public Meeting Protocols attached to this Declaration which may be updated, from time to time, in the actual agenda notice for the meeting of the legislative body.

**NOW, THEREFORE**, The Board Of Directors OF CALAVERAS COUNTY WATER DISTRICT does hereby resolve as follows:

Section 1. Recitals. The Recitals set forth above are true and correct and are incorporated into this Resolution by this reference.

Section 2. Proclamation of Local Emergency. The Board hereby proclaims that a local emergency now exists throughout the District, and COVID-19 has caused, and will continue to cause, conditions of peril to the safety of persons within the District that are likely to be beyond the control of services, personnel, equipment, and facilities of the District.

Section 3. Ratification of Governor's Proclamation of a State of Emergency. The Board hereby ratifies the Governor of the State of California's Proclamation of State of Emergency, effective as of its issuance date of March 4, 2020

Section 4. Remote Teleconference Meetings. The General Manager and legislative bodies of Calaveras County Water District are hereby authorized and directed to take all actions necessary to carry out the intent and purpose of this Resolution including,

conducting open and public meetings in accordance with Government Code section 54953(e) and other applicable provisions of the Brown Act.

Section 5. Effective Date of Resolution. This Resolution shall take effect immediately upon its adoption and shall be effective until the earlier of (i) March 24, 2022, or such time the Board of Directors adopts a subsequent resolution in accordance with Government Code section 54953(e)(3) to extend the time during which the legislative bodies of Calaveras County Water District may continue to teleconference without compliance with paragraph (3) of subdivision (b) of section 54953.

**PASSED AND ADOPTED**, this 23<sup>rd</sup> day of March 2022, by the following vote:

**AYES:**

**NOES:**

**ABSENT:**

**ABSTAIN:**

CALAVERAS COUNTY WATER DISTRICT

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Cindy Secada, President  
Board of Directors

ATTEST:

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Rebecca Hitchcock  
Clerk to the Board

# Agenda Item

DATE: March 23, 2022

TO: Michael Minkler, General Manager

FROM: Stacey Lollar, HR Manager

SUBJECT: Presentation of GASB 75 Disclosures for Fiscal Year Ending June 30, 2022

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## **SUMMARY:**

A GASB 75 report is the result of a comprehensive review of the Calaveras County Water District (District) other post-employment benefits (OPEB) to determine recommended District contributions to the District's OPEB budget.

This year's review and report preparation was completed by GovInvest. The review included an in-depth look in three key areas:

- The demographics of the District's active employees and existing retirees
- Current and future retiree health benefit design
- Health plan cost trends

In addition to these key areas inflation, payroll growth, investment rate of return and discount rate were based on actuarial assumptions.

The results of the report show a decrease in a Net OPEB Liability which increases the District's OPEB funding status to 86.5%. These results are due to significant retiree health benefit change, spectacular PARS Trust investment performance and reduced health plan costs trends

## **FINANCIAL CONSIDERATIONS:**

None at this time.

*Attachments: GASB 75 Disclosures of Fiscal Year Ending June 30, 2022*

# Calaveras County Water District

GASB 75 Disclosures for Fiscal Year Ending June 30, 2022  
Based on OPEB Valuation as of June 30, 2021

## CONTACT

Evi Laksana, ASA, MAAA  
evi@govinvest.com  
(424) 877-2393



**GovInvest**  
The Financial Forecasting Authority

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# Actuarial Certification

Michael Minkler  
Calaveras County Water District  
120 Toma Ct  
San Andreas, CA 95249

GovInvest has been engaged by Calaveras County Water District to complete an actuarial valuation as of June 30, 2021 which will be used as the basis of the financial accounting disclosure for fiscal year ending June 30, 2022 in accordance with GASB Statement No. 75 (Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions).

The purpose of this report is to provide the District with recommended contributions as well as required information needed for financial statement disclosure purposes. The use of this report for any other purpose may not be appropriate. The content of this report may not be modified, reproduced, or provided to third parties, either in whole or in part, without our permission. GovInvest is not responsible for usage, inference, or misinterpretation of this report by third parties.

Results presented in this report are based on the census data, substantive plan provisions, and healthcare cost information provided by the District and/or their benefit consultants. All information provided has been reviewed for reasonableness and clarifications or corrections have been requested where appropriate. We have not audited the information at the source, and therefore, do not accept responsibility for the accuracy or completeness of the data on which the information is based. Assumptions made related to missing data have been identified in this report. We are satisfied that the information provided is suitable and sufficient for the purpose of the measurement.

The valuation results were prepared using leased actuarial modeling software that produces results consistent with the purpose of this valuation and meet applicable regulatory requirements. The vendor is responsible for the development, maintenance, and improvement of these models. The models include comprehensive technical documentations that outline how the calculations are performed along with sample life outputs that allow the users to confirm with high degree of accuracy how the programmed benefit is applied to an individual with the proposed decrements and other assumptions. The actuarial team loads the participant data, programs the benefit provisions and proposed assumptions into the model and reviews sample life outputs and results under the supervision of credentialed actuaries who are proficient users of the software. We are not aware of any material limitations in the model nor any material inconsistencies in the assumptions used within the model.

Discount rate, other economic, and demographic assumptions have been selected by the District with our recommendations and concurrence. We believe each assumption is reasonable based on its own merits and in combination represent reasonable expected experience of the Plan. All calculations have been completed in accordance with generally accepted actuarial principles and practices.

Future actuarial measurements may differ significantly from current measurements due to factors such as actual plan experience that differs from that anticipated by the economic and demographic assumptions as well as changes in future assumptions, substantive plan provisions, and/or applicable law. We have not analyzed the potential range of such differences due to the limited scope of our engagement. To our knowledge, there are no significant events prior to the current year's Measurement Date or as of the date of this report that may materially affect the results presented herein.

The undersigned meets the General Qualification Standards of the American Academy of Actuaries for the purpose of issuing Statement of Actuarial Opinion in the United States. Neither GovInvest or any of its employees have any relationship with the Plan Sponsor that could impair or appear to impair the objectivity of this report.

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Evi Laksana, ASA, MAAA  
March 1, 2022



# Section 1: Executive Summary

Calaveras County Water District (the “District”) sponsors a single-employer defined benefit OPEB plan that provides medical, prescription drug, dental, and vision coverage at retirement. Employees may continue health coverage with the District at retirement for themselves, their spouses, and dependents for life once they meet certain eligibility requirements and as long as required contributions are made.

The results presented in this report are based on the June 30, 2021 valuation with liabilities and assets measured as of June 30, 2021, for use in the District’s accrual-based financial statement for the fiscal year ending June 30, 2022. The District has elected to use the GASB 75 “lookback” method where assets and liabilities are measured as of the prior fiscal year-end but applied to the current fiscal year. The June 30, 2021 valuation uses census data of (a) active employees who will be eligible to receive benefits in the future and (b) existing retirees who are currently receiving these benefits as of June 30, 2021, as well as healthcare cost information effective on January 1, 2021 provided by the Plan Sponsor and/or their healthcare consultant.

The actuarial valuation is based on substantive plan provisions outlined in Section 6 and it requires assumptions which are listed in Section 7. Results from June 30, 2021 valuation may be rolled-forward for use in the Plan Sponsor’s accrual-based financial statement disclosure for the fiscal year ending June 30, 2023 assuming that there are no material changes to the substantive plan provisions and/or the covered population.

The Plan Sponsor’s next full valuation is as of June 30, 2023 with liabilities and assets measured as of June 30, 2023 for reporting in the Plan Sponsor’s accrual-based financial statements for the fiscal year ending June 30, 2024.

## Changes Since Prior Valuation

The District’s Net OPEB Liability has decreased from \$5,947,042 as of June 30, 2020 to \$2,008,651 as of June 30, 2021, which is attributable to a combination of the following factors:

1. Substantive plan provision changes outlined in Section 6.
2. Better actual asset performance compared to expected.
3. Slightly less favorable actual demographic experience that is offset by lower healthcare cost increase than expected for a net liability decrease.
4. Assumption changes as outlined in Section 7 that produces a net liability decrease.

## Summary of Results

Presented below is the summary of results for the current fiscal year compared to the prior fiscal year.

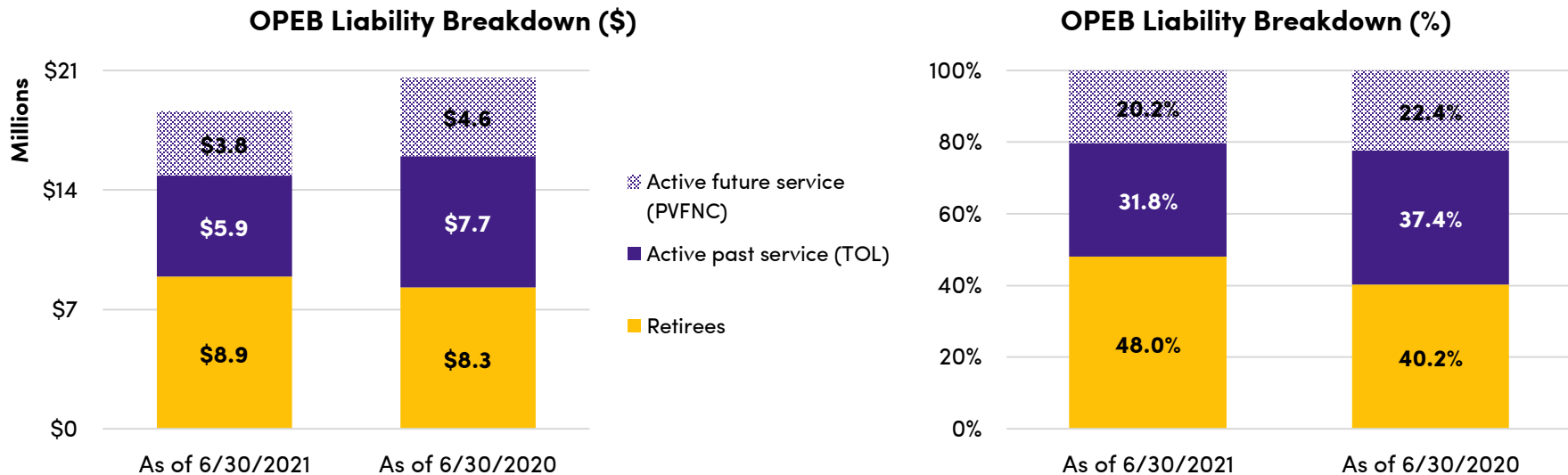
Fiscal Years	2021/22	2020/21
Valuation Date (VD)	June 30, 2021	June 30, 2019
Measurement Date (MD)	June 30, 2021	June 30, 2020
<b>Membership Data as of Valuation Date</b>		
Inactive employees or beneficiaries currently receiving benefits	61	57
Inactive employees entitled to but not yet receiving benefits	0	0
Active employees	67	63
Total membership	128	120
<b>Discount Rate at Measurement Date</b>		
Municipal Bond Index Rate	2.19%	2.66%
Long-term Expected Asset Return	7.00%	7.00%
Year in which Fiduciary Net Position is projected to be depleted	N/A	N/A
Single Equivalent Discount Rate (SEDR)	7.00%	7.00%
<b>Net OPEB Liability as of Measurement Date</b>		
Total OPEB Liability (TOL)	\$ 14,847,133	\$ 15,975,929
Fiduciary Net Position (FNP)	(12,838,482)	(10,028,887)
Net OPEB Liability (NOL = TOL - FNP)	\$ 2,008,651	\$ 5,947,042
Funded Status (FNP / TOL)	86.50%	62.80%
OPEB Expense / (Income)	\$ 58,383	\$ 1,089,803
Balance of unamortized Deferred Inflows at MD	\$ (3,056,656)	\$ (824,756)
Balance of unamortized Deferred Outflows at MD	\$ 1,697,839	\$ 3,056,278
<b>Actuarially Determined Contribution</b>	\$ 606,965	\$ 1,046,475

Below is a breakdown of the OPEB liability allocated to past and current service as of the Measurement Date compared to the prior Measurement Date. The liability below includes explicit subsidy (if any) and implicit subsidy. Refer to the Substantive Plan Provisions section for complete information on the District benefit provisions.

Present Value of Future Benefits (PVFB)	As of June 30, 2021	As of June 30, 2020 <sup>1</sup>
Active employees	\$ 9,675,495	\$ 12,314,932
Retired employees	8,927,665	8,275,921
<b>Total PVFB</b>	<b>\$ 18,603,160</b>	<b>\$ 20,590,853</b>

Total OPEB Liability (TOL)	As of June 30, 2021	As of June 30, 2020 <sup>1</sup>
Active employees	\$ 5,919,468	\$ 7,700,008
Retired employees	8,927,665	8,275,921
<b>Total TOL</b>	<b>\$ 14,847,133</b>	<b>\$ 15,975,929</b>

	As of June 30, 2021	As of June 30, 2020
Discount Rate	7.00%	7.00%



<sup>1</sup> As actual PVFB and TOL split between active and retired employees are not available in the prior actuary's report, the above figures have been approximated.

## Section 2: Financial Disclosures

This section provides the necessary accounting disclosures for the District’s financial reports as shown in the following tables:

Table 1: Plan Demographics

Table 2: Brief Summary of Assumptions

Table 3: OPEB Expense

Table 4: Net OPEB Liability Sensitivity (Discount Rate)

Table 5: Net OPEB Liability Sensitivity (Healthcare Trend Rates)

Table 6: Historical Deferred Inflows and Outflows

Table 7: Unamortized Balance of Deferred Inflows and Outflows

Table 8: Schedule of Future Amortization of Deferred Inflows and Outflows

### Summary of Membership and Assumptions

The table below shows the number of employees covered by the benefit terms as of June 30, 2021.

Table 1 - Plan Demographics

Inactive employees or beneficiaries currently receiving benefits	61
Inactive employees entitled to but not yet receiving benefits	0
Active employees	67
<b>Total membership</b>	<b>128</b>

The Total OPEB Liability (TOL) as of June 30, 2021 was determined using the following actuarial assumptions, applied to all periods included in the measurement, unless otherwise specified. For a complete list of assumptions, refer to Section 7.

Table 2 - Brief Summary of Assumptions

Inflation	2.50%
Payroll growth	2.75% wage inflation plus seniority, merit, and promotion salary increases based on CalPERS Experience Study and Review of Actuarial Assumptions published in December 2017
Investment rate of return	7.00%
Discount rate	7.00%
Healthcare trend rates	Based on 2021 Getzen model with an initial rate of 6.00% decreasing gradually to an ultimate rate of 4.04%

## OPEB Expense

The table below shows a comparison of the OPEB Expense recognized by the District for the current and prior fiscal years.

Table 3 - OPEB Expense

Fiscal Years	2021/22	2020/21
SEDR as of beginning of year	7.00%	7.00%
SEDR as of end of year	7.00%	7.00%
Service Cost	\$ 530,841	\$ 507,982
Interest on TOL and Service Cost	1,129,595	1,070,276
Changes of benefit terms	(407,492)	0
Projected earnings on OPEB Plan investments	(721,401)	(594,017)
OPEB Plan administrative expenses net of all revenues	0	0
Current period recognition of Deferred Inflows / Outflows of Resources		
Difference between expected and actual experience in the TOL	\$ 71,655	\$ 295,933
Changes of assumptions or other inputs	(253,840)	(204,392)
Net difference between the projected and actual earnings on OPEB Plan investments	(290,975)	14,021
Other	0	0
Total current period recognition	\$ (473,160)	\$ 105,562
OPEB Expense	\$ 58,383	\$ 1,089,803

## Schedule of Changes in Net OPEB Liability

Fiscal Year Ending June 30	2022	2021	2020	2019	2018
Measurement Period Ending June 30	2021	2020	2019	2018	2017
<b>Total OPEB Liability (TOL)</b>					
Service Cost	\$ 530,841	\$ 507,982	\$ 393,335	\$ 356,032	\$ 339,078
Interest on TOL and Service Cost	1,129,595	1,070,276	974,068	921,936	873,640
Changes of benefit terms	(407,492)	0	0	0	0
Difference between expected & actual experience	(1,345,668)	0	1,788,002	(13,392)	0
Changes of assumptions or other inputs	(296,687)	0	(1,226,349)	0	0
Benefit payments	(739,385) <sup>2</sup>	(768,012)	(570,587)	(534,668)	(544,601)
<b>Net change in TOL</b>	<b>\$ (1,128,796)</b>	<b>\$ 810,246</b>	<b>\$ 1,358,469</b>	<b>\$ 729,908</b>	<b>\$ 668,117</b>
<b>TOL – beginning</b>	<b>\$ 15,975,929</b>	<b>\$ 15,165,683</b>	<b>\$ 13,807,214</b>	<b>\$ 13,077,306</b>	<b>\$ 12,409,189</b>
<b>TOL – ending</b>	<b>\$ 14,847,133</b>	<b>\$ 15,975,929</b>	<b>\$ 15,165,683</b>	<b>\$ 13,807,214</b>	<b>\$ 13,077,306</b>
<b>Plan Fiduciary Net Position (FNP)</b>					
Contributions – employer	\$ 1,302,598	\$ 1,614,145	\$ 1,422,545	\$ 1,228,844	\$ 1,156,609
Contributions – employees	0	0	0	0	0
Benefit payments	(739,385)	(768,012)	(570,587)	(534,668)	(544,601)
Net investment income	2,305,656	362,855	562,710	405,162	564,907
Trust administrative expenses	(59,274)	(50,062)	(41,110)	(17,301)	(15,813)
<b>Net change in Plan FNP</b>	<b>\$ 2,809,595</b>	<b>\$ 1,158,926</b>	<b>\$ 1,373,558</b>	<b>\$ 1,082,037</b>	<b>\$ 1,161,102</b>
<b>FNP – beginning</b>	<b>\$ 10,028,887</b>	<b>\$ 8,869,961</b>	<b>\$ 7,496,403</b>	<b>\$ 6,414,366</b>	<b>\$ 5,253,264</b>
<b>FNP – ending</b>	<b>\$ 12,838,482</b>	<b>\$ 10,028,887</b>	<b>\$ 8,869,961</b>	<b>\$ 7,496,403</b>	<b>\$ 6,414,366</b>
<b>Net OPEB Liability – ending</b>	<b>\$ 2,008,651</b>	<b>\$ 5,947,042</b>	<b>\$ 6,295,722</b>	<b>\$ 6,310,811</b>	<b>\$ 6,662,940</b>
FNP as % of TOL	86.5%	62.8%	58.5%	54.3%	49.0%
Covered payroll – measurement period	\$ 5,721,768	\$ 5,528,469	\$ 5,373,055	\$ 5,379,180	\$ 5,256,427
NOL as % of covered payroll	35.1%	107.6%	117.2%	117.3%	126.8%

<sup>2</sup> Based on explicit benefit payment of \$596,953 and estimated implicit subsidy payment of \$142,432.

## Schedule of Employer Contribution

GASB Statement number 75 was first implemented in the fiscal year ending June 30, 2018. No information was available prior to this date.

Fiscal Year Ending	2022	2021	2020	2019	2018
Measurement Period Ending	2021	2020	2019	2018	2017
Actuarially Determined Contribution (ADC)	\$ 606,965	\$ 1,046,475	\$ 1,105,921	\$ 851,958	\$ 746,759
Contributions in relation to the ADC	\$ 1,302,598	\$ 1,318,383	\$ 1,614,145	\$ 1,422,545	\$ 1,156,609
Contribution deficiency / (excess)	\$ (695,633)	\$ (271,908)	\$ (508,224)	\$ (570,587)	\$ (409,850)
Covered-employee payroll – employer fiscal year	\$ 5,078,748	\$ 5,721,768	\$ 5,528,469	\$ 5,373,055	\$ 5,379,180
Contributions as a % of covered-employee payroll	25.6%	23.0%	29.2%	26.5%	21.5%

## Net OPEB Liability Sensitivity

The following presents the Net OPEB Liability of the District, as well as what the District's Net OPEB Liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current discount rate as of June 30, 2021.

Table 4 - Net OPEB Liability Sensitivity (Discount Rate)

	<b>1% Decrease (6.00%)</b>	<b>Discount Rate (7.00%)</b>	<b>1% Increase (8.00%)</b>
Net OPEB Liability / (Asset)	\$ 3,838,622	\$ 2,008,651	\$ 482,323

The following presents the Net OPEB Liability of the District, as well as what the District's Net OPEB Liability would be if it were calculated using healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the current healthcare cost trend rates as of June 30, 2021.

Table 5 - Net OPEB Liability Sensitivity (Healthcare Trend Rates)

	<b>1% Decrease (5.00% decreasing to 3.04%)</b>	<b>Healthcare Trend Rates (6.00% decreasing to 4.04%)</b>	<b>1% Increase (7.00% decreasing to 5.04%)</b>
Net OPEB Liability / (Asset)	\$ 336,246	\$ 2,008,651	\$ 4,041,951



## Deferred Inflows and Deferred Outflows of Resources Related to OPEB

The tables below show changes in the Net OPEB Liability that have not been included in the OPEB expense for the following items:

1. Differences between expected and actual experience of the OPEB plan
2. Changes in assumptions
3. Differences between projected and actual earnings on the OPEB plan investments

The initial amortization base for the first two items above are amortized linearly over the average expected remaining service lives of active and inactive employees. The difference between projected and actual earnings on the OPEB plan investments is amortized linearly over five years.

Table 6 - Historical Deferred Inflows and Outflows

### Differences between expected and actual experience

Measurement Period Ending	Fiscal Year Ending	Initial Balance	Initial Amortization Period	Annual Recognition	Recognized in OPEB Expense through June 30, 2021	Unamortized Balance as of June 30, 2021
6/30/2017	6/30/2018	\$ 0	6.48	\$ 0	\$ 0	\$ 0
6/30/2018	6/30/2019	\$ (13,392)	6.48	\$ (2,067)	\$ (8,268)	\$ (5,124)
6/30/2019	6/30/2020	\$ 1,788,002	6.00	\$ 298,000	\$ 894,000	\$ 894,002
6/30/2020	6/30/2021	\$ 0	6.00	\$ 0	\$ 0	\$ 0
6/30/2021	6/30/2022	\$ (1,345,668)	6.00	\$ (224,278)	\$ (224,278)	\$ (1,121,390)

### Changes in assumptions or other inputs

Measurement Period Ending	Fiscal Year Ending	Initial Balance	Initial Amortization Period	Annual Recognition	Recognized in OPEB Expense through June 30, 2021	Unamortized Balance as of June 30, 2021
6/30/2017	6/30/2018	\$ 0	6.48	\$ 0	\$ 0	\$ 0
6/30/2018	6/30/2019	\$ 0	6.00	\$ 0	\$ 0	\$ 0
6/30/2019	6/30/2020	\$ (1,226,349)	6.00	\$ (204,392)	\$ (613,176)	\$ (613,173)
6/30/2020	6/30/2021	\$ 0	6.00	\$ 0	\$ 0	\$ 0
6/30/2021	6/30/2022	\$ (296,687)	6.00	\$ (49,448)	\$ (49,448)	\$ (247,239)

**Differences between projected and actual earnings on OPEB plan investments**

Measurement Period Ending	Fiscal Year Ending	Initial Balance	Initial Amortization Period	Annual Recognition	Recognized in OPEB Expense through June 30, 2021	Unamortized Balance as of June 30, 2021
6/30/2017	6/30/2017	\$ (176,665)	5.00	\$ (35,333)	\$ (176,665)	\$ 0
6/30/2018	6/30/2018	\$ 67,134	5.00	\$ 13,427	\$ 53,708	\$ 13,426
6/30/2019	6/30/2019	\$ (92,859)	5.00	\$ (20,318)	\$ (60,954)	\$ (31,905)
6/30/2020	6/30/2020	\$ 281,224	5.00	\$ 56,245	\$ 112,490	\$ 168,734
6/30/2021	6/30/2021	\$ (1,524,981)	5.00	\$ (304,996)	\$ (304,996)	\$ (1,219,985)

The table below shows the unamortized balance of Deferred Inflows and Outflows of Resources as of June 30, 2021 for financial statement disclosure for the fiscal year ending June 30, 2022.

Table 7 - Unamortized Balance of Deferred Inflows and Outflows

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 894,002	\$ (1,126,514)
Changes in assumptions or other inputs	0	(860,412)
Net difference between projected and actual earnings on OPEB plan investments	0	(1,069,730)
Employer contribution subsequent to the Measurement Date	803,837 <sup>3</sup>	0
<b>Total</b>	<b>\$ 1,697,839</b>	<b>\$ (3,056,656)</b>

Schedule of future annual amortizations of Deferred Inflows and Outflows that will be recognized in future OPEB expense is as shown below.

Table 8 - Schedule of Future Deferred Inflows and Outflows Amortization

Measurement Period Ending	Amounts
2022	\$ (437,827)
2023	\$ (442,524)
2024	\$ (429,855)
2025	\$ (578,723)
2026	\$ (273,725)
Thereafter	\$ 0

<sup>3</sup> Estimated equal to the projected benefit payment for the measurement period ending June 30, 2022 or fiscal year ending June 30, 2023.

## Section 3: Asset Information

### Funding Policy

The District has an OPEB Trust that is invested in Public Agency Retirement Services (PARS) under the Moderately Conservative Investment Objective, which is a qualified irrevocable trust. The District intends to make discretionary annual OPEB Trust contributions and pay for the retiree health benefit expenses (both implicit and explicit subsidies) from the District's general assets.

### Asset Breakdown

As of	June 30, 2021 <sup>4</sup>	June 30, 2020
<b>Assets</b>		
Cash and cash equivalents	\$ 128,385	\$ 0
Receivables	0	0
Investments		
Fixed income	\$ 5,969,894	\$ 0
Equities	6,740,203	0
Mutual funds	0	10,028,887
Real assets	0	0
Total investments	<u>\$ 12,710,097</u>	<u>\$ 10,028,887</u>
Total assets	\$ 12,838,482	\$ 10,028,887
<b>Liabilities</b>		
Accounts payable	<u>\$ 0</u>	<u>\$ 0</u>
Total liabilities	\$ 0	\$ 0
Net asset available for benefits	\$ 12,838,482	\$ 10,028,887

<sup>4</sup> Asset breakdown among the different asset classes is based on the PARS June 30, 2021 target asset allocation of 52.5% equity, 46.5% bond, and 1.0% cash.

## Reconciliation of Assets

Measurement Periods	2020/21	2019/20
<b>Additions</b>		
Contributions received		
Employer	\$ 1,302,598	\$ 1,614,145
Employees	0	0
Total contributions	\$ 1,302,598	\$ 1,614,145
Investment income		
Interest and dividend	0	0
Net increase/(decrease) in fair value of investments	2,305,656	362,855
Accrued income	0	0
Investment expense	(59,274)	(50,062)
Net investment income	\$ 2,246,382	\$ 312,793
Total additions	\$ 3,547,399	\$ 1,926,938
<b>Deductions</b>		
Benefit payments net of retiree contributions	\$ (739,385)	\$ (768,012)
Administrative expenses	0	0
Total deductions	\$ (739,385)	\$ (768,012)
Change in net position	\$ 2,809,595	\$ 1,158,926
Net position – beginning of year	\$ 10,028,887	\$ 8,869,961
Net position – end of year	\$ 12,838,482	\$ 10,028,887

## Section 4: Actuarially Determined Contribution

Actuarially Determined Contribution (ADC) is the recommended contribution that, if paid on an ongoing basis, is expected to provide sufficient resources to fund (a) future normal cost (cost for new service) and (b) the amortized unfunded liabilities (cost for past service). There is no requirement to fund OPEB benefit under GASB 75 and it is up to the Plan Sponsor's discretion to determine the OPEB contributions based on their fiscal situation.

Fiscal Years (Contribution Years)	2021/22	2022/23
Measurement Periods	2020/21	2021/22
Funding discount rate	7.00%	7.00%
Amortization method	Level % of pay	Level % of pay
Payroll growth	2.75%	2.75%
Amortization period	17 years	16 years
Actuarial Accrued Liability (AAL) – beginning of year <sup>5</sup>	\$ 14,847,133	\$ 15,490,456
Actuarial Value of Assets (AVA) – beginning of year <sup>6</sup>	(12,838,482)	(13,737,176)
Unfunded AAL (UAAL) – beginning of year	\$ 2,008,651	\$ 1,753,280
Normal Cost – beginning of year	\$ 407,027	\$ 393,556
Amortization of UAAL – beginning of year	160,230	145,946
Total Normal Cost and amortization of UAAL	\$ 567,257	\$ 539,502
Interest adjustment for end of year payment	39,708	37,765
Actuarially Determined Contribution (ADC) <sup>7</sup>	\$ 606,965	\$ 577,267
Expected benefit payments	\$ 739,385 <sup>8</sup>	\$ 803,837

<sup>5</sup> Fiscal year 2021/22 AAL as of beginning of year is based on June 30, 2019 actuarial valuation projected to June 30, 2021 on a "no gain/loss" basis. Fiscal year 2022/23 AAL as of beginning of year is based on June 30, 2021 actuarial valuation projected to June 30, 2022 on a "no gain/loss" basis.

<sup>6</sup> Fiscal year 2021/22 AVA as of beginning of year is based on market value of assets as of June 30, 2021. Fiscal year 2022/23 AVA as of beginning of year is projected from June 30, 2021 market value of asset assuming a 7.00% investment income and District contribution equals to the expected benefit payments.

<sup>7</sup> End of year payment timing is assumed in the above calculations.

<sup>8</sup> Actual benefit payment is shown for 2020/21 measurement period.

# Section 5: Projected Benefit Payments

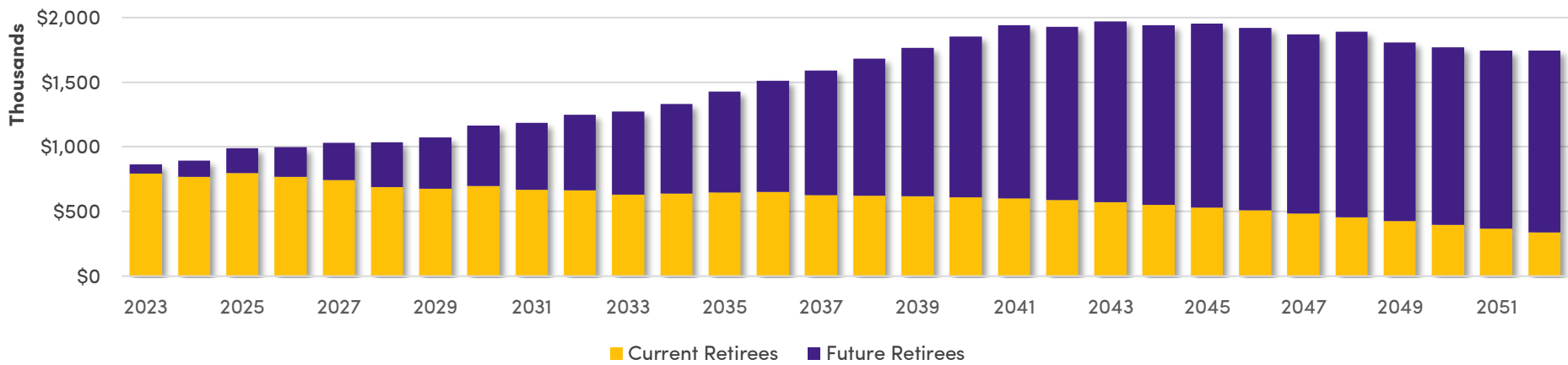
The below table shows the projected benefit payments for the next 30 years for a closed group of participants (both active employees and existing retirees) who are included in the census data as of the June 30, 2021. This exhibit is provided for informational purposes only and is not a required disclosure under GASB 75. Projected benefit payments below include both explicit (if any) and implicit subsidies (as applicable).

FYE	Future Retirees	Current Retirees	Total
2023	\$ 35,068	\$ 768,769	\$ 803,837
2024	\$ 71,776	\$ 791,269	\$ 863,045
2025	\$ 128,321	\$ 766,348	\$ 894,669
2026	\$ 191,169	\$ 799,093	\$ 990,262
2027	\$ 229,233	\$ 767,500	\$ 996,733
2028	\$ 285,935	\$ 745,001	\$ 1,030,936
2029	\$ 347,669	\$ 689,086	\$ 1,036,755
2030	\$ 396,513	\$ 675,942	\$ 1,072,455
2031	\$ 463,654	\$ 699,134	\$ 1,162,788
2032	\$ 518,030	\$ 666,994	\$ 1,185,024

FYE	Future Retirees	Current Retirees	Total
2033	\$ 690,669	\$ 662,073	\$ 1,352,742
2034	\$ 781,841	\$ 630,463	\$ 1,412,304
2035	\$ 860,382	\$ 639,489	\$ 1,499,871
2036	\$ 966,942	\$ 646,404	\$ 1,613,346
2037	\$ 1,058,998	\$ 651,391	\$ 1,710,389
2038	\$ 1,147,508	\$ 624,649	\$ 1,772,157
2039	\$ 1,241,933	\$ 622,522	\$ 1,864,455
2040	\$ 1,340,082	\$ 617,824	\$ 1,957,906
2041	\$ 1,339,222	\$ 610,441	\$ 1,949,663
2042	\$ 1,397,713	\$ 600,297	\$ 1,998,010

FYE	Future Retirees	Current Retirees	Total
2043	\$ 1,339,222	\$ 587,360	\$ 1,926,582
2044	\$ 1,397,713	\$ 571,645	\$ 1,969,358
2045	\$ 1,388,873	\$ 553,225	\$ 1,942,098
2046	\$ 1,420,512	\$ 532,240	\$ 1,952,752
2047	\$ 1,409,996	\$ 508,894	\$ 1,918,890
2048	\$ 1,385,638	\$ 483,439	\$ 1,869,077
2049	\$ 1,434,886	\$ 456,176	\$ 1,891,062
2050	\$ 1,378,905	\$ 427,466	\$ 1,806,371
2051	\$ 1,370,865	\$ 397,679	\$ 1,768,544
2052	\$ 1,379,109	\$ 367,229	\$ 1,746,338

Projected Benefit Payments



# Section 6: Substantive Plan Provisions

## Changes Since Prior Valuation

The Board rescinded the CalPERS vesting schedule for active employees hired on/after October 1, 2021. Employees hired on/after October 1, 2021 are eligible for the PEMHCA minimum benefit at retirement and they have a Retiree Health Saving account that the District contributes to on a per pay period basis. There is a one-time buyout option for employees hired prior to October 1, 2021 to opt into the new retiree health benefit and they received compensation from the District for each year of District service as an initial deposit into the Retiree Health Saving account. There are nine employees who elected this buyout benefit. This change caused a decrease in the District’s liability.

## Eligibility

Employees are eligible for lifetime retiree health benefits once they retire within 120 days from date of separation and the retiree must be receiving benefits from California Public Employees Retirement System (CalPERS). The earliest service retirement eligibility requirements under CalPERS are as follows:

Membership Date	Requirements
Before 1/1/2013	Age 50 with 5 years of CalPERS service <sup>9</sup>
On/after 1/1/2013	Age 52 with 5 years of CalPERS service <sup>9</sup>

## Spouse Benefits

Employees are allowed to elect spousal and/or dependent children coverage at retirement. Retiree health coverage continues to surviving spouses and/or dependent children upon death of retirees if the retiree chooses the option for their surviving spouse to continue receiving a retirement benefit. For valuation purposes, all retirees with spousal coverage are assumed to elect continuation of retirement benefit to their surviving spouses and all surviving spouses are assumed to continue coverage with the District.

## Dental and Vision

For eligible employees hired prior to January 1, 2008, the District provides dental and vision coverage for the retiree and eligible dependents at no cost to the retiree. The monthly premium rates for dental and vision benefit effective on January 1, 2021 are as shown below.

Benefit	EE	EE + 1	Family
Dental	\$33.72	\$65.20	\$106.12

Benefit	Composite
Vision	\$18.56

<sup>9</sup> Note that service includes service across all CalPERS employers and with other retirement systems with which CalPERS has reciprocity agreements.

**Ancillary Benefit**

There is no subsidized life insurance benefit provided at retirement.

**PEMHCA Minimum**

Pursuant to Government Code 22892 of the Public Employees’ Medical and Hospital Care Act (PEMHCA), employees not eligible for Employer Subsidy described below will receive the PEMHCA minimum contribution. The minimum amount allowed is \$143 per month for 2021. The minimum employer contribution increases annually by the CPI medical care component. The amount of the District-provided contribution is the same regardless of the coverage level (single, 2-person, or family) and health plan elected.

**Employer Subsidy**

For employees hired prior to August 1, 2001 who retire with at least five years of District service and did not elect the buyout option, the District pays for the cost of medical benefits for eligible retirees and eligible dependents. The District-paid portion is limited to 100% of the CalPERS PERS Choice<sup>10</sup> Region 1 Basic premium rates.

For employees hired on/after August 1, 2001 but before October 1, 2021 who did not elect the buyout option, the District pays for the cost of medical benefits for eligible retirees and eligible dependents. The District-paid portion is limited to a percentage of the CalPERS PERS Choice<sup>9</sup> Region 1 Basic premium rates, subject to the vesting schedule below:

CalPERS Service	Vesting %
<10	0%
10	50%
11	55%
12	60%

CalPERS Service	Vesting %
13	65%
14	70%
15	75%
16	80%

CalPERS Service	Vesting %
17	85%
18	90%
19	95%
20+	100%

For employees hired on/after October 1, 2021 and those hired prior to October 1, 2021 who elected the buyout option, there is no additional employer subsidy other than the PEMHCA minimum benefit. These employees have a Retiree Health Saving account that the District contributes to on a per pay period basis. District’s contribution to the Retiree Health Saving account is not considered an OPEB liability.

**Retiree Contributions**

Retirees are required to contribute the portion of premium rates not covered by the Employer Subsidy.

<sup>10</sup> PERS Choice has been re-named PERS Platinum effective on January 1, 2022.



**Premium Rates**

The monthly premium rates used in the valuation effective on January 1, 2021 are as shown below.

Pre-Medicare Plans		Single	2-Party	Family
Region 1	Kaiser Permanente	\$ 813.64	\$ 1,627.28	\$ 2,115.46
	PERS Choice	\$ 935.84	\$ 1,871.68	\$ 2,433.18
	PERS Select	\$ 566.67	\$ 1,133.34	\$ 1,473.34
	PERS Care	\$ 1,294.69	\$ 2,589.38	\$ 3,366.19
Region 2	PERS Choice	\$ 783.19	\$ 1,566.38	\$ 2,036.29
Region 3	PERS Choice	\$ 761.23	\$ 1,522.46	\$ 1,979.20
Out of State	PERS Choice	\$ 760.17	\$ 1,520.34	\$ 1,976.44
	PERS Care	\$ 1,008.08	\$ 2,016.16	\$ 2,621.01

Medicare Plans		Single	2-Party	Family
Kaiser Permanente Senior Advantage		\$ 324.48	\$ 648.96	\$ 973.44
PERS Choice Medicare Supplement		\$ 349.97	\$ 699.94	\$ 1,049.91
PERS Select Medicare Supplement		\$ 349.97	\$ 699.94	\$ 1,049.91
PERS Care Medicare Supplement		\$ 381.25	\$ 762.50	\$ 1,143.75

# Section 7: Actuarial Methods and Assumptions

## Changes Since Prior Valuation

The following assumptions have been updated since the prior valuation:

1. Health care trend rates have been updated from an initial rate of 6.00% that decreases gradually to an ultimate rate of 4.50% by 2037 to Getzen 2021 version with an initial rate of 6.00% that decreases gradually to an ultimate rate of 4.04% by 2075. This change caused a slight increase in liability.
2. In the prior valuation, it was assumed that 50% of future retirees eligible for District-paid health benefit with covered spouse will cover dependent children while either the retiree or spouse are under age 60. Based on review of current participants, no future retirees are assumed to elect dependent children coverage at retirement in this year's valuation. No changes were made to the dependent liability calculation for existing retirees<sup>11</sup>. This change caused a decrease in liability.

<b>Valuation Date</b>	June 30, 2021
<b>Measurement Date</b>	June 30, 2021
<b>Reporting Period</b>	Fiscal year ending June 30, 2022
<b>Actuarial Cost Method</b>	<p>Entry Age Normal Level Percentage of Pay; a method that allocates the actuarial present value of the projected benefits of each individual on a level basis over the earnings of the individual between entry age and assumed exit age(s).</p> <ul style="list-style-type: none"> <li>• The portion allocated to a valuation year is called the Normal Cost.</li> <li>• The portion allocated to past periods is called the Actuarial Accrued Liability (AAL) or Total OPEB Liability (TOL).</li> </ul>

<sup>11</sup> Similar to prior valuation, dependent liability for existing retiree is valued while either the retiree or spouse are under age 60.

<b>Discount Rate</b>	<p>For accounting disclosure: 7.00% as of June 30, 2021 and 7.00% as of June 30, 2020</p> <p>For funding purposes (in calculating the Actuarially Determined Contribution): 7.00% as of June 30, 2021 and 7.00% as of June 30, 2020</p> <p>Refer to the Discussion of Discount Rate section for additional information on the discount rate setting.</p>
<b>Payroll Growth</b>	2.75% wage inflation plus seniority, merit, and promotion salary increases based on CalPERS Experience Study and Review of Actuarial Assumptions published in December 2017 for Public Agency Miscellaneous members. Refer to the Appendix for sample rates.
<b>Mortality</b>	Based on CalPERS Experience Study and Review of Actuarial Assumptions published in December 2017 for Public Agency Miscellaneous members.
<b>Termination</b>	Based on CalPERS Experience Study and Review of Actuarial Assumptions published in December 2017 for Public Agency Miscellaneous members. Refer to the Appendix for sample rates.
<b>Disability</b>	None
<b>Retirement</b>	Based on CalPERS Experience Study and Review of Actuarial Assumptions published in December 2017 for Public Agency Miscellaneous members. Refer to the Appendix for sample rates.
<b>Participation Rate</b>	<p>For medical benefit:</p> <ul style="list-style-type: none"> <li>• 100% of active employees hired prior to October 1, 2021 who did not elect the buyout option and eligible for 100% or a percentage of the CalPERS PERS Choice Region 1 Basic premium rate employer subsidy are assumed to elect health coverage with the District at retirement.</li> <li>• 40% of active employees eligible for PEMHCA minimum benefit only are assumed to elect health coverage with the District at retirement.</li> </ul> <p>All active employees hired prior to January 1, 2008 are assumed to receive subsidized dental and vision benefit from the District at retirement.</p> <p>Existing retirees who are currently enrolled in the District's health plans are assumed to continue coverage until death. All existing retirees who are currently receiving subsidized dental and vision benefit from the District are assumed to receive this benefit until death. Upon retiree's death, surviving spouses are assumed to continue coverage in the District's health plans (all of them are assumed to receive contingent pension benefit).</p>

**Spousal Election**

For future retirees, 80% of active employees are assumed to elect spousal coverage at retirement. Husbands are assumed to be three years older than wives.

For existing retirees, spousal coverage and age is based on actual data.

**Dependent Election**

Future retirees are not assumed to elect dependent coverage at retirement. Dependent liability for medical, dental, and vision benefits is only valued for existing retirees who currently elect Family coverage level while the retiree or spouse is under age 60.

**Health Plan Election**

Employees are assumed to elect the same health plan option they are currently enrolled in at retirement prior to Medicare eligibility. Upon Medicare eligibility, the pre-Medicare to Medicare health plan mapping assumed is as shown below.

Pre-Medicare Plans	Medicare Plans
Kaiser Permanente	Kaiser Permanente Senior Advantage
PERS Choice	PERS Choice Medicare Supplement
PERS Select	PERS Select Medicare Supplement
PERS Care	PERS Care Medicare Supplement

Existing retirees are assumed to remain in the same health plan option they are currently enrolled in for life, except for those who are under the age of 65 as of the valuation date. The assumed Medicare plan option election for these retirees is according to the above table.

**Medicare Eligibility**

All future and existing retirees (including disabled retirees) are assumed to be eligible for Medicare at age 65.

**Per Capita Costs**

The valuation projects health care costs for employees who remain enrolled in the District’s benefit plans after retirement. In accordance with Actuarial Standards of Practice No. 6 (ASOP 6), the actuarial development of health care costs should preferably use the health plan experience that is considered the best predictor of future claims experience assuming it is sufficiently credible. In the absence of credible health plan experience data, the actuary may use other methods such as premiums and normative databases to develop the per capita costs.

As medical/prescription drug costs generally vary by age, age-specific costs should be used in the development of initial per capita costs and projection of future benefit costs, except in very limited circumstances defined in ASOP 6 Section 3.7.7(c). The development of the age-specific costs should be based on the demographics of the group being valued and the group’s total expected claims or premiums.

**Per Capita Costs (Cont'd)** Retiree healthcare costs is, on average, significantly higher than active employees and if the District charges blended premium rates (determined using active employees and retiree claims experience) to the retirees, the District is providing an implicit subsidy for these retirees. Under GASB 75, the implicit subsidy must be included in the post-employment medical benefit obligation. Separate costs should be developed for Medicare-eligible participants due to Medicare being the primary payer for these retirees, which leads to a reduction to the Plan Sponsor’s health plan costs.

In developing the per capita costs, we have used CalPERS health plan premium rates effective on January 1, 2021 and aging factors and subscriber enrollments for HMO and PPO plans combined as published in the CalPERS Health Plan (PEMHCA) Implicit Subsidy Data for Calendar 2019.

The following table shows the sample per capita costs at select ages for 2021/22 period used in the valuation. These costs are assumed to increase with health care trend rates. Separate costs were developed for active employees and retirees based on weighted average premium rates for active employees and retirees respectively.

Age	Active Employees		Retirees	
	Male	Female	Male	Female
50	\$9,803	\$11,564	\$10,306	\$12,157
55	\$12,768	\$13,127	\$13,423	\$13,801
60	\$16,484	\$15,366	\$17,330	\$16,154
64	\$19,550	\$17,174	\$20,553	\$18,056

We have assumed that CalPERS health premiums for Medicare eligible retirees are based on Medicare eligible retiree claims experience and represent the expected true cost of retiree coverage. As such, we have assumed there is no implicit subsidy for Medicare retirees. The annual costs used on/after age 65 are \$4,190 for active employees and \$4,206 for retirees. These costs are assumed to increase with health care trend rates.

The annual employer subsidies for dental and vision benefits are based on the annualized premium rates which are as shown below. These costs are assumed to increase with dental and vision trend rates.

Benefit	EE	EE + 1	Family
Dental	\$405	\$782	\$1,273

Benefit	Composite
Vision	\$223

**Trend Rates**

Historically, health care costs have increased more rapidly than the rate of inflation. In estimating the value of retiree health benefits, assumptions must be made on future increases in healthcare costs. The health care trend rates assumption used in this valuation is based on the Getzen Model of Long-Run Medical Cost Trends, which was first designed by T.E. Getzen for the Society of Actuaries (SOA) in 2007. The model is designed to make long-run forecasts and typically used to select medical trend assumptions for retiree medical valuations to present liabilities disclosed under the appropriate accounting standards, or to determine contributions under a funding policy. The long-run baseline projection and input variables were developed under the guidance of the SOA Project Oversight Group. The model is updated annually along with updated documentation and recommended input variables by the author of the model.

The baseline assumptions used in the Getzen model is as shown in the table below.

Inflation Rate	2.5%
Real GDP Per Capita Growth	1.5%
Excess Medical Cost Growth	1.1%
Health Share of GDP Resistance Point	25.0%
Year for Limiting Cost Growth to GDP Growth	2075

The output of the Getzen Model of Long-Run Medical Cost Trend Model used in the valuation is as shown below.

Year	Medical/Rx	Year	Medical/Rx
2021	6.00%	2035	5.18%
2022	5.75%	2040	5.18%
2023	5.50%	2050	5.18%
2024	5.40%	2060	4.83%
2025	5.36%	2070	4.38%
2030	5.18%	2075+	4.04%

PEMHCA minimum cost is assumed to increase by 3.00% annually while dental and vision costs are assumed to increase by 4.00% annually.

## Discussion of Discount Rates

Under GASB 75, the discount rate used in valuing OPEB liabilities as of the Measurement Date is a single rate that reflects:

1. The long-term expected rate of return on OPEB plan investments that are expected to be used to finance future benefit payments, to the extent that (a) they are sufficient to pay for the projected benefit payments and (b) the OPEB plan assets are expected to be invested using a strategy that will achieve that return.
2. A yield or index rate for 20-year tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale), when the conditions in (1) above are not met.

For the current year's valuation:

1. The expected long-term real rate of return of the OPEB Trust is 7.00% as of June 30, 2021 as provided by the Plan Sponsor's investment advisor. This rate of return was determined using a building-block method in which best-estimate ranges of expected future real rates of return net of investment expense are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future rates of return by the target allocation percentage plus expected inflation of 2.50%. The Plan Sponsor's expected future real rates of return by asset class is as shown below.
2. The municipal bond index as of the prior and current Measurement Dates are as shown below:

Index	June 30, 2021	June 30, 2020
S&P Municipal Bond 20 Year High Grade Rate Index	2.19%	2.66%

3. The final equivalent single discount rate used for accounting disclosure is 7.00% with the expectation that the Plan Sponsor will contribute in accordance with the Funding Policy described in Section 3. Under this Funding Policy, the OPEB Trust is not expected to be depleted in the future.

The discount rate used to calculate the Actuarially Determined Contribution for recommended funding contribution is 7.00%.

Asset Classes	Target Allocation <sup>12</sup>	Expected L/T Real Rates of Return <sup>13</sup>
Equity	52.5%	4.65%
Fixed income	46.5%	1.24%
Cash	1.0%	0.00%
Total	100.0%	3.02%

<sup>12</sup> PARS target allocation by asset classes as of June 30, 2021 is in the range of 40% to 60% for both Equity and Fixed Income and 0% to 20% range for Cash. The actual asset allocation as of June 30, 2021 is 52.71% in Equities, 46.61% in Fixed Income, and 0.68% in Cash.

<sup>13</sup> Based on Horizon Survey of Capital Market Assumptions 2021 Edition.

# Section 8: Participant Summary

## Active Employees

### Enrollments by Health Plans

Actives with Health Coverage	Single	2-Party	Family	Total	Avg. Age	Avg. Svc <sup>14</sup>	Total Salary
Kaiser Permanente			2	2	39.9	10.9	\$ 192,864
PERS Choice	8	9	25	42	44.5	8.9	\$ 3,631,908
PERS Select		4	12	16	45.5	8.3	\$ 1,405,896
<b>Total actives with health coverage</b>	<b>8</b>	<b>13</b>	<b>39</b>	<b>60</b>	<b>44.6</b>	<b>8.8</b>	<b>\$ 5,230,668</b>

Actives without Health Coverage <sup>15</sup>	Total	Avg. Age	Avg. Svc <sup>14</sup>	Total Salary
<b>Total actives without health coverage</b>	<b>7</b>	<b>48.4</b>	<b>12.8</b>	<b>\$ 676,620</b>

### Enrollments by Subsidy Group

Actives with Health Coverage by Subsidy Group	Single	2-Party	Family	Total	Avg. Age	Avg. Svc <sup>14</sup>	Total Salary
Pre-2001		1	3	4	52.7	24.1	\$ 405,516
Post-2001	8	11	29	48	44.9	8.2	\$ 3,992,904
PEMHCA minimum		1	7	8	39.1	5.3	\$ 832,248
<b>Total actives with health coverage</b>	<b>8</b>	<b>13</b>	<b>39</b>	<b>60</b>	<b>44.6</b>	<b>8.8</b>	<b>\$ 5,230,668</b>

Actives without Health Coverage by Subsidy Group	Total	Avg. Age	Avg. Svc <sup>14</sup>	Total Salary
Pre-2001	1	58.1	24.5	\$ 99,564
Post-2001	5	47.2	10.0	\$ 484,080
PEMHCA minimum	1	44.9	14.7	\$ 92,976
<b>Total actives without health coverage</b>	<b>7</b>	<b>48.4</b>	<b>12.8</b>	<b>\$ 676,620</b>

<sup>14</sup> The table above shows average service with the District.

<sup>15</sup> Active employees who currently have no health coverage are assumed to elect coverage with the District at retirement based on the Participation Rate shown in Section 7.



**Active Employees Age-Service Distribution**

Age	Years of Service with the District										Total
	<1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40+	
<25	1										1
25 – 29	2	2									4
30 – 34	1	1			1						3
35 – 39	3	2	3	3							11
40 – 44	2	4	3	6	2	1					18
45 – 49	1	4	3	2	1						11
50 – 54	1			1	5			1			8
55 – 59		2	1	1		3					7
60 – 64				1	2						3
65+				1							1
<b>Total</b>	<b>11</b>	<b>15</b>	<b>10</b>	<b>15</b>	<b>11</b>	<b>4</b>		<b>1</b>			<b>67</b>

## Retired Employees

Retirees with Health Coverage <sup>16</sup>	Single	2-Party	Family	Total	Avg. Age
PERS Care Out of State	1			1	58.9
PERS Choice Out of State	3	5		8	67.4
PERS Choice Region 1	10	34	2	46	70.3
PERS Choice Region 2	1			1	67.3
PERS Choice Region 3		1		1	78.6
PERS Select Region 1	1			1	71.1
<b>Total retirees with health coverage</b>	<b>16</b>	<b>40</b>	<b>2</b>	<b>58</b>	<b>69.8</b>

In addition to the above, there are three retirees who are receiving subsidized dental and vision benefit only.

Age	Retirees <sup>16</sup>
<50	
50 – 54	
55 – 59	7
60 – 64	8
65 – 69	19
70 – 74	12
75 – 79	9
80 – 84	3
85 – 89	3
90+	
<b>Total</b>	<b>61</b>

<sup>16</sup> Includes three disabled retirees.

## Comparison of Participant Summary

Below is a comparison of participant summary included in the current valuation and the prior full valuation.

	As of June 30, 2021	As of June 30, 2019
<b>Number of Participants</b>		
Active employees	67	63
Retired employees <sup>17</sup>	61	57
Total	128	120
<b>Averages</b>		
Active average age	45.0	46.5
Active average service	9.3	10.1
Inactive average age	70.0	68.8

<sup>17</sup> Retired employees' enrollments as of June 30, 2021 and June 30, 2019 include three retirees who are receiving subsidized dental and vision benefit only. The enrollments above include retirees only and exclude spouses and/or dependents who are covered under the District's health plans.

# Appendix – Sample Decrement Rates

## Mortality Rates

Mortality rates used in the valuation are based on the CalPERS Experience Study and Review of Actuarial Assumptions published in December 2017 for Public Agency Miscellaneous members. Sample pre-retirement and post-retirement non-disabled rates for Miscellaneous members are as shown below.

Attained Ages	Miscellaneous			
	Pre-Retirement <sup>18</sup>		Post-Retirement Non-Disabled <sup>18</sup>	
	Male	Female	Male	Female
20	0.00022	0.00007	0.00022	0.00007
25	0.00029	0.00011	0.00029	0.00011
30	0.00038	0.00016	0.00038	0.00016
35	0.00049	0.00027	0.00049	0.00027
40	0.00064	0.00037	0.00064	0.00037
45	0.00080	0.00054	0.00080	0.00054
50	0.00116	0.00079	0.00372	0.00346
55	0.00172	0.00120	0.00437	0.00410
60	0.00255	0.00166	0.00671	0.00476
65	0.00363	0.00233	0.00928	0.00637
70	0.00623	0.00388	0.01339	0.00926
75	0.01057	0.00623	0.02316	0.01635
80	0.01659	0.00939	0.03977	0.03007
85	0.00000	0.00000	0.07122	0.05418
90	0.00000	0.00000	0.13044	0.10089

<sup>18</sup> Pre-retirement and post-retirement mortality rates include 15 years of projected on-going mortality improvement using MP-2016 published by the Society of Actuaries.

## Salary Increases

The seniority, merit and promotional salary increases used in the valuation are based on the CalPERS Experience Study and Review of Actuarial Assumptions published in December 2017 for Public Agency Miscellaneous members. Sample rates for Miscellaneous members are as shown below.

Service	Miscellaneous						
	Entry Ages						
	20	25	30	35	40	45	50
0	0.0850	0.0850	0.0775	0.0700	0.0650	0.0600	0.0600
2	0.0560	0.0560	0.0510	0.0460	0.0410	0.0360	0.0360
4	0.0400	0.0400	0.0355	0.0310	0.0270	0.0230	0.0230
6	0.0290	0.0290	0.0250	0.0210	0.0175	0.0140	0.0140
8	0.0210	0.0210	0.0170	0.0130	0.0100	0.0070	0.0070
10	0.0160	0.0160	0.0135	0.0110	0.0090	0.0070	0.0070
12	0.0140	0.0140	0.0120	0.0100	0.0080	0.0060	0.0060
14	0.0130	0.0130	0.0110	0.0090	0.0070	0.0050	0.0050
16	0.0110	0.0110	0.0095	0.0080	0.0060	0.0040	0.0040
18	0.0100	0.0100	0.0085	0.0070	0.0050	0.0030	0.0030
20	0.0090	0.0090	0.0075	0.0060	0.0045	0.0030	0.0030

## Termination Rates

This assumption is used to project terminations (voluntary and involuntary) prior to meeting the minimum eligibility requirements to retire. The rates are based on the CalPERS Experience Study and Review of Actuarial Assumptions published in December 2017 for Public Agency Miscellaneous members. Sample rates for Miscellaneous members are as shown below.

Service	Miscellaneous						
	Entry Ages						
	20	25	30	35	40	45	50
0	0.1742	0.1674	0.1606	0.1537	0.1468	0.1400	0.1332
2	0.1348	0.1280	0.1212	0.1142	0.1074	0.1006	0.0938
4	0.0954	0.0886	0.0818	0.0748	0.0680	0.0612	0.0543
6	0.0588	0.0569	0.0528	0.0487	0.0440	0.0393	0.0331
8	0.0497	0.0480	0.0450	0.0420	0.0360	0.0301	0.0261
10	0.0416	0.0399	0.0375	0.0351	0.0286	0.0222	0.0197
12	0.0354	0.0338	0.0313	0.0290	0.0228	0.0164	0.0086
14	0.0271	0.0262	0.0237	0.0213	0.0163	0.0113	0.0056
16	0.0236	0.0227	0.0196	0.0165	0.0126	0.0087	0.0041
18	0.0206	0.0198	0.0161	0.0124	0.0085	0.0046	0.0023
20	0.0176	0.0168	0.0130	0.0092	0.0052	0.0015	0.0008

## Retirement Rates

Retirement rates used in the valuation are based on the CalPERS Experience Study and Review of Actuarial Assumptions published in December 2017 for Public Agency Miscellaneous members. Sample rates for Miscellaneous members are as shown below.

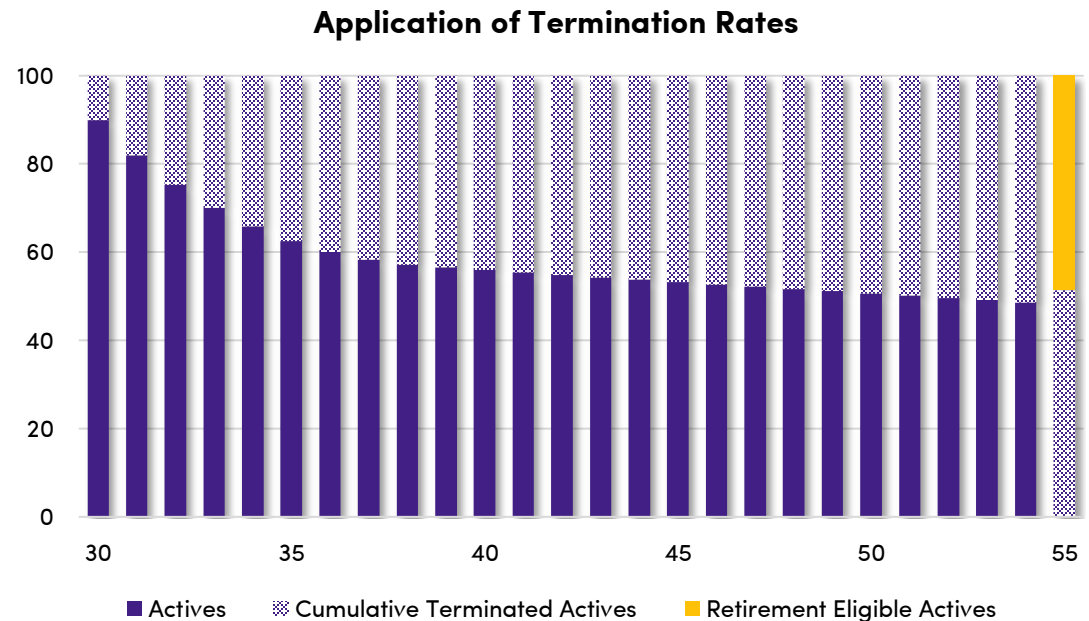
Service	Miscellaneous 2% at 55						Miscellaneous 2% at 62					
	Attained Ages											
	50	55	60	65	70	75	50	55	60	65	70	75
5	0.0080	0.0400	0.0580	0.1450	0.1500	1.0000	0.0000	0.0100	0.0310	0.1080	0.1200	1.0000
10	0.0130	0.0400	0.0750	0.1730	0.1710	1.0000	0.0000	0.0190	0.0510	0.1410	0.1560	1.0000
15	0.0180	0.0560	0.0930	0.2010	0.1920	1.0000	0.0000	0.0280	0.0710	0.1730	0.1930	1.0000
20	0.0210	0.0930	0.1260	0.2330	0.2390	1.0000	0.0000	0.0360	0.0910	0.2060	0.2290	1.0000
25	0.0220	0.1090	0.1430	0.2660	0.3040	1.0000	0.0000	0.0610	0.1110	0.2390	0.2650	1.0000
30	0.0330	0.1540	0.1690	0.2890	0.3300	1.0000	0.0000	0.0960	0.1380	0.3000	0.3330	1.0000
35	0.0500	0.2100	0.2070	0.3160	0.3300	1.0000	0.0000	0.1520	0.1830	0.3480	0.3870	1.0000
40	0.0000	0.2400	0.2800	0.3300	0.3300	1.0000	0.0000	0.1800	0.2040	0.3600	0.4000	1.0000



## Decrements Illustration

The table below illustrates how decrements are applied in the valuation and how the decrements affect the liabilities valued. Assuming the Plan Sponsor has 100 employees aged 30 as of the valuation date, only 48.6 employees will be projected to be employed at age 55 (assumed retirement eligibility age) using the assumed illustrative termination rates.

Age	# Actives BOY	Annual Termination %	# Terminated Actives / Year
30	100.0	10%	10.0
31	90.0	9%	8.1
32	81.9	8%	6.6
33	75.3	7%	5.3
34	70.1	6%	4.2
35	65.9	5%	3.3
36	62.6	4%	2.5
37	60.1	3%	1.8
38	58.3	2%	1.2
39	57.1	1%	0.6
40	56.5	1%	0.6
41	56.0	1%	0.6
42	55.4	1%	0.6
43	54.9	1%	0.5
44	54.3	1%	0.5
45	53.8	1%	0.5
46	53.2	1%	0.5
47	52.7	1%	0.5
48	52.2	1%	0.5
49	51.6	1%	0.5
50	51.1	1%	0.5
51	50.6	1%	0.5
52	50.1	1%	0.5
53	49.6	1%	0.5
54	49.1	1%	0.5
55	<b>48.6</b>	0%	0.0



Notes:

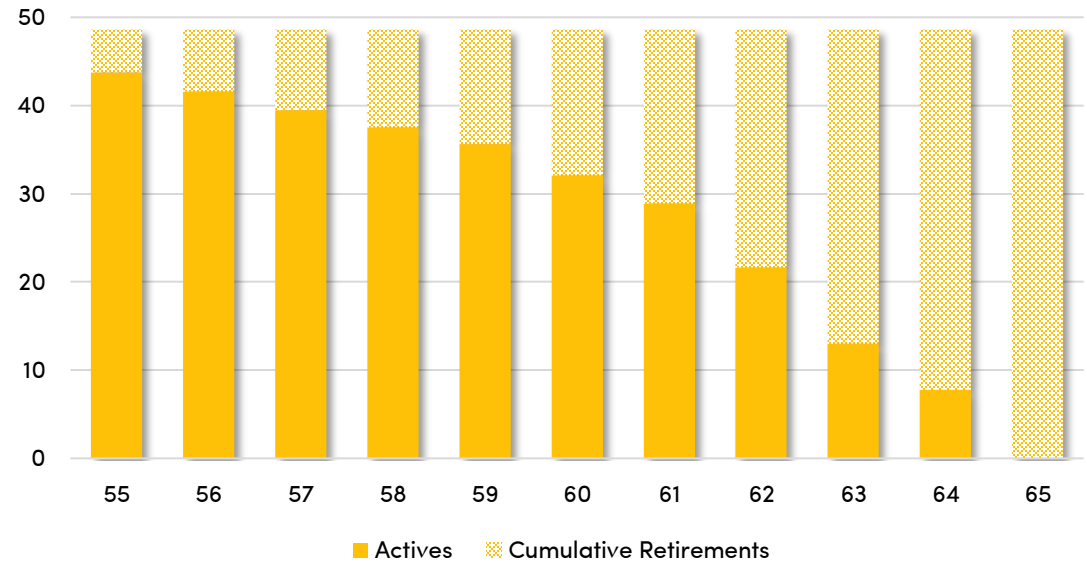
1. The annual termination percentages shown in the table are for illustrative purposes only, not the actual termination rates used in the valuation.
2. For simplification, only termination decrement is assumed to be applicable while actively employed. Actuarial valuation typically applies pre-retirement death decrement during employment as well.

## Decrements Illustration (continued)

The table below illustrates the number of active employees assumed to retire at each age based on the illustrative retirement rates.

Age	# Actives BOY	Annual Retirement %	# Retirements / Year
55	48.6	10%	4.9
56	43.8	5%	2.2
57	41.6	5%	2.1
58	39.5	5%	2.0
59	37.5	5%	1.9
60	35.6	10%	3.6
61	32.1	10%	3.2
62	28.9	25%	7.2
63	21.7	40%	8.7
64	13.0	40%	5.2
65	7.8	100%	7.8

Application of Retirement Rates



Notes:

1. The annual retirement percentages shown in the table are for illustrative purposes only, not the actual retirement rates used in the valuation.
2. For simplification, only retirement decrement is assumed to be applicable once the employee is retirement eligible. Actuarial valuation typically applies pre-retirement death decrement once an employee is eligible to retire.
3. The illustration above assumes that all active employees who are projected to be employed at age 55 elect health coverage with the Plan Sponsor at retirement.

# Appendix – Glossary

1. **Active Employees** – Individuals employed at the end of the reporting or measurement period, as applicable.
2. **Actuarial Cost Method** – A method to allocate the Actuarial Present Value of Future Benefits into portion attributed to past service (Total OPEB Liability) and future service (Normal Cost).
3. **Actuarial Present Value of Future Benefits** – Projected benefit payments estimated to be payable through the OPEB plan to current active and inactive employees as a result of their past service and their expected future service, discounted to reflect the expected effects of time value (present value) of money and the probabilities of payment (which is contingent on events such as death, termination, retirement, etc). In other words, this is the amount that would have been invested as of the Valuation Date so that it is sufficient to pay for benefit payments when due.
4. **Deferred Inflows** – Gains in the Total OPEB Liability and Fiduciary Net Position (for funded plan only) due to be recognized in the future.
5. **Deferred Outflows** – Losses in the Total OPEB Liability and Fiduciary Net Position (for funded plan only) due to be recognized in the future.
6. **Defined Benefit OPEB** – OPEB for which the benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The OPEB may be stated as (a) a specified dollar amount; (b) an amount that is calculated
7. **Entry Age Actuarial Cost Method** – A method that allocates the actuarial present value of the projected benefits of each individual on a level basis over the earnings or service of the individual between entry age and assumed exit age(s).
  - The portion allocated to a valuation year is called the Normal Cost.
  - The portion allocated to past periods is called the Total OPEB Liability.
  - The portion allocated to future periods after the valuation year is called the Present Value of Future Normal Costs.
8. **Fiduciary Net Position** – OPEB plan assets in a secure Trust that meet the following criteria:
  - Contributions from employers to the OPEB plan and earnings on those contributions are irrevocable.
  - OPEB plan assets are dedicated to providing OPEB to plan members in accordance with the benefit terms.
  - OPEB Plan assets are legally protected from the creditors of employers, OPEB plan administrator, and creditors of the plan members.
9. **Funded Ratio** – The value of the assets expressed as a percentage of the Total OPEB Liability.

10. **Healthcare Cost Trend Rates** – The rates of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.
11. **Inactive Employees** – Individuals no longer employed by an employer in the OEPB plan or the beneficiaries of those individuals. Inactive employees also include individuals who have accumulated benefits under the terms of an OPEB plan but are not yet receiving benefit payments and individuals currently receiving benefits.
12. **Net OPEB Liability** – The difference between the Total OPEB Liability and the Fiduciary Net Position.
13. **Payroll Growth** – An actuarial assumption on the rate of future increase in the total coverage payroll attributable to wage inflation and productivity increase; used in the Actuarial Cost Method to determine the Total OPEB Liability.
14. **Plan Members** – Individuals covered by the terms of the OPEB plan, which would typically include employees in active service, terminated employees who have terminated service but are not yet receiving benefit payments, and retired employees who are currently receiving benefits.
15. **Other Postemployment Benefits (OPEB)** – Benefits such as death benefits, life insurance, disability, and long-term care, as well as healthcare benefits (medical, prescription drug, dental, vision, and other health-related benefits), that are paid in the period after employment and that are provided separately from a pension plan regardless of the manner in which they are provided. OPEB does not include termination benefits or termination payments for sick leave.
16. **Service Cost (Normal Cost)** – The portion of actuarial present value of projected benefit payments that are attributed to a 12-month period after a valuation date as determined by the Actuarial Cost Method.
17. **Total OPEB Liability** – The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service as of the valuation date as determined by the Actuarial Cost Method.



# GovInvest

The Financial Forecasting Authority

1230 Rosecrans Avenue, Ste. 300 PMB 754, Manhattan Beach, CA 90266  
[info@govinvest.com](mailto:info@govinvest.com)

# Agenda Item

DATE: March 23, 2022

TO: Board of Directors, Calaveras County Water District  
Michael Minkler, General Manager

FROM: Charles Palmer, P.E., District Engineer  
John Griffin, P.E., Senior Civil Engineer

RE: Discussion/Action Regarding Bond Funding for Proposed FY2022-23  
through FY2026-27 Capital Improvement Plan and Hiring of One New  
Construction Phase Staff

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## RECOMMENDED ACTION:

Motion: \_\_\_\_\_ / \_\_\_\_\_ to adopt Resolution No.2022-\_\_\_\_\_ directing staff to initiate a private placement process for bond funding.

Motion: \_\_\_\_\_ / \_\_\_\_\_ to adopt Resolution No.2022-\_\_\_\_\_ amending the Fiscal Year 2021-22 Personnel Allocation.

## SUMMARY:

The District has a significant amount of capital improvements planned over the next several years to catch up with deferred maintenance, increasing capacity, and required infrastructure upgrades for environmental compliance. In late 2020, the District issued an RFP to solicit a financial advisor to assist the District in developing a capital financing plan. Julio Morales of Urban Futures, Inc. (UFI) was selected via a competitive RFP process. UFI has worked with staff over the past year to develop a comprehensive financing strategy. This presents a unique opportunity to address a backlog of critical infrastructure projects and set the District up for long-term success.

On March 1, staff presented the draft FY2022-23 through FY2026-27 CIP to the Engineering Committee. The Engineering Committee reviewed the projects in the CIP and associated timing of the projects. The discussion included financing options and staffing needs to implement critical projects on a timely basis and the need to take advantage of low interest rates. The Engineering Committee recommended bringing the CIP to the full Board along with a funding plan.

On March 15, staff presented the draft FY2022-23 through FY2026-27 CIP to the Finance Committee, including the recommendation to obtain bond funding to cover the costs of several high-priority capital improvement projects. While the Finance Committee did not

have any concerns with the projects and associated timing of the projects, concern was raised about the impacts to the District's budget by increasing the construction team. This matter will be discussed further in the Financial Considerations section of this staff report.

The proposed CIP is comprised of projects that have been ranked in terms of highest priority based on many factors including risk of failure, negative impacts to public health and safety, reliability, etc. The risk, regulatory compliance, growth demands, potential consequences and liability are too great to consider further postponing several large infrastructure projects, such as the Copper Cove Wastewater Treatment Plant Improvements and Jenny Lind Tank A-B Transmission Pipeline.

The proposed CIP is attached to this staff report. In addition to several projects proposed to be completed by the District's construction crew and several developer-funded projects, a total of 23 high-priority capital improvement projects are proposed within the five-year window of this CIP. The estimated cost of the 13 water projects is \$37.4M, which includes \$1.2M in rollover of unspent funds from FY2021-22. The estimated cost of the 10 wastewater projects is \$58.2M, which includes \$3.6M in rollover of unspent funds from FY2021-22.

The proposed CIP also identifies 21 (15 water and six wastewater) projects beyond the five-year window of this CIP, at a cost of \$24.1M and \$10.3M, respectively. These improvements are necessary to complete in the near future in order to ensure that our facilities operate in a reliable and safe manner but were deemed not as urgent as the 23 high-priority capital improvement projects.

Also attached to this staff report are preliminary implementation schedules for the water and wastewater projects. These schedules provide a snapshot of timing for the 23 high-priority capital improvement projects. Please note that a CIP is intended to be a dynamic document, recognizing that schedules and budgets can be impacted as projects evolve. Staff continues to assess the applicability of grants and other funding sources to augment the existing District revenues to fund these projects. District procedures adopted by the Board require that any amendments to a project budget must be approved by the Board of Directors.

### **Project Financing**

The District does not have sufficient existing and anticipated revenue and reserves (both R&R and capacity fees) to fund the 23 high-priority capital improvement projects in the proposed CIP. At this time, four projects have grant funding totaling \$7.6M. Staff continues to pursue all available grant funding opportunities and other sources of revenue that can be used to fund infrastructure projects. The District currently has over \$30M in pending grant applications from State and Federal agencies. The District was recently notified that \$1M is included in the recently adopted federal budget for the Copper Cove Tertiary, DAF & UV Improvements and is aggressively pursuing another \$10M in federal funding for the Copper Cove Pond 6 Expansion. These funds are not shown in the proposed FY2022-23 through FY2026-27 CIP until funding letters are received by the District.



The existing R&R reserves are estimated at \$9.2M and \$5.8M, respectively for water and wastewater funds. Connection fee reserves are also available; however, these fees are eligible for use only in the service area paid. Over the next five years, staff estimates a total of 156 new connections in both the La Contenta and Jenny Lind service areas and 192 new connections in both the Copper Cove water and wastewater service areas, along with additional funding once the Jenny Lind Elementary School connects to the La Contenta service areas. This would provide between \$11.3M and \$11.5M in new revenue.

Staff recommends that the District consider leveraging additional financial mechanisms in order to achieve the infrastructure renewal and replacement needs depicted in the proposed CIP. Completion of several priority CIP projects can only be achieved with outside financing of those capital costs and addressing appropriate staffing levels.

Traditionally, the District has financed its capital projects through the use of its R&R funds, which are a fixed component of the District’s water and wastewater rates. Annual R&R revenue is approximately \$3.3M for water and \$1.3M for wastewater, which is inadequate to implement the CIP without financing certain projects.

Based on current capital R&R revenue, the District has the capacity to borrow up to \$25M-\$30M in tax-exempt bonds under the current interest rate environment. After extensive prioritization of critical projects, and in consultation with finance experts, staff recommend borrowing \$15-\$20M for water fund and \$10-\$12M sewer fund. Below is a list of highest priority projects that may be funded with bond proceeds:

<b>Water Projects</b>	<b>Wastewater Projects</b>
<ul style="list-style-type: none"> <li>Jenny Lind Tank A to Tank B Transmission Line: \$7.3 Million</li> </ul>	<ul style="list-style-type: none"> <li>Copper Cove Lift Stations: \$7.5 Million</li> </ul>
<ul style="list-style-type: none"> <li>Copper Cove Zone B-C Transmission Pipeline &amp; Pump Stations: \$9.0 million</li> </ul>	<ul style="list-style-type: none"> <li>Arnold Secondary Clarifier &amp; WWTP Improvements: \$4.5 million</li> </ul>
<ul style="list-style-type: none"> <li>Copper Cove Tank B: \$4.5 Million</li> </ul>	<ul style="list-style-type: none"> <li>Copper Cove Tertiary DAF &amp; UV: \$3.5 Million</li> </ul>

*Note: Loan documents will provide the District the flexibility to swap out projects, should delays be encountered or re-prioritization desired. Existing District policies do not allow for swapping out bond funding for capital improvement projects without prior Board approval.*

The expected borrowing amounts will be based on project readiness, priority of need, and staff’s ability to spend the proceeds within 3 years (IRS requirement). Following this section is a discussion of public offering versus private placement for bond funding.

Even with all of the above funding sources, the proposed CIP is not fully funded. Unless additional funding sources are identified, the District will need to make some very difficult decisions regarding which high-priority projects to defer. Staff will continue to pursue all available sources of infrastructure funding for future projects even as we increase the rate of project implementation.

## Construction Management Capacity

In order to effectively complete the projects identified in the proposed FY2022-23 through FY2026-27 CIP, additional construction phase staff must be added to the Engineering Team or consultant services for construction management would be added to individual projects. Construction management and inspection services are essential to ensure that high quality work is performed, that contract requirements are enforced, and that the impacts of construction change orders are kept to a minimum. The proposed budget for these projects is based on the approach of using in-house staff to perform all construction management and inspection services (except where certain special inspections are required). For comparison purposes, internal labor costs are anticipated to range between \$550K and \$575K annually (assumes the District hires two Senior Construction Inspectors and one Senior Civil Engineer or Senior Supervisor – Construction/Inspection, and includes salary plus an additional 50% to capture costs associated with benefits and payroll taxes and other related costs) with one time equipment costs of approximately \$120K and on-going annual operation & maintenance costs of \$75K. Over a period of five years, staff estimates that the total costs for three new construction phase staff could range between \$3.25M and \$3.5M.

There are other options available to the District to staff the construction management and inspection services, which includes the use of outside consultants. For comparison purposes, over this same period, assuming that the District contracts with consulting firm(s) for two full-time construction phase staff, costs to the District could range between \$4M and \$4.6M over a period of five years.

These costs assume 4,000 hours of additional labor needed per year. Three District staff are needed to meet this need (devoting 1,600 hours per year per person to District projects), whereas two consultants are needed to meet this need (devoting 2,000 hours per year per person to District projects).

In addition to the high-priority capital improvement projects, several developer-funded external projects will require significant District oversight and inspection over the next several years. In particular, the Jenny Lind Elementary force main (\$8 Million total project cost, which includes all engineering, District Capacity Fees, and construction expenses), the Copper Town Center force main (estimated construction cost of \$4.5 million), the Reed's Turnpike pump station (estimated construction cost of \$900k), and the development of multiple subdivisions in the Jenny Lind/La Contenta and Copperopolis service areas are all imminent. The District will be reimbursed by the project proponents for District services in those cases, but the District currently lacks the bandwidth to adequately staff those projects. One of the proposed staff could be used to provide construction inspection services for these projects, reducing overall District expenses.

The District has managed to maintain low staffing levels through constant efforts to keep costs low and increase efficiency, but there is no way to implement the CIP without increasing in-house construction phase capacity. It may be possible to reduce staffing levels after successful implementation of the projects in the CIP, which can be done through attrition and reassignment, but there is an immediate need for these new positions that will remain for the foreseeable future.

Adding additional employees is always a challenge. The District recently added three new positions to staff an underground utility crew based on the fact that the in-house crew will deliver several projects at a significant cost savings to the District compared to the alternatives. The District also recently added a Customer Service Supervisor, although the overall number of customer service staff returned to the previous level in December. While not related to CIP financing, staff have also identified an immediate need for an additional IT technician and possibly a safety coordinator position, although staff are reviewing possible part-time options to assist HR with safety coordination. To put this into context, however, the District's current staffing level is 72 full-time employees. That is still fewer staff than the District had at its peak of 79 back in FY2008-09, despite the fact that since then the District has expanded (18,295 customers compared to 17,013 in 2009), infrastructure has deteriorated, and the District deals with increasing regulatory burdens and IT demands. The following table provides additional information regarding the District's staffing level compared to other agencies.

Agency	# of Connections	# of EEs	Connections per EE
CCWD	18,295	72	254 (241 if 76 EEs)
AWA	10,000	51	196
EID	110,000	226.5	485
STPUD	18,000	115.5	156
TUD	19,742	82	241

Staff recognizes that this is a significant investment of District resources, but in-house construction management staff are generally better equipped than outsourced inspectors to ensure a high-quality work product is received. While it is very difficult to estimate a price for qualitative risks associated with premature repair and replacement costs caused by poor materials and construction methods, unnecessary operation & maintenance costs, and potential litigation, in staff's opinion the exposure of long-term risks to the District outweigh the costs of adding new construction phase staff to the Engineering team. Staff recommends moving forward with the process of hiring of one new construction phase staff at this time and will return to the Board for the authorization to hire additional construction phase staff once the high-priority capital improvement projects increase construction activity.

**Public Offering vs. Private Placement**

Tax-exempt Bonds can be sold through two methods: a traditional public offering or a private placement loan. In a public offering, the District's underwriter sells the bonds to sophisticated institutional investors, including corporations, pension funds, and insurance companies and to bond funds such as Fidelity and Blackrock. A public sale requires that the District obtain a bond rating, develop an offering document, and provide on-going continuing disclosure, which requires a significant commitment of staff time. This method of sale often provides a lower cost of borrowing for issues sized \$10-\$15 million and above.

In comparison, a private placement loan is sold directly to a bank or single investors. Although these types of loans often carry a higher interest rate (20-30 basis points), the

increased borrowing cost is often offset by the lower cost of issuance (\$50,000 to \$75,000 less).

In addition, private placement can be executed faster, does not require a public offering document, has limited continuing disclosure requirements, and less staff time. Private placement loans are often executed in a 30 to 45-day timeframe, while a public offering typically takes 90 days or more.

Private placements also have two additional advantages over a traditional bond sale:

1. Rate Lock – banks offer rate locks in which the District can secure a rate lock up front. In comparison, the interest rate on a traditional bond is not known until the day of pricing.

*Given current market volatility and the expectation that interest rates will rise by the end of the year, we feel more comfortable with the ability to “lock-in” rates up-front with private placement loan.*

2. Draw Down Provision – Some loan providers offer a unique draw down feature in which the borrower is not charged interest on the bonds until loans proceeds have been drawn. Under a traditional public offering the District would pay the cost of carry on the full amount of the bonds.

*Illustration: \$10 million loan @ 2.5% in which only \$5 million are spend in Year 1. Under a traditional public offering, the District would pay \$250,000 in interest costs in year 1. In comparison, under a private placement with a drawn down feature, the District would only pay interest on \$5 million or \$125,000.*

The financing team consists of a Municipal Advisor, a Bond Underwriter (Placement Agent) and Bond and Disclosure Counsel. Julio Morales of UFI has served the District as its Municipal Advisor and has been a key member of the District’s team in developing its CIP funding plan. Mr. Morales would serve as Municipal Advisor for this debt issuance. Staff will work with Mr. Morales to assemble the remainder of the finance team.

This team of expert bond finance professionals can move this transaction quickly to market, as reaching the market as soon as possible is tantamount given the future interest rate outlook and volatility in the current market caused by current world events.

Given the ability to lock-in an interest rate up front (in a volatile and rising interest rate environment) and to eliminate the cost of carry of a traditional loan, staff recommends that the District finance the current round of capital improvements via a private placement loan. The District has implemented a similar strategy in the past with positive results.

## **CONCLUSION**

The cost to replace infrastructure will only go up over time. This financing plan represents a cost-effective new direction for the District that will significantly improve the condition of our infrastructure. Staff recommends approval of the private placement option along with

the associated actions that will enable the District to increase its capacity to implement projects.

## **FINANCIAL CONSIDERATIONS**

The cost of issuance associated with this refinancing would be paid from the proceeds of the private placement loan. The estimated cost of issuance is approximately \$115,000 to \$125,000 for each transaction, which is in line with the fees for the majority of private placement financings. Each firm has provided a price confession if both transactions are done with the same bank. Since the cost of issuance will be incorporated into the bond structure, these financings will not have a direct impact on the District's current year budget.

Debt service will be paid with R&R revenue. Staff will present a detailed analysis of the R&R revenue and expenses. The projected R&R expenditures could impact the recommended loan amount to ensure funds are available to cover all costs in addition to debt service.

*Attachments: Resolution No. 2022-\_\_ Approving the Proposed FY 2022/23-2026/27 Capital Improvement Plan and Direct staff to Initiate a Private Placement Process for Bond Funding  
Table 1 Project Prioritization  
Table 2 Water Schedule  
Table 3 Wastewater Schedule  
Resolution No. 2022-\_\_ Amending the FY 2021-22 Personnel Allocation  
FY 21-22 Personnel Allocation*

**RESOLUTION NO. 2022-**

**A RESOLUTION OF THE BOARD OF DIRECTORS  
OF THE CALAVERAS COUNTY WATER DISTRICT**

**TO APPROVE THE PROPOSED FY 2022/23-2026/27 CAPITAL IMPROVEMENT  
PLAN AND DIRECT STAFF TO INITIATE A PRIVATE PLACEMENT PROCESS FOR  
BOND FUNDING**

**WHEREAS**, the proposed FY2022-23 through FY2026-27 CIP consists of a total of 23 high-priority capital improvement projects; and

**WHEREAS**, the estimated cost of the 13 water projects is \$37.4M, which includes \$1.2M in rollover of unspent funds from FY2021-22; and

**WHEREAS**, the estimated cost of the 10 wastewater projects is \$58.2M, which includes \$3.6M in rollover of unspent funds from FY2021-22; and

**WHEREAS**, the estimated revenue from grants, existing R&R reserves, existing capacity fee reserves, anticipated unencumbered R&R funds, and anticipated capacity fees received between FY2022-23 through FY2026-27 are insufficient to fully cover the anticipated costs of the 23 high-priority capital improvement projects; and

**WHEREAS**, based on current capital R&R revenue, the District has the capacity to borrow up to \$25M-\$30M in tax-exempt bonds (\$15-\$20M for water fund and \$10-\$12M sewer fund) under the current interest rate environment; and

**WHEREAS**, the District may choose from public offering or private placement for bond financing; and

**WHEREAS**, the current construction phase staffing level is insufficient to adequately deliver the 23 high-priority capital improvement projects and additional staff are needed to adequately deliver the 23 high-priority capital improvement projects; and

**BE IT RESOLVED**, the CALAVERAS COUNTY WATER DISTRICT Board of Directors hereby approves the proposed FY 22/23-26/27 Capital Improvement Plan and directs staff to initiate a private placement process for bond funding with final financing amounts to be approved by the Board prior to issuance.

**PASSED AND ADOPTED** this 23<sup>rd</sup> day of March, 2022 by the following vote:

**AYES:**

**NOES:**

**ABSTAIN:**

**ABSENT:**

CALAVERAS COUNTY WATER DISTRICT

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Cindy Secada, President  
Board of Directors

ATTEST:

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Rebecca Hitchcock  
Clerk to the Board

Table 1 Project Prioritization

Rank	Reason	Project #	CIP Projects	Project Description	W/ S	Amount Grant Funded	FY2021-22 Rollover	Year 1 (FY 22-23)	Year 2 (FY 23-24)	Year 3 (FY 24-25)	Year 4 (FY 25-26)	Year 5 (FY 26-27)	FUTURE YEARS	TOTAL	
<b>WATER PROJECTS</b>															
	0 Operations	11099	Ebbetts Pass Meadowmont Pump Station / Rehab.		W		100,000	104,121	C					204,121	
	0 Operations	TBDWP	WP Tule Removal/Spillway		W		100,000	100,000	C					200,000	
	0 Operations	TBDWPT	West Point Regulator Repair/Tule Removal		W			100,000	C					100,000	
1	Reg/Legal	11096	AMR/AMI Radio Read Meter Program* USDA Loan		W			500,000	C					500,000	
2a	Prevent ND	11095	Ebbetts Pass Redwood Tanks HMGP		W	900,000		1,197,227	C					1,197,227	
2b	R & R	11083L	Larkspur Tank / Replacement		W			276,122	C					276,122	
4	H & S	11106	West Point Backup Water Filter / MAC IRWMP		W	525,000	200,000	1,650,000	C	250,000	C			2,100,000	
6	H & S	11103	Hunters Raw Water Pumps (Hazard Mitigation)		W	1,440,000	166,743	877,403	C	877,403	C			1,921,549	
7	Internal	11101	District Corp Yard		W			895,000	C					895,000	
9	R & R	11083J	Jenny Lind Clearwell #2 / Repair & Paint-TANKS PROJECT		W			199,471	C					199,471	
14	Developer	TBDCC	O'Byrne's Ferry Water Line Extension (Tri-Dam)		W		108,000							108,000	
15a	R & R	11083C	Copper Cove Tank B / Clearwell (11079/11080)		W		100,000	1,971,000	C					2,071,000	
15b	H & S	11111	Copper Cove Tank B Pump Station Renovation		W			400,000	D	2,100,000	C			2,500,000	
16	H & S	11088	Jenny Lind Tank A-B Transmission Line		W		390,000	1,763,690	C	5,500,000	C			7,653,690	
17	Developer	11110	Reeds Turnpike Pump Station Replacement		W	Developer Project								0	
18	H & S	11104	Lake Tulloch Submerged Water Line Crossing		W			1,000,000	D	3,000,000	C	3,000,000	C	7,000,000	
20	Capacity	11122	Copper Cove Zone B-C Trans Pipeline & Pump Stations		W					500,000	D	4,000,000	C	4,500,000	
22	R & R	11115	Ebbetts Pass Larkspur Pump Station Rehab / Electrical		W					250,000	D	1,250,000	C	1,500,000	
	<b>Subtotal</b>						1,164,743	11,034,034		12,477,403	8,250,000	4,500,000	0	0	37,426,180
<b>WASTEWATER PROJECTS</b>															
	0 Operations	15109	Collection System Rehab and I&I Mitigation		S			50,000	C	50,000	C			100,000	
	0 Operations	15111	Vallecito WWTP System Improvements		S		130,000							130,000	
	0 Operations	15106	FM UV Disinfection System Replacement		S			120,000						120,000	
3	Consolidation	15091	West Point / Wiseyville Consolidation Project		S	4,750,000		3,500,000	C	1,500,000	C			5,000,000	
5a	R & R	15080	CC Lift Station 15 & 18 Rehab/Replacement		S		1,307,602	2,422,805	C					3,730,407	
5b	R & R	15076	CC Lift Station 6, 8 & Force Main Bypass		S		1,059,939	3,179,816	C					4,239,755	
8	R & R & Capacity	15095	Arnold Secondary Clarifier & WWTP Improvements		S		200,000	2,000,000	C	2,450,000	C			4,650,000	
10	Capacity	15101	La Contenta Spray Fields		S			200,000	D	500,000	C	500,000	C	1,200,000	
11	Developer	?	Jenny Lind Elementary School Sewer Force Main		S	Developer Project								0	
13	Capacity	15097	LC Biolac, Clarifier & UV Improvements		S			1,000,000	D	2,000,000	C	2,000,000	C	5,000,000	
14a	R & R & Capacity	15112	CC Pond 6 Dam Raise		S		200,000	2,500,000	C	5,000,000	C	2,300,000	C	10,000,000	
14b	R & R & Capacity	15094-T	CC Tertiary, DAF & UV Improvements		S		500,000	3,000,000	C	500,000	C			4,000,000	
14c	R & R & Capacity	15094-S	CC Secondary Bio., Clarification and Solids Handling		S		200,000	200,000	D	600,000	D	7,000,000	C	7,000,000	
21	Capacity	?	CC Lower & Upper X-Country Gravity Sewer & Force Main		S					500,000	D	2,250,000	C	2,250,000	
23	Developer	?	Town Square / Little John Sewer Force Main & Lift Station		S	Developer Project								0	
	<b>Subtotal</b>						3,597,541	18,172,621		12,600,000	12,300,000	9,250,000	2,250,000	0	58,170,162
	<b>TOTAL</b>						4,762,284	29,206,655		25,077,403	20,550,000	13,750,000	2,250,000	0	95,596,342
<p><b>Note: "Amount Grant Funded" is an estimate of grant funding remaining at the end of FY2021-22.</b></p>															



Table 1 Project Prioritization

Rank	Reason	Project #	CIP Projects	Project Description	W/ S	Amount Grant Funded	FY2021-22 Rollover	Year 1 (FY 22-23)	Year 2 (FY 23-24)	Year 3 (FY 24-25)	Year 4 (FY 25-26)	Year 5 (FY 26-27)	FUTURE YEARS	TOTAL
<b>FUTURE WATER PROJECTS</b>														
28	R & R	11108	Big Trees Pump Stations 4 & 5 Replacement		W								1,499,893	<b>1,499,893</b>
29	R & R	11083S	Ebbetts Pass Sawmill Tank / Repair & Paint		W								1,799,345	<b>1,799,345</b>
30	R & R	11119	Jenny Lind Tanks A, B, E & F Rehab		W								2,000,000	<b>2,000,000</b>
31	H & S	11121	Jenny Lind Tank C Replacement		W								1,000,000	<b>1,000,000</b>
32	R & R	11083W	Wallace Tanks / Repair & Paint		W								1,493,076	<b>1,493,076</b>
33	H & S	11100	Wallace SCADA System Improvements		W								64,763	<b>64,763</b>
34	R & R	11127	Sheep Ranch Clearwell Rehab/ Repair and Paint		W								350,000	<b>350,000</b>
35	R & R	11126	Sheep Ranch Distribution System Replacement		W								6,000,000	<b>6,000,000</b>
36	R & R	11125	Sheep Ranch Water Plant Replacement		W								800,000	<b>800,000</b>
37	R & R	11116	Ebbetts Pass Pinebrook Tank Rehabilitation		W								400,000	<b>400,000</b>
38	R & R	TBDEP	E.P. Hunters WTP Clearwell Rehab. & Coating		W								1,000,000	<b>1,000,000</b>
39	R & R	11120	Jenny Lind Raw Water Intake Structure		W								4,000,000	<b>4,000,000</b>
43	Capacity	11123	West Point Acorn Pump Station & Trans Pipeline		W								2,010,000	<b>2,010,000</b>
44	R & R	11124	West Point Middle Fork Pump Station		W								1,610,000	<b>1,610,000</b>
45	H & S	11107	West Point SCADA Improvements		W								109,566	<b>109,566</b>
<b>Subtotal</b>													24,136,643	<b>24,136,643</b>
<b>FUTURE WASTEWATER PROJECTS</b>														
26	R & R	15104	Arnold Lift Station 2 & 3 Improvements		S								2,000,000	<b>2,000,000</b>
27	R & R	15110	Sequoia Woods Leach Field Rehab		S								150,000	<b>150,000</b>
40	Reg/Legal	15108	Regional Biosolids/Sludge Handling		S								1,500,000	<b>1,500,000</b>
41	R & R	15102	Arnold Tertiary Filter and Eff Tank Rehab		S								250,000	<b>250,000</b>
42	R & R	TBDCCLS	CC Lift Station Rehab - General		S								5,000,000	<b>5,000,000</b>
	R & R	TBDCWWTF	CC WWTP Tertiary Filter		S								1,400,000	<b>1,400,000</b>
<b>Subtotal</b>													10,300,000	<b>10,300,000</b>
<b>TOTAL</b>													34,436,643	<b>34,436,643</b>
<b>GRAND TOTAL</b>							4,762,284	29,206,655	25,077,403	20,550,000	13,750,000	2,250,000	34,436,643	<b>130,032,985</b>

Table 2 Water Schedule

**WATER PROJECTS / 5-YEAR CAPITAL IMPROVEMENT PROGRAM  
PRELIMINARY IMPLEMENTATION SCHEDULE**

Rank	Project #	Project Title / Description	Total Project Cost	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27
0	NA	Underground Service Lateral Replacement Construction	NA	[Blue bar spanning FY 21-22 to FY 26-27]					
1	11096	AMR/AMI Radio Read Meter Program* USDA Loan Construction	\$500,000	[Blue bar: (Completion by Sept. '22)]					
2	11095	Ebbetts Pass Redwood Tanks HMGP & Larkspur Tank Design/Bid/Award Construction	\$1,473,349	[Blue bar: (Completion by Dec. '22)]					
4	11106	West Point Backup Water Filter - UMRWA Grant Design/Bid/Award Equipment Pre-Purchase Construction	\$300,000 \$1,800,000	[Blue bar: (Nov. '21 - July '22)] [Blue bar: (April '22 - Sep. '23)]					
6	11103	Hunters Raw Water Pump Station HMGP Design/Bid/Award Construction	\$1,921,549	[Blue bar: (July '22 - Dec. '23)]					
9	11083J	Tanks Rehab (JL CW Repair)	\$199,471	[Blue bar: (Jan. '23 - June '26)]					
30	11119	Design/Bid/Award	\$199,471	[Blue bar: (Jan. '23 - June '26)]					
31	11121	Construction - Rehab/Replace	\$3,000,000	[Blue bar: (Jan. '23 - June '26)]					
15a	11083C	Copper Cove WTP Clearwell and B-Tank Rehab Design/Bid/Award Construction	\$250,000 \$1,821,000	[Blue bar: (Apr. '23 - Mar. '24)]					
15b	11111	Copper Cove WTP - B-Tank Pump Station Renovation Design/Bid/Award Construction	\$400,000 \$2,100,000	[Blue bar: (Apr. '24 - Mar. '25)]					
18	11088	Jenny Lind A to B Transmission Pipeline Design/Bid/Award Construction	\$750,000 \$6,903,690	[Blue bar: (Jan. '23 - Mar. '24)]					
20	11104	Lake Tulloch Submerged Water Line Crossing Design/Bid/Award Construction	\$1,000,000 \$6,000,000	[Blue bar: (July '23 - June '25)]					
21	11126	Sheep Ranch Master Plan	\$72,970	[Blue bar: (Completion by July '22)]					
22	11122	Copper Cove B & C Zone Trans Pipeline & P.S.'s Design/Bid/Award Construction	\$500,000 \$8,500,000	[Blue bar: (July '24 - June '26)]					
24	11115	Ebbetts Pass Larkspur PS Rehab (Electrical) Design/Bid/Award Construction	\$250,000 \$1,250,000	[Blue bar: (July '24 - June '25)]					

Table 3 Wastewater Schedule

**WASTEWATER PROJECTS / 5-YEAR CAPITAL IMPROVEMENT PROGRAM  
PRELIMINARY IMPLEMENTATION SCHEDULE**

Rank	Project #	Project Title / Description	Total Project Cost	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27
3	15091	West Point & Wilseyville Wastewater Consolidation Project Design/Bid/Award Construction	\$5,000,000		(May '22 - Dec. '23)				
6	15076/15080	Copper Cove Lift Stations 6, 8, 15 & 18 and Force Main Design/Bid/Award Construction	\$7,970,162		(May '22 - Dec. '23)				
9	15095	Arnold WWTP Secondary Clarifier Improvements Design/Bid/Award Construction	\$200,000 \$4,450,000		(July '22 - June '24)				
12	15101	La Contenta Spray Fields Design/Bid/Award Construction	\$200,000 \$1,000,000			(Dec. '23 - Dec. '24)			
15	15097	La Contenta Biolac, Clarifier & UV Improvements Facilities Plan Design/Bid/Award Construction	\$300,000 \$700,000 \$4,000,000			(Dec. '23 - June '25)			
16	15112	Copper Cove Pond 6 Dam Raise Design/Bid/Award & DSOD Permitting Construction Utility Relocations Construction Dam	\$200,000 \$300,000 \$9,500,000		(Jan. '23 - Dec. '23)	(Jul. '23 - Nov. '24)			
16	15094-T	Copper Cove WWTP - Tertiary & UV Improvements Design/Bid/Award Construction	\$500,000 \$3,500,000		(Nov. '22 - Feb. '24)				
16	15094-S	Copper Cove WWTP - Secondary, Clarifier & Solids Handling Facilities Plan Design/Bid/Award Construction	\$250,000 \$1,000,000 \$13,750,000				(July '24 - June '26)		
23		CC Lower and Upper X-Country Gravity Sewer & Force Main Design/Bid/Award Construction	\$750,000 \$4,250,000					(Jan. '26 - June '27)	

**RESOLUTION NO. 2022-**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE  
CALAVERAS COUNTY WATER DISTRICT TO AMEND THE FISCAL YEAR 2021-22  
PERSONNEL ALLOCATION**

**WHEREAS**, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT adopted Resolution 2021-44 on June 23, 2021 approving Fiscal Year 2021-22 Personnel Allocation; and

**WHEREAS**, the Board of Directors adopted Resolution 2021-83 to amend the Fiscal Year 2021-22 Personnel Allocation to add 3 Utility Workers; and

**WHEREAS**, the Board of Directors adopted Resolution 2021-85 to amend the Fiscal Year 2021-22 Personnel Allocation to add a Customer Service Supervisor; and

**WHEREAS**, the Board of Directors of the does hereby find that it is in the best interest of the District to add an additional Construction Inspector; and

**NOW, THEREFORE BE IT RESOLVED**, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT authorizes an amendment to the Fiscal Year 2021-22 Personnel Allocation, attached hereto and made a part hereof, is hereby approved and adopted.

**PASSED AND ADOPTED** this 23rd day of March 2022 by the following vote:

**AYES:**

**NOES:**

**ABSTAIN:**

**ABSENT:**

CALAVERAS COUNTY WATER DISTRICT

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Cindy Secada, President  
Board of Directors

**ATTEST:**

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Rebecca Hitchcock  
Clerk to the Board

Department	Full Time Position	FY 2020-21	FY 2021-22
Administrative Services	Accountant I/II*	2	2
	Accounting Technician I/II	1	1
	Customer Service Representative I/II/III/SR	3	3
	Customer Service Supervisor +	0	1
	Director of Administrative Services	1	1
	External Affairs Manager	1	1
	Information System Administrator	1	1
	Succession IT Admin (2 Months) **	0	0.17
<b>59 – Administrative Services Total</b>		<b>9</b>	<b>10.17</b>
Engineering/Technical Services	Civil Engineer	1	0
	<b>Construction Inspector I/II/III/SR++</b>	<b>1</b>	<b>1</b>
	District Engineer	1	1
	Engineer - Associate, Civil, Senior	0	3
	Engineering Coordinator	1	1
	Engineering Technician	1	1
	Senior Civil Engineer	2	0
	Senior Supervisor of Construction/ Inspection	0	1
<b>58 – Engineering/Technical Services Total</b>		<b>7</b>	<b>8</b>
General Management	Executive Assistant/Clerk to the Board	1	1
	General Manager	1	1
	Human Resources Manager	1	1
	Human Resources Technician	1	1
<b>General Management Total</b>		<b>4</b>	<b>4</b>
Utility Services	Administrative Technician I/II/Sr	1	1
	Collection System Worker I/II/III/IV/Sr	5	5
	Construction and Maintenance Manager	1	1
	Construction Worker I/II/III/Sr	7	7
	Director of Operations	1	1
	Distribution Worker I/II/III/IV/Sr	7	9
	Electrical/Instrumentation Tech I/II/Sr	1	1
	Electrical/SCADA Senior Supervisor	1	1
	Facilities Maintenance Worker	1	1
	Mechanic I/II/Sr	4	3
	Meter Reader Trainee/I/II	2	0
	Operations, Senior Supervisor	4	4
	Plant Operations Manager	1	1
	Purchasing Agent	1	1
	SCADA Technician I/Sr	2	2
	Utility Worker I/II/Sr***	0	3
Water/Wastewater Plant Operator	10	10	
<b>Utility Services Total</b>		<b>49</b>	<b>51</b>
Water Resources	Manager of Water Resources	1	1
<b>Water Resources Total</b>		<b>1</b>	<b>1</b>
Total Personnel Allocation		70	74.17

\* Accountant II Retiring Mid Year

\*\* IT Administrator succession overlap for 2 months

\*\*\* Added Utility Worker Series per Res. No. 2021-83

+ Added Customer Service Supervisor per Res. No. 2021-85

**++Added additional Construction Inspector Res. No. 2022-\_\_**

# Agenda Item

DATE: March 23, 2022

TO: Board of Directors  
Michael Minkler, General Manager

FROM: Charles Palmer, District Engineer

RE: Discussion/Action Award of Professional Services Agreement (PSA) and Budget Adjustment for Design of the Jenny Lind Water System Tank A-B Transmission Pipeline Project, CIP #11088

---

## RECOMMENDED ACTION:

Motion: \_\_\_\_\_/\_\_\_\_\_ to adopt Resolution No.2022-\_\_\_\_\_ awarding contract and authorizing General Manager to enter into a PSA with Coleman Engineering in an amount of \$664,640 for design, engineering and other professional services related to the Jenny Lind Water System Tank A-B Transmission Pipeline Project, CIP #11088.

Motion: \_\_\_\_\_/\_\_\_\_\_ to adopt Resolution No.2022-\_\_\_\_\_ approving amendment of the FY2021-22 Operating and Capital Improvement Project (CIP) budget adding \$390,000 in funding for the Jenny Lind Water System Tank A-B Transmission Pipeline Project, CIP #11088.

## SUMMARY:

This proposed design consultant selection and award for the Jenny Lind A-B Transmission Pipeline was presented to the Engineering Committee on March 1, 2022.

In summary, staff issued a Request for Statement of Qualifications and Proposals for the Jenny-Lind A-B Pipeline Project on December 15, 2021. A total of 10 firms were notified of this project. A total of ten firms (including three firms that were not originally notified of this project) attended the site walk held on January 6, 2022.

This project is separated into four major components:

1. New water transmission pipeline from Tank A pump station to Tank B, with ability to backfeed water supply from Tank B when the pump station is idle;
2. Modification of Tank B inlet and outlet pipes;
3. Assessment of Tank A pump station; and
4. System modeling to optimize pressure zones upon completion of improvements.

The District received six proposals on February 3, 2022. A total of five staff members reviewed the six proposals. Below is a summary of the proposals received.

Consultant Name	Proposed Level of Effort Base Tasks (hours)	Proposed Fee (dollars)
Bennett Engineering Services	1,724 <sup>a</sup>	\$614,622
Coleman Engineering	4,368	\$664,640
Dudek	3,236 <sup>a</sup>	\$746,315
Murraysmith	2,423 <sup>a</sup>	\$632,588
Petersen Brustad Inc.	2,200 <sup>a</sup>	\$589,970
Sandis	3,666	\$698,601

Notes: Scope of work includes geotechnical investigation and assumes an Initial Study/Mitigated Negative Declaration for project environmental analysis. Excludes engineering services during construction.

a – Hours shown are for prime consultant only. No data available for hours for subconsultants.

After reviewing the proposals, staff deemed a total of three firms (Bennett Engineering Services, Coleman Engineering and Weber Ghio Associates, and Peterson Brustad Inc.) as the highest ranking. While staff identified strengths in the proposals from these firms, in the end the committee decided that the team of Coleman Engineering and Weber Ghio Associates was best qualified for this project. The strengths of a quality, local staff, along with a good value in total number of hours compared to total project cost, helped the team of Coleman Engineering and Weber Ghio Associates stand out. Having a new set of eyes evaluate the model and provide recommendations on system changes was also viewed as important.

## **FINANCIAL CONSIDERATIONS:**

The project was initially programmed to begin in FY23-24. However, given the pace of development along with on-going challenges in meeting demands during peak usage periods, staff recommends moving this project forward at this time. A CIP budget adjustment is necessary to accommodate the initiation of design for this project. Staff estimates that a maximum of \$390,000 for cash flow needs for rest of FY 2021-22. This includes staff costs for project management and oversight, as well as environmental and permitting costs. This also assumes that District staff will conduct potholing efforts in support of the design effort. The balance of the contract funds will be obligated in the FY 2022-23 budget. An approved resolution from the District’s Board of Director’s will be necessary to initiate this project. Given the project’s importance, Staff identified this as a critical and necessary effort.

*Attachments:* Coleman Proposal  
 Coleman Fee Estimate  
 Resolution No. 2022-\_\_ Approving Design Contract for Jenny Lind Water System Tank A-B Transmission Pipeline Project, CIP 11088  
 Resolution No. 2022-\_\_ Amending the FY 2021-22 Operating and Capital Improvement Budget to Increase the Outlay for the Jenny Lind Water System Tank A-B Transmission Pipeline Project, CIP 11088





In Association With:



Proposal to Calaveras County Water District

**ENGINEERING AND DESIGN SERVICES FOR THE  
JENNY LIND WATER SYSTEM**

**TANK A-B WATER TRANSMISSION PIPELINE PROJECT**

**CCWD CIP #11088**

FEBRUARY 3, 2022





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APPENDIX A — “Exhibit A” Detailed Scope of Services

APPENDIX B — Resumes



# COVER LETTER



February 3, 2022

Ms. Kate Jesus, Engineering Coordinator  
Calaveras County Water District  
120 Toma Court  
San Andreas, CA 95249

**Re: Proposal for Engineering and Design Services for the Jenny Lind Water System Tank A – B Water Transmission Pipeline Project  
CCWD CIP # 11088**

Dear Kate,

Thank you for this opportunity to provide engineering and design services for the Jenny Lind Water System Tank A – B Water Transmission Pipeline Project. We recognize that this important pipeline project will allow the District to replace a long-term hydraulic bottleneck, stabilize system pressures, provide flexibility, optimize pressure zone boundaries and provide for growth within the Jenny Lind Water System. The project will also help to resolve water quality issues and improve mixing at Tank B.

As you know, Coleman Engineering, Inc. is a private consulting engineering firm focused entirely on water and wastewater engineering. The firm was established in 2010 by Chad Coleman, who is the President and Owner of the firm, and is incorporated as a California Corporation. We are located at 1223 Pleasant Grove Boulevard, Suite 100, Roseville, CA 95678. Four of our professionals are licensed Professional Engineers in California, with additional registrations in the states of Nevada, Utah, Washington, and Idaho. Our most recent pipeline project with the District was the Techite Water Pipeline Replacement Project at Ebberts Pass.

For this project we have teamed with Weber, Ghio & Associates of San Andreas. WGA has an extensive record of successful project implementation with the District. As we show in the proposal, this association creates a strong, well-balanced team with complementary skills and relevant experience. The two firms are currently working together on a water tank and booster pump station project in Plymouth, and our Project Manager, Simon Gray, is a former WGA employee.

Coleman Engineering will act as the prime consultant for contracting purposes and provide overall project management. Working together throughout, WGA will take the lead for the preliminary design phase and Coleman Engineering will be responsible for completing the final design and bid-ready documents. This differentiation is reflected in the project organization chart presented in the proposal. Two Project Engineers, Bill Ostroff P.E. (WGA – preliminary design) and Jon Kaminsky P.E. (Coleman Engineering -final design) will provide continuous technical oversight and supervision of the project team.

Our project team is also supplemented by specialist subconsultants for topographical mapping and survey (Valley Springs-based Nordahl Land Surveying), geotechnical investigation and reporting (Crawford & Associates), SWPPP preparation (Tully Consulting Group) and environmental / CEQA compliance (ECORP Consulting)

Our proposal demonstrates our thorough understanding of the project's elements and its key issues and challenges. We have included a detailed and sys-





tematic project approach to resolve these key issues within the document, together with a very detailed draft scope of services included as an appendix. We trust this demonstrates our level of interest and commitment to this project. Per discussions at the pre-proposal meeting, we have included for preparation of an Initial Study / Mitigated Negative Declaration: though it is hoped that the project may qualify for a categorical exemption. As directed by the District, we have included for engineering services during construction within our scope and fee on the understanding that, as these services cannot as yet be fully defined, the associated fee will not be considered in proposal evaluation.

We also recognize that the District places emphasis not only on the overall proposed fee for services but also on the value of those services relative to the number of proposed labor hours. We have deliberately presented both the fee and labor hours (including for sub consultants) clearly in our fee spreadsheet to allow ease of evaluation by the District.

We also appreciate the opportunity to review the District's Professional Service Agreement and look forward to the opportunity to review the entire agreement with the District to be certain that the District maintains the full benefit of the insurance which we provide to our clients.

We look forward to implementing this important project for the District. If you have any questions, or require any additional information, please don't hesitate to contact us.

Sincerely,

A handwritten signature in black ink that reads "Chad R. Coleman".

Chad R. Coleman, P.E.  
Principal-in-Charge

A handwritten signature in black ink that reads "Simon N. Gray".

Simon N. Gray, P.E.  
Project Manager



**B**

## FIRM DESCRIPTION

### COLEMAN ENGINEERING

Section B gives a description of Coleman Engineering and Weber, Ghio & Associates (WGA) identifies their core capabilities and experience for performing the District's requested consulting services.

## COLEMAN ENGINEERING

Founded in 2010 by Chad Coleman, Coleman Engineering Inc. is a California corporation that has successfully completed many projects as a specialist water and wastewater engineering firm. The project team has decades of experience and expertise designing water and wastewater infrastructure for both municipal agencies and the private sector in northern California. Our resume includes in depth knowledge and experience with design, permitting, and construction management/quality assurance associated with public water, recycled water and wastewater systems.

Located in Roseville, CA, we have 13 employees. Our professionals are licensed Civil Engineers in California, Nevada, Utah, Washington, and Idaho. Our company President and Principal Engineer, Chad Coleman P.E., is also a Certified Grade 3 Water Treatment Plant Operator in California. We also employ 2 full-time water and wastewater treatment plant operators.

*I appreciate that Chad is flexible - he can always meet the City's schedule. He understands a lot about our system because he's done a lot of work for us so there's institutional knowledge there, and he produces a quality product.*

**Chris Ehlers, Assistant Director of Public Works**  
 City of Brentwood

Coleman Engineering provides the following services:

### Planning Studies

- > Master planning for water, sewer, and recycled water systems.
- > Development of Capital Improvement Plans and Specific Plans for developments.
- > Water and wastewater facility condition and vulnerability assessments.
- > Reviews of operation and maintenance procedures.

### Modeling

- > Hydraulic models of pressurized and gravity conveyance systems.
- > Hydraulic transient modeling of large hydroelectric penstocks.

### Design

- > Feasibility and pre-design studies and reports, including detailed alternatives evaluations and project selection.

- > Preliminary and final design of water, wastewater, and recycled water treatment and pipeline conveyance projects, including plans, technical specifications, and contract documents for bidding.
- > Capital and life-cycle cost estimating.
- > Schedule preparation and constructability review.
- > Value Engineering

### Bidding and Construction

- > Bid support, including responses to Requests for Information (RFIs), pre-bid meetings and site walks, bid addenda, bid evaluation, and contract award recommendation.
- > Engineering Services During Construction, including site meetings, submittal reviews, responses to RFIs, claims support and evaluation, pay request reviews, and construction observation.
- > Contractor schedule review and analysis.
- > Funding agency contract conditions compliance monitoring.
- > Full construction management and inspection.
- > Record drawings and operations and maintenance manuals.

### Funding Support

- > Engineering and managerial support to obtain and manage state and federal funding from a variety of loan and grant sources.
- > Engineering and managerial support of bridge loans to fund planning, environmental and design activities.

## WATER SYSTEM EXPERIENCE

Water treatment plant process and operations

Water pumping stations

Water storage tanks

Transmission and distribution pipelines

Well down-hole designs

Well pumping stations

Wellhead treatment systems

## WASTEWATER & RECYCLED WATER SYSTEM EXPERIENCE

Wastewater treatment plant process design and operations

Wastewater lift stations

Collection system pipelines

Force main pipelines

Trenchless pipeline replacement and rehabilitation

NPDES/WDR compliance studies and reporting

Decentralized and onsite wastewater treatment systems

Our public sector clients for water projects in Northern California include:

- > Calaveras County Water District
- > County of Placer
- > Placer County Water Agency
- > City of Roseville
- > City of Lincoln
- > City of Lathrop
- > City of Oakley
- > City of Hollister
- > City of Brentwood
- > Los Molinos Community Services District
- > Amador Water Agency
- > County of Yolo
- > Valenzuela Water District
- > Locke Waterworks Company
- > County of Sacramento
- > City of Dixon
- > City of Williams
- > Tuolumne City Sanitary District
- > San Juan Water District
- > California Department of Parks and Recreation
- > US Government Department of Veterans Affairs





Coleman Engineering are pleased to propose to the District in association with WGA. We know that this partnership will provide the District with an exceptional level of experience and expertise for the Jenny Lind Tank A-B Transmission Pipeline project.



WGA is a small civil engineering firm serving clients in the rural counties of Amador, Alpine, Calaveras, Tuolumne and San Joaquin. WGA specializes in providing engineering services to cities, rural counties, and special districts.

WGA is a full-service firm, specializing in civil engineering, planning and entitlements, surveying, and construction management services. They have served the Mother Lode area for over 40 years and look forward to continuing to service the area. Their projects include roads, bridges, water and wastewater facilities, and underground utilities. WGA prides themselves on making sure their clients' projects are constructed on time, within budget and to the required quality. As required, they work with quality subconsultants in areas of environmental, geotechnical, materials testing, public outreach, and structural engineering.

WGA staff have worked with public officials and property owners in completing numerous successful public works projects utilizing local, State, and Federal funds. WGA has vast experience in working with and following State and Federal funding program procedures.

WGA is committed to delivering services and deliverables that exceed clients' expectations. Their years of combined engineering and construction management experience throughout the greater Mother Lode area set them apart from the competition.

WGA has extensive experience with the District and in and around, Calaveras County. The following projects demonstrate their local knowledge which we believe is integral to the overall success of this project:

- > Calaveras County - Hawver Road Low Water Crossing Project
- > Calaveras County - Mountain Ranch Road Improvements Project
- > Calaveras County - SB1 Road Maintenance Project
- > Calaveras County - Six Mile Road Project
- > City of Jackson – Mission Boulevard Extension Project
- > City of Jackson - SB1 Paving Project

- > City of Jackson – Safe Route to Schools Project
- > City of Plymouth – Safe Route to Schools Project
- > City of Sutter Creek – Main Street Bridge Replacement Project
- > Jackson Valley Irrigation District - Campground Paving Project
- > Jackson Valley Irrigation District - Phase 2 Service Extension Project
- > Linden County Water District - Water and Sewer Improvement Project





## PROJECT TEAM AND ORGANIZATIONAL STRUCTURE

### COLEMAN ENGINEERING

Section C describes the project team, its members, and their qualifications and experience. The qualifications and years of experience demonstrate how the team is extremely well-placed to serve the Calaveras County Water District.

## PROJECT TEAM AND ORGANIZATION STRUCTURE

Section C presents our project team and organizational structure. For this project we have teamed with Weber, Ghio & Associates of San Andreas. This association creates a strong, well-balanced team with complementary skills and relevant experience. Coleman Engineering will act as the prime consultant for contracting purposes and provide overall project management. Working together throughout, WGA will take the lead for the preliminary design phase and Coleman Engineering will be responsible for completing the final design and bid-ready documents. This differentiation is reflected in the project organization chart.

Two Project Engineers, Bill Ostroff P.E. (WGA – preliminary design) and

Jon Kaminsky P.E. (Coleman Engineering -final design) will provide continuous technical oversight and supervision of the project team and ensure that there is an acceptable balance of professional inputs.


Our project team is also supplemented by specialist subconsultants for topographical mapping and survey (Valley Springs-based Nordahl Land Surveying), geotechnical investigation and reporting (Crawford & Associates), SWPPP preparation (Tully Consulting Group) and environmental / CEQA compliance (ECORP Consulting)


Primary responsibilities by task are set out below, referencing our project approach set out later in this proposal:

Task No.	Task Description	Primary Responsibility
1	Project Management	Coleman Engineering
2	Data Collection and Review	WGA
3	Topographical Mapping and Survey	Nordahl Land Surveying
4	Transmission Pipeline Hydraulic Modeling Studies	WGA
5	Transmission Pipeline Route Alternatives Analyses	WGA
6	Geotechnical Investigation and Report	Crawford & Associates
7	Tank A Pump Station Hydraulics Review	Coleman Engineering
8	Preliminary Design Report	WGA
9	Final Design	Coleman Engineering
	- SWPPP	Tully Consulting Group
	- Utility Potholing	WGA
10	Calaveras County Permitting	WGA
11	Environmental / CEQA Compliance	ECORP Consulting
12	Bid and Award Phase Services	Coleman Engineering
13	Engineering Services During Construction	Coleman Engineering

### Key Subconsultant Information

The Coleman Engineering/WGA team will partner with the following subconsultants to provide the specialized engineering and other services required for this project. The following gives details of the subconsultants we will work with on this project. We have regularly worked with these firms and know them to be experts in their field and trusted partners.

 **Crawford & Associates, Inc. – Geotechnical Investigation.** Crawford & Associates, Inc. is a full-service geotechnical engineering firm based in Sacramento, CA. The firm is a State of California certified small business. In addition to geotechnical investigation, testing and reporting, the firm provides geotechnical foundation design, materials testing, special inspection, and hazardous materials assessment services in the water and wastewater, bridge, and structures sectors. In the water and wastewater fields, Crawford specializes in investigation for, and design of pump stations, treatment plants, tanks, pipelines, and reservoirs. The firm has broad experience working with various oversight agencies, including FEMA; Cal OES; FHWA; Caltrans; regional water quality control boards; State of California Departments of Water Resources and Fish and Wildlife, United States Corps of Engineers; and Union Pacific Railroad.

 **ECORP Consulting, Inc. – Environmental/CEQA Compliance.** ECORP Consulting, Inc. has its headquarters in Rocklin, California. ECORP assists our public and private clients with a wide range of environmental services including technical studies for biological, cultural, and water resources; land use planning; air and noise technical studies; and regulatory compliance with California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), Clean Water Act, federal and state Endangered Species Acts (ESAs), National Historic Preservation Act (NHPA), and other laws and regulations. ECORP can provide support over the life of a project from initial baseline field surveys, special studies, and environmental planning; to environmental review, permit negotiation, liaison with resource agencies, and mitigation design; and through to construction monitoring, and compliance reporting. ECORP brings to our clients an experienced team of CEQA and NEPA specialists, environmental permitting specialists, environmental analysts, terrestrial and aquatic biologists, wetland specialists, archaeologists, cultural resource specialists, architectural historians, air quality and noise experts, and geographic information system

(GIS) analysts.



### Tully Consulting Group—SWPPP.

Tully Consulting Group was founded in 2005 by Robin Tully, PE. They provide stormwater management and civil engineering services throughout Northern California.

The company is accredited with the Better Business Bureau (BBB) and is a registered DBE, WBE, and SBE firm. They offer our services to a wide variety of public and private clients.

Tully's core services include Construction Stormwater General Permit Compliance, 401/404 Permit Compliance, Caltrans SWPPP/WPCP Compliance, SWPPP/WPCP Compliance Oversight, QSP and QSD Services, NPDES Permit Compliance, and Stormwater Civil Engineering.

### Nordahl Land Surveying—

**Topographic/Location Surveying.** Nordahl Land Surveying was established in Valley Springs in 1990 and is well known throughout the Mother Lode and Central Valley. Nordahl Land Surveying is strictly a Land Surveying firm, focusing on providing high quality professional services in Land Surveying.

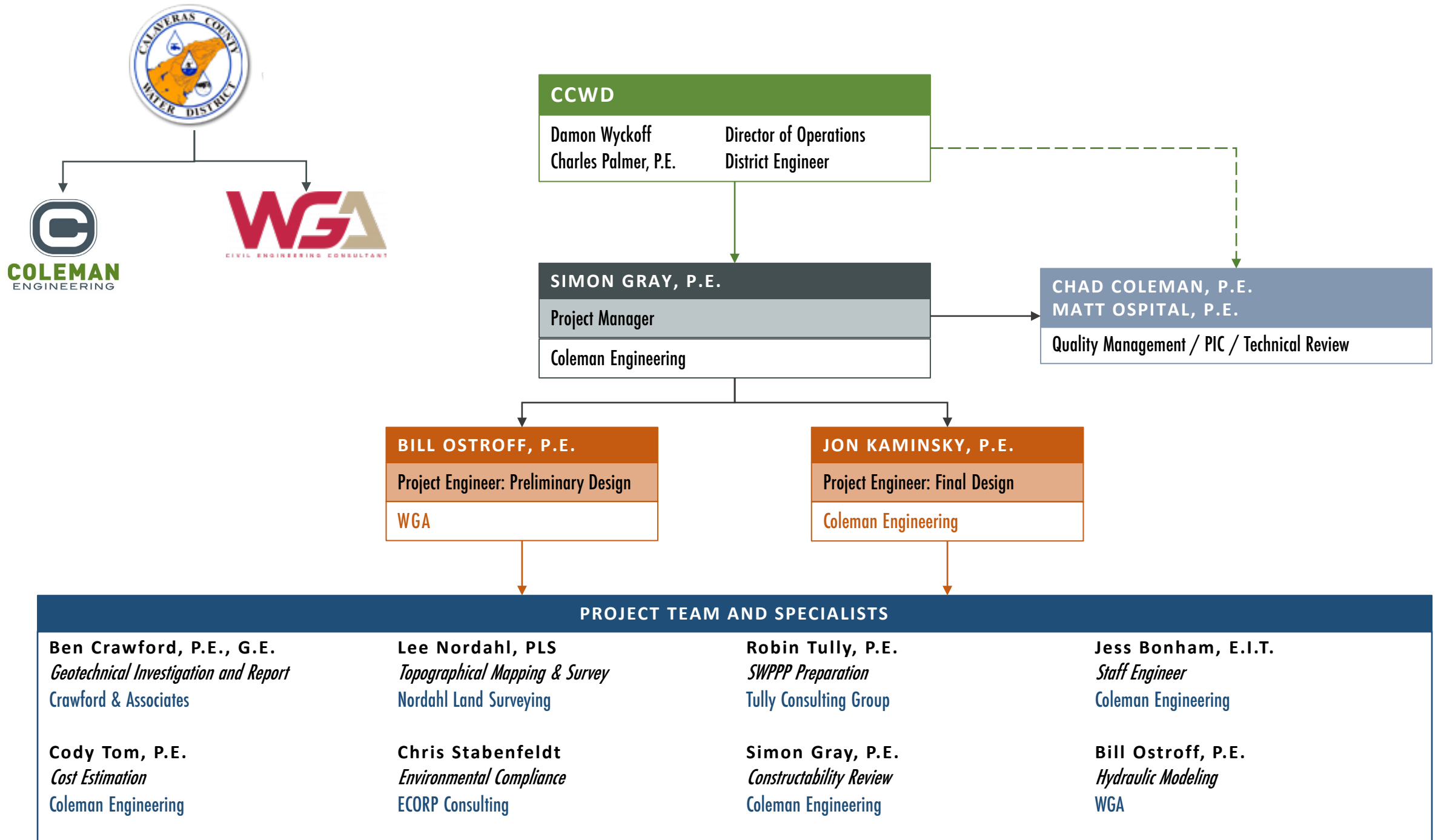
Nordahl Land Surveying provides services which include boundary surveys, right-of-way surveys, control surveys, legal descriptions, A.L.T.A. surveys, mapping, location surveys, topographic surveys, quantity surveys, cadastral surveys, land divisions, lot line adjustments, AutocAD drafting, preparation and processing of record maps, ground control for aerial mapping and specializing in construction staking of large and difficult projects.

### Project Organization Chart

The organization chart on the following page outlines the organization of our internal team and expert subconsultants on this project. The subconsultants are incorporated into our design team to ensure seamless and uninterrupted two-way communication and so that all members are always up to speed on the current status of the project.



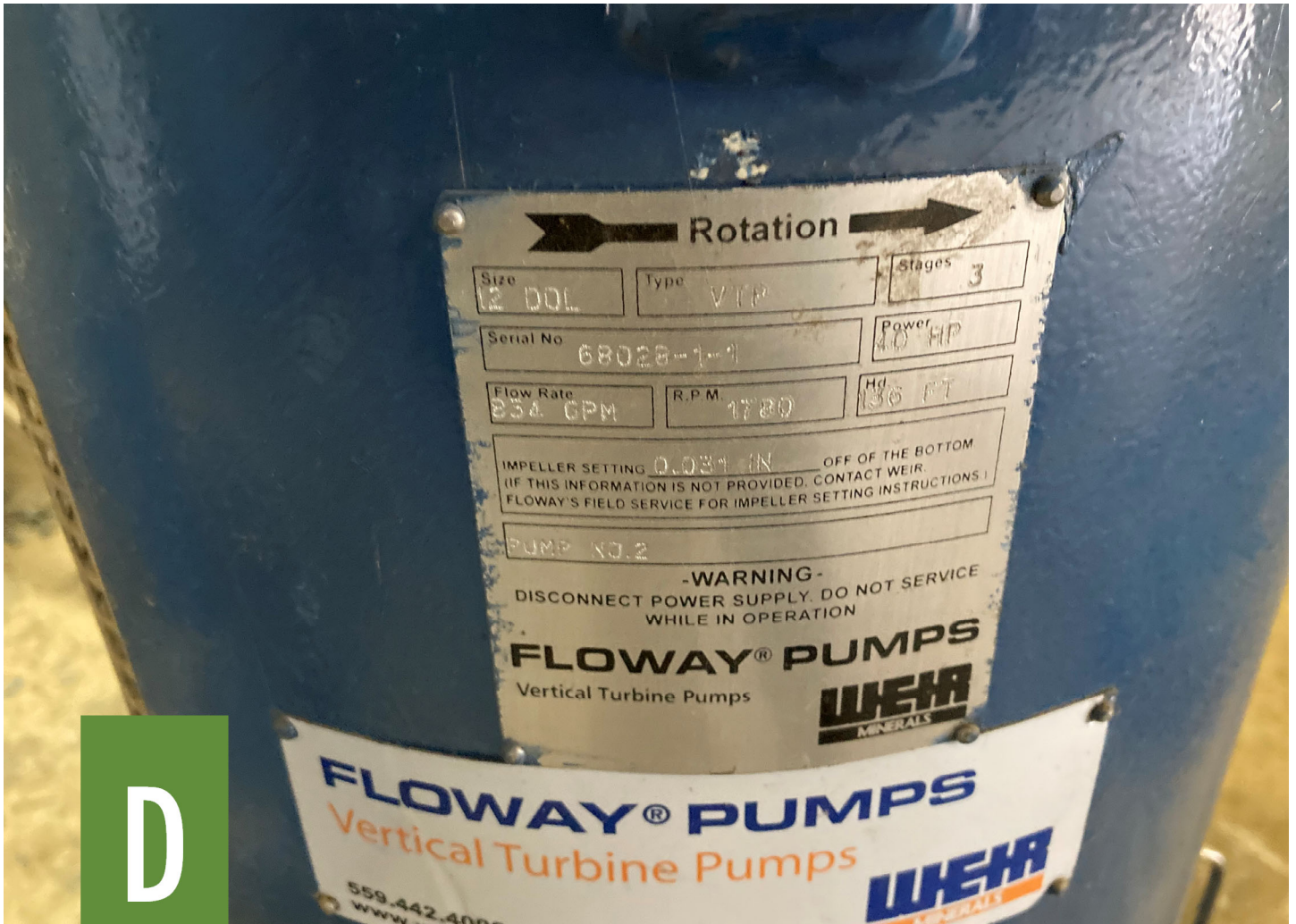
# Project Organization Chart



We have assembled a strong team from both Coleman Engineering resources and WGA to provide quality professional engineering services for this project. The table below includes a brief summary of the experience and qualifications of the key Coleman Engineering and WGA team members.

Professional Team Member	Education and Years of Experience	Qualifications	Key Relevant / Project Experience
<b>Chad Coleman, P.E.</b>  <i>Project Role:</i> PIC / Technical Review / QA Manager	B.S., Brigham Young University M.S., Brigham Young University 29 years (12 years with Coleman Engineering since its founding)	Professional Civil Engineer: CA # 56490 ID # 8964 NV # 16990 UT # 188915 Water Treatment Plant Operator, Grade 3, CA # 31314	<ul style="list-style-type: none"> <li>&gt; Quality assurance, technical review, and Principal-in-Charge with oversight of all Coleman Engineering projects.</li> </ul>
<b>Simon Gray, P.E.</b>  <i>Project Role:</i> Project Manager / Technical and Constructability Review	BSc (Eng.) (Hons), Civil Engineering, Imperial College of Science and Technology, University of London, United Kingdom Certificate in Business Administration, Hong Kong Management Association / Walsey Hall, Oxford, United Kingdom 39 years (4 years with Coleman Engineering)	Professional Civil Engineer: CA # 60311 WA # 51959  Chartered Engineer, United Kingdom: #45101217	<ul style="list-style-type: none"> <li>&gt; Calaveras County WD Ebbetts Pass Tehchote Pipeline Project</li> <li>&gt; Los Molinos CSD Arsenic Compliance and Consolidation Project</li> <li>&gt; Midas Booster PS</li> <li>&gt; Sacramento VA Medical Center Water Supply System Project, Mather, CA</li> <li>&gt; Riolo Vineyards SLS</li> <li>&gt; Amador Water Agency CAWP Pioneer Water Rehabilitation, Phase 2 Booster PS</li> <li>&gt; Fort Bragg Raw Water Line Replacement Project</li> <li>&gt; Ukiah Recycled Water Project, Phases 1 - 3</li> <li>&gt; Pine Grove CSD Pipeline Project</li> </ul>
<b>Jon Kaminsky, P.E.</b>  <i>Project Role:</i> Project Engineer (Final Design)	M.S., Civil and Environmental Engineering University of California, Davis CA B.S., Civil Engineering University of California, Davis CA 12 years (2 years with Coleman Engineering)	Professional Civil Engineer: CA # 82004 ID # 17460 WA # 55136	<ul style="list-style-type: none"> <li>&gt; Homestead Well, Dixon, CA</li> <li>&gt; Homestead Storm Drain Pump Station, Dixon, CA</li> <li>&gt; Eden Light Tree Fire System, East Palo Alto, CA</li> <li>&gt; Winship Elementary School, Well #2, Meridian, CA</li> <li>&gt; Yolo Corporation Yard Water and Wastewater Systems, Yolo County, CA</li> <li>&gt; Bickford Ranch Sewer Lift Station, Placer County, CA</li> <li>&gt; Valenzuela Water System, Hollister, CA</li> </ul>

Professional Team Member	Education and Years of Experience	Qualifications	Key Relevant / Project Experience
<b>Matt Ospital, PE</b>  <i>Project Role:</i> PIC / Technical Review / QA Manager	B.S., Cal Poly, San Luis Obispo  16 years (14 years with WGA)	Professional Civil Engineer: CA #76594  QSD/QSP	<ul style="list-style-type: none"> <li>&gt; Pipeline improvement plans: Fly-In Acres Water System Replacement Project, Irrigation Line Replacement Project, Sky High Ranch Water System Replacement Project, Martell Water Main Improvement Project.</li> <li>&gt; Tank improvement plans: Sky High Ranch Water System Replacement Project, Valley Springs PUD Replacement Well and Storage Tank Project.</li> </ul>
<b>Bill Ostroff, PE</b>  <i>Project Role:</i> Project Engineer / Hydraulic Modeler	B.S., Cal Poly, San Luis Obispo  19 years (<1 year with WGA)	Professional Civil Engineer: CA # 69221	<ul style="list-style-type: none"> <li>&gt; Pipeline improvement plans: CCWD Ebbetts Pass Reach 1 Pipeline, Sutter Creek to Plymouth Pipeline, McCarthy Ranch Pipeline.</li> <li>&gt; Tank improvement plans: Calaveras PUD Clearwell, Linden CWD Well 5 Storage Tank, AWA Wildflower Tank</li> <li>&gt; Hydraulic modeling services for: Linden CWD, Calveras PUD, Union PUD, City of Plymouth, Olivehurst PUD, Orange Vale Water Company, River Pines PUD, City of Fort Bragg, Georgetown Divide PUD, Valley Springs PUD, and many military housing and private water systems.</li> </ul>



## PROJECT EXPERIENCE

### COLEMAN ENGINEERING

Section D describes the combined experience of the Coleman Engineering/WGA Team. The extensive and relevant project experience demonstrates how the team is extremely well-placed to serve CCWD.

## EBBETTS PASS TECHITE PIPELINE REPLACEMENT PROJECT | CALAVERAS COUNTY, CA



### PROJECT OVERVIEW

Coleman Engineering prepared preliminary and final designs, bid documents and cost estimates for approximately 8,100-feet of 10-inch dia. ductile iron water supply pipeline in a high elevation Sierra community. The project replaced an existing 14-inch dia. Techite pipe that had reached the end of its useful life. Due to the terrain, rock, and space constraints, the existing main had to be replaced along the same alignment. A detailed construction sequencing and bypassing plan was prepared for the project to facilitate construction while maintaining service to residents. The project included the design of a jack-and-bore crossing under Highway 4, and negotiation with Caltrans concerning technical requirements and an Encroachment Permit.

### REFERENCE

Charles Palmer, P.E. | District Engineer  
Telephone: (209) 754-3543 | E-mail: charlesp@ccwd.org



## FORT BRAGG RAW WATER LINE REPLACEMENT PROJECT | FORT BRAGG, CA



### PROJECT OVERVIEW

Coleman Engineering prepared route alternatives analyses and selection; preliminary and final design and CEQA environmental document preparation for a four-phase replacement of approximately 11,000 feet of the City's 10-inch diameter raw water pipeline from Waterfall and Newman Gulches to the City's water treatment plant. The pipeline is nearing the end of its service life and crosses sections of steep, heavily wooded terrain and landslip-prone gorges. There is also sensitive riparian environment within the California Coastal Zone to be crossed. The planning and route selection stage included identification of options; creation and refinement of evaluation criteria; establishment of an evaluation methodology in conjunction with the City and stakeholders; weighting factors; a quantitative numerical matrix to sum the evaluation criteria, and a sensitivity analysis workshop with the City. Evaluation criteria included construction cost, life cycle cost, construction schedule, easement acquisition, ease of operation and maintenance, constructability, geotechnical and geologic hazards, environmental impacts, ease of permitting, and public impacts.

### REFERENCE

Diane O'Connor | Project Manager, City of Fort Bragg  
Telephone: (707) 961-2823 Ext 134 | E-mail: doconnor@fortbragg.com

# VA MEDICAL CENTER CAMPUS WATER SYSTEM PROJECT | DEPARTMENT OF VETERANS AFFAIRS | MATHER, CA



## PROJECT OVERVIEW

The Sacramento Veterans Administration Medical Center (VAMC) is a 14-acre, 35-building campus located in Mather, CA and adjacent to the Mather Airport. As the campus has grown, demand has increased and created associated capacity problems and low water pressure. In addition, there is currently inadequate emergency water storage at the campus. This project upsizes the existing 6-inch diameter water main loop to 8-inch diameter. Each of the buildings is to be connected to the new 8-inch diameter loop by smaller lines, ranging from ¾-inch to 6-inch diameter, and the existing 6-inch diameter water main loop is to be re-purposed as a fire main. In addition, a 565,000-gallon ground-level storage tank; a 40,000-gallon and 220-foot tall, elevated water storage tank; a CMU building housing a booster pump station comprising four 300 gpm capacity centrifugal pumps with VFDs; a standby generator housed in the CMU building; a hydropneumatic tank; a water treatment / chlorination (Memchlor) unit; and yard piping including valves, vaults, bypasses, and manholes, are to be provided. As the Engineer of Record, Coleman Engineering is responsible for overall design and design management, permitting, negotiation with public agencies for new water system connections, and flow testing of hydrants and preparation of a commissioning report.

## REFERENCE

Andy Malone | Project Manager, VAMC Engineering Department, Mather CA  
 Telephone: (916) 843-9129 | E-mail: andy.malone@va.gov



## LOS MOLINOS CSD ARSENIC COMPLIANCE AND CONSOLIDATION PROJECT | LOS MOLINOS, CA



### PROJECT OVERVIEW

Coleman Engineering provided planning services (including a successful SRF-grant funding application); preliminary and final design; project management; and inspection and construction contract administration for a new drinking water well and for a consolidation pipeline for the Los Molinos Community Services District, Los Molinos, CA. The water supply pipeline portion of the project consisted of 1,800-feet of 10-inch dia. C900 PVC transmission main within and adjacent to the Caltrans right-of-way for State Highway 99, and two 4-inch dia. C900 PVC distribution mains each approximately 450-feet long. The distribution mains are to connect two mobile home parks into the Los Molinos water supply network so that existing wells can be decommissioned. Three horizontal directional drilling (HDD) / jack-and-bore crossings – two of State Highway 99 and one of Los Molinos Creek – were included in the project.

### REFERENCE

Jim Lowden | General Manager, Los Molinos Community Services District  
Telephone: (530) 824-2914 | E-mail: [jglowden54@gmail.com](mailto:jglowden54@gmail.com)

# WGA Project Experience

CIVIL ENGINEERING CONSULTANT

## Fly-In Acres Water System Replacement Project

Calaveras County Water District

Bill Perley—(916) 812-8733

This project involved the replacement of the old Fly-In Acres water system with the merger of CCWD. WGA provided professional engineering, design services for this project. The work consisted of replacing approximately 22,000 feet of 6-inch and 8-inch diameter water mains including all new piping, fittings, valves, hydrants, services, air valves, pressure reducing stations, tie-in's and other appurtenances. Property owner coordination was a key element during the design phase of the placement of the new water services/meters to minimize impacts to property owner connections. From concept to construction WGA delivered this successful project. This successful project was completed ahead of schedule and within budget. The construction cost of this project was \$1,637,827.

*Project Staff:*  
 Gary Ghio, P.E. – Project Engineer  
 Matt Ospital, P.E. – Design Engineer  
 Nordahl Land Surveying



## Irrigation Line Replacement Project

Union Public Utility District

Bill Eltringham—(209) 728-9363

This project involved the replacement of the existing North Ditch irrigation line, to increase reliability and capacity thereby increasing the availability of irrigation water for agricultural use. The North Ditch system primarily serves the town of Murphys and surrounding areas and was installed in the 1950's. The existing line was constructed of spiral welded steel pipe which has greatly exceeded its lifetime and had been experiencing significant leaks. This line is the main feed line for the North Ditch system and also provides fire protection through three fire hydrants for portions of the town of Murphys adjacent to Hwy 4. WGA provided professional engineering, design services for this project. The work consisted of installing approximately 3,450 feet of 14-inch diameter PVC irrigation mains including all new piping, fittings, valves, hydrants, services, air valves, tie-in's and other appurtenances. The new alignment involved a creek crossing, highly sensitive cultural areas which required extensive onsite monitoring and Caltrans involvement. The construction cost of this project was \$631,205.

*Project Staff:*  
 Gary Ghio, PE – Project Engineer  
 Matt Ospital, PE – Design Engineer  
 Nordahl Land Surveying





# WGA Project Experience

CIVIL ENGINEERING CONSULTANT

## Sky High Ranch Water System Replacement Project

Sky High Ranch HOA

Mark Korte—(916) 719-3714  
Mike Cooke—(510) 295-9350

*Project Staff:*  
Gary Ghio, P.E. – Project Engineer  
Matt Ospital, P.E. – Design Engineer  
Nordahl Land Surveying

The project is located within an existing subdivision and on Forest Service land in Tamarack, CA. A Project Engineering Report was prepared by WGA to secure USDA funding for this project. WGA provided professional engineering, design including extensive hydraulic modeling, and construction oversight for this project. The work included construction of 125,000 gallon bolted steel water tank, approximately 20,700 lf of 6" diameter, 2,440 lf of 8" diameter, 820 lf of 10" diameter, and 650 lf of 12" diameter waterline, electrical improvements, and miscellaneous appurtenances. The design of the project have been completed and awarded. Construction commenced in the spring of 2016 and is scheduled to end in this fall. The construction cost of this project was \$3,696,370.



## Martell Water Main Improvement Project 2015

City of Jackson

Yvonne Kimball | City Manager—  
(209) 223-1646

*Project Staff:*  
Gary Ghio, PE – Project Engineer  
Matt Ospital, PE – Design Engineer  
Nordahl Land Surveying

The City of Jackson's main water supply to town consisted of two parallel 10" and 12" diameter water mains which were located on a cross country alignment, were outdated and failing. WGA provided professional engineering, design and construction support services for this project. The work included installing approximately 1,730 linear feet of 16-inch diameter waterline. The proposed pipeline alignment traverses State and privately owned parcels within Amador County. WGA developed legal plats and descriptions for easements on privately owned parcels and identified the limits of existing easements and right of ways for the remaining pipeline alignment. From concept to construction WGA delivered this successful project. This successful project was completed ahead of schedule and within budget. The construction cost of this project was \$350,007. Many items of this project were accomplished with careful wording of the project specifications and proactive construction management.





Hydraulic modeling will play an important role on this project: helping to determine the transmission pipeline size, pressure zone boundaries, location and set points of PRV stations, and potential impacts on water quality. WGA will bring their extensive experience in modeling water systems to these important tasks. Some of their relevant and local representative experience is given below:

#### LINDEN COUNTY WATER DISTRICT DOMESTIC WATER SYSTEM

- > **Key Staff:** Matt Ospital, Bill Ostroff
- > **Status:** Completed
- > **Water System Description:** Small water system including wells and hydro-pneumatic tanks.
- > **Tasks:** System mapping, hydrant flow testing, model calibration, modeling of existing and proposed conditions, fire flow analysis
- > **Project results:** Created recommendations for pipeline additions and replacements to provide for required fire flows. Created recommendations for a new clearwell and necessary SCADA controls, valving, etc. to serve as the system's only treated water storage. Construction of new clearwell is currently in progress.

#### CALAVERAS PUBLIC UTILITIES DISTRICT DOMESTIC WATER SYSTEM

- > **Key Staff:** Matt Ospital, Bill Ostroff
- > **Status:** On-going modeling services since 2020
- > **Water System Description:** Large water system including multiple tanks and many pressure reducing valves and pressure zones.
- > **Tasks:** System mapping based on existing GIS data, hydrant flow testing, modeling of existing conditions.

#### UNION PUBLIC UTILITY DISTRICT DOMESTIC WATER SYSTEM

- > **Key Staff:** Matt Ospital, Bill Ostroff
- > **Status:** On-going modeling services since 2019
- > **Water System Description:** Medium sized water system including tanks, pressure reducing valves, and multiple pressure zones.
- > **Tasks:** System mapping, hydrant flow testing, modeling of existing and proposed conditions, fire flow analysis.
- > **Project results:** Created recommendations for pipeline additions and replacements to provide for required fire flows. Recommendations were used in the calculation of the District's Capital Improvement Program.

#### CITY OF PLYMOUTH DOMESTIC WATER SYSTEM

- > **Key Staff:** Matt Ospital, Bill Ostroff
- > **Status:** On-going modeling services since 2014
- > **Water System Description:** Medium sized water system including tank and pressure reducing valves.
- > **Tasks:** System mapping, hydrant flow testing, model calibration, modeling of existing and proposed conditions, fire flow analysis, extended period simulation.
- > **Project results:** Created alternatives for City Water Master Plan and for new developments. Created recommendations for system improvements including pipeline and new tank improvements.





## PROJECT UNDERSTANDING AND KEY ISSUES

This section describes the project and its goals, and the key issues and challenges that have to be overcome. The following section, Project Approach (Section F), explains how we will address these issues and challenges to successfully implement the project.

## SECTION D – PROJECT UNDERSTANDING AND KEY ISSUES

This section describes the project and its goals, and the key issues and challenges that have to be overcome. The following section, Project Approach, explains how we will address these issues and challenges to successfully implement the project.

### Project Understanding

The Jenny Lind Water System serves approximately 3,900 customers in the communities of Jenny Lind, Rancho Calaveras, and La Contenta in western Calaveras County adjacent to State Highway 26. The system includes seven water storage tanks: of which two – Tanks A and B – are included in this project. Both were built in 1991, together with a 1.7 mgd pump station at the Tank A site that supplies Tank B. The tanks are connected by a 1970s era 8-inch dia. asbestos cement pipe (ACP) transmission / distribution main routed along Hart Vickson Lane and Baldwin Street.

In the summer of 2006, the Tank A pump station was unable to meet maximum daily demands (MDD), and as a consequence, Tank B emptied and could not be re-filled for a significant period. This caused a prolonged service interruption for more than 900 homes within the Rancho Calaveras subdivision. The problem was caused by not only record water usage in an extended heat wave, but also by electrical surges that disabled control panels, and a hydraulic bottleneck in the 8-inch ACP main that limited flow to Tank B.

In response, the District implemented several improvements:

- > 2,700-ft of new 12-inch dia. pipeline on Highway 26 and Jenny Lind Road to improve transmission from Tank A. Pressure zone boundaries were also adjusted such that some demands could be re-directed from the Tank B zone to the Tank A zone.
- > 14 new pressure reducing valves (PRVs) and adjustments to existing PRV settings to support more efficient water distribution.
- > Replacement of pumps, electrical upgrades, and modified discharge manifolds at the Tank A pump station to reduce headloss and improve flow.

However, the 8-inch dia ACP transmission / distribution pipeline between the two tanks was not replaced at this time on cost grounds, and it remains a bottleneck during peak summer demand periods.

The existing Tank A pump station has five pumps: two 75 HP pumps (600 gpm at a TDH of 341 feet) are used to transfer water to Tank B, and two 40 HP pumps (834 gpm at a TDH of 136 feet) to Tank F. According to

District staff, the fifth pump (also 40 HP, 834 gpm at a TDH of 136 feet) can be used to transfer to either tank, though this may be just to the Tank B distribution system rather than to Tank B given the static head difference between Tanks A and B. The District's most recent master plans define a required firm pumping capacity of approximately 1,400 gpm for the MDD at build-out. The existing baseline demand is about 950 gpm. The District has also found that the higher-capacity pumps at the Tank A pump station have proved to be just an interim solution. Without fixing the hydraulic bottleneck in the 8-inch dia main, applying more pump capacity at higher operating pressures has led to excessive service pressures and increases in costly system pipeline breaks and leaks.

During periods of low demand, velocities within the 8-inch dia. main are under an acceptable 4 feet per second (fps). However, at higher flow rates the velocities quickly rise to 8 to 9 fps. At these higher velocities, District operators have recorded transient pressure surges and spikes in the distribution system. Hydraulic analyses have shown system pressures in the main to be up to 175 psi at a flow rate of 600 gpm: at 1,000 gpm the operating pressure increases to 205-psi in some locations. The existing water system was not designed for these severe operating conditions. District staff have also expressed concerns about the impact changes to the water transmission / distribution system could have on disinfection by-products. There will potentially be altered flow patterns and circulation with increasing water age.

To address the problems identified above, the following improvements have been identified for this project:

- > A new transmission main from the Tank A pump station to Tank B approximately 20,000 ft in length. The project will determine the alignment, but it is expected to be routed generally along Hart Vickson Lane, Cane Lane, Rippon Road, Baldwin Street, and Usher Drive to the Tank B site on Wind River Drive. Other options for the alignment to be considered include Rippon Road to Baldwin Street or Hart Vickson Lane to Baldwin Street. The new transmission pipeline will be in a separate trench parallel to the existing distribution system lines. The pipe diameter is to be determined from hydraulic analyses: the District anticipates either 12-inch dia., Class 350 ductile iron pipe or 14-inch dia. DR-14 / Class 305, C900 PVC pipe.
- > The new transmission main will allow flow in both directions including forward pumping from Tank A to fill Tank B and, when the pump station is idle, to allow gravity flow in the reverse direction in order for Tank B to supply water system demands when / if peak flow



system demands exceed the pumping capacity.

- > The new transmission main will be isolated from the existing water distribution mains and only connected to the distribution system at key locations with PRV stations.
- > Re-definition of existing pressure zone boundaries in the distribution system to optimize service pressures, fire flow, reliability, and redundancy. Each zone will be supplied via at least two PRV stations, or each zone will be served by looping from multiple directions.
- > Replacement of old water service laterals (service saddles, corporation stops, service lines, and meter valves), and the addition of or replacement of main-line valves and fire hydrants.
- > Evaluation of the existing Tank A pump station hydraulics, including performance under existing conditions and expected performance when the new transmission main and tank modifications are in place and when buildout is reached. Recommendations for any pump or pump station modifications.
- > Upsizing of the 6-inch dia. inlet and 8-inch dia. outlet pipes to Tank B. These modifications are required to meet State standards, assure

mixing and turnover in the tank, and to avoid further increasing water age and contributing to the formation of disinfection byproducts. Alternative methods of providing separate inlet and outlet piping or potentially an internal mixing manifold, e.g. Tideflex Mixing System (TMS), are to be considered. Temporary storage provisions, revised operating procedures, and timing of the work are to be determined as Tank B cannot be readily taken out of service.

- > Associated civil and mechanical improvements, including yard piping at both tank sites.

The project design phase will be implemented through preliminary and final design stages. Data and information collection and review, engineering alternatives analyses, survey, geotechnical investigations and hydraulic modeling will be performed in the preliminary design stage to define the project to a 30% design-level-of completion. The final design phase will further develop the project with the final deliverables being bid-ready plans and specifications and an opinion of probable construction cost.



## Key Issues and Challenges

The project's key issues and challenges are detailed below. Our approach to resolving these issues is discussed in detail in the following "Project Approach" section.

KEY ISSUES AND CHALLENGES	DETAILS
Resolve transmission pipeline capacity and pressure problems and meet projected demands at build-out.	<ul style="list-style-type: none"> <li>Upsize the transmission pipeline to reduce the TDH through reduced friction losses.</li> <li>Maintain the existing pipeline in operation during construction of a new independent pipeline to avoid prolonged disruption to residents.</li> </ul>
Evaluate whether the existing Tank A Pump Station will work with the new transmission pipeline and, if not, what modifications need to be made.	<ul style="list-style-type: none"> <li>Will the existing pumps (and pump configurations) still work efficiently with a reduced TDH?</li> <li>Determine if there are cost-effective modifications that can maximize the working life of existing assets before subsequent replacement.</li> </ul>
Design the transmission main so that water can be both pumped from Tank A to B, and gravity flow back from B to A when peak demands require it.	<ul style="list-style-type: none"> <li>Determine using the hydraulic model if reverse gravity flow from Tank B to A can meet projected peak demands or higher.</li> </ul>
Determine the location and depth of rock along alternative transmission pipeline alignments and select a preferred alignment in conjunction with hydraulics, cost and constructability.	<ul style="list-style-type: none"> <li>Key task for the geotechnical investigation as it impacts route selection, construct cost and construction schedule.</li> </ul>
Determine how rock along the transmission can be excavated: is it rippable? Will blasting be needed?	<ul style="list-style-type: none"> <li>Key task for the geotechnical investigation as it impacts route selection, construction cost and construction schedule.</li> </ul>
Align the new transmission pipeline within the public right-of way to avoid new easements or right-of-way, but also to minimize traffic impacts during construction.	<ul style="list-style-type: none"> <li>Determine the best technical, cost-effective and least disruptive solution.</li> </ul>
Establish practical, operations-friendly and cost-effective distribution system pressure zones.	<ul style="list-style-type: none"> <li>Strike a balance between too few and too many pressure zones. Impacts the number of PRV stations which in turn must consider the cost and the future operational and maintenance burden.</li> <li>Maintain acceptable pressure ranges.</li> <li>Boundaries also determined by distribution of properties, and changes in elevation.</li> <li>Hydraulic model is a powerful tool to evaluate alternatives.</li> </ul>
Find suitable locations for PRV stations	<ul style="list-style-type: none"> <li>Must be coordinated with setting realistic pressure zone boundaries.</li> <li>Consider non-technical constraints on PRV station locations, including availability of land and ease of operator access.</li> </ul>
Resolve hydraulic bottlenecks at Tank B without disrupting supply to residents during construction.	<ul style="list-style-type: none"> <li>Potential use of temporary storage tanks on flat land adjacent to Tank B to isolate Tank B for construction.</li> <li>Can improvements be made to Tank A BPS site to temporarily supply Tank B pressure zone demands during construction?</li> <li>Can work be scheduled for periods of low demand? Is there sufficient time to do the work?</li> <li>Can the new pipeline be connected to Tank B without tank drain-down? Investigate tank wall tapping using Tap Master Inc or others.</li> <li>Coordinate with options to improve mixing within the tank – there is no point tapping the tank wall if the tank has to be drained to modify internal pipe work.</li> </ul>
Improve mixing at Tank B	<ul style="list-style-type: none"> <li>Coordinate options with the Tank B connection solution.</li> </ul>
Avoid creating water quality problems	<ul style="list-style-type: none"> <li>The hydraulic model is a powerful tool for water age determination and its impact on water quality.</li> </ul>





F

## PROJECT APPROACH

This section explains how we will address these issues and challenges to successfully implement the project.

## SECTION E – PROJECT UNDERSTANDING AND KEY ISSUES

Following the identification of key issues and challenges in the previous section, this section describes our approach to their resolution and summaries our logical and sequential tasks to implement the project through to preparation of bid-ready documents. The summary is based on a very detailed scope of services in the form of an “Exhibit A” attachment to a future project agreement that is included in Appendix A.

### Approach to Resolving Key Issues and Challenges

KEY ISSUES AND CHALLENGES	RESOLUTION AND APPROACH
Resolve transmission pipeline capacity and pressure problems and meet projected demands at build-out.	> The existing transmission pipeline will be upsized to both increase capacity and reduce the TDH through reduced frictional losses. We will work with the District’s existing hydraulic model to determine technically acceptable pipe sizes and materials. These options will then be evaluated in terms of capital and life cycle cost, availability, operator preference and other factors to determine the preferred pipeline solution. Results will be presented in a TM that will form part of the subsequent Preliminary Design Report.
Evaluate whether the existing Tank A Pump Station will work with the new transmission pipeline and, if not, what modifications need to be made.	> We will initially examine how the existing pumps and pump combinations work against their original design parameters. Then we will review how they will work with the new transmission pipeline and reduced TDH. Of particular interest is any change in efficiency at the new pump duties. In the light of these results and the remaining working life of the pumps, we will determine the need and schedule for any pump replacement. We will aim to maximize the remaining working life of current assets. The study will be coordinated with the pipeline sizing task. Results will be presented in a TM that will form part of the subsequent Preliminary Design Report.
Design the transmission main so that water can be both pumped from Tank A to B, and gravity flow back from B to A when peak demands require it.	> The hydraulic model will be used to address the technical feasibility and the quantity of flow that can be conveyed back by gravity in the chosen pipeline size. The amount of flow will be compared to peak demands to determine an operational strategy. Findings will be included in the Preliminary Design Report.
Determine the location and depth of rock along alternative transmission pipeline alignments and select a preferred alignment in conjunction with hydraulics, cost and constructability.	> Determining the extent of rock along the alignments is a key objective of the Geotechnical Investigation and Report. Tools include a review of previous investigations and reports, and a series of trial pits and borings are proposed to determine depth to rock. In addition, seismic lines will be performed to both determine depth to rock and measure rock velocities that in turn help to determine excavation methods, rippability and the potential use (or avoidance) of blasting.
Determine how rock along the transmission can be excavated: is it rippable? Will blasting be needed?	> Performing seismic lines as part of the geotechnical investigation will measure rock velocities to help to determine excavation methods, rippability and the need for blasting. This information will be used to select the preferred pipeline route, subject to hydraulic and right-of-way acceptability, since the extent and ease of rock excavation will significantly impact construction cost.
Align the new transmission pipeline within the public right-of way to avoid new easements or right-of-way, but also to minimize traffic impacts during construction.	> We anticipate that most if not all proposed routes can be located within the public right-of-way, so route selection will probably be determined by total length and hydraulic acceptability. We will work with the District and the County to determine if there are preferred routes that have the lowest traffic impacts. Available road widths and ease of traffic diversion will be considered.
Establish practical, operations-friendly and cost-effective distribution system pressure zones.	> The hydraulic model is key to evaluating the pressure zone and boundary alternatives. We will first establish a long list of potential zones and boundary locations, but these will be swiftly reduced to strike a practical balance between too few and too many, considering the following. Each zone must maintain acceptable pressure ranges, and boundaries will be determined as much by changes in ground elevation and the density and distribution of properties. The number of PRV stations will impact both capital costs and the recurrent costs of operation and maintenance. The recommended solution will balance all these factors, together with finding suitable locations for those PRV stations (see below).

## KEY ISSUES AND CHALLENGES



## RESOLUTION AND APPROACH

Find suitable locations for PRV stations	<ul style="list-style-type: none"> <li>&gt; Suitable locations for PRV stations will be considered as part of the establishment of pressure zone boundaries. These two selection processes must work in tandem. We will consider non-technical constraints on the PRV station locations, including availability of land and ease of operator access.</li> </ul>
Resolve hydraulic bottlenecks at Tank B without disrupting supply to residents during construction.	<ul style="list-style-type: none"> <li>&gt; The lack of alternative storage at Tank B is a constraint on replacing undersized pipework at Tank B. We will investigate several alternatives to allow the hydraulic bottleneck to be removed:               <ul style="list-style-type: none"> <li>&gt; Can temporary storage tanks be located on flat land adjacent to Tank B to isolate Tank B for construction?</li> <li>&gt; Can improvements be made at the Tank A booster pump station to allow it to temporarily feed the Tank B pressure zone while construction takes place at Tank B?</li> <li>&gt; Can work be scheduled for periods of low demand? Is there sufficient time during low demands to do the work?</li> <li>&gt; Can the new pipeline be connected to Tank B without tank drain-down? We will investigate tank wall tapping using Tap Master Inc or others.</li> <li>&gt; We will coordinate this with tank mixing improvements in case a shutdown is needed for that work.</li> </ul> </li> </ul>
Improve mixing at Tank B	<ul style="list-style-type: none"> <li>&gt; This activity will be coordinated with the solution for removing the Tank B hydraulic bottleneck. If a shutdown of Tank B is needed then revisions to the internal pipework to improve inlet and outlet flow conditions and thus mixing can be made during that shutdown. Alternatively, a mixer could be installed on the tank floor while it remains in operation. We will also evaluate with the District to see if there is any need to combine this new mixer with a chlorine residuals monitoring and dosing system e.g. Monochlor.</li> </ul>
Avoid creating water quality problems	<ul style="list-style-type: none"> <li>&gt; The hydraulic model will be used to determine the impact of the new transmission pipeline on water age and thus on water quality. Should a potential increase in water quality be determined, we will work with the District to address, including the impact of new mixing and possibly dosing at Tank B.</li> </ul>

### Project Approach by Task

This sub-section summarizes and explains our project approach as detailed in the extensive scope of services document included in Appendix A.

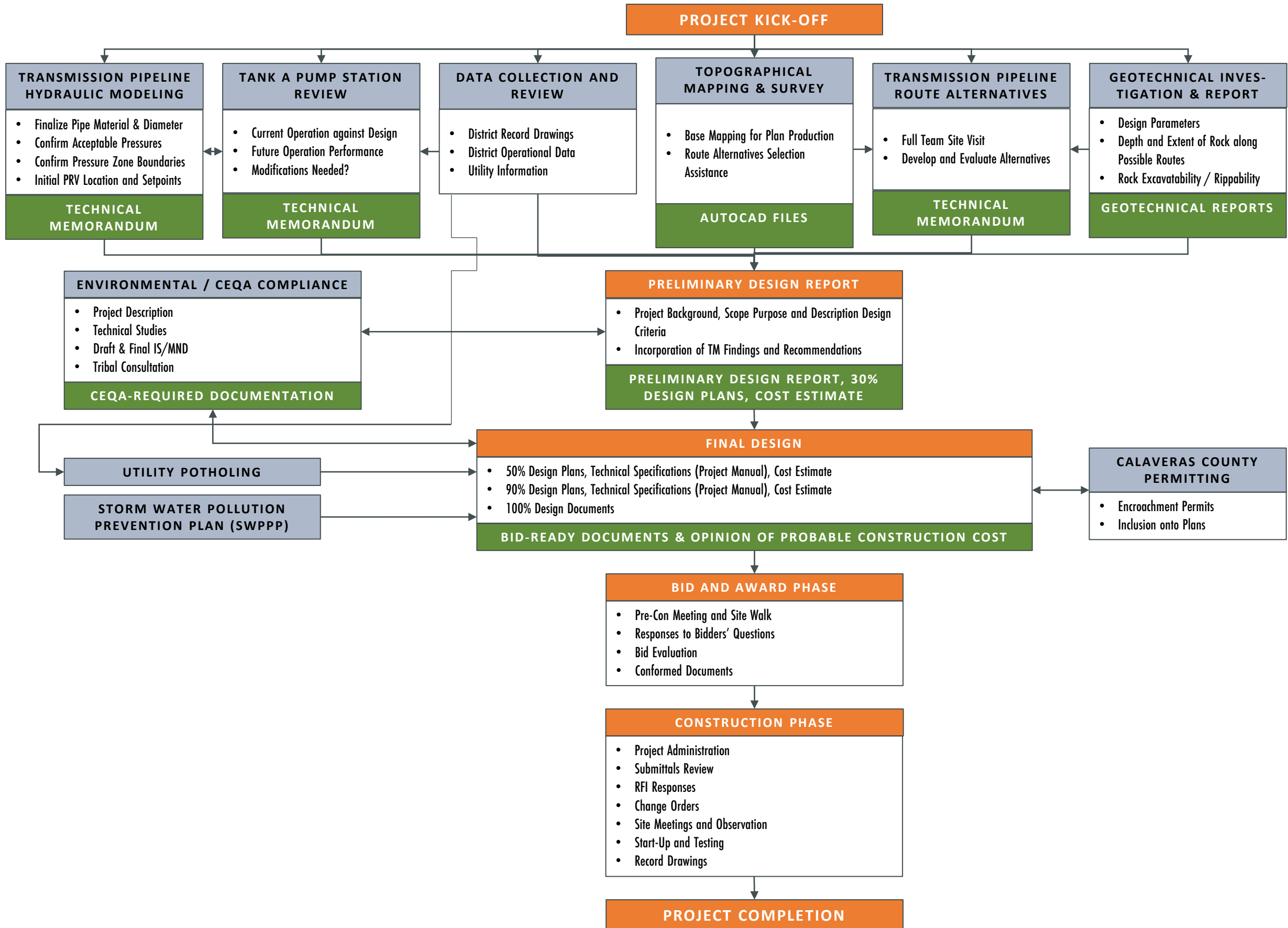
We have organized the work into a logical sequence of thirteen tasks as described below. Task 13 for Engineering Services During Construction is an optional task and is not included in the total fee associated with this scope. The scope and fee for this task will be better defined (e.g. no. of submittals reviews, responses to RFIs, change orders, etc.) once the final design is approaching completion.

- > Task 1 - Project Management
- > Task 2 - Data Collection and Review
- > Task 3 - Topographical Mapping and Survey
- > Task 4 - Transmission Pipeline Hydraulic Modeling Studies
- > Task 5 - Transmission Pipeline Route Alternatives Analysis
- > Task 6 - Geotechnical Investigation and Report
- > Task 7 - Tank A Pump Station Hydraulics Review
- > Task 8 - Preliminary Design Report

- > Task 9 - Final Design
- > Task 10 – Calaveras County Permitting
- > Task 11 - Environmental / CEQA Compliance
- > Task 12 - Bid and Award Phase Services
- > Task 13 - Engineering Services During Construction (OPTIONAL)

A broad summary description of the work to be performed under each task and its associated sub-tasks is given below and is shown on Figure 1.

# Figure 1. – Project Workflow



### Task 1 – Project Management.

Task 1 covers our project management and administration for the preliminary and design stages as far as completion of construction bidding and contract award. We will maintain and update the design phase project schedule and budget and report to the District regularly on progress. Task 1 also includes for project meetings, including the kick-off meeting, progress meetings, design submittal workshops and for a presentation to the District's Engineering Committee or to the full District Board.

Quality management is an important component of Task 1 and includes for the internal technical peer review and checking of project deliverables prior to delivery to the District in accordance with our quality assurance / quality control program.

#### Task 1: Deliverables

- > Monthly invoices with progress reports.
- > Meeting agendas and notes, Action and Decision Logs.
- > Information and responses for the District.
- > Workshop agenda and notes, Action and Decision Logs.
- > Presentation.

### Task 2 – Data Collection and Review.

Under this task, the project team, including Coleman Engineering, WGA and subconsultants will collect and review requested data received from the District and from utility companies. Information obtained will be coordinated with that from the topographical mapping and survey (Task 3) for inclusion on the design plans.

The project team will collect and review record drawings and operational data received from the District prior to the kick-off meeting, including pipeline, tank and pump station record drawings, pump station operational data, and water quality and disinfection byproducts testing results. Additional data and information may be requested from the District following this review. We will also contact utility companies to request existing utility plans and records, together with details of any planned utility projects within the project area that might conflict with this project. A Utility "A", "B" and "C" Letter process will be used as appropriate. We anticipate that there will be limited buried utility conflicts since all power cables are overhead in the project area. Buried utilities are anticipated to be only the District's water mains and for cable TV / internet connections, but could also include other fiber optic, telephone and natural gas. Received data and information will be reviewed under this task to determine any potential

conflicts and impacts on pipeline alignment and will be used in planning subsequent utility potholing.

#### Task 2: Deliverables

- > Reviewed data and information for use in subsequent tasks.

### Task 3 – Topographical Mapping and Survey.

Under this task, sub consultant Nordahl Land Surveying, Inc will establish primary and secondary control, perform detailed topographical mapping and survey for the design team to ensure coverage of the pipeline route (including alternative routes), and the Tanks A and B sites. After the District has marked out its existing water line facilities, the survey will record structures and surface features, including utility surface manifestations such as valve boxes, manholes, vaults, hydrants, roads, edges of pavement, poles, culverts, drainage inlets, driveway locations, fences, signs, and the like. Survey will conform to the North American Datum (NAD83), California Zone 3 and the North American Vertical datum of 1988 (NAVD88) and will tie in existing noticeable lot corner monuments. The topographical mapping and survey will be used to complete layout plans (including plan and profile drawings) in AutoCAD Civil 3D 2022 format in subsequent design tasks. It is anticipated that the topographical mapping will include trees that could be impacted by construction activities.

#### Task 3: Deliverables

- > Topographical mapping and survey data in AutoCAD Civil 3D 2022 format for use in subsequent design tasks.

### Task 4 – Transmission Pipeline Hydraulic Modeling Studies.

The District has performed a preliminary evaluation of proposed pipeline and tank modifications using its Innovzye InfoWater hydraulic model. Under Task 4, the design team will work closely with the District's modelers to validate these initial modeling results and complete the pipeline design.

The modeling studies will assist with:

- Finalizing the new transmission pipeline diameter and material.
- Confirming acceptable transmission main operating pressures when conveying build-out scenario flows, including peak hourly demand and a maximum daily demand and fire flow combination.
- Finalizing distribution system pressure zone boundaries and PRV locations.
- Confirming that current very high distribution system operating pressures will be reduced to normal operating ranges for residential ser-



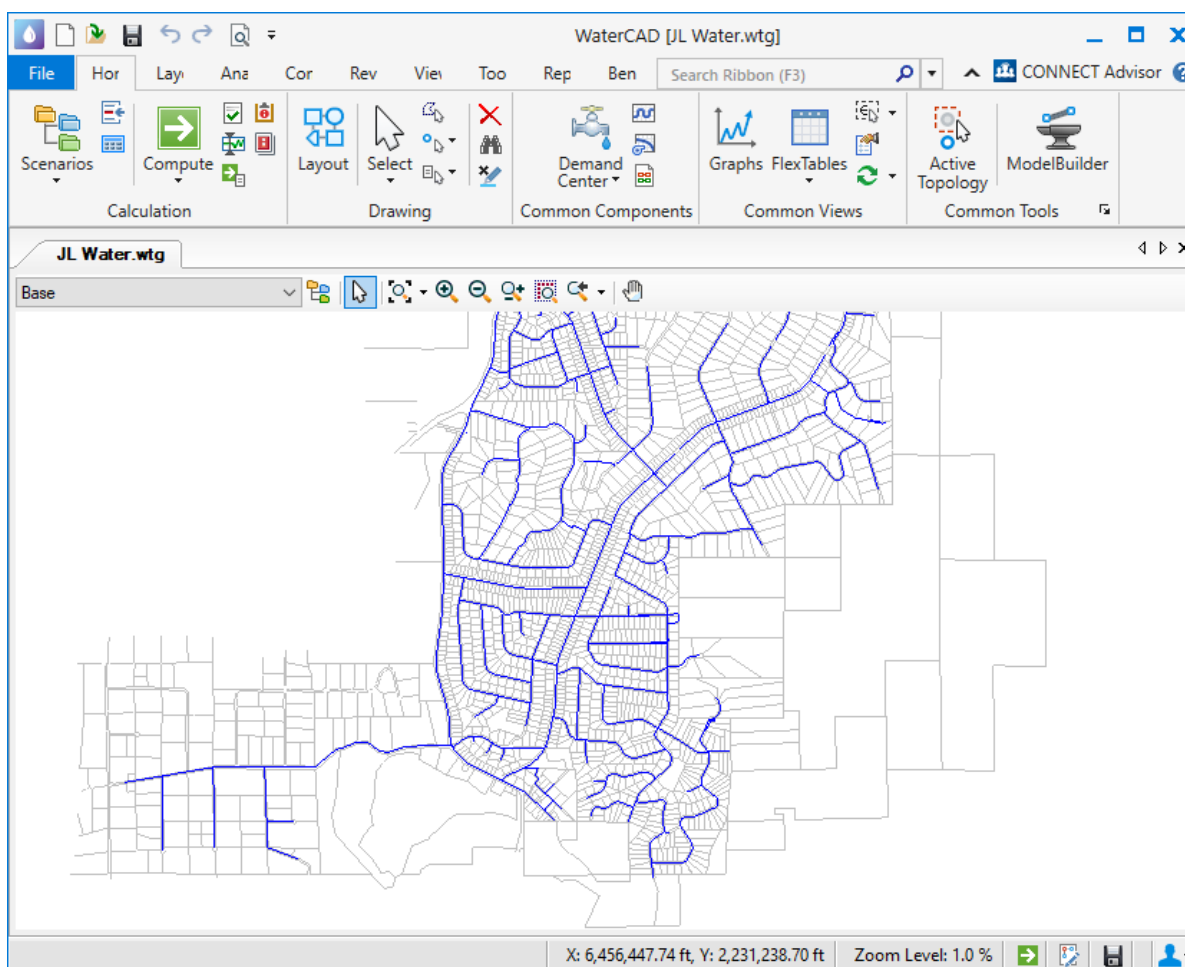
vice and that transient surges and spikes will be minimized.

- Assessing impacts on water age and quality, and on disinfection by-products.

Results and findings from the hydraulic modeling studies will be presented in a technical memorandum (TM) for District review and then incorporation into the Preliminary Design Report (Task 8). Work under Task 4 will also be coordinated with the hydraulics review of the Tank A Pump Station (Task 7)

### Task 5 – Transmission Pipeline Route Alternatives Analyses.

Task 5 details site reconnaissance, development and evaluation of potential alignment alternatives and modifications, and recommendation of a preferred pipeline alignment. The studies under this task will use the reviewed District and utility company data and information (Task 2) and the topographical mapping and survey (Task 3). The results and findings will be presented in a TM that will be incorporated as a chapter into the Preliminary Design Report (Task 8). A half-day site reconnaissance visit involving the design team, sub consultants, and available District staff will be



### Task 4: Deliverables

- > Results and findings for use in subsequent tasks.
- > Transmission Pipeline Hydraulic Modeling TM (in electronic pdf format)
- > Hydraulic model in EPANET format.

organized, coincident with the project kick-off meeting. The intent of the site walk is to identify key technical issues such as extent of rock, access constraints, constructability and applicable construction methods. The site walk will include not only the anticipated pipeline alignment but also potential alternative alignments. Notes of the walk findings with photographs documenting the walk's conclusions will be prepared and circulated to the design team.



Following review of received data and information and the site reconnaissance visit, a series of alternative alignments will be developed for investigation and evaluation. Potential alignment adjustments will be assessed for pipe hydraulics, proximity to geotechnical and geologic hazards, extent of rock excavation, constructability and access concerns, tree removal requirements, adverse environmental impacts, ease of any right-of-way / easement acquisition, and other factors. Each alignment will also be assessed using the hydraulic model.

Findings, analyses, conclusions and recommendations from the Task 5 studies will be presented in a TM for the District's review and comment. The TM will not be finalized: the intent is for it to be incorporated as a chapter in the Preliminary Design Report (Task 8) with text modifications agreed from the District's review.

#### *Task 5: Deliverables*

- > Site reconnaissance visit notes for design team use.
- > Results and findings for use in subsequent tasks.
- > Transmission Pipeline Route Alternatives Analyses TM (in electronic pdf format)

#### **Task 6 – Geotechnical Investigation and Report.**

Geotechnical sub consultant Crawford and Associates will plan and perform a geotechnical investigation and prepare draft and final geotechnical reports to assist with final design in Task 6. A key focus of the investigation will be determination of the extent of potential rock excavation on the preferred and alternative pipeline routes. Crawford will coordinate with the design team and the District to confirm project definition and schedule; review project data; review published topographic, geologic, and seismic mapping; and review available geotechnical data. Crawford proposes to complete 1 to 3 test pits to a maximum depth of 10 feet, and 10 to 12 borings to a depth of 5 to 10 feet or until drilling refusal on rock. At 1 to 2 boring locations, Crawford plans to utilize rock coring methods to a maximum depth of 10 feet. Groundwater elevations will be noted, where encountered. Crawford will collect bulk and relatively "undisturbed" soil/rock samples from the borings for laboratory testing. Drive samples will be taken at approximate 2.5 ft to 5 ft intervals using a 2.0" O.D. "Standard Penetration" (ASTM D1586) or 3.0" O.D. "Modified California" sampler (ASTM D3550), driven with a standard 350 ft-lb automatic or manually operated hammer per ASTM D1586. The borings will be cement-grout back-filled per Calaveras County permit requirements.

Crawford also will perform two to three seismic lines along the alignment to further define the depth to rock and rock velocities that can be converted to hardness to help determine excavatability/rippability.

Crawford will complete laboratory testing on representative soil/rock samples obtained from borings including grainsize analysis, plasticity index, moisture density, point load, and soil corrosion tests. They will then perform engineering analysis and calculations to determine geotechnical design parameters and provide recommendations for:

- Lateral earth pressures and skin friction values for thrust restraint design,
- Rock seismic velocities and rippability,
- Soil loads on buried pipes, and
- Composite modulus of soil/rock reaction.

A draft Geotechnical Report will be prepared and submitted to the District for review prior to its finalization.

#### *Task 6: Deliverables:*

- > Draft and Final Geotechnical Reports (electronic copies in pdf format, and 3 bound hard copies of the Final Geotechnical Report)

#### **Task 7 – Tank A Pump Station Hydraulics Review.**

The Tank A pump station hydraulics are evaluated in Task 7. The evaluation includes a review of the existing pumps' and pump station's performance against original design parameters, including pump design curves. In addition, the pumps and pump station's anticipated performance with the new transmission main is assessed. It is assumed that the new transmission main will reduce system losses and the TDH requirement for the Tank A pumps, thus improving the flow rate and removing the hydraulic bottleneck. The impact of the change in TDH may impact pump efficiency. The review will also examine if future pump station modifications are needed to accommodate growth up to buildout.

Findings, analyses, conclusions and recommendations from the Task 7 Tank A Pump Station hydraulic review will be presented in a TM for the District's review and comment. The TM will not be finalized: the intent is for it to be incorporated as a chapter in the Preliminary Design Report (Task 8) with text modifications agreed from the District's review.

### Task 7: Deliverables

- > Results and findings for use in subsequent tasks.
- > Tank A Pump Station Hydraulic Review TM (in electronic pdf format)

### Task 8 – Preliminary Design Report.

The Preliminary Design Report (PDR) brings together all the investigations, evaluations and analyses prepared under previous tasks. Its format and content will match that required by the funding agency, assumed to be the USDA. The PDR will incorporate the content of the TMs prepared under earlier tasks. The anticipated contents are:

- Project background, purpose, scope and general description.
- Design criteria.
- Approach to, and findings of, hydraulic modeling for the final design of the new transmission main.
- Evaluation of route alternatives and results for the new transmission main alignment.
- Location and set points for PRV stations and definition of pressure zone boundaries.
- Evaluation of the Tank A pump station hydraulics and recommendations for any improvements.
- Evaluation of Tank B inlet and outlet modification alternatives, need for temporary storage facilities, and the recommended approach.
- 30% design-level-of-completion plans.
- Construction cost estimate to a 30% design level with appropriate contingency.

The draft PDR will be submitted to the District for review and comment. A PDR Review Workshop will be held to review the conclusions and recommendations presented in the PDR and to discuss the District's comments. The workshop will complete definition of the project and confirm the elements to be carried forward for incorporation into the 50% final design. The PDR will be finalized after this workshop. The workshop is included in Task 1.

### Task 8: Deliverables:

- > Draft Preliminary Design Report, including 30% design level plans (electronic copy in pdf format).
- > Final Preliminary Design Report, including 30% design level plans (electronic copy in pdf format).
- > Updated hydraulic model in EPANET format.

### Task 9 – Final Design.

The design team will further develop the PDR plans and agreed comments, and the associated design information generated from the utility records and the geotechnical report to prepare the project final design and bid-ready documents. Task 9 will also include utility potholing based on the utility records received and field investigations / mapping in earlier tasks, and preparation of a Storm Water Pollution Prevention Plan (SWPPP). It is assumed for the purposes of this scope and associated fee after discussions with the District that the potholing contractor will contract directly with the District outside of the Project Agreement.

Intermediate design submittals will be made at 50% and 90% design levels of completion prior to the completion of 100% Design and Bid-Ready Documents. Each submittal will comprise plans, technical specifications (Project Manual) (table of contents only at 50%) and a construction cost estimate will be produced.

A detailed plan list is included in the Scope of Services in Appendix A. Submittal Review Workshops will be held with the District to review the 50% and 90% design level submittals. These workshops are itemized in Task 1.

### Task 9: Deliverables:

- > Utility potholing information for use in design and incorporation onto the plans.
- > 50% Plans, Technical Specifications (table of contents only) and Construction Cost Estimate ( electronic copy of plans, specifications, and cost estimate documents in pdf format. Plans suitable for 11" x 17" and 22" x 34" reproduction).
- > 50% Design Submittal Review Workshop agenda, minutes, and Action Item Decision Log.
- > 90% Plans, Project Manual (including Technical Specifications) and Construction Cost Estimate ( electronic copy of plans, Project Manual, specifications, and cost estimate documents in pdf format. Plans suitable for 11" x 17" and 22" x 34" reproduction).
- > 100% Plans, Technical Specifications and Opinion of Probable Construction Cost (electronic copy of plans, Project Manual, and cost estimate documents in pdf format. Plans suitable for 11" x 17" and 22" x 34" reproduction).
- > Bid-Ready Documents (electronic copy of plans in pdf and AutoCAD file format. Project Manual and cost estimate documents in Word and pdf format. Plans suitable for 11" x 17" and 22" x 34" reproduc-

tion).

- > SWPPP Documents, including 6 printed color copies of the final SWPPP document in three-ring binders ( 2 copies each to the District, Contractor and County).

### Task 10 – Calaveras County Permitting.

The project team will prepare and secure an encroachment permit from the Calaveras County Public Works Department for the project. The level of effort required for this task assumes that the design will remain within County roads and existing utility easements and not require procurement of additional right-of-way, or temporary or permanent easements. Plans and specifications will be submitted to the County Public Works Department for review and comment. Anticipated items of concern for the County include traffic control, trench backfill and compaction testing, location and placement of fire hydrants, extent of removal and replacement of AC paving, and SWPPP requirements.

#### Task 10: Deliverables

- > Encroachment Permit applications, including plans and specifications as supporting documentation.

### Task 11 – Environmental / CEQA Compliance.

Based on direction from the District it is assumed for the purposes of the scope and associated fee that an Initial Study/Mitigated Negative Declaration (IS/MND) will be the appropriate CEQA document for the project. Sub-consultant ECORP Consulting, Inc. will initially develop a Project Description. Technical studies will then be conducted for the project. These will include preparation of:

- Air Quality and Greenhouse Gas Emissions Assessment.
- Biological Resource Assessment.
- Cultural Resources Inventory Report.
- Energy Consumption Impact Assessment.
- Noise Impact Memorandum.
- Paleontology Records Search Memorandum.

ECORP will then prepare an Administrative Draft IS/MND for the proposed project. The scope of the IS/MND will address the full scope of potential environmental issues as based on Appendix G of the State CEQA Guidelines. The analysis and conclusion of the technical studies (Task 2A – 2F above) will be summarized in the IS/MND, and the technical studies will be attached as appendices. The analysis will focus on impacts associated with

construction of the pipeline as there will be minimal long-term impacts following completion. Key issues associated with construction that will be the focus of the document will include Air Quality/Greenhouse Gases, Biological Resources, Cultural Resources, Paleontological Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, and Transportation.

After receipt of integrated comments on the Administrative Draft IS/MND from the District, ECORP will revise the IS/MND and produce the State Clearinghouse (SCH) summary form and notice for posting electronically on the SCH website. The document will also be posted to the internet for public review. ECORP will also prepare and file the Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration, Notice of Completion (NOC) (State Clearinghouse Cover) and the Notice of Determination (NOD) as required by CEQA.

After the conclusion of the 30-day public and agency comment period, ECORP will prepare draft responses to comments and make the appropriate revisions to the IS/MND. The Final IS/MND will include responses to comments received on the Draft IS/MND, any changes to the Draft IS/MND, and the Mitigation Monitoring and Reporting Program (MMRP), prepared in accordance with CEQA Guidelines Section 15097. ECORP will prepare the MMRP in table format, with input from the District. An Administrative Final IS/MND and MMRP will be prepared, and after review by the District, the Final IS/MND and MMRP will be provided. ECORP will send the Final IS/MND and MMRP to agencies, organizations, and individuals that commented on the project, and also notify them of the date and time the project is scheduled for approval as required by CEQA. ECORP will also prepare an environmental record of the entire CEQA process for the District's records. This will include all notices, the Draft and Final IS/MND and all approvals required for the project.

As an optional task, ECORP can assist in consulting with California Native American tribes under Assembly Bill 52 to support CEQA. Using the Project Description, ECORP can draft all required notification letters, coordinate tribal meetings, maintain the consultation administrative record, and provide technical support to the District in responding to, or acting upon, comments from tribes. ECORP can document the consultation process and comments discussed and provide advice on how to conclude to the consultation.

#### Task 11 Deliverables:

- > Draft and final Air Quality & Greenhouse Gas Emissions Assessment Memorandum, the Cultural Resources Inventory Report, Energy Consumption Impact Assessment Memorandum, Noise Impact Assessment Memorandum and the Paleontology Records Search Memorandum.
- > Administrative Draft IS/MND (electronic pdf format).
- > Draft IS/MND with appendices (electronic pdf format).
- > One hardcopy of the Draft IS/MND with appendices on CD for the local library.
- > Two hardcopies (appendices on CD) and one electronic copy of the Final IS/MND for the District's use.
- > Ten flash drives will be mailed to commenting agencies and interested parties.

### Task 12 – Bid and Award Phase Assistance.

We will assist the District during the bid period by responding to contractor / bidder questions with information. We will also assist with advertising for bids, and placement of bid documents in electronic plan holder rooms. We will not reproduce or distribute bidding documents, nor maintain plan holders' lists – since it is assumed that those services will be provided by a document reproduction shop.

The project team will attend one pre-bid meeting to be held at the project sites. The District will conduct the meeting and Consultant will assist with answers to questions regarding the design as necessary to support the District. It is assumed that the pre-bid meeting may include a site walk with bidders.

During the bid period we will prepare written responses to questions from bidders raised at the pre-bid meeting and site walk, and subsequently during the bid period up to one week before bids are due. We have included for preparation of up to two addenda for the District's issue to prospective bidders.

If requested by the District, we will assist with review, tabulation, and evaluation of bid results. Following completion of the bid phase, a conformed set of project plans and specifications (Project Manual) will be prepared and issued to the Contractor for construction use.

#### Task 12: Deliverables

- > Written responses to bidders' questions presented in up to two addenda.

- > Conformed Documents (electronic pdf for Contractor, with additional AutoCAD files for District).

### Task 13 – Engineering Services During Construction (Optional Task).

Per discussions with the District, we have included Engineering Services During Construction (ESDC) as an optional task. We expect these services to be required during construction, however the scope and fee for this task will be better defined (e.g. no. of submittals reviews, responses to RFIs, change orders, etc.) once the final design is approaching completion. Our current assumptions are included for clarity. We will assist the District by reviewing technical submittals for compliance with the design intent and the technical specifications; responding to the Contractor's Requests for Information; clarifying design details; attendance at one weekly construction meeting per month; assistance with project setting-to-work and commissioning, and in preparing record drawings from the Contractor's redline marked-up drawings at the end of the project.

We will review up to a combined total of 30 technical submittals and re-submittals from the District to check for compliance with the design intent and technical requirements. We will also respond to up to 15 Requests for Information and Design Clarifications from the Contractor during construction, and prepare up to 5 change orders. We have assumed that we will attend one weekly construction meetings / calls each month, up to a total of 9 meetings as may be required by District. It is assumed that 4 of these meetings will be at the project site: the remainder will be Teams meetings. We will also perform observation of construction during the on-site meetings.

The project team will assist the District with project commissioning after the project has achieved Substantial Completion. Activities will include development of punch-lists to achieve Final Completion. Work under this task is assumed for the purposes of this scope to be limited to a two - week duration, with an allowance of up to 40 labor hours. As part of close-out, we will prepare record drawings from redline marked-up construction drawings agreed between the District's Construction Manager and the Contractor.

#### Task 13: Deliverables:

- > Review of Technical Submittals and Resubmittals (up to 30)
- > Responses to Requests for Information and Design Clarification (up to 15)
- > Draft Change Orders (up to 5)
- > Project commissioning documents
- > Record Drawings (electronic copies in pdf and AutoCAD format, suitable for 11" x 17" and 22" x 34" reproduction)



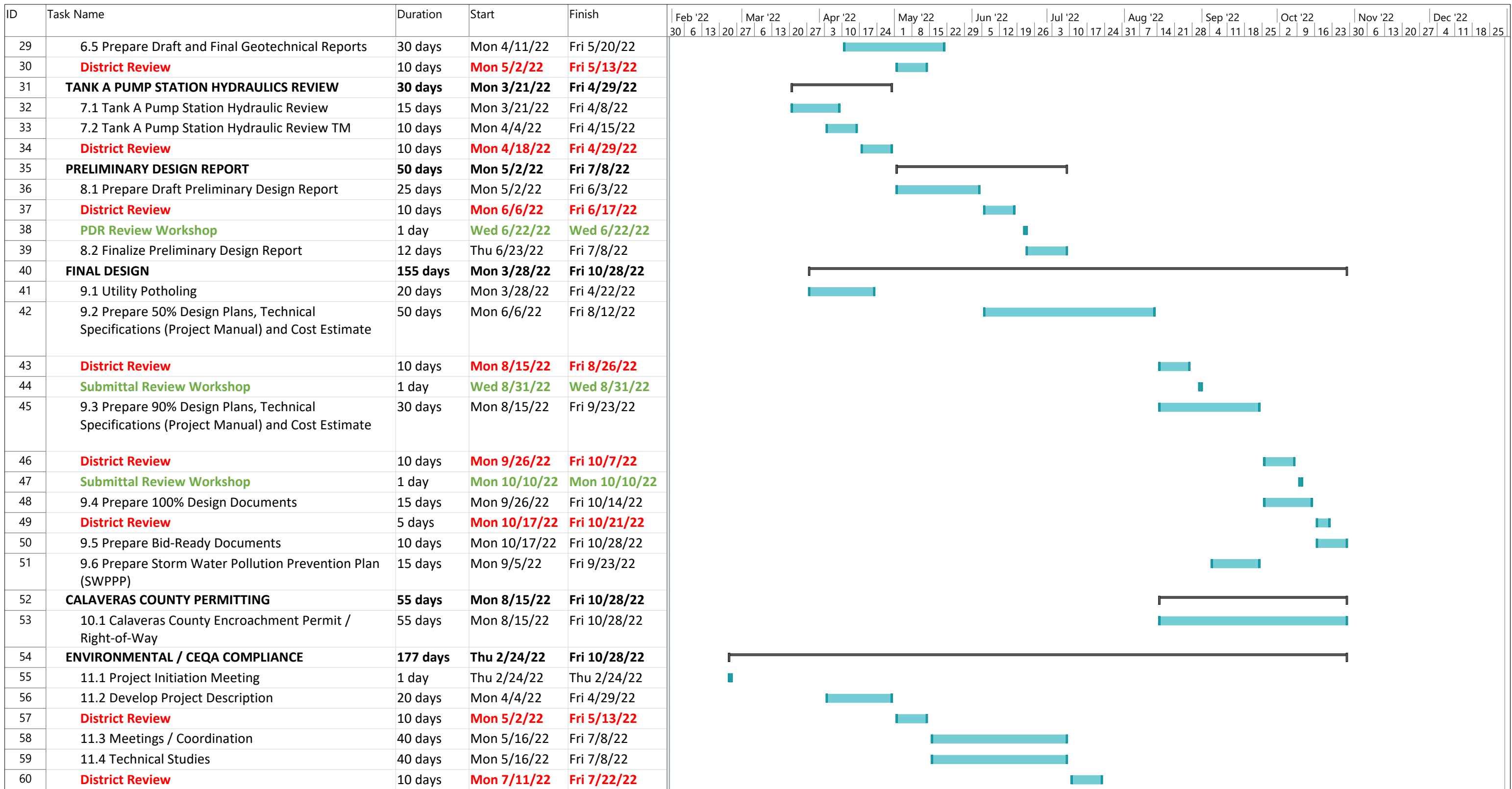
## PROJECT SCHEDULE

The following section details the planned project schedule.



ID	Task Name	Duration	Start	Finish	Feb '22	Mar '22	Apr '22	May '22	Jun '22	Jul '22	Aug '22	Sep '22	Oct '22	Nov '22	Dec '22																																					
					30	6	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25
1	<b>Board Approval and Notice to Proceed</b>	0 days	<b>Wed 2/23/22</b>	<b>Wed 2/23/22</b>	◆ 2/23																																															
2	<b>Kick-off Meeting</b>	1 day	<b>Thu 2/24/22</b>	<b>Thu 2/24/22</b>	■																																															
3	<b>PROJECT MANAGEMENT</b>	<b>222 days</b>	<b>Thu 2/24/22</b>	<b>Fri 12/30/22</b>	▬																																															
4	1.1 Project Administration	222 days	Thu 2/24/22	Fri 12/30/22	▬																																															
5	1.2 Project Kick-off, Progress Meetings, and Board / Engineering Committee Presentation	222 days	Thu 2/24/22	Fri 12/30/22	▬																																															
6	1.3 Quality Management	222 days	Thu 2/24/22	Fri 12/30/22	▬																																															
7	<b>DATA COLLECTION AND REVIEW</b>	<b>17 days</b>	<b>Thu 2/24/22</b>	<b>Fri 3/18/22</b>	▬																																															
8	2.1 District Record Drawing and Operational Data Collection and Review	10 days	Thu 2/24/22	Wed 3/9/22	▬																																															
9	2.2 Utility Information and Data Collection and Review	17 days	Thu 2/24/22	Fri 3/18/22	▬																																															
10	<b>TOPOGRAPHICAL MAPPING AND SURVEY</b>	<b>20 days</b>	<b>Mon 2/28/22</b>	<b>Fri 3/25/22</b>	▬																																															
11	3.1 Pipeline and Tank Sites Topographical Mapping and Survey	20 days	Mon 2/28/22	Fri 3/25/22	▬																																															
12	<b>TRANSMISSION PIPELINE HYDRAULIC MODELING STUDIES</b>	<b>40 days</b>	<b>Mon 2/28/22</b>	<b>Fri 4/22/22</b>	▬																																															
13	4.1 Review of Existing District Hydraulic Model, Development and Calibration Checks	10 days	Mon 2/28/22	Fri 3/11/22	▬																																															
14	4.2 Transmission Pipeline Diameter and Material Selection	10 days	Mon 3/14/22	Fri 3/25/22	▬																																															
15	4.3 Pressure Zone Boundaries and Initial PRV locations and Setpoints	15 days	Mon 3/21/22	Fri 4/8/22	▬																																															
16	4.4 Water Age, Water Quality and Disinfection Byproducts	10 days	Mon 3/28/22	Fri 4/8/22	▬																																															
17	4.5 Transmission Pipeline Hydraulic Modeling TM	5 days	Mon 4/4/22	Fri 4/8/22	▬																																															
18	<b>District Review</b>	10 days	<b>Mon 4/11/22</b>	<b>Fri 4/22/22</b>	▬																																															
19	<b>TRANSMISSION PIPELINE ROUTE ALTERNATIVES ANALYSES</b>	<b>32 days</b>	<b>Thu 2/24/22</b>	<b>Fri 4/8/22</b>	▬																																															
20	5.1 Full Team Site Reconnaissance Visit	1 day	Thu 2/24/22	Thu 2/24/22	■																																															
21	5.2 Alternatives Alignments Development and Evaluation	15 days	Mon 2/28/22	Fri 3/18/22	▬																																															
22	5.3 Transmission Pipeline Route Alternatives TM	5 days	Mon 3/21/22	Fri 3/25/22	▬																																															
23	<b>District Review</b>	10 days	<b>Mon 3/28/22</b>	<b>Fri 4/8/22</b>	▬																																															
24	<b>GEOTECHNICAL INVESTIGATION AND REPORT</b>	<b>62 days</b>	<b>Thu 2/24/22</b>	<b>Fri 5/20/22</b>	▬																																															
25	6.1 Geotechnical Investigation Planning	10 days	Thu 2/24/22	Wed 3/9/22	▬																																															
26	6.2 Subsurface Investigation	12 days	Thu 3/10/22	Fri 3/25/22	▬																																															
27	6.3 Laboratory Testing	10 days	Mon 3/21/22	Fri 4/1/22	▬																																															
28	6.4 Geotechnical Engineering Evaluation and Analyses	10 days	Mon 3/28/22	Fri 4/8/22	▬																																															

Calaveras County Water District Jenny Lind Tank A-B Transmission Pipeline Project Proposed Design & Bid Phase Project Schedule	Task		Project Summary		Manual Task		Start-only		Deadline	
	Split		Inactive Task		Duration-only		Finish-only		Progress	
	Milestone		Inactive Milestone		Manual Summary Rollup		External Tasks		Manual Progress	
	Summary		Inactive Summary		Manual Summary		External Milestone			



Calaveras County Water District  
 Jenny Lind Tank A-B Transmission Pipeline Project  
 Proposed Design & Bid Phase Project Schedule

Task		Project Summary		Manual Task		Start-only		Deadline	
Split		Inactive Task		Duration-only		Finish-only		Progress	
Milestone		Inactive Milestone		Manual Summary Rollup		External Tasks		Manual Progress	
Summary		Inactive Summary		Manual Summary		External Milestone			



ID	Task Name	Duration	Start	Finish	Timeline (Feb '22 to Dec '22)																											
					Feb '22	Mar '22	Apr '22	May '22	Jun '22	Jul '22	Aug '22	Sep '22	Oct '22	Nov '22	Dec '22																	
61	11.5 CEQA Initial Study / Mitigated Negative Declaration	120 days	Mon 5/16/22	Fri 10/28/22	[Gantt bar from May 16 to Oct 28]																											
62	<b>District Review</b>	59 days	<b>Tue 8/2/22</b>	<b>Fri 10/21/22</b>	[Gantt bar from Aug 2 to Oct 21]																											
63	<b>Public Comment Period</b>	23 days	<b>Mon 9/5/22</b>	<b>Wed 10/5/22</b>	[Gantt bar from Sep 5 to Oct 5]																											
64	11.6 Tribal Consultation Support (OPTIONAL)	40 days	Mon 9/5/22	Fri 10/28/22	[Gantt bar from Sep 5 to Oct 28]																											
65	<b>BID AND AWARD PHASE ASSISTANCE</b>	<b>38 days</b>	<b>Wed 11/9/22</b>	<b>Fri 12/30/22</b>	[Gantt bar from Nov 9 to Dec 30]																											
66	12.1 Pre-Bid Meeting and Site Walk	1 day	Wed 11/9/22	Wed 11/9/22	[Single day bar on Nov 9]																											
67	12.2 Respond to Bidders' Questions and Prepare Addenda	15 days	Mon 11/14/22	Fri 12/2/22	[Gantt bar from Nov 14 to Dec 2]																											
68	12.3 Bid Evaluation Assistance	5 days	Mon 12/12/22	Fri 12/16/22	[Gantt bar from Dec 12 to Dec 16]																											
69	12.4 Prepare Conformed Documents	15 days	Mon 12/12/22	Fri 12/30/22	[Gantt bar from Dec 12 to Dec 30]																											
70	<b>CONSTRUCTION CONTRACT - FEBRUARY TO DECEMBER 2023</b>				[No Gantt bar]																											

Calaveras County Water District Jenny Lind Tank A-B Transmission Pipeline Project Proposed Design & Bid Phase Project Schedule	Task		Project Summary		Manual Task		Start-only		Deadline	
	Split		Inactive Task		Duration-only		Finish-only		Progress	
	Milestone		Inactive Milestone		Manual Summary Rollup		External Tasks		Manual Progress	
	Summary		Inactive Summary		Manual Summary		External Milestone			

# APPENDIX A

## “EXHIBIT A” DETAILED SCOPE OF SERVICES



## **SCOPE OF SERVICES (EXHIBIT A)**

### **Project Background**

The Jenny Lind Water System serves approximately 3,900 customers in the communities of Jenny Lind, Rancho Calaveras, and La Contenta in western Calaveras County adjacent to State Highway 26. The system includes seven water storage tanks: of which two - Tanks A and B – are included in this project. Both were built in 1991, together with a 1.7 mgd pump station at the Tank A site that supplies Tank B. The tanks are connected by a 1970s era 8-inch dia. asbestos cement pipe (ACP) transmission / distribution main routed along Hart Vickson Lane and Baldwin Street.

In the summer of 2006, the Tank A pump station was unable to meet maximum daily demands (MDD) and as a consequence Tank B emptied and could not be re-filled for a significant period. This caused a prolonged service interruption for more than 900 homes within the Rancho Calaveras subdivision. The problem was caused by not only record water usage in an extended heat wave, but also by electrical surges that disabled control panels, and a hydraulic bottleneck in the 8-inch ACP main that limited flow to Tank B.

In response, the District implemented several improvements:

- 2,700-ft of new 12-inch dia. pipeline on Highway 26 and Jenny Lind Road to improve transmission from Tank A. Pressure zone boundaries were also adjusted such that some demands could be re-directed from the Tank B zone to the Tank A zone.
- 14 new pressure reducing valves (PRVs) and adjustments to existing PRV settings to support more efficient water distribution.
- Replacement of pumps, electrical upgrades and modified discharge manifolds at the Tank A pump station to reduce headloss and improve flow.

However, the 8-inch dia ACP transmission / distribution pipeline between the two tanks was not replaced at that time on cost grounds and it remains a bottleneck during peak summer demand periods.

The existing Tank A pump station has five pumps: two 75 HP pumps (600 gpm at a TDH of 341 feet) are used to transfer water to Tank B and two 40 HP pumps (834 gpm at a TDH of 136 feet) to Tank F. According to District staff, the fifth pump (also 40 HP, 834 gpm at a TDH of 136 feet) can be used to transfer to either tank, though this may be just to the Tank B distribution system rather than to Tank B given the static head difference between Tanks A and B. The District's most recent master plans define a required firm pumping capacity of approximately 1,400 gpm for the MDD at build-out: the existing baseline demand is about 950 gpm. The District has also found that the higher-capacity pumps at the Tank A pump station have proved to be just an interim solution. Without fixing the hydraulic bottleneck in the 8-inch dia main, applying more pump capacity at higher

operating pressures has led to excessive service pressures and increases in costly system pipeline breaks and leaks.

During periods of low demand, velocities within the 8-inch dia. main are under an acceptable 4 feet per second (fps). However, at higher flow rates the velocities quickly rise to 8 to 9 fps. At these higher velocities, District operators have recorded transient pressure surges and spikes in the distribution system. Hydraulic analyses have shown system pressures in the main to be up to 175 psi at a flow rate of 600 gpm: at 1,000 gpm the operating pressure increases to 205-psi in some locations. The existing water system was not designed for these severe operating conditions.

District staff have also expressed concerns about the impact changes to the water transmission / distribution system could have on disinfection byproducts. There will potentially be altered flow patterns and circulation with increasing water age.

### **Project Definition**

To address the problems identified above, the following improvements have been identified for this project:

- A new transmission main from the Tank A pump station to Tank B approximately 20,000 ft in length. The project will determine the alignment, but it is expected to be routed generally along Hart Vickson Lane, Baldwin Street, Usher Road and Harding Road to the Tank B site on Wind River Drive. Other options for the alignment to be considered include Cane Lane and Rippon Road. The new transmission pipeline will be in a separate trench parallel to the existing distribution system lines. The pipe diameter is to be determined from hydraulic analyses: the District anticipates either 12-inch dia., Class 350 ductile iron pipe or 14-inch dia. DR-14 / Class 305, C900 PVC pipe.
- The new transmission main will allow flow in both directions including forward pumping from Tank A to fill Tank B and, when the pump station is idle, to allow gravity flow in the reverse direction in order for Tank B to supply water system demands when / if peak flow system demands exceed the pumping capacity.
- The new transmission main will be isolated from the existing water distribution mains and only connected to the distribution system at key locations with PRV stations.
- Re-definition of existing pressure zone boundaries in the distribution system to optimize service pressures, fire flow, reliability, and redundancy. Each zone will be supplied via at least two PRV stations, or each zone will be served by looping from multiple directions.
- Replacement of old water service laterals (service saddles, corporation stops, service lines, and meter valves), and the addition or replacement of main-line valves and fire hydrants.

- Evaluation of the existing Tank A pump station hydraulics, including performance under existing conditions and expected performance when the new transmission main and tank modifications are in place and when buildout is reached. Recommendations for any pump or pump station modifications.
- Upsizing of the 6-inch dia. inlet and 8-inch dia. outlet pipes to Tank B. These modifications are required to meet State standards, assure mixing and turnover in the tank, and to avoid further increasing water age and contributing to the formation of disinfection byproducts. Alternative methods of provide separate inlet and outlet piping or potentially an internal mixing manifold, e.g. Tideflex Mixing System (TMS), are to be considered. Temporary storage provisions, revised operating procedures and timing of the work are to be determined as Tank B cannot be readily taken out of service.
- Associated civil and mechanical improvements, including yard piping at both tank sites.

A Preliminary Design Report (PDR) will be prepared that includes:

- Project description, purpose, scope and approach.
- Design criteria.
- Approach to, and findings, of hydraulic modeling for the final design of the new transmission main.
- Evaluation of route alternatives and results for the new transmission main alignment.
- Location and set points for PRV stations and definition of pressure zone boundaries.
- Evaluation of the Tank A pump station hydraulics and recommendations for improvements.
- Evaluation of Tank B inlet and outlet modification alternatives, need for temporary storage facilities, and the recommended approach.
- Project definition for final design and 30% design level plans.
- Construction cost estimate to a 30% design level with appropriate contingency.

The PDR will be prepared in a format to suit the likely funding agency's requirements (assumed to be for USDA).

Final design, including preparation of plans, a Project Manual containing front-end documents and technical specifications, and opinions of probable construction cost will follow the PDR. Once Bid Documents are completed at the end of Final Design, bid phase services and engineering services during construction will follow.

Coleman Engineering (Consultant) with the assistance of Weber, Ghio & Associates (WGA) will provide preliminary and final design phase engineering services, bid phase

assistance, and engineering services during construction for the project. Services related to other items will be performed by the District. Services will include detailed civil, mechanical and geotechnical engineering necessary to develop constructible plans and specifications for the infrastructure listed above.

**Services and Data to be Provided to Coleman Engineering by District**

Prior to commencing design services, the District will provide as much of the following services and data to Consultant as are available. Some record drawings were provided during the proposal phase. Consultant will make reasonable assumptions for data that is not available.

- Confirm all design assumptions listed above are valid and approved for inclusion in the design.
- Any existing topography and survey mapping in an AutoCAD file.
- Any existing geotechnical investigation and engineering reports.
- Existing Innovyze InfoWater hydraulic model in EPANET (.inp) file format.
- Previous relevant planning, engineering design, and environmental documents, including pump station operational data and records, disinfection byproducts testing results and water quality records.
- Existing utility information.

## **SCOPE OF SERVICES**

The scope of services detailed below is organized under thirteen tasks as follows. Task 13 for Engineering Services During Construction is an optional task and is not included in the total fee associated with this scope. The scope and fee for this task will be better defined (e.g. number of submittals reviews, responses to RFIs, change orders, etc.) once the final design is approaching completion.

- **Task 1 - Project Management**
- **Task 2 - Data Collection and Review**
- **Task 3 - Topographical Mapping and Survey**
- **Task 4 - Transmission Pipeline Hydraulic Modeling Studies**
- **Task 5 - Transmission Pipeline Route Alternatives Analysis**
- **Task 6 - Geotechnical Investigation and Report**
- **Task 7 - Tank A Pump Station Hydraulics Review**
- **Task 8 - Preliminary Design Report**
- **Task 9 - Final Design**
- **Task 10 - Calaveras County Permitting**
- **Task 11 - Environmental / CEQA Compliance**
- **Task 12 - Bid and Award Phase Services**
- **Task 13 - Engineering Services During Construction (OPTIONAL)**

### **TASK 1 – PROJECT MANAGEMENT**

#### **Task 1.1 - Project Administration.**

The Consultant will administer the project design and maintain and update the design phase project schedule and budget.

#### **Task 1.2 – Project Kick-off, Progress Meetings and Board / Engineering Committee Presentation.**

The Consultant will meet with the District through project meetings and conference calls. The Consultant will prepare an agenda and brief meeting summaries for each of the meetings and will prepare and update Action and Decision Logs. 13 meetings (assumed to be 6 via Microsoft Teams conference call, 7 at District offices) have been budgeted for, as identified below:

- **Project Kick-off Meeting and Site Visit (In-person).** At this meeting, the Consultant and the District will review and refine a design phase work plan and schedule, including critical milestones. Prior to the meeting, the Consultant will



have presented the District with a data and information request, and it is assumed that the District will provide the requested data and information by the meeting. This will include, but not be limited to previous planning and design documents, previous topographical mapping and survey, additional record drawings, operations and maintenance records, utility information, hydraulic model and environmental reports.

- **Design Phase Conference Calls / In-person Site Meetings** (up to 6 monthly progress calls via Teams conference call and 2 in-person site visits). These calls are to review progress and to resolve any design questions requiring District's input outside of design submittals.
- **Submittal Review Workshops** (up to 3, after the draft Preliminary Design Report, 50%, and 90% design-level-of-completion submittals) with the District to review comments on the design submittals and to agree on which comments should be incorporated into the next stages of design.
- **Engineering Committee / District Board Meeting** (In-person) This meeting will include a project presentation to the District's Engineering Committee or the full District Board.

### **Task 1.3 - Quality Management.**

Quality control will be monitored during the project. Coleman Engineering will peer-review deliverables internally prior to delivery to the District in accordance with its quality assurance / quality control program.

#### **Task 1: Deliverables**

- Monthly invoices with progress reports.
- Meeting agendas and notes, Action and Decision Logs.
- Information and responses for the District.
- Workshop agenda and notes, Action and Decision Logs.
- Presentation.

### **TASK 2 – DATA COLLECTION AND REVIEW**

Under this task, Coleman Engineering, WGA and subconsultants will collect and review requested data received from the District and from utility companies. Information

obtained will be coordinated with that from the topographical mapping and survey (Task 3) for inclusion on the design plans.

### **Task 2.1 – District Record Drawing and Operational Data Collection and Review.**

The design team will collect and review record drawings and operational data received from the District prior to the kick-off meeting, including pipeline, tank and pump station record drawings, pump station operational data, and water quality and disinfection byproducts testing results. Additional data and information may be requested from the District following this review.

### **Task 2.2 – Utility Information and Data Collection and Review.**

Under this task, the Consultant will contact utility companies to request existing utility plans and records, together with details of any planned utility projects within the project area that might conflict with this project. A Utility “A”, “B” and “C” Letter process will be used as appropriate. From discussions at the pre-proposal meeting, it is anticipated that there will be limited buried utility conflicts since all power cables are overhead in the project area. Buried utilities are anticipated to be only the District’s water mains and for cable TV / internet connections, but could also include other fiber optic, telephone and natural gas. Received data and information will be reviewed under this task to determine any potential conflicts and impacts on pipeline alignment and will be used in planning subsequent utility potholing.

### **Task 2: Deliverables**

- Reviewed data and information for use in subsequent tasks.

## **TASK 3 – TOPOGRAPHICAL MAPPING AND SURVEY**

### **Task 3.1 – Pipeline and Tank Sites Topographical Mapping and Survey.**

Under this task, sub consultant Nordahl Land Surveying, Inc will establish primary and secondary control, perform detailed topographical mapping and survey for the design team to ensure coverage of the pipeline route (including alternative routes), and the Tanks A and B sites. After the District has marked out its existing water line facilities, the survey will record structures and surface features, including utility surface manifestations such as valve boxes, manholes, vaults, hydrants, roads, edges of pavement, poles, culverts, drainage inlets, driveway locations, fences, signs, and the like. Survey will conform to the North American Datum (NAD83), California Zone 3 and the North American Vertical datum of 1988 (NAVD88) and will tie in existing noticeable

lot corner monuments. The topographical mapping and survey will be used to complete layout plans (including plan and profile drawings) in AutoCAD Civil 3D 2022 format in subsequent design tasks. It is anticipated that the topographical mapping will include trees that could be impacted by construction activities.

### **Task 3: Deliverables**

- Topographical mapping and survey data in AutoCAD Civil 3D 2022 format for use in subsequent design tasks.

## **TASK 4 – TRANSMISSION PIPELINE HYDRAULIC MODELING STUDIES**

The District has performed a preliminary evaluation of proposed pipeline and tank modifications using its Innowyze InfoWater hydraulic model. Under Task 4, the design team will work closely with the District’s modelers to validate these initial modeling results and complete the pipeline design. The modeling studies will assist with:

- Finalizing the new transmission pipeline diameter and material.
- Confirming acceptable transmission main operating pressures when conveying build-out scenario flows, including peak hourly demand and a maximum daily demand and fire flow combination.
- Finalizing distribution system pressure zone boundaries and PRV locations.
- Confirming that current very high distribution system operating pressures will be reduced to normal operating ranges for residential service and that transient surges and spikes will be minimized.
- Assessing impacts on water age and quality, and on disinfection byproducts.

Results and findings from the hydraulic modeling studies will be presented in a technical memorandum (TM) for District review and then incorporation into the Preliminary Design Report (Task 8).

Work under Task 4 will be coordinated with the hydraulics review of the Tank A Pump Station (Task 7)

### **Task 4.1 – Review of Existing District Hydraulic Model, Development and Calibration Checks.**

The design team will work closely with the District’s modelers and will review the existing hydraulic model, modify it as appropriate for use on the project and perform limited calibration checks under this task using known flows and pressures provided by the District. If calibration of the model is deemed necessary by the District, model

calibration services can be provided by the design team as an additional service. Please see description in the section of this proposal titled, “Tasks Not Included in this Scope of Services”.

#### **Task 4.2 – Transmission Pipeline Diameter and Material Selection.**

The hydraulic model will be used under this task to size the transmission pipeline diameter, considering pipe material alternatives to suit the range of likely operating pressures. The District’s prior preliminary selections of a 12-inch dia., Class 350 ductile iron pipe or a 14-inch dia. DR-14 / Class 305, C900 PVC pipe will be reviewed. Final recommendations will be presented in the Preliminary Design Report (Task 8) which will also consider other factors, including capital and life cycle costs, and availability, which impact the final selection.

#### **Task 4.3 – Pressure Zone Boundaries and Initial PRV Locations and Setpoints**

The design team will examine the current location of pressure zone boundaries within the distribution system using the hydraulic model and will evaluate the need to revise the locations to suit appropriate operating pressure ranges for specific communities. Based on the findings of the modeling, the design team will also initially determine field locations for PRV stations to suit the proposed pressure zone boundaries and the associated pressure set points. The intent is to determine a practical system with a manageable number of pressure zones fed from the new transmission pipeline at a reasonable cost. The adopted system must also consider ease of operation and maintenance to reduce recurrent costs. The pressure zone boundaries and PRV station locations and set points will be finalized during Final Design (Task 9) after the transmission main route is confirmed (Task 5). For the purposes of this scope, we have assumed a total of 10 PRVs (5 pressure zones) will be required.

#### **Task 4.4 – Water Age, Water Quality and Disinfection Byproducts.**

The hydraulic model will be used under this task to assess the impact of the new facilities on water age and water constituents including chlorine residuals.

#### **Task 4.5 – Transmission Pipeline Hydraulic Modeling TM.**

The methodology, approach, results, findings and recommendations determined from the hydraulic modeling performed in Task 4 will be presented in a TM for the District’s review and comment. The TM will not be finalized: the intent is for it to be incorporated as a chapter in the Preliminary Design Report (Task 8) with text modifications agreed from the District’s review.

#### **Task 4: Deliverables**

- Results and findings for use in subsequent tasks.
- Transmission Pipeline Hydraulic Modeling TM (in electronic pdf format)
- Hydraulic model in EPANET format.

#### **TASK 5 – TRANSMISSION PIPELINE ROUTE ALTERNATIVE ANALYSES**

Task 5 details site reconnaissance, development and evaluation of potential alignment alternatives and modifications, and recommendation of a preferred pipeline alignment. The studies under this task will use the reviewed District and utility company data and information (Task 2) and the topographical mapping and survey (Task 3). The results and findings will be presented in a TM that will be incorporated as a chapter into the Preliminary Design Report (Task 8).

##### **Task 5.1 - Full Team Site Reconnaissance Visit.**

A half-day site reconnaissance visit involving the design team, sub consultants, and available District staff will be organized, coincident with the project kick-off meeting. The intent of the site walk is to identify key technical issues such as extent of rock, access constraints, constructability and applicable construction methods. The site walk will include not only the anticipated pipeline alignment but also potential alternative alignments. Notes of the walk findings with photographs documenting the walk's conclusions will be prepared and circulated to the design team.

##### **Task 5.2 - Alternative Alignments Development and Evaluation.**

Following review of received data and information and the site reconnaissance visit, a series of alternative alignments will be developed for investigation and evaluation. Potential alignment adjustments will be assessed for pipe hydraulics, proximity to geotechnical and geologic hazards, extent of rock excavation, constructability and access concerns, tree removal requirements, adverse environmental impacts, ease of any right-of-way / easement acquisition, and other factors. Each alignment will also be assessed using the hydraulic model.

##### **Task 5.3 – Transmission Pipeline Route Alternatives TM.**

Findings, analyses, conclusions and recommendations from the Task 5 studies will be presented in a TM for the District's review and comment. The TM will not be finalized: the intent is for it to be incorporated as a chapter in the Preliminary Design Report (Task 8) with text modifications agreed from the District's review.

### **Task 5: Deliverables**

- Site reconnaissance visit notes for design team use.
- Results and findings for use in subsequent tasks.
- Transmission Pipeline Route Alternatives Analyses TM (in electronic pdf format)

### **TASK 6 – GEOTECHNICAL INVESTIGATION AND REPORT**

Geotechnical sub consultant Crawford and Associates will plan and perform a geotechnical investigation and prepare draft and final geotechnical reports to assist with final design in Task 6. A key focus of the investigation will be determination of the extent of potential rock excavation on the preferred and alternative pipeline routes.

Published geologic mapping shows the project site generally underlain by Late Jurassic Gopher Ridge Volcanics consisting of quartz, tuff, basalt, greywacke, and agglomerate. Web Soil Survey indicates the upper 1.5 to 3 ft of the site consists of clay, clayey gravel, and clayey sand underlain by weathered rock. Depending on the depth of the improvements, excavatability within rock will be an important geotechnical consideration.

Nearby explorations (approximately 2 miles north) encountered approximately 1 to 20 ft of soil consisting of clay, clayey gravel, and clayey sand underlain by very intensely weathered to fresh metamorphic rock. During drilling, rock was augured to a depth of about 10 ft before rock coring and drilling methods were required.

#### **Task 6.1 – Geotechnical Investigation Planning.**

Crawford will coordinate with the design team and the District to confirm project definition and schedule; review project data; review published topographic, geologic, and seismic mapping; and review available geotechnical data. Crawford will visit the site to mark subsurface exploration locations for Underground Service Alert (USA North 811), meet with District staff with knowledge of the onsite utilities, and schedule the drilling subcontractor.

#### **Task 6.2 - Subsurface Exploration.**

Crawford proposes to complete 1 to 3 test pits to a maximum depth of 10 feet. Crawford also proposes to complete 10 to 12 borings to a depth of 5 to 10 feet or until drilling refusal on rock. At 1 to 2 boring locations, Crawford plans to utilize rock coring methods to a maximum depth of 10 feet. A Crawford engineer/geologist will log the borings and direct the sampling in accordance with the Caltrans Logging Manual (2010

Edition). Groundwater elevations will be noted, where encountered. Crawford will collect bulk and relatively “undisturbed” soil/rock samples from the borings for laboratory testing. Drive samples will be taken at approximate 2.5 ft to 5 ft intervals using a 2.0” O.D. “Standard Penetration” (ASTM D1586) or 3.0” O.D. “Modified California” sampler (ASTM D3550), driven with a standard 350 ft-lb automatic or manually operated hammer per ASTM D1586. The borings will be cement-grout backfilled per Calaveras County permit requirements.

Crawford also will perform two to three seismic lines along the alignment to further define the depth to rock and rock velocities that can be converted to hardness to help determine excavatability/rippability.

### **Task 6.3 - Laboratory Testing.**

Crawford will complete laboratory testing on representative soil/rock samples obtained from borings including grainsize analysis, plasticity index, moisture density, point load, and soil corrosion tests.

### **Task 6.4 - Geotechnical Engineering Evaluation and Analysis.**

Based on the results of Tasks 6.1 through 6.3, Crawford will perform engineering analysis and calculations to determine geotechnical design parameters and provide recommendations for:

- Lateral earth pressures and skin friction values for thrust restraint design,
- Rock seismic velocities and rippability,
- Soil loads on buried pipes, and
- Composite modulus of soil/rock reaction.

### **Task 6.5 - Prepare Draft and Final Geotechnical Reports.**

Crawford will prepare Draft and Final Geotechnical Reports for proposed improvements that include the following:

- Scope of work
- Project description
- Field exploration
- Site geology
- Subsurface soil, rock, and groundwater conditions
- Lab testing



- CBC seismic design parameters
- Geotechnical recommendations for grading, including ground preparation, materials excavatability, stability, and placement
- Geotechnical recommendations for pipeline design including trench backfill unit weight, pipe support, skin friction and passive resistance for thrust restraint design, and composite soil modulus
- Soil corrosion potential
- Construction considerations
- Limitations
- Geologic map
- Fault map
- Site plan with boring and seismic line locations
- Boring logs with laboratory test results

#### Assumptions

The task scope of services assumes the following:

- Auger cuttings are assumed to be non-hazardous and will be spread out in the shoulder.
- Borings will be backfilled per the County Boring Permit.
- Based on conversations with Calaveras County Public Works, we understand borings within the roadway will require hot-mix asphalt or “two-sack” slurry cement backfill patch.
- Rights of entries, if needed, will be provided by the District.
- Traffic control will consist of a temporary lane closure with flaggers and shoulder closure with cones.
- A site-specific hazard analysis will not be required and is excluded in the scope and fee.
- District staff will need to clear boring locations based on their understanding of the site utilities at Tank A and Tank B.

#### **Task 6: Deliverables:**

- Draft and Final Geotechnical Reports (electronic copies in pdf format, and 3 bound hard copies of the Final Geotechnical Report)

## **TASK 7 – TANK A PUMP STATION HYDRAULICS REVIEW**

The Tank A pump station hydraulics are evaluated in Task 7. The evaluation includes a review of the existing pumps' and pump station's performance against original design parameters, including pump design curves. In addition, the pumps and pump station's anticipated performance with the new transmission main is assessed. It is assumed that the new transmission main will reduce system losses and the TDH requirement for the Tank A pumps, thus improving the flow rate and removing the hydraulic bottleneck. The impact of the change in TDH may impact pump efficiency. The review will also examine if future pump station modifications are needed to accommodate growth up to buildout.

### **Task 7.1 - Tank A Pump Station Hydraulic Review.**

The design team will perform the hydraulic evaluation detailed above under this task.

### **Task 7.2 - Tank A Pump Station Hydraulic Review TM.**

Findings, analyses, conclusions and recommendations from the Task 7 Tank A Pump Station hydraulic review will be presented in a TM for the District's review and comment. The TM will not be finalized: the intent is for it to be incorporated as a chapter in the Preliminary Design Report (Task 8) with text modifications agreed from the District's review.

#### **Task 7: Deliverables**

- Results and findings for use in subsequent tasks.
- Tank A Pump Station Hydraulic Review TM (in electronic pdf format)

## **TASK 8 – PRELIMINARY DESIGN REPORT**

Under Task 8, the design team will prepare the Preliminary Design Report (PDR) in a format and with content to match that required by the funding agency, assumed for the purposes of this scope to be the USDA. The PDR will incorporate the content of the TMs prepared under earlier tasks. The anticipated contents are:

- Project background, purpose, scope and general description.
- Design criteria.
- Approach to, and findings of, hydraulic modeling for the final design of the new transmission main.
- Evaluation of route alternatives and results for the new transmission main alignment.

- Location and set points for PRV stations and definition of pressure zone boundaries.
- Evaluation of the Tank A pump station hydraulics and recommendations for any improvements.
- Evaluation of Tank B inlet and outlet modification alternatives, need for temporary storage facilities, and the recommended approach.
- 30% design-level-of-completion plans.
- Construction cost estimate to a 30% design level with appropriate contingency.

### **Task 8.1 – Prepare Draft Preliminary Design Report**

The draft PDR will be prepared under this task and submitted to the District for review and comment. A PDR Review Workshop will be held to review the conclusions and recommendations presented in the PDR and to discuss the District’s comments. The workshop will complete definition of the project and confirm the elements to be carried forward for incorporation into the 50% final design. The PDR will be finalized after this workshop. The workshop is included in Task 1.2.

### **Task 8.2 – Finalize Preliminary Design Report**

The PDR will be finalized under this task. It will incorporate agreed comments from the PDR Review Workshop.

### **Task 8: Deliverables:**

- Draft Preliminary Design Report, including 30% design level plans (electronic copy in pdf format).
- Final Preliminary Design Report, including 30% design level plans (electronic copy in pdf format).
- Updated hydraulic model in EPANET format.

## **TASK 9 – FINAL DESIGN**

The design team will further develop the PDR plans and agreed comments, and the associated design information generated from the utility records and the geotechnical report to prepare the project final design. Task 9 will also include utility potholing based on the utility records received and field investigations /mapping in earlier tasks, and preparation of a Storm Water Pollution Prevention Plan (SWPPP). Intermediate design submittals will be made at 50% and 90% design levels of completion prior to the completion of 100% Design and Bid-Ready Documents. Each submittal will comprise plans, technical specifications (Project Manual) (table of contents only at 50%) and a construction cost estimate will be produced. It is anticipated that the plan sets will

include the following sheets. Plans to be submitted at the PDR and 50% stage are identified below for clarity (PDR plans will be prepared under Task 8). All plan sheets will be submitted with the 90% and 100% Design / Bid-Ready Documents sets. Submittal Review Workshops will be held with the District to review the 50% and 90% design level submittals. These workshops are itemized in Task 1.2.

PDR	50%	Sheet	Title
✓	✓	G1	Cover Sheet (maps, sheet index, legend, abbreviations)
	✓	G2	General Notes, Symbols, and Abbreviations
	✓	G3	Project Notes, Survey Control and Construction Sequencing
✓	✓	G4	Hydraulic Profile and Process Flow Diagram
✓	✓	P1	Transmission Pipeline Plan and Profile – Sheet Key Plan
Plan only	✓	P2	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P3	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P4	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P5	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P6	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P7	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P8	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P9	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P10	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P11	Transmission Pipeline Plan and Profile – STA _to_

<b>PDR</b>	<b>50%</b>	<b>Sheet</b>	<b>Title</b>
Plan only	✓	P12	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P13	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P14	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P15	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P16	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P17	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P18	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P19	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P20	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P21	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P22	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P23	Transmission Pipeline Plan and Profile – STA _to_
Plan only	✓	P24	Transmission Pipeline Plan and Profile – STA _to_
✓	✓	P25	Distribution Mains Modifications - Key Plan
	✓	P26	Distribution Mains Modifications 1
	✓	P27	Distribution Mains Modifications 2
		P28	Distribution Mains Modifications 3
		P29	Distribution Mains Modifications 4
✓	✓	C1	PRV Stations – Key Plan
	✓	C2	PRV Stations – Layout and Details 1
	✓	C3	PRV Stations – Layout and Details 2

PDR	50%	Sheet	Title
	✓	C4	PRV Stations – Layout and Details 3
	✓	C5	PRV Stations – Layout and Details 4
	✓	C6	PRV Stations – Layout and Details 5
	✓	C7	Civil and Standard Details 1
	✓	C8	Civil and Standard Details 2
		C9	Civil and Standard Details 3
		C10	Civil and Standard Details 4
		S1	Structural Notes
		S2	Structural Standard Details
		S3	PRV Station Structural Details
✓	✓	T1	Tank A - Yard Piping Modifications 1
✓	✓	T2	Tank A - Yard Piping Modifications 2
		T3	Tank A - Yard Piping Modifications 3
		T4	Tank A – Yard Piping Modification Details
✓	✓	T5	Tank B – Temporary Storage Facilities & Piping 1
✓	✓	T6	Tank B – Temporary Storage Facilities & Piping 2
✓	✓	T7	Tank B - Yard Piping Modifications 1
✓	✓	T8	Tank B - Yard Piping Modifications 2
	✓	T9	Tank B - Yard Piping Modifications 3
		T10	Tank B – Yard Piping Modification Details
✓	✓	T11	Tank B – Internal Piping Modification Details 1
		T12	Tank B – Internal Piping Modification Details 1

### Task 9.1 – Utility Potholing

Under Task 9.1, Coleman Engineering will coordinate, schedule and organize utility potholing to verify the location and depth of potential utility conflicts. A potholing plan for potholing along the alignment will be prepared and submitted to the District for approval. The plan will be based on the information provided by the District and utility companies from earlier tasks, and from the topographical mapping and survey effort. Buried utilities will probably include fiber optic, telephone, cable, natural gas, and water. The potholing will be performed by a qualified third-party contractor. Coleman Engineering will develop a scope of work with maps of proposed pothole locations and

the District will solicit bids from three qualified contractors. The District may choose to reject bids and perform work using its own equipment and field crews. Coleman Engineering will walk the alignment with the selected potholing contractor (or District) to mark pothole locations so that the contractor can notify USA North 811 before digging. Pothole excavations and the exposed conflicting utilities will be surveyed, and data included on the plans. The contractor will obtain an encroachment permit and provide necessary traffic control.

It is assumed for the purposes of this scope and associated fee that the potholing contractor will contract directly with the District outside of the Project Agreement.

### **Task 9.2 - Prepare 50% Design Plans, Technical Specifications (Project Manual) and Cost Estimate**

50% design level general, plan and profile, civil, mechanical plans will be developed using Coleman Engineering's CAD standards, unless otherwise directed by the District. A table of contents for the Technical Specifications will be prepared. A construction cost estimate with a level of contingency appropriate to the level of design will be included in the submittal.

The 50% design submittal will be reviewed by the District. A submittal review workshop will then be held to discuss the District's comments and to agree those to be incorporated into the design. All review comments and responses to comments will be documented in Action Item and Decision logs.

### **Task 9.3 – Prepare 90% Design Plans, Technical Specifications (Project Manual) and Cost Estimate**

Incorporating agreed comments from the 50% design submittal, the 90% design level general, plan and profile, civil, mechanical plans will be developed using Coleman Engineering's CAD standards, unless otherwise directed by the District. Technical specifications to a 90% design level of completion will be prepared in accordance with the table of contents submitted with the 50% design submittal. The technical specifications will be incorporated into a Project Manual that includes front end documents (based on edited 2018 EJCDC standards) and appendices provided by the District. A construction cost estimate with a level of contingency appropriate to the level of design will be included in the submittal.

The 90% design submittal will be reviewed by the District. A review workshop will then be held to discuss the District's comments and to agree those to be incorporated into the 100% Design Submittal. All review comments and responses to comments will be documented in the Action Item and Decision logs.



#### **Task 9.4 – Prepare 100% Design Documents**

Agreed comments received from the District after the 90% Design Review Workshop will be incorporated into the 100% Design Documents. A final Opinion of Probable Construction Cost will be submitted with the 100% Design Submittal.

#### **Task 9.5 - Prepare Bid-Ready Documents**

Agreed comments received from the District after review of the 100% Design Documents will be incorporated into the Bid-Ready Documents.

#### **Task 9.6 - Prepare Storm Water Pollution Prevention Plan (SWPPP)**

Sub consultant Tully Consulting Group as a QSD will develop a project SWPPP under this task. The SWPPP will be prepared per State and contract requirements and will include the Rain Event Action Plan (REAP) template, a Construction Site Monitoring Plan and a Sampling and Analysis Plan where required. Water Pollution Control Drawings will also be included as part of the SWPPP. Tully will prepare the Notice of Intent (NOI) via the State SMARTS website: it is assumed that the District will pay the State NOI fee.

Tully will also prepare one Stormwater Annual Report in accordance with SWRCB requirements. This item is required for projects with a stormwater permit active for 3 or more months within a reporting year. Tully will prepare one Notice of Termination (NOT) at the completion of project via the State SMARTS website.

The final SWPPP will be uploaded to the SMARTS website no less than 6 weeks before the Contractor's mobilization date for the start of construction.

#### **Task 9: Deliverables:**

- Utility potholing information for use in design and incorporation onto the plans.
- 50% Plans, Technical Specifications (table of contents only) and Construction Cost Estimate (electronic copy of plans, specifications, and cost estimate documents in pdf format. Plans suitable for 11" x 17" and 22" x 34" reproduction).
- 50% Design Submittal Review Workshop agenda, minutes, and Action Item Decision Log.
- 90% Plans, Project Manual (including Technical Specifications) and Construction Cost Estimate (electronic copy of plans, Project Manual, specifications, and cost estimate documents in pdf format. Plans suitable for 11" x 17" and 22" x 34" reproduction).
- 100% Plans, Technical Specifications and Opinion of Probable Construction Cost (electronic copy of plans, Project Manual, and cost estimate documents in pdf format. Plans suitable for 11" x 17" and 22" x 34" reproduction).

- Bid-Ready Documents (electronic copy of plans in pdf and AutoCAD file format. Project Manual and cost estimate documents in Word and pdf format. Plans suitable for 11" x 17" and 22" x 34" reproduction).
- SWPPP Documents, including 6 printed color copies of the final SWPPP document in three-ring binders ( 2 copies each to the District, Contractor and County).

## **TASK 10 – CALAVERAS COUNTY PERMITTING**

### **Task 10.1 – Calaveras County Encroachment Permit / Right-of-Way**

Coleman Engineering will prepare and secure an encroachment permit from the Calaveras County Public Works Department for the project. The level of effort required for this task assumes that the design will remain within County roads and existing utility easements and not require procurement of additional right-of-way, or temporary or permanent easements. Plans and specifications will be submitted to the County Public Works Department for review and comment. Anticipated items of concern include traffic control, trench backfill and compaction testing, location and placement of fire hydrants, extent of removal and replacement of AC paving, and SWPPP requirements.

#### **Task 10: Deliverables**

- Encroachment Permit applications, including plans and specifications as supporting documentation.

## **TASK 11 – ENVIRONMENTAL / CEQA COMPLIANCE**

Coleman Engineering will engage the services of ECORP Consulting Inc to provide environmental consulting, investigations, analysis, and recommendations. ECORP will provide the services described below.

### **11.1 - Project Initiation Meeting**

ECORP will attend the project kick-off meeting and site visit to discuss project objectives and characteristics. The site visit will be used as a means of refining the project description, discussing the schedule, establishing procedures for data gathering and focusing the analysis on pertinent issues. The meeting will be attended by ECORP's Project Manager and CEQA lead. Based on direction from the District it is assumed that an Initial Study/Mitigated Negative Declaration will be the appropriate CEQA document for the project.

## 11.2 - Develop Project Description

ECORP will coordinate with the design team to develop and clarify the project description. Coordination for this task will be by telephone and/or email. Development of the project description will establish the critical elements of the proposed improvements. The project description will include:

- **Project setting:** a description of the project's regional and local location, environmental setting, local transportation system, land use designations, and surrounding land uses. Maps showing the regional and specific location of the project will be included in this section.
- **Project background:** a description of the project's history
- **Project objectives:** the goals, objectives, and need for the project
- **Project characteristics:** a detailed description of all project components, project construction schedule and sequencing; and site layout and staging areas
- **Intended uses of the IS/MND:** a list of uses of the IS/MND, including a list of project approvals required by other agencies.

## 11.3 – Meetings / Coordination

Consultation and coordination with the design team, the District and other appropriate project team members and agencies will be conducted during the preparation of the IS/MND. This task includes project management and coordination time between ECORP, the design team, the District and other project team members. ECORP will attend up to eight (8) project team meetings. It is assumed these meetings will be held via conference call and may require up to approximately two (2) hours each. ECORP's Project Manager, key environmental staff, and members of the ECORP team that may be needed to address specific issues will participate in the project team meetings/conference calls as appropriate. This task also includes project management support thru the duration of the contract.

## 11.4 – Technical Studies

The following technical studies will be conducted for the Proposed Project. It has been assumed that the data required to support and document answers to all other CEQA Initial Study checklist items can be obtained from existing documentation (i.e., the Calaveras County General Plan and associated environmental documentation, floodplain maps, previous environmental documentation in the vicinity of the project site, and other standard environmental references), consultation with District staff, or information being prepared separately by the engineering team.

**11.4.1 - Air Quality and Greenhouse Gas Emissions Assessment.** The assessment of air quality and greenhouse gas (GHG) emissions will quantify Project emissions using the California Emissions Estimator Model version 2020.4.0 (CalEEMod) software. CalEEMod is a statewide land use emissions computer model designed to quantify pollutant emissions associated with a variety of land use projects. A general description of the phases of construction and its timing will be required. Project criteria air pollutant emissions will be compared to the thresholds of significance promulgated by the Calaveras County Air Pollution Control District (CCAPCD). ECORP proposes to evaluate potential air quality and GHG emission-related impacts in a technical memorandum. The analysis will be supported by modeling documentation, which would be included as an attachment to the memorandum.

**11.4.2 - Biological Resource Assessment.** ECORP will conduct a biological resources assessment (BRA) for the transmission pipeline located within existing paved areas within the community of Jenny Lind, Calaveras County, California. The new transmission pipeline will be in a separate trench parallel to the existing distribution system lines along Hartvickson Lane and Baldwin Street and continuing to Tank B on Usher and Harding Road. Other options for the alignment may take slightly different routes along Cane Lane and Rippon Road, and iterations of possible alignment alternatives need to be further evaluated at the preliminary design level, however, these alternatives are assumed to be within existing paved areas. This assessment will also cover road shoulders and a 50-foot perimeter around tank locations for potential staging of equipment, setup areas and entry/exit pits for directional drilling, replacement of fire hydrants, and connections for new or replaced laterals. This assessment includes evaluation of the connection locations for new laterals; however, it does not include surveys of entire routes for any new laterals that are planned.

The BRA will cover a review of existing biological information in the region and documentation specific to the project, including a literature review. The literature review will include available information such as aerial photography and database queries of the CDFW California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS), U.S. Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NMFS) for potentially occurring special-status species in the vicinity of the project. This assessment will also include aerial photograph interpretation and a reconnaissance-level site investigation to identify and characterize vegetation communities present onsite and the approximate extent of potential aquatic resources. Vegetation communities, including riparian vegetation, will be assessed and mapped using the *Manual of California Vegetation* (Sawyer et al., 2009). The assessment will also include an evaluation of special-status species with potential to occur onsite based on the literature review and reconnaissance-level site visit and investigation.

A summary of the findings will be incorporated into the BRA report. The report will provide the regulatory context, as well as the methods, results, and recommendations for appropriate mitigation measures to address potential impacts to biological resources for incorporation into the CEQA review document. Potential impacts to biological resources will be assessed using the CEQA Appendix G Checklist. As part of the biological resource assessment, ECORP will also identify any required resource agency permits and approvals to implement the project design and construct the project.

Assumptions:

- The scope assumes that the project boundary will be provided by the client at the start of preparation, and that no changes to the original project boundary or land use components occur.
- It is assumed that disturbance for the project can be contained within existing paved areas or in road shoulders and that trimming of vegetation would not be required for the project.
- This task does not include focused (protocol-level) surveys for sensitive species or coordination or consultation with the regulatory agencies.
- This assessment includes evaluation of the connection locations for new laterals but does not include surveys of entire routes for any new laterals that are planned.

**11.4.3 - Cultural Resources Inventory.** ECORP will prepare a Cultural Resources Inventory for the Proposed Project. The inventory will include records search and literature review with the California Historical Resources Information System's (CHRIS) Central California Information Center (CCIC) for the entirety of the Project Area plus a 0.5-mile radius to gather previously conducted cultural resource studies. The inventory will also include an intensive pedestrian survey of the Project Area using current protocols for the identification of cultural resources, and preparation of a Cultural Resources Inventory Report. This study will be conducted pursuant to compliance with CEQA and Section 106 of the NHPA for the identification of cultural resources. A summary of the findings will be provided in the Inventory report, following the OHP's recommended content and format. The report will provide the historic context, which is also necessary for incorporation into the CEQA document, as well as the methods, results, and recommendations. All cultural resources efforts will be conducted by or under the direct supervision of a Registered Professional Archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historical archaeology.

Assumptions:

- GIS or CAD data of the project area will be provided to ECORP prior to initiating any work.

- Project meetings, hard copies of reports, responses to comments, and other tasks not specified above will require a contract change order.
- The timeline for deliverables is contingent upon receiving Records Search results from the CCIC within the allotted period for the study. CCIC delays in disseminating records search results will affect the timeline for deliverables.
- One unbound copy of the final report will be submitted to the appropriate confidential OHP Information Center, where it will be archived and remain confidential (accessible only by qualified archaeologists; note that this is required, regardless of project status and does not affect project approval).

**11.4.4 - Energy Consumption Assessment.** ECORP proposes to analyze Project energy consumption in a technical memorandum where potential impacts related to Project energy consumption will be assessed against the Office of Planning and Research’s proposed standards of significance: i.e., whether the Project result in the wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources; and, whether the Project would conflict with an applicable plan for renewable energy or energy efficiency. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed infrastructure project. Therefore, for the purposes of this analysis, the amount of energy necessary for Project implementation will be quantified and compared to that consumed in Calaveras County as a whole. Where appropriate, the analysis would be supported by modeling documentation, which would be included as an appendix to the memorandum.

**11.4.5 - Noise Impact Memorandum.** The applicable noise criteria for the Project Area will be reviewed and noise standards (i.e., the County of Calaveras General Plan Noise Element and Chapter 9.02 of the County Municipal Code) regulating noise impacts will be discussed for land uses adjacent to, and nearby, the Project Site as they will be the basis for the Project impact determination and whether mitigation is necessary. The Proposed Project will not include the provision of new permanent stationary sources of noise and therefore baseline noise measurements are not proposed. Construction would occur during implementation of the Proposed Project. Noise levels from construction sources will be analyzed using the Federal Highway Administration Roadway Construction Noise Model and based on the anticipated equipment to be used. In order to evaluate the potential health-related effects (physical damage to the ear) from construction noise, construction noise will be evaluated in terms of hourly equivalent continuous noise levels (Leq) and the frequency of occurrence at the nearby residences along the linear Project Site. In addition to construction noise, an analysis of vibration impacts will be prepared. The evaluation of the Project’s contribution to noise increases over existing conditions will also be addressed; however, due to the nature of the Project, the contribution to noise in the existing environment is expected to be nominal as the Project is only proposing infrastructure improvements. Therefore, post-

construction Project noise will be addressed qualitatively. ECORP proposes to evaluate noise impacts in a technical memorandum. Where appropriate, the analysis would be supported by modeling documentation, which would be included as an attachment to the memorandum.

**11.4.6 - Paleontology Records Search.** ECORP will request a records search for paleontological resources to determine if known fossils have been reported for the project area. Sources of records to be sought may include the University of California Museum of Paleontology, the Natural History Museum of Los Angeles County, Sierra College Natural History or other institutions as appropriate and applicable. The results of the records search combined with a review of regional geologic maps and existing literature on paleontological resources for the region will be described in a brief letter memorandum and provided as an attachment to the CEQA document, if necessary. If the results indicate a high sensitivity for paleontological resources, a survey and/or monitoring by a qualified paleontologist may be required (which will require a contract change order).

#### **11.5 - CEQA Initial Study/Mitigated Negative Declaration (IS/MND)**

**11.5.1 - Administrative Draft IS/MND.** ECORP will prepare an Administrative Draft IS/MND for the proposed project. The scope of the IS/MND will address the full scope of potential environmental issues as based on Appendix G of the State CEQA Guidelines. The analysis and conclusion of the technical studies (Task 2A – 2F above) will be summarized in the IS/MND, and the technical studies will be attached as appendices. The analysis will focus on impacts associated with construction of the pipeline as there will be minimal long-term impacts following completion. Key issues associated with construction that will be the focus of the document will include Air Quality/Greenhouse Gases, Biological Resources, Cultural Resources, Paleontological Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, and Transportation.

**11.5.2 - Prepare Draft IS/MND.** After receipt of one (1) set of integrated comments on the Administrative Draft IS/MND from the District, ECORP will revise the IS/MND accordingly. ECORP will produce two (2) bound copies for the District's use. It is assumed that the District and ECORP will work together to assemble the mailing list. ECORP will produce the State Clearinghouse (SCH) summary form and notice for posting electronically on the SCH website. The document will also be posted to the internet for public review.

**11.5.3 - Prepare Public and Agency Notices.** ECORP will prepare the following notices as required by CEQA:

- Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration
- Notice of Completion (NOC) (State Clearinghouse Cover)



- Notice of Determination (NOD)

One copy of each of these notices will be filed with the State Clearinghouse, as appropriate. One electronic copy of each notice will be provided to the District. The NOI is required by CEQA to either be, posted on-site, mailed to the surrounding property owners, or published in a newspaper of general circulation. For costing purposes it is assumed that ECORP will assist the District with coordinating with the local newspaper for publication of the NOI. ECORP has included payment for the newspaper ad in our cost estimate.

Fees associated with these notices are as follows:

- NOI – No fee
- NOC – No fee
- NOD – County filing fee of \$50.00 and CDFW CEQA environmental document filing fee of \$2,548 (MND)

It has been assumed that the District will pay the County filing and the CDFW fee when the NOD is posted.

**11.5.4 - Final IS/MND and MMRP.** The Lead Agency (District) must consider any comments received on the MND when deciding on the Proposed Project. After the conclusion of the 30-day public and agency comment period, ECORP will prepare draft responses to comments and make the appropriate revisions to the IS/MND. For costing, we have assumed that ten (10) comment letters containing five (5) substantive comments each will be received (or a total of 50 comments). ECORP will collate all public comments and comment letters regarding the IS and prepare and/or assist staff with preparing written responses to comments and submit electronically for District review. It is assumed that District staff will receive all comments and will forward to ECORP as soon as possible after receipt.

The Final IS/MND will include responses to comments received on the Draft IS/MND, any changes to the Draft IS/MND, and the Mitigation Monitoring and Reporting Program (MMRP), prepared in accordance with CEQA Guidelines Section 15097. ECORP will prepare the MMRP in table format, with input from the District.

An Administrative Final IS/MND and MMRP will be prepared, and after review by the District, the Final IS/MND and MMRP will be provided. ECORP will send the Final IS/MND and MMRP to agencies, organizations, and individuals that commented on the Proposed Project, and also notify them of the date and time the project is scheduled for approval as required by CEQA. ECORP will also prepare an environmental record of the entire CEQA process for the District's records. This will include all notices, the Draft and Final IS/MND and all approvals required for the project.

## **11.6 - Tribal Consultation Support (OPTIONAL)**

ECORP can assist in consulting with California Native American tribes under Assembly Bill 52 to support CEQA. Using a project description provided by the District, ECORP can draft all required notification letters, coordinate tribal meetings, maintain the consultation administrative record, and provide technical support to the District in responding to, or acting upon, comments from tribes. ECORP will document the consultation process and comments discussed and provide advise on how to conclude to the consultation. Alternately, this budget can be applied toward assisting the design team in interpreting the outcomes of tribal consultation and assessing the impact to the project's compliance strategy, in coordination with the District.

This cost estimate is provided on a time and materials, "best efforts" basis. If the consultation requests from the tribes will require more effort that will exceed the budget provided herein, then a contract change order would be required to complete the scope and tribal consultation.

### **Task 11 Deliverables:**

- One (1) electronic version of both the draft and final Air Quality & Greenhouse Gas Emissions Assessment Memorandum.
- One draft report would be submitted for review and approval by Weber Ghio and CCWD. Comments would be incorporated into one final report. It is assumed that all deliverables can be submitted electronically, rather than in hard copy format.
- The Cultural Resources Inventory Report will be submitted electronically within 60 days of the notice to proceed.
- One (1) electronic version of both the draft and final Energy Consumption Impact Assessment Memorandum.
- One (1) electronic version of both the draft and final Noise Impact Assessment Memorandum.
- One (1) electronic version of the Paleontology Records Search Memorandum.
- An electronic copy of the Administrative Draft IS/MND including both a word file and pdf will be submitted to CCWD via email for review and comment
- One (1) electronic of the Draft IS/MND with CD appendices for CCWD
- One (1) hardcopy of the Draft IS/MND with CD appendices for the local library
- Two (2) hardcopies (appendices on CD) and one (1) electronic copy of the Final IS/MND for CCWD's use

- Ten (10) flash drives will be mailed to commenting agencies and interested parties

## **TASK 12 – BID AND AWARD PHASE ASSISTANCE**

Consultant will assist the District during the bid period by responding to contractor/ bidder questions with information. Consultant will also assist with advertising for bids, and placement of bid documents in electronic plan holder rooms. Consultant will not reproduce or distribute bidding documents, nor maintain plan holders' lists – since it is assumed that those services will be provided by a document reproduction shop.

### **Task 12.1 – Pre-Bid Meeting and Site Walk**

Consultant will attend one pre-bid meeting to be held at the project site. The District will conduct the meeting and Consultant will assist with answers to questions regarding the design as necessary to support the District. It is assumed that the pre-bid meeting may include a site walk with bidders.

### **Task 12.2 – Respond to Bidders' Questions and Prepare Addenda**

Consultant will prepare written responses to questions from bidders raised at the pre-bid meeting and site walk, and subsequently during the bid period up to one week before bids are due. Consultant will prepare up to two addenda for the District's issue to prospective bidders.

### **Task 12.3 – Bid Evaluation Assistance**

Consultant will assist with review, tabulation, and evaluation of bid results.

### **Task 12.4 – Prepare Conformed Documents**

Following completion of the bid phase, Consultant will prepare a conformed set of project plans and specifications (Project Manual). The conformed set of plans and specifications (Project Manual) will be issued to the Contractor for construction use.

### **Task 12: Deliverables**

- Written responses to Bidders' Questions presented in up to two Addenda.
- Conformed Documents (electronic pdf for Contractor, with additional AutoCAD files for District).

## **TASK 13 – ENGINEERING SERVICES DURING CONSTRUCTION (OPTIONAL)**

During construction, Consultant will assist the District by reviewing technical submittals for compliance with the design intent and the technical specifications; responding to Contractor's Requests for Information; clarifying design details; attendance at one weekly construction meeting per month; assistance with project setting-to-work and commissioning, and in preparing record drawings from the Contractor's redline marked-up drawings at the end of the project.

### **Task 13.1 - Project Administration During Construction.**

Consultant will manage and administer its construction phase activities under this sub task, including project progress and budget status review, and billing invoices.

### **Task 13.2 – Review of Technical Submittals**

Consultant will review up to a combined total of 30 technical submittals and re-submittals from the District to check for compliance with the design intent and technical requirements.

### **Task 13.3 – Respond to RFIs and Design Clarifications**

Consultant will respond to up to 15 Requests for Information and Design Clarifications from the Contractor during construction.

### **Task 13.4 – Prepare Change Orders**

Consultant will prepare up to 5 Change Orders during construction. Change Orders will be issued to the Contractor by the District.

### **Task 13.5 – Attendance at Construction Meetings and Site Observation**

Under this task, Consultant will attend one weekly construction meetings / calls per month, up to a total of 9 meetings as may be required by District. It is assumed that 4 of these meetings will be at the project site: the remainder will be Teams meetings. Consultant also perform observation of construction during the on-site meetings.

### **Task 13.6 – Project Start-up, Testing and Commissioning**

Consultant will assist the District with project commissioning after the project has achieved Substantial Completion. Activities will include development of punch-lists to achieve Final Completion. Work under this task is assumed for the purposes of this scope to be limited to a two - week duration, with an allowance of up to 40 labor hours.

### **Task 13.7 – Prepare Record Drawings**

Under this task, Consultant will prepare Record Drawings from redline marked-up construction drawings agreed between the District’s Construction Manager and the Contractor.

#### **Task 13: Deliverables:**

- Review of Technical Submittals and Resubmittals (up to 30)
- Responses to Requests for Information and Design Clarification (up to 15)
- Project commissioning documents
- Record Drawings (electronic copies in pdf and AutoCAD format, suitable for 11” x 17” and 22” x 34” reproduction)

#### **Tasks Not Included in this Scope of Services**

This Scope of Services is intended to outline the services offered to the District by Consultant. The list below is offered as a clarification of the services that are not included, not anticipated, or that will be completed by others.

1. Consultant’s CAD standards to be used. Plans will be prepared as a stand-alone document and not to be inserted into any other plan set.
2. The only coordination for approvals that will be made are with the District. No other agencies will be consulted, coordinated with, or sought out for approvals.
3. Neighborhood meetings and public relations activities are not included in the scope of services.
4. Transient hydraulics impacts are not anticipated, so a surge analysis is not included. It can be added as an additional task.
5. Calibration of hydraulic model including fire flow testing is not included but can be added as an additional task.
6. Traffic control planning preparation is not included but will be required to be provided by the Contractor.
7. The utility potholing contractor will contract directly with the District, so contractor costs are not included in the scope of services and the associated fee.
8. Landscape design around any of the facilities.
9. Topographical mapping and survey will not include boundary mapping nor preparation of a Record-of-Survey.
10. CEQA / NEPA document preparation will be limited to preparation of an Initial Study / Mitigated Negative Declaration (ISMND), assuming that this is required by the funding agency and that the project does not qualify for a categorical exemption. Per the District’s instruction, the scope and associated fee are based on an ISMND.

Any further environmental permitting will be performed by the District. Any further environmental applications, studies or reports required by the funding agency, e.g. USDA, are excluded but can be offered as an additional task.

11. SWPPP services exclude installation and implementation of water pollution control practices; provision of a Water Pollution Control Manager; conducting training, and monitoring, inspecting and correcting water pollution control practices. These are available as additional services upon request.
12. Obtaining any required construction permits other than identified previously in this scope.
13. Construction management / inspection (may be offered under a separate contract).
14. Legal review of documents.
15. Expert witness services.
16. Hazardous materials and contaminated soils investigations, permits, reports, design to remediate, or approvals, are not included.
17. Construction inspection services are not included but can be added as an additional task.

# APPENDIX B

## RESUMES





# Chad R. Coleman, P.E.

## Principal-in-Charge / Technical Review and QA/QC

### Education

M.S., Civil Engineering  
Brigham Young University

B.S., Civil Engineering  
Brigham Young University

### Registrations

Professional Engineer # 56490, CA

Professional Engineer # 8964, ID

Professional Engineer # 188915, UT

Professional Engineer # 16990, NV

Water Treatment Plant Operator, CA,  
Grade 3

### Professional Affiliations

American Public Works Association

American Water Works Association

Water Environment Federation

Sacramento Area Water  
Works Association

Mountain Counties Water  
Resources Association

California Water Environment  
Association

### Special Certifications

Completed Risk Assessment  
Methodology for Water Utilities (RAM-  
W™) Training Course sponsored by  
AWWA

Certified Grant Administrator, Idaho

Chad has over twenty-five years of experience planning, designing, and managing construction of water and wastewater infrastructure and facilities. He is experienced with the planning, design, and construction management of wastewater treatment plants, wastewater collection system rehabilitation and design, wastewater lift stations as well as municipal wells, water treatment plants, water storage tanks, transmission and distribution piping, and pumping stations,

### Relevant Selected Project Experience

Calaveras County Water District, Ebbetts Pass Water System / Big Trees Subdivision, Camp Connell, CA: Principal in Charge's responsibilities included the mapping and geotechnical investigation of the existing Techite water transmission line from the existing water tanks 4 and 5 to tank 8. A preliminary design report and draft plans and construction cost estimate were generated for the improvements.

Calaveras County Water District, Ebbett's Pass Techite Pipe Replacement: Principal in Charge of the preliminary design of approximately 8100-feet of 10-inch PVC pipeline. The purpose of the project was to replace Techite pipe that had reached the end of its useful life. Because the project site included many differing terrains and challenges, the design effort included evaluation and recommendation of numerous construction methods, including parallel open cut, remove and replace open cut, bore and jack, and sliplining the old pipe. The preliminary design effort was successful in helping the Water Agency to make budget decisions and to prepare for funding applications.

Sacramento Veterans Administration (VA) Medical Center, Correct Campus Water System Project, Mather, CA: Principal-in-Charge for a water facility upgrade and expansion project that required a tightly sequenced and phased installation of a new 8" water loop across the VA Medical Campus, together with a new 565,000 gallon potable water storage tank, a CMU booster pump station, an emergency generator, a 40,000-gallon, 220-foot tall elevated water tank, and a residual chlorine management system. The new water utilities supplement the existing 6" potable / fire water system serving the campus and require tie-ins to 34 buildings, with provisions for future connections.

Amador Water Agency CAWP Pioneer Water Rehabilitation Project, Phase 2, Pioneer / Buckhorn, CA: Principal-in-Charge.

COLEMAN ENGINEERING, INC.

1358 Blue Oaks Boulevard, Suite 200 | Roseville, CA 95678

T : 916-791-1188 | [www.coleman-eng.com](http://www.coleman-eng.com)



Treated water for Amador Water Agency's Central Amador Water Project (CAWP) is stored in two 500,000-gallon and 250,000-gallon capacity welded steel tanks at the head of the CAWP system off Buckhorn Ridge Road in Pioneer, CA. The smaller Tank B serves customers at the highest elevations of the CAWP system which the Tank A distribution system cannot pressurize by gravity. A dedicated booster pump station, on the same site as the tanks, pumps water from Tank B to these residents. The booster pump station is under-sized, and this restricts the ability to meet both normal daily demands (these have increased over time through population growth) and fire flow requirements. In addition, the facility is aging and reaching the end of its working life. Simon was the project manager for the design of a new booster pump station in a CMU building adjacent to the existing facility. Three in-line 150 gpm vertical turbine pumps with VFDs operating up to a TDH of 150 feet are to be provided. The new pump station and building includes a hydropneumatic tank, design for snow loading at the project site elevation of 3,560 feet, and re-purposing of the existing standby generator.

City of Fort Bragg Raw Water Line Replacement Project, Fort Bragg, CA: Principal-in-Charge for route alternatives analyses and selection, preliminary and final design and CEQA environmental document preparation for a four-phase replacement of approximately 11,000 LF of the City's raw water pipeline from Waterfall and Newman Gulches to the City's water treatment plant. The pipeline is nearing the end of its service life and crosses sections of steep, heavily wooded terrain and landslip-prone gorges. There is also sensitive riparian environment within the Coastal Zone to be crossed.

Well #5 and Consolidation Pipeline, Los Molinos Community Services District, Los Molinos, CA: Principal-in-Charge for design of a well, pipeline, treatment, storage, fire protection, and distribution facilities; structural design for control buildings, supports, and site improvements; preparation of funding application; project planning and management; resident inspection; construction management; and O&M training. The pipeline includes several jack-and bore crossings of Highway 99.

Intertie Project, Locke Water Works Company, Locke CA: Principal -in-Charge for design of a pipeline to the neighboring water system in Walnut Grove, CA. Coleman Engineering prepared 60% design plans for a 4,300 long, 4-inch dia. HDPE intertie pipeline with Sacramento County Water Agency and will complete the design once additional state funding is made available. The pipeline will cross the 180 feet-wide Delta Cross Channel. An existing, now-unused 10-inch dia. sewer force main currently attached to the side of a USBR bridge and flood control structure (that crosses the Channel) will be removed, and existing supports and ring hangers will be used to support a new 4-inch dia. DI pipe as part of the intertie.

Water System Consolidation, Castle City Mobile Home Park, Newcastle, CA: Principal in Charge for design of new potable water pipeline, fire-flow pipeline, and connection to existing Placer County Water Agency potable water main to service 212-unit residential mobile home park. Responsible for coordinating project funding from the Drinking Water State Revolving Loan Fund, design of over 2,800 feet of pipe alignment including existing utility conflicts, connections at existing pipelines, landscape removal and replacement costs, hydraulic calculations, project cost estimates, and plan drafting.

Water System Intertie Project, Sacramento Suburban Water District, Sacramento, CA: Principal in Charge for the coordination and design of upgrades to seven existing interties between SSWD and their neighboring water purveyors. The purpose of the upgrades was to add a SCADA monitoring of intertie flow, pressure and intrusion in an effort to enhance the security of the water system. Coleman Engineering developed construction plans and specifications.

Broadmoor Estates Water Main Replacements, Sacramento Suburban Water District, Sacramento, CA: Principal in Charge responsible for preparation of design, plans and specifications for replacement of 6,500 feet of new water distribution piping and 95 residential service connections.

South Stockton Water Transmission Mains, City of Stockton, CA: Principal in Charge responsible to create contract documents for design-build teams to use in bidding. The project included construction of 8,000-feet of 16-inch transmission pipe and 4,800-feet of 24-inch transmission pipe.

Broadway Water Line Relocation, Sacramento, CA: Principal in Charge responsible for design 2,000 feet of 8-inch water distribution main that was to be relocated as part of a larger reconstruction of Broadway Avenue.

Water Line Replacements, Arcade Water District, Sacramento, CA: Principal in Charge responsible for design management and construction support for 30,000 feet of 8-inch and 16-inch water line replacements for approximately 530 customer service connections.

Dumbarton Force Main Pipeline, City of Newark: Principal in Charge responsible for the planning, and pre-design of a twin 33-inch sewer force main pipeline facility. The pipeline was to be relocated to accommodate new development. The project required design of

approximately 10,000-foot pipeline across very poor soils with provisions for manned and unmanned access.

**Vineyards NPW Pipeline, City of Brentwood, CA:**

Principal in Charge leading conceptual level investigations of the conversion of a 24-inch steel PG&E gas pipeline for use as a non-potable water pipeline. The first phase of the project will connect the Roddy Ranch Pump Station site to the Vineyards development. The project has included modeling to size the required pipeline as well as the investigation of multiple construction methods for the most efficient utilization of the steel pipeline as well as other facilities already constructed and in place. This is a current conceptual investigation project that will develop into design of the new NPW pipeline as soon as pipeline ownership and right-of-way issues are resolved.



# Simon N Gray, P.E.

## Project Manager

### Education

BSc (Eng.) (Hons), Civil Engineering,  
Imperial College of Science and  
Technology, University of London,  
United Kingdom

Certificate in Business Administration,  
Hong Kong Management Association  
/ Wolsey Hall, Oxford, United  
Kingdom,

Leadership Course, Ashridge Business  
School, Ashridge, United Kingdom

### Registrations

Professional Engineer # 60311, CA

Professional Engineer # 51959, WA

Chartered Engineer # 45101217,  
United Kingdom

Fellow, Institution of Civil Engineers,  
United Kingdom

### Professional Affiliations

American Water Works Association

Water Environment Federation

American Public Works Association

Sacramento Area Water  
Works Association

Mountain Counties Water  
Resources Association

California Water Environment  
Association

Simon has 39 years of varied and broad-based technical and managerial experience covering all aspects of project implementation. His career is well balanced, and includes planning studies, condition assessment, design, contracting, project and construction management in the United States and abroad. This extensive experience also includes successful management of multi-discipline 'fast-track' design build projects with particular emphasis on constructability and design-construction coordination. Simon has also been responsible for successful public outreach on many potentially- contentious projects and has particular skills in communicating technical concepts to a lay audience, and in consensus-building.

Simon has worked on multi-million-dollar programs as well as on small-scale projects for municipalities and rural communities. He also has heavy civil engineering experience beyond water engineering that includes roads, bridges, power stations, buildings, and airports.

### Selected Project Experience

Calaveras County Water District, Ebbett's Pass Techite Pipe Replacement Project, CA: Project Manager. Simon was responsible for the completion of final design of approximately 8,100-foot of 10-inch dia. ductile iron water supply pipeline in a high elevation Sierra community. The project replaced an existing 14-inch dia. Techite pipe that had reached the end of its useful life. Due to the terrain and space constraints, the existing main had to be replaced along the same alignment. A detailed construction sequencing and bypassing plan was prepared for the project to facilitate construction while maintaining service to local residents.

Sacramento Veterans Administration (VA) Medical Center, Correct Campus Water System Project, Mather, CA: Design Project Manager for a water facility upgrade and expansion project that required a tightly sequenced and phased installation of a new 8" water loop across the VA Medical Campus, together with a new 565,000 gallon potable water storage tank, a CMU booster pump station, an emergency generator, a 40,000-gallon, 220-foot tall elevated water tank, and a residual chlorine management system. The new water utilities supplement the existing 6" potable / fire water system serving the

campus and require tie-ins to 34 buildings, with provisions for future connections.

Atherton Drive Water Storage Tank and Booster Pump Station, Manteca, CA: Design Project Manager. Simon was the design phase project manager for this fast-track \$5.3 million design build project comprising a 3.6-million-gallon capacity welded steel storage tank, a dedicated booster pump station with five 150-hp pumps, piping, and on-site standby power generation. Site improvements, along with water distribution improvements necessary to complete the tank and pump station, were included. The site layout is designed to facilitate future well and a wellhead treatment system.

Amador Water Agency CAWP Pioneer Water Rehabilitation Project, Phase 2, Pioneer / Buckhorn, CA: Project Manager. Treated water for Amador Water Agency's Central Amador Water Project (CAWP) is stored in two 500,000-gallon and 250,000-gallon capacity welded steel tanks at the head of the CAWP system off Buckhorn Ridge Road in Pioneer, CA. The smaller Tank B serves customers at the highest elevations of the CAWP system which the Tank A distribution system cannot pressurize by gravity. A dedicated booster pump station, on the same site as the tanks, pumps water from Tank B to these residents. The booster pump station is under-sized, and this restricts the ability to meet both normal daily demands (these have increased over time through population growth) and fire flow requirements. In addition, the facility is aging and reaching the end of its working life. Simon was the project manager for the design of a new booster pump station in a CMU building adjacent to the existing facility. Three in-line 150 gpm vertical turbine pumps with VFDs operating up to a TDH of 150 feet are to be provided. The new pump station and building includes a hydropneumatic tank, design for snow loading at the project site elevation of 3,560 feet, and re-purposing of the existing standby generator.

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Well #5 and Consolidation Pipeline, Los Molinos Community Services District, Los Molinos, CA: Project Manager for design of a well, pipeline, treatment, storage, fire protection, and distribution facilities; structural design for control buildings,

supports, and site improvements; preparation of funding application; project planning and management; resident inspection; construction management; and O&M training. The pipeline includes several jack-and-bore crossings of Highway 99.

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**Banner Cascade Pipeline Project, Nevada Irrigation District, Grass Valley, CA:** Project Manager. The \$26 million project involved the replacement of the Lower Cascade Canal with seven miles of 36, 48 and 54-inch diameter raw water transmission pipeline in rural Nevada County. The initial phase included the preparation of a full Environmental Impact Report in accordance with CEQA. Simon was responsible as project manager and for engineering components, technical review, sub-consultant management and cost estimating in this phase. During the public review period for the Draft EIR, he also participated in public forums and in detailed "question and answer sessions" with the public and the District Board. For subsequent design, Simon was the program manager and had overall responsibility for management of four teams covering pipeline and hydropower plant design; right-of-way acquisition, environmental permitting, topographical survey, public consultation; project controls; cost estimating, and the ISO 9000 quality assurance / technical review team.

**Upper Mountain View Pressure Zone Improvements Project, City of Shelton, WA:** Project Manager. Simon was the design and construction phase project manager for this fast-track project that includes construction of a 400,000-gallon elevated water storage tank, yard piping reconfigurations, well and well pump evaluations and upgrades, a 1-million-gallon welded steel ground level reservoir, a booster pump station, over 10,000 linear feet of 12-inch and 16-inch diameter transmission mains, and pressure reducing valve stations. The project included local agency permitting, environmental mitigation, constraints from FAA-controlled air space and compliance with funding agency procedures and requirements. Four jack and bore connections were also required for road and stream crossings.

Bellevue-Issaquah Pipeline (BIP) Master Metering and Flushing Plan Project, Cascade Water Alliance, Bellevue, WA: Project Manager. The BIP extends over 7 miles from the Eastside Reservoir in the City of Bellevue to a terminus in the City of Issaquah. This 24-inch diameter, Class 52 ductile iron water transmission pipeline delivers treated water to Issaquah and Sammamish Plateau Water & Sewer District at pressures reaching 200 psi. Currently there is only partial metering of water supply deliveries from the BIP. Simon managed a project that includes installation of additional flowmeters and associated valves, and structural rehabilitation. Key issues addressed included definition of an acceptable accuracy of measured flows for revenue calculation; equipment selection; installation of an automated remote meter reading system; and integration with existing telemetry networks and equipment. A pipeline flushing plan for routine and emergency shutdown scenarios was also developed.

Sacramento and Larkfield District Comprehensive Planning Studies, California American Water, Sacramento and Santa Rosa, CA: Project Engineer. As part of water master planning studies, Simon was responsible for investigation into, and preparation of reports for, existing and future sources of water supply for three Districts within Cal Am. Simon also prepared supporting documentation and capital improvement project cost estimates for use in testimony hearings at the California Public Utilities Commission.

City of Jackson Water Treatment Plant Appraisal and Alternatives Analysis, Jackson, CA: Project Engineer. Working for the City Engineer, Simon conducted an appraisal of the City of Jackson's water treatment plant following its annual inspection by the State of California. The existing plant comprised a raw water storage reservoir, direct filtration and chemical dosing facilities, and a treated water reservoir. He produced a report that evaluated the existing facilities, identified deficiencies, and developed improvement alternatives. He also developed cost estimates and a phased implementation strategy.

Lakeside Drive Water Main Replacement Project, Valley of the Moon Water District, Sonoma, CA: Project Manager. A small private residential development required an extension and upgrade of its existing water mains in order to comply with fire flow capacity regulations, and to remove inaccessible 'back lot' connections. Simon was the project manager for the investigation and detailed design phases of the project that included the preparation of bid plans and specifications.

City of Ukiah Recycled Water Project, Phases 1-3, Ukiah, CA: Project Manager. Responsible for fast-track final design of this \$22 million project comprising a 66-MG lined open storage reservoir,



3000-gpm vertical turbine pump station, over 30,000 feet of 16- and 12-inch diameter PVC pipelines, and jack-and-bore crossings of creeks, roads, and railroads. Also performed technical review and supervised geotechnical investigation, topographical mapping, permitting, and right-of-way acquisition activities. Assisted in completing State Revolving Fund funding and regulatory agency approvals. Responsible for an associated water balance/zero liquid discharge modeling study to confirm storage requirements and a nitrogen balance study. As an extension to the project, Simon was also responsible for preliminary and final design of replacement chlorine contact basins at the City's wastewater treatment plant.

Placer Nevada Wastewater Authority Regional Pipeline, Auburn / Lincoln, CA: Project Manager. Simon was responsible as the project manager for routing studies for 18 miles of 36-inch diameter trunk sewer. Seven existing wastewater treatment plants (WWTP) are to be closed to eliminate treated effluent discharges to local creeks. The new pipelines will connect these existing facilities and convey raw wastewater to the City of Lincoln's new WWTP for treatment. The project also includes wastewater pump stations and force mains, storage, and flow equalization facilities. Simon was also responsible for a routing study for a pipeline to connect the Applegate WWTP to the Regional Pipeline, and for technical input to environmental documents prepared in accordance with the California Environmental Quality Act (CEQA) and the Federal NEPA.

South Tahoe Public Utility District, California, "Big 5" Pump Stations Condition Assessment, South Lake Tahoe, CA: Technical Advisor and QA/ QC Reviewer. The study includes in-field condition assessments for five pump stations with capacities up to 5,200 gpm.

Reclaimed Water System Extension Project, City of Livermore, CA: Project Manager. This 4,000 linear feet, 24-inch diameter extension to the City of Livermore's recycled water system project included a 300 feet jack and bore tunnel under Interstate 580, as well as extensive coordination with Caltrans; the California Department of Fish and Game and other state departments; power, telephone, cable TV utility agencies; sub-division developers; the Federal Aviation Administration and other agencies. Simon was responsible for project management and technical review.





# Jonathan W. Kaminsky, P.E.

## Project Engineer

### Education

M.S., Civil and Environmental Engineering  
University of California, Davis CA

B.S., Civil Engineering  
University of California, Davis CA

### Registrations

Professional Engineer # 82004, CA  
Professional Engineer # 17460, ID  
Professional Engineer # 55136, WA

### Technical Expertise

Well design  
Water system master planning  
Pumping station design  
Aquifer pump testing  
Geophysical testing  
Water seepage investigations  
Distribution system hydraulic modeling, calibration, and field testing  
Groundwater level contouring  
Public water system permitting

Jon is experienced planning, designing, and managing construction of water and wastewater infrastructure and facilities. He is an expert in the planning, design, and construction management of wells of all types including drinking water and agricultural water. In addition, Jon is experienced providing engineering services for all other parts of water and wastewater utility systems.

### Selected Representative Project Experience

**Valenzuela Water System Consolidation, San Benito County, CA:** Project Manager. The Valenzuela Water System is a small, disadvantaged community with a single domestic well supplying the community's water system. In recent years, the well has shown MCL levels of nitrate in the State of CA. This project was state funded to help bring the VWS up to regulation. Coleman Engineering was contracted to help determine what possible options could be provided for the Valenzuela community, develop design criteria, and coordinate with the various project shareholders including the system owners, RCAC, the Division of Drinking Water, the City of Hollister, and the San Benito Water District.

**Light Tree Apartments Fire System, East Palo Alto, CA:** Project Manager. Engineering design for facilities to provide required fire flow to a redeveloped apartment complex. Components of the fire water supply system included a 2,500 gpm-packaged fire booster pump station, a 135,000-gallon bolted-steel drinking water storage tank, and approximately of 300 feet of 12-inch fire service pipeline. The pump station was sized to provide both building sprinkler system service and private fire hydrant service. The water storage tank was designed to drinking water standards to facilitate possible future transition for use on the City's drinking water system.

**Lower Elkhorn Corporation Yard Water and Wastewater Systems, Yolo County, CA:** Project Manager. Engineering design for a potable water supply well, onsite wastewater treatment system, and fire flow service system. The potable water well serves an office building, fire supply, and equipment wash station. The wastewater system consists of a septic tank, pump chamber and pump, and a mound leach field to accommodate clay soils and high groundwater levels. The fire system consists of a 1,000-gpm packaged

fire booster pump station, a 50,000-gallon storage tank, and 8-inch fire service pipe to a fire hydrant.

Homestead Well, Dixon, CA: Assistant Project Manager and Project Engineer. Engineering design and construction services for a municipal public water system drinking water well and associated appurtenances. Production well parameters are a targeted rate of 1,500 gpm, depth of 1,000 feet, 16-inch diameter casing. The well was designed to minimize exceedances of federal and state water quality standards while meeting production goals. Design and construction also included a vertical turbine, deep well pump with a design point of 750 gpm. Engineering services consisted of permitting the well for use by a public drinking water system.

Homestead Storm Drain Pump Station, Dixon, CA: Assistant Project Manager. Engineering design and construction services for a 15 cfs storm drain pump station. The pump station consists of a wet well that houses four submersible solids handling pumps. The pump station conveys water from a storm catch basin to a 30-inch pipeline that transitions from pressure to gravity-flow.

Winship School Drinking Water Well, Winship, CA: Project Engineer. Engineering construction services for a small public water system potable supply well and associated appurtenances for an elementary school. Construction of the well posed water quality issues, which was explored extensively during pump testing to minimize the occurrence of arsenic in the drinking water supply through well modifications and pumping procedures.

Water System Facility Plan and Projects, City of Lewiston, ID: Project Engineer. Responsible for completing a condition assessment of the City's groundwater supply, booster pumps, and distribution system. This project included the design of well pump for Well 3, water quality testing of Well 2, and analysis of water quality data for City's wells. Performed engineering design for storage tank and pump station.

Water System Improvement Project, Fernwood Water and Sewer District, ID: Project Manager. Completed a preliminary engineering report, well site evaluation, design plans and specifications for a booster station and new pipelines. Conducted and managed bidding, submittal review, construction inspections, and construction meetings. Managed project budget and coordinated with federal and state grant and loan agencies. Attended District Board meetings to discuss project scope, budget, and timeline ensuring project was delivered on time and on budget.

Water System Emergency Improvement, City of White Bird, ID: Project Manager. Conducted well performance testing, evaluated well yield and required recovery time, and assessed the

hydrogeological conditions of the City's wells during the water system emergency. Completed a Well Evaluation Report detailing findings of the field data. Completed design of new well pumps and chlorination facilities for the City's groundwater sources. Managed project budget and coordinated USDA-RD grant administrators.

Water System Upgrades, City of Deary, ID: Project Engineer. Directed and inspected replacement of well pump; conducted well capacity testing; evaluated test data to determine yield based on pumping test data.

Simco Road Wells 1 and 2, J&M Solid Rock (Management Group), LLC, Boise, ID: Project Engineer. Performed engineering design for two production wells intended to be used as municipal drinking water wells. Completed well site evaluations, preliminary engineering reports, and construction plans and specifications. Performed construction inspections and well yield testing. Composed well completion reports for regulatory approval of the wells for use as a public drinking water source.

Groundwater Source Exploration, Blue Lake Springs Mutual Water Company, CA: Project Engineer. Conducted groundwater level monitoring, water quality sampling and analysis, and well testing for hard rock wells; performed siting and managed exploratory drilling for new production wells; inspected and managed production well rehabilitation and deepening activities; mapped and modeled the distribution system for a pressure zone analysis and water master plan.

El Prado Well Rehabilitation, Sacramento Suburban Water District, CA: Project Engineer. Performed engineering construction services for a well rehabilitation and pump station construction. Conducted submittal review, coordinated responses to RFPs and filed change orders. Conducted site inspections including rebar placement, asphalt paving, well casing extension, well chlorination and rehabilitation, and submersible pump installation. Conducted construction meetings between the client and contractor. Conducted start up testing on the well and closeout punch-list inspections.

Public Water System Permitting, Crew Wine Company, Zamora, CA: Project Engineer. Completed a TMF (technical, managerial, and financial) evaluation and documentation for permitting as a non-transient, non-community public water system. Performed and inspection and evaluation of the production well, storage tank, distribution lines, and backflow devices. Completed a demand analysis to determine adequacy of the well source capacity and available storage to meet the system's maximum day demand per State regulations. Prepared recommendations regarding water quality sampling plans and location changes to meet County requirements. Conducted a walkthrough of the

system with the County Environmental Health Department for final approval of the permit.

Well Field Investigation and Analysis, City of Cloverdale, CA: Staff Engineer. Created a MODFLOW model of the City's drinking water production well field to analyze groundwater and surface water influence. Conducted production well testing to optimize pumping operations.



# Cody Tom, P.E.

## Cost Estimation

### Education

M.S., Civil and Environmental Engineering, University of California, Berkeley

B.S., Civil and Environmental Engineering, Brigham Young University

### Registrations

EIT Certification #164683, CA

Cody has four years' experience with cost estimating, water modeling, treatment systems, field sampling, system design and calculations, inspection, construction services, and maintaining and designing water supply systems. Cody has the ability to make educated decisions and solve difficult problems and is a valuable member of the Coleman Engineering team.

### Selected Relevant Project Experience

**Caste City Mobile Home Park Water System Consolidation, Newcastle, CA:** Staff Engineer for the engineering services during construction contract as well as providing full time inspection for the project. The project consists of the installation of 3,000 LF of potable water pipe connecting to the PCWA water system to consolidate the mobile home park's water system including fire suppression for the entire park. Funding for the project came from the State of California's Division of Drinking Water (DDW) Drinking Water State Revolving Fund (DWSRF). Responsibilities included: Client and Agency (PCWA & DDW) relations. Applying for Construction Funding and Budget justification with the Agencies per State requirements and forms. Bidding Assistance, Bid Tabulation and choosing a Contractor based on bids. Creating Conformed Plans and Specifications per amended contract and addenda. Issuing Notice of Award and Notice to Proceed per State requirements and forms. Reviewing Submittals and responding to RFI's from the Contractor. Full time inspection providing quick advice, clarification, and decisions on-site. Writing daily inspection reports. Conducting weekly meetings with the Contractor, Client, and Agency. Challenges included: 90-day time constraint for project construction. 2-day turn-around for Submittals and RFIs due to time constraint. No As-builts or record drawings for existing utilities in the mobile home park. Field changes and decisions to be quickly made on-site due to changing conditions and utility discovery. Quick turn-around for revised drawings. Navigating both PCWA and State requirements.

**Feather River Pipeline, Linda County, CA:** Staff Engineer for the design of a 2,700 LF potable water pipeline project for Linda County Water District (LCWD) on Feather River Blvd in Linda, CA. The purpose of the pipeline is to loop LCWD's system more redundantly, providing isolation valves, and providing fire protection. Responsibilities included: preparing a plan set for 50%, 90% and final design review including plan and profile of the entire pipeline. Writing specifications for the project at

90% and final design review. Preparation of an opinion of probable construction cost document at 50%, 90% and final design. Addressing comments from LCWD. Coordination with several utility owners using the "A, B, C" utility letter system. Challenges included: not a good defined set of LCWD requirements and specifications.

Lower Elkhorn Corporation Yard Water and Wastewater Systems, Yolo County, CA: Staff Engineer involved with the design and planning for a potable water supply well, onsite wastewater treatment system, and fire flow service system. The potable water well serves an office building, fire supply, and equipment wash station. The wastewater system consists of a septic tank, pump chamber and pump, and a mound leach field. The fire system consists of a 1,000-gpm packaged fire booster pump station, a 50,000-gallon storage tank, and 8-inch fire service pipe to a fire hydrant. Responsibilities included: Creating a Plot Map in CAD per the requirements of Yolo County for acceptance of the septic system detailing items such as setbacks, vicinity features and layout. Writing Technical Specifications per the project components and work.

Los Molinos Community Service District Arsenic Compliance and Consolidation Project, Los Molinos, CA: Staff Engineer for design of a well, pipeline, treatment, storage, fire protection, and distribution facilities. Structural design for pipe bridge crossing of Los Molinos Creek, supports, and site improvements. Provided post-design services through the engineering services during construction contract. Responsibilities included: Well design including filter pack and screen slot sizing calculations. Plan and profile design of potable water pipeline. Pipe bridge design crossing Los Molinos Creek. Reviewing Submittals and responding to RFI's from the Contractor. Inspection services during the construction of the well. Challenges included: inconsistent lithology during well drilling causing some delays. Inability to HDD underneath Los Molinos Creek triggering alternative design possibilities to eventually design a pipe bridge. Outcome: A well that produces more than sufficient volume, does not produce sand and keeps arsenic levels low after blending flow from new well with flow from old well.

Arsenic Treatment, Funding, Planning and Design, Winship-Robbins Elementary School District: Staff Engineer for the design of a new 120 gpm water supply well to mitigate arsenic levels in an existing well. The well was designed to meet all state and local standards and features State Revolving Fund Contract Documents. A pilot well was drilled and zone-tested to verify the water quality prior to design. The well is designed to draw water only from select aquifers that meet drinking water standards. The final design includes controls, 500-gallon hydropneumatic tank, and provisions to treat water as needed in the future. The site was designed for simplified

maintenance and fully automatic functionality to accommodate the District. Responsibilities included: Consultation for filter pack, well screen and casing design, plan sheet drafting, specification writing, and equipment selection. Challenges included sizing a filter pack with unclear soil gradation layers.

Potrero Power Plant Redevelopment, CBG, San Francisco, CA: Staff Engineer. Water modeling and writing report for a large redevelopment of the Potrero Power Plant. Responsibilities included coordinating with client, the City, and others to produce an accurate water model. Challenges included adjusting the model based on updates from the client and receipt of new information. Responsibilities included wet well sizing calculations and review of technical memo writing. Challenges included assisting a young staff engineer with design implications and technical writing.

Warm Springs Irrigation Well, Lennar Homes, Fremont, CA: Staff Engineer for design of a new irrigation well to supply irrigation water to a park site and school site. Responsible for design of 100 gpm irrigation well including hydraulic calculations, associated piping and valves, pump sizing, equipment selection, and plan drafting. Construction is scheduled for 2018. Responsibilities included: submersible well pump sizing and setting depth design with supporting calculations, automatic self-cleaning filter and sand separator design and equipment selection, delta revision plan drafting, submittal reviews, and responses to RFIs. Challenges included coordinating project schedule, critical lead times and priorities with contractors, engineers, and clients in order to insure a sound sand-free well design.

Phelan Gateway Project, Siegfried Engineering, Lathrop, CA: Staff Engineer for the construction of a wastewater lift station and force main pipeline system to convey wastewater to the City of Lathrop's Consolidated Treatment Facility (CTF). The lift station will be designed to serve Phases 1-3 wastewater flows in the short term as well as total project flows in the Buildout Condition. Coleman Engineering are providing preliminary engineering required to advance the design concepts of these facilities and to obtain concurrence from the City on proposed design concepts and criteria. Services will also include detailed civil, mechanical, structural, electrical, and instrumentation design necessary to develop constructible plans and specifications for the sewer lift station. Responsibilities included sizing a sewer lift station wet well and force main tie-in with an existing sewer lift station force main. Challenges included assisting a young staff engineer with design implications and sewer lift station sizing calculations.

Replacement Water Treatment System, California Department of Parks and Recreation, MacKerricher State Park, CA: Staff Engineer. Coleman Engineering will provide



professional engineering services to the California Department of Parks and Recreation (DPR) in support of upgrades to the drinking water system for MacKerricher State Park. Previous engineering studies have been completed for the project that have resulted in preliminary plans. However, Parks staff is not comfortable with the viability of the proposed design. Responsibilities included: Lake Cleone intake and pump rehabilitation for conveyance raw water to a new proposed WTP design, Catwalk design for access to the intake structure, process valve design, concrete pad design, raw water line design, plan sheet drafting and site layout, Mill Creek intake and pump design for conveyance raw water to the new proposed WTP, traffic rated culvert design and CMP wet well rehabilitation. Challenges included: placement of catwalk high enough above the high-water mark of Lake Cleone but secluded where park attendees will not see, watershed flow calculations for culvert capacity design, and the retrieval of good water samples in an existing tattered CMP wet well.

Tracy Hills At-Grade Tank and Pump Station, Ruggeri-Jensen-Azar Tracy, CA: Staff Engineer working on the project to provide onsite storage that includes operational and fire water storage as well as boosted water pressure to the drinking water distribution system. Responsibilities included: submittal reviews, responses to RFIs, technical memo writing, project coordination, Monochlor system design, and management with contractors and city agencies, and booster pump station sizing, calculations and design. Challenges included getting familiar with a plan set that was not designed in-house for engineering services during construction.

Well Source Capacity Compliance, Shaffer School, Litchfield, California: Staff Engineer. Coleman Engineering is responsible for existing well testing and well zone testing and site investigation to bring the Shaffer School drinking water system into compliance with drinking water standards. Project was Prop 1 funded and involved investigation of an existing on site well for possible development and a new well to determine water quality and total yield to meet peak hour and maximum day demands. Responsible for field oversight, hydraulic calculations, and groundwater data analysis. Responsibilities included: plan sheet drafting, equipment selection, sewer lift station design, force main design, potable water pipe design, gravity sewer pipe design, cross connection control, potable water well design, fitting and joint connection design, process valve design, and construction application completion and submittal. Challenges included completed design without the use of a sound survey. Outcome: 100% design plans that acquired funding in August 2019.





# Jessica Bonham, E.I.T.

## Staff Engineer

### Education

M.S., Environmental Engineering,  
California State University,  
Sacramento

B.S., Civil Engineering, California State  
University, Sacramento

### Registrations

EIT Certification #163909, CA

Jessica has four years of experience in water and wastewater civil engineering. She recently gained her Masters in Environmental Engineering from California State University, Sacramento. Jessica is a thorough engineer who pays great attention to detail and her proactive attitude ensures that each project she works on is always moving forwards to a satisfactory conclusion for all involved.

### Project Experience

Big Basin State Park Water Treatment Plant, Santa Cruz, CA: Staff Engineer. Coleman Engineering has been retained to provide professional engineering services to the California Department of Parks and Recreation (DPR) in support of upgrades to the drinking water system for Big Basin Redwoods State Park. This includes preliminary engineering to perform bench scale laboratory studies in support of recommendations for source water and water treatment plant improvements; development of Pilot Study testing protocol; development of contract documents (plans and specifications) for construction of plant improvements.

Raw Water Pipeline Replacement Design, Fort Bragg, CA: Staff Engineer for route alternatives analyses and selection, preliminary and final design and CEQA environmental document preparation for a four-phase replacement of approximately 11,000 LF of the City's raw water pipeline from Waterfall and Newman Gulches to the City's water treatment plant. The pipeline is nearing the end of its service life and crosses sections of steep, heavily wooded terrain and landslip-prone gorges. There is also sensitive riparian environment within the Coastal Zone to be crossed.

Sacramento Veterans Administration (VA) Medical Center, Correct Campus Water System Project, Mather, CA: Staff Engineer for a water facility upgrade and expansion project that required a tightly sequenced and phased installation of a new 8" water loop across the VA Medical Campus, together with a new 565,000 gallon potable water storage tank, a CMU booster pump station, an emergency generator, a 40,000-gallon, 220-foot tall elevated water tank, and a residual chlorine management system. The new water utilities supplement the existing 6" potable / fire water system serving the campus and require tie-ins to 34 buildings, with provisions for future connections.

Sierra Vista II Sewer Lift Station, Roseville, CA: Staff Engineer for the design and construction of a wastewater lift station and force main pipeline to convey wastewater from a new housing development to the City's wastewater treatment plant. The lift station will be designed to serve Phases 1-3 wastewater flows in the short term as well as total project flows in the Buildout Condition. Coleman Engineering provided preliminary engineering required to advance the design concepts of these facilities and to obtain concurrence from the City on proposed design concepts and criteria. Services also included detailed civil, mechanical, structural, electrical, and instrumentation design necessary to develop constructible plans and specifications for the sewer lift station.

Phelan Gateway Wastewater Lift Station Project, Lathrop, CA: Staff Engineer for the construction of a wastewater lift station and force main pipeline system to convey wastewater to the City of Lathrop's Consolidated Treatment Facility (CTF). The lift station will be designed to serve Phases 1-3 wastewater flows in the short term as well as total project flows in the Buildout Condition. Coleman Engineering provided preliminary engineering required to advance the design concepts of these facilities and to obtain concurrence from the City on proposed design concepts and criteria. Services also included detailed civil, mechanical, structural, electrical, and instrumentation design necessary to develop constructible plans and specifications for the sewer lift station.

Sump 53 (Delta Shores East) Sewer Lift Station, Sacramento, CA: Staff Engineer for the development of preliminary design concepts for an approach to the Sump 53 Sewer Lift Station (SLS) that will be acceptable to the City of Sacramento (City). Coleman Engineering will coordinate with the City to obtain historical flow information from existing Lift Stations which will be analyzed to calculate a flow factor that will be used to scale the design flow for the future Sump 53 SLS. Coleman Engineering will also coordinate with the City to obtain As-Built drawings from existing Lift Stations to explore alternatives for providing interim sewer service to the Delta Shores development. Lastly, Coleman Engineering will provide preliminary engineering required to advance the design concepts of the Sump 53 facilities and to obtain concurrence from the City on proposed design concepts and criteria.

Valpico Glenbriar Apartments Water and Fire Modeling, Tracy, CA: Staff Engineer. Coleman Engineering was retained by Katerra to prepare water models of potable and fire suppression water systems for a new apartment complex in Tracy, CA. After the completion of the models, Coleman Engineering prepared a Technical Memorandum that summarized the results. The Memo listed modeling criteria and assumptions and included modeling results tables

showing recommended pipe sizes that demonstrate compliance with City Standards.

Homestead Well, Dixon, CA: Staff Engineer. Provided engineering design and engineering services during construction of a municipal drinking water well and associated appurtenances for a residential development in Dixon, CA. Production well parameters consisted of a targeted rate of 1,500 gpm, a depth of 1,000 feet, and 16-inch diameter casing. The well was designed to minimize exceedances of federal and state water quality standards while meeting production goals. Additional engineering services consisted of permitting the well for use by a public drinking water system.

Homestead Storm Drain Pump Station, Dixon, CA: Staff Engineer. Provided engineering design and engineering services during construction for a 15 cfs storm drain pump station and force main pipeline for a residential development in Dixon, CA. The design consisted of a wet well housing four submersible, solids handling pumps and conveying water from a storm catch basin to a 30-inch diameter, 4,500-foot storm drain force main.

Amador Water Agency CAWP Pioneer Water Rehabilitation Project, Phase 2, Pioneer / Buckhorn, CA: Staff Engineer. Treated water for Amador Water Agency's Central Amador Water Project (CAWP) is stored in two 500,000-gallon and 250,000-gallon capacity welded steel tanks at the head of the CAWP system off Buckhorn Ridge Road in Pioneer, CA. The smaller Tank B serves customers at the highest elevations of the CAWP system which the Tank A distribution system cannot pressurize by gravity. A dedicated booster pump station, on the same site as the tanks, pumps water from Tank B to these residents. The booster pump station is under-sized, and this restricts the ability to meet both normal daily demands (these have increased over time through population growth) and fire flow requirements. In addition, the facility is aging and reaching the end of its working life. Simon was the project manager for the design of a new booster pump station in a CMU building adjacent to the existing facility. Three in-line 150 gpm vertical turbine pumps with VFDs operating up to a TDH of 150 feet are to be provided. The new pump station and building includes a hydropneumatic tank, design for snow loading at the project site elevation of 3,560 feet, and re-purposing of the existing standby generator.

Light Tree Apartments Fire System, East Palo Alto, CA: Staff Engineer. Eden Housing Inc. has requested Coleman Engineering to provide engineering design services of its fire pumping system for the Light Tree Apartments in East Palo Alto, CA. The design and setup of the fire suppression system will consist of a 136,000-gallon aboveground bolted steel tank, fire pump station, private underground service mainline, fire alarm system, and three hydrants. Services also included

detailed civil, electrical, and instrumentation design necessary to develop constructible plans and specifications for the fire system.

Markley Cove Resort, Water Treatment Plant Rehabilitation, Napa County, CA: Staff Engineer. Coleman Engineering will provide professional engineering services to the Markley Cove Resort to design a replacement water treatment plant at Lake Berryessa, CA. The original water treatment plant was destroyed by fire in the summer of 2020. The concrete tank/foundation/slab structure remains and will be used in the replacement design in the same capacity it served in the original WTP. Coleman Engineering will provide detailed civil, mechanical, electrical, and instrumentation design necessary to develop a constructible design for the WTP process elements.



**Years with Firm**  
**13 years**

**Key Qualifications:**

- ✓ Extensive Civil Engineering Experience
- ✓ Performed design evaluations that have resulted in significant savings in construction costs
- ✓ Experience with State and Federally funded projects

**Professional Registration**

Civil Engineer, CA #76594  
QSD/QSP

**Education**

B.S. Civil Engineering,  
California Polytechnic State  
University, San Luis Obispo

## **Matt Ospital, PE** **Principal**

**SPECIAL QUALIFICATIONS**

Mr. Ospital is a California Registered Civil Engineer (C 76594) with 15 years of design experience in grading and drainage design, water and sewer utility design, roadway design, hydraulic modeling, and construction management of water, sewer, drainage, grading and roadway improvements for numerous public and private projects. He has also been involved with project management for various infrastructure and transportation projects. The majority of the projects he has worked on during his time at WGA involved taking a project from funding acquisition to completion acting as the design engineer and project manager.

**EXPERIENCE**

Matt's experience includes serving as the design engineer and project manager for numerous water, wastewater, and transportation projects for both the public and private sectors. Since February 2018, Matt has served as City Engineer for the City of Jackson, City of Sutter Creek, City of Plymouth, and City of Amador City. As well as District Engineer for Calaveras Public Utility District, Union Public Utility District, Valley Springs Public Utility District, Linden County Water District, Bear Valley Water District.



**Years with Firm**  
**1 year**

**Key Qualifications:**

- ✓ Extensive Civil Engineering Experience
- ✓ Performed design evaluations that have resulted in significant savings in construction costs
- ✓ Experience with State and Federally funded projects

**Professional Registration**

Civil Engineer, CA #69221

**Education**

B.S. Civil Engineering,  
California Polytechnic State  
University, San Luis Obispo

## Bill Ostroff, PE Senior Engineer

### SPECIAL QUALIFICATIONS

Bill has over 19 years of experience in a wide variety of civil engineering projects including drainage studies (design of detention basins, culverts, and storm drain systems including BMPs for water quality; preparation of calculations for “No Rise Certifications”; preparation of calculations in Rational method and SCS method), pump station and valve station design (preparation of plans for water treatment plants, booster pump stations, treated effluent disposal, and control valve stations), improvement plans (preparation of plans including design of roads, grading, water, sewer, and drainage for public and private developments and commercial sites; bridge and approach roadway plans; creek restoration plans; Safe Routes to School plans; traffic calming (including roundabouts) plans; bike path plans; traffic control plans.), pipeline design (design and preparation of plans for raw water, treated water, sewer gravity and force mains), water system studies (preparation of system maps; creation of system hydraulic models, calibration of models, recommendations to systems based on models, preparation of reports of findings, and preparation of plans based on those recommendations), surveying projects (construction staking; preparation of final maps and easement exhibits; preparation of R/W mapping for improvement plans).

### EXPERIENCE

- Domestic Water Studies: City of Plymouth, Linden CWD, City of Fort Bragg, Union PUD, Orange Valve Water Company, River Pines PUD.
- Residential Subdivisions: Wheeler Ranch, Yuba County, CA; Wildflower, Lone, CA; Hickam AFB; Lemoore NAS
- Tank and Booster Pump Projects: Calaveras PUD Clearwell, Linden CWD Well 5 Storage Tank, AWA Wildflower Tank
- Pipeline Projects: CCWD Ebbetts Pass Reach 1 Pipeline, Sutter Creek to Plymouth Pipeline, McCarthy Ranch Pipeline
- Traffic Calming, Road Widening, and Safe Routes to School Projects: City of Citrus Heights, City of Rancho Cordova, City of Fort Bragg, CA
- Hydrology and Hydraulic Drainage Studies: Caselman Regional Detention Basin and Union House Creek, Sacramento; Cripple Creek Bridge Crossing, Sacramento; Chicken Ranch Slough, Sacramento





**Benjamin D. Crawford, PE, GE**  
Principal Geotechnical Engineer



<p><b>Biography</b></p> <p>Ben Crawford is the Founder and President of Crawford &amp; Associates, Inc. He is a graduate of California Polytechnic State University, San Luis Obispo, with a concentration both in Geotechnical Engineering and Hydrology. He has managed complex projects throughout Northern California, including tanks, pump stations, pipelines, and Water/Wastewater treatment facilities.. Ben has over 15 years of experience providing geotechnical recommendations for water and wastewater, schools, residential and commercial structures, water and communication towers, retaining walls, pipelines, and airports.</p>	<p><b>Education</b></p> <p>California Polytechnic State University, San Luis Obispo, B.S. Civil Engineering, 2002</p> <p><b>Registrations</b></p> <p>Civil Engineer, CA #68457, Exp. 9/30/19 Geotechnical Engineer, CA #2861, Exp. 9/30/19</p> <p><b>Affiliations</b></p> <p>GBA – Geoprofessional Business Association APWA – American Public Works Association Modesto Engineers Club ACEC – American Council of Engineering Companies CEAC – County Engineers Association of California</p>
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**Related Experience**

**2015 Pump Station Condition and Performance Assessment Project, Rosemont Pump Station – Sacramento, CA**

As Principal, Ben oversaw the preparation of a Geotechnical/Geologic Memorandum, which includes the construction of a new wet well structure supported on a below ground mat foundation; a new valve vault structure supported on a mat foundation; instrumentation installation inside the wet well portion of the pump station; and an 180 sq. ft. canopy-covered mat foundation for the electrical equipment. To prepare the report, CAInc drilled, sampled, and logged exploratory borings and completed laboratory testing; reviewed geologic settings, soil conditions, and groundwater conditions; and reviewed site seismicity. Provided recommendations for excavation and compaction of areas to support the mat foundations.

**Arden Pump Station Wet Well Assessment and Remediation – Sacramento, CA**

As Principal, Ben oversaw the preparation of a Draft Geotechnical Report for a temporary bypass pump that will be installed adjacent to an existing pump station at the Sacramento Regional County Sanitation District’s (Regional San) Arden location. To prepare the report, CAInc drilled, sampled, and logged exploratory borings and completed laboratory testing; reviewed geologic settings, soil conditions, and groundwater conditions; and reviewed site seismicity. Key Geotechnical considerations for the project include the presence of historical fill of varying quality and existing underground utilities. Provided excavation and fill recommendations for the bypass pump slab and minimum footing dimensions for the retaining wall.

**Well 17 Project for Linda County Water District – Marysville, CA**

CAInc provided foundation recommendations for structures at two sites. The Well 17 site includes a below ground sump station, mist eliminator structure, and chemical & electrical control facility supported on concrete mat foundations; 25-foot diameter steel backwash tank on a shallow perimeter ring foundation; and ancillary structures/tanks including brine and fuel tanks, generator, pressurized filters, and transformer supported on shallow spread footings/concrete mat foundations. The Storage Tank Site includes an approx. 1-million-gallon, 100-foot diameter steel storage tank on perimeter ring foundations, interior column spread footings, a booster pump station supported on a concrete basin/vault, and booster pump ancillary piping and equipment. The project will also include approximate 1,000 linear feet of open cut water pipeline connecting the Well 17 and Storage Tank Site. CAInc used SETTLE 3D Version 3.0 software to evaluate immediate and consolidation settlement for both the storage basin tank and pump station. Grading, pavement, and utility trench recommendations were also provided.

**Hexavalent Chromium (Cr6) Compliance Design Project – Newman, Stanislaus County, CA**

CAInc prepared a Draft Geotechnical Memorandum for the proposed water tank facility. The facility will include a one-million-gallon 80 ft diameter potable steel water storage tank on a shallow perimeter ring foundation with a center column supported roof; electrical building, booster pump station pad and a generator/fuel pad; drainage basin; one mile of water transmission pipe. To prepare the memo, CAInc drilled and sampled six test borings and logged the borings consistent with the Unified Soil Classification System (USCS) and the Caltrans Logging Manual. Recommendations were provided for foundations, pavement, grading, and utility trenches.

**Zone 7 Water Agency Busch Valley Well No. 1 – Pleasanton, Alameda County, CA**

Proposed improvements consist of the single story, CMU block, water treatment building supported on shallow spread footings or mat foundation; underground water and waste pipelines; spill containment system with below ground tank; basin; asphalt parking and drive areas; and flatwork. As Principal, Ben oversaw a Geotechnical Report which included recommendations for grading, foundations including spread foundations and mat foundations, exterior flatwork, utility trenches and subsurface structures, and structural pavement sections.

### **North Valley Regional Recycled Water Program (Turlock Component) – Turlock, Stanislaus County, CA**

As Principal-In-Charge, Ben oversaw the preparation of a Geotechnical Report for the recycled wastewater project which includes over 35,000 lineal feet of open-cut trenches, three trenchless crossings, flow control vault, metering vault, and various ancillary structures. Forty exploratory borings were drilled, logged, and analyzed to develop recommendations for foundations. Key geotechnical considerations associated with design and construction of this project included shallow groundwater levels, presence of soft clays and very loose sands, and the potential for liquefaction.

### **City of Oakdale Sewer Line Replacement Project – Oakdale, Stanislaus County, CA**

As Principal-In-Charge, Ben oversaw the preparation of a Draft Geotechnical Design Report for the City of Oakdale. The City plans to replace an existing sewer main from their wastewater treatment plant to the intersection of North Oak Avenue and Kimball Street. The overall plan alignment measures about 2,300 feet. The new pipeline will be constructed using horizontal directional drilling (HDD) beneath the Stanislaus River. The HDD alignment will be about 50 ft below ground surface (bgs) at its deepest point. Recommendations were provided for HDD and Open-Cut Pipeline sections.

### **City of Tracy Recycled Water Project – Tracy, San Joaquin County, CA**

The City of Tracy is constructing a recycled water pipeline from the WWTP to a pump station. The combined recycled water will be conveyed to the Delta Mendota Canal. Key project components include about 50,000 total lineal feet of open-cut trenches, six trenchless crossings, pump station at the WWTP, new pump station, and ancillary structures including manholes, blowoff assemblies, air valve assemblies, isolation valves. Ben oversaw the preparation of a Geotechnical report. Key geotechnical considerations associated with design and construction include the presence of soft clays and shallow groundwater levels. CAInc provided calculations and recommendations for soil loads on rigid buried pipes, flexible buried pipes, thrust restraint, composite modulus of soil reaction for open cut construction, and trenchless pipeline recommendations.

### **Southwest Berm Slope Stability, Vernalis Plant- French Camp Project – Tracy, San Joaquin County, CA**

Proposed project to excavate Proposed Pit A and convert the Existing Pit into a new settling pond. The Existing Pit is about 115 feet deep, and Proposed Pit A is planned to be excavated to an approximate depth of 150 feet. During this process, a berm (southwest berm) will eventually be created between the two pits. Prepared a Geotechnical Report to provide analysis, conclusions, and recommendations for the project. Drilled, logged, and sampled 1 exploratory boring on the proposed southwest berm. Provided Seepage and Slope Stability Analysis and recommendations for the Proposed Pit A southwest berm configuration and planning purposes.

### **Bass Lake Wastewater Treatment Plant Equipment Pad Improvements – Madera County, CA**

Prepared a preliminary Geotechnical Memorandum for the Bass Lake Wastewater Treatment Plant (WWTP) Equipment Pads. To prepare the memo, the CAInc team reviewed existing geotechnical and groundwater data, excavated three test pits, and performed geotechnical engineering analysis. Provided recommendations for the EQ tank installation depth and mat foundation; RAS/WAS pump station, blower, and screw press shallow foundations; engineered fill requirements; and construction considerations.

### **Atherton Tank and Pump Station – Manteca, San Joaquin County, CA**

Ben Crawford and the CAInc team prepared geotechnical recommendations for the Atherton Tank and Pump Station (formerly Manteca Well 26 and Booster Pump Station). The project consisted of three new booster pumps and a 90-foot diameter steel water storage tank. Performed detailed settlement calculations and determined that an over excavation and recompaction of the near surface loose sands would be required. Provided foundation recommendations for a reinforced concrete mat foundation and perimeter ring foundation. In 2013, the City of Manteca upgraded the project to include a 150 ft. diameter, 33 ft. tall, 3.6-million-gallon steel water tank founded on a perimeter ring foundation; a dedicated booster pump station, piping and standby on-site electrical generation. The project has been completed utilizing **design/build** delivery. CAInc completed the design/build process and worked with the City, Design Team and Contractor to update our recommendations during construction.

### **Brentwood Non-Potable Water Storage Tank and Pump Station – Brentwood, Contra Costa County, CA**

The City of Brentwood plans to construct a 3 million gallon prestressed concrete storage tank at its wastewater treatment facility. The tank will be about 25 feet in height and 170 feet in diameter. The tank will be used to store non-potable water (NPW) for the NPW distribution system. Proposed improvements also include a new pump station, ancillary piping, and a small service structure to house and service equipment. CAInc prepared a Geotechnical Report, which included a review of available geologic and seismic maps; drilling, logging, and sampling; laboratory testing; and geotechnical engineering calculations and analysis to develop recommendations. Recommendations were provided for dewatering, grading, foundation design parameters, utility trenches, and pavement recommendations.

### **Tobin Water Tank and Pipeline – Tobin, Plumas County, CA**

Prepared a Geotechnical Report for the project to will provide raw water storage for fire protection for the community of Tobin. The new 60,000-gallon water tank will be constructed of welded steel and will be connected to approximately 4,500 lf of new pipeline. To prepare the report, CAInc reviewed drilled, logged, and performed laboratory tests on soil samples; and performed geotechnical engineering calculations and analysis to develop recommendations. Recommendations were provided for site grading, tank foundations, and pipeline trenching.



# RESUME

## LEE M. NORDAHL

C.E.O., Nordahl Land Surveying, Inc.

### PROFESSIONAL REGISTRATION:

Professional Licensed Land Surveyor in California since 1975, P.L.S. 4233.  
Member of the California Land Surveyors Association since 1977.

### EDUCATION:

Chabot College – Civil Engineering  
Army Technical Schools – Geodetic Surveying  
University of California Extension – Land Surveying  
Sacramento City College – Land Surveying

### EXPERIENCE:

Mr. Nordahl has over 50 years of diversified experience in surveying; specializing in land surveying, cadastral surveys, control surveys, right-of-way surveys, photogrammetric control surveys, subdivision/land development surveys, and construction surveys with experience in both office and field. Mr. Nordahl was director of land surveying and field operations for PRC Toups Corporation in Dublin, Tetrad Engineering in Martinez and Sierra Engineering in San Andreas. He is presently the C.E.O. of Nordahl Land Surveying in Valley Springs since 1990. Mr. Nordahl has been an owner/principal of firms in private practice since 1975. Prior to this, Mr. Nordahl worked at a Land Surveyor level for CALTRANS in the District 4 Office of Surveys and Right-of-Way Engineering Departments in San Francisco. While in the U.S. Army, he was in charge of 3 - 10 man survey parties establishing geodetic control networks throughout Germany. Mr. Nordahl also has extensive experience as the Land Surveyor on many Federal Highway projects and U.S. Army Corps of Engineers Levee Reconstruction Projects. Mr. Nordahl has lived in and conducted Land Surveying work in the Mother Lode Area, Bay Area and Central Valley since 1968.

# ROBIN TULLY, PE | Qualified SWPPP Developer /Practitioner and Civil Engineer

## Education

- BS, Environmental Resources Engineering

## Registrations / Certifications

- CA, Civil Engineer No. C64354
- Caltrans 24-Hour Storm Water Pollution Prevention Training
- QSD / QSP Certification #503
- Title 22 Hazardous Materials Training
- CASQA Trainer of Record

## Areas of Expertise

- SWPPP Development
- QSD/QSP Inspection
- Erosion Control Design experience
- Hydrology/water quality monitoring experience
- Experience with Risk Level 1, 2 and 3 sites
- Experienced in the preparation of grading, drainage and erosion control plans
- Competent in REAP preparation and oversight of environmental permits
- Experience with SMARTS NOI, NOT, Ad Hoc, and Annual Reporting requirements

## Work History

- President, Tully Consulting Group, 2005 to current – specialize in grading, drainage, erosion control and SWPPP development, implementation and monitoring

Robin Tully has 21 years of civil engineering and stormwater consulting experience. Her role in projects has ranged from Project Design Engineer, Project Manager to Qualified SWPPP Developer and Practitioner (QSD/QSP). She is familiar with sustainable site design, erosion control and water, sewer and stormwater. She has prepared Stormwater Pollution Prevention Plans (SWPPPs) and served as the QSD and QSP on several projects. Ms. Tully specializes in stormwater issues, erosion control, stormwater treatment, BMP design and SMARTS reporting.

## Select Project Experience

### **Caltrans 03-3797U4 Highway 80 Across the Top Project, Sacramento, CA. Risk Level 2.**

*Water Pollution Control Manager and QSD/QSP.* Ms. Tully prepared the SWPPP, oversaw BMP implementation and performed stormwater monitoring/inspection. This project involved very complicated construction staging over a 5 ½ year span and included \$90 million worth of highway improvements including roadway rehabilitation and bridge widening over Steelhead Creek. Numerous environmental permits were involved.

### **Oakland Eastbound Touchdown OTD-II – San Francisco Oakland Bay Bridge, Caltrans District 4, Oakland, CA. Risk Level 2.**

*Water Pollution Control Manager and QSD/QSP.* Ms. Tully prepared the SWPPP, oversaw BMP implementation and performed stormwater monitoring/inspection. This project involved very strict water quality protection measures for work over and along the San Francisco Bay.

### **Caltrans 03-2F5904 Route 20 Curve Realignment, Smartsville, CA. Risk Level 3.**

*QSD/QSP.* Ms. Tully prepared the SWPPP, oversaw BMP implementation and managed a team of stormwater inspectors. This project involved significant cuts and fills through rough terrain and construction over several receiving water bodies. Her work also involved overseeing water quality monitoring for the 401 Water Quality Certification.

### **Calaveras County Route 12 and 26 Intersection Improvements, Valley Springs, CA. Risk Level 2.**

*Water Pollution Control Manager and QSD/QSP.* Ms. Tully prepared the SWPPP, oversaw BMP implementation and performed stormwater monitoring/inspection. This project involved roadway and intersection improvements in the middle of a busy intersection.

### **Calaveras County Stagecoach Road Low Water Crossing at Littlejohns Creek near Copperopolis, CA. Risk Level 2.**

*QSD/QSP.* Ms. Tully prepared the SWPPP and managed a team of stormwater inspectors. This project involved roadway construction and in-water work. Her work also involved overseeing water quality monitoring for the 401 Water Quality Certification.





# Chris Stabenfeldt, AICP

## Senior Environmental Planner

Mr. Stabenfeldt is a certified planner, team and project manager, and environmental analyst with more than 35 years of professional environmental and planning consulting experience. He has served in a broad range of roles including group manager, office manager, director of business development, and project manager. He has managed comprehensive and complex environmental documents and planning projects for public agencies and private sector clients including documentation and related compliance activities under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) throughout the west. He served in a key management role for the PG&E Hydro-divestiture Environmental Impact Report (EIR) which evaluated changes in operation for an extensive system of streams; dams and diversions; canals, flumes, and tunnels; and reservoirs located primarily along the western slopes of the Sierra Nevada Mountains, including task leader for land use, responsible for developing an impact assessment strategy for more than 180,000 acres of watershed lands. He also served as project manager for preparation of CEQA components and technical studies in support of environmental documentation for the proposed Auburn Dam, which included consideration of numerous alternatives as possible sources of aggregate for dam construction. He is currently serving as project manager for the Foresthill Public Utilities District (PUD) Water Rights Extension EIR/Environmental Impact Statement (EIS) which includes consideration of increasing the storage capacity of the reservoir through installation of radial gates. He has managed numerous environmental documents for water rights applications, has a strong multidisciplinary background and has conducted technical studies in noise, air quality, geology, hydrology/water supply, infrastructure analysis, and land use policy assessment.

## Education

B.A., Environmental Studies, University of California Santa Barbara

MCRP Coursework, City and Regional Planning, California Polytechnic University, San Luis Obispo

## Registrations, Certifications, Permits and Affiliations

- American Institute of Certified Planners
- American Planning Association
- Association of Environmental Planners

## Professional Experience

**Calaveras County Water District (CCWD) Ebbetts Pass Reach 1 Water Transmission Pipeline Capital Improvements Project, Calaveras County – CCWD (2017-Ongoing).** Project Manager in charge of managing the completion of environmental documentation under CEQA and permits required for the proposed project, which includes the replacement of 24,000 feet of eight-inch diameter pipeline located within and adjacent to State Route 4 within Caltrans right-of-way. A portion of the alignment near Hunter Dam Road falls within lands administered by the Stanislaus National Forest. CCWD anticipates utilizing

funding by United States Department of Agriculture (USDA) Rural Development and that NEPA documentation will be prepared internally by USDA and/or U.S. Army Corps of Engineers (USACE). Technical studies prepared by ECORP will be structured to be NEPA compliant and will support preparation of the NEPA documents by the Federal Lead Agencies. The CEQA documentation focuses on impacts associated with construction of the pipeline. The key project issues revolve around near-term nuisance issues (i.e. noise, air quality, traffic delays) and resource issues (i.e. biological resources, cultural resources, Waters of the U.S).

**Central Amador Water Project (CAWP) Pioneer Water Rehabilitation Project, Amador County– Amador Water Agency (AWA) (2015-2017).** Project Manager in charge of the overall project coordination and review of all documents created for the project. AWA proposed a new pipeline in order to increase fire flow and improve the distribution system quality in the Buckhorn Ridge and Carson Drive area of the CAWP system. The Proposed Project is being funded through Community Development Block Grant (CDBG) administered by the U.S. Department of Housing and Urban Development (HUD). ECORP was retained by AWA to prepare CEQA and NEPA documentation and associated technical studies including air quality and greenhouse gases, biological resources, cultural resources, and a health risk assessment in support of the Proposed Project. In addition, ECORP worked closely with AWA to provide AB 52 tribal coordination support and assisted AWA staff with CDBG Program documentation to ensure all requirements were met. ECORP is currently assisting with mitigation implementation.

**E. George to Lake Wildwood Backbone Extension Pipeline Project, Nevada County – Nevada Irrigation District (NID) (2018-Ongoing).** Project Manager for the project. ECORP was retained by NID to provide complete environmental documentation under CEQA for the proposed NID Elizabeth George to Lake Wildwood Backbone Extension Pipeline Project (Project). Leg A of the proposed project involves installation of over 5 miles of new 16 to 20 inch underground pipe primarily in existing roadways with two cross country segments. The project is intended to provide back up to the Lake Wildwood Water Treatment Plant and extend service to parcels along the pipeline alignment. The CEQA documentation focused on impacts associated with construction of the pipeline. ECORP prepared a Biological Resource Assessment and wetland delineation. ECORP worked with NID staff to design the Project to avoid the need for permits. A special-status plant survey will also be conducted before Project construction. ECORP also prepared a cultural resources inventory including a field survey and provided AB 52 consultation support.

**Pine Grove Tank Replacement, Amador County – Bailey Civil Engineering (2018-Ongoing).** Project Manager for the project. ECORP was retained by Pine Grove Community Services District (PGCSD) for CEQA, Biological, and cultural services support. The Project consisted of the demolition of a failed 426,000 gallon tank and replacing it with a new 500,000 gallon tank and appurtenant structures. The PGCSD water system storage tanks were located on a single lot on Tank Court in Pine Grove, owned by PGCSD. Recent failure of one of the storage tanks prompted PGCSD to identify replacement storage alternatives in order to maintain adequate storage for the district. ECORP staff drafted a Categorical Exemption supported by Biological and Cultural Resources Technical Studies.

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## FEE AND LEVEL OF EFFORT

## PROJECT FEE AND LEVEL OF EFFORT

In this section we have detailed our proposed fee and level of effort by task for implementation of the project. We will provide the services described in the scope of services included in the appendix on a time and materials basis according to the terms of payment outlined in the Agreement. We reserve the right to transfer budgets between tasks while maintaining the total budget of the project.

We recognize that the District puts significant emphasis on the value of professional services to be provided, so we have included a summary of both the budgets and labor hours by task below to show both the value our project team provides and to assist the District with proposal evaluation. Note that as previously discussed, we have included for both tribal consultation and Engineering Services During Construction as optional tasks. Task 11 for Environmental / CEQA Compliance may be significantly reduced in scope and fee if an IS/MND is not required.

Task No.	Task Description	Budget	Total Labor Hours
1	Project Management	\$32,899	162
2	Data Collection and Review	\$16,325	120
3	Topographical Mapping and Survey	\$65,736	694
4	Transmission Pipeline Hydraulic Modeling Studies	\$42,852	220
5	Transmission Pipeline Route Alternative Analyses	\$20,391	142
6	Geotechnical Investigation and Report	\$55,511	209
7	Tank A Pump Station Hydraulics Review	\$23,274	140
8	Preliminary Design Report	\$86,333	584
9	Final Design	\$188,393	1279
10	Calaveras County Permitting	\$5,968	32
11	Environmental / CEQA Compliance	\$109,997	682
12	Bid and Award Phase Services	\$16,961	104
<b>Total for Design and Bid and Award Phases</b>		<b>\$664,640</b>	<b>4,368</b>
11.6	Tribal Consultation	\$6,692	37
13	Engineering Services During Construction	\$103,490	602
<b>Total for Optional Services</b>		<b>\$110,182</b>	<b>639</b>

The spreadsheet on the following pages provides full details of proposed labor hours for each task by staff classification, plus other expenses, as included in the Scope of Services.



<b>13.0 Engineering Services During Construction (OPTIONAL)</b>																
13.1	Project Administration During Construction	2	40	40		8		\$17,288	\$2,438	2			2	\$19,726	92	11.9
13.2	Review of Technical Submittals (up to 20)	4	24	80				\$14,788		4			4	\$14,788	92	11.9
13.3	Respond to Requests for Information and Design Clarification (up to 15)	5	24	65				\$14,788		4			4	\$14,788	92	11.9
13.4	Prepare Change Orders (5)	5	16	24	16	2		\$5,700		2			2	\$5,700	64	8.0
13.5	Attendance at Construction Meetings and Site Observation (up to 8)	4	24	45	35			\$25,700			14		14	\$737/mileage	135	16.8
13.6	Project Start-up, Testing and Commissioning (up to 40 labor hours)	4	4	16	16			\$7,212					4	\$164/mileage	40	5.0
13.7	Prepare Record Drawings	4	4	16	64	8		\$13,168							80	10.0
<b>SCOPE OF SERVICES BUDGET AND LABOR HOUR TOTALS</b>																
Total Budget Hours		32	166	272	406	1212	60		702	197	664	37	620	2,220	0	4,368
Total Budget Days		4.0	20.8	34.0	50.8	151.5	7.5		87.8	24.6	83.0		77.5	277.5		546
Total Budget Dollars		\$7,168	\$24,620	\$52,768	\$65,820	\$187,660	\$5,700	\$320,654	\$119,200	\$53,899	\$61,050	\$4,004	\$98,715	\$7,118	\$664,641	
<b>OPTIONAL TASKS BUDGET AND LABOR HOUR TOTALS</b>																
Total Budget Hours		10	86	176	212	80	18		12	14	0	74	31	97		630
Total Budget Days		1.3	10.8	22.0	26.5	10.0	2.3		1.5	1.8	0.0	9.3	3.9	7.1		79.9
Total Budget Dollars		\$2,265	\$77,888	\$34,544	\$33,660	\$10,400	\$1,710	\$99,242	\$2,438	\$2,191	\$0	\$5,000	\$901	\$110,182		



## COLEMAN ENGINEERING — 2022 BILLING RATE SCHEDULE

Classification	Billing Rates
Principal Engineer	\$224
Project Manager	\$208
Assistant Project Manager	\$194
Project Engineer	\$175
Staff Engineer	\$155
Engineering Intern	\$93
CAD Drafter/Designer	\$130
Project Technician	\$118
Project Assistant	\$95
W/WW Operator – Grade 1/2/3/4/5	\$96 / \$106 / \$128 / \$155 / \$190
Construction Manager	\$175 - \$208
Resident Inspector	\$140 - \$165
CM Field Admin	\$75 - \$95

- > Billing rates and expense charges are subject to annual update.
- > Hourly rates include Indirect Costs such as general computers, telephone, fax, routine in-house reproductions, first class letter postage, miscellaneous supplies, and other incidental general expenses.
- > Direct Costs of services and materials such as vendor reproductions/prints, shipping, major in-house Coleman Engineering reproduction efforts, travel expenses, special engineering supplies, etc. will be billed at actual cost plus 10%.
- > Sub-Consultants will be billed at actual cost plus 10%.
- > Mileage will be billed at the current Federal Rate (\$0.56/mile as of Jan. 1, 2021)
- > Expert Witness Services will be billed at standard rates plus a 25% premium.
- > Computer charges are included in the Standard Hourly Rates for those employees and contract personnel assigned to use such specialty hardware and software.
- > Billing rates apply to all computers and equipment, whether owned or rented by Coleman Engineering, and to all employment categories including regular full-time, part-time, limited term and contract personnel, etc.
- > A finance charge of 1.5% per month (an annual rate of 18%) on the unpaid balance will be added to invoice amounts if not paid within 45 days from the date of the invoice.

**RESOLUTION NO. 2022-**

**A RESOLUTION OF THE BOARD OF DIRECTORS  
OF THE CALAVERAS COUNTY WATER DISTRICT**

**APPROVING/AUTHORIZING DESIGN CONTRACT FOR THE JENNY LIND WATER  
SYSTEM TANK A-B TRANSMISSION PIPELINE PROJECT, CIP 11088**

**WHEREAS**, upon issuing a Request for Proposals (RFP) on December 15, 2021 for engineering and design services for the subject project and conducting a job walk of the project area with prospective consulting firms interested in submitting proposals, the District received six (6) proposals as of the due date of February 3, 2022, and

**WHEREAS**, the District Engineer and other staff reviewed all proposals considering qualifications and experience, team organization, scope of work, cost effectiveness, schedule and other criteria, and among the top ranking proposals staff recommends the Award of the contract for engineering and design services to Coleman Engineering and

**WHEREAS**, the total project cost is estimated to be \$6.7 million which the District has obligated supplemental funding (Water Capital Reserves and Replacement Fund 125) in its FY 2021/22 CIP budget and will obligate in FY 2022/23 to pay for completing the design phase and estimated construction costs.

**BE IT RESOLVED**, the Calaveras County Water District Board of Directors hereby approves the proposal submitted by Coleman Engineering, attached hereto and made a part hereof, and authorizes the General Manager to enter into a Professional Services Agreement (PSA) with Coleman Engineering in the amount of \$664,640.00 for engineering and design services for said project.

**PASSED AND ADOPTED** this 23<sup>rd</sup> day of March, 2022 by the following vote:

**AYES:**

**NOES:**

**ABSTAIN:**

**ABSENT:**

CALAVERAS COUNTY WATER DISTRICT

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Cindy Secada, President  
Board of Directors

**ATTEST:**

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Rebecca Hitchcock  
Clerk to the Board

**RESOLUTION NO. 2022-**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE  
CALAVERAS COUNTY WATER DISTRICT**

**AMENDING THE FY 2021-22 OPERATING AND CAPITAL  
IMPROVEMENT BUDGET TO INCREASE THE OUTLAY FOR THE JENNY LIND  
WATER SYSTEM TANK A-B TRANSMISSION PIPELINE PROJECT, CIP 11088**

**WHEREAS**, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT adopted Resolution 2021-43 on June 23, 2021 approving Fiscal Year 2021-22 Operating Budget and Capital Improvement Budget; and

**WHEREAS**, the 2021-22 Fiscal Year's Budget Outlay identified the Jenny Lind Water System Tank A-B Transmission Pipeline Project, CIP 11088 but did not allocated funding for this fiscal year; and

**WHEREAS**, due to recent pace of development in this service area along with on-going challenges in meeting demands during peak usage periods, staff recommends moving this project forward by approving the necessary project funds to begin the design phase and contract with Coleman Engineers;

**NOW, THEREFORE BE IT RESOLVED**, the Board of Directors of THE CALAVERAS COUNTY WATER DISTRICT accordingly approves amendment of the FY 2021-22 Operating and Capital Improvement Budget to increase the outlay adding \$390,000 in funding for the Jenny Lind Water System Tank A-B Transmission Pipeline Project, CIP #11088.

**PASSED AND ADOPTED** this 23<sup>rd</sup> day of March 2022 by the following vote:

**AYES:**

**NOES:**

**ABSTAIN:**

**ABSENT:**

CALAVERAS COUNTY WATER DISTRICT

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Cindy Secada, President  
Board of Directors

**ATTEST:**

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Rebecca Hitchcock  
Clerk to the Board