RESOLUTION NO. 2022-11
RESOLUTION NO. PFA-02
ORDINANCE NO. 2022-01

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, January 26, 2022
1:00 p.m.

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

Based on guidance from the California Governor's Office and Department of Public Health, in order to minimize the potential spread of the COVID-19 virus, the Calaveras County Water District will convene its public meetings of the Board of Directors virtually until further notice.

The following alternative is available to members of the public to participate in the meeting:

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# United States

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.

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 Report on the Monthly Investment Transactions for December 2021
(Jeffrey Meyer, Senior Vice President Hilltop Securities Inc)

3b Action regarding Approval of Work on the Calaveras County Water District Property for the Hunter Reservoir Fuels Reduction Project
(Jessica Self, External Affairs Manager) **RES 2022-_____**

4. NEW BUSINESS

4a Discussion/Action Regarding the Mid-Year FY 2021-22 Operating and Capital Improvement Program Budgets
(Jeffrey Meyer, Senior Vice President Hilltop Securities Inc) **RES 2022-_____**

4b Discussion/Action regarding Awarding a Contract for Hunters Reservoir Raw Water Intake-Design/Engineering Services
(Kevin Williams, Senior Civil Engineer) **RES 2022-_____**

4c Discussion/Action to Award of Environmental Services for the Hunters Raw Water Intake Hazard Mitigation Project, CIP 11103
(Kevin Williams, Senior Civil Engineer) **RES 2022-_____**

4d Discussion/Action for Award of a Design Services Contract for the CC Secondary, Tertiary, & UV Improvements Project (CIP #15094)
(John Griffin, Senior Civil Engineer) **RES 2022-_____**

4e Discussion/Direction regarding Redistricting Following the 2020 Census
(Brad Arnold, Water Resources Program Manager)

5. OLD BUSINESS

5a* Discussion regarding the District's COVID-19 Response Plan
(Michael Minkler, General Manager)

6. REPORTS

6a* General Manager's Report
(Michael Minkler)

7.* BOARD REPORTS / INFORMATION / FUTURE AGENDA ITEMS

8. NEXT BOARD MEETINGS

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

9. CLOSED SESSION

9a Conference with Real Property Negotiators (Gov. Code section 54956.8.) Property: APN 012-011-011 Agency negotiators: M. Minkler and D. Wyckoff Negotiating parties: Calaveras Healthy Impact Prod Solutions (CHIPS): Under negotiation: Price and/or terms of payment.

10. REPORTABLE ACTION FROM CLOSED SESSION

11. 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

Legal Counsel

Matthew Weber, Esq.
Downey Brand, LLP

Financial Services

Umpqua Bank
US Bank
Wells Fargo Bank

Auditor

Richardson & Company, LLP

CCWD Committees	Membership**
*Engineering Committee	Thomas / Davidson (alt. Secada)
*Finance Committee	Underhill / Secada (alt. Thomas)
*Legal Affairs Committee	Davidson / Ratterman (alt. Thomas)
CCWD/CPUD Coordination Committee	Ratterman / Secada

Joint Power Authorities

ACWA / JPIA	Ratterman (alt. Michael Minkler)
CCWD Public Financing Authority	All Board Members
Calaveras-Amador Mokelumne River Authority (CAMRA)	Ratterman / Underhill (alt. Secada)
Calaveras Public Power Agency (CPPA)	Michael Minkler (Alt. Brad Arnold)
Eastern San Joaquin Groundwater Authority	Thomas
Tuolumne-Stanislaus Integrated Regional Water Management Joint Powers Authority (T-Stan JPA)	Secada (alt. Thomas)
Upper Mokelumne River Watershed Authority (UMRWA)	Davidson (alt. Ratterman)

Other Regional Organizations of Note

Calaveras County Parks and Recreation Committee	Thomas (alt. Ratterman)
Highway 4 Corridor Working Group	Thomas / Underhill
Mountain Counties Water Resources Association (MCWRA)	All Board Members
Mokelumne River Association (MRA)	All Board Members
Tuolumne-Stanislaus Integrated Regional Water Mgt. JPA Watershed Advisory Committee (WAC)	Brad Arnold
Eastern San Joaquin Groundwater Authority-Technical Advisory Committee	Brad Arnold

* Standing committees, meetings of which require agendas & public notice 72 hours in advance of meeting.
** The 1st name listed is the committee chairperson.

Agenda Item

DATE: January 26, 2022

TO: Michael Minkler, General Manager

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

SUBJECT: Report on the Monthly Investment Transactions for December 31, 2021

RECOMMENDED ACTION:

For information only.

SUMMARY:

Per the District's Investment Policy, Staff will report the monthly investment activity for the preceding month. During December 2021, the following investment transactions occurred:

Chandler Asset Management Activity:	
Book Value at 11/30/21	**20,005,842.12**
Security Purchases	540,291.08
Money Market Fund Purchases	5,368.64
Money Market Contributions	-
Money Market Fund Sales	(541,098.57)
Money Market Fund Withdrawals	(1,818.86)
Amortization/Accretion	(5,379.29)
Book Value at 12/31/21	**20,003,205.12**
Local Agency Investment Fund Activity:	
Book Value at 11/30/21	**12,900,568.33**
No Activity	-
Balance at 12/31/21	**12,900,568.33**

LAIF (Local Agency Investment Fund) interest rates are 0.22% as of 12/31/2021. The LAIF rate has remained relatively low, and the majority of available funds are being invested through Chandler Asset Management.

Attachment: Investment Activity Report for December 2021

CALAVERAS COUNTY WATER DISTRICT
CHANDLER ASSET MANAGEMENT
FOR THE MONTH ENDED DECEMBER 31, 2021

INVESTMENT TRUSTEE/TYPE	MARKET VALUE	INVESTMENT COST			Dividends Earned	Interest Earned	Net Income
		BOOK	PAR Value/Units	CPN RATE			
Asset Backed Security	847,867.39	854,938.14	855,000.00	0.47%	-	325.89	325.89
Agency Securities	2,382,305.60	2,414,184.96	2,400,000.00	0.36%	-	1,000.00	1,000.00
CMO	207,801.00	210,963.89	200,000.00	0.62%	-	445.00	445.00
Corporate Securities	3,385,542.52	3,422,729.61	3,350,000.00	0.67%	-	2,837.50	2,837.50
Money Market Fund (Cash)	595,187.47	595,187.47	595,187.47	0.01%	10.25	-	10.25
Negotiable CD	2,148,726.65	2,149,999.91	2,150,000.00	0.19%	-	-	-
Supernational Securities	1,104,496.02	1,121,584.89	1,120,000.00	0.65%	-	-	-
US Treasury	9,098,218.80	9,233,616.25	9,200,000.00	0.54%	-	750.00	750.00
Totals	**19,770,145.45**	**20,003,205.12**	**19,870,187.47**	**0.46%**	**10.25**	**5,358.39**	**5,368.64**

CALAVERAS COUNTY WATER DISTRICT
INVESTMENT ACTIVITY
FOR THE MONTH ENDING DECEMBER 31, 2021

INVESTMENT TRUSTEE/TYPE	MARKET VALUE	INVESTMENT COST				CM INTEREST AND DIVIDEND RECVD
		COST	PAR (PRINC)	CPN RATE	DATE INVST	
Local Agency Investment Fund	12,900,568.33	12,900,568.33	12,900,568.33	0.220%	ongoing	-
Chandler Asset Management	19,770,145.45	20,003,205.12	19,870,187.47	0.490%	ongoing	**5,368.64**
Totals	**32,670,713.78**	**32,903,773.45**	**32,770,755.80**			**5,368.64**

Chandler Asset Management Activity:	
Book Value at 11/30/21	**20,005,842.12**
Security Purchases	540,291.08
Money Market Fund Purchases	5,368.64
Money Market Contributions	-
Money Market Fund Sales	(541,098.57)
Money Market Fund Withdrawals	(1,818.86)
Amortization/Accretion	(5,379.29)
Book Value at 12/31/21	**20,003,205.12**
Local Agency Investment Fund Activity:	
Book Value at 11/30/21	**12,900,568.33**
No Activity	-
Balance at 12/31/21	**12,900,568.33**

Agenda Item

DATE: January 26, 2022

TO: Michael Minkler, General Manager

FROM: Jessica Self, External Affairs Manager

SUBJECT: Action regarding Approval of work on the Calaveras County Water District property for the Hunter Reservoir Fuels Reduction project

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RECOMMENDED ACTION:

Motion: _____/_____ approving Resolution No. 2022- ___ approving work on Calaveras County Water District property for the Hunter Reservoir Fuels Reduction project.

SUMMARY:
Utica Water and Power Authority (Utica) is applying for funding for the Hunters Reservoir Fuels Reduction Project through Cal Fire.

This project will address the incidence of extensive tree mortality which occurred throughout the 2011 – 2016 drought and resultant outbreak of the Western Pine Beetle. As a result, this project would reduce fire risk and protect critical water supply infrastructure by removing brush, dead and dying trees, as well as small trees on 226 acres near Hunters Reservoir in Avery.

This project encompasses the District's Hunter's water treatment plant and thus the District will accept the work on it's property for the fuels reduction project within the following parameters:

Project Title: Hunter Reservoir Fuels Reduction
Lead Agency: Utica

FINANCIAL CONSIDERATIONS:

There are no financial considerations for the District to consider.

Attachments: *a) Resolution No 2022-__ Authorizing work on CCWD property for the Hunters Reservoir Fuels Reduction Project*
b) Project Map

RESOLUTION NO. 2022-

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

AUTHORIZING WORK ON CALAVERAS COUNTY WATER DISTRICT PROPERTY FOR THE HUNTER RESERVOIR FUELS REDUCTION PROJECT

WHEREAS, Utica Water and Power Authority is applying for funding for the Hunters Reservoir Fuels Reduction Project through Cal Fire; and

WHEREAS, the Board of Directors has determined it to be in the best interest of the District to improve fire safety and forest health for CCWD facilities on-site and the Wildland Urban Interface of the Hathaway Pines -Avery communities; and

WHEREAS, the project will address the incidence of extensive tree mortality which occurred in the stand by the effects of the 2011-2016 drought and resultant outbreak of the Western Pine Beetle.

NOW, THEREFORE BE IT RESOLVED, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT does hereby accept the work on its property for the fuels reduction project with the following parameters:

Project Title: Hunter Reservoir Fuels Reduction

Lead Agency/Grantee: Utica Water & Power Authority

Administrator: Calaveras Amador Forestry Team (CalAmTeam)

PASSED AND ADOPTED this 26th of January, 2022 by the following vote:

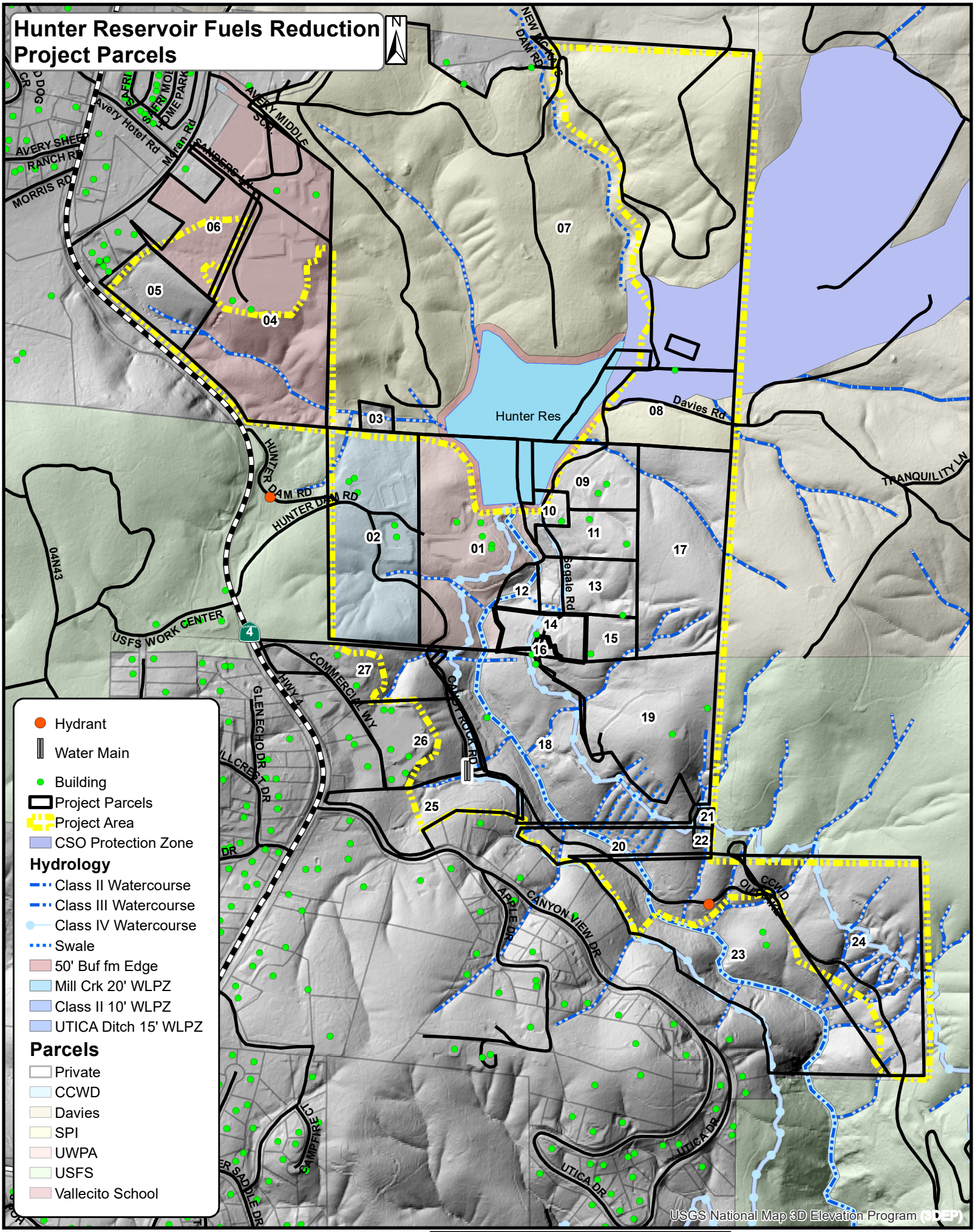
AYES:
NOES:
ABSTAIN:
ABSENT:

CALAVERAS COUNTY WATER DISTRICT

_____
Cindy Secada, President
Board of Directors

ATTEST:

_____
Rebecca Hitchcock
Clerk to the Board



Hunter_Parcels_Portrait.MXD

1:9,000

0 750 1,500 Feet

Map by CalAm 11-Dec-21

Agenda Item

DATE: January 26, 2022

TO: Michael Minkler, General Manager

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

SUBJECT: Discussion/Action Regarding the Mid-Year FY 2020-22 Operating and Capital Improvement Program Budgets

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RECOMMENDED ACTION:

Motion: _____/ _____ adopting Resolution No. 2022 – ____ Approving Mid-Year FY 2020-22 Operating and Capital Improvement Program Budget adjustments.

SUMMARY:

The mid-year budget review is an analysis of the financial status of the District's operating and capital improvement funds covering the six-month period of July 1, 2021 through December 31, 2021. This review provides an analysis of actual revenues and expenditures compared to the FY 2020-21 adopted budget and provides year-end projections. The Mi-Year Budget Review also sets the stage for the next fiscal year by:

- Identifying variances to budget and the impact they may have on future budgets.
- Allowing the Board to provide staff direction on types of services or programs the Board would like to see emphasized for future budget years.

Staff has reviewed budgets and actual expenses and revenue activity through December 2021, projected accounts through June 30, 2022, and identified budget adjustments that require Board action per Budget and Fiscal Policies 5.00.2.13. The proposed budget amendments were presented to the Finance Committee on January 21, 2022.

Revenues:

After the December 2021 revenues were posted, the District received funds from Cal OES's Request for Public Assistance (RPA) for the Coronavirus Disease 2019 program. The amount of the award is $50,014 and reimburses the District for material and supply costs incurred during the first half of 2020. Covered costs include disinfection supplies, PPE supplies, and supplies for COVID public safety communications.

Additionally, the District requested and received a transfer in January from the District's PARS Retiree Health Trust Fund in the amount of $551,205. These funds will be used to offset the budget increases required to fund the new Retiree Health Savings (RHS)

account contributions, and to fund, for those employees hired before the recension of the vesting schedule and who choose to opt into the new retiree health benefit, the one-time RHS payout they receive.

Expenditures:

There were two expenditures charged in FY 2021-22 that should have been posted to FY 2020-21. They include:

- The repair of a pump as part of the Lift Station Pump and Motor Replacement Project, #15100. The $20,096 cost was charged to Sewer Capital R&R, Fund 135.
- $12,210 for consultant's work on the District's Urban Water Management Plan that was posted to Department 60, Water Resources, under Mandated Plans.

Additionally, the operating budget needs to be increased for the following:

- $505,905 for contributions and one-time payouts for the District's new Retiree Health Savings (RHS) program.
- $20,000 in additional funding for water rights legal costs in Department 60, Water Resources, Outside Legal Fees.
- $13,104 in Department 59, Administrative Services, Admin Technologies, for increased costs associated with computer replacements and related equipment.

Capital Improvement Program (CIP):

The FY 2021-22 CIP budget includes $150,000 for the Copper Cove Secondary/Tertiary and UV Improvements Project, #15094. At the time the budget was developed the detailed level of effort for project design was not envisioned. Therefore, a budget amendment in the amount of $250,000 is needed to cover projected costs for the remainder of this fiscal year. The amended project budget will be $400,000 and funding will be split equally between the Copper Cove Wastewater Expansion Fund (Fund 584) and the Wastewater Capital R&R Fund (Fund 135).

On September 22, 2021 the Board accepted the MOU between the Calaveras County and the District concerning the relocation of a water tank in Sheep Ranch. The County agreed to contribute $136,000 towards the project. The project costs are included in the Sheep Ranch Distribution System Replacement Project, #11126, and it is estimated that total project costs will be $210,000. A budget increase of $210,000 is required for the FY 2021-22 Water CIP Budget. The funding sources will be $136,000 from outside contributions (Calaveras County) and $74,000 from Water Capital R&R (Fund 125).

FINANCIAL CONSIDERATIONS:

Staff recommends a budget adjustment to the FY 2021-22 Operating Budget to recognize the increased operating expenditures identified above and increase revenues to recognize the COVID grant funds and the transfer from the District's PARS Retiree Health

Trust Fund. Staff also recommends increasing the Wastewater CIP budget by $250,000 to fund additional project costs for the Copper Cover Secondary, Tertiary and UV Improvement Project, and increasing the Sheep Ranch Distribution System Replacement Project in the Water CIP budget by $210,000.

Attachments: *Resolution 2022-__ Amending the Fiscal Year 2021-22 Operating and Capital Improvement Program Budget*
Appendix A – Budget Adjustment 22-01

RESOLUTION NO. 2022-

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

AMENDING THE FISCAL YEAR 2021-22 OPERATING AND CAPITAL IMPROVEMENT PROGRAM BUDGET

WHEREAS, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT adopted Resolution 2021-43 on June 23, 2021 approving the Fiscal Year 2021-22 Operating Budget in the amount of $28,673,483 and adopted the Fiscal Year 2021-22 Capital Improvement Program (CIP) Budget in the amount of $12,625,918; and

WHEREAS, the District has reviewed the operating and capital improvement program revenues and expenditures through December 31, 2021; and

WHEREAS, the Board of Directors has, as a result of the review, identified those programs and expenditures that will be most beneficial to the needs of the Calaveras County Water District; and

WHEREAS, the District's adopted Operating and CIP Budgets require an adjustment to amend the proposed revenues and expenditures to reflect the District's priorities; and

WHEREAS, the Board of Directors does hereby find that it is in the best interest of the District to amend the adopted FY 2021-22 Operating and Capital Improvement Budgets accordingly, effective January 26, 2022.

NOW, THEREFORE BE IT RESOLVED, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT adopts an amendment to the Fiscal Year 2021-22 Operating Budget and Capital Improvement Program as set forth in Budget Adjustment 22-01, attached hereto and made a part hereof, and authorizes the Director of Administrative Services to record the appropriate accounting entries.

PASSED AND ADOPTED this 26th day of January 2022 by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

CALAVERAS COUNTY WATER DISTRICT

_____
Cindy Secada, President
Board of Directors

ATTEST:

_____
Rebecca Hitchcock
Clerk to the Board

Appendix A
Budget Adjustment 22-01

			Expenses			Revenues				
Account Number	Dept	Account Description	Decrease	Increase	Total Expense	Decrease	Increase	Total Revenues	Auth	Description
300 59-54520	59	Grant Revenue - State					36,510	36,510	Board	Increase revenues for COVID Grant Reimbursement
500 59-54520	59	Grant Revenue - State					13,504	13,504	Board	Increase revenues for COVID Grant Reimbursement
300 59-54600	59	Other Non-Operating Revenue					402,380.00	402,380	Board	Increase revenues for PARS Retiree Health Trust Fund transfer
500 59-54600	59	Other Non-Operating Revenue					148,825	148,825	Board	Increase revenues for PARS Retiree Health Trust Fund transfer
300 59-60390	59	Admin. Technologies/Comm.		9,566	9,566				Board	Increase expenses for computer replacements
500 59-60390	59	Admin. Technologies/Comm.		3,538	3,538				Board	Increase expenses for computer replacements
300 60-60505	60	Outside Legal Fees		20,000	20,000				Board	Increase expenses for water rights legal costs
300 60-61450	60	Mandated Plans		8,913	8,913				Board	Increase expenses for Urban Water Management Plan
500 60-61450	60	Mandated Plans		3,297	3,297				Board	Increase expenses for Urban Water Management Plan
300 54-60117	54	Retiree Health Benefit		163,812	163,812				Board	Increase expenses for new Retiree Health Savings (RHS) Program
500 54-60117	54	Retiree Health Benefit		60,588	60,588				Board	Increase expenses for new Retiree Health Savings (RHS) Program
300 56-60117	56	Retiree Health Benefit		35,259	35,259				Board	Increase expenses for new Retiree Health Savings (RHS) Program
500 56-60117	56	Retiree Health Benefit		13,041	13,041				Board	Increase expenses for new Retiree Health Savings (RHS) Program
300 58-60117	58	Retiree Health Benefit		82,267	82,267				Board	Increase expenses for new Retiree Health Savings (RHS) Program
500 58-60017	58	Retiree Health Benefit		30,428	30,428				Board	Increase expenses for new Retiree Health Savings (RHS) Program
300 59-60017	59	Retiree Health Benefit		124,341	124,341				Board	Increase expenses for new Retiree Health Savings (RHS) Program
500 59-60017	59	Retiree Health Benefit		45,989	45,989				Board	Increase expenses for new Retiree Health Savings (RHS) Program
300 60-60117	60	Retiree Health Benefit		131	131				Board	Increase expenses for new Retiree Health Savings (RHS) Program
500 60-60117	60	Retiree Health Benefit		49	49				Board	Increase expenses for new Retiree Health Savings (RHS) Program
					601,219			601,219		
135 58-79100		Transfer out to Other Funds				125,000			Board	Increase Transfers Out for CIP Project #15094
130 58-59100		Transfer in From Funds					125,000	125,000	Board	Increase Transfers In for CIP Project #15094
854 58-79100		Transfer out to Other Funds				125,000			Board	Increase Transfers Out for CIP Project #15094
130 58-59100		Transfer in From Funds					125,000	125,000	Board	Increase Transfers In for CIP Project #15094
130 58-60590		Professional Services		250,000	250,000				Board	increase expenses for CIP Project #15094
125 54-79100		Transfer out to Other Funds				74,000			Board	Increase Transfers Out for CIP Project #11126
120 54-59100		Transfer in From Funds					74,000	74,000	Board	Increase Transfers In for CIP Project #11126
120 54-54600		Other Non-Operating Revenue					136,000	136,000	Board	Increase revenues for County Contribution for CIP Project #11126
130 54-78700		Construction		210,000	210,000				Board	increase expenses for CIP Project #11126
					460,000			460,000		
135		Use of Reserves					20,906	20,906	Board	Increase use of reserves for pump repair under Project #15100.
135 54-60359		Pumps/Motors Repair		20,906	20,906				Board	Increase expenses for pump repair under Project #15100.
					20,906			20,906		

Agenda Item

DATE: January 26, 2022

TO: Board of Directors
Michael Minkler, General Manager

FROM: Kevin Williams, Senior Civil Engineer

SUBJECT: Discussion/Action to Award of Design Services for the Hunters Raw Water Intake Hazard Mitigation Project, CIP 11103
Cal-OES/FEMA HMGP DR-4431 PJ0028

RECOMMENDED ACTION:

Motion:_____/_____ to adopt Resolution No. 2022-____ accepting the proposal and authorizing the General Manager to enter into a Professional Services Agreement (PSA) with Blackwater Consulting Engineers. in a contract amount of $253,631 for design, engineering and other professional services related to the Hunters Raw Water Intake Hazard Mitigation Project, CIP 11106.

SUMMARY:

The project is to relocate and mitigate hazards related to the existing Raw Water Intake Pumps at Hunters Reservoir near Avery, CA that serve the Ebbetts Pass Water System. The District was approved grant funding through Cal OES's Hazard Mitigation Grant (HMGP) program. Preliminary work such as topographical/bathymetric surveys have already been completed by the District. The design/engineering portion of the project has an aggressive schedule to meet the deadlines required by the funding agencies.

Staff issued a Request for Proposals (RFP) on December 3, 2021, for engineering and design services and conducting a job walk of the project area with prospective consulting firms interested in submitting proposals. As tabulated below, the District received two (2) proposals as of the due date of January 13, 2022.

Staff Ranking of Proposal	Consultant and Office Location	Proposal Fee
1	Blackwater Consulting Engineers, Inc. / Modesto	$253,631
2	Lumos and Associates / Carson City	$283,895

Staff reviewed the proposals considering qualifications and experience, team organization, scope of work, cost effectiveness, schedule and other criteria. Staff finds that Blackwater Consulting Engineers is responsive to the District, and they can deliver the Project Drawings in the accelerated timeframe necessary for the Project schedule. The recommendation to the Board is to award a design contract to Blackwater Consulting Engineers, Inc.. according to the submitted proposal and authorize the General Manager to enter into a Professional Services Agreement with Blackwater Consulting Engineers, Inc in the amount of $253,631 for engineering and design services for the Hunters Raw Water Intake Hazard Mitigation Project, CIP 11103.

FINANCIAL CONSIDERATIONS:

The total project cost is estimated to be $1.9 million. The HMGP requires a 75/25 percent local cost share match requiring CCWD to authorize a funding for $475,000 of the estimated total Project Cost of $1.9 million. The District has obligated $710,000 in funding through FY 2021-22 CIP budget, which is sufficient to cover the cost of this design and environmental contracts.

Attachments:

1) Resolution No. 2022-__ Awarding Design Contract for the Hunters Raw Water Intake Hazard Mitigation Project, CIP 11103

2) Black Water Consulting Engineers. Proposal, January 13, 2022

RESOLUTION NO. 2022-

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

APPROVING/AUTHORIZING DESIGN CONTRACT FOR THE HUNTERS RAW WATER INTAKE HAZARD MITIGATION PROJECT, CIP 11103

WHEREAS, the District has identified as a need to relocate the Raw Water Intake at Hunter Reservoir in Avery, CA serving the Ebbetts Pass Water System, the existing pumps are susceptible to natural disasters. The Project for receive a CALOES-FEMA HMGP Grant with 75/25 percent local cost to complete this Project, and

WHEREAS, upon issuing a Request for Proposals (RFP) on December 3, 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 two (2) proposals as of the due date of January 13, 2022, and

WHEREAS, the Engineering staff reviewed all proposals considering qualifications and experience, team organization, scope of work, cost effectiveness, schedule, and other criteria, and among the proposals staff recommends the Award of the contract for engineering and design services to Blackwater Consulting Engineers, Inc., and

WHEREAS, the total project cost is estimated to be $1.9 million with a 75/25 cost share which in addition to authorized grant funds the District has obligated sufficient supplemental funding in its FY 2021-22 CIP budget to pay for the subject design contract.

BE IT RESOLVED, the CALAVERAS COUNTY WATER DISTRICT Board of Directors hereby approves the proposal submitted by Blackwater Consulting Engineers, Inc., attached hereto and made a part hereof, and authorizes the General Manager to enter into a Professional Services Agreement (PSA) with Blackwater Consulting Engineers, Inc. in the amount of $253,631 for engineering and design services for said project.

PASSED AND ADOPTED this 26th day of January, 2022 by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

CALAVERAS COUNTY WATER DISTRICT

_____
Cindy Secada, President
Board of Directors

ATTEST:

_____
Rebecca Hitchcock
Clerk to the Board

REQUEST FOR PROPOSAL

DESIGN/ENGINEERING SERVICES FOR

CALOES/FEMA HAZARD MITIGATION GRANT PROGRAM PROJECT
HUNTERS RAW WATER PUMP STATION MITIGATION PROJECT

JANUARY 13, 2022

SUBMITTED BY:

BLACKWATER CONSULTING ENGINEERS

602 Lyell Drive, Modesto, CA 95356

P: 209.322.1820 | F: 209.222.4088 | www.blackwater-eng.com

BLACK WATER
CONSULTING ENGINEERS

January 13, 2022

Kate Jesus
Calaveras County Water District
120 Toma Court
San Andreas, CA 95249

via email: katej@ccwd.org

Subject: RFP - Hunters Raw Water Pump Station Mitigation Project

Dear Ms. Jesus,

Black Water Consulting Engineers, Inc. (Black Water) very much appreciated the opportunity to meet with Kevin Williams and visit the project site to discuss the Hunters Raw Water Pump Station Mitigation Project (Project). We understand Calaveras County Water District's (District/CCWD) plans to evaluate alternatives for relocating the raw water intake and pump station and construct a new Utica Water and Power Authority (UWPA) mechanical building. Based on our review of the RFP and discussions with District operations staff, CCWD's overarching project goal is to improve accessibility, reliability, and safety operating the new raw water intake.

We understand the significance of this work to the District and have assembled a consulting team equal to the challenge with expertise in pump station and intake design, preparation of bid documents, equipment pre-purchase, and project management. The members of our project team are experts in their respective fields. Additionally, our team members have worked together for years, which allows us to proceed quickly and smoothly.

As requested, our proposal includes a preliminary evaluation of project alternatives and recommendations. Black Water's evaluation considered alternatives for the type and location of pumping equipment and a parallel evaluation of the type and location of raw water suction screens. With this approach, we were able to expand the options defined in the RFP. As you will see in our proposal, our preliminary evaluation reveals a floating intake and a deployable pump station as the preferred system. Preliminary cost estimates support this recommendation.

The detailed approach and scope of work that we have outlined in this proposal are comprehensive, offering all services that CCWD will need to relocate and update the intake, pumping, controls, and UWPA building within budget and expeditiously. It is our hope that after careful review and consideration of our proposal, the District will be confident in selecting the Black Water team to join you in completing this important project.

We would like to emphasize that this approach is based on our current understanding of the scope of work, and we anticipate that the District will have input on improving this approach. Our fee proposal outlines our proposed tasks, estimated hours, and fee to complete the work outlined in the RFP and our proposal. We also agree to the terms of the District's standard Professional Services Agreement. Black Water sincerely appreciates the opportunity to submit our proposal to CCWD and we look forward to working with you. Should you have any questions, please do not hesitate to email me at jeff@blackwater-eng.com, or call (209) 322-1817.

Sincerely,

Jeff Black, PE
President

About Black Water Consulting Engineers

Company Background

Black Water Consulting Engineers (Black Water) is a Central California corporation that provides professional engineering services in water, wastewater, storm drain, and construction management. The company was formed in 2012 and is comprised of talented professionals who endeavor to maintain an outstanding reputation for delivering responsive service, technical expertise, and value to our clients.

Our firm is staffed with experts in the fields of planning and design of water supply, treatment, and distribution systems; wastewater collection, conveyance, and treatment works; storm water analysis and drainage facilities and construction management. We continually participate in the evaluation, design, and review of water and wastewater infrastructure projects and technologies in order to maintain a sound knowledge base of current design standards and construction methods. We have a solid track record in identifying and securing project financing, regulatory compliance, permitting, and reporting requirements for the water and wastewater industries. A list of our firm's capabilities and services is provided below, and our team's experience with similar projects and resumes can be found in the appendix.

WATER

- Pumping and Booster Station Design
- Well Design
- Water System Evaluation
- Demand Analysis
- Hydraulic Modeling of Distribution Systems
- Water Treatment Storage
- Pipelines
- Funding Assistance
- Permitting
- Technical Report Preparation
- Water Master Planning
- Financing Evaluations
- Regulatory Compliance
- Construction Management

WASTEWATER

- Pump Station and Force Main Design
- Sewer Collection System Evaluation and Design
- Wastewater Treatment and Process Design
- Regulatory Compliance and Permitting
- Corrosion and Odor Control
- Pipeline Rehabilitation
- Trenchless Construction
- Funding Assistance
- Sewer Master Planning and Asset Management
- Sanitary Sewer Management Plans (SSMP)
- Collection System Modeling
- Wastewater Recycling and Reuse
- Sewer and Storm System Rate Studies
- Construction Management

PLANNING

- Capital Improvement Planning
- Asset Management
- Feasibility Analysis
- Utility Master Planning
- Life-Cycle Costs
- Capital Facilities Planning
- Project Funding and Financing
- Utility Rate Studies
- Geographical Information Systems (GIS) Database and Development

Understanding and Approach

Project Understanding

On December 16, 2021 Jeff Black met with Kevin Williams and other CCWD staff at the Hunters Water Treatment Plant (WTP). This site meeting provided Black Water with an increased understanding of the District's process for transferring raw water to the WTP, the interface with Utica Water and Power Authority (UWPA), and the precarious condition and location of the existing raw water pumping station at the base of the dam. The group also discussed several options and constraints of the three scenarios for pumping raw water from the reservoir to the WTP. Black Water's understanding of the project objectives and proposed scope of work are central to the development of our proposal.

The Hunters Raw Water Pump Station Mitigation Project (Project) is driven by the need to improve the reliability of raw water delivery to the WTP, and improved access to pumping facilities that are currently located in a FEMA designated Special Flood Hazard Area. Access to the current location is treacherous if not impossible during winter or a disaster. Another driver of the project is the aging condition of an existing UWPA mechanical building. As part of the Project, the building will be demolished and replaced. The existing generator in the building will be salvaged and relocated to the new mechanical building.

CCWD is endeavoring to relocate the pump/intake to the surface of the reservoir to minimize the impacts of sedimentation and improve operational safety of the pumping system. A surface intake will also allow continual access to raw water during periods when the Collierville tunnel is out of service. Three alternatives are initially proposed which include a floating intake structure, deployable intake structure, and fixed intake structure. As requested by the district, a preliminary evaluation of these alternatives is provided in Black Water's proposal.

PROJECT GOALS AND CRITICAL ELEMENTS

Critical Elements are tasks and project components that will address each of the project goals including a preliminary evaluation of the alternatives in this proposal. The evaluation will provide CCWD staff with a detailed summary of the alternatives and high-level cost estimates of each. Ideally, the results of the preliminary evaluation will allow the District to make a confident decision on the preferred intake type when the design consultant is selected and shorten the design period to meet CalOES time lines. Design of an optimized system with the lowest possible construction and operating costs are a critical part of Black Water's approach and scope of work.

Project Goals

- Relocating the pumping facilities to improve access
- Modernize pumping equipment and controls
- Improve reliability during winter and emergencies
- Replacement of the UWPA mechanical building
- Scalable to accommodate future growth
- Design solution adhering to the fixed maximum construction budget of $1.4M

The following items are critical elements of the project. They are divided into two categories. Category 1 elements are consistent between all the alternatives and therefore would not be used for comparison between the alternatives. Category 2 elements are unique to each alternative and should be the basis for comparison and selection of a preferred alternative. Relative costs are provided only for Category 2 elements as part of the evaluation.

CATEGORY I CRITICAL ELEMENTS	CATEGORY 2 CRITICAL ELEMENTS
Preliminary Alternatives Evaluation	Floating raw water intake
Demolish existing pump station	Fixed raw water intake
Demolish existing UWPA mechanical building	Deployable raw water intake
Relocate generator	
Power and Controls Improvements	
Connect to existing 12-inch raw water pipeline	

CONSTRUCTION SEQUENCING

When work is not implemented in the proper sequence, disruption to critical processes or damage to completed work can occur if it is adversely affected by the tasks that follow. The sequence of work for construction is typically addressed in the project specifications, including requirements for schedules and related submittals. Black Water will consider where guidance is needed to highlight important sequencing requirements that will allow the pumping of raw water to continue during the project. Additional variables that affect construction sequencing include:

- Permit conditions
- Access to the site
- Operational activities
- Construction trades
- Construction schedule
- Equipment lead times
- Environmental constraints and mitigation measures

A critical concern for the site and process improvements at Hunters Raw Water Pump Station is sequencing work so that if needed, raw water can be delivered to the WTP during construction. Black Water's specifications will provide direction about the required order of steps in certain tasks; timing needed for equipment procurement, inspections of the work, and other coordination issues related to the project. The specifications will alert the contractor to these issues so they are accounted for in construction schedules and planning as the work progresses.

Funding

Funding is a critical element for the project, not only because of the availability of funds, but the requirements upon which the funding is conditioned. CCWD has secured grant funding for this project which comes with schedule conditions. Black Water will review the funding agreement and perform the work in compliance with the funding conditions and budget limitations.

Environmental

Environmental review is a critical item for the project. We understand the CCWD has issued a separate RFP for the completion of this part of the work. Black Water will coordinate with the selected environmental consultant to incorporate any conditions, mitigation measures, and monitoring and reporting requirements in the construction project.

Stakeholder Coordination

An important element to the success of this project is the understanding that the while CCWD is the primary stakeholder, consideration of and coordination with other stakeholders including UWPA, adjacent property owners, CalOES, and DDW will be essential to achieving the project goals.

Preliminary Alternatives Evaluation and Recommendation

Preliminary Evaluation

Hydraulics – The existing vertical turbine pumps are located at the base of the dam and suction for these pumps is not a problem. However, when the level in the reservoir is low, the pumps are undersized and are unable to keep up with the WTP demand.

A topographic/bathymetric file was provided by CCWD that included elevations for the WTP, ground surface, and reservoir bottom near the dam. Black Water has reviewed the elevation data and using the maximum day demand (MDD) and peak hour demand (PHD) provided in the RFP we have preliminarily determined that a new pump station must be capable of operating over a dynamic range of flow and head conditions depending on the WTP demand and the water surface level of the reservoir. The estimated pump horsepower ranges from 55 to 210 hp. To accomplish this Black Water preliminarily recommends a pumping station that consists of three (3) 75 hp pumps, with space for one (1) future 150 hp pump to handle potential future growth. To improve efficiency of the system, all pumps should be equipped with variable frequency drives.

Two pump types were also considered. Each type and installation are summarized below.

SUBMERSIBLE	SELF-PRIMING CENTRIFUGAL END SUCTION
Pumps installed below the minimum water surface level of the reservoir. Intake suction manifold with 3-4 self-cleaning screens set at or slightly above the bottom of the reservoir. Multiple discharge lines (one per pump) connecting the suction manifold to a valve vault located above the maximum water surface elevation of the reservoir. Power and signal conduit, and screen cleaning flush lines.	Either a permanent or deployable pumps located above the maximum water surface elevation. Suction line permanently installed, anchored to the ground below the reservoir, connected to self-cleaning screens on a suction manifold. Or Floating suction line with cable anchors to the ground below the reservoir. A floating intake with self-cleaning screens, debris barrier set over the deepest portion of the reservoir.

Considering operation and maintenance advantages, the self-priming centrifugal pumps are recommended over the submersible pump option. To reduce electrical installation costs for power and controls of the new pump station, it is further recommended that the pumps be located adjacent to the reservoir above the maximum water elevation of 3200 feet above mean sea level (msl). The installation could be permanent or equipped with electrical and piping connections for a deployable pumping system. Both options are evaluated in this proposal.

The recommended pumps can be installed in all four of the alternative arrangements described on the next pages.

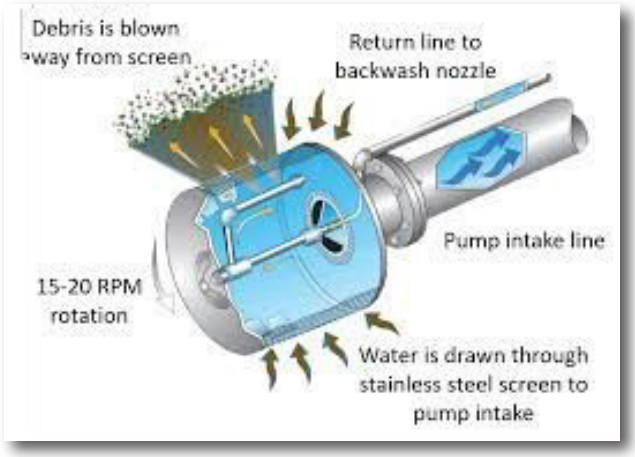
Alternative 1 - Floating Intake

The Floating Intake alternative consists of a prefabricated pontoon system with self-cleaning intake screens and is available from multiple manufacturers. The intake should be place in the deepest part of the reservoir to allow for the greatest usable range in reservoir levels. A photograph of a floating intake is shown in Figure 1.

↑ *FIGURE 1 - FLOATING INTAKE*

Alternative 2 - Fixed Intake

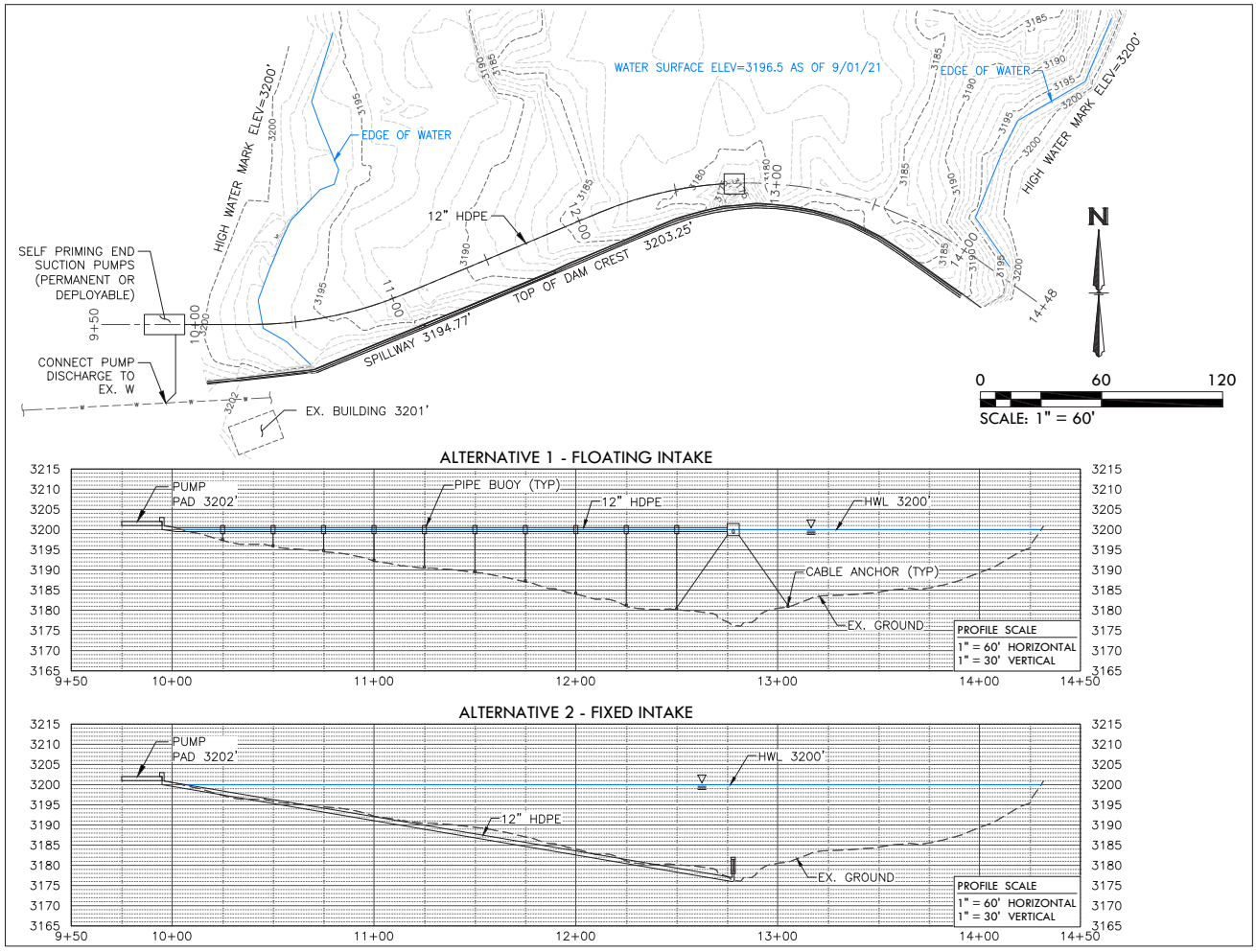
A fixed intake will consist of one or two suction lines installed between the pump station pad and a manifold of intake screens set on the reservoir bottom at an elevation of approximately 3176 msl. The suction line(s) would be installed at a constant slope to the greatest extent possible and be anchored to the bottom on evenly spaced piers. Self-cleaning intake screens are available from several manufacturers in various sizes. Examples of self cleaning screens are shown in Figures 2 and 3. The screen manifold will require a screen flush return line and small booster pump to provide pressure for the spray nozzles on the screens.



↑ *FIGURE 2 - LAKOS*

Preliminary concept designs for Alternatives 1 and 2 are shown in Figure 4 on the next page. For both alternatives, the location of the pumping station, the alignment of the suction line, and the intake screens would essentially be the same. The only main difference between the alternatives is the type of screen and the method of anchoring the suction line. A more detailed evaluation of each of these alternatives is given in Table 1.

↑ *FIGURE 3 - LAKE MCCLURE WATER INTAKES*



↑ *FIGURE 4 - PRELIMINARY DESIGN OF ALTERNATIVES I AND 2.*

Alternative 3 - Deployable Pump Station

The deployable pump station option would include a deployable pumping system connecting to either a floating intake screen (Alt 1), or a submerged fixed intake (Alt 2). A deployable pumping system will likely consist of a three-pump trailer mounted system that would be deployed to a concrete pad that is equipped with electrical and piping connections to operate the system. The location of the concrete pad would minimize the length (and cost) of plumbing and conduit required for the connection and be placed above the reservoirs maximum water surface elevation. The concrete pad and electrical controls would be oversized to allow for the future installation of additional pumping capacity. Because the pumping equipment is trailer mounted, future pumping capacity would most likely need to be installed on a separate trailer. When not in use, the deployable system would be stored at the WTP in a location preferably protected from the elements.

↑ *FIGURE 5 - DEPLOYABLE PUMP STATION*

Alternative 4 - Permanent Pump Station

The permanent pump station alternative would consist of three 75-hp pumps each capable of delivering approximately 2,000 gpm to the WTP. The self-priming centrifugal pumps would be connected to a suction manifold leading to either the floating intake or the submerged fixed intake, and a discharge manifold connecting to the existing WTP supply line. Space would be provided on the equipment pad and in the electrical cabinets to accommodate the addition of a future pump if the demand at the WTP were increased due to consolidation or development. The recommended location for the pump station is the same for both alternatives to reduce the amount of piping and electrical conduit.

ANALYZING ALTERNATIVES

Too frequently, construction alternatives are chosen to include the engineer's preferred project (or the one they think the client wants) and two other alternatives that are obviously less preferable. The alternatives analysis becomes an exercise in report production because no true evaluation is required. This approach is not in the client's best interests. We have developed an approach to alternatives analyses to meet the District's needs. Our approach focuses on the critical parameters that make a project attractive (or unattractive), which are developed in cooperation with input from the client.

With this knowledge, we have identified project alternatives that have a high likelihood of being practical and acceptable. For example, a project that is not highly reliable during a disaster or a winter storm event would be a non-starter. Our structured approach to evaluating alternative projects breaks each project into components and focuses on the differences between them. For each critical parameter, a numerical value is assigned for each option (with higher rankings indicating more preferable conditions). The rankings are then totaled to identify the relative value of each alternative. This procedure not only highlights the best project, but also provides information regarding the spread between project rankings. As an example, our team has preliminarily identified two alternatives for the intake mechanism (floating or fixed), and two alternatives for pumping equipment (permanent installation or deployable) These alternate project components are shown on the attached matrix. Using these four alternatives we have prepared a preliminary analysis of each alternative to assist CCWD personnel in reviewing and selecting a preferred overall project.

The matrix shows the criteria used to evaluate the advantages and disadvantages of each alternative more thoroughly. As we develop our evaluation of each alternative further to include quantitative data such costs associated with different construction materials and methods, the difference between each alternative will become more evident and a recommended project will become apparent. At this level of analysis, the alternative that includes a floating intake (Weighted Score 3.55) and a deployable pumping station (Weighted Score 4.00) appears to rank slightly better than the other alternatives.

↓ TABLE I. NON-FINANCIAL EVALUATION OF RAW WATER INTAKE ALTERNATIVES

Criteria	Ranking Weight	Alternative 1 Floating Intake	Unweighted Score	Weighted Score	Alternative 2 Fixed Intake	Unweighted Score	Weighted Score	Alternative 3 Deployable Pump Station	Unweighted Score	Weighted Score	Alternative 4 Permanent Pump Station	Unweighted Score	Weighted Score
Operations and Maintenance	40%	**Advantages:** - Accessible by boat/barge for maintenance and visual inspection. Greater operating range of reservoir water levels. **Disadvantages:** - Potential for accumulation of debris around intake debris barrier and floating suction line. System is subject to wind and wave action. Subject to vandalism.	3	1.2	**Advantages:** - Minimal moving parts require little or no maintenance. Scheduled periodic inspection and cleaning the intake screen is sufficient. Less prone to vandalism. **Disadvantages:** - Maintenance of underwater intake will required divers or lowering the reservoir water level.	5	2	**Advantages:** - May be stored under cover or indoors when not in use or during maintenance work. Less exposure to the elements. Less prone to vandalism. **Disadvantages:** - Requires the system to be moved to the service site and additional startup time to connect to the electrical and piping utilities. May require additional troubleshooting at startup. Not standard equipment for operations staff.	3	1.2	**Advantages:** - Available for testing, startup, and operation with the least amount of effort and advance notice. Operations staff should be familiar with this type of pump station equipment. **Disadvantages:** - Exposed to the elements.	5	2
Constructability	25%	**Advantages:** - Installation possible at any reservoir water level. **Disadvantages:** - Installation from a barge or boat.	4	1	**Advantages:** - No boat or barge equipment required for installation. **Disadvantages:** - Requires underwater installation or lowering of the reservoir to 3175.	2	0.5	**Advantages:** - Packaged mobile pumping system assembled and shipped as a system by a manufacturer **Disadvantages:** - Minor amount of additional components to accommodate quick-connect of piping and power.	5	1.25	**Advantages:** - Standard construction methods, tools, and practices. **Disadvantages:** - More complex field assemply of custom fittings, materials, and equipment from a variety of suppliers.	2	0.5
Equpment Pre-Purchase and Delivery	20%	**Advantages:** - Multiple manufactures allows for more competative pricing. **Disadvantages:** - Fabrication and shipping delays are possible due to materials and labor supplies.	4	0.8	**Advantages:** - Multiple suppliers, local distributors of screening equipment. **Disadvantages:** - None	2	0.4	**Advantages:** - Available from multiple manufacturers. Single source responsibilty of pumping equipment. **Disadvantages:** - Power and controls provided separately will require additional coordination between electrical designer and pumping equipment supplier.	5	1	**Advantages:** - Purchasing and shipping flexibilty from a variety of local distributors and suppliers. **Disadvantages:** - Fabrication and shipping delays are possible due to materials and labor supplies	3	0.6
Environmental Impact	10%	**Advantages:** - Minimal earthwork, low profile, fish safe perforations. Quiet operation. **Disadvantages:** - Visible on the surface	3	0.3	**Advantages:** - Most pipe and equipment is submerged and not visible below the water line. **Disadvantages:** - Minor disturbance to lakebed and riparian area during installation and anchoring the suction line.	2	0.2	**Advantages:** - Stored off-site, system is less visible when not in use. **Disadvantages:** - Increased effort to deploy and start up the the system will cause additional prolonged noise and activity.	4	0.4	**Advantages:** - None **Disadvantages:** - Aesthetic (visual) environmental impacts with permanent installation.	3	0.3
Utilities	5%	**Advantages:** - All of the power and signal is on the land. **Disadvantages:** - None	5	0.25	**Advantages:** - All of the power and signal is on the land. **Disadvantages:** - Additional booster pump required for screen wash return flow.	3	0.15	**Advantages:** - None **Disadvantages:** - Additional steps required for connecting the equipment to power and plumbing when pumping is necessary.	3	0.15	**Advantages:** - No addition connection equipment or operational processes are needed to begin pumping raw water. **Disadvantages:** - None	4	0.2
Final Score	100%			3.55			3.25			4.00			3.60

Note:
1. Unweighted Score: Least Desireable = 1, Most Desireable = 5.

Preliminary Costs

Black Water has contacted vendors to request budgetary cost data for screening and pumping equipment evaluated in this section. Table 2 presents a summary of the cost information. The total costs are representative of the items unique to the alternative and do not include demolition, construction of the mechanical building, or other project components that are common to the alternatives. The costs represent materials and equipment only and do not reflect contractors mark-up, taxes, shipping, or contingencies. Evaluation assumptions, data, and vendor information is provided in Appendix A.

↓ *TABLE 2. PRELIMINARY BUDGETARY COSTS*

	INTAKE		PUMP STATION	
	FLOATING	FIXED	DEPLOYABLE	PERMANENT
EARTHWORK	$0	$15,000	$5,000	$5,000
CONCRETE	$5,000	$20,000	$15,000	$25,000
EQUIPMENT	$45,000	$65,000	$405,000	$540,000
PIPE AND FITTINGS	$80,000	$85,000	$25,000	$25,000
ELEC, INST, & CONTROLS	$8,000	$5,000	$240,000	$215,000
ESTIMATE TOTAL	**$138,000**	**$190,000**	**$690,000**	**$810,000**

Assumptions:

1. *No dredging or contouring of lake bed.*
2. *Costs do not include contingencies, taxes, or shipping.*

Scope of Work

Scope of Work

The Scope of Work in the RFP includes a detailed list of tasks for the various phases of the project. Black Water is proposing to complete the scope of work provided by CCWD *with the exception* of Task 2 – Preliminary Design Report. It is our understanding that to accelerate the schedule, this task will be simplified to only include evaluation of a preferred option that will be selected by CCWD at the time the project is awarded to the consultant. We have also identified additional tasks to supplement the base scope of work and that will improve the overall outcome of the project and reduce the project cost.

TASK 1 *PROGRESS MEETINGS*

Black Water will schedule periodic progress meetings throughout the design phase for the kickoff, preliminary design report review and various workshops and review meetings for the 65%, and 100% deliverables. Black Water is anticipating a total of six (6) progress meetings in this scope of work.

TASK 2 *PRELIMINARY DESIGN MEMORANDUM*

Black Water will review project materials and data provided by the District that will assist in developing a preferred alternative and provide the basis for designing the improvements. Black Water will prepare a preliminary design technical memorandum for further refinement of a preferred alternative that will be selected by CCWD at the time of consultant selection.

Deliverables: Request for Information, Preliminary Design Technical Memo, preliminary plans, details, and refined cost estimates.

TASK 3 *EQUIPMENT PRE-PURCHASE*

In advance of bidding the project for construction, the District plans to pre-purchase the pumping system, control panel and complete PG&E application for Power. Black Water will prepare a purchase specification and review shop drawings prior to release of the unit for fabrication.

Deliverables: Equipment Pre-purchase Specification and Shop Drawing Review Comments and Markups.

TASK 4 *PROJECT DRAWINGS*

Black Water will provide civil, mechanical, structural, and electrical design drawings, contract documents and specifications for the project. Black Water will retain a qualified electrical engineering subconsultant to complete the electrical and instrumentation design for the project.

Deliverables: 65% and 100% Drawings.

TASK 5 *PROJECT MANUAL*

CCWD's project manual generally uses the Engineer's Joint Contract Document Committee (EJCDC) boilerplate front end contact documents and bid forms. Black Water will prepare and edit the project manual which includes the bid documents, contract documents, general conditions, supplementary and special conditions, sequence of work, bid schedule, description of bid items, and all necessary technical specifications.

Deliverables: 65% and 100% Project Manuals.

TASK 6 *CONSTRUCTION COST ESTIMATES*

The District would prefer to have highly cost-effective design solutions and not go over budget on this project. Black Water will provide cost estimates at each step in the design effort so these estimates may be used as a tool to guide design choices and select more economical alternatives.

Deliverables: 65% and 100% construction cost estimates.

TASK 7 *BID PERIOD SERVICES*

The District will advertise and circulate the bid documents for public bidding of the project for construction. Black Water will prepare written responses to answer bidder's requests for information and to make clarifications. During the bid, Black Water will prepare written addenda to address changes and clarifications to the drawings, bid forms, project manual and technical specifications. Black Water will review the bids and make a recommendation for award.

Deliverables: Attend Pre-Bid Meeting, Reply to Bidder's RFI's, Written Addenda and Recommendation for Award.

TASK 8 *ENGINEERING SERVICES DURING CONSTRUCTION*

After the bid, Black Water will prepare a conformed set of drawings and specifications for construction and provide engineering support during construction, including reviewing shop drawings, answering requests for information, and resolving technical issues.

Deliverables: Conformed Drawings, Written Shop Drawing Review Comments, and Field Notes.

TASK 9 *PROJECT MANAGEMENT AND ADMINISTRATION*

This task includes project correspondence and meetings with the Client, subconsultants, and stakeholders via telephone or virtual meetings.

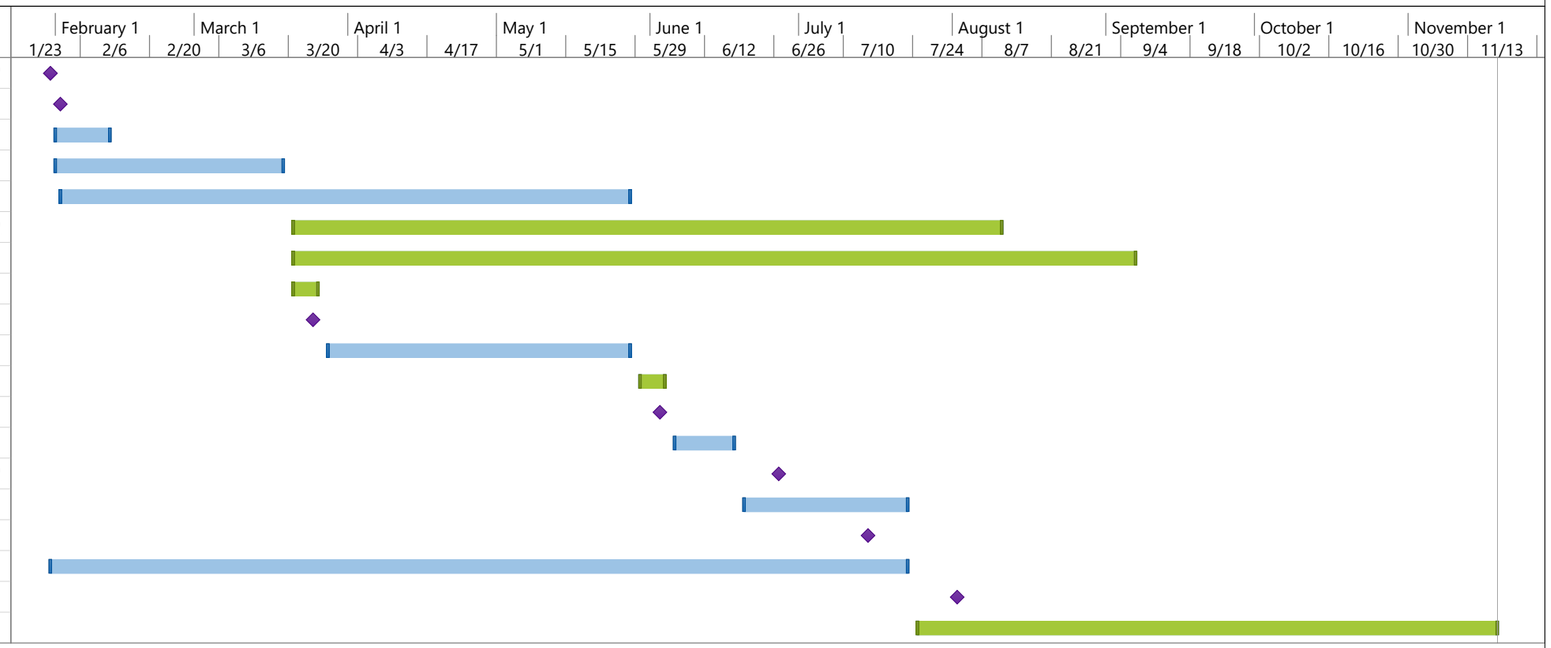
Administration includes general office and overhead activities directly attributed to tracking and managing the progress of the project. Typical tasks include copying and production, budget and schedule tracking, resource allocation, and invoicing.

Deliverables: Detailed monthly invoices.

↓ *A DETAILED SCHEDULE WITH TASKS AND MILESTONES IS SHOWN ON THE NEXT PAGE.*

Calaveras County Water District
Hunters Raw Water Pump Station Mitigation Project
Preliminary Project Schedule

ID	Task Name	Duration	Start	Finish
1	Notice to Proceed	1 day	Mon 1/31/22	Mon 1/31/22
2	*Kickoff Meeting*	1 day	Wed 2/2/22	Wed 2/2/22
3	Develop Preliminary Design Consensus	9 days	Tue 2/1/22	Fri 2/11/22
4	60% PS&E	34 days	Tue 2/1/22	Fri 3/18/22
5	CEQA/FEMA Completion	83 days	Wed 2/2/22	Fri 5/27/22
6	Pre-Purchase Equipment	103 days	Mon 3/21/22	Wed 8/10/22
7	PG&E Service Application	122 days	Mon 3/21/22	Tue 9/6/22
8	CCWD Review	5 days	Mon 3/21/22	Fri 3/25/22
9	*Progress Meeting*	1 day	Fri 3/25/22	Fri 3/25/22
10	Final PS&E	45 days	Mon 3/28/22	Fri 5/27/22
11	CCWD Review	5 days	Mon 5/30/22	Fri 6/3/22
12	*Progress Meeting*	1 day	Fri 6/3/22	Fri 6/3/22
13	Prepare Bid Documents	10 days	Mon 6/6/22	Fri 6/17/22
14	*Pre-Bid Meeting*	1 day	Mon 6/27/22	Mon 6/27/22
15	Bid & Award	25 days	Mon 6/20/22	Fri 7/22/22
16	*Bid Review Meeting*	1 day	Fri 7/15/22	Fri 7/15/22
17	Project Management & Admiration	125 days	Mon 1/31/22	Fri 7/22/22
18	*Pre-Construction Meeting*	1 day	Tue 8/2/22	Tue 8/2/22
19	Engineering Services During Construction	85 days	Mon 7/25/22	Fri 11/18/22



LEGEND	BWCE	CCWD	Milestones/Meetings

Prepared by: Black Water Consulting Engineers, Inc.

Fee Estimate

Fee Estimate

CALAVERAS COUNTY WATER DISTRICT
HUNTERS RAW WATER PUMP STATION MITIGATION PROJECT

13-Jan-22

ESTIMATED FEE SCHEDULE

TASK	Task Activity	Principal/ Project Manager	Senior Engineer	Assistant Engineer	CAD/ GIS	Admin.	Office/ Clerical	Black Water Total Hours	Black Water Fee	Sub Consultant Fee	Total Fee
	Hourly Rate	218	198	155	135	98	75				
1	Project Meetings	24	24	12			3	63	$12,069		$12,069
2	Preliminary Design Report	8	18	72			8	106	$17,068		$17,068
3	Equipment Pre-Purchase	4	32	80			6	122	$20,058		$20,058
4	Project Drawings	40	60	192	410		8	710	$106,310	$5,100	$111,920
5	Project Manual	24	44	124			60	252	$37,664		$37,664
6	Construction Cost Estimates	8	16	30				54	$9,562		$9,562
7	Bid Period Services	4	12	40		4	4	64	$10,140		$10,140
8	Engineering Services During Construction	3	6	140	24			173	$26,782		$26,782
9	Project Management and Administration	24				32		56	$8,368		$8,368
	Totals	**139**	**212**	**690**	**434**	**36**	**89**	**1600**	**$248,021**	**$5,100**	**$253,631**

1. Additional task items and hours will be charged at Consultants Standard 2021 rate schedule.
2. Mileage is charged at the IRS rate.
3. Reimbursable expenses are charged at consultants cost plus 10 percent.
4. Black Water Consulting Engineers will gladly discuss the assumptions, timing, and fees shown herein to negotiate an equitable fee with CCWD.

Appendix A

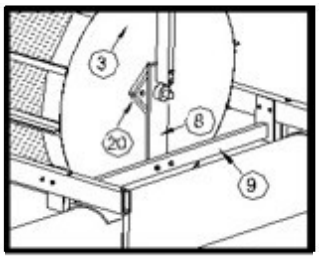
Preliminary Alternatives Evaluation Data

RIVERSCREEN™

RIVERSCREEN PRODUCT SPECIFICATION

12 INCH RIVERSCREEN

4/15/2021



END VIEW

WHEEL ASSEMBLY VIEW

Parts List

Item	Part No.	Qty.	Description
1	R - SF1012	1	12" Suction Funnel
2	R - DPB0812	1	Drum Plate B
3	R - DPA0812	1	Drum Plate A
4	R - WB1012	1	10" Wheel Bracket
5	WA500	2	Wheel Assembly
6	R - AF0812	1	A Frame
7	R - LF0812	1	L Frame
8	R - DSP0812	1	Drum Support Plate
9	R - DSR0812	1	Drum Support Rail
10	R - CSB0812	1	Cleaning Spray Bar
11	R - SBA0612 Attachment	1	Spray Bar
12	R - LR0812	1	Left Side Rail
13	R - RR0812	1	Right Side Rail
14	R - SA0812	2	Screen Assembly
15	SH012	1	12"x40" Suction Hose
16	TBC012	2	12" T Bolt Clamp
17	R - HP001	1	Hanger Plate
18	R - PS0612	8	Pontoon Strap
19	R - P10	4	10 ft. Pontoon
20	FPL205-AIB-1-6	1	1” Bearing w/ Block

Specifications

Weights

Basic Unit: 285 lbs

Optional Equipment

Power Drive: 2 lbs

Foot Valve w/ Pressure Relief: 16 lbs

Extra pontoon: 24 lbs

Maximum GPM Ratings & Velocities

4,000 GPM @ 11.66 ft per second

3,000 GPM @ 8.75 ft per second

2,000 GPM @ 5.83 ft per second

1,000 GPM @ 2.91 ft per second

Screen area at maximum depth (7 inches)

8.29 Square feet

Additional Set-up Items (Not Shown in Picture)

EPDM58	1	5/8" Hose
R - FA0612	1	Filter Assembly
CC6252	1	Anchor
AR1550	1	Cable
R - BP0612	1	Bolt Package

RIVERSCREEN, Inc.
1919 Kiowa Road
Clay Center, Kansas 67432
www.riverscreen.com

Contact Information:
Office: 785-632-5452
Fax: 785-632-6141
Email: joe@riverscreen.com

From: Toua Cha
To: Jeff Black
Subject: PC3424 Budgetary
Date: Monday, January 10, 2022 8:03:54 AM

Hi Jeff,

I got your voicemail and left a message as well, but here is the budgetary number:

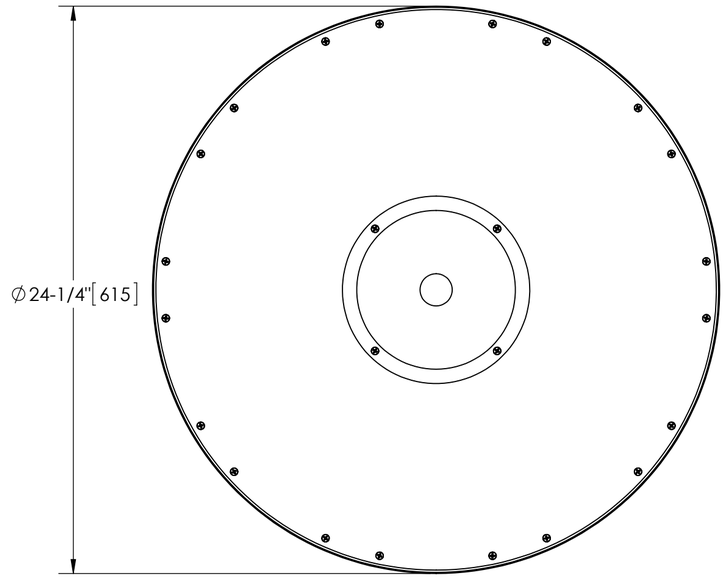
Part Number	Description		QTY	MSRP Ea.
106901	PC342410S	PC SCREEN 3424 CAGE 10 MESH TP 304L SS	1	$ 5,205.00

This would be MSRP only with a standard lead time of 3-4 weeks to build.

Thank you,

Toua Cha
Account Manager
LAKOS Filtration Solutions
C: 559-400-1326| O: 559-558-9340
Toua.cha@lakos.com | www.lakos.com

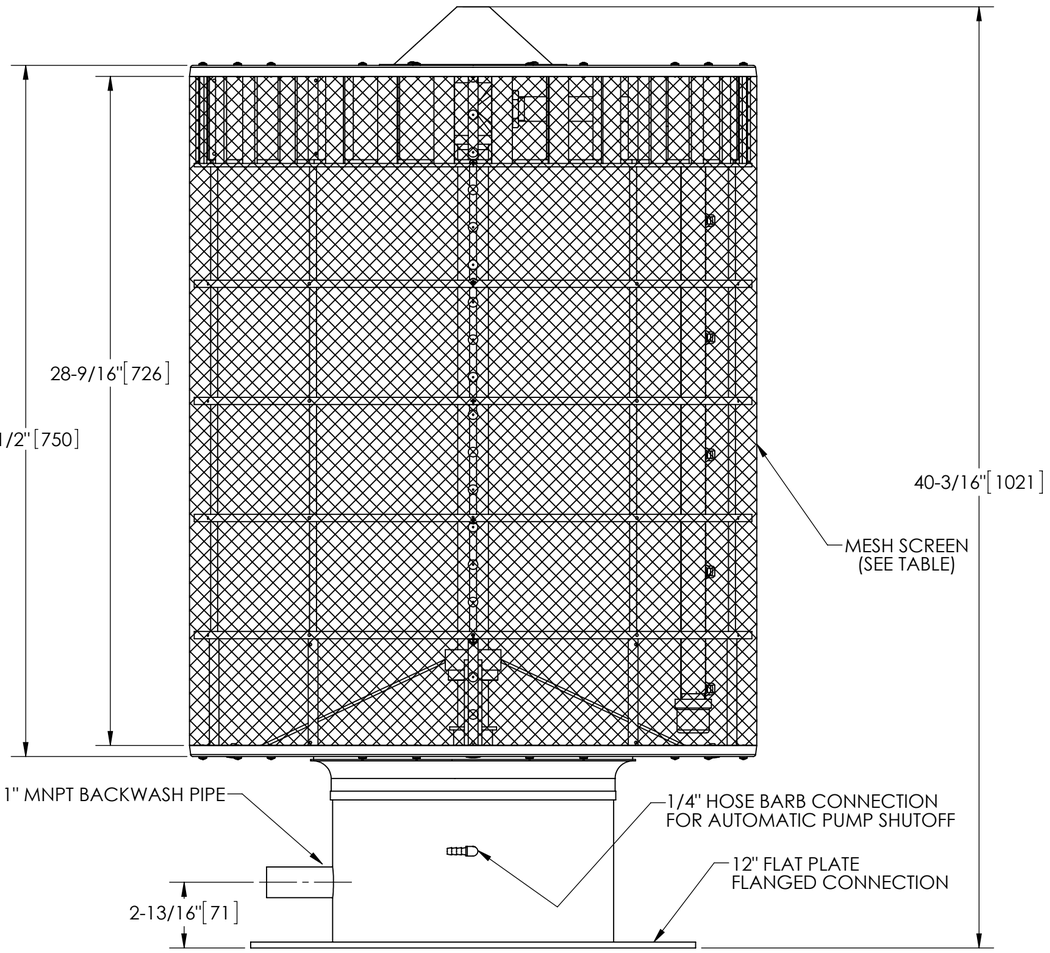
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

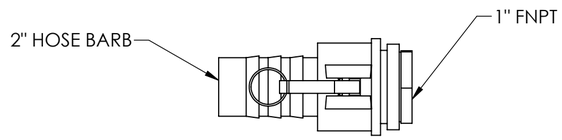


NOTES:

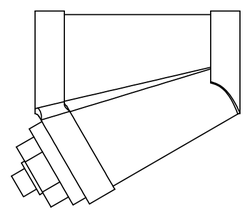
1. OUTLET FLANGE IS 12" FLAT PLATE B16.5 HOLE PATTERN REQUIRING 12X 7/8" BOLTS (BOLTS AND GASKETS NOT INCLUDED).
2. REQUIRED BACKWASH PRESSURE: 75-100 psi (5.1-6.9 Bar).
3. APPOXIMATE BACKWASH FLOW AT PROPER PRESSURE: 41 gpm. (9.5 m³/hr)
4. MAXIMUM FLOWRATE: SEE TABLE.
5. APPROXIMATE DRY WEIGHT: 93 lbs. (42 kg.)
6. FINISH: SEE TABLE

PART NO.	DESCRIPTION	SCREEN MESH	MAXIMUM FLOW RATE		SUCTION PIPE	
			GPM	M³/HR	MATERIAL	FINISH
106890	PC292410E	10	2050	465	CARBON STEEL	LAKOS GREEN
106893	PC292418E	18	2050	465	CARBON STEEL	LAKOS GREEN
106896	PC292430E	30	1450	330	CARBON STEEL	LAKOS GREEN
106892	PC292410S	10	2050	465	STAINLESS STEEL	GLASS BLAST
106895	PC292418S	18	2050	465	STAINLESS STEEL	GLASS BLAST
106898	PC292430S	30	1450	330	STAINLESS STEEL	GLASS BLAST





2" QUICK DISCONNECT ADAPTER
(INCLUDED)
SCALE 1:4



2" INLINE STRAINER
(INCLUDED)
1:4

SUBMITTAL DRAWING

This drawing is submitted for spatial consideration only. Do not pre-plumb to these dimensions.

THIS DRAWING HAS BEEN GENERATED AND IS MAINTAINED BY A CAD SYSTEM. CHANGES SHALL ONLY BE INCORPORATED AS DIRECTED BY AN APPROVED ENGINEERING CHANGE ORDER (ECO).
PAPER COPIES ARE UNCONTROLLED.

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN: INCHES [mm]
TOLERANCES ARE:
FRACTIONS ± 1/4" DECIMALS .XX ± .01 .XXX ± .005 .XXXX ± .0005 ANGLES ± 1/4°
DO NOT SCALE DRAWING
MATERIAL: PER LAKOS SPECS
FINISH: SEE NOTES

ENGINEERED FOR: STANDARD

APPROVALS	DATE
DRAWN TAR	12/4/13
ENGR -	-
MFG -	-
WORK ORDER	QTY.

LAKOS
CLAUDE LAVAL CORP.
FRESNO, CALIFORNIA 93727
WWW.LAKOS.COM
LAVAL UNDERGROUND SURVEYS

TITLE: PC 2924 PC SCREEN
29" TALL x 24" DIAMETER

SIZE	MODEL NO.	DWG NO.	REV.
C		106890	A
SCALE 1:5		EST. WT. 93 lbs.	SHEET 1 OF 1

DWG NO. 106890 SH 1 REV. A

evoQUA
WATER TECHNOLOGIES

VAF™ FILTRATION SYSTEMS
SELF-CLEANING INTAKE SUCTION SCREENS

GENERAL INFORMATON

When pumping water, it is important to keep equipment running smoothly and water flowing freely. Whether pumping water from a stream, canal, river, ditch, pit, sump, or pond, the water must be free of debris that could block water flow, damage the pump, clog water distribution equipment or damage process equipment.

The Self-Cleaning Intake Suction Screen utilizes a heavy 12, 18, or 24 mesh stainless steel screen designed to increase pump efficiency. The screen continuously removes debris from water. This saves energy and maintenance costs. The suction screens can be used in numerous applications with intake.

The suction screen is attached to the end of the pump at the water source. All water pulled in must traverse the screen before entering the intake pipe. The screen stops debris from entering and causing costly maintenance requirements in the system. The pump discharge return line drives two spray bars that continually rotate, jet water at the screen, and blast debris away from the screen at 2.8 to 4.5 bar (40 to 65 psi) operating range.

The suction screen has no exterior moving parts. It can be installed at any altitude without the operation being affected. The screen is corrosion resistant and also has a standard flanged connection. Other connections are available upon request.

Advantages

- Self-cleaning with very low maintenance requirements
- Construction Options: hot dip galvanized, epoxy coated carbon steel, and 304/316 combined
- Heavy duty, corrosion resistant construction for a long service life
- No exterior moving parts
- Hydraulically powered
- Simple installation
- Available in:
  - 12 mesh (1680 micron)
  - 18 mesh (1000 micron)
  - 24 mesh (710 micron)
- When combined with a V-Series™ automatic self-cleaning screen filter, any water source can be filtered down to 10 micron.

SUCTION SCREEN SPECIFICATIONS

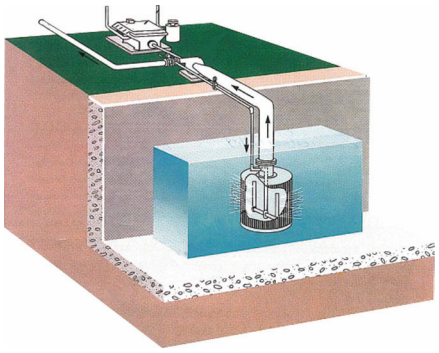
MODEL	FLOW RATE 12 OR 18 MESH	FLOW RATE 24 MESH	LENGTH	DIAMETER	FLANGE SIZE	SPRAY	OPERATING PRESSURE	WEIGHT
	M³/HR	M³/HR	CM	CM	CM	M³/HR	BAR	KG
IS-100	45	37	50.8	30.5	7.6	3	3-4	14
IS-200	74	51	63.5	40.6	10.2	4.5		26
IS-400	125	91	73.7	40.6	15.2	4.5		28
IS-600	170	119	83.8	61.0	20.3	4.5	3.1-4.5	46
IS-800	216	159	88.9	61.0	25.4	4.5		52
IS-1000	307	216	101.6	61.0	25.4	6.4		56
IS-1400	352	250	109.2	61.0	30.5	6.4		60
IS-1700	409	284	114.3	66.0	30.5	6.4	3.4-4.5	67
IS-2000	477	329	124.5	66.0	35.6	8.2		73
IS-2400	591	409	134.6	76.2	40.6	8.2		101
IS-3000	681	471	147.3	76.2	40.6	10		107
IS-3500	795	550	152.4	91.4	45.7	10		129
IS-4000	908	628	162.6	106.7	45.7	10		163

MODEL	FLOW RATE 12 OR 18 MESH	FLOW RATE 24 MESH	LENGTH	DIAMETER	FLANGE SIZE	SPRAY	OPERATING PRESSURE	WEIGHT
	GPM	GPM	IN	IN	IN	GPM	PSI	LBS
IS-100	200	165	20	12	3	12	40-60	30
IS-200	325	225	25	16	4	20		58
IS-400	550	400	29	16	6	20		62
IS-600	750	525	33	24	8	20	45-65	102
IS-800	950	700	35	24	10	20		115
IS-1000	1350	950	40	24	10	28		123
IS-1400	1550	1100	43	24	12	28		131
IS-1700	1800	1250	45	26	12	28		148
IS-2000	2100	1450	49	26	14	36		160
IS-2400	2600	1800	53	30	16	36	50-65	223
IS-3000	3000	2075	58	30	16	44		236
IS-3500	3500	2420	60	36	18	44		283
IS-4000	4000	2765	64	42	18	44		358

NOTES:
12 mesh = approximately 1680 micron, 18 mesh = approximately 1000 micron, 24 mesh = approximately 710 micron

To specify construction selection, add G = Galvanized, E = Epoxy Coated, S = Stainless Steel (For Example: ISG-200)

TYPICAL APPLICATION



STRAINER

An inline strainer or mini-filter is recommended in the 1.5" spray water supply line.

- 1.5" Solvent Weld Connections
  Max Flow 16 m³/hr (70 gpm)
- 2" Solvent Weld Connections
  Max Flow 23 m³/hr (100 gpm)

STRAINER

Models Available

Model	Part Number
1.5" Strainer	STR-IS-1.5-PVC
2" Strainer	STR-IS-2.0-PVC

SUCTION SCREEN FEATURES

EVOQUA WATER TECHNOLOGIES

5270 Marshall St, Arvada, CO 80002 USA

Phone: **+1 (303) 425-4242** Fax: **+1 (303) 425-0112** www.vafusa.com www.evoqua.com

NOT FOR DESIGN. PRELIMINARY ONLY FOR THE PROPOSAL.

Hunters Raw Water Intake PS - P0370

WTP	3280 amsl	Pump Elevataion	3203
Max WSE	3200 amsl	Maximum static lift	21 (close to max.)
Min WSE	3182 amsl		

Estimated horsepower

				Static Head, ft	
Flow	mgd	gpm	cfs	80	98
ADD	2.7	1852	4	**69**	**84**
MDD	4	2778	6	**103**	**126**
PHD	8.2	5694	13	**211**	**258**

Increase by 50% to account for friction losses between the intake and the WTP.

Minimum Required hp is 69, the maximum is 258.
Recommend 3 initial pumps, 90 hp each
Future 4th pump 150 hp.
VFD's on all pumps.

BBA Pumps®

Pumps for results

BA200E Diesel Driven

This cut sheet shows a diesel driven pump. The same pump can also be provided with an electric motor, 480V.
Mfrs budgetary cost: $98,000/pump, unmounted.

Pump specifications:

Type	BA200E D328
Max. flow	3850 US GPM (875 m3/hour)
Max. pressure	152 ft. / 65.8 PSI (46 mwc)
Discharge x suction	8" x 10" flanges
Solids handling	3,15" (80 mm)
Impeller type	Open impeller
Priming system	BBA MP50
Engine	Volvo Penta TAD570VE
Emission standard	Tier 4 final
Canopy	M14-30
Sound level	Approx. 69 dB(A) at 33 ft.
Dry weight	8760 lbs. (3980 kg)

FEATURES

BA auto prime pump
The BA range of pumps has been designed with a clear focus on reliability, efficiency and durability. Featuring a fully automatic priming system, the BA series pumps quickly prime and re-prime, even from dry conditions. The heavy build style of both pump and canopy make the BA range perfect for use in the demanding construction market.

World-class performance
The BA range is built to be deployed on the most demanding applications. Using high efficiency pumps and state-of-the-art diesel engines, the pumps offer maximum performance at minimal cost, fully in-sync with the company philosophy of “Lowest cost of ownership”.

Sustainability
- High efficiency pumps minimising fuel consumption
- Corrosion free hot dip galvanized canopy
- Corrosion free composite door panels and powder coated plating
- 100% Oil-spill free priming system
- Fully self contained unit featuring a double wall fuel containment tank and fluid containment system eliminating fuel/oil spills at all times

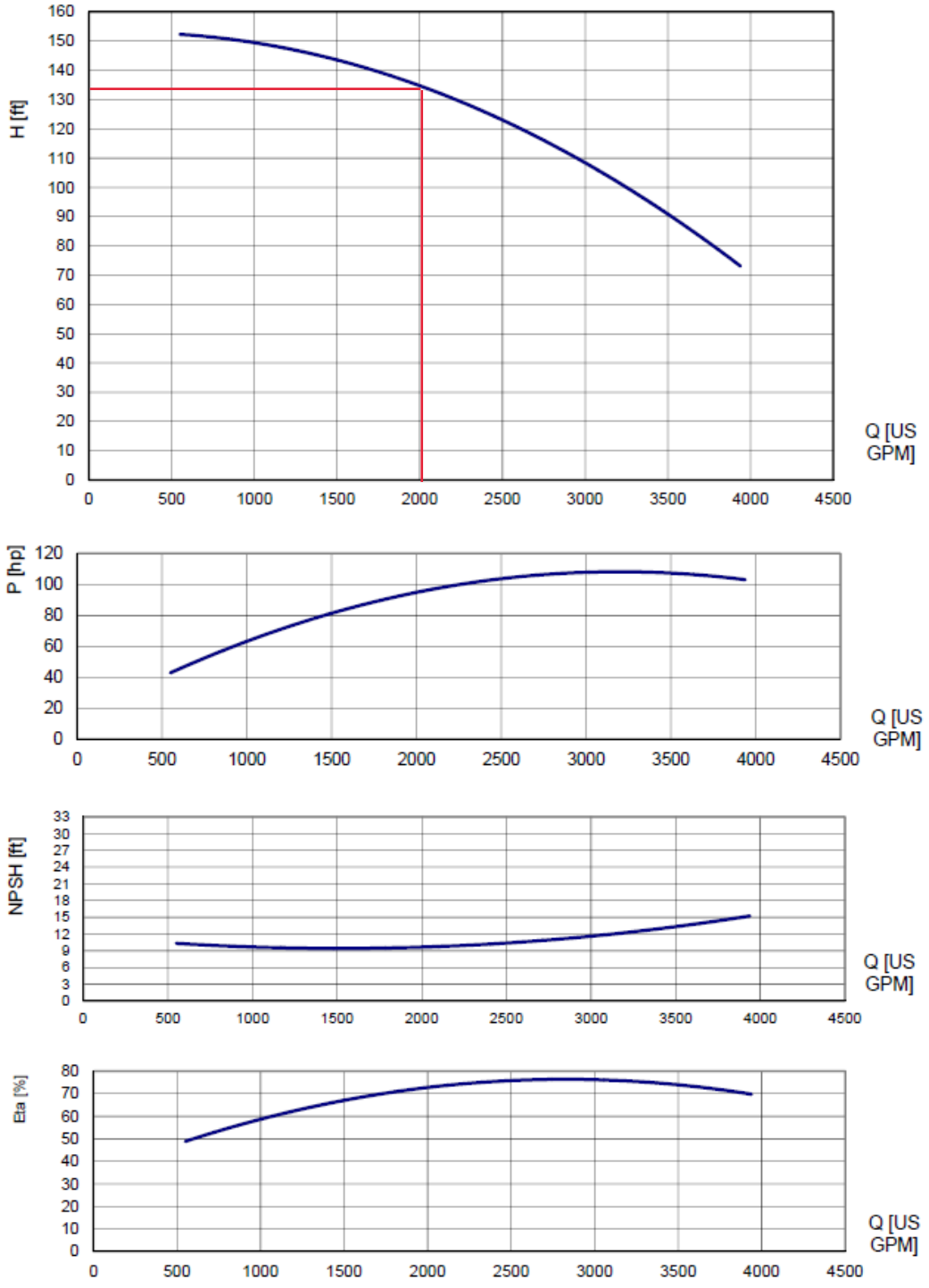
Complete package designed & built by BBA Pumps
- Complete in-house design & production
- Over 60 years of experience in the market
- Extensive testing facility in-house
- Contemporary & functional design
- Durable & eco-friendly materials
- Custom builds available

After sales service & product support
- Single supplier for parts, spares & accessories
- Dedicated customer help-desk (24h service)
- Dedicated service department in-house
- Global parts distribution network
- Optional global on-site servicing
- Extensive training options available (technical & commercial), on-site or in-house

PUMPS FROM HOLLAND

PERFORMANCE CURVES 1800 RPM

Continuous duty according ISO 9906



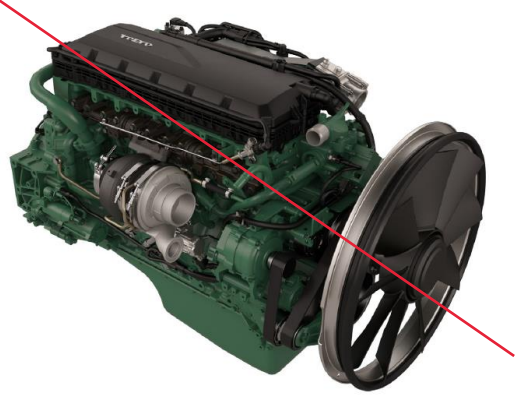
STANDARD TECHNICAL SPECIFICATIONS

BBA auto prime pump

Pump type	BA200E D328
Max. flow	3850 US GPM (875 m^3/hour)
Max. head	152 feet / 66 PSI (46 mwc)
Impeller type	Open impeller
Solids handling	3.15" (80 mm)
Pump casing	Cast iron GG20
Impeller	Chrome Moly 42CrM04
Wear plate	Chrome Moly 42CrM04
Pump shaft	C45
Shaft seal	Mechanical seal
Seal faces	Tung/Sic
O-ring	Viton

BBA priming system

Pump type	BBA MP50 Diaphragm pump
Air handling capacity	28 CFM (50 m^3/h)
Max. vacuum	29 inHg (8.5 m)
Drive	Toothed belt (continuous drive)
Float box	Aluminium
Non return valve	Cast iron GG25
Check valve disc	Buna-N



Engine

Engine brand	Volvo Penta
Engine type	TAD570VE
Flywheel power	130 Hp (96 kW)
Engine speed	1300 - 1800 RPM
Fuel consumption	202 g/kWh
Displacement	5.1 ltr
Number of cylinders	4
Aftertreatment	SCR (=AdBlue)
Exhaust emission US	Tier 4 final

Lofa control panel LC30

- Auto start/stop system
- Two float switches included (10m cable)
- Switch Manual-0-Auto
- RAMP-UP/DOWN function
- Rpm. control with push buttons
- Warning lights
- 4.3" LCD monitor

Fuel system

- Fuel tank steel 125 gallon net (450 L)
- AdBlue® tank 48 US Gallon net (180 L.)
- Electronic fuel injection system

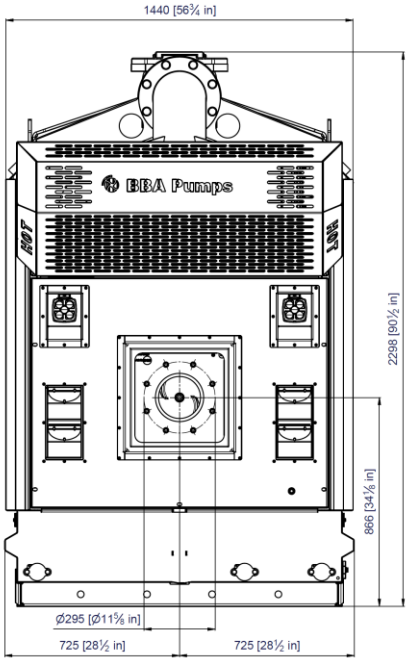
Electrical system & safety features

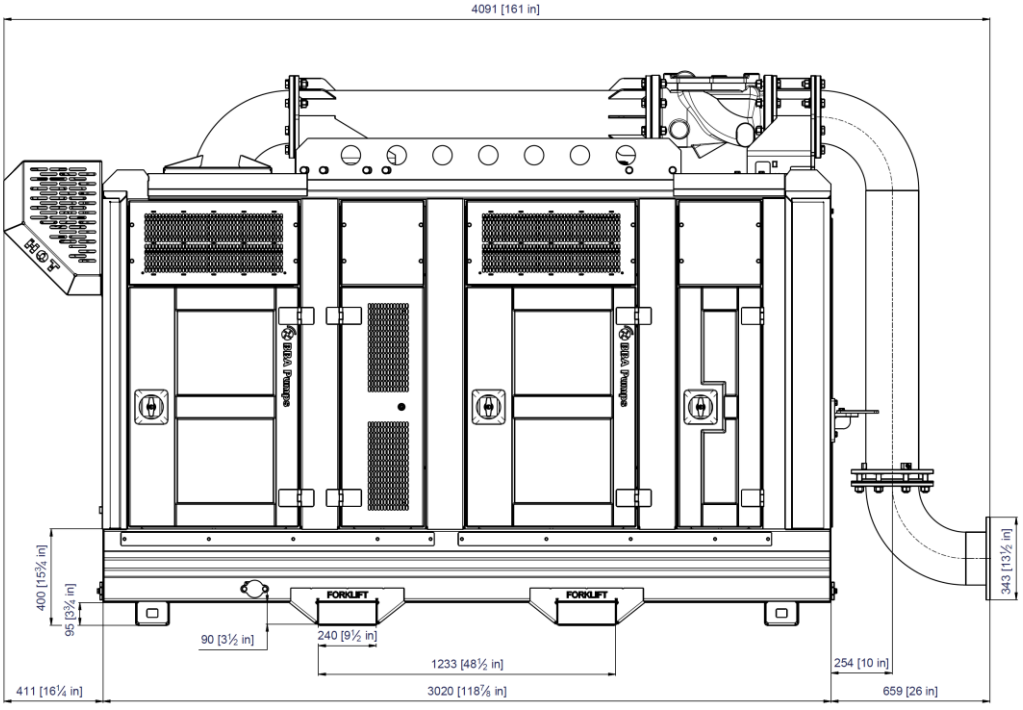
- Nominal voltage 24 Volt
- Premium quality battery
- Engine safety features like overload shutdown

CANOPY M14-30 (discharge roof pipe)

BBA sound attenuating canopy

Canopy type	M14-30
Dimensions L x W x H	157.5 x 57 x 98.4 inch
Dimensions L x W x H	4000 x 1450 x 2500 mm
Basic frame	Hot dip galvanized
Doors	6 composite easy-access doors (lockable)
Fuel tank	Steel net 125 US gallon (475 ltr)
Fuel tank autonomy	22-23 hours (at 1800 rpm BEP)
Fuel tank cap	4 inch (100 mm)
Adblue® tank	PE net 48 US Gallon (180 ltr)
Forklift pockets	Fitted with 2 forklift pockets
Lifting point	Fitted with lifting points
Connections	Flange connections
Exhaust system	Muffler mounted on front canopy
Aftertreatment	Fully integrated in the canopy
Additional	Fitted with oil-water separator
Documentation box	BBA user manual and warranty book





Actual dimensions (in mm and inches) may vary depending on selected quick couplings.

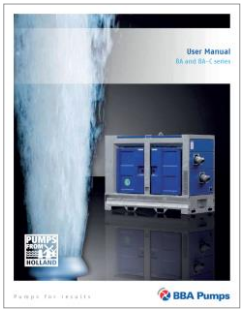
Factory Acceptance Test
Extensive testing facility in-house. FAT must be conducted formally and be witnessed by the owner and/or project manager.

LED lights
Fully integrated in the canopy for easy operation throughout the evening and night.

Large inspection covers
Easy access to float box, impeller and non-return valve.

Safety
Extremely durable and lockable T-locks offering perfect grip.

4 Year limited warranty
The BBA limited warranty covers years or operating hours whichever occurs first. For more details please consult the BBA warranty book.



User Manual BA
Extensive user manual with important information concerning the pump unit, pump installation and safety warnings. Available in several languages.

Pictures used are for illustration purposes only.

Appendix B

Reference Projects and Resumes

Project Experience and References

Black Water provides a range of services in the field of water and wastewater engineering. Our team of licensed professional civil engineers and technical staff possess a wealth of experience drawn from a variety of projects. With creativity and commitment, we draw upon that experience and combine it with understanding of the latest methods, standards, and technologies to develop innovative and sustainable solutions for our clients and the communities they serve. The following demonstrate our team's experience with similar projects.

REYNOLDS RANCH WATER STORAGE TANK PROJECT *CITY OF LODI*

Contact: Lyman Chang - City Engineer/Deputy Public Works Director; P: 209.333.6800 ext. 2665

The project is comprised of installing a one million-gallon welded steel storage tank and booster pump station with four pumps of a rated capacity of 1,375 gpm each. These improvements, constructed adjacent to the City's existing Well 23 site, will provide the water supply and pressure for domestic and fire protection demands for the Reynolds Ranch development. The new storage tank and pump station connects to the existing distribution system downstream of the existing well. The project also includes on-site post-construction stormwater treatment, a new pump station building, hypochlorite treatment system, and site hardscape improvements.

LAUREL AVENUE BOOSTER PUMP STATION *TWAIN HARTE COMMUNITY SERVICES DISTRICT*

Contact: Tom Trott, P.E. - General Manager; P: 209.586.3172

Twain Harte Community Services District (THCSD) contracts for surface water from the Tuolumne Utilities District and operates a direct filtration plant to provide potable water to the residents and businesses in the community. THCSD provides water to Cedar Pines Avenue, a residential street with 46 homes located along the top of Cedar Pines ridge on the south side of Twain Harte. Water is gravity fed from storage tanks at the water treatment plant to an existing pump station located at the south end of Laurel Avenue. Two booster pumps deliver water to a 40,000 gallon water storage tank near the top of Cedar Pines ridge. Water is then distributed by gravity to the homes along the street. The existing system could not provide sufficient pressure to some of the homes, requiring the use of additional privately owned booster pumps.

Black Water conducted a detailed evaluation to determine the most effective option to provide adequate domestic water pressure and flow to the residents of Cedar Pine Avenue. Alternatives for leaving the existing 40,000 gallon storage tank in service were considered. Recommendations were also considered for VFD's and a hydro-pneumatic tank taking into account the effects of low flow periods on this equipment. Black Water prepared a technical memorandum recommending the installation of a hydro-pneumatic tank.

OID PARKS IRRIGATION PROJECT *CITY OF OAKDALE*

Contact: Jeff Gravel - Public Services Director; P: 209.845.3600

Black Water is providing engineering services for the design of diversion, pumping, and conveyance facilities used to provide Oakdale Irrigation District water to the City of Oakdale park irrigation system. 50% preliminary plans and specifications were prepared for system connections, piping, filters, pumps, and controls to divert irrigation water from an existing OID irrigation structure to the City park irrigation system at Greger and Branding Iron.

MOUNTAIN CREEK SCHOOL WATER TANK REPLACEMENT - DWSRF *PIONEER UNION SCHOOL DISTRICT*

Contact: Kelly Howard - Chief Business Officer; P: 530.620.3556

The existing 20,000-gallon Redwood Storage Tank was cited for a positive bacteriological test in the past and was at risk for future reoccurrence. The wooden tank leaked consistently due to the age of the structure. The reliability and safety of the existing tank did not comply with waterworks standards and had made it no longer practical to maintain. Black Water secured state funding and was retained for engineering services for the replacement of the Redwood Tank with a steel tank of the same size and in the same location. The tank site was retrofitted with a booster station, control panels, and a disinfection system.

COLONY OAK SCHOOL WATER WELL IMPROVEMENTS *RIPON UNIFIED SCHOOL DISTRICT*

Contact: Dr. Ziggy Robeson - Superintendent; P: 209.599.2131

Black Water prepared the plans and specifications for drilling, construction, and development of a production well to bid a pilot borehole, including geophysical logging and collection of water sampling, testing, and analysis at recommended depths to evaluate the borehole prior to the development of the final production well. Additionally, plans and specifications were also developed for the well site infrastructure improvements including the installation of a new well and pump station, pressure tank, metering, chemical system, well head piping, controls and equipment housing, site access/ driveway, site drainage and well system drain to waste, site perimeter fencing, associated piping for connection to the existing distribution system, and electrical service and controls. Black Water also provided engineering services during construction and secured a permit amendment from the regulatory agency for the new well source and system.

Project Team

Our team of experienced professionals specializes in all aspects of water and sewer projects, from planning through construction. Black Water staff meets regularly to review and schedule our workload so that we can be most responsive to our client's needs. We are appropriately staffed to take on a project of this type and size. The table below summarizes our key team members and a brief description of our electrical subconsultant, HCS Engineering.

TEAM MEMBER	BACKGROUND AND EXPERIENCE
Jeff Black, P.E. *Principal-in-Charge*	• Over 30 years of experience in public water and wastewater systems. • Thorough understanding of the construction and operation of hydraulic systems. • Throughout his career, he has actively participated in planning, design, permitting, and construction oversight of various public and private water, wastewater, and water resources projects, pipe lines, pump stations, and treatment works.
Aja Verburg, P.E. *Project Manager*	• Over 18 years of experience in water/wastewater project management and design. • Experienced with of all aspects of project management, which includes application for funding, public outreach, preliminary engineering, environmental approval, right-of-way acquisition, utility coordination, permitting, project approval and design, and project advertisement for federal, state, and locally-funded projects. • Experienced in using Geographical Information System (GIS) software and Innovyze InfoWater hydraulic network modeling software.
Jennifer Pratt, P.E. *Senior Project Engineer*	• Over 19 years of experience in public infrastructure emphasizing on water and wastewater systems. • Well versed in public policy and has a thorough understanding of engineering planning, design, funding, environmental approval, right of way acquisition, permitting, project approval and design, and project advertisement and bidding for both federal, state, and locally-funded projects. • Experienced with construction administration, including procurement and prequalification of contractors, as well as monitoring budget, schedule, inspections, claims mitigation, and RFI and submittal review.
Tyler Lee, E.I.T. *Assistant Engineer*	• Over three years of engineering experience assisting from the planning stages to construction on several public water and wastewater projects. • Proficient in collecting and analyzing data, performing calculations, sizing process equipment, coordinating with agencies, and reporting progress to our clients. • Familiar with drafting in Civil 3D and AutoCAD.
Patrick Scott, E.I.T. *Assistant Engineer*	• Over four years of experience aiding in the design of various public and private water and wastewater projects. • Field work experience includes water sampling, measuring water surface elevation for static and pumping wells, and flow meter readings. • Proficient in AutoCAD, Civil 3D, Microsoft Excel, ArcGIS, and QGIS.
HCS Engineering, Inc. *Electrical Design*	• Providing electrical engineering consulting services since 1969 to suit client needs within the economic constraints set forth by them. • Strives to produce the best balance of electrical design functionality, cost efficient schemes, and meet the highest green building and performance standards. • The firm's principal electrical engineer, ***Richard Smith, P.E.***, has over 30 years of experience in all aspects of electrical engineering and includes work with water and wastewater pump station design.

BLACKWATER CONSULTING ENGINEERS

Jeff M. Black, P.E.
PRINCIPAL-IN-CHARGE

education

M.S., Civil Engineering, University of Utah

B.S., Civil/Environmental Engineering, Utah State University

years with Black Water

9

years with others

21

registrations

Professional Engineer:
California #66645
Montana #72039
Texas #136672

affiliations

Water Environment Federation (WEF)

California Water Environment Association (CWEA)

American Society of Civil Engineers (ASCE)

Jeff Black has 30 years of experience in public water and wastewater systems. Mr. Black's thorough understanding of the construction and operation of hydraulic systems is a valuable benefit to his clients and the operators of these facilities. Throughout his career, he has actively participated in planning, design, permitting, and construction oversight of various public and private water, wastewater, and water resources projects, pipe lines, pump stations, and treatment works. He is proficient in all aspects of project management, design, water and wastewater engineering, and system modeling.

Project Experience

Reynolds Ranch Water Storage Tank Project, City of Lodi - CA. Principal-in-Charge. The project is comprised of installing a one million-gallon water storage tank and booster pump station adjacent to the City's Well 23 site.

Laurel Avenue Booster Pump Station, Twain Harte Community Services District - Twain Harte, CA. Project Manager. Conducted a detail inspection to determine the most effective option to provide adequate domestic water pressure and flow to the residents of Cedar Pine Avenue.

OID Parks Irrigation Project, City of Oakdale - CA. Project Manager. This project consists of engineering design services for the diversion, pumping, and conveyance facilities used to provide Oakdale Irrigation District water to the City park irrigation system.

Mountain Creek School Water Tank Replacement - DWSRF, Pioneer Union School District - Somerset, CA. Project Manager. Provided engineering services for the replacement of the Redwood Tank with a steel tank of the same size and in the same location. The tank site will be retrofitted with a booster station, control panels, and a disinfection system.

Santa Lucia Community Services District - Carmel, CA. Since 1998, Mr. Black has been assisting the SLCSD in the ongoing design, improvement, and permitting of the District's wastewater and water systems. Services provided include collection system design, plan review, pump station, and force main design. Mr. Black conducted a capacity analysis of the existing trickling filter treatment plant, and designed and permitted a new wastewater treatment facility for the District.

Ceres River Bluff Reservoir and Pumping Facility, City of Ceres - CA. Project Manager. This project includes civil design modifications for an existing City well, connections to the future surface water delivery and distribution systems, design of pumping facilities, and a new water storage tank.

Cedar Pines Tank and Booster Pumping Station, Twain Harte Community Services District - Twain Harte, CA. Project Manager. Conducted an evaluation of system storage, flow, and available pressure for the Cedar Pines tank and booster pump station. The analysis included a hydraulic model of the existing system and calculations for three alternatives to replace and/or improve the existing facilities. The alternatives analyzed included provisions for a hydro-pneumatic tank, variable frequency drive motors, and fire pumps. A technical memorandum with calculations, details, and recommendations was provided to and approved by the District.

Meadow Well Pumping Plant and Main Extension, Twain Harte Community Services District - Twain Harte, CA. Project Manager. Prepared construction documents for equipping the new well with pumping equipment, including piping and valves to deliver potable water to the distribution system.

Well #14, City of Patterson - CA. Principal-in-Charge. The project includes well and infrastructure design, including the installation of a new well and pump station, pressure tank, metering, chemical system, well head piping, building construction for controls, storage, and equipment, site access/driveway, landscaping with irrigation, site drainage and well system drain to waste, site perimeter walls, associated piping, and electrical service and controls.

Water System Improvements for Domestic Water System at the Westley Migrant Center, Housing Authority of the County of Stanislaus - Westley, CA. Principal-in-Charge. Provided engineering design services for construction of the recommended improvements to refurbish Well #2 and the installation of a new pump and motor at Well #2.

Thornton Water System and Storage Facility Project, San Joaquin County - Thornton, CA. Managed the design and permitting for a new water storage tank and a booster pumping station to improve operating pressure and provide fire flow to the town of Thornton. Provided permitting and agency coordination, project management during engineering, assistance during the advertising and bidding phase, and engineering services during construction.

Galas Water Improvements - Modesto, CA. Engineering design and specifications for a new domestic well, a 2.5-mgd water booster station, and 1.4 mg of water storage to serve the City of Modesto. Design included site work, pump station, reservoirs, disinfection system, and appurtenant piping and site work for connection to a treatment system for the removal of nitrates and manganese.

Water Distribution and Storage System - Diablo Grande, CA. Prepared the water master plan, hydraulic model, and engineering design of the water distribution system that includes three pressure zones, two storage tanks, and water booster pumping stations.

Industrial Tank 13 and Booster Pumping Station - Modesto, CA. Project Manager for the preliminary and final design of a 4.0-mg pre-stressed concrete reservoir and 12-mgd booster pumping station. The preliminary design included a life-cycle cost analysis of various tank materials and construction methods. The facility includes a pump station control building, piping and connections to the City distribution system, disinfection equipment, surge control, and standby power facilities.

Smyrna Well and Pump Station Project - Ceres, CA. Project Manager responsible for the design of a new well site and pumping station. The project involved extensive coordination with the City staff, hydro geologist, and engineering team to provide a site assessment, test well, production well, and site design. The ultimate design included two wells each capable of producing 1,000 gpm. Other improvements included chlorination facilities, site piping to allow the isolation and blending of each well, standby power, and integration with the City's SCADA system.

E&J Gallo Winery Office Building Pump Stations - Modesto, CA. Design of a storm water pump station and sewer pump station for the new Gallo Building. Design included sizing and selection of submersible pumps, preparation of design plans and specifications for new pump station civil, mechanical, and structural design, for wet well and discharge piping and valving, and civil site design.

Forrest Meadows Effluent Pumping Station and Force Main - Calaveras County, CA. Project Manager for the design of a 2-mgd pumping station and 2.5 miles of force main for the Forrest Meadows Wastewater Treatment Plant. The pump station consisted of three vertical turbine high-head pumps, site piping, lighting, security, electrical and controls, and standby power. A particular challenge to this design was the proximity of the pump station to residential homes at a golf course community. Prepared the preliminary design report with an alternatives analysis to provide recommendations for pump type, location, arrangement, and force main alignment.

Meadowview Sanitary Sewer Pump Station, City of Atwater - CA. Conducted a sewer capacity study for the existing sewer collection system and prepared plans and specifications for a 2.4 mgd sanitary sewer pump station and approximately 4,000 feet of force main.

BLACK WATER CONSULTING ENGINEERS

Aja J. Verburg, P.E.
PROJECT MANAGER

education
B.S., Civil Engineering, California Polytechnic State University, San Luis Obispo

years with Black Water
8

years with others
10

registrations
Professional Engineer:
Arizona #72561
California #73020
Nevada #028296

affiliations
Modesto Engineers Club, Past President

Aja Verburg has 18 years of experience in public infrastructure and water/wastewater project management and design. Ms. Verburg has a strong understanding of delivering projects from a public agency's perspective. She is experienced with of all aspects of project management, which includes application for funding, public outreach, preliminary engineering, environmental approval, right-of-way acquisition, utility coordination, permitting, project approval and design, and project advertisement, for federal, state, and locally-funded projects. This broad range of experience is a benefit to clients, as her approach for each project is to act as an extension of the agency staff and deliver the most cost efficient and innovative design, on schedule, from the planning stage through construction, to serve the client and public. Throughout her career she has served as a project manager and engineering designer for various public and private water and wastewater projects. Ms. Verburg also has extensive experience using Geographical Information System (GIS) software and Innovyze InfoWater and InfoSewer hydraulic network modeling software.

Project Experience

Water Engineering

Mountain Creek School Water Tank Replacement - DWSRF, Pioneer Union School District - Somerset, CA. Project Engineer. Provided SRF application assistance and engineering services for the replacement of the Redwood Tank with a steel tank of the same size and in the same location. The tank site will be retrofitted with a booster station, control panels, and a disinfection system.

Colony Oak School Water Well Improvements, Ripon Unified School District - Ripon, CA. Project Manager. Provided engineering services for the replacement and construction of a new water well, storage tank, and pumping facilities at the Colony Oak School.

Regional Surface Water Supply Project, Stanislaus Regional Water Authority - Stanislaus County, CA. Project Manager. This project will provide a new surface water supply to the cities of Turlock and Ceres, CA and consists of the design and construction of a new regional water treatment plant, raw water pump station, raw water transmission main, finished water transmission mains, replacement bridge, and all appurtenant and related facilities. Black Water is a subconsultant to Jacobs and is responsible for the preliminary and final design documents for the Ceres Finished Water Transmission Main and the appurtenances from the water treatment plant to the Ceres terminal tank facility.

Potrero Water Treatment Preliminary Design, Santa Lucia Preserve Community Services District - Carmel, CA. Project Manager. The CSD manages a public water system that will ultimately serve 300 homes and various commercial users including a golf clubhouse, restaurants, equestrian center, and community support structures. Black Water is preparing the preliminary design of the proposed improvements to the existing infrastructure which will improve water supply to a pressure zone serving approximately 33 homes by adding two new water supply wells, treatment equipment for the removal of iron and manganese, and booster pumps to supply treated water to the distribution system.

Water System Improvements for Domestic Water System at the Westley Migrant Center, Housing Authority of the County of Stanislaus - Westley, CA. Project Manager. Provided engineering design services for construction of the recommended improvements to refurbish Well #2 and the installation of a new pump and motor at Well #2.

Santa Nella/Volta Water Quality Improvement Project - DWSRF, Santa Nella County Water District - Merced County, CA. Project Engineer. The project involves improvements to the water supply facilities of SNCWD and Volta Community Services District and consolidation of the two systems. Improvements include a new well, trunk lines delivering water to the distribution systems, water storage, blending, and pumping facilities, and distribution improvements to the VCSD system. Coordinated efforts with client and subconsultants, and reviewed permit and application submittal.

Well #14, City of Patterson - CA. Project Manager. The project includes well and infrastructure design, including the installation of a new well and pump station, pressure tank, metering, chemical system, well head piping, building construction for controls, storage, and equipment, site access/driveway, landscaping with irrigation, site drainage and well system drain to waste, site perimeter walls, associated piping, and electrical service and controls.

Northwest Reservoir and Pump Station Upgrades, City of Stockton - Westlake, CA. Project Engineer. Design of 3.34-mg storage tank at the existing water storage tank site, upgrade of existing pump station, and installation of new back-up generator.

Node 1 Water Treatment Facility - Santa Lucia, CA. Project Engineer. Design and construction of Pureflow Water Treatment Facility to treat well water at the existing Node 1 site. Design included the installation of a backwash supply horizontal split-case pump to supply water from the existing tank to the proposed filters, installation of equalization storage to accommodate backwash from filters, installation of submersible pump in equalization storage tank to discharge backwash to existing ponds via a connection to existing gravity drain line.

Hydraulic Network Analyses - Diablo Grande, CA. Design Engineer. Hydraulic network analyses of the water distribution system that includes three pressure zones, two storage tanks, and water booster pumping stations.

Bellevue Ranch Development - Merced, CA. Project Engineer. Water distribution system hydraulic network analysis and prepared the water master plan. Analysis included determining the groundwater pumping rate and water distribution pipe sizing to meet domestic, irrigation, and fire flow water demands.

Sierra Avenue and D Street Sewer Pump Station Replacement, City of Oakdale - CA. Project Manager. Design of a replacement sewer pump replacement and upgrade of the electrical supply, controls and telemetry/SCADA systems. The project consisted of replacing an existing 30-year-old wet pit-dry pit pump station with 4,400 gpm triplex submersible pump station, valve vault, meter vault, sewer bypass system, replacement of existing gravity sewer manholes and collection system piping upstream of the pump station, and connection to an existing force main.

2014 Lift Station Modification Project, City of Ceres - CA. Project Engineer. Assisted with engineering services for the modification of six storm drain and sewer lift stations.

E&J Gallo Winery Office Building Pump Stations - Modesto, CA. Design of a storm water pump station and sewer pump station for the new Gallo Building. Design included sizing and selection of submersible pumps, preparation of design plans and specifications for new pump station civil, mechanical, and structural design, for wet well and discharge piping and valving, and civil site design.

Wastewater Collection System 9 Pipeline and Pump Stations Projects, City of Stockton - CA. Project Engineer. Design-build of sewer pipeline and two pumps stations. Reviewed contractor equipment submittals and facilitated coordination with City for review and approval.

Oakmore Meadows Development - Stockton, CA. Project Engineer. Design of the storm water pump station and force main and sewer pump station.

BLACKWATER CONSULTING ENGINEERS

Jennifer R. Pratt, P.E.

SENIOR PROJECT ENGINEER

education

B.S., Civil Engineering, University of the Pacific

years with Black Water

3

years with others

17

registrations

Professional Engineer: California #71466

trainings

Caltrans Resident Engineer Training, 2014

UC Berkeley Extension Construction Project Scheduling and Control Course, 2013

affiliations

Modesto Engineers Club, Past President

California Water Environmental Association, Past Board of Directors

Jennifer Pratt has over 20 years of experience in public infrastructure emphasizing on water and wastewater systems. Ms. Pratt's experience includes project management, design, and construction administration of a wide variety of complex capital improvement projects. Ms. Pratt is well versed in public policy and has a thorough understanding of engineering planning, design, funding, environmental approval, right of way acquisition, permitting, project approval and design, and project advertisement and bidding for both federal, state, and locally-funded projects. She is also experienced with construction administration, including procurement and prequalification of contractors, as well as monitoring budget, schedule, inspections, claims mitigation, and RFI and submittal review. Ms. Pratt has coordinated with various utilities and agencies, including County, City, and Caltrans, for required permits, inspections, and funding for several projects. Her skills and commitment to high standards have earned her a reputation as being a key component to her team. Throughout her career she has served as project manager, engineering designer and construction administration engineer for various public infrastructure projects.

Project Experience

Reynolds Ranch Water Storage Tank Project, City of Lodi - CA. Project Manager. The project is comprised of installing a one million-gallon water storage tank and booster pump station adjacent to the City's Well 23 site.

Santa Nella/Volta Water Quality Improvement Project - DWSRF, Santa Nella County Water District - Merced County, CA. Project Engineer. The project involves improvements to the water supply facilities of SNCWD and Volta Community Services District and consolidation of the two systems. Improvements include a new well, trunk lines delivering water to the distribution systems, water storage, blending, and pumping facilities, and distribution improvements to the VCSD system. Assisted with the SRF application and reviewed the plans and specifications for the project.

Frank Raines OHV Park Water Improvements, Stanislaus County - CA. Project Engineer. Provided engineering design services for the supply of potable water for the day-use area at Frank Raines Regional Park.

Roselawn High School Water System - DWSRF, Turlock Unified School District - Turlock, CA. Project Manager. Provided engineering services for the SRF application. Additionally, prepared a corrective action plan, prepared a bottled water application, and provided consolidation assistance for the District.

Waterford Water Master Plan Hydraulic Model and Recycled Water Feasibility Study, City of Waterford - CA. Ms. Pratt served as the Project Engineer responsible for the preparation of technical memorandums evaluating the existing water and wastewater systems for the City. This work included a hydraulic analysis of the water system, and a recycled water feasibility study, which required an evaluation of the wastewater treatment plant, and projections for infrastructure necessary to produce recycled water.

Valley Gateway Travel Center, PM Design Group - Madera County, CA. Project Manager. Designed a new domestic well, water storage tank, and septic tank/ leach field for the Valley Gateway Travel Center.

Wastewater Treatment Plant Planning - CWSRF, Murphys Sanitary District - Murphys, CA. Project Engineer responsible for the preparation of preliminary design of improvements to the wastewater treatment plant to address capacity and effluent quality issues. Preliminary design included a review of the existing facility and analysis of the existing aerated pond treatment capacity. She serves as the main contact for the client, and is responsible for coordination with the District regarding schedule and budgets. Improvements include new influent pumps, 1 mile of sewer force main replacement, new headworks screening, sub-surface aeration system, sludge removal, and increasing storage capacity.

Phase 1A Tertiary Wastewater Treatment Facility, City of Modesto - CA. Project Manager / Engineer. Preliminary design of the City's $20 million 2.3-mgd Phase 1A Biological Nutrient Removal (BNR)/Tertiary Wastewater Treatment Facility Project. Work included preliminary design of a primary effluent pump station, fine screens, oxidation ditch, selection of a membrane bioreactor (MBR) system, and selection of an in-vessel UV disinfection system. Ms. Pratt was responsible for consultant procurement, budget oversight, and project management, coordination with the existing plant staff, project approvals, and completion of the preliminary design report to establish project alternatives.

West Tank 12 and Pump Station, City of Modesto - CA. Construction Administration Engineer. Served as the City's Construction Administration Engineer for the construction of a 4-mg welded steel water storage tank and 12-mgd booster pump station. Work included advertisement and bidding of the project, budget oversight, management of the SRF loan agreement, general construction oversight, facilitation of pre-construction meeting and progress meetings, RFI and submittal management, document management, change order management, claims mitigation, and coordination with city staff and management.

Construction Project Manager, Preston Pipelines - CA. Construction Project Manager. Served as a construction Project Manager for various underground utility installation projects throughout the Bay Area, including storm drains, sanitary sewers, domestic water, fire protection, joint trench, pumping systems, and treatment systems. Responsibilities included managing all aspects of the project including value engineering, USA and potholing management, partnering, permit assistance, QA/QC implementation, owner and site coordination, technical oversight, change orders, cost estimating, materials management and procurement, administration and adherence of contract requirements (e.g. contract review, RFIs, submittals, safety, budget management), and oversight of subcontractors.

- Google Bay View 2.0, Stormwater Treatment System – Storm Water Treatment System, including piping, force main, pumps, recycled water tank, membrane treatment skid, oxidation, ozone, chlorine systems, communications and controls - Mountain View, CA.
- Apple Atlas BP#5, Site Domestic and Recycled Water, Sanitary Sewer, and Storm Drain Utility Systems - Sunnyvale, CA.
- Carondolet High School Stem Center - Site Domestic Water, Sanitary Sewer, and Storm Drain Utility Systems - Concord, CA.
- Google Stierlin Ct, Site Sanitary Sewer and Storm Drain Systems, and Water System Connection to City System - Mountain View, CA.
- Google 237 Rain Harvesting System and Site Utilities – Storm Water Rain Harvesting/Recycling Water Treatment System, Site Domestic and Recycled Water, Sanitary Sewer, and Storm Drain Utility Systems - Sunnyvale, CA.

Phase 1A Tertiary Wastewater Treatment Facility, City of Modesto - CA. Construction Administration Engineer. Served as the City's Construction Administration Engineer for the construction of the City's new $20 million, 2.3-mgd Biological Nutrient Removal (BNR)/ Tertiary Wastewater Treatment Facility, which included a primary effluent pump station, fine screens, oxidation ditch, MBR system, an in-vessel UV disinfection system and 2 miles of 12-inch effluent pipeline. The scope of work included general construction oversight, facilitation of pre-construction meeting and progress meetings, RFI and submittal management, document management, change order management, claims mitigation, and coordination with city staff and management.

BLACK WATER
CONSULTING ENGINEERS

Tyler Lee, E.I.T.
ASSISTANT ENGINEER

education

M.S., Engineering Science, Utah State University

B.S., Civil Engineering, Brigham Young University Idaho

years with Black Water

2

years with others

1

registrations

Engineer-in-Training: California #168043

Tyler Lee has over three years of experience -- starting as an intern for Black Water during the summer of 2016. After receiving his masters at Utah State University, Mr. Lee returned to Black Water to continue expanding his engineering experience assisting from the planning stages to construction on several public water and wastewater projects. Mr. Lee is proficient in collecting field data, analyzing data, performing calculations, sizing process equipment, coordinating with agencies, and reporting progress to our clients. He is also familiar with drafting in Civil 3D and AutoCAD.

Project Experience

Colony Oak School Water Well Improvements, Ripon Unified School District - Ripon, CA. Engineer Technician. Provided engineering services for the replacement and construction of a new water well, storage tank, and pumping facilities at the Colony Oak School. Assisted with the design of the 35% planset.

Regional Surface Water Supply Project, Stanislaus Regional Water Authority - Stanislaus County, CA. Assistant Engineer. This project will provide a new surface water supply to the cities of Turlock and Ceres, CA and consists of the design and construction of a new regional water treatment plant, raw water pump station, raw water transmission main, finished water transmission mains, replacement bridge, and all appurtenant and related facilities. Black Water is a subconsultant to Jacobs and is responsible for the preliminary and final design documents for the Ceres Finished Water Transmission Main and the appurtenances from the water treatment plant to the Ceres terminal tank facility.

Ceres River Bluff Reservoir and Pumping Facility, City of Ceres - CA. Assistant Engineer. This project includes civil design modifications for an existing City well, connections to the future surface water delivery and distribution systems, design of pumping facilities, and a new water storage tank. Responsibilities include preparation of the preliminary design report, and design and drafting of the 35% planset and cost estimate.

Potrero Water Treatment Preliminary Design, Santa Lucia Preserve Community Services District - Carmel, CA. Assistant Engineer. The CSD manages a public water system that will ultimately serve 300 homes and various commercial users including a golf clubhouse, restaurants, equestrian center, and community support structures. Black Water is preparing the preliminary design of the proposed improvements to the existing infrastructure which will improve water supply to a pressure zone serving approximately 33 homes by adding two new water supply wells, treatment equipment for the removal of iron and manganese, and booster pumps to supply treated water to the distribution system.

River Trunk Realignment Project, City of Modesto - CA. Engineer Technician. This project consisted of the design of a portion of the River Trunk Realignment project which will divert flow from the existing River Trunk, located at the E & J Gallo facility, to the proposed River Trunk Pump Station, located near B Street and between 7th and 9th Streets. Responsible for handling the dry utility requests for the project.

Sierra Avenue and D Street Sewer Pump Station Replacement Project, City of Oakdale - CA. Engineer Technician. This project involved the design of a sewer pump replacement and upgrade of the electrical supply, controls and telemetry/SCADA systems. Provided assistance in submittal reviews and construction observation during the construction phase.

Water System Treatment Plant, Ratto Bros., Inc. - Modesto, CA. Assistant Engineer. Ratto Bros. operates a 61-acre facility that includes offices, shops, an old barn, solar array, and a cooling and cold storage facility. A potable and non-potable water system supply the domestic and industrial process water system. Black Water is providing engineering services for the design of potable and non-potable water treatment systems to remove arsenic and nitrates.

Water Meter Improvement Project - DWSRF, Westley Community Services District - Westley, CA. Assistant Engineer. This project consisted of SRF application assistance for the installation of water meters on all service connections within the district. Assisted with the preparation of the plans and specifications for the construction of the project.

Water Main Consolidation Improvements Project - DWSRF, Keyes Community Services District - Keyes, CA. Engineer Technician. The project consists of the design of approximately 13,000 ft of 8-inch,10-inch and 12-inch water distribution main to extend service to out of service boundary mobile home parks with non-compliant water systems with the Keyes CSD water system. The project included abandonment of 4 existing water and two (2) bore and jack crossings at irrigation facilities. Responsible for the coordination of the dry utility requests. Secured funding for the District for planning, design and construction of the project through the SWRCB DWSRF program. Provided bidding and advertisement and construction management and inspection services for construction of the project.

Curtis Creek Elementary School Water System Consolidation Project - DWSRF, Curtis Creek Elementary School District - Sonora, CA. Engineer Technician. Secured planning funding through the SWRCB DWSRF program for the consolidation of Curtis Creek Elementary School's water system with the Tuolumne Utilities District (TUD) water system to address system deficiencies that include inadequate source and storage capacity and no emergency fire protection. Completed and submitted construction package for SWRCB DWSRF program funding for the project. Responsible for the coordination of the dry utility requests.

Mobile Home Park Water Distribution System Improvements - DWSRF, Santa Nella County Water District - Santa Nella, CA. Engineer Technician. The project consists of the design of approximately 12,000 ft of existing 4-inch through 8-inch water main to replace existing distribution system and install 350 new service laterals with remote-read water meters to existing residences and businesses. Secured funding for the District for planning, design and construction of the project through the SWRCB DWSRF program. Provided bidding and advertisement services for the construction project. Responsibilities included assisting with the drafting of the planset, preparation of specifications and the cost estimate, and reviews of submittals during the project construction.

On-Call Water Analyses, City of Tracy - CA. Assistant Engineer. Conducted various analyses to verify the condition and capacity of the existing water system to serve planned development and connections to the water system. Responsibilities included developing hydraulic models and preparing the technical memoranda.

Potable Water System Upgrades, Sierra Park Water Company - Tuolumne County, CA. Assistant Engineer. Providing funding application services and detailed design services for improvements to the Sierra Park Water System.

Pinecrest Permittees Association Water Balance, Notice of Violation Project, Pinecrest Permittees Association - Pinecrest, CA. Engineer Technician. Black Water prepared a technical memorandum to present and summarize results of calibrated typical year and 100-year water balances.

Alamo and Enebro Control Valve Replacements, Lake Don Pedro Community Services District - Mariposa County, CA. Assistant Engineer. Designed and prepared the bid documents for the replacement of several valves.

Gratton Water System - DWSRF, Gratton School District - Denair, CA. Engineer Technician. Design of new potable water well for Gratton Elementary School. Assisted with submittal reviews and observed project during construction.

BLACKWATER CONSULTING ENGINEERS

Patrick J. Scott, E.I.T.

ASSISTANT ENGINEER

education

B.S., Environmental Engineering, San Diego State University

years with Black Water

1

years with others

3

registrations

Engineer-in-Training: California #155879

affiliations

Engineers Without Borders (Professional Chapter)

Modesto Engineers Club

Patrick Scott has over four years of experience aiding in the design of various public and private water and wastewater projects, from the planning stages to construction. His experience includes providing application assistance for state revolving funded projects and coordination with local, state, and federal agencies. Mr. Scott's field work experience includes water sampling, measuring water surface elevation for static and pumping wells, and flow meter readings. He is proficient in AutoCAD, Civil 3D, Microsoft Excel, ArcGIS, and QGIS.

Project Experience

Mountain Creek School Water Tank Replacement - DWSRF, Pioneer Union School District - Somerset, CA. Assistant Engineer. Provided engineering services for the replacement of the Redwood Tank with a steel tank of the same size and in the same location. The tank site will be retrofitted with a booster station, control panels, and a disinfection system. Assisted with the completion and submission of the funding application. Additionally, assisted with the preparation of the planset.

Colony Oak School Water Well Improvements, Ripon Unified School District - Ripon, CA. Assistant Engineer. Provided engineering services for the replacement and construction of a new water well, storage tank, and pumping facilities at the Colony Oak School.

Shadybrook Well Site, Twain Harte Community Services District - Twain Harte, CA. Assistant Engineer. Design and preparation of plans and specifications for the new Shadybrook well site and 1,100 feet of new water main to connect to the existing distribution system. Well site improvements included a new well building to house piping, valves, controls, and mechanical equipment for the new well head. Responsibilities included the development of the planset.

Sierra Avenue and D Street Sewer Pump Station Replacement, City of Oakdale - CA. Assistant Engineer. Design of a sewer pump replacement and upgrade of the electrical supply, controls, and telemetry/SCADA systems. The project consisted of replacing an existing 30-year-old wet pit-dry pit pump station with 4,400 gpm triplex submersible pump station, valve vault, meter vault, sewer bypass system, replacement of existing gravity sewer manholes and collection system piping upstream of the pump station, and connection to an existing force main. Assisted with drafting the detail plan sheets.

Wastewater Treatment Facilities Upgrade Project - CWSRF, Murphys Sanitary District - Murphys, CA. Assistant Engineer. Preparation of preliminary design improvements to the wastewater treatment plant to address capacity and effluent quality issues. Preliminary design included a review of the existing facility and analysis of the existing aerated pond treatment capacity. Improvements include new influent pumps, 1 mile of sewer force main replacement, new headworks screening, sub-surface aeration system, sludge removal, and increasing storage capacity. Provided funding application assistance including developing GIS figures and drafting the influent pump station site plan.

On-Call Water Analyses, City of Tracy - CA. Assistant Engineer. Assisted in the maintaining and updating of the City's hydraulic water model, and conducted various analyses to verify the condition and capacity of the existing water system to serve planned development and connections to the water system.

Curtis Creek Elementary School Water System Consolidation Project - DWSRF, Curtis Creek Elementary School District - Sonora, CA. Assistant Engineer. Secured planning funding through the SWRCB DWSRF program for the consolidation of the school's water system with the Tuolumne Utilities District (TUD) water system to address system deficiencies that include inadequate source and storage capacity and no emergency fire protection. The project included an engineering report and preliminary design for approximately 6,000 feet of distribution water main. Completed and submitted construction package for SWRCB DWSRF program funding for the project.

Mobile Home Park Water Distribution System Improvements - DWSRF, Santa Nella County Water District - Santa Nella, CA. Assistant Engineer. The project consisted of the design of approximately 12,000 ft of existing 4-inch through 8-inch water main to replace existing distribution system and install 350 new service laterals with remote-read water meters to existing residences and businesses. Secured funding for the District for planning, design and construction of the project through the SWRCB DWSRF program. Assisted with the preliminary design of the project including drafting a technical memorandum, estimating costs, and developing parts of the project planset.

Water Meter Improvement Project - DWSRF, Westley Community Services District - Westley, CA. Assistant Engineer. Provided SRF application assistance for the installation of water meters on all service connections within the district.

Water Main Consolidation Improvements Project - DWSRF, Keyes Community Services District - Keyes, CA. Assistant Engineer. The project consisted of the design of approximately 13,000 ft of 8-inch,10-inch, and 12-inch water distribution main to extend service to out of service boundary mobile home parks with non-compliant water systems with the Keyes CSD water system. The project included abandonment of 4 existing water and two (2) bore and jack crossings at irrigation facilities. Secured funding for the District for planning, design and construction of the project through the SWRCB DWSRF program. Responsibilities included assistance with the LAFCO application and development of figures for the water service agreements.

Refuge Level 2 Exchange with SLWD, San Luis Water District - Stevinson, CA. Assistant Engineer. Provided groundwater and surface water sampling, weekly flow meter readings, groundwater surface elevation measurements, data analysis, and monthly reporting.

Turner Academy Water Treatment Plant Upgrades, Lodi Unified School District - Lodi, CA. Assistant Engineer. Assisted with the preparation of a technical memorandum presenting an updated flow schematic and a description of proposed revisions for the water treatment system.

Waterford Water Master Plan Hydraulic Model and Recycled Water Feasibility Study, City of Waterford - CA. Assistant Engineer. Preparation of technical memorandums evaluating the existing water and wastewater systems for the City. This work included a hydraulic analysis of the water system, and a recycled water feasibility study, which required an evaluation of the wastewater treatment plant, and projections for infrastructure necessary to produce recycled water.

Recycled Water Project - CWSRF, Santa Nella County Water District - Santa Nella, CA. Assistant Engineer. Assisted with the application submittal process to secure funding for the completion of a feasibility study to evaluate the existing wastewater treatment system and identify improvements to produce, store, and distribute disinfected tertiary recycled water.

Woodward Reservoir Campground Sewer System Capacity Evaluation, Stanislaus County - CA. Assistant Engineer. Assisted in the completion of a sewer capacity evaluation and technical report for the existing gravity conveyance system, campground lift stations, and force mains, and provided recommendations for improvements to system. Assisted with the design and construction documents for completing the project.

Wastewater Treatment Facility Spray Field Improvement Project, Murphys Sanitary District - Murphys, CA. Assistant Engineer. The project consisted of constructing new spray field infrastructure on 20 acres adjacent to the existing WWTF to provide reliable effluent disposal capacity under various climatic conditions, specifically heavy precipitation years. Prepared the planset including pipe alignment and sprinklers.

HCS Engineering

Richard C. Smith, P.E.

Principal Electrical Engineer

I am the firm's Principle Electrical Engineer , starting in 1990, with experience in all aspects of electrical engineering. I graduated with Honors from California State University, Sacramento receiving my Bachelor of Science in Electrical Engineering that complimented my Bachelor of Science in Computer Science from California State University, Chico. The past 30 years have allowed me to work in most areas of electrical engineering while I honed my skills in commercial, medical, office, school design, industrial electrical engineering and distribution systems, water/waste, water pump station design, power distribution and control systems design, substation design and computer network design.

Registration

Registered Electrical Engineer in California - E14303 registered since 1993

Registered Electrical Engineer in Oregon - E17605 registered since 1995

Registered Electrical Engineer in Arizona - E30833 registered since 1996

Registered Electrical Engineer in Nevada - E013006 registered since 1997

Registered Electrical Engineer in Idaho - EE8786 registered since 1997

Certification by National Council of Engineering Examiners registered since 1995

Education

Bachelor of Science in Electrical Engineering with Honors California State University, Sacramento, 1990

Bachelor of Science in Computer Science,
California State University, Chico, 1987

Master of Science in Electrical Engineer , 2005
University of Idaho, Moscow

Experience

Principle Electrical Engineer with HCS Engineering since 1990.
University Instructor, California State University Sacramento, 1988 to 1990.

Specialties

Community Spaces and Park Design
Sustainable Energy Services Design
Commercial and Medical Offices Building Design
Industrial Electrical Engineering and Distribution Design Water/Waste pump station design
Power distribution and Control systems design
Substation design
Computer Network Design

Fraternal Organizations

California Chapter of National Society of Professional Engineers, Past Chapter President
Past President, Engineers Club of Stockton
Eagle Scout Rank, 1980. National Eagle Scout Association
Tau Beta Pi Engineering Honor Society

Appendix C

Electrical Engineering Scope and Fee

December 20, 2021

Jeff Black
Black Water Consulting Engineers, Inc

Re: CCWD Water System
Electrical Engineering Proposal

Dear Jeff:

HCS Engineering is pleased to submit this proposal for Electrical Engineering services on the above-mentioned project. For this project, our services will include:

1. Site Visit to review existing conditions and review power service.
2. Electrical design of the site including power service upgrade (if required), and connections to the new electrical pumps, power for a 20'x20' pump house, SCADA connections for the new pump controls,

   1A. Utility Services we will assist in a submitting Utility Application to PG&E. Once the Application is received, they will send an engineering deposit request to the Cit. Once paid, we can schedule a site meeting with PG&E & discussion power extension to the site.

3. Design of automatic controls and coordination.
4. Electrical specifications.
5. Construction observation including shop drawing and review only.
6. Printing for this project included as all prints billed as reimbursable.

The following services are not included under the base electrical fee, but can be added as extra services:

A. Electrical design of any modifications to the pumps station.

Our fee for this project will be:

1. Site investigation and technical memo about power availability	**$800**
2. Electrical design for the power system for the new pump, pump House, reconnection existing generator	**$2500**
3. Construction Admin (1 site visit, shop drawing review and answering field questions).	**$1800**
Total	**$5100**

Billing and payments for services rendered will be monthly based on progress of work. Should the project be postponed or abandoned, in all or part we would bill up to the time of notification.

If you find this proposal acceptable, please acknowledge your acceptance of our proposal by signing the authorization to proceed and returning a copy to our office by either fax at (209) 478-2169 or through email to annette@hcs-eng.com.

Please don't hesitate to call if you have any questions.

Sincerely,

HCS Engineering, Inc.

Richard C. Smith, P.E.

Electrical Engineer

RCS

By signing this, I state that I am authorized representative to sign for the company/partnership/corporation/limited liability company/government agency as indicated in this document and agree to the terms and conditions set out in this proposal.

Approved:

X_____

Authorized Signature ***Date***

_____

Name and Title

BLACKWATER
CONSULTING ENGINEERS

602 Lyell Drive, Modesto, CA 95356
P: 209.322.1820 | F: 209.222.4088 | www.blackwater-eng.com

Agenda Item

DATE: January 26, 2022

TO: Board of Directors
Michael Minkler, General Manager

FROM: Kevin Williams, Senior Civil Engineer

SUBJECT: Discussion/Action to Award of Environmental Services for the Hunters Raw Water Intake Hazard Mitigation Project, CIP 11103
Cal-OES/FEMA HMGP DR-4431 PJ0028

RECOMMENDED ACTION:

Motion:_____/_____ to adopt Resolution No. 2022-____ accepting the proposal and authorizing the General Manager to enter into a Professional Services Agreement (PSA) with Cardno Stantec in a contract amount of $63,112 for Environmental Services including biological and cultural resources for CEQA and future permitting NEPA related to the Hunters Raw Water Intake Hazard Mitigation Project, CIP 11106.

SUMMARY:

The Project is to relocate and mitigate hazards related to the existing Raw Water Intake Pumps at Hunters Reservoir near Avery, CA, which serve the Ebbetts Pass Water System. The District was approved grant funding through Cal OES's Hazard Mitigation Grant (HMGP) program. The District is seeking environmental clearance and permitting support, including assistance with completion of biological, aquatic and cultural/built environmental studies – both of which are needed to successfully complete the environmental clearance including the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), and secure relevant permits (anticipated Section 401 Clean Water Certification; Section 404 Clean Water Act – Reservoir/Wetlands; and California Department of Fish and Wildlife 1600/1602 Lake/Streambed Alteration Agreement.

Staff issued a Request for Proposals (RFP) on December 15, 2021 for the subject environmental services and upon request staff performed job walks with prospective environmental consulting firms. As tabulated below, the District received six (6) proposals as of the due date of January 13, 2022, from qualified firms.

Staff Ranking of Proposal	Consultant and Office Location	Proposal Fee
1	Cardno Stantec	$63,112
2	Helix Environmental	$110,103
-	Dewberry Engineers Inc.	$214,607
-	EN2 Resources, Inc	$99,974
-	Augustine Planning & Associates	$125,070
-	Horizon Water & Environmental	$133,615

Staff reviewed all proposals considering qualifications and experience, team organization, scope of work, cost effectiveness, schedule, and other criteria. Staff finds that Cardno Stantec is responsive to the District and are well qualified to complete the required scope of work. The recommendation to the Board is to award a project design contract to Cardno Stantec according to the submitted proposal and authorize the General Manager to enter into a professional services agreement with Cardno Stantec, Inc in the amount of $63,112 for Environmental Services for the Hunters Raw Water Intake Hazard Mitigation Project, CIP 11103.

FINANCIAL CONSIDERATIONS:

The total project cost is estimated to be $1.9 million. The HMGP requires a 75/25 percent local cost share match requiring CCWD to authorize a funding for $475,000 of the estimated total Project Cost of $1.9 million. The District has obligated $710,000 in funding through FY 2021-22 CIP budget, which is sufficient to cover the cost of the design and this environmental contract.

Attachments:

a) Resolution 2022-__-Awarding Design Contract for the Hunters Raw Water Intake Hazard Mitigation Project, CIP 11103

b) Black Water Consulting Engineers. Proposal, January 13, 2022

RESOLUTION NO. 2022-

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

APPROVING/AUTHORIZING DESIGN CONTRACT FOR THE HUNTERS RAW WATER INTAKE HAZARD MITIGATION PROJECT, CIP 11103

WHEREAS, the District has identified as a need to relocate the Raw Water Intake at Hunter Reservoir in Avery serving Ebbetts Pass Water System, the existing pumps are susceptible to natural disasters. The Project for receive a CALOES-FEMA HMGP Grant with 75/25 percent local cost to complete this Project, and

WHEREAS, upon issuing a Request for Proposals (RFP) on December 15, 2021 for Environmental 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 January 13, 2022, and

WHEREAS, 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 Cardno Stantec., and

WHEREAS, the total project cost is estimated to be $1.9 million with a 75/25 cost share which in addition to authorized grant funds the District has obligated sufficient supplemental funding in its FY 2021-22 CIP budget and to pay the cost of the environmental services contract with Cardno Stantec.

BE IT RESOLVED, the Calaveras County Water District Board of Directors hereby approves the proposal submitted by Cardno Stantec., attached hereto and made a part hereof, and authorizes the General Manager to enter into a Professional Services Agreement (PSA) with Cardno Stantec, Inc. in the amount of $63,112 for environmental services for said project.

PASSED AND ADOPTED this 26th day of January, 2022 by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

CALAVERAS COUNTY WATER DISTRICT

_____
Cindy Secada, President
Board of Directors

ATTEST:

_____
Rebecca Hitchcock
Clerk to the Board

Biological and Cultural Resources for CEQA and Future Permitting NEPA Proposal

CalOES/FEMA Hazard Mitigation Grant Program Project – Hunters Raw Water Pump Station Mitigation Project

Prepared for

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

January 13, 2022

Cardno

now

Stantec

January 13, 2022

17506 Quartz
Mountain Road North
Sutter Creek, CA 95686
USA

www.cardno.com
www.stantec.com

Ms. Kate Jesus
Calaveras County Water District
120 Toma Court
San Andreas, CA 95249
Phone: (209) 754-3181
Email: Katej@ccwd.org

RE: Biological and Cultural Resources for CEQA and Future Permitting NEPA for CalOES/FEMA Hazard Mitigation Grant Program Project
Hunters Raw Water Pump Station Mitigation Project

Dear Ms. Jesus:

We are pleased to present this proposal to the Calaveras County Water District (District) to provide biological and cultural resources services, environmental clearance, and permitting support for the Hunters Raw Water Pump Station Mitigation Project (Project) in Avery, California. Our experience is perfectly aligned with the District's needs. We regularly offer similar services for public and private clients for large and small infrastructure projects, especially within and near hydrogeneration facilities in the Sierra Nevada. As such, we are well positioned to provide efficient and strategic support with an eye towards helping the District meet the California Governor's Office of Emergency Services (CalOES) grant funding deadlines, achieve required permits, and move the Project to construction as soon as late summer of 2022. The team compiled for this response work and live in the Sierra Nevada, and we are excited by the opportunity to support a local public utility District in our region.

Cardno offers a positive track record of implementing infrastructure projects in northern California. Our environmental and permitting staff work closely with engineers from the initiation of project planning to environmental clearance, permit approvals, and implementation monitoring. We seek to identify efficiencies in processes and to avoid or minimize potential environmental impacts during design to avoid potentially costly mitigation or monitoring that could otherwise be triggered. We are familiar with the unique landscapes and regulatory conditions of the region and adept at identifying when and where project features, components or locations may trigger regulatory agency interest.

The enclosed proposal introduces our team and describes our approach to compete cost effective, defensible, and timely resource evaluations, environmental clearance documents, and permitting applications for the Project. The proposal also highlights examples of our team's relevant project work, including projects near other dam facilities on National Forest Land in the Sierra Nevada. Our legal department has reviewed the District's Professional Service Agreement (PSA) and agrees to the terms therein. We look forward to working with the District and partners to relocate and increase the size of the raw water intake pumps at Hunter Reservoir. Please contact us if you have any questions or we can provide further information.

Sincerely,

Patricia Sussman
Senior Environmental Planner
for Cardno
Direct Line: 775 210 7128
Email: patricia.sussman@cardno.com

Katie Ross-Smith, PhD
Business Unit Leader, Natural Resources
for Cardno
Direct Line: 916 386 3820
Email: katie.ross-smith@cardno.com

Table of Contents

Appendices

Acronyms

APE	Area of Potential Effects
CalOES	California Governor's Office of Emergency Services
CALVEG	Classification and Assessment with Landsat of Visible Ecological Groupings
CEQA	California Environmental Quality Act
CESSWI	Certified Erosion, Sediment, & Stormwater Inspector
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CPESC	Certified Professional in Erosion and Sediment Control
EA	Environmental Assessment
FEMA	Federal Emergency Management Agency
FOE	Finding of Effect
GIS	Geographic Informational System
IC	Information Center
IPaC	Information for Planning and Conservation
LLO	Low-Level Outlet
LSA	Lake or Streambed Alteration
MGD	Million gallons per day
MLRA	Major Land Resource Area
MND	Mitigated Negative Declaration
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NOE	Notice of Exemption
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
PG&E	Pacific Gas and Electric
QSIP	Qualified Industrial Storm Water Practitioner
QSP	Qualified Construction Stormwater Practitioner
REC	Record of Environmental Consideration
RPA	Registered Professional Archaeologist
SAA	Streambed Alteration Agreement
SCE	Southern California Edison
SHPO	State Historic Preservation Office
SWOT	Strength, Weakness, Opportunities, and Threats

SWPPP	Stormwater Pollution Prevention Plans
TRPA	Tahoe Regional Planning Agency
WTP	Water Treatment Plan
CDFW	California Department of Fish and Wildlife
CE	Categorical exemption
CWA	Clean Water Act
NAHC	Native American Heritage Commission
PCN	Pre-Construction Notification
USFWS	US Fish and Wildlife Service

1. Project Understanding

The Hunters Raw Water Pump Station Mitigation Project (Project) proposes to relocate and increase the size of the raw water intake pumps at Hunter Reservoir. The Calaveras County Water District (District) is the project proponent and also the primary permitting authority for the Project. The Project includes funding from a CalOES/Federal Emergency Management Agency (FEMA) hazard mitigation grant.

The existing vertical turbine intake pumps proposed for replacement are located within a pump house at the downstream base of the reservoir (adjacent to Mill Creek) within a FEMA-identified Special Flood Hazard Area. The intake pumps are used at least once per year to convey raw water from Hunter Reservoir to the Hunters Water Treatment Plan (WTP) when water is not flowing directly to the WTP from the Collierville Tunnel (the Collierville Tunnel is taken out of service yearly for approximately two weeks for inspections and maintenance). The Hunters WTP provides potable and fire hydrant water to 11,900 customers within the Ebbetts Pass service area of the District. The Hunters WTP is located some 700 feet uphill and to the west of the intake pumps and has the capacity to treat 4.0 million gallons per day (MGD) of water[1].

Hunter Reservoir is located east of State Route (SR) 4 in Avery, California at an elevation of approximately 3,200 feet and is accessible via Hunters Dam Road. The Project is within the Stanislaus National Forest. Current access to the existing water intake pumps and pump house requires either walking on top of wooden flumes or climbing down face of dam on vertical ladder. The Project involves the following key activities:

- Installation of a new raw water intake structure at the surface of Hunter Reservoir (either a floating intake structure, deployable intake structure or fixed intake structure) that is able to meet the current needs of the WTP capacity: 4 million gallons per day (mgd) of water and a peak demand of 8.2 mgd of water. New piping to transfer the water from the intake pumps would be installed underwater to the shoreline, then buried to the connection point near the existing mechanical building. Soil may need to be excavated within the reservoir for installation of the underwater pipeline within the vicinity of the existing spillway.
- Construction of a new masonry mechanical building adjacent to the existing mechanical building. The new mechanical building will include new electrical service, lighting, ventilation, communications and pump controls. The standby generator (property of Utica Water and Power Authority) within the existing mechanical building will be relocated to the new mechanical building.
- Demolition/removal of the intake pumps and associated infrastructure from the base of the dam; and demolition/removal of the existing mechanical building (constructed in the 1960s-1970s).

The District has developed a timeline to construct the Project as early as this coming summer (2022). Based on the Request for Proposals (RFP) issued for the design and engineering work, the District anticipates preliminary designs by mid-March of 2022, 65% design plans by the end of April 2022, and 100% design plans by the end of May 2022.

The District is seeking environmental clearance and permitting support, including assistance with completion of biological, aquatic and cultural/built environmental studies – both of which are needed to successfully complete the environmental clearance (California Environmental Quality Act [CEQA] and National Environmental Policy Act [NEPA]), and secure relevant permits (anticipated Section 401 Clean Water Certification; Section 404 Clean Water Act – Reservoirs/Wetlands; and California Department of Fish and Wildlife 1600/1602 Lake/Streambed Alteration Agreement). We understand the District must satisfy CalOES Phase I requirements by March 18, 2021.

[1]CCWD, 2013. Ebbets Pass System Evaluation. Prepared by Peterson, Brustad, Inc. November, 2013.

2. Proposed Approach

We have reviewed the proposed Project based on the RFP, conducted a site visit on January 6, 2022, completed a cursory desktop evaluation of the Project area, and considered potential impacts. We understand the District must satisfy CalOES Phase I requirements by March 18, 2022, and we are committed to supporting the District with deliverables and documentation need to meet the CalOES grant deadline. The detailed approach below recognizes that while design details for the Project will not be available until the spring, we can work with the District and design team to prepare a draft project description; complete desktop aquatic, biological and cultural resource evaluations; support regulatory consultation (as needed); and use conservative excavation and fill estimates to draft environmental compliance findings and initiate permitting applications as early as mid-March. Consistent with the findings described in FEMA's March 2021 Record of Environmental Consideration (REC) for the Project, our proposed approach assumes that this Project will meet the conditions for a categorical exemption (CE) under CEQA and for a categorical exclusion (CE) under NEPA, and that neither a Mitigated Negative Declaration (MND) or Environmental Assessment (EA) will be required.

The detailed work plan outlined below maintains the same general organization as the task outline in the District's RFP with the following exceptions. First, we expand Task 1 (Progress Meetings/Coordination) to include preparation of a Project Description. The Project Description will be a key reference utilized for all other deliverables, including the resource studies/reports and in all permitting applications. Second, to support the District's expedited schedule, our approach assumes desktop evaluations will be sufficient for aquatic, biological and cultural resources evaluation purposes (Tasks 2, 3 and 4 in the RFP). In the case that the field surveys are needed to confirm impact findings, we include three optional tasks: *Optional Task A* for completion of a field survey for purposes of the aquatic resource delineation; *Optional Task B* for a pedestrian cultural resource survey, and *Optional Task C* for a pre-construction field survey. Third, we assume (as stated above) that the Project will meet the conditions for an exemption/exclusion under CEQA and NEPA, and therefore there is no task identified for preparation of an MND or EA (Task 6 in the RFP). Finally, to facilitate efficiencies in preparation of the permit packages we group preparation of anticipated permits (Task 7,8 and 9 in the RFP) into a single task below.

Detailed Work Plan

Task 1. Progress Meetings/Coordination and Development of Project Description

Ms. Katie Ross Smith, principal-in-charge and Ms. Patricia Sussman, senior planner and project manager will coordinate and attend an in-person kick-off meeting with the District – ideally at the Project site – to initiate the process, discuss project features, schedule, communication protocols and other issues; and to gather any additional background materials and other useful information.

Following the project initiation meeting, Ms. Sussman will prepare a basic Project Description to serve as the reference document for the biological, aquatic and cultural desktop evaluations. The Project Description will include a Project vicinity and Project area map; identify the Project's purpose, need and objectives; and include as many details about the scope of the Project as are known – including anticipated schedule, access and staging areas, and identified construction best practices/avoidance and minimization measures as agreed upon by the District. The Project Description is expected to be enhanced and refined over the course of the contract as design plans become available.

In addition to this project initiation meeting, Cardno will attend up to two virtual meetings with the District for purposes of maintaining coordination between the District, the engineering and design team, and FEMA environmental personnel. The objective of these meetings is to clarify findings, recommendations and schedule as the environmental studies and engineering drawings progress.

Assumptions:

- This task assumes that existing available information is adequate to prepare a draft Project Description with sufficient detail to complete desktop resources evaluations and initiate permitting applications.

Deliverables:

- *Project initiation meeting and site visit (in person)*
- *First draft Project Description*
- *Coordination Meeting 1 (virtual)*
- *Coordination Meeting 2 (virtual)*

Task 2. Biological Resource Study

Cardno will prepare a Biological Resource Assessment (biological technical report) based on a desktop evaluation. The biological technical report will include a synthesis of the results of relevant biological databases and records, summarize evaluation findings, and include any pre-construction mitigation measures that maybe required to avoid or minimize potential impacts. The report will include maps and tables to support and clarify findings. As part of the desktop evaluation we will review, at a minimum, the following resources:

- California Natural Diversity Database (CNDDB) Rarefind 5 and Spotted Owl Observations Database
- California Native Plant Society's (CNPS's) Online Inventory of Rare and Endangered Plants US Geological Survey (USGS) 7.5-minute quadrangle search
- The Jepson Manual, second edition
- US Fish and Wildlife Service (USFWS) database of designated critical habitats
- USFWS Information for Planning and Conservation (IPaC) Resource List
- USDA-FS Region 5 Sensitive Species Lists
- California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships System, Species Descriptions

A buffer of up to 3 miles around the Project area will be used to develop the final list of potential species for the Project.

Assumptions*:*

- We assume that a detailed desktop review will be sufficient to confirm that the proposed Project will not destroy or adversely modify suitable habitat, and will not affect any listed or proposed species. If a field survey is needed to confirm the effects analysis, it will be scheduled as soon as seasonal conditions allow and be coordinated with any other identified field surveys required (e.g. aquatic delineation). Refer to Optional Task C.

Deliverables:

- *Draft and Final Biological Resources Assessment that includes effects findings for USFWS, USFS, CESA, and CDFW special-status species, and includes suggested avoidance, minimization and/or mitigation measures to be included in permitting applications.*

Task 3. Aquatic Resources/Wetlands Assessment

Cardno will complete a wetlands assessment that will show wetland and nonwetland jurisdictional waters. The assessment shall be suitable for use based on the regulations of the following agencies: USACE Section 404 of Federal Clean Water Act, RWQCB Section 401 of Clean Water Act, and CDFW Section 1602 of CA Fish and Game. The results of the aquatic resource/wetlands delineation shall be included in an Aquatic Resource/Wetlands Delineation Report. The report will include details (maps and tables) to quantify and illustrate the location of aquatic resources/wetlands. Resources to complete the assessment may include, but are not limited to, aerial imagery and photos, the USDA-FS Region 5 Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) dataset; the data from the Natural Resources Conservation Service (NRCS) Major Land Resource Area (MLRA) to describe geography, geology, and climate); the USGS Watershed Boundary dataset, and the National Hydric Soils List for California as well as SoilWeb to identify soil types. The report will include recommendations for the permit requirements for the Project based on the aquatic delineation findings (e.g. applicable Nationwide Permits). Based on initial review, the Project may qualify as non-reporting to USACE under Nationwide Permit (NWP) 3 (a), Maintenance, and NWP 158, Utility Line Activities for Water and Other Substances,

If a field survey is needed to complete a jurisdictional aquatic resources delineation – as could be required if USACE requires a pre-construction notification (PCN), the survey must be completed during the growing season for the Project area, as dictated by USACE delineation requirements. Growing season dates may be approximated by the median dates of 28°F air temperatures in the spring and fall, based on long-term National Weather Service meteorological data. Review of meteorological data from weather stations nearby the site at similar elevations indicate that the growing season typically starts between March 29th and April 28th. Therefore, if a field survey is required for the aquatic resources delineation, it will be scheduled as soon as possible within the growing season (likely early April), and the findings incorporated into the aquatic resource delineation report. The scope of work for the potential field survey is described in Optional Task A.

Assumptions*:*

- This scope of work assumes the proposed Project will qualify as non-reporting to USACE. If a PCN is required (and therefore a field delineation), then Optional Task A could be initiated.

Deliverables:

- *Draft and Final Aquatic Resource/Wetlands Assessment Report (including accompanying maps showing location of resources, and permitting recommendations).*

Task 4. Cultural Resource and Historic Properties Study/Built Environment Assessment

Cardno will prepare a desktop cultural resources study in accordance with Section 106 of the National Historic Preservation Act (NHPA), and CEQA. The study shall include an assessment of potential adverse effects to historic properties under Section 106 of the State Historic Preservation Act. The desktop evaluation will rely on a Native American Heritage Commission (NAHC) Sacred Lands File records search, California Historical Resources Information System (CHRIS) records searches, aerial imagery, consultation with the District, and consultation with local historical societies and stakeholders that may have information on the properties. Cardno will contact the California NAHC upon approval from the District. Cardno understands tribal consultations (per AB 52 requirements) will be completed by District staff. This scope of work assumes that the investigation will result in a finding of no adverse effect. If, based on the desktop review, Cardno's cultural team determines a field survey is required in order to

confirm effects findings, then a field survey would be scheduled as soon as weather permits. The scope of work for this potential field survey is described in Optional Task B.

Cardno's archaeologists will conduct all fieldwork and reporting in accordance with the Secretary of the Interiors "Standards & Guidelines for Archaeology and Historic Preservation: Reporting Identification Results" and with implementing the procedures in 36 Code of Federal Regulations 800. All work accomplished for this contract will also conform to the guidance established in the State Historic Preservation Office (SHPO) guidelines and standards, as well as federal/state-specific permit stipulations, as appropriate.

Assumptions:

- Cardno understands tribal consultations (per AB 52 requirements) will be completed by District
- Cardno assumes that fees charged by CHRIS to complete an Information Center (IC) staff-performed records search will be invoiced directly to the District. Based on CHRIS IC structure, it is reasonable to assume approximately $500 in direct costs for a CHRIS search ($150 per hour, plus $75 per one-half hour, or portion thereof, plus minor product fees associated with digital database records requests).

Deliverables:

- *NAHC Sacred Lands File records search and CHRIS records searches.*
- *Draft and Final Cultural Resources and Built Environment Evaluation Report.*

Task 5. Environmental Report

Cardno will gather the information necessary to substantiate a CEQA CE finding and NEPA CE finding. For purposes of the administrative record, Cardno will prepare documentation that briefly describes the project, cites the CE/ exclusion that applies, the methods and criteria used to assess the environmental effects of the proposed Project, and the finding that there are no potentially significant impacts expected as a result of extraordinary and/or unique circumstances. As part of this administrative record for the CE findings, Cardno shall prepare a Notice of Exemption (NOE) for the District to file with the County and State Clearinghouse in accordance with CEQA Guidelines (Section 15062).

Deliverables:

- *CE findings documentation (in accordance with FEMA guidelines) and NOE (in accordance with CEQA guidelines)*

Task 6. Permitting

(Note: Combined Tasks 7, 8 and 9 in the RFP)

Cardno shall prepare and secure the following permits:

- Section 401 Clean Water Certification;
- Section 404 Clean Water Act – Reservoirs/Wetlands; and
- CDFW 1600/1602 Lake/Streambed Alteration Agreement.

We have found that because there is substantive overlap in the information included in permitting applications, that it is most efficient to prepare a single draft application for District review (e.g. for a 401 Water Quality Certification), and incorporate District feedback and refinements to the rest of the applications. Our entire team is familiar with the permitting nuances and requirements of the Central Valley Regional Water Quality Control Board (Regional Water Board) and State Water Board, USACE,

and CDFW, and regularly work together to determine impacts and efficiently complete applications for clients. As part of this scope we will coordinate with the District to confirm appropriate agency communication protocols. Especially with the use of the Environmental Permit Information Management System (EPIMS) to notify CDFW, we will work with the District to confirm the most appropriate, secure and efficient application protocols. In addition, we suggest, and our budget includes, time for a pre-filing meeting with the Regional Water Board once conceptual plans and estimated excavation and fill quantities are available. We have found this is the best way to clarify Water Board concerns and recommendations, and thereby avoid submittal of an application deemed incomplete by Water Board staff.

A full, technically accurate description of the entire Project is required to develop complete permitting applications. As such, an aspect of this permitting task involves refining and finalizing the Project Description. We anticipate this will require reference to the design plans, and confirmation of the construction sequence, equipment, and overall activities with the District and design team. The design plans will also be referenced to identify and refine estimated impact quantities and classifications (temporary and/or permanent impacts associated with excavation/fill and dredge/extraction). Beyond a technically accurate Project Description, the other main information resources to complete the permitting applications will be the information (including findings, tables and maps) in the Biological Resources Assessment, Aquatic Resources Delineation Assessment, and Cultural Resources and Built Environmental Evaluation Report. As noted under Task 3 above, this Project may qualify as non-reporting to USACE under NWP 3, Maintenance and NWP 58, Utility Line Activities for Water and Other Substances. If a PCN is required to verify the applicability of an NWP with USACE, the scope of work to develop a PCN is included as part of Optional Task A.

Assumptions:

- We expect only minor adjustments (such as those pertaining to construction activity details and impact quantities) will be required to finalize the Project Description (developed as part of Task 1) for permitting applications.
- This approach assumes the Project falls under a USACE NWP permit that does not require a PCN for USACE review. If a PCN is required, then Optional Task A could be initiated.

Deliverables:

- *Final technically accurate Project Description*
- *Draft permit application packages including transmittal letters and all attachments (maps, photos, reports, engineering drawings, etc.)*
- *Final permit application packages including transmittal letters and all attachments (maps, photos, reports, engineering drawings, etc.)*
- *Consultation with permitting agencies as required (including a pre-filing meeting with the Water Board)*

Optional Tasks

OPTIONAL Task A. Aquatic Resources Field Delineation

If a wetland delineation is required as a condition of the 404 permit, Cardno will schedule a full field day to conduct the delineation in accordance with USACE delineation procedures and guidance, and with consideration for CDFW jurisdictional impacts. April is anticipated to be an optimal period to conduct the delineation. For the wetland delineation hydric soils may be classified based on soil pits and/or the presence of hydrology and hydrophytic vegetation (wetland indicator species). Data and findings based

on the field survey would be documented in an Aquatic Resources Wetland Delineation Report, which would be used to develop a PCN for USACE permit application purposes.

Deliverables:

- *Aquatic Resources Wetland Delineation Report (including field survey documentation: GPS points, photos and datasheets)*
- *PCN and jurisdictional aquatic resources delineation report for USACE*

OPTIONAL Task B. Cultural Resource Pedestrian Field Survey

If a field survey is determined to be needed to complete the cultural resource report and confirm a finding of no adverse effects, then Cardno will schedule a field day for an intensive pedestrian study of the Project area by Susan Talcott, a registered professional archaeologist (RPA) and Shelby Stepper an architectural historian. Documentation based on the field survey, including datasheets and photos, will be synthesized into a field survey report and incorporated into the Cultural Resources and Built Environment Evaluation Report.

Assumptions:

- This scope of work assumes that during the survey no archaeological resources will be found and that no more than one historic property site record will be needed.

Deliverables:

- *Cultural Resources* and *Built Environment Studies Site Survey.*

OPTIONAL Task C. Biological Resources Reconnaissance Field Survey or Pre-construction Field Survey

The level of effort and general scope of work to complete a biological reconnaissance field survey and a pre-construction field survey are substantially equivalent, and therefore the budget required to compete either are identified as equivalent for the purposes of this proposal.

For biological field survey: If a field survey is determined to be needed to confirm potential Project impacts to biological resources, Cardno will schedule a full field day for the purposes of completing any necessary reconnaissance-level biological field surveys. The biological survey would be completed with two staff, Michelle Hochrein, senior biologist, and Caroline Hamilton, staff-level biologist. April is anticipated to be an optimal period to conduct the field survey for any special-status plants. After field efforts are complete, the potential of any special-status species to occur will be evaluated based on the potential to occur within the Project area itself, and species information (i.e., known occurrences and habitat) to determine of potential impacts. Data and findings based on the field survey would be incorporated into the Biological Resources Technical Report.

For pre-construction field survey: We anticipate that a required condition of the CDFW LSA will be a pre-construction survey for special-status species and/or for nesting birds and raptors. We assume a single field day will be sufficient to complete the pre-construction survey. The results of the survey will be documented in a short memo for the District's records.

Please note, if both an aquatic delineation and biological reconnaissance field survey are required, they both could be completed on the same day by the same staff (Michelle Hochrein and Caroline Hamilton), a cost saving efficiency.

Deliverables:

- *Field survey and documentation (including GPS points, photos, and datasheets).*

Schedule

The following presents our proposed schedule, based on our current understanding of the Project and the approach above. As noted in our approach, this schedule assumes desktop reviews will be sufficient to complete and secure permitting applications. This schedule also identifies that cut and fill quantities, necessary to secure permits, may not be available until 65% design plans are complete. Optional field survey tasks are noted in italics (and would only be initiated at the District's request).

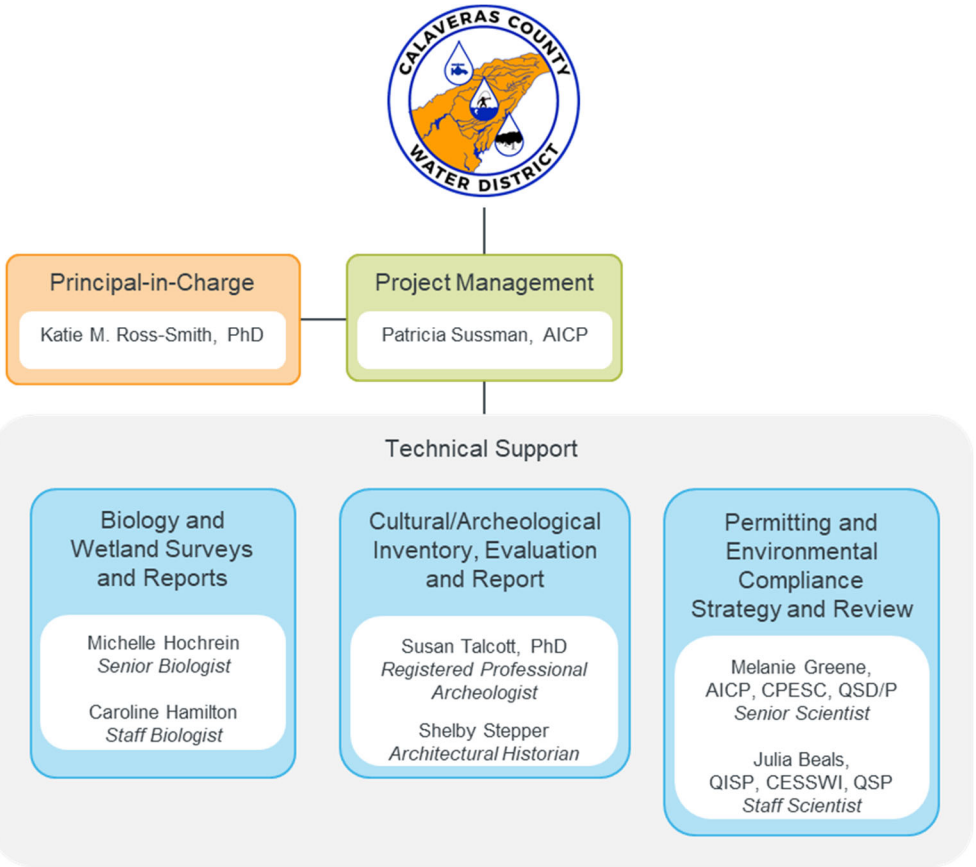
Key Task or Deliverable	Date
Project initiation meeting/ site visit	No later than February 4, 2022
Initiate cultural resources record search	February 4, 2022
Complete biological resources desktop evaluation and report	February 28, 2022
Complete aquatic/wetlands resources delineation and assessment	February 28, 2022
Meeting 1 with District and others as needed (design team/engineers and/or FEMA)	Early March
Preliminary design plans*	March 15, 2022 (estimated according to District schedule)
Complete Categorical Exclusion/Exemption findings (CEQA and NEPA) for District submissions	March 18 2022
Complete administrative draft permit applications (not including cut-fill quantities)	March 22, 2022
OPTIONAL TASK A: Complete Biological Survey and/or Aquatic Resources Field Delineation	*April 2022*
Complete cultural resources and built environment desktop evaluation and report	April 4, 2022
OPTIONAL TASK B: Cultural Resource Field Survey	*Mid-April 2022*
Meeting 2 with District and others as needed (design team/engineers and/or FEMA)	Week of April 18, 2022
65% Design Plans*	April 30, 2022 (estimated according to District schedule)
Finalize permit applications for agency review (with refined project description and with cut and fill quantities based on 65% design plans)	May 10, 2022
100% Design Plans*	May 31, 2022 (estimated according to District schedule)
OPTIONAL TASK C: Pre-construction Field Survey	*June/July 2022*
Receipt of permits from agencies*	July 11 2022 (possible based on a 60-day review period)
Construction*	Mid-summer – late fall 2022

**INDICATES A MILESTONE/DELIVERABLE THAT IS NOT THE RESPONSIBILITY OF CARDNO UNDER THIS SOW*

3. Project Team

Our team is a coordinated and efficient collection of in-house staff, familiar with the landscape, ecology and communities of the Sierra Nevada, and adept at completing biological and cultural desktop reviews and field surveys to support clients with environmental clearance and permitting. The team selected for this Project has, cumulatively, decades of experience with NEPA and CEQA, including development of NEPA categorical exclusions on National Forest Land in Region 5, and CEQA categorical exemptions for public infrastructure projects. As identified in our project examples, biographies, and resumes, the staff selected to work on this Project regularly work together to support Southern California Edison, Pacific Gas & Electric, and local jurisdictions with environmental compliance and permitting tasks substantially similar to those outlined in this scope of work.

The Project team will be led by Katie Ross-Smith, PhD, and Patricia Sussman, AICP (based in Sutter Creek and South Lake Tahoe, respectively). Dr. Ross-Smith will serve as the principal-in-charge and will provide overall contract management, quality assurance and strategic guidance. Ms. Sussman will serve as the project manager and will provide internal team management, lead the coordination of the work, and serve as the day-today-point of contact for District staff. Michelle Hochrein, senior biologist will oversee the desktop biological and aquatic delineation (and field studies if needed) with support from Caroline Hamilton, staff biologist. Susan Talcott, PhD, RPA, a SOI-approved archaeologist, and Shelby Stepper, an architectural historian will lead the cultural desktop evaluation (and field studies if needed). Melanie Greene, AICP, Certified Professional in Erosion and Sediment Control (CPESC), QSD/P will lead, with support from Julia Beals, staff scientist, the preparation of the permitting applications. The structure of Cardno's team is presented in the organizational chart below.



Key Staff

The following brief biographies detail education, experience and relevant skills sets of the project team. Resumes are included as Appendix A.

Staff	Experience
Patricia Sussman, AICP *Senior Environmental Planner* ▪ MS, Community and Regional Planning, University of Oregon, 2012 ▪ BA, Environmental Studies and Philosophy, University of California, Santa Cruz, 2002	**Patricia Sussman** is an experienced project manager and certified planner with primary expertise in conservation planning, regulatory permitting and environmental compliance in northern California and the Sierra Nevada. Ms. Sussman has served as the project manager and/or primary author for multiple successful environmental documents (CEQA and NEPA documents) and permitting applications (in accordance with Clean Water Act Section 401 and 404 requirements as well as CDFW formal notifications). At Cardno she is among several environmental and permitting project managers for Cardno's on-call contract with Southern California Edison (SCE)'s hydroelectric program. In this role she coordinates biological, aquatic and cultural resources teams to provide permitting and construction support for non-routine maintenance activities for the Eastern Hydro and Big Creek Hydroelectric Systems. Ms. Sussman is confident leading and supporting the synthesis of complex policies and data and has 15 years of experience researching, writing, editing and coordinating deliverables for clients in the public and private sector including environmental documents, contracts, grant proposals, impact analyses and a variety of white papers, memos, presentations and handbooks. Ms Sussman has also identified and led the development of multiple federal and state grant proposals relevant to the goals and objectives of client and agency partners – including for water districts and agencies on the west slope of the Sierra.
Katie M. Ross-Smith, PhD *Regional Senior Principal – Ecology* ▪ PhD, Environmental Sciences, University of Virginia, Charlottesville, 2003 ▪ MS, Environmental Sciences University of Virginia, Charlottesville, 1999 ▪ BA, Environmental Studies, Whittier College, 1995	**Katie Ross-Smith, PhD,** has more than 17 years of experience in environmental consulting and 25 years of technical experience in environmental sciences and natural resource management. Dr. Ross-Smith lives in Amador County and has worked extensively throughout the Sierra Nevada and Sierra foothills and understands the sensitive resources and important issues to this region. She has provided technical expertise and management for private sector, government, and nongovernmental organization (NGO) clients for a variety of water resource projects, including hydroelectric relicensing and compliance, riparian and channel restoration, and water supply projects. For hydroelectric licensing projects, Dr. Ross-Smith has been involved with strategic development of process approaches; study plan preparation and implementation; data analysis and research; development of PM&E measures and management and monitoring plans; and preparation of draft and final license applications. She works closely with the relicensing teams to develop strategies to achieve concurrence on PM&E measures and plans by multiple stakeholders, often with competing interests. She is experienced with CEQA and NEPA planning and federal and California regulatory compliance and permitting including Clean Water Act (CWA) permitting under Sections 404 and 401, and CDFW Section 1602 Lake or Streambed Alteration permitting. She has directed, authored, and provides senior technical review of environmental documents in support of projects that require multidisciplinary approaches for watershed conditions assessments and impact analyses of terrestrial and aquatic resources.
Michelle Hochrein *Senior Environmental Scientist* ▪ MS, Geography, University of Nevada, Reno, 2013 ▪ BLA, Landscape Architecture, California	**Michelle Hochrein** has extensive experience with riparian and wetland studies, including botanical evaluations and assessments, developing and executing riparian monitoring plans, and designing and overseeing the implementation of riparian and wetland restorations. She has experience with Sierra Nevada plant ecology, aerial imagery and on-the-ground vegetation mapping, and plant identification. She has experience in biological field assessments and environmental monitoring, including vegetation surveys, invasive species monitoring, sensitive plant surveys, wetland delineations, and mobile GIS mapping. She is adept with CNDDB, BIOS, and Survey of California Vegetation Classification and Mapping standards, and statutes

Staff	Experience
Polytechnic State University, San Luis Obispo, 2007	and regulations related to plants and plant collection. She has experience with federal regulatory compliance and permitting including CWA permitting under Sections 404 and 401, National Pollutant Discharge Elimination System (NPDES) and Waste Discharge Requirements (WDRs) permitting and requirements, and CDFW Section 1602 Lake or Streambed Alteration (LSA) permitting. She develops and implements water quality, wetland, and riparian monitoring plans, managing field crews to direct the collection and analysis of data for monitoring and reporting. Using her landscape architecture background, Ms. Hochrein specializes in environmental restoration and revegetation projects and oversees implementation.
Susan D. Talcott, PhD, RPA *Archaeological Field Director* ▪ PhD, Evolutionary Anthropology, University of California Davis, 2019 ▪ MA, Anthropology, University of California Davis 2012 ▪ BS, Anthropology, University of California Davis, 2007	**Susan Talcott, PhD, RPA,** has 12 years of experience in cultural resource management, research, and regulatory compliance throughout California. Her past roles have included serving as senior archaeologist and project manager, authoring technical reports, conducting records searches, facilitating Native American outreach, leading fieldwork, and evaluating archaeological resources. Throughout her career, she has supported multiple utility projects across California. Most recently supporting Pacific Gas and Electric (PG&E) projects in Santa Cruz and Monterey Counties. Dr. Talcott is experienced in site testing, data recovery, burial excavation, skeletal assessments, and construction monitoring at sensitive archaeological sites. She has used her skill set to help foster positive working relationships with Native American tribes in northern California, most recently working collaboratively with the United Auburn Indian Community. Dr. Talcott meets the Secretary of the Interior's Professional Qualification Standards for archaeology. Dr. Talcott has systematically reviewed faunal materials in museum collections to identify and catalog fragmentary human skeletal remains co-mingled with archaeological faunal assemblages. She reviewed and developed Native American Graves Protection and Repatriation Act (NAGPRA) inventories, ensuring archaeological collections complied with NAGPRA regulations. Additionally, Dr. Talcott has eight years of college teaching and mentorship experience.
Shelby A. Stepper *Architectural Historian* ▪ MA, Public History, California State University, Sacramento, CA, In- Process, 2022 ▪ BA, History, California State University, Sacramento, CA 2017	**Shelby Stepper** has 4 years of experience in cultural resource management and built environment documentation with an emphasis on documentation under Section 106 of the National Historic Preservation Act (NHPA) and built environment research and resource evaluation related to a number of localized municipal contexts. She is versed in all facets of project planning, from project delineation and Area of Potential Effects (APE) development, to intensive survey, field recordation, report documentation, agency review, and Geographic Informational System (GIS) development. She has worked on a wide range of architectural documentation projects, including under Section 106 as well as under specialized contexts including municipal preservation ordinances and the CEQA. Ms. Stepper is also experienced in the development of Strength, Weakness, Opportunities, and Threats (SWOT) Analysis related to build environment resources and in the development of resource registration including National Historic Landmark Nomination (NHL) documentation, National Register of Historic Places (NRHP) documentation, Finding of Effect (FOE) documentation and cultural built environment assessments.
Melanie Greene, AICP, CPESC, QSD/P *Senior Project Scientist* ▪ MS, Watershed Science, Colorado State University, 2003 ▪ BS, Applied Biology, Georgia Institute of Technology, 1995	**Melanie Greene**, a senior project scientist and AICP-certified environmental planner, specializes in CEQA and NEPA environmental documentation and clearance, and project permit acquisition, compliance, monitoring and reporting. She has worked independently as a contractor, as a member of project-level and regional-level interdisciplinary teams, and in conjunction with numerous stake holders, private entities and government agencies to: prepare planning and outreach documents; develop and vet project alternatives; manage CEQA and NEPA processes, including conducting potential impact analyses for water quality, hydrology, hazards and hazardous materials, geology and soils, land use and planning as well as other resource analyses, writing and editing environmental documents and mitigation monitoring and reporting plans and programs; and acquire permit authorizations.

Staff	Experience
	Ms. Greene works directly with project engineers and designers to assure proposals meet the programmatic requirements of CWA Sections 404/401, RHA Sections 10/108, NHPA Section 106, ESA Section 7, State and Regional Water Board NPDES permits and WDRs, and CDFW LSAs and Streambed Alteration Agreement (SAAs). Ms. Greene also works closely with local and regional authorizing and reviewing agencies for acquisition of encroachment, grading, and other project-level approvals. Ms. Greene specializes in development of comprehensive yet succinct narrative project descriptions and the quantification of potential impacts to jurisdictional waters of the US, waters of the State, and instream and riparian habitats and resultant compensatory mitigation, when applicable. She peer-reviews and also develops mitigation monitoring and reporting plans, erosion and sediment control plans, and Stormwater Pollution Prevention Plans (SWPPP); manages field crews for compliance monitoring; and prepares final reports for project close-out. She is a QSD/QSP certified by the California State Water Resources Control Board, maintains her CPESC certification along with OSHA 40-Hour HAZWOPPER. She is preparing with Qualified Industrial Storm Water Practitioner (QSIP) certification in 2022.
Julia Beals, QISP, CESSWI, QSP *Environmental Scientist* ▪ BA, Environmental Earth Science, University of California – Berkeley, 2017	**Ms. Julia Beals** is an environmental scientist with expertise in planning and permitting, water quality, wildfire mitigation, forestry regulations, industrial and construction stormwater permit compliance, statewide water quality permit development, CWA Section 401 certifications, CEQA document development, and electrical and gas utility maintenance permitting. She excels at navigating local, state, and federal regulations and organizing multi-jurisdictional information to inform policy and planning. She is also skilled in field data collection, data analysis, and technical writing. She has held positions in environmental consulting as well as with regulatory agencies, including the California State Water Resources Control Board where she worked within the 401 Program, permitted NWP 12 utility projects under the State Water Board Certification of the 2017 NWPs General Order, and participated in the development of two statewide permits—the Vegetation Treatment General Order and an upcoming utility wildfire mitigation permit. With these experiences, she derived strong communication skills to navigate both consultant-client and regulator-permittee relationships. Ms. Beals is a California Qualified Industrial Stormwater Practitioner (QISP), a Qualified Construction Stormwater Practitioner (QSP), and a Certified Erosion, Sediment, & Stormwater Inspector (CESSWI).

About Cardno

Founded in 1945, Cardno is a full-service engineering and environmental services firm that employs more than 4,000 staff in 120 offices worldwide. We are an interdisciplinary firm that integrates the knowledge and experience of scientific and regulatory experts to provide practical and defensible solutions to complex natural resource issues. Cardno has built a solid reputation among public and private sector clients for providing innovative approaches to engineering and environmental projects, while ensuring that high-quality deliverables are submitted on, or ahead of schedule.

Cardno has maintained a presence in California since 1986 and today has 15 offices in California and Nevada staffed by more than 300 professionals. Cardno has maintained regional offices in Sacramento and Lake Tahoe for more than 20 years. In 2008, we expanded our local capabilities by establishing an office in Reno, Nevada and in 2021, we opened an office in Sutter Creek. Since that time, our Sacramento, Lake Tahoe, Reno and Sutter Creek offices have been working hand-in-hand on a variety of projects, with a strategic focus to support the Sierra Nevada region extensively. Our local offices provide the intimate client experience you expect from a smaller company, while at the same time we have a deep bench that can be called upon if and when an unexpected technical issue arises. Our northern

California and Nevada team has earned a reputation for helping find innovative solutions to project challenges to ensure timely and effective project deliverables, always with a focus on quality and safety.

In December 2021, Stantec announced the purchase of Cardno's North America group and the combined staff will integrate during 2022. Cardno joins Stantec to become one of the largest environmental consulting firms in the US, offering our clients a robust work force of nearly 25,000 designers, engineers, scientists, project managers, and support staff. For additional information regarding our combined resources, qualifications, and strong financial standing, please visit www.cardno.com and www.stantec.com.

4. Project Examples

The Cardno team has proven experience and extensive knowledge in the planning, environmental review, permitting and implementation for multiple infrastructure projects in the Sierra Nevada. The three project examples below highlight our team's recent experience working on closely relevant projects.

Huntington Lake Dam No. 1 Low-Level Outlet Valve Replacement Project – Sierra National Forest

Client	Location
Southern California Edison	Huntington Lake, CA – Sierra National Forest

Summary

The Cardno team, including Ms. Patricia Sussman, Ms. Melanie Greene, and Ms. Caroline Hamilton completed a desktop archaeological review, desktop aquatic resources assessment, and biological desktop review and field survey of the area around Huntington Lake, at approximately 6,900-foot elevation in the Sierra Nevada. The biological and aquatic review focused specifically on the riparian drainage below Huntington Lake Dam No. 1 as part of the Huntington Lake Dam No. 1 Low-Level Outlet Valves Replacement Project. The purpose of the desktop review and field survey was to evaluate any potential effects to special-status species associated with adjustments and additions to the dam infrastructure. This included conducting a presence/absence survey for the federally threatened Yosemite toad, evaluating the riparian vegetation community in the affected drainage, and identifying appropriate biological and water resource avoidance and protection measures. Findings were presented to the client in a jurisdictional delineation memo, cultural resources assessment memo, and a biological resources technical report. Deliverables were supported by tables, maps, and photos. Biological report findings are being used, in combination with the aquatic resource delineation assessment, to prepare permitting packages for CWA Section 401 and 404 permits for the project and to secure a SAA from the CDFW. The Cardno team also developed a technical description of the project to support the resource assessments/evaluations and permitting applications.

Key Service Categories

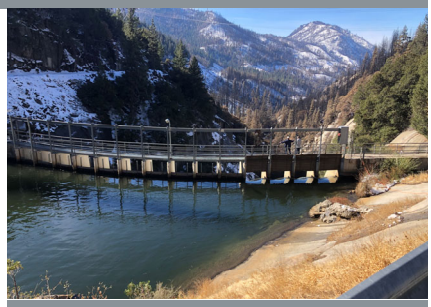
- Biological Services
- Aquatic Wetlands Assessment
- Archaeological Services
- CWA Permits
- CDFW Lake and SAA
- USFS Special Use Permit
- Federal Emergency Relicensing Commission USFS 4(e) conditions

Big Creek Dam No. 4 Resurfacing and Low-Level Outlet Repair Project – Sierra National Forest

Client	Location
Southern California Edison	Big Creek, CA – Sierra National Forest

Summary

The Cardno team developed a detailed technical project description based on 30% design plans, for the Big Creek Hydroelectric Project No. 1 and 2, Dam No. 4 Low-Level Outlet (LLO) Repair and Dam Resurfacing Project. The project involves substantive repairs to the LLO system – including the construction of a new LLO valve shelter at the downstream base of the dam, and resurfacing the entire face of the dam (a 170-foot high structure). The Cardno team, including Ms. Patricia Sussman, Ms. Caroline Hamilton and Ms. Shelby Stepper, supported the client with resource evaluations to consider the potential biological, aquatic and cultural effects of the proposed activities. These evaluations included a cultural built environment assessment according to the guidelines outlined in 36 CFR 800.11, as well as an analysis of the potential effects project activities may have on the historic District that includes Dam No. 4. Based on her review, Cardno's cultural specialist, Shelby Stepper, identified a non-adverse effect on the historic District alignment, and supported findings congruence with SHPO. Resource assessments also included a desktop biological resources evaluation and jurisdictional delineation, the results of which were captured in a biological resources technical report and jurisdictional delineation memo. These documents are currently being used to prepare permit packages for the project, including a formal request for water quality certification from the State Water Board and notification to CDFW for a Lake and Streambed Alternation Agreement.



Key Service Categories

- Historic Built Environment Evaluation
- USFS SUP
- Biological resource evaluation
- Aquatic Wetlands Assessment
- CWA Permits
- CDFW Lake an SAA
- Federal Emergency Relicensing Commission USFS 4(e) conditions

Tahoe Valley Stormwater and Greenbelt Improvement Project – South Lake Tahoe, CA

Client	Location
City of South Lake Tahoe	City of South Lake Tahoe, CA

Summary

Cardno is working with the City of South Lake Tahoe to develop a recreational improvement, stormwater improvement, and flood control project. Improvements are proposed in the urban areas primarily to address an existing undersized stormwater collection, conveyance, and treatment system. The design plans define proposed pedestrian/bicycle trails, site amenities, and incorporation of natural stormwater facilities across public lands to enhance recreational opportunities and the creation of open space.

Cardno has completed all of the planning, environmental compliance, and design for the project. Cardno used the preliminary design to develop a CEQA IS/MND that detailed the project's anticipated impact to resources and developed mitigation where necessary to protect resources from project impacts. Cardno provided the City with resource impact analysis for air quality, GHGs, and biological resources; special conservation area habitat; tribal, cultural, and historic resources; hydrology; and water quality, among others.

In the fall of 2021 Ms. Michelle Hochrein completed a full aquatic resources wetland delineation for the project and Ms. Melanie Greene, with support from Ms. Julia Beals and Ms. Patricia Sussman, used the results of the delineation, environmental document findings, and the complete design plans to prepare permit application packages and to consult with regulatory agencies on the same, including the Regional Water Board, USACE and CDFW. Permits are anticipated to be secured before spring, with construction anticipated this coming summer (summer of 2022).

Key Service Category

- Biological Services
- Archaeological Services
- Tahoe Regional Planning Agency (TRPA)/CEQA/NEPA Environmental Compliance
- TRPA and other Permits
- Stakeholder Engagement and Agency Coordination
- Tribal Consultation and Coordination
- USFS SUP
- CWA Permits
- CDFW Lake and SAA

5. References

Three references that can speak the experience and performance of Cardno and key personnel identified are listed below.

Organization Contact Name	Southern California Edison Anne McAulay, Sr. Manager, Project Environmental Management
Phone Number	626 302 3339
Email Address	Anne.Mcaulay@sce.com
Project	SCE's on-call hydroelectric program
Description of Services	Cardno provides permitting and construction support for non-routine maintenance activities for the Eastern Hydro and Big Creek Hydroelectric Systems (involving multiple waterbodies, dams and infrastructure in Fresno, Mono and Inyo counties). Under this program Cardno is tasked with preparing narrative project descriptions for USDA-FS 4(e) license condition packages, developing permitting strategies, conducting biological and cultural desktop and field surveys and reports, and preparing permitting packages including under Section 401 and 404 of the CWA (for the Water Board and USACE respectively), and CDFW LSA Agreements.

Organization Contact Name	City of South Lake Tahoe Hillary Roverud, Director, Development Services
Phone Number	530 542 6024
Email Address	hroverud@cityofslt.us
Projects	Tahoe Valley Stormwater and Greenbelt Improvement Project
Description of Services	Cardno has led and supported a range of environmental services for ongoing engineering projects with the City of South Lake Tahoe Development Services and Public Works Department.

Organization Contact Name	Washoe Tribe of Nevada and California Rhiana Jones (sp) Environmental Program Director
Phone Number	775 265 8683
Email Address	Rhiana.Jones@washoetribe.us
Project	Meeks Meadow Restoration Planning, Environmental Documentation, and Permitting
Description of Services	Cardno provides the Washoe Tribe with services important to preserving and restoring native habitat. Services provided as part of the Meeks Meadow project included biological and archaeological services, CEQA/NEPA/TRPA permitting support, stakeholder engagement and agency coordination, and climate adaptation and action planning.

6. Cost

Cardno proposes to complete the scope of services as outlined in our technical proposal for a lump sum of $31,454.00. We have also included a separate budget that identifies costs for three separate optional tasks. Any one or more of these tasks may be initiated with a simple task order change at the District's request. On the following pages you will find Cardno's cost assumptions, the project team's hourly rates, and level of effort (number of hours) per task. In addition, we have provided our 2022 Schedule of Fees for this project.

Cost Assumptions

- Hours and budget may vary by individual and task, but total budget will not be exceeded.
- Resource impact/effect findings can be confirmed based on desktop evaluations for biological, aquatic, and cultural resources, and a no impact/no adverse effect finding will be found for all resources. If a field survey is needed to determine project effects, Optional Task A, B or C could be initiated with a task order change.
- The proposed Project will qualify as non-reporting to USACE. If a pre-construction notification (PCN) is required (and therefore a field delineation), then Optional Task A could be initiated.
- The Project will meet the conditions for a categorical exemption (CE) under CEQA and for a categorical exclusion (CE) under NEPA, and neither a Mitigated Negative Declaration (MND) or Environmental Assessment (EA) will be required.
- The District will cover any fees associated with cultural record database searches charged by the CHRIS center (we anticipate fees may be around $500).
- Mileage to the Project site is calculated from Cardo's Sutter Creek, CA office.

Cardno

Biological and Cultural Resources for CEQA and Future Permitting NEPA Proposal - Hunters Raw Water Pump Station Mitigation Project

	Cardno Staff											Unit Costs		
	Ross-Smith, Katharina M. Senior Consultant 1	Sussman, Patricia Senior Project Scientist 1	Hochrein, Michelle Project Scientist 1	Hamilton, Caroline Staff Scientist 1	Talcott, Susan Senior Project Scientist 1	Stepper, Shelby Staff Scientist 1	Greene, Melanie Senior Project Scientist 1	Beals, Julia Assistant Staff Scientist	Clare, Anna GIS Consultant	Browning, Lori A. Senior Project Coordinator	Total Cardno Labor	Mileage	TOTAL UNIT COSTS	TOTALS
Hourly Billing Rate, Markup, or Unit Cost:	$ 190	$ 160	$ 140	$ 95	$ 160	$ 95	$ 160	$ 85	$ 115	$ 115		$ 0.585		
Task 1 - Progress Meetings/Coordination and Development of Project Description														
1.1 Project Initation Meeting														
a. Prepare for and attend mtg/site visit (including 3 hours travel)	4	7								1	$ 1,995	110	$ 64	$ 2,059
b. Prepare and distribute meeting summary/report		4									$ 640		$ -	$ 640
Subtotal - Phase 1.1	4	11	0	0	0	0	0	0	0	1	$ 2,635	110	$ 64	$ 2,699
1.2 First draft Project Description														
a. Data review and compilation		8									$ 1,280		$ -	$ 1,280
b. Draft PD for District Review		7	2				2		4		$ 2,180		$ -	$ 2,180
c. Refine based on District feedback		3							2		$ 710		$ -	$ 710
Subtotal - Phase 1.2	0	18	2	0	0	0	2	0	6	0	$ 4,170	0	$ -	$ 4,170
1.3 Coordination Meeting 1														
a. Prepare for and attend meeting		2					2				$ 640		$ -	$ 640
b. Prepare and distribute meeting summary/report		2									$ 320		$ -	$ 320
Subtotal - Phase 1.3	0	4	0	0	0	0	2	0	0	0	$ 960	0	$ -	$ 960
1.4 Coordination Meeting 2														
a. Prepare for and attend meeting		2					2				$ 640		$ -	$ 640
b. Prepare and distribute meeting summary/report		2									$ 320		$ -	$ 320
Subtotal - Phase 1.4	0	4	0	0	0	0	2	0	0	0	$ 960	0	$ -	$ 960
TOTAL - Task 1 -	**4**	**37**	**2**	**0**	**0**	**0**	**6**	**0**	**6**	**1**	**$ 8,725**	**110**	**$ 64**	**$ 8,789**
Task 2 - Biological Resource Study														
2.1 Biological Resources Technical Report														
a. Data Collection (dekstop only)				8						1	$ 875		$ -	$ 875
b. Draft Report		2	4	10					2		$ 2,060		$ -	$ 2,060
c. Final Report				4							$ 380		$ -	$ 380
Subtotal - Phase 2.1	0	2	4	22	0	0	0	0	2	1	$ 3,315	0	$ -	$ 3,315
TOTAL - Task 2 -	**0**	**2**	**4**	**22**	**0**	**0**	**0**	**0**	**2**	**1**	**$ 3,315**	**0**	**$ -**	**$ 3,315**
Task 3 - Aquatic Resources/Wetlands Delineation														
3.1 Aquatic Resource/Wetlands Assessment Report														
a. Data Gathering (desktop only)			8							1	$ 1,235		$ -	$ 1,235
b. Draft Report		2	10						3		$ 2,065		$ -	$ 2,065
c. Final Report			4						1		$ 675		$ -	$ 675
Subtotal - Phase 3.1	0	2	22	0	0	0	0	0	4	1	$ 3,975	0	$ -	$ 3,975
TOTAL - Task 3 -	**0**	**2**	**22**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**$ 3,975**	**0**	**$ -**	**$ 3,975**
Task 4 - Cultural Resource and Historic Properties Study/Built Environment Assessment														
4.1 Cultural Resource and Historic Properties Study/Built Environment Assessment														
a. Records Searches and consultations					2	8				1	$ 1,195		$ -	$ 1,195
b. Draft Report (based on desktop review only)					8	8					$ 2,040		$ -	$ 2,040
c. Final Report		1			5	4					$ 1,340		$ -	$ 1,340
Subtotal - Phase 4.1	0	1	0	0	15	20	0	0	0	1	$ 4,575	0	$ -	$ 4,575
TOTAL - Task 4 -	**0**	**1**	**0**	**0**	**15**	**20**	**0**	**0**	**0**	**1**	**$ 4,575**	**0**	**$ -**	**$ 4,575**
Task 5 - Environmental Report														
5.1 Environmental Report														
a. CE Findings Documentation		4					2			1	$ 1,075		$ -	$ 1,075
b. NOE		1									$ 160		$ -	$ 160
Subtotal - Phase 5.1	0	5	0	0	0	0	2	0	0	1	$ 1,235	0	$ -	$ 1,235
TOTAL - Task 5 -	**0**	**5**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**$ 1,235**	**0**	**$ -**	**$ 1,235**
Task 6 - Permitting														
6.1 Refine and Finalize Project Description														
a. Draft PD		8	2				3		2	1	$ 2,385		$ -	$ 2,385
b. Final PD		2					1				$ 480		$ -	$ 480
Subtotal - Phase 6.1	0	10	2	0	0	0	4	0	2	1	$ 2,865	0	$ -	$ 2,865
6.2 401 App														
a. Draft							1	20			$ 1,860		$ -	$ 1,860
b. Final	1	2					1	8			$ 1,350		$ -	$ 1,350
c. agency consultation		1					2	4			$ 820		$ -	$ 820
Subtotal - Phase 6.2	1	3	0	0	0	0	4	32	0	0	$ 4,030	0	$ -	$ 4,030
6.3 CDFW LSA EPIMS														
a. Draft							1	10			$ 1,010		$ -	$ 1,010
b. Final	1	1					1	4			$ 850		$ -	$ 850
c. agency consultation		1					3	2			$ 810		$ -	$ 810
Subtotal - Phase 6.3	1	2	0	0	0	0	5	16	0	0	$ 2,670	0	$ -	$ 2,670
TOTAL - Task 6 -	**2**	**15**	**2**	**0**	**0**	**0**	**13**	**48**	**2**	**1**	**$ 9,565**	**0**	**$ -**	**$ 9,565**
Total Hours or Amounts	**6**	**62**	**30**	**22**	**15**	**20**	**21**	**48**	**14**	**6**	244.0	**110**	**$ 64**	
TOTAL PROJECT COST											**$ 31,390**		**$ 64**	**$ 31,454**

Notes / Assumptions

Mileage calculated from Sutter Creek Office to the Project Site (~ 55 miles one way)

Costs for Optional Tasks

Cardno	Cardno Staff									Unit Costs		
Biological and Cultural Resources for CEQA and Future Permitting NEPA Proposal - Hunters Raw Water Pump Station Mitigation Project	Ross-Smith, Katharina M. Senior Consultant 1	Hochrein, Michelle Project Scientist 1	Hamilton, Caroline Staff Scientist 1	Talcott, Susan Senior Project Scientist 1	Stepper, Shelby Staff Scientist 1	Greene, Melanie Senior Project Scientist 1	Clare, Anna GIS Consultant	Browning, Lori A. Senior Project Coordinator	Total Cardno Labor	Mileage	TOTAL UNIT COSTS	TOTALS
Hourly Billing Rate, Markup, or Unit Cost:	*$ 190*	*$ 140*	*$ 95*	*$ 160*	*$ 95*	*$ 160*	*$ 115*	*$ 115*		*$ 0.585*		
OPTIONAL TASK A - Aquatic Resources Field Delineation												
7.1 Field survey and documentation (including GPS points, photos, and datasheets).												
a. Field Survey (including 3 hours travel)		12	12						$ 2,820	110	$ 64	$ 2,884
b. Field Survey Synthesis		2	6						$ 850		$ -	$ 850
c. Wetland Delineation Report		20					4		$ 3,260		$ -	$ 3,260
d. PCN for USACE		4	12			3	2		$ 2,410		$ -	$ 2,410
Subtotal - Phase 7.1	0	38	30	0	0	3	6	0	$ 9,340	110	$ 64	$ 9,404
TOTAL - OPTIONAL TASK A	**0**	**38**	**30**	**0**	**0**	**3**	**6**	**0**	**$ 9,340**	**110**	**$ 64**	**$ 9,404**
OPTIONAL TASK B - Cultural Resource Pedestrian Field Survey												
8.1 Cultural Resources and Built Environment Studies Site Survey												
a. Field Survey (including 3 hours travel)				11	11				$ 2,805	110	$ 64	$ 2,869
b. Field Survey Synthesis				8	8				$ 2,040		$ -	$ 2,040
Subtotal - Phase 8.1	0	0	0	19	19	0	0	0	$ 4,845	110	$ 64	$ 4,909
TOTAL - OPTIONAL TASK B	**0**	**0**	**0**	**19**	**19**	**0**	**0**	**0**	**$ 4,845**	**110**	**$ 64**	**$ 4,909**
OPTIONAL TASK C - Pre Construction Field Survey or Biological Field Survey												
9.1 Pre-construction survey and documentation												
a. Prep for Survey			4						$ 380		$ -	$ 380
b. Survey (including 3 hours travel)	2		11						$ 1,425	110	$ 64	$ 1,489
c. Prepare Documentation/Data Synthesis			5						$ 475		$ -	$ 475
Subtotal - Phase 9.1	2	0	20	0	0	0	0	0	$ 2,280	110	$ 64	$ 2,344
TOTAL - OPTIONAL TASK C	**2**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**$ 2,280**	**110**	**$ 64**	**$ 2,344**
Total Hours or Amounts	**2**	**38**	**50**	**19**	**19**	**3**	**6**	**0**	137.0	**330**	**$ 193**	
TOTAL PROJECT COST FOR OPTIONAL TASKS									**$ 16,465**		**$ 193**	**$ 16,658**

Notes / Assumptions

Mileage calculated from Sutter Creek Office to the Project Site (~ 55 miles one way)

Schedule of Fees - 2022

Field Technician	$75
Project Assistant	85
Project Coordinator	105
Senior Project Coordinator	115
Production Specialist	140
Technical Editor	150
CADD/Drafting/GIS Consultant	115
Assistant Staff Consultant	85
Staff Consultant 1	95
Staff Consultant 2	105
Senior Staff Consultant 1	115
Senior Staff Consultant 2	130
Project Consultant 1	140
Project Consultant 2	150
Senior Project Consultant 1	160
Senior Project Consultant 2	185
Senior Consultant 1	190
Senior Consultant 2	230
Director	260

Consultant and Director positions include professional Scientist, Ecologist, Economist, Engineer, Hydrogeologist, Geologist, Planner, and other technical and non-technical staff positions. Consultant hours spent providing expert witness, deposition, or preparation for deposition will be charged at 1½ times regular billing rate. Rates are subject to increase annually.

Expenses

Use of a personal vehicle will be at the current IRS allowable rate. Subconsultant fees and all direct costs (ODC) will be billed will be charged at cost.

Payment

Cardno invoices will be submitted monthly. Payment is due on or before the thirtieth (30th) day following the date of the invoice. Invoices paid more than thirty (30) days after the invoice date are subject to a finance charge of one percent (1%) per month.

Conditions

Cardno specifies that our services are performed, within the limits prescribed by our clients, with the usual thoroughness and competence of the environmental consulting profession. No other warranty or representation, either expressed or implied, is included or intended in our proposals, contracts, or reports.

Appendix A

RESUMES

Cardno

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Patricia Sussman, AICP

Current Position
Senior Environmental Planner

Discipline Areas
> Environmental Compliance (CEQA, NEPA, TRPA)
> Regulatory Permitting
> Grant Writing
> Project Management
> Stakeholder Communication

Years' Experience
15

Joined Cardno
2020

Education
> MS, Community and Regional Planning, University of Oregon, 2012
> BA, Environmental Studies and Philosophy, University of California, Santa Cruz, 2002

Certifications
> Certified Environmental Planner, American Institute of Certified Planners, No. 028685

Affiliations

www.cardno.com

Summary of Experience

Ms. Patricia Sussman is an experienced project manager and certified planner with primary expertise in conservation planning, regulatory permitting and environmental compliance. She is especially proficient in California Environmental Quality Act (CEQA) compliance and has also supported projects and clients requiring compliance with the National Environmental Policy Act (NEPA) and Tahoe Regional Planning Agency (TRPA) Compact. She has served as the primary author and editor for environmental documents and permitting applications and has also identified and led the development of multiple federal and state grant proposals relevant to the goals and objectives of client and agency partners. Ms. Sussman is confident leading and supporting the synthesis of complex policies and data and has 15 years of experience researching, writing, editing and coordinating deliverables for clients in the public and private sector including environmental documents, contracts, grant proposals, impact analyses and a variety of white papers, memos, presentations and handbooks. Her skill set includes policy and economic analysis, strategic planning and facilitation, program development, and outreach and communication.

Significant Projects

Deputy Project Manager/Senior Environmental Planner – Nevada Division of State Parks, Walker River State Recreation Area Rafter 7 Unit – Yerington, Nevada

Ms. Sussman is serving as the deputy project manager (PM) for the planning effort to develop Nevada Division of State Parks' (NDSP) recently acquired Rafter 7 Ranch, an approximately 3,000-acre ranch south of Yerington, Nevada. Ms. Sussman led development of an Environmental Assessment (EA) for Phase I of the Rafter 7 Ranch Development Plan (currently under NDSP administrative review), and is supporting coordination and facilitation of NDSP discussions on development and conservation/restoration of the remainder of the property for Phase II of the Development Plan. The property includes more than 11 miles of the East Fork of the Carson River, multiple special status species – including western yellow-billed cuckoo, and an eligible historic district associated with the turn-of-the-century buildings located in the core ranch area.

Senior Environmental Planner – SCE's On-call Hydroelectric Program – California

Ms. Sussman is serving as a project manager with the environmental and permitting team contracted to implement SCE's on-call hydroelectric program, which includes providing permitting and construction support for non-routine maintenance activities for the Eastern Hydro and Big Creek Hydroelectric Systems. As part of the Cardno permitting team for SCE on-call tasks Ms. Sussman crafts narrative project descriptions for USDA-FS 4(e) license condition packages, develops permitting strategies, and prepares permitting packages including State Water Resources Control Board Clean Water Action Section 401 Water Quality Certification and California Department of Fish and Wildlife Lake or Streambed Alteration Agreements. Specific projects she has worked or is working on in a project management role include Saddlebag Lake Flume Replacement Project; Big Creek Dam No. 1 Low Level Outlet (LLO) Valves Repair Project; Big Creek Dam No. 4 LLO Repair and Dam Resurfacing Project, Florence Lake Arches 52-54 Repair and LLO Upgrade Project, and several projects mitigating damage associated with the Creek Fire.

- Secretary, City of South Lake Tahoe 100% Renewable Committee
- Tahoe Climate Change Action Network, Active Member
- American Planning Association (APA), California Chapter
- City of South Lake Tahoe Planning Commission, Past Commissioner, 2013-2014
- City of South Lake Tahoe Sustainability Commission, Past Commissioner, 2010
- LiveMove, (University of Oregon Transportation and Livability Student Group) Campaign Coordinator and Clinton Global Initiative University representative, 2012-2014

Publications

- Max Nielsen-Pincus, Patricia Sussman, Drew E. Bennett, Hannah Gosnell, Robert Parker. 2017. The Influence of Place on the Willingness to Pay for Ecosystem Services. Society & Natural Resources 30(12):1,423-1,441.
- Sierra Nevada Alliance and the Local Government Commission. 2008. Planning for Water-Wise Growth in the Sierra: A Water and Land Use Policy Guide.

Professional Work History

Project Manager – Ione Small Hydroelectric Project – Amador County, California

Prior to joining Cardno, As the project manager beginning in 2018, Ms. Sussman led project permitting including completion of a Lake and Streambed Alteration Agreement in accordance with CDFW requirements, a 401 Water Quality Certification from the Central Valley Water Resources Control Board, and verification of approval under a USACE Nationwide Permit. She also led the development of an addendum to the project's CEQA IS/MND due to minor project changes. The project, consisting of construction and operation of a small hydroelectric facility, will provide renewable supplemental power to serve the Amador Water Agency

Project Manager – Euer Valley Restoration Project – Nevada County, California

Prior to joining Cardno, Ms. Sussman served as the team lead and coordinator for the Euer Valley Restoration Project. The project involves restoration of aquatic habitat along ½ mile of the South Fork of Prosser Creek in the Truckee River Watershed and addressing a degraded stream and wet meadow crossing with a new bridge and elevated boardwalk. In this role she led coordination with the full team (including design contractors, structural engineers, and other resource specialists), acted as the day-to-day point of contact with the client, and led development of the Initial Study/Proposed Negative Declaration (IS/ND).

Project Manager – Bucks Creek Hydroelectric Project – Santa Clara and Plumas County, California

Prior to joining Cardno, Ms. Sussman served as the project manager for CEQA support to the City of Santa Clara for the relicensing of the Bucks Creek Project under the Federal Energy Regulatory Commission (FERC) Integrated Licensing Process (ILP). Major tasks included preparation and distribution of the CEQA Supplement to the NEPA document (EIS) prepared by FERC for the project, and working with the City to ensure appropriate notification and distribution of document information in accordance with CEQA regulations. The environmental analysis provided in the CEQA Supplement completes the analysis of potential impacts of the Bucks Creek Project by fully analyzing those resource areas required by CEQA that were not analyzed under NEPA and by identifying the level of significance of all potential impacts resulting from continued operation and maintenance of the project under a new FERC license..

Project Manager – Coldstream Canyon Watershed Restoration Project IS/MND – Placer County, California

Prior to joining Cardno, Ms. Sussman was the project manager for CEQA-based environmental analysis (IS/ND) of the watershed and habitat restoration project on California State Park and private land in Coldstream Canyon (east of Donner Lake) for Wildscape Engineering, the Truckee River Watershed Council, and the California Department of Parks and Recreation (State Parks). This project required substantive coordination with State Parks' staff, restoration of three landforms (roads, two ponds, and ½ linear mile of Cold Creek) and substantive analysis associated with potential impacts to hydrological, biological and cultural resources. Implementation of the project was initiated in 2021 and is ongoing.

Grant Writer – Multiple Projects – California

Prior to joining Cardno, Ms. Sussman coordinated, drafted, and compiled multiple large federal (e.g. WaterSMART grants) grant applications that have resulted in more than $1 million in awards to public agencies throughout the Sierra Nevada.

Katie M. Ross-Smith, PhD

Current Position
Regional Senior Principal – Ecology

Discipline Areas
- Hydroelectric Licensing
- Riparian Ecology and Flows
- Riparian Restoration
- Environmental Assessments & Studies
- Vegetation Community Mapping
- Fluvial Geomorphology
- Floodplain Retention Dynamics
- Hydrology Analysis
- Data / Statistical Analysis
- Project Management

Years' Experience
24

Joined Cardno
2003

Education
- PhD, Environmental Sciences, University of Virginia, Charlottesville, 2003
- MS, Environmental Sciences University of Virginia, Charlottesville, 1999
- BA, Environmental Studies, Whittier College, 1995

Summary of Experience

Dr. Ross-Smith has more than17 years of experience in environmental consulting and 25 years of technical experience in the field of environmental sciences and natural resource management. She has provided technical expertise and management for private sector, government, and nongovernmental organization (NGO) clients for a variety of environmental, water resource, and restoration projects.

Dr. Ross-Smith is an ecologist with a strong interdisciplinary background with an emphasis on riparian and riverine ecosystems. Her experience includes projects related to hydroelectric licensing, river restoration and revegetation, and watershed assessments. She has directed and authored numerous technical studies and reports in support of projects that require multidisciplinary approaches for watershed conditions assessments and impact analyses of terrestrial and aquatic resources. She manages large, multiyear studies assessing resource conditions; evaluating impacts; and developing protection, mitigation, and enhancement measures. She manages multiyear monitoring projects to assess changes in riparian and channel conditions over time in response to new flow regimes and develop restoration options. Her areas of technical expertise include quantitative riparian/meadow field studies; riparian limiting factor analysis; riparian, wetland, and geomorphic condition assessments; and development of recommendations to improve habitat and channel conditions.

Significant Projects

Project Manager – Phoenix Hydroelectric Licensing Project – Central Sierra Nevada, Tuolumne County, California

Dr. Ross-Smith is the project manager for the relicensing of Pacific Gas and Electric Company's (PG&E) Phoenix Hydroelectric Project. She is responsible for the contract and budget tracking and management. She works closely with the PG&E project manager and project technical team, assisting with strategic and process planning; stakeholder collaboration; preparation of license applications; and negotiations of new license conditions and development of management and monitoring plans. In addition, she is the technical manager for the wildlife, botanical, and riparian disciplines, including reporting, and preparation of appropriate PM&Es.

Process and Strategic Support and Terrestrial Resources Lead – Kerckhoff Hydroelectric Licensing Project – Central Sierra Nevada, Fresno/Madera Counties, California

Dr. Ross-Smith is the terrestrial resources lead and is providing relicensing process support for the relicensing of PG&E's Kerckhoff Project. Her responsibilities include strategic and planning; agency consultation; technical support for terrestrial and flow-related resources, evaluation, and PM&E development and negotiations; and preparation of the relicensing documents.

Project Manager / Technical Lead – PG&E Mokelumne River Hydroelectric Project – Amador, Alpine, and Calaveras counties, California

Dr. Ross-Smith led 2016 and is leading 2021 riparian monitoring in the Mokelumne River watershed. Monitoring included a combination of low-altitude helicopter vegetation mapping, quantitative data collection, and photo point documentation along 18 stream reaches. The objectives were to identify the effects of new flows on riparian vegetation in order to facilitate adaptive management and to determine if the objectives are being met. She led preparation of the technical report and presented the results at a SEMP meeting.

Project Manager / Technical Lead – Merced River Restoration – Yosemite Valley, California

Dr. Ross-Smith was part of team, composed of scientists and engineers from UC Santa Barbara, UC Davis, Sacramento State, and Cardno, that provided scientific and design support for restoration efforts in east Yosemite Valley being considered by the National Park Service. The team evaluated past and future behavior of the river, given the potential management prescriptions for riparian areas that attempt to balance recreation use while meeting the Wild and Scenic River objectives, and under potential climate change scenarios. The Cardno team is also providing guidance to the National Park Service on site-scale riparian restoration projects on the Merced River through Yosemite Valley, including engineering and revegetation planning, design, and implementation. To date, the Cardno team has designed and implemented eight restoration projects, including at Housekeeping Bridge and Swinging Bridge, popular recreation locations within the Park.

Senior Technical Support – Meeks Meadow Restoration Planning – Tahoe Basin, California

In partnership with the U.S. Forest Service (USFS) and the Washoe Tribe, Cardno developed restoration plans for a 300-acre conifer-invaded meadow at Lake Tahoe. Dr. Ross-Smith provided senior technical support in development of the monitoring plan.

Senior Consultant – Spring Gap-Stanislaus Hydroelectric Project – Central Sierra Nevada, Tuolumne County, California

For PG&E, Dr. Ross-Smith manages a riparian vegetation restoration and stream bank stabilization project at Kennedy Meadows along the Middle Fork Stanislaus River. The project involved development and implementation of focused studies; preparation of a restoration project plan and design report using a combination of bioengineered techniques (engineered log features) and revegetation to stabilize banks, restore the riparian corridor, and enhance the aquatic habitat. Cardno assisted with the permitting (i.e., CEQA; Clean Water Act Sections 401 and 404; and CDFW Section 1600), provided restoration engineering and revegetation oversight, monitoring before and during construction, and post-construction maintenance and monitoring. Dr. Ross-Smith is also leading two revegetation and monitoring projects required by federal and state permits for construction activities near PG&E dam facilities.

Technical Lead – Rock Creek-Cresta Hydroelectric Project – Sierra Nevada, California

Dr. Ross-Smith is providing technical support to PG&E on the Rock Creek-Cresta Hydroelectric Project for establishing instream flows that will support all beneficial uses within the project on the North Fork Feather River. For riparian resources, she is assisting with the development of a new flow regime to discourage establishment of dense woody riparian vegetation within the channel margins.

Technical Lead / Senior Consultant – Middle Fork American River Project, Integrated Licensing Process – Placer County, California

Dr. Ross-Smith led riparian studies on more than 100 river miles in the Middle Fork American River watershed on the western slope of the Sierra Nevada. She prepared the riparian study plan and assisted with preparation of other aquatic plans with stakeholder collaboration. The field studies included vegetation mapping, quantitative data collection, and tree core dating of riparian species on surveyed transects along which stage-discharge relationships were developed. Flows were related to various riparian attributes, including life history strategies, which were used to evaluate the condition of riparian resources, such as recruitment. This information was used to develop new environmental flows to enhance channel and riparian processes. Dr. Ross-Smith also authored or provided technical review of numerous other aquatic reports and existing condition and impact sections of the environmental impact report, including instream flow modeling, fish population, macroinvertebrate, geomorphology, water quality, water use, and fish passage. She also authored the riparian monitoring plan that was included in the license application.

Michelle Hochrein

Current Position
Senior Environmental Scientist

Discipline Areas
> Riparian and Wetland Surveys and Restoration
> Wetland Delineations
> Regulatory Compliance Reporting and Permitting
> CEQA and NEPA Clearance
> Biological and Botanical Assessments and Evaluations
> Invasive Species Management
> Forest Resources and Hazardous Fuels Management
> Riparian and Wetland Restoration
> GIS and Data Management
> Water Quality Monitoring

Years' Experience
9

Joined Cardno
2017

Education
> MS, Geography, University of Nevada, Reno, 2013
> BLA, Landscape Architecture, California Polytechnic State University, San Luis Obispo, 2007

Summary of Experience

Michelle Hochrein has extensive experience with riparian and wetland studies, including botanical evaluations and assessments, developing and executing riparian monitoring plans, and designing and overseeing the implementation of riparian and wetland restorations. She has experience with Sierra Nevada plant ecology, aerial imagery and on-the-ground vegetation mapping, and plant identification. She has experience in biological field assessments and environmental monitoring, including vegetation surveys, invasive species monitoring, sensitive plant surveys, wetland delineations, and mobile GIS mapping. She is adept with CNDDB, BIOS, and Survey of California Vegetation Classification and Mapping standards, and statutes and regulations related to plants and plant collection. She has experience with federal regulatory compliance and permitting including CWA permitting under Sections 404 and 401, National Pollutant Discharge Elimination System (NPDES) and Waste Discharge Requirements (WDRs) permitting and requirements, and CDFW Section 1602 Lake or Streambed Alteration (LSA) permitting.

She develops and implements water quality, wetland, and riparian monitoring plans, managing field crews to direct the collection and analysis of data for monitoring and reporting. Using her landscape architecture background, Ms. Hochrein specializes in environmental restoration and revegetation projects and oversees implementation.

Significant Projects

Botanist and Revegetation Specialist – Placer County Water Agency Environmental Surveys – Sierra Nevada, California

Conducts surveys of special status plant species (threatened, endangered, sensitive, rare, or other special status) plant species on Placer County Water Agency project areas according to California Department of Fish and Wildlife and Tahoe National Forest protocols. Provides analysis and mitigation in technical memos and Botanical Evaluations/Assessments. Develops revegetation plans for rehabilitation areas and specifies native seed mixes and containerized species.

Botanist and Revegetation Specialist – Caples Spillway Stabilization – Caples Lake Spillway, California

Developed and oversaw installation of biological treatments for stabilization of Caples Spillway Channel, including installation of large woody debris structures, willow fascines, and pole plantings. Oversaw willow harvest and conducted construction and long-term monitoring.

Riparian Biologist – Poe Reach Riparian Monitoring Plan – NF Feather River, California

Developed the riparian vegetation monitoring plan for the Poe Bypass Reach on the North Fork of the Feather River to document existing conditions and determine if new flow regimes result in riparian changes. The riparian monitoring plan included qualitative and quantitative field monitoring protocols and data analysis and reporting requirements. Selected monitoring reaches in conjunction with PG&E staff.

Botanist – Rafter 7 Management Unit – Walker River, Nevada

Conducted surveys of special status plant species and noxious weeds on Nevada State Park lands along the Walker River according to Nevada Natural Heritage Program and BLM

Affiliations

- > Keep Truckee Meadows Beautiful – Program Advisory Board
- > Tahoe Nordic Search and Rescue Team Member
- > Nevada Water Resources Association Member
- > Nevada Weed Management Association

protocols. Recorded plant community species lists. Provided analysis and project-level mitigation plans in technical memos and Botanical Evaluations/Assessments.

Botanist– Meeks Meadow Restoration Planning – Tahoe Basin, California

In partnership with the Forest Service and the Washoe Tribe, developed restoration plans for a 300-acre conifer-invaded meadow at Lake Tahoe. Assisted with the development of environmental permitting documents, including NEPA Biological Assessments updates per species changes to ESA, TRPA Environmental Improvement Program (EIP) checklist, and Lahontan Timber Waiver permit. Restoration plans included conifer removal, prescribed fire, riparian monitoring, and culturally significant vegetation restoration. Vegetation mapping included aerial imagery community mapping with on-the-ground detailed vegetation species mapping. Developed vegetation management and botanical monitoring plans, and trained teams on monitoring protocols and plant identification.

Lead Wetland Delineator – Placer County Water Agency Facilities Improvements – Sierra Nevada, California

Conducted wetland delineations at multiple locations at Hellhole Reservoir and French Meadows Reservoir to support infrastructure and recreation improvements. Led infrastructure design scope changes to mitigate wetland impacts. Assisted with related USACE and CDFW permitting.

Botanist and Revegetation Specialist – IVGID Culvert Replacement and Incline Creek Restoration – Tahoe Basin, California

Conducted botanical special status plant surveys, riparian monitoring, and developed reports for a USFS Special-Use Permit, including a Botanical Biological Assessment/Evaluation, a Terrestrial/Aquatic Wildlife Biological Assessment/Evaluation, Migratory Bird Report, Invasive Plant Risk Assessment, and Weed Management Plan. Developed revegetation plans for restoration areas and oversaw planting implementation.

Wetlands Biologist –SCE On-Call Services – Southern Sierra Nevada, California

Provides wetlands analysis and delineation for distribution and transmission/ subtransmission utility projects. Develops project-level restrictions and mitigation recommendations. Develops and submits USACE CWA 404 permits, State Water Resources Control Board CWA 401 permits, and CDFW Section 1602 LSA permits for projects with impacts to jurisdictional wetlands.

Riparian Biologist – Heavenly Valley Ski Area Water Quality Sampling and Reporting – Tahoe Basin, California

Conducts monthly and annual riparian and water quality monitoring at stream reaches associated with the Heavenly Mountain Resort in accordance with the Lahontan Water Board's Waste Discharge Permit. Efforts include measuring water quality parameters, monitoring water flow, monitoring riparian habitat conditions, conducting benthic macroinvertebrate and stream condition index surveys, data analysis, and preparation of reports. Stream condition index monitoring include channel and water surface topographic surveys, and surveys of substrate size, entrenchment, and sediment accumulation.

Lead Wetland Delineator – South Lake Tahoe Greenbelt and Stormwater Improvements – Sierra Nevada, California

Conducted wetland delineations at multiple locations on public agency properties in South Lake Tahoe to support project design and permitting. Incorporated findings into public scoping documents and environmental documentation.

Susan D. Talcott, PhD, RPA

Current Position
Archaeological Field Director

Discipline Areas
> Archaeology
> California and Great Basin Archaeology
> Human Osteology

Years' Experience
12

Joined Cardno
2020

Education
> PhD, Evolutionary Anthropology, University of California Davis, 2019
> MA, Anthropology, University of California Davis 2012
> BS, Anthropology, University of California Davis, 2007

Certifications
> First Aid/CPR/AED

Affiliations
> Register of Professional Archaeologists
> Society for American Archaeology
> Society for California Archaeology

Summary of Experience

Dr. Susan Talcott has 12 years of experience in cultural resource management, research, and regulatory compliance throughout California. Her past roles have included serving as senior archaeologist and project manager, authoring technical reports, conducting records searches, facilitating Native American outreach, leading fieldwork, and evaluating archaeological resources. Throughout her career, she has supported multiple utility projects across California. Most recently supporting PG&E projects in Santa Cruz and Monterey Counties. Dr. Talcott is experienced in site testing, data recovery, burial excavation, skeletal assessments, and construction monitoring at sensitive archaeological sites. She has used her skill set to help foster positive working relationships with Native American tribes in Northern California, most recently working collaboratively with the United Auburn Indian Community. Dr. Talcott meets the Secretary of the Interior's Professional Qualification Standards for archaeology.

Dr. Talcott has systematically reviewed faunal materials in museum collections to identify and catalog fragmentary human skeletal remains co-mingled with archaeological faunal assemblages. She reviewed and developed Native American Graves Protection and Repatriation Act (NAGPRA) inventories, ensuring archaeological collections complied with NAGPRA regulations. Additionally, Dr. Talcott has eight years of college teaching and mentorship experience.

Significant Projects

Archaeological Field Director / Osteologist – Moss Landing Gas Line Project – Monterey County, California

Dr. Talcott was responsible for pedestrian survey and documenting cultural resources for a PG&E gas line project along Highway 1. She participated in construction monitoring and is responsible for continued construction monitoring and Native American monitor coordination. Dr. Talcott contributed to the archaeological survey and monitoring reports.

Archaeological Field Director – Big Basin PG&E Service Restoration – Santa Cruz County, California

Dr. Talcott participated in construction monitoring and submitted daily monitoring logs.

Senior Archaeologist / Project Manager – Mills High School Athletic Complex Project – San Mateo County, California

Dr. Talcott was responsible for planning and leading pedestrian survey and auger testing, conducting archival research with the California Historical Resources Information System, Native American outreach, and documenting cultural resources. Dr. Talcott provided resource evaluations and authored the final CEQA letter report.

Senior Archaeologist / Project Manager – Capuchino High School Athletics Complex Project – San Mateo County, California

Dr. Talcott was responsible for planning and leading pedestrian survey and auger testing, conducting archival research with the California Historical Resources Information System, Native American outreach, and documenting cultural resources. Dr. Talcott provided resource evaluations and authored the final CEQA letter report.

Senior Archaeologist / Project Manager – Decima Allen Elementary School Replacement Project – San Mateo County, California

Dr. Talcott was responsible for planning and leading fieldwork, conducting archival research with the California Historical Resources Information System, Native American outreach, and documenting cultural resources. Dr. Talcott provided resource evaluations and authored the final CEQA letter report.

Archaeological Monitor / Osteologist – Sacramento River East Levee Project, Contract 1 – Sacramento County, California

Dr. Talcott was responsible for providing cultural resource support for the Native American monitors, construction monitoring, and providing in-field assessments of resources. She worked closely with Native American monitors to facilitate communication of tribal wishes regarding the discovery of cultural resources, to construction personnel and the contractor's archaeologist.

Archaeological Monitor / Osteologist – Marysville Ring Levee, Phase 2B/3 Project – Yuba County, California

Dr. Talcott monitored construction activities and administered training for the worker environmental awareness program to all project personnel.

Senior Archaeologist / Project Manager – Mokelumne River Debris Removal Project – Sacramento and San Joaquin Counties, California

Dr. Talcott was responsible for planning and leading fieldwork to assess the project's impact on cultural resources at 55 debris removal sites along the Mokelumne River. She conducted archival research with the California Historical Resources Information System, Native American outreach, and provided recommendations based on conditions at each debris removal site.

Senior Archaeologist / Project Manager – Matchbook Winery Solar Array Project – Yolo County, California

Dr. Talcott was responsible for planning and leading pedestrian survey and auger testing, conducting archival research with the California Historical Resources Information System, Native American outreach, and documenting cultural resources. She provided resource evaluations and authored the final CEQA letter report.

Senior Archaeologist – Cal.net Telecommunications Projects – Tuolumne and Mariposa Counties, California

Dr. Talcott conducted archaeological record searches and research into the Historical Resources Inventory listings to assess candidate's location for potential for unrecorded and recorded cultural resources, and to review the potential for direct and indirect visual impact by construction. She authored multiple Section 106 compliance letter reports.

Archaeologist – PG&E Line 108 Natural Gas Pipeline Project – Sacramento and San Joaquin Counties, California

Dr. Talcott conducted archaeological monitoring and submitted daily monitor logs.

Archaeologist – Wireless Telecommunications Project-packaged Cell Phone Tower Facility Modifications – Santa Clara County California

Dr. Talcott conducted fieldwork and letter report writing for multiple wireless telecommunications companies

Shelby A. Stepper

Current Position
Architectural Historian

Discipline Areas
> NEPA
> Sections 106 and 110 NHPA
> CEQA
> NHL Research and Documentation
> Field Survey and Documentation
> Additional Housing Units (ADU)

Years' Experience
4

Joined Cardno
2021

Education
> MA, Public History, California State University, Sacramento, CA, In-Process, 2022
> BA, History, California State University, Sacramento, CA 2017

Summary of Experience

Ms. Stepper has 4 years of experience in cultural resource management and built environment documentation with an emphasis on documentation under Section 106 of the National Historic Preservation Act (NHPA) and built environment research and resource evaluation related to a number of localized municipal contexts. She is versed in all facets of project planning, from project delineation and Area of Potential Effects (APE) development, to intensive survey, field recordation, report documentation, agency review, and Geographic Informational System (GIS) development. She has worked on a wide range of architectural documentation projects, including under Section 106 as well as under specialized contexts including municipal preservation ordinances and the California Environmental Quality Act (CEQA). Ms. Stepper is also experienced in the development of Strength, Weakness, Opportunities, and Threats (SWOT) Analysis related to built environment resources and in the development of resource registration including National Historic Landmark Nomination (NHL) documentation and National Register of Historic Places (NRHP) documentation.

Significant Projects

Staff Architectural Historian – PG&E Narrows Hydroelectric Project – Yuba County, California

Ms. Stepper assisted in the implementation of field work, inventory, resource evaluation, and NRHP analysis for the Narrows Hydroelectric Project to support components of Project relicensing.

Staff Architectural Historian – PG&E Plainfield Substation Expansion Project – Yolo County, California

Ms. Stepper assisted in the development of CEQA impacts analysis in relation to the expansion of the Plainfield Substation in Yolo County, in the vicinity of the city of Woodland. Analysis included NRHP and Center for Regional Heritage Research (CRHR) documentation of a nineteenth century agricultural property and associated impacts analysis related to potential project impacts of substation expansion on the historical resource.

Public History MA Student – National Historic Landmark Nomination – Sutter's Fort, Sacramento County, California

Ms. Stepper assisted in an evaluative analysis under the criteria of the NRHP regarding a comprehensive historic context and biography of Sutter's Fort. In this capacity, Ms. Stepper developed a two-phase historiography on John Sutter regarding Old Western History and New World History, and also helped develop a historic context on the California gold rush, and how it pertains to the development of Sutter's Fort.

Historic Preservation Intern – City of Sacramento Historic Preservation Office – Additional Housing Unit (ADU) – Sacramento County, California

Ms. Stepper worked with the Historic Preservation Director and Associate Preservation Planner with research and background materials for public hearings. She helped make historic significance determinations, preparing updates to the Sacramento Register and compiling information for recordation of new historic designations with the County Recorder.

Historic Preservation Intern – City of Sacramento Historic Preservation Office – Sacramento County, California

Ms. Stepper worked with the Historic Preservation Director and Associate Preservation Planner with research and background materials for public hearings. She assisted in historic significance determinations and preparation of updates to the Sacramento Register, compiling information for recordation of new historic designations with the County Recorder, and supported updates to the city's webpage preservation content.

Historic Preservation Intern – City of Sacramento Historic Preservation Office – Sacramento Register of Historic Places, Old Sacramento – Sacramento County, California

Ms. Stepper contributed to extensive historic preservation research in Old Sacramento's Historic District Nomination and contributed to the development of a comprehensive DPR 523 designation form for the district.

Graduate Assistant – Office of Historic Preservation – Informational Management Unit (IMU) – Sacramento County, California

Ms. Stepper worked in the IMU inputting Section 106 documents into the state's database (OTIS). In this position she inputted CC10s and CC09s that were either restricted ineligible or ineligible Section 106 resource reports.

Public History MA Student – Historic Preservation SWOT Analysis – Folsom, California

Ms. Stepper developed a comprehensive SWOT analysis and historic context for the City of Folsom's historic district and provided the city with analysis regarding the efficacy of the district's historic preservation regulatory framework.

Public History MA Student – National Historic Landmark Nomination – Pond Farm, Sonoma County, California

Ms. Stepper assisted in an evaluative analysis under the criteria of the NRHP regarding a comprehensive historic context of Marguerite Wildenhain, and cultural resource landscape of Pond Farm, a historic property in Guerneville, Sonoma County, California. Ms. Stepper wrote the biography on Marguerite Wildenhain, a famous pottery artist and artist of the 21st century arts and crafts movement. Ms. Stepper also contributed in the development of the Pond Farms cultural landscape, including a single-property residence, a barn and studio, and guest house.

Certifications

> First Aid / CPR

June 9, 2021:

American Red Cross

Certification of Completion 1-year First Aid / CPR/AED

Melanie Greene, AICP, CPESC, QSD/P

Current Position
Senior Project Scientist

Discipline Areas
> Environmental Planning
> CEQA and NEPA Clearance
> Permit Acquisitions
> Environmental Compliance
> Community Outreach and Public Engagement
> Water Quality Monitoring and Analysis
> SWPPPs
> Biological Surveys
> Erosion and Sediment Control
> Stream Condition Inventories and California Rapid Assessment Methodology
> Riparian and Wetland Delineation

Years' Experience
23

Joined Cardno
2018

Education
> MS, Watershed Science, Colorado State University, 2003
> BS, Applied Biology, Georgia Institute of Technology, 1995

Certifications
> 40-hour USACE Wetland Delineation Certification, Wetland Training Institute, 2016
> American Institute of Certified Planners (AICP), No. 028732, 2015
> California Notary Public, No. 2051299, 2013
> Qualified Developer and Practitioner of Stormwater Pollution Prevention Plans

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Summary of Experience

Over the last two decades, Melanie Greene has refined and expanded her skills developing partnerships and working on interdisciplinary project teams toward the successful completion of master planning and projects led by federal, state, municipal, and private industry clients for transportation, capital improvement, infrastructure construction and maintenance, watershed management and restoration, and land use planning projects. She contributes toward and often leads the efforts for permit acquisition, management, and compliance monitoring and reporting. Ms. Greene specializes in development of comprehensive yet succinct narrative project descriptions and the quantification of potential impacts to jurisdictional waters of the US, waters of the State, and instream and riparian habitats and resultant compensatory mitigation, when applicable. She peer-reviews and also develops mitigation monitoring and reporting plans, erosion and sediment control plans, and Stormwater Pollution Prevention Plans (SWPPP); manages field crews for compliance monitoring; and prepares final reports for project close-out.

Ms. Greene brings 17 years of expertise as a water resource specialist and environmental planner for the preparation of NEPA and CEQA documentation and associated fieldwork, data collection, analysis, and mitigation monitoring and reporting programs. She has experience working with and engaging diverse, and at times divergent, groups of stakeholders to define core values, vision statements, goals, and policy frameworks, and developing open and transparent public engagement strategies, including effective methods for scoping and public outreach and the timely dissemination of data-supported and fact-based information to explain complex and at times controversial projects and plans. Ms. Greene's approach to project planning focuses on collaboration and transparency, and comprehensively collecting, documenting, and responding to oral and written public comments, followed by presentation of clear responses, results, findings, and recommendations from such outreach efforts to regulatory and community institutions, leaders, and decision-making bodies.

Significant Projects

Planner and Scientist – Environmental Planning, Review, and Clearance Projects – California and Nevada

Ms. Greene specializes in the preparation of defensible, joint environmental documentation. She prepares CEQA-compliant initial studies (IS), negative declarations (ND), mitigated negative declarations (MND), and EIRs with expertise in hydrology, water quality, groundwater, geology, soils, seismic, hazardous materials, and cumulative effects analyses. She also prepares NEPA documentation, including categorical exclusions and EAs, and the water quality, hydrology, groundwater, geology, soils, and seismic resource sections of EISs. Specific California projects, current and dating back to 2004, include:

Bureau of Reclamation, Mid-Pacific Region

> Battle Creek Salmon and Steelhead Restoration Project, Shasta County, CA: CWA 404/401 Permit Acquisition, Monitoring and Reporting, State CGP enrollment, Habitat Mitigation and Monitoring Plan development and Construction Management (Current)

City of Bishop, CA

> Sewer Trunk Replacement Project IS/ND and CWA 404/401, CDFW LSAA, Caltrans Encroachment Permit Acquisition

City of South Lake Tahoe, CA

> Ski Run Center Stormwater Quality Monitoring and Reporting (Current)
> Tahoe Valley Greenbelt and Stormwater Improvement Project IS/MND/IEC and CWA 404/401, CDFW LSAA and Lake Tahoe CGP Permit Acquisition (Current)
> Lake Tahoe Boulevard Shared-use Trail Project IS/ND/IEC
> Al Tahoe Safety and Mobility Project IS/ND/IEC and Permit Acquisition

Placer County, CA

> Tahoe City Downtown Access Improvements Project Design and IS/ND/IEC

(QSD/QSP), No. 22314, 2011
> Certified Professional in Erosion and Sediment Control (CPESC), No. 6120, 2010
> 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER), since 1999

Affiliations

> Association of Environmental Professionals, 2020-Present
> American Planners Association, Nevada Chapter, 2015–Present
> American Planners Association – Green Team, 2008–2009
> California Alpine Resort Environmental Committee, 2001–2004
> Lake Tahoe Environmental Education Coalition, 1999–2003
> Lake Tahoe Interagency Monitoring Program Co-chair, 2009–2012
> Lake Tahoe Leadership Graduate, 2014
> Lake Tahoe Snapshot Day Committee, 2001–2004
> Nearshore Aquatic Weed Management Group 2015-Present

> Placer County's North Tahoe Bike Trail/Dollar Creek Shared-use Trail Project IS/ND/IEC
> Homewood Mountain Resort Ski Area Master Plan and Community Enhancement Program EIR/EIS/EIS

Santa Cruz and Monterey Counties, CA

> Pajaro River Flood Risk Management Project EIR (Current)

Southern California Edison, CA

> CWA 404/401 and CDFW LSAA Permit Acquisition, Monitoring and Reporting for Various Federal Energy Regulatory Commission (FERC) and Hydropower Infrastructure Operations and Maintenance Projects:
  - Creek Fire Debris Flow Barrier Project, Fresno County, CA: Big Creek Hydroelectric System FERC Project No. 2175, 67, 120 and 2017
  - Huntington Lake Dam No. 1 Auxiliary Spillway Repairs Project, Fresno County, CA: Big Creek Nos. 1 and 2 Hydroelectric System FERC Project No. 2175 (Current)
  - Saddlebag Lake Flume Replacement Project, Mono County, CA: Lee Vining Hydroelectric System FERC Project No. 1388
  - Shaver Lake Dam Floating Boat Barrier Project, Fresno County, CA: Big Creek Hydroelectric System FERC Project No. 67
  - Big Creek Dam 7 Generator Room Repairs Project, Fresno County, CA: Big Creek No. 4 Hydroelectric Project FERC Project No. 2017
  - Canyon Road, Million Dollar Mile Road, and Powerhouse Road Repairs, Fresno County, CA: Big Creek Hydroelectric System FERC Project Nos. 67, 120, and 2175
  - Shaver Lake Dam Erosion Repair Project Fresno County, CA: Big Creek Hydroelectric System FERC Project No. 67
  - Shake Flat Creek Crossing Repair Project, Madera County, CA: Mammoth Pool Hydroelectric System FERC Project No. 2085
  - Lee Vining Erosion Repairs Project Mono County, CA: Lee Vining Hydroelectric System FERC Project No. 1388

South Tahoe Public Utility District, CA

> Keller-Heavenly Water System Improvement Project IS/MND
> Replacement Generator Project IS/ND/IEC
> Water Meter Installation Project IS/ND/IEC
> Sanitary Sewer Intertie Project (with Douglas County Sewer Improvement District, NV) IS/ND/IEC, TRPA Linear Public Facility Project Permit, TRPA Soils Hydrologic Waiver, and Douglas County Site Improvement Permit Acquisitions
> Headworks Replacement Project IS/MND/IEC, CWA 404/401 Permit Acquisition, Monitoring, and Reporting, SWPPP development
> Angora Creek Pipeline Replacement Project IS/MND/IEC
> Recycled Water Facilities Master Plan Supplemental EIR
> Recycled Water Facilities Master Plan CEQA Plus Documentation
> Recycled Water Facilities Master Plan EIR
> Indian Creek Reservoir Total Maximum Daily Load and Oxygenation System IS/ND

Southwest Gas Corporation, CA

> CAFLAP State Route 89 Gasline Replacement Project CWA 401 WQC Permit Acquisition, Dewatering and Discharge Plan, Monitoring, and Reporting

Tahoe Keys Property Owner Association, CA

> Maintenance Dredging and Beach Replenishment Project, Permit Acquisition, Monitoring, and Reporting (California State Land Commission Lease, CWA 404 Letter of Permission/CWA 401 WQC and CDFW LSAA), Construction Management, and Post-Project Monitoring and Reporting for Metal Toxicity

Julia Beals, QISP, CESSWI, QSP

Current Position
Environmental Scientist

Discipline Areas
> Local, State, and Federal Environmental Regulations
> Water Quality
> Wildfire Mitigation
> Forestry
> Utility Maintenance Activities
> CEQA Documents
> Compliance-related Technical Reports
> Water Sampling
> Site Inspections
> Field Data Collection and Analysis
> Technical Writing

Years' Experience
3

Joined Cardno
2021

Education
> BA, Environmental Earth Science, University of California – Berkeley, 2017

Certifications
> California Qualified Industrial Stormwater Practitioner (QISP), 3875
> Certified Erosion, Sediment and Storm Water Inspector (CESSWI), 5962
> Qualified SWPPP Practitioner (QSP), 27885

Summary of Experience

Ms. Julia Beals is an environmental scientist with expertise in water quality, wildfire mitigation, forestry regulations, industrial and construction stormwater permit compliance, statewide water quality permit development, Clean Water Act (CWA) Section 401 certifications, California Environmental Quality Act (CEQA) document development, and electrical and gas utility maintenance permitting. She excels at navigating local, state, and federal regulations and organizing multi-jurisdictional information to inform policy and planning. She is also skilled in field data collection, data analysis, and technical writing. She has held positions in environmental consulting as well as with regulatory agencies, including the California State Water Resources Control Board where she worked within the 401 Program, permitted Nationwide Permit 12 utility projects under the State Water Board Certification of the 2017 Nationwide Permits General Order, and participated in the development of two statewide permits—the Vegetation Treatment General Order and an upcoming utility wildfire mitigation permit. With these experiences, she derived strong communication skills to navigate both consultant-client and regulator-permittee relationships. Ms. Beals is a California Qualified Industrial Stormwater Practitioner (QISP).

Significant Experience

Environmental Scientist – California State Water Resources Control Board – California

Prior to joining Cardno, Ms. Beals served as an environmental scientist with the California State Water Resources Control Board. She routinely:

> Participated in the development of statewide general permits for discharges associated with wildfire mitigation activities, including utility maintenance and vegetation treatment. Her duties included research, data analysis, preparation of CEQA documents, application of local, state, and federal regulations related to utilities and forestry, stakeholder outreach, and cooperation with sister agencies.
> Issued permits for utility dischargers under existing CWA Section 401 regulations by analyzing proposed projects for accuracy and completeness, potential impacts to aquatic resources, and consistency with applicable regulatory requirements, as well as working with applicants to ensure the implementation of adequate avoidance, minimization, and mitigation measures.
> Assisted with quality assurance/quality control tasks for the statewide CWA Section 401 program by reviewing staff data entry for accuracy, performing data analysis based on program targets, and presenting the results to staff.

Environmental Scientist – Thunder Mountain Enterprises – California

Prior to joining Cardno, Ms. Beals served as an environmental scientist with a soil and water management services provider. She routinely:

> Worked under the direct supervision of a Qualified Stormwater Pollution Prevention Plan (SWPPP) Developer to assist with SWPPP development, including thorough review of geotechnical reports, assistance with risk calculations, creation of AutoCAD drawings for each construction phase, and selection of appropriate best management practices (BMPs) depending on timeline and geographic location.
> Performed weekly site inspections, collected stormwater samples and performed field tests for pH and turbidity, and prepared inspection reports in accordance with Construction General Permit requirements.

> Oversaw BMP installation jobs, including material estimating, job costing, and field crew mobilization.

Environmental Scientist – Environmental.Com – California

Prior to joining Cardno, Ms. Beals served as an environmental scientist and QISP with an environmental consulting and laboratory company. She routinely:

> Assisted clients from diverse industries in achieving full compliance with the Industrial General Permit.
> Developed expertise in stormwater quality and regulation through SWPPP development, stormwater sampling, stormwater data analysis, technical report writing, client training, and facility evaluations.
> Utilized her knowledge of scientific principles to recommend creative and cost-effective BMPs to clients, resulting in marked improvements in stormwater quality.
> Liaised with state and local regulators on behalf of non-compliant clients to facilitate mutually beneficial outcomes.

Scientific Aide – San Francisco Bay Regional Water Quality Control Board – California

Prior to joining Cardno, Ms. Beals served as a scientific aide with San Francisco Bay Regional Water Quality Control Board. She routinely:

> Assisted staff with scientific investigations, compliance assessments, and the enforcement of local, state, and federal water quality laws.
> Reviewed technical reports produced by dischargers across a wide variety of local industries in order to evaluate their compliance with state water quality permits.
> Received spill complaints and applied scientific understanding to determine their extent and harm.

Please Respect the Environment

TOGETHER we can do great things

Community

When we say community, we don't just mean the neighborhoods that people call home. We mean everyone and everything with a stake in the work that we do—from our Stantec and industry colleagues to the clients we collaborate with and the people and places we impact.

Whether creating, sustaining, or revitalizing a community, we help diverse cultures and perspectives work together toward shared successes.

Although our work helps to create physical communities, our ultimate goal is to create something far more meaningful—a sense of community.

Creativity

For us, creativity is driven by purpose. Knowing that transformation is truly possible inspires us to approach every situation with a fresh perspective.

Our inventive and collaborative approach to problem-solving helps bring big ideas to life through creative solutions.

Whether our contribution is a design that strikes the perfect balance between function and aesthetics, a feat of engineering that redefines what's possible, or a project management approach that delivers results, we strive for outcomes that transcend the challenges they solve and shape the communities we serve for the better.

Client Relationships

We're better together. This belief shapes how we collaborate with our clients, our partners, and our communities.

We listen so we can deeply understand our clients' needs, communicate with purpose so we maintain alignment, and remain open and flexible so we never miss an opportunity to strengthen a project and positively transform a community.

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ADDENDUM

Biological and Cultural Resources for CEQA and Future Permitting NEPA

Technical Proposal

CalOES/FEMA Hazard Mitigation Grant Program Project – Hunters Raw Water Pump Station Mitigation Project

Prepared for

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

January 19, 2022

Cardno

now

Stantec

January 19, 2022

17506 Quartz
Mountain Road North
Sutter Creek, CA 95686
USA

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Ms. Kate Jesus
Calaveras County Water District
120 Toma Court
San Andreas, CA 95249
Phone: (209) 754-3181
Email: Katej@ccwd.org

RE: Addendum to our original proposal: Optional Task – Preparation of a combined Initial Study/Negative Declaration (IS/ND) and Environmental Assessment/Finding of No Significant Impact (EA/FONSI)

Dear Ms. Jesus:

Attached please find an addendum to our original proposal. This addendum describes the scope of work and budget to complete a combined CEQA/NEPA joint document – an anticipated Initial Study (IS)/Mitigated Negative Declaration (MND) and Environmental Assessment (EA)/Finding of No Significant Impact (FONSI).

We understand this is an optional task, the requirement for which will be determined as part of the initial resource evaluation process. We present this task as Optional Task D, as it is an addition to the three other optional tasks identified in the scope of work we submitted on January 13, 2022. As described in the following task narrative, we are assuming all potential environmental or human health impacts of the project could be mitigated to less-than-significant levels such that the findings of the IS/EA would support a MND (or simply a Negative Declaration if there are no impacts that require mitigation) and a Finding of No Significant Impact (FONSI).

Please be advised that development and distribution of the joint document would likely add at least two months to the overall schedule. This additional time would be for preparation and review of the joint document – including time for review of an administrative draft by the CEQA lead agency (the District) and NEPA lead agency, followed by a 30-day public review period in accordance with CEQA Guidelines Section 15073.

Sincerely,

Patricia Sussman
Senior Environmental Planner
for Cardno
Direct Line: 775 210 7128
Email: patricia.sussman@cardno.com

Katie Ross-Smith, PhD
Business Unit Leader, Natural Resources
for Cardno
Direct Line: 916 386 3820
Email: katie.ross-smith@cardno.com

Optional Task

OPTIONAL Task D. Preparation of a combined Initial Study/Negative Declaration (IS/ND) and Environmental Assessment/Finding of No Significant Impact (EA/FONSI)

If the Project is determined not to be exempt from CEQA and also not subject to an exclusion under NEPA, the Project team will consult with the District (as CEQA lead agency) and with the NEPA lead agency (e.g. FEMA) to confirm expectations for the document preparation process. Items to be confirmed include potential scoping (an item of the NEPA lead agencies discretion), expectations pertaining to agency document review, and confirmation of the template for the joint document. This scope of work assumes the NEPA lead agency will agree to a joint document and determine that scoping for the Project is not required. This scope of work also assumes no additional public distribution of the document beyond what is required in accordance with CEQA Guidelines Section 15073 (including a Notice of Intent [NOI] filed with the State Clearinghouse and County Clerk).

Following this meeting, and upon receipt of comments from the District and NEPA lead agency on the Draft Project Description (developed as part of Task 1) the Project team will prepare a combined draft joint Initial Study and Environmental Assessment (IS/EA). The document will be in a format that meets the approval of the District and NEPA lead agency and will address all questions in the Appendix G checklist of the CEQA Guidelines (21 resource areas), and also ensure other NEPA considerations not addressed by the checklist are covered. For each environmental resource, the Project team will briefly describe existing conditions, assess potential environmental impacts, and identify feasible mitigation measures, if needed. Key resource topics for the IS/EA may include cultural resources, hydrology and water quality (erosion control), and biological resources. This proposal assumes that all potentially significant environmental impacts (if any are identified) will be mitigable to less-than-significant levels such that an MND (for CEQA) and FONSI (for NEPA) are the appropriate decision documents.

The structure of the joint document may be organized as follows:

- Chapter 1, Introduction – including general information about the document and NEPA/CEQA process requirements.
- Chapter 2, Proposed Project and Alternatives – including purpose/need and goals/objectives; and a descriptive overview of the Proposed Project and the No Project/No Action Alternative. This chapter will also include identification of required permits and approvals.
- Chapter 3, Environmental Checklist – responses to the CEQA-based environmental checklist questions for each resource topic (21 resource topics)
- Chapter 4, Other NEPA Considerations – including a discussion of additional environmental analysis topics required by NEPA and not already addressed in Chapter 3.
- Chapter 5, References

The Project team will produce a screencheck draft IS/MND and EA/FONSI for final review by the District and NEPA lead agency. Upon receipt of final comments (assuming one set of consolidated comments on the draft document) the Project team will incorporate feedback and produce a joint document for public distribution. The Project team will prepare a Notice of Intent (NOI) to adopt the MND (or potentially ND) for the District to file with the State Clearinghouse and County Clerk. We assume that the District will be responsible for providing public notice by one or more of the following methods: 1) publication in a local adjudicated newspaper, 2) posting the notice on-and offsite in the project area; and/or 3) direct mailing to occupants of property contiguous to the project area.

Upon conclusion of the 30-day public review period the Project team will review comments received on the document and advise the District on any modifications needed, undertake minor revisions to the

analysis if required (including the addition of a Mitigation, Monitoring and Reporting Program [MMRP] if needed), and provide assistance to the District for presentation to its Board of Directors and, assuming Board approval, provide assistance preparing and filing a Notice of Determination (NOD) and Notice of Availability (NOA) of FONSI.

Assumptions:

- Both the CEQA and NEPA lead agencies will agree to a joint document.
- The basic project description prepared as part of Task 1, Progress Meetings/Coordination and Development of Project Description, in our original scope of work (dated January 13, 2022) will only require minor modifications/additions for the purposes of the CEQA and NEPA impact analyses.
- No scoping will be required.
- All potentially significant environmental impacts (if any are identified) will be mitigable to less-than-significant levels such that an ND or MND (for CEQA) and FONSI (for NEPA) are the appropriate decision documents.
- The District will be responsible for tribal consultation in accordance with AB 52 and will provide Cardno with records of the consultation for inclusion as an appendix to the joint document.
- The District will be responsible for circulation and filing the notice (NOI) for the public draft document to initiate the 30-day public review period (Cardno available to advise as needed). Cardno will prepare the NOI.
- The District and NEPA lead agency will coordinate on input and provide one set of consolidated comments on the administrative draft document.

Deliverables:

- Admin Draft IS and proposed MND/ EA and proposed FONSI (including NOI)
- Pubic Draft IS/MND and EA/FONSI
- Responses to minor comments and redline revisions to the public draft document (as needed)
- Preparation of Notice of Determination and Notice of Availability (of FONSI)

Cost – Optional Task D

ADDENDUM Biological and Cultural Resources for CEQA and Future Permitting NEPA Proposal - Hunters Raw Water Pump Station Mitigation Project	Cardno Staff											Total Cardno Labor	Unit Costs	TOTAL UNIT COSTS	TOTALS
	Ross-Smith, Katharina M. Senior Consultant 1	Sussman, Patricia Senior Project Scientist 1	Hochrein, Michelle Project Scientist 1	Hamilton, Caroline Staff Scientist 1	Beals, Julia Assistant Staff Scientist	Talcott, Susan Senior Project Scientist 1	Stepper, Shelby Staff Scientist 1	Greene, Melanie Senior Project Scientist 1	Technical Editor Technical Editor	Clare, Anna GIS Specialist	Browning, Lori A. Senior Project Coordinator		Mileage		
Hourly Billing Rate, Markup, or Unit Cost:	*$ 190*	*$ 160*	*$ 140*	*$ 95*	*$ 95*	*$ 160*	*$ 95*	*$ 160*	*$ 140*	*$ 115*	*$ 115*		*$ 0.585*		
OPTIONAL TASK D - Prepare IS/MND and EA/FONSI (joint document)															
Prepare IS/MND and EA/FONSI (joint document)															
a. Consultation with District and NEPA lead agency		3										$ 480		$ -	**$ 480**
b. Chapter I - Introduction		2										$ 320		$ -	**$ 320**
c. Chapter 2. Project Description (Proposed Project and Alternatives)		3								6		$ 1,170		$ -	**$ 1,170**
c. Chapter 3 Environmental Checklist		29		2	12				4			$ 6,530		$ -	**$ 6,530**
d. Chapter 4 NEPA Considerations		10										$ 1,600		$ -	**$ 1,600**
e. Front matter, references, and formatting		5							4			$ 1,360		$ -	**$ 1,360**
f. Prepare public draft document and NOI	6	5										$ 1,940		$ -	**$ 1,940**
g. response to comments and minor adjustments to document + prep of MMRP		6										$ 960		$ -	**$ 960**
h. Prep of NOD and NOA for FONSI		4										$ 640		$ -	**$ 640**
Subtotal - Phase Prep	6	67	0	2	12	0	0	0	8	6	0	$ 15,000	0	$ -	**$ 15,000**
TOTAL - OPTIONAL TASK D	**6**	**67**	**0**	**2**	**12**	**0**	**0**	**0**	**8**	**6**	**0**	**$ 15,000**	**0**	**$ -**	**$ 15,000**
Total Hours or Amounts	**6**	**67**	**0**	**2**	**12**	**0**	**0**	**0**	**8**	**6**	**0**	101.0	**0**	**$ -**	
TOTAL PROJECT COST FOR OPTIONAL TASKS												**$ 15,000**		**$ -**	**$ 15,000**

Notes / Assumptions

See scope of work narrative

Agenda Item

DATE: January 26, 2022

TO: Michael Minkler, General Manager

FROM: John Griffin, Senior Civil Engineer

SUBJECT: Discussion/Action for Award of a Design Services Contract for the CC Secondary, Tertiary, & UV Improvements Project (CIP #15094)

RECOMMENDED ACTION:

Motion: _____/_____ adopting Resolution No. 2022 - ___Awarding Contract for Engineering Services for the Copper Cove Secondary, Tertiary, & UV Improvements Project (CIP #15094) and Authorizing the General Manager to execute a professional services agreement with Keller and Associates.

SUMMARY:
The District issued a Request for Statement of Qualifications and Proposals for this project on September 16, 2021. A total of 11 firms were notified of this project. This project is separated into three major components:

1. Design of tertiary treatment components (tertiary filter replacement, UV disinfection system replacement, and dissolved air flotation system);
2. Design of infrastructure impacted by Pond 6 dam raise; and
3. Master planning (10% design level) for all treatment components at the Copper Cove Wastewater Treatment Plant (CCWWTP).

The District received three proposals on October 26, 2021. A summary of the original proposals is below. Note that the level of effort does not include hours for subconsultants, nor does it include bid phase services or engineering services during construction.

Consultant Name	Proposed Level of Effort	Proposed Fee
HydroScience Engineers	3,086 hours	$702,395
Keller Associates	3,279.5 hours	$674,099
Nexgen Utility Management	5,457 hours	$1,565,925

After the District review committee completed their review of qualifications and proposals, the review committee deemed each proposer qualified and issued a clarification to the

proposers asking for a refinement of their scope of work to include several additional tasks as the review committee could not reach a consensus on the most qualified consultant and each consultant had a different approach to accomplishing the project. This clarification was issued on November 29, 2021. The primary, but not sole, objective of this additional step in the proposal process was to guide the proposers to providing similar scope of work.

Amended proposals were received on December 9, 2021. A summary of each proposer's level of effort is below. Note that the District did not require updated fee estimates, only updated level of effort table including subconsultant hours.

Consultant Name	Proposed Level of Effort
HydroScience Engineers	5,401 hours
Keller Associates	5,857 hours
Nexgen Utility Management	7,795 hours

A smaller review committee, consisting of two operations staff, one engineering staff, and the Director of Operations, assessed the three amended proposals and determined that Keller Associates (Keller) was the most qualified firm and began discussions with Keller on their scope of work.

Over a period of a month, District staff and Keller project team negotiated project final scope of work and fee. The final scope of work has been drafted with base tasks and optional tasks. The base tasks are integral to achieving the project objectives. As the project moves forward, additional information may become available that requires the District move forward with an optional task in order to achieve the project objectives. The contract amount of $1,188,301 is the sum of the base and optional tasks; however, the notice to proceed will authorize work on only the base tasks, with approval required by the General Manager prior to initiating work on the optional tasks.

Staff acknowledges that there is a significant difference in fee from the original proposal when compared to the final scope of work. Beginning with staff review of the original proposals and concluding with negotiations with Keller, the team determined that a number of additional tasks are needed in order to meet the project objectives and provide for a realistic scope of and fee to complete the environmental, planning, and design phases of this project. These new tasks are:

- Evaluation of site drainage improvement options to mitigate runoff from site into the various site treatment ponds.
- Enhanced bench testing for selection of tertiary filtration, UV disinfection, and dissolved air flotation process components.
- Addition of new dissolved air flotation and replacement of ultraviolet disinfection system process units to treatment plant design.

At the time the FY2021-22 CIP was drafted, this detailed level of effort was not envisioned. Therefore, a budget amendment is needed to cover the anticipated costs for the remainder of this fiscal year.

Funding for construction is to be determined. Staff recently submitted a grant application via the Department of Water Resources and will continue to pursue funding sources. In addition, partial funding for the construction phase of this project may be included in a bond that will be discussed with the Board later this year.

This solicitation for consulting services was conducted in a manner that the selected firm could be retained as the design engineer for other related projects for the CCWWTP that are identified in the planning study, instead of requiring the District to issue a Request for Proposals for future engineering efforts. Board approval will be required for any future design phase services.

FINANCIAL CONSIDERATIONS:

The current budget for this project is insufficient to fully fund this agreement and associated project costs. As discussed above, funds are being added with the mid-year budget adjustment ($250,000) sufficient to meet anticipated cash flow needs for this fiscal year. Based on current information, staff estimates that a total increase of $700,000 will be needed for the duration of the design phase. This includes staff costs for project management and oversight, as well as resource agency permitting (401/404/1602) costs. This overall cost also includes environmental, planning, and design services for relocation of utilities affected by raising the dam of Pond 6, which is CIP Project #15112. Upon completion of this contract, staff will “re-allocate” expenses incurred for environmental, planning, and design services for relocation of utilities affected by raising the dam of Pond 6 to CIP Project #15112.

Attachments:

1. *Resolution No. 2022 - ___ Awarding a contract for engineering services for the CC Secondary, Tertiary, & UV Improvements Project (CIP #15094) and Authorizing the General Manager to execute a professional services agreement with Keller Associates*
2. *Keller Associates Proposal*

RESOLUTION NO. 2022-

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

APPROVING/AUTHORIZING A CONTRACT FOR ENGINEERING SERVICES FOR THE CC SECONDARY, TERTIARY, & UV IMPROVEMENTS PROJECT (CIP #15094)

WHEREAS, on September 16, 2021, the District issued a Request for Statement of Qualifications and Proposals for the Copper Cove Secondary, Tertiary, & UV Improvements Project (CIP #15094) to a total of 11 firms; and

WHEREAS, on October 26, 2021, the District received three proposals, from HydroScience Engineers, Keller Associates, and Nexgen Utility Management; and

WHEREAS, the District review committee evaluated all three proposals, but could not reach consensus on the highest ranked firm; and

WHEREAS, on November 29, 2021, a clarification was sent to the three proposers, requesting a resubmittal of their scope of work; and

WHEREAS, on December 9, 2021, the District received three revised proposals; and

WHEREAS, a smaller review committee, consisting of two operations staff, one engineering staff, and the Director of Operations, identified Keller Associates as the most qualified firm; and

WHEREAS, over a period of one month, the District and Keller team worked together to define the necessary base and optional tasks needed to accomplish the project goals; and

WHEREAS, the final scope of work includes design services for tertiary treatment components (tertiary filter replacement, UV disinfection system replacement, and dissolved air flotation system); infrastructure impacted by Pond 6 dam raise; and master planning (10% design level) for all treatment components; and

WHEREAS, the final scope of work also includes environmental studies and resource agency permitting services for tertiary treatment components (tertiary filter replacement, UV disinfection system replacement, and dissolved air flotation system); infrastructure impacted by Pond 6 dam raise; and the Pond 6 dam raise project; and

WHEREAS, the contract amount of $1,188,301 is the sum of the base and optional tasks; and

WHEREAS, funds are being added with the mid-year budget adjustment ($250,000) sufficient to meet anticipated cash flow needs for this fiscal year; and

WHEREAS, this solicitation for consulting services was conducted in a manner that the selected firm could be retained as the design engineer for other related projects for the Copper Cove Wastewater Treatment Plant that are identified in the master planning study, instead of requiring the District to issue a Request for Proposals for future engineering efforts; and

WHEREAS, Board approval will be required for any future design phase services.

NOW, THEREFORE BE IT RESOLVED, that the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT does hereby authorize awarding a contract for engineering services for the CC Secondary, Tertiary, & UV Improvements Project (CIP #15094) attached hereto and made a part hereof; and

BE IT FURTHER RESOLVED that the Board of Directors does hereby authorize the General Manager to execute a professional services agreement with Keller Associates in the amount of $1,188,301 to prepare preliminary and final design of the tertiary treatment process upgrade and associated components as well as to conduct facilities master planning efforts for the CC Secondary, Tertiary & UV Improvements Project (CIP #15094).

PASSED AND ADOPTED this 26th day of January 2022 by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

CALAVERAS COUNTY WATER DISTRICT

_____
Cindy Secada, President
Board of Directors

ATTEST:

_____
Rebecca Hitchcock
Clerk to the Board

Date: January 18, 2022

Project Number: KA# 221289

Project Name: Calaveras County Water District – Copper Cove Wastewater Treatment Facility Tertiary Treatment and Storage Improvements

PROJECT DESCRIPTION

The Calaveras County Water District (District or CCWD) owns and operates the Copper Cove Wastewater Treatment Facility (CCWWTF). The CCWWTF is located in Copperopolis, California and serves just under 2,000 sewer connections. The area is growing in population, and the CCWWTF is approaching its permitted capacity of 0.23 million gallons per day (MGD) average flow.

The treated effluent from the facility is currently used to irrigate the nearby Golf Club at Copper Valley. However, the tertiary treatment facility at the CCWWTF has multiple operational deficiencies and lacks the capacity and redundancy to treat the secondary effluent effectively. The District is currently under contract with a separate consultant to increase the capacity of the effluent storage pond (Pond 6).

The District is contracting with Keller Associates (Consultant) to evaluate and select new tertiary treatment technology, design a new tertiary treatment facility, and perform an update to the CCWWT Facility Plan.

The scope of work to be completed by the Consultant is described below.

Task 1 – Project Management

Consultant Responsibilities:

1.1. Project Management. Provide general project management, including contract administration, project accounting, schedule maintenance, and internal project administration.

1.2. Kick-off meeting / Site Walk. Prepare for and attend a project kick-off meeting with the District. The purpose of this meeting will be to establish communication channels, review the overall project schedule including major milestones and meetings, review project objectives, discuss available data and published materials that will be made available by the District, and review the process for deliverables, including the process for District review and approval. It is anticipated that the meeting will be a mix of virtual and in-person at the CCWWTF. Following the kick-off meeting, the Consultant will perform a site walk with CCWWTF staff.

1.3. Project Progress Meetings. Consultant will prepare for and attend up to 21 monthly project progress meetings with the District. It is anticipated that the meetings will be a mix of in-person and virtual.

During months where a workshop or other meeting takes place, it is anticipated that the project progress meeting will be combined with the other meeting.

District Responsibilities

- Provide a venue for the meetings.
- Provide operations staff for the site walk.

Assumptions:

- Project management budget is based on the Schedule section below.

Deliverables:

- Draft agendas approximately one week prior to the meeting.
- Final agenda approximately one day prior to the meeting.

- Draft minutes approximately three days after the meeting
- Final minutes approximately three days after receiving District comments.
- Action item log
- Monthly schedule updates
- Invoice with report documenting activities performed during billing period.
- Responses to District comments matrices for all deliverables. This deliverable applies to all tasks in this scope of work.

Task 2 – Data Acquisition

Consultant Responsibilities:

2.1 Request for Information. A request for information will be prepared by the Consultant describing the information needed'.

2.2 Data Collection and Review. Collection and processing of furnished data, mapping, and reports.

District Responsibilities:

- Provide requested data within two weeks of receiving requests.
- Provide access to relevant facilities and records as requested by the Consultant.
- Provide operations and maintenance staff for questions as needed.

Assumptions:

- No sampling is anticipated by the Consultant.
- Consultant shall be entitled to rely, without liability, on the accuracy and completeness of the information provided by District, other agencies and stakeholders, and information from public records, without the need for independent verification.

Deliverables:

- Request(s) for information in the form of an email to the District's project manager.

Task 3 – Tertiary Treatment, Facility Pre-Design

Consultant Responsibilities:

3.1. Site Survey: Consultant will perform a topographic land survey that will include setting control.

3.2. Site Drainage Evaluation. Consultant will review the existing topography and stormwater drainage infrastructure at the CCWWTF. Following this review, the Consultant will summarize the recommended improvements to the site in a technical memorandum. It is anticipated that the memorandum will be limited to the components below.

- Summary and discussion of the existing stormwater drainage and conveyance system at the CCWWTF.
- Recommended stormwater drainage and conveyance improvements at the CCWWTF.
- Recommended improvements summary.

The Technical Memorandum will be submitted to the District in draft form to allow the District to comment on the document's findings and recommendations. The Consultant will address the District's comments and provide a final version of the technical memorandum.

3.3. Tertiary Treatment Bench Testing: The Consultant will conduct one round of bench-testing using up to five samples (five gallons each for the filter samples and twenty gallons for the DAF sample). Consultant will develop a workplan for the bench testing that will include overall approach to bench

testing, quantity of samples, manufacturers performing testing, tests being performed on the samples. The testing will involve one dissolved air flotation (DAF), transmissivity for UV disinfection, and up to three filter technologies (granular media, compressible media, and cloth media) on the effluent from the existing lagoons. The goal of the bench-testing is to determine the solids removal performance of the DAF and filter technologies. The District will assist by collecting and shipping the samples. The Consultant will coordinate with vendors to provide the shipping labels and coordinate the bench testing and review the results (including testing DAF before filtration).

3.4. Tertiary Treatment Technology Technical Memorandum: Consultant will perform an evaluation of up to three tertiary treatment alternatives for installation at the CCWWTF. Consultant will compile the findings of the evaluation into a Technical Memorandum. It is anticipated that the Tertiary Treatment Technology Technical Memorandum will be limited to the following components:

- Summary and discussion of the existing tertiary treatment system, and the need for replacement.
- Summary and discussion of the results of the bench testing.
- Review and discussion of the applicable discharge requirements.
- Evaluation of up to three alternatives for tertiary treatment.
- Comparison of advantages and disadvantages for each proposed alternative. The comparison will consider life cycle cost, reliability, ease of operation, maintenance requirements, treatment goals, and chemical reliance.
- The Consultant will provide its opinion and recommendation for the best alternative.
- Preliminary placement location on the site for the selected tertiary treatment equipment, associated structure, and supporting power infrastructure.

3.5. Tertiary Treatment Workshop: The Consultant will participate in one workshop meeting with the District to discuss the findings of the technical memorandum. The Consultant will address the District's comments and provide a final version of the technical memorandum.

3.6. Pre-Design Report: Consultant will prepare a Pre-Design report for the Tertiary Treatment filtration, DAF facility, and UV disinfection at CCWWTF. It is anticipated that the Pre-Design Report will include the following Components:

- Summary of design criteria.
- Discussion and incorporation of the Site Drainage Evaluation, and the Tertiary Treatment technical memorandum.
- UV disinfection
- DAF and Tertiary Filtration Facility
- MCC room with SCADA equipment
- Solids handling for the DAF and tertiary filtration only. This includes an evaluation of up to three types of dewatering equipment and up to two different polymer systems. An option will be recommended based on the ability to dewater DAF and tertiary filter solids that is anticipated to best meet the District’s goals for solids handling. Discuss options of expanding the solids handling to include secondary solids. Options may include a separate system, a combined system, or a partially combined system.
- Relocation of the utilities and pump station from the toe of Pond 6.
- Summary of proposed improvements including: land/topographic survey, hydraulic profile, site plan and yard piping, proposed structures plan views of unit processes.
- Class 5 AACE Engineer's opinion of probable cost of construction.

District Responsibilities:

- Provide requested data and sampling within two weeks of request.
- Collect a representative secondary effluent sample to be used for bench testing of the tertiary system.
- Provide hydraulic and nutrient loading rates to be used for assessing the land application site capacity.
- Provide access to relevant facilities and records as requested by Consultant.
- Provide operations and maintenance staff for questions as needed.
- Collect and ship lagoon effluent samples for bench-testing.

Assumptions:

- Vertical datum will be NAVD88, Horizontal positions will be on the California Coordinate System, Zone 3 (NAD83)
- One round of bench testing is anticipated. If the results of the bench testing are inconclusive and (or) additional bench testing is required, Consultant will be entitled to additional compensation.
- No sample collection or handling is anticipated by the Consultant. Consultant will pay the shipping costs and coordinate shipment of the samples collected by the District.
- Consultant's opinions of probable cost represent Consultant's judgment as an experienced and qualified design professional. Since Consultant has no control over the cost of labor, materials, equipment, or services furnished by others, or over the Owner's and other contractor's methods of determining prices, or over competitive bidding or market conditions, the Consultant cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from opinions of probable cost prepared by the Consultant.
- Consultant shall be entitled to rely, without liability, on the accuracy and completeness of information provided by District, other agencies and stakeholders, and information from public records, without the need for independent verification.
- Solids handling system is assumed to include solids storage tank, polymer system, and dewatering equipment.
- Disposal of solids is not evaluated.
- Dewatering of secondary solids will be evaluated separately as part of the facility plan. This evaluation will occur separately and after this task. As a result, coordination with secondary solids will not be part of this task.
- Algae sludge from a dissolved air flotation system can present considerable challenges to dewater. If bench testing is not successful, then another method of dewatering such as drying beds or recycling to the headworks for biological treatment in the lagoons or secondary mechanical treatment can be evaluated as an additional cost.

Deliverables:

- Submittal of the site topographic survey in .dwg format
- Draft Land Application Evaluation Technical Memorandum in PDF format
- Final Land Application Evaluation Technical Memorandum in PDF format
- Draft Tertiary Treatment Technical Memorandum in PDF format
- Final Tertiary Treatment Technical Memorandum in PDF format
- Tertiary Treatment workshop minutes in PDF format
- Draft Pre-Design Report in PDF format

- Final Pre-Design Report in PDF format

Task 4 – File for Amended Operating Permit (Optional Task)

Consultant Responsibilities: Consultant will not proceed with this task without written authorization (email) from the District's project manager.

4.1. Amended Operating Permit: Consultant will work with the Central Valley Regional Water Quality Control Board (RWQCB or Regional Board) to file for an amended operating permit for the CCWWTF consistent with the improvements to Pond 6 (by others), and the improvements recommended in the Pre-Design Report. To accomplish this, the Waste Discharge Requirements (WDR's) for the CCWWTF need to be updated. A Report of Waste Discharge (ROWD) will be submitted in support of updated WDR's.

4.1.1 Pre-application Meeting: Consultant will schedule and participate in a meeting with Regional Board and CCWD staff to present available background data and to obtain feedback from regulatory personnel. The following topics will likely be discussed:

- Available background information
- Supplemental data collection/analysis
- Approach to anti-degradation analysis
- Appropriateness of WDRs plus NPDES permit
- CEQA requirements
- Schedule

Consultant will document the results of the pre-application meeting in a brief technical memorandum including recommendations for one or two permits for submission to CCWD and Regional Board staff.

4.1.2 Review Meetings with Regional Board Staff: Two review meetings are anticipated with Regional Board staff during preparation of the permit application. The objectives of the meetings are to confirm technical analyses, including preliminary water balances, resolve potential issues, and to facilitate subsequent permit writing by Regional Board staff. Meeting minutes will be prepared and distributed to all participants.

4.1.3 Permit Processing: To facilitate approvals, the following activities will be undertaken:

- A meeting will be scheduled with Regional Board staff to review the ROWD submittal and to answer any initial questions. Supplemental information, if required, will be identified and a schedule for submittal will be established.
- Prior to issuing the draft Tentative WDRs (TWDRs), a second meeting will be scheduled with Regional Board staff to discuss potential water quality limitations and monitoring/reporting requirements.

4.1.4 Preparation of Report of Waste Discharge (ROWD)/Form 200: A draft ROWD will be submitted to the CCWD for review. The ROWD will be revised to address comments. Once revised, the final ROWD will be submitted to the Regional Board. The Regional Board requires that the ROWD include a Form 200 that provides contact information for the discharger. Consultant will assist in collecting the information required for the Form 200 that will then be included as an appendix to the ROWD. The following activities will be undertaken in the preparation of the ROWD:

- Narrative Description, Maps, and Process Flow Diagram of Wastewater Conveyance, Treatment and Disposal Systems: A narrative description of wastewater generation and all systems providing wastewater conveyance, treatment, and disposal/reuse will be provided. Infiltration and inflow (I&I) estimates will be used as part of the wastewater generation description. Design criteria, process calculations for

equipment/system sizing, reliability features, redundancy provisions, and emergency components will be summarized. The location and operation of the proposed disposal/reuse areas will be highlighted. A vicinity map of the community; scaled site map showing wastewater facilities; and a process flow diagram showing how wastewater is collected, treated, and disposed will be prepared.

- Characterization of Influent Wastewater: A chemical characterization of influent wastewater quality based on existing data and historical values will be developed. The characterization will include biochemical oxygen demand (BOD), total suspended solids (TSS), nitrogen, and salts. The characterization of influent wastewater will include flow projections. Source water quality will be investigated to determine likely concentrations of metals, organics, or other constituents of concern. Where local data are not available, historical information from other published sources for similar applications will be cited.
- Summary of Probable Effluent Quality: Considering the influent wastewater characterization for the proposed wastewater treatment plant improvements, a summary of probable effluent quality will be undertaken. Treatment removal efficiencies for various constituents will reflect published values and operational experience at comparable installations. Effluent characterization will include projected values for BOD, TSS, total dissolved solids (TDS), nitrate nitrogen, and total nitrogen.
- Antidegradation Study: An Antidegradation Study will be performed in parallel with the ROWD preparation. The Antidegradation Study will be prepared in accordance with Resolution 68-16, *Policy with Respect to Maintaining High Quality Waters of the State* and September 2009 Regional Board guidelines. Based on past direction from the Regional Board, the study will include discussions of applicable regulatory requirements, applicable water quality standards, environmental setting, effluent quality, groundwater quality assessment, and alternative assessment. The majority of the discussion topics will be drawn from existing sources. The groundwater quality assessment will incorporate historical groundwater monitoring results. A draft of the Antidegradation Study will be submitted to CCWD. It is anticipated that revisions to the Antidegradation Study will be discussed during the same meeting where draft ROWD comments are addressed. The final Antidegradation Study will be submitted to the Regional Board with the ROWD.
- Preparation of ROWD: Technical analyses and project specific information will be presented in the ROWD consistent with the most recent Regional Board formatting guidelines. A tentative outline of the ROWD is as follows:
    1. Introduction
        a. Overview of Facility Plan
        b. Description of Wastewater Facilities
        c. Anticipated Schedule of Improvements
        d. Form 200
    2. Wastewater Characterization
        e. Influent Quality
        f. Projected Flows
        g. Probable Effluent Quality
    3. Description of Wastewater Treatment Facility Improvements
        h. Summary of Design Criteria and Process Controls
        i. Description of Reliability Features
        j. Summary of Emergency Provisions
    4. Summary of Storage and Disposal/Reuse System
        k. Summary of Design Criteria
        l. Water Balance
        m. Discussion of Operational Practices

5. Description of Biosolids Management
6. Description of Local Soils
7. Summary of Groundwater Characterization
8. Summary of Antidegradation Analysis
9. CEQA Compliance

4.1.5 Coordination of Permit Requirements including MRP: The Regional Board will circulate the TWDRs for a minimum 60-day comment period prior to Regional Board approval. During this time the Regional Board may modify the TWDRs based on feedback from CCWD. Consultant will review the TWDRs and advise the District of unexpected requirements. In collaboration with the District, the Consultant will prepare a written response to the TWDRs and participate in a meeting with Regional Board staff to discuss the TWDRs. This task assumes Consultant attendance at the Regional Board hearing where final permit requirements are adopted.

District Responsibilities:

- Provide requested data within two weeks of request.
- Provide access to relevant facilities and records as requested by Consultant.
- Provide operations and maintenance staff for questions as needed.

Deliverables:

- Technical memorandum documenting the results of the pre-application meeting in PDF format
- Minutes from review meetings with Regional Board staff in PDF format.
- Draft ROWD/Form 200 for District review in PDF format.
- Final ROWD/Form 200 for District review in PDF format.

Task 5 – Final Design

Consultant Responsibilities:

5.1 Final Design. Consultant will prepare design documents for the improvements included in the Pre-Design report. For budgeting purposes, Consultant has assumed the following general components of design: Tertiary treatment filtration, UV disinfection, DAF system, solids handling and dewatering (for the tertiary treatment filtration system and DAF only), filter backwash pump station (if needed), and relocation of existing pump station and associated utilities from the toe of Pond 6. Consultant has anticipated that the tertiary treatment (filter and UV), and dewatering system will be under a metal structure (similar to the existing tertiary treatment building). The critical electrical equipment (MCCs) and SCADA equipment will be in an enclosed building.

Consultant has assumed there will be two bid packages in this task and they will be broken up as follows:

- Package #1: Tertiary treatment filtration system, UV disinfection, DAF system, solids handling and dewatering (for the tertiary treatment filtration system and DAF only), Filter backwash pump station (if needed). Consultant will prepare plan sheets, technical specifications, and front end documents.
- Package #2: Relocation of existing pump station and associated utilities from the toe of Pond 6. Consultant will prepare plan sheets, and technical specifications. It is anticipated that the front end documents will be prepared by others for this package.

Plan Sheets. Prepare general, site civil, landscape plan, structural, architectural, plumbing, HVAC (if applicable), mechanical, electrical, and instrumentation and control plan sheets for the site, tertiary treatment building, and yard piping. Coordinate location of equipment, equipment layout, piping, piping layout, spacing, electrical and control equipment, equipment removal, building access, HVAC equipment, plumbing drains, and other appurtenances with the District. Prepare 50%, 90% and 100% review sets. After receiving comments from the District and reviewing agencies, Consultant will

prepare a bid set.

Specifications. Provide front end contract documents. For budgeting purposes, it is assumed that the EJCDC front end documents will be utilized. Incorporate District requirements, supplemental conditions, special provisions and project constraints. Prepare technical specifications for electrical, HVAC, structural and architectural project components. Technical specifications will be prepared to detail the materials, processes, and the products that are to be used in the construction of the tertiary treatment facility. Consultant will provide a control strategy specification for District review. Prepare table of contents for the 50% review set, and complete draft technical specifications for the 90% and100% set. After receiving comments from the District and reviewing agencies, Consultant will prepare a bid set.

5.2 50% Design and Review Workshop Meeting. Submit 50% design review drawings and specifications table of contents to the District. Participate in a 50% design review workshop meeting. Consultant has assumed that this will be a meeting with two (2) local representatives attending and other staff participating virtually as needed.

5.3 90% Design and Review Workshop Meeting. Submit 90% design review drawings and specifications to the District. Participate in a 90% design review workshop meeting. Consultant has assumed that this will be a meeting with two (2) local representatives attending and other staff participating virtually as needed.

5.4 100% Design and Review Workshop Meeting. Submit 100% design review drawings and specifications to the District. Participate in a 100% design review workshop meeting. Consultant has assumed that this will be a meeting with two (2) local representatives attending and other staff participating virtually as needed.

5.5 Agency Submittals. Consultant has assumed that the following submittals will be needed:

- Regional Water Quality Control Board (RWQCB) at 100% design.
- PG&E at 90% design.
- Calaveras Public Power Agency at 90% design. Online application process.
- Local fire authority having jurisdiction at 100% design. It is anticipated that the District will facilitate this submission.

5.6 Final Approval. Upon District, RWQCB, PG&E, and building department review, Consultant will incorporate appropriate revisions into a final set of stamped drawings and specifications that will be used for bidding.

5.7 Opinion of Probable Costs. Prepare an updated opinion of probable cost for the project at 50%, 90% and 100% design.

District Responsibilities:

- Provide timely review of document submission, provide comments on document submissions.
- Participate and provide feedback in design workshops.
- Provide access to relevant facilities and records as requested by Consultant.
- Provide operations and maintenance staff for questions as needed.

Assumptions:

- No sizing or evaluation of the existing pump stations at the toe of the dam are included.
- The pipe sizing, associated appurtenance sizing, and pump sizes will be the same as the existing.
- Two bid packages have been assumed.
- Consultant's opinions of probable cost represent Consultant's judgment as an experienced and qualified design professional. Since Consultant has no control over the cost of labor, materials, equipment, or

services furnished by others, or over the Owner's and other contractor's methods of determining prices, or over competitive bidding or market conditions, the Consultant cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from opinions of probable cost prepared by the Consultant.

- Consultant shall be entitled to rely, without liability, on the accuracy and completeness of information provided by District, other agencies and stakeholders, and information from public records, without the need for independent verification.

Deliverables:

- 50% Submittal:
    a. 50% level design plans, technical specificaiton table of contents, engineer's opinion of probable cost (all documents in PDF format)
- 90% Submittal:
    a. 90% level design plans, draft technical specifications, draft front end documents, engineer's opinion of probable cost (all documents in PDF format)
- 100% Submittal:
    a. 100% level stamped design plans, stamped technical specifications and front-end documents, engineer's opinion of probable cost (all documents in PDF format)
- Bid Documents:
    a. Bid level stamped design plans, stamped technical specifications and front-end documents, engineer's opinion of probable cost (all documents in PDF format)

Task 6 – Facility Plan

Consultant Responsibilities: Consultant prepare a Facility plan for the CCWWTF. The facility plan will be stages with incremental deliverables as described below.

6.1 Project Planning:

6.1.1 Site Tour: Consultant will complete a site tour with District's operation staff of the CCWWTF, to assess general conditions, interview District staff, and note known and observed problems.

6.1.2 Location. Provide brief description of project location. Develop figure(s) to establish the project planning area.

6.1.3 Growth Trends. Review historical residential growth projections and summarize recommended growth rates for the 20-year planning period. Coordinate with District on location, phasing, and type of new growth. District will provide input on population projections.

6.1.4 Community Engagement. Description of the District's approach to engage the community in the planning process.

6.1.5 Design Flow Rates. Review historical influent flow data to assess existing flow rates. Inflow and infiltration will be summarized based on flow patterns relative to historic daily rainfall totals. Provide flow projection estimates based on growth assumptions and input from District.

6.1.6 Design Loading Rates. Review historical data to characterize wastewater loadings and project future loadings based on growth assumptions and input from District.

6.1.7 Regulatory Requirements. Review and summarize current regulatory requirements and planning criteria that may influence operation, maintenance, and capital improvements of the existing wastewater system.

6.1.8 Cost Estimating. Establish cost estimating methodology to reflect both local and current conditions.

6.1.9 Review Meeting Workshop. Lead a workshop meeting with the District to review preliminary findings.

6.1.10 Draft Write-Up. Prepare draft technical memorandum. Final document to have District's comments incorporated.

6.2 Existing Facilities Evaluation:

6.2.1. Base Map. Create a schematic process layout of the existing treatment plant showing major process components.

6.2.2. History. Document wastewater treatment plant history and system description to reflect current flow and water quality data, recent monitoring records, plant improvements that have been completed since the previous planning study, current condition of plant equipment and facilities, and current operation practices.

6.2.3. Wastewater System Management Classification, Operators and License. Provide a brief writeup of system required licensing and current operator license information.

6.2.4. Conditions Assessment. Consultant will document existing physical conditions of the equipment based on visual observations during the facility tour, information from District's staff, and available information.

6.2.5. Capacity Evaluation. Compare existing and future projected flows and loadings to the existing capacity of the wastewater treatment system (redundancy of processes, equipment, the existing electrical system, and backup power will be reviewed). Summarize existing capacity deficiencies.

6.2.6. Hydraulic Profile. Prepare a hydraulic profile for the treatment plant. Evaluate hydraulic potential bottlenecks at design flows.

6.2.7. Review Meeting Workshop. Lead a workshop meeting with the District to review preliminary findings.

6.2.8. Draft Write-Up. Prepare draft technical memorandum. Final document to have District's comments incorporated.

6.3 Treatment System Alternatives and Selection

6.3.1. Model future 20-year process and hydraulic conditions of selected alternative.

6.3.2. List Alternatives. A list of treatment plant improvement alternatives will be created focused on improving effluent water quality, vulnerability, safety, and redundancy.

6.3.3. Develop Alternatives. Develop up to three pre-screened alternatives. The three prescreened alternatives which include headworks, secondary biological treatment, tertiary treatment, disinfection, effluent storage and disposal, and solids handling processes.

6.3.4. Alternative Cost/Benefit Analysis. Assist in comparing benefits, drawbacks, and costs of up to three viable alternatives. This will include life cycle cost analysis and discuss non-monetary factors such as operations, maintenance, sustainability, and impacts to adjoining lands. Life-cycle costs will include capital cost, operations and maintenance for a 20-year life cycle evaluation.

6.3.5. Site Plan/Schematics. Develop a master plan concept map and/or figures for selected alternatives.

6.3.6. Land Requirements. Discusses property needed for alternatives.

6.3.7. Review Meeting Workshop. Lead a workshop meeting with the District to review findings. Outcome of meeting is anticipated to include consensus of recommended improvements.

6.3.8. Draft Write-Up. Prepare draft technical memorandum. Final document to have District's comments incorporated.

6.4 Proposed Projects

6.4.1. Capital Improvement Plan.

- Summarize recommended improvements.
- Prepare planning level cost estimates for recommended improvements.

6.4.2. Preliminary Project Schedule. Provide a preliminary schedule of improvements.

6.4.3. Redundancy and Operational Considerations. Summarize how the priority improvement projects will enable the District to serve its customers and be able to operate and maintain the system. This includes backup power, system redundancy, bypass piping and equalization basins as recommended.

6.4.4. Review Meeting Workshop. Lead a workshop meeting with the District to review an overall summary of the plan, selected improvements, and budget implications.

6.4.5. Draft Write-Up. Prepare draft technical memorandum. Final document to have District's comments incorporated.

6.5 Facility Plan Documentation

6.5.1. Develop 10% design: Consultant will prepare 10% design documents for the Priority 1 improvements listed in the Capital Improvement Plan. Consultant has assumed that the 10% design documents will be include the following components:

- Hydraulic profile
- Topographic survey
- Mechanical plan views
- AACE Class 5 Construction Cost estimate for the proposed improvements
- Process schematic
- System process operating parameters (design criteria sheet).

6.5.2. Prepare Facility Plan. Prepare and combine draft documents for a complete facility plan. Draft documents to be updated to address District comments. Submit final draft plan for District review.

6.5.3. Address Agency Comments. Address agency comments and finalize document.

District Responsibilities:

- Review and comment on draft technical memoranda and reports in a timely manner.
- Participate and provide feedback during workshops.
- Pay agency review fees, if applicable.

Assumptions:

- Consultant's opinions of probable cost represent Consultant's judgment as an experienced and qualified design professional. Since Consultant has no control over the cost of labor, materials, equipment, or services furnished by others, or over the Owner's and other contractor's methods of determining prices, or over competitive bidding or market conditions, the Consultant cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from opinions of probable cost prepared by the Consultant.
- Consultant shall be entitled to rely, without liability, on the accuracy and completeness of information provided by District, other agencies and stakeholders, and information from public records, without the need for independent verification.
- Disposal of solids is not evaluated.

- Alternatives for solids handling treatment will include expanding the tertiary solids handling system. This will include using the same technology and combining the solids, using the same technology but keeping the solids separate, and using different technology and separate solids handling systems.

Deliverables:

- Draft #1 – Project Planning Technical Memorandum (in PDF format).
- Draft #2 –Existing Facilities Evaluation Technical Memorandum (in PDF format).
- Draft #3 –Treatment System Alternatives and Selection Technical Memorandum (in PDF format).
- Draft #4 –Proposed Projects Technical Memorandum (in PDF format).
- Stamped Facility Plan – Project Planning Technical Memorandum, Existing Facilities Evaluation Technical Memorandum, Treatment System Alternatives and Selection Technical Memorandum, and Proposed Projects Technical Memorandum (in PDF format and three hard copies (in 3 ring binders) of the facility plan).

Task 7 – Other Engineering and Consulting Services

Consultant Responsibilities:

7.1. Coordination with Wagner and Bonsignore: The District is under contract with another Consultant to perform the design and enlargement for Pond 6 storage reservoir. This work will have a significant impact on the activities in this agreement. Consultant is anticipating coordinating with the District and Wagner and Bonsignore throughout the planning and design phases of this project. For budgeting purposes, Consultant has anticipated a total of 14 meetings with up to 2 staff. These meeting are for coordination purposes with the Pond 6 Storage Project and are in addition to the meetings listed in other tasks.

7.2. Conduct Initial Studies and Prepare California Environmental Quality Act (CEQA) Documents:

7.2.1 Kick-off meeting: Consultant will prepare for and attend one kick-off meeting with CCWD staff to compile and obtain additional project information, discuss preliminary schedules for deliverables and coordinate date and time for field surveys with the project team.

7.2.2 General Field Survey of Project Area: Consultant will conduct a general survey of the Copper Cove WWTP project to become familiar with the plant and general layout of the proposed project.

7.2.3 Conduct Environmental Constraints and Prepare CEQA Project Description: The project is not sufficiently well-defined at this time as to quarry site locations, pipeline alignments, location of dissolved air flotation (DAF) units, and other details. Biological and cultural resources database searches will be conducted for the proposed in-reservoir borrow site. Consultant will assist in defining the project description and perform an initial screening (biological, cultural, wetlands, etc.) of the one borrow site at a high-level including database and records searches and 1 day field visit to survey the candidate borrow site to determine environmental constraints. We will also assist with evaluation issues of a hauling route/road from the quarry to be considered. One option would be to look at obtaining rock for the dam from excavating inside the existing reservoir footprint assuming CCWD could generate sufficient quantities of suitable materials to eliminate aggregate truck hauling. Preliminary geotechnical evaluation conducted by others will assist with that determination before initiating the environmental review.

Consultant will use CCWD Preliminary Engineering Report (30%) Basis of Design for this project, and the documents prepared for the pond 6 dam raise project as the basis for

preparing a CEQA project description for review and approval by CCWD. The CEQA project description will include a detailed description of new wastewater treatment facilities, dam improvements, utility relocations, staging areas, construction phasing, water management, construction methods and equipment used, and other details to assist with environmental impact evaluations.

7.2.4 Prepare Administrative Draft CEQA Initial Study Mitigated Negative Declaration (IS/MND): Consultant will prepare an Administrative Draft of the Initial Study Mitigated Negative Declaration (IS/MND) to analyze project construction and operation effects on the environment. Consultant will work with CCWD to prepare the appropriately formatted IS/MND according to CEQA Guidelines, the CEQA Initial Study Checklist, and CCWD requirements and guidance. The IS/MND will be prepared to meet the required ADA-compliant electronic files for CCWD and the State Clearinghouse. The IS/MND will include a project description, existing conditions, the potential adverse effects of project implementation (both individual and cumulative) for resources as necessary, and mitigation measures as required. Technical studies that will assist preparation of the ISMND include air quality and GHG study, biological study and wetlands delineation.

7.2.5 Preliminary Draft IS/MND: Upon receipt of one round of consolidated CCWD review comments, Consultant will prepare a Preliminary Draft IS/ MND for final approval before public circulation and review. Consultant will submit electronic copies (PDF) of the Preliminary Draft IS/MND for review and approval to circulate. Consultant will respond to one round of CCWD comments and has estimated 6 hours for this task.

7.2.6 Screencheck Draft IS/MND: Upon receipt of one round of consolidated CCWD review comments, Consultant will prepare a Screencheck Draft IS/ MND that will include responding to CCWD comments and completing necessary revisions. Consultant will submit the Screencheck Draft for final approval before publishing for public circulation and review.

Consultant will submit electronic copies (PDF) of the Screencheck Draft IS/MND for review and approval to circulate.

7.2.7 Public Distribution and Review: Up to 5 hardcopies copies and electronic copy of the public review Draft IS/MND will be provided to CCWD for distribution. The Consultant environmental team will work with CCWD to prepare a Notice of Intent to Adopt a Mitigated Negative Declaration and Notice of Availability for an Initial Study for publication in the newspaper of general circulation or for mailing to the CCWD distribution list. Consultant will work with the CCWD to finalize and distribute this notice to announce the IS/MND public circulation. Consultant will coordinate the notices publication in the newspaper of general circulation and will mail up to 15 notices to the CCWD-provided distribution list. Consultant will work with the CCWD in determining the appropriate person(s) (i.e., Submitter) to upload the required documentation onto the State Clearinghouse website no later than 3:30 PM on the start day of public circulation. The Submitter can be CCWD, or CCWD can designate Consultant as the Submitter.

7.2.8 Prepare Final ISMND and Mitigation Monitoring and Reporting Program (MMRP): At the conclusion of the 30-day public comment period, Consultant will meet with CCWD to discuss the comments received and the preparation of the final document. Consultant will prepare written responses to comments received on the Draft IS/MND that raise substantive environmental issues and submit them for CCWD staff review after the close of the public comment period. We have budgeted for a maximum of 16 hours for responding to comments generated by the public. Consultant will also prepare a Mitigation Monitoring and Reporting Program (MMRP) for CEQA that outlines timing and responsibility assignments for implementing each mitigation measure.

After the CCWD has reviewed the draft-final IS/MND and draft MMRP, Consultant will incorporate the revisions into the document and submit the Final IS/MND and MMRP. Consultant has budgeted 6 hours for responding to CCWD review comments.

Consultant will prepare the draft Notice of Determination (NOD) for CCWD to review and comment. Consultant will revise and return the NOD to the CCWD to file with the State Clearinghouse and the County Clerk's Office within 5 days of CCWD Board of Directors approval of the IS/MND (pursuant to CEQA guidelines).

7.3. Obtain Permits from Fish and Wildlife and USACE:

7.3.1 Nationwide Permit Verification (Clean Water Act, Section 404): The proposed project may result in discharge of material into waters of the U.S. In the event this occurs, the project will require authorization from the USACE. It is anticipated that any discharge resulting from this project can be authorized using one or more Nationwide Permits (NWP). Consultant will prepare a Preconstruction Notification (PCN) to submit to the USACE requesting verification that the project can be authorized using the specified NWP(s). Consultant will also submit a Preliminary Jurisdictional Delineation and request concurrence by the USACE. Technical studies that will assist with permit acquisition include Federal Section 7 Biological assessment, wetland delineation and water quality analyses for the WQ 401 certification. We will conduct one pre-app meeting with USACE Sacramento District to inform them of the project and obtain their input on issues of concern.

7.3.2 Water Quality Certification (Clean Water Act Section 401): A Water Quality Certification may be required from the RWQCB for the proposed project, if it will affect wetlands or other waters of the State, to certify that the project is consistent with water quality goals and objectives. Consultant will prepare an application package for submittal to the RWQCB. A processing fee must be included with the submittal (to be provided by CCWD, amount to be determined).

7.3.3 Pre-Application Meeting: Consultant will submit a pre-application meeting request to the RWQCB at least 30 days in advance of the submittal of the 401 Water Quality Certification application package. If the RWQCB requests a meeting, Consultant will schedule a 1-hour video conference with the RWQCB, CCWD, and the design team. Consultant will also prepare a succinct project summary for discussion during the meeting, including a description of the project, the project impacts, proposed compensatory mitigation, and proposed alternatives to be addressed in the alternatives analysis. Based on input provided by the RWQCB during the pre-application meeting, Consultant will discuss with CCWD and the design team any additional requirements that may not be covered under Consultant's existing scope of work before finalizing the 401 Water Quality Certification application package.

7.3.4 Alternatives Analysis: Consultant will prepare an Alternative Analysis consistent with the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures) requirements for "Tier 2 Projects," which specify an analysis of on-site alternatives that would potentially reduce impacts to waters of the State. The AA will describe cost and feasibility information (i.e., logistical or technical constraints) for each of the alternatives to demonstrate that that they are impracticable when compared with the proposed project. Based on input and direction provided by Consultant, the design team will provide support for the AA, including preparation of the conceptual alternative layouts and brief written descriptions, line-item cost estimates for infrastructure and fees, and feasibility input for the alternatives.

Consultant will submit the Draft AA CCWD and the design team electronically for review. We have included 8 hours to respond to internal comments generated during review of the Draft AA. Consultant's budget for the AA also includes 8 hours to respond to questions and/or

revise the Draft AA based on comments from the RWQCB.

7.3.5 Streambed Alteration Agreement (Fish and Game Code, Section 1602): The proposed project may require notification of proposed streambed alteration if the project will impact waters under the jurisdiction of CDFW. Consultant will conduct on pre-application meeting with CDFW staff if deemed necessary. CDFW permit applications are submitted electronically through EPMIS. Consultant will prepare a Notification of Lake or Streambed Alteration package for submittal to CDFW. A processing fee must be included with the submittal (to be provided by CCWD, amount to be determined).

District Responsibilities:

- Provide comments on the draft documents.

Assumptions:

Deliverables:

- Minutes from meetings with Wagner and Bonsignore in PDF format.
- Minutes from kickoff meeting for CEQA documents.
- Administrative Draft (IS/MND) in PDF format.
- Initial Study Mitigated Negative Declaration in PDF format.
- Preliminary Draft Initial Study Mitigated Negative Declaration in PDF format.
- Screencheck Draft Initial Study Mitigated Negative Declaration in PDF format.
- Public Distribution Draft Initial Study Mitigated Negative Declaration in PDF, and up to 5 hard copies.
- Final Initial Study Mitigated Negative Declaration in PDF format.
- Notice of Determination in PDF format.
- Draft and final versions of the section 404 permit application, and the section 401 permit application, section 1602 permit application in PDF format
- Meeting minutes from the pre-application meeting with RWQCB.
- Draft Alternative Analysis in PDF format

Task 8 Bid Support Services (Future Task)

No budget has been included for this task. It is anticipated that this Task will be added in the future by addendum.

Task 9 Construction Services (Future Task)

No budget has been included for this task. It is anticipated that this Task will be added in the future by addendum.

Task 10 Technical Support Services (Optional Task)

From time to time the District may have additional tasks related to the project or additional tasks may be encountered that are not identified in this scope of work. For these instances, a time and material budget is established in order for Consultant to complete the additional services. Prior to the use of this contingency budget, District's representative will provide written (email) authorization to use the budget for specific tasks.

ADDITIONAL SERVICES (not included in scope of work)

- Arc Flash Study

- Bond support
- Public outreach or stakeholder outreach support
- User rate and connection fee study
- Additional field work
- Operation and maintenance recommendations
- Staffing evaluation and recommendations
- Energy efficiency evaluations
- Bidding Services
- Construction Services

SCHEDULE

The Consultant anticipates performing the activities described based on the attached schedule. The number of days associated with each task is approximate and assumes the timely delivery of requested information. The actual schedule may vary.

CONTRACT SUM

The Consultant will be compensated on a lump sum basis for the services outlined above, as illustrated in the following table. The total authorized budget amount shall not be exceeded without written authorization from the City.

Base Tasks	Type	Amount	Hours
Task 1 – Project Management	LS	$ 53,565	303
Task 2 – Data Acquisition	LS	$ 10,910	60
Task 3 – Tertiary Treatment, Facility Pre-Design	LS	$ 126,030	758
Task 5 – Final Design	LS	$ 483,003	3,264
Task 6 – Facility Plan	LS	$ 128,456	805
Task 7 – Other Engineering and Consulting Services	LS	$ 196,099	1,174
Total Base Tasks Cost		$ 998,063	

Optional Tasks	Type	Amount	Hours
Task 4 – File for Amended Operating Permit	LS	$ 133,652	761
Task 8 – Bid Support Services (Future Task to be added by amendment)	N/A	N/A	N/A
Task 9 – Construction Services (Future Task to be added by amendment)	N/A	N/A	N/A
Task 10 – Technical Support Services	TM	$ 56,586	N/A
Total Optional tasks		$ 190,238	

Total Cost	$ 1,188,301

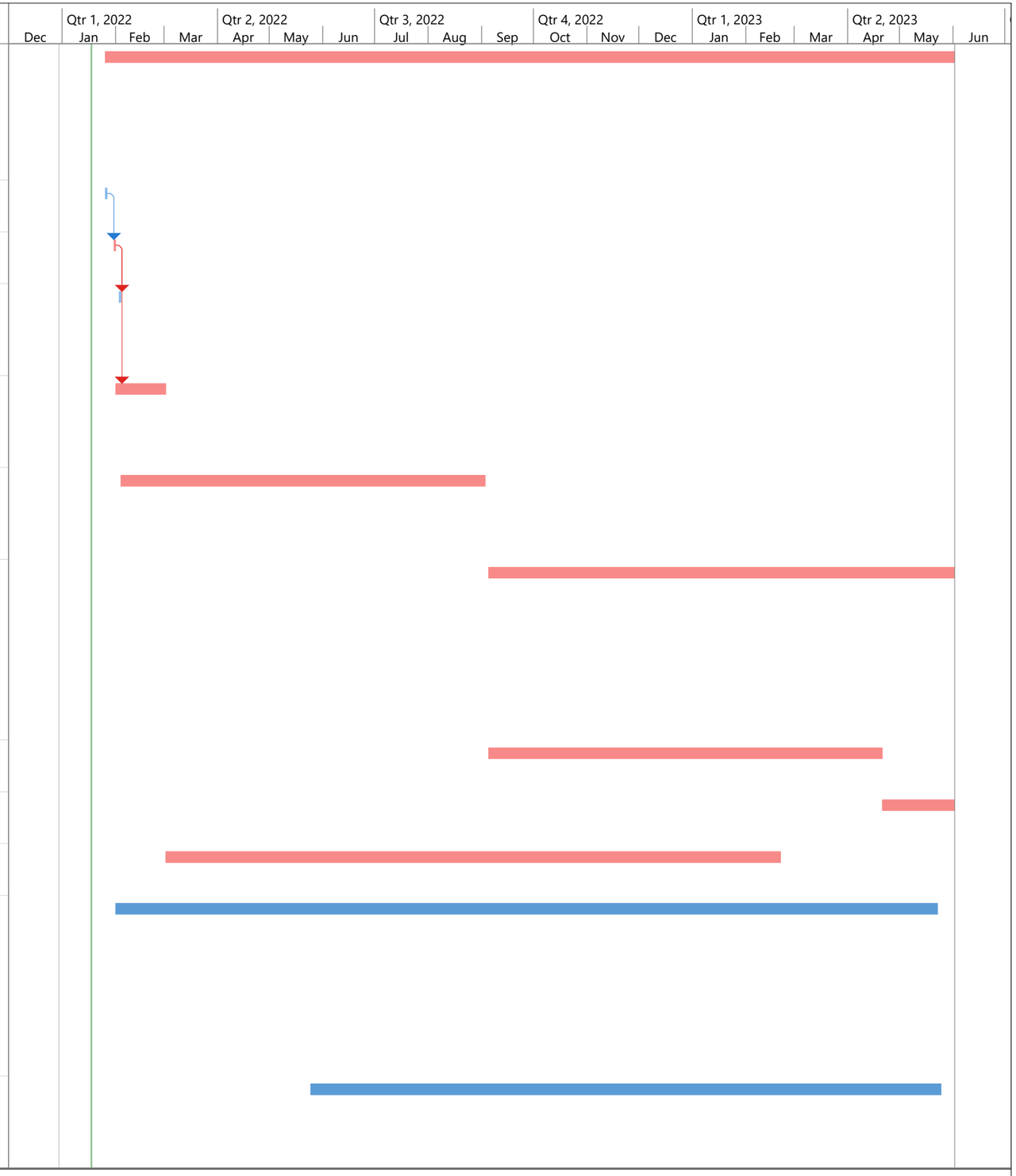
Calaveras County Water District
Copper Cove Wastewater Treatment Facility Tertiary Treatment Evaluation

Date: **1/19/2022**

		Keller Associates (KA)															
				Team Leads			Senior Engineer										
Task	**Description**	**PM/Principal in Charge**	**Deputy Project Manager**	**Lead Process Engineer**	**Lead Planning Engineer**	**Site Civil Lead**	**Structural Engineer**	**Electrical Engineer**	**Controls Engineer**	**Process Mechanical Engineer**	**Project Engineer**	**Staff Engineer**	**ACAD Tech.**	**Admin**	**Total Hours by Task**	**Additional Costs**	**Task Cost**
	Composite Rates	**$255**	**$185**	**$195**	**$190**	**$225**	**$195**	**$185**	**$210**	**$180**	**$150**	**$120**	**$135**	**$85**			
1	**Project Management**																
1.1	Project Management	21	42								42			21	126		$21,210
1.2	Kick-Off Meeting / Site Walk	4	8	8				8		8				4	40		$7,320
1.3	Project Progress Meetings	21	63	8	8			8	8					21	137		$25,035
	Task Total	46	113	16	8	0	0	16	8	8	42	0	0	46	**303**	**$0**	**$53,565**
2	**Data Acquisition**																
2.1	Request for Information	1	2	4	4	4	4	4	4						27		$5,425
2.2	Data Collection and Review	1	2	2	2	2	2	2	2	2	6	10			33		$5,485
	Task Total	2	4	6	6	6	6	6	6	2	6	10	0	0	**60**	**$0**	**$10,910**
3	**Tertiary Treatment, Facility Pre-Design**																
3.1	Site Survey	1	4			6					2		20		33	$32,172	$37,517
3.2	Site Drainage Evaluation	1	4		8	12					16	40	33	2	116		$17,040
3.3	Tertiary Treatment Bench Testing	1	2	8		2		2	2	4		6		2	29	$5,000	$10,035
3.4	Tertiary Treatment Technology Technical Memorandum	1	8	20		2	2	2	2	2	10	80	20	4	153		$21,765
3.5	Tertiary Treatment Workshop	1	2	2						2	2	4		2	15		$2,325
3.6	Pre-Design Report	2	8	16		3	8	8	4	36	20	60	81.5		246.5		$37,348
	Task Total	7	28	46	8	25	10	12	8	44	50	190	154.5	10	**592.5**	**$37,172**	**$126,030**
4	**File for Amended Operating Permit (OPTIONAL TASK)**																
4.1	Amended Operating Permit	1	8	4											13		$2,515
4.1.1	Pre-Application Meeting	1	2	2								2		2	9		$1,425
4.1.2	Review Meetings with Board Staff	1	8	4								4		4	21		$3,335
4.1.3	Permit Processing	1	8	4								4			17		$2,995
4.1.4	Preparation of ROWD/Form 200	1	4	1								4			10		$1,670
4.1.5	Coordination of Permit Requirements including MRP	2	4	1								4		4	15		$2,265
	Task Total	7	34	16	0	0	0	0	0	0	0	18	0	10	85	**$119,447**	**$133,652**
5	**Final Design**																
5.1	Final Design (elements included in deliverables below)														0		$0
5.2	50% Design and Workshop	4	20	40		16	8	10	20	20	75	50	388.5	8	659.5		$97,708
5.3	90% Design and Workshop	4	15	30		40	30	45	60	55	165	120	840	9	1413		$208,635
5.4	100% Design and Workshop	3	10	10		30	20	30	40	45	45	40	405	8	686		$104,170
5.5	Agency Submittals	2	6	1		1	1	1	1	2	40	20	109.5	8	192.5		$26,853
5.6	Final Approval (bid documents)	2	10	10		2	6	6	6	4	40	20	156	8	270		$39,160
5.7	Opinion of probable costs	0.5	1	1		2	2	2	1	1	20	10		2	42.5		$6,478
		15.5	62	92	0	91	67	94	128	127	385	260	1899	43	3263.5	**$0**	**$483,003**
6	**Facility Plan**																
6.1	Project Planning (included in subtasks)	4	12	24.5	8	1	0	0	0	7	17	18	0	10	101.5		$16,583
6.2	Existing Facilities Evaluation (included in subtasks)	2.75	7.5	19.5	10.5	2	2	6	6	7	14	24	0	5.75	107		$17,825
6.3	Treatment System Alternatives and Selection (inculded in subtasks)	2.75	13.5	25	22.5	17	7	9	8	14	52	88	0	5.75	264.5		$42,253
6.4	Proposed Projects (included in subtasks)	3.75	8	14	10	5	5	5	5	5	32	39	0	1.25	133		$21,628
6.5	Facility Plan Documentation (included in subtasks)	0.75	1.5	28	6.5	5.5	4.5	4.5	4.5	4.5	26	24	80	8.5	198.75		$30,169
	Task Total	14	42.5	111	57.5	30.5	18.5	24.5	23.5	37.5	141	193	80	31.25	804.75	**$0**	**$128,456**

7	**Other Engineering Consulting Services**																
7.1	Coordination with Wagnor and Bonsignore	1	20			6						60			87		$12,505
7.2	Conduct Initial Studies and Prepare CEQA Documents	5	20	4	0	2	0	0	0	0	0	4	0	2	37		$6,855
7.3	Obtain Permits from Fish and Wildlife and USACE	6	26	8											40		$7,900
															0		$0
															0	$168,839	$168,839
	Task Total	12	66	12	0	8	0	0	0	0	0	64	0	2	164	**$168,839**	**$196,099**
8	**Bid Support Services (Future Task)**																
															0		$0
	Task Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**$0**	**$0**
9	**Construction Services (Future Task)**																
															0	$0	$0
	Task Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**$0**	**$0**
10	**Technical Support Services (Optional Task)**																
															0	$56,586	$56,586
	Task Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**$56,586**	**$56,586**
	Total Base Tasks	97	316	283	80	161	102	153	174	219	624	717	2134	132	5188	$ 206,011.81	$ 998,063
	Total Optional Tasks	7	34	16	0	0	0	0	0	0	0	18	0	10	85	$ 119,447.41	$ 190,238
	Total	104	350	299	80	161	102	153	174	219	624	735	2134	142	5273	$382,045	**$1,188,301**

ID	Task Mode	Task Name	Start	Finish	Critical	Duration	Predecessors
1		**CCWWTF Tertiary Treatment and Storage Improvements**	**Wed 1/26/22**	**Thu 6/1/23**	**Yes**	**352 days**	
2		Contract to Board	Wed 1/26/22	Wed 1/26/22	No	1 day	
3		Notice to Proceed	Mon 1/31/22	Mon 1/31/22	Yes	1 day	2
4		Kickoff Meeting / Site Visit	Thu 2/3/22	Thu 2/3/22	No	1 day	3
5		**Data Collection and Review**	**Tue 2/1/22**	**Tue 3/1/22**	**Yes**	**21 days**	**3**
8		**Tertiary Treatment Pre-Design**	**Fri 2/4/22**	**Fri 9/2/22**	**Yes**	**151 days**	
20		**Design tertiary treatment faiclity, Relocate Existing Utilities**	**Mon 9/5/22**	**Thu 6/1/23**	**Yes**	**194 days**	
21		**100% Design**	**Mon 9/5/22**	**Thu 4/20/23**	**Yes**	**164 days**	
27		**Bid Documents**	**Fri 4/21/23**	**Thu 6/1/23**	**Yes**	**30 days**	
33		**Facility Plan**	**Wed 3/2/22**	**Mon 2/20/23**	**Yes**	**254 days**	
43		**Conduct Initial Studies and Prepare California Environmental Quality Act (CEQA) Documents**	**Tue 2/1/22**	**Mon 5/22/23**	**No**	**340 days**	
55		**Obtain Permits from Fish and Wildlife and USACE**	**Wed 5/25/22**	**Wed 5/24/23**	**No**	**261 days**	



Agenda Item

DATE: January 26, 2022

TO: Board of Directors

FROM: Brad Arnold, Water Resources Program Manager

SUBJECT: Discussion/Direction regarding Redistricting Following the 2020 Census

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RECOMMENDED ACTIONS:

Receive and discuss information regarding Division redistricting effort.

SUMMARY:

On August 12, 2021, the U.S. Census Bureau released the results of the 2020 Census (Census), providing updated Calaveras County (County) population figures among other statistics. Release of these data triggers an obligation for Calaveras County Water District (CCWD), as a California Special District represented by publicly elected officials (Directors), to revise its voter representation areas, known as Divisions, to best reflect the latest County Census data. This process, known as "redistricting" is required with each decennial census update, pursuant to California Election Code §22000. Based on the guiding regulations, CCWD's redistricting process must do the following:

(1) Be adopted through a resolution approved by a majority of the Directors;

(2) Use the federal decennial Census as a basis;

(3) Adjust the boundaries of any Divisions so that the Divisions are, as far as practicable:

  (a) Equal in population; and

  (b) In compliance with §10301 of Title 52 of the United States Code, as amended, to the extent those provisions apply.

In determining new or amended Division boundaries, CCWD may consider the following factors: (1) topography, (2) geography, (3) cohesiveness, contiguity, integrity, and compactness of territory, and (4) community of interests of the Division.

Prior to adoption of the new or amended Division boundaries, CCWD must hold at least one public hearing to discuss the proposed changes.

Any changes in the Division boundaries will not impact any current Director's term of office. Each CCWD Director will remain in office representing their elected (former) Division until their term expires, even if that Director no longer resides in the boundaries of the new or amended Division.

Timing of Redistricting

Pursuant to the California Election Code, “no change in division boundaries may be made within 180 days preceding the election of any director.” The next election for any of the Directors for CCWD is November 2022, therefore any redistricting changes would need to be adopted by April 17, 2022.

Redistricting Proposal

A map of the current Divisions adopted by the CCWD Directors on March 12, 2003 per Resolution 2003-15 are shown in Attachment A. Divisions have historically been divided to reflect CCWD’s water and wastewater customer service areas, located in separate portions of the County, as well as the County’s population centers (Arnold/Highway 4 Corridor, Angels Camp, San Andreas, Valley Springs, etc.). Since the prior 2010 Census, County population has decreased by approximately 286 people (to 45,292 in total), indicating minimal change, however, there have been considerable shifts in customer base usage, CCWD’s service capability and extent, and to water supply characteristics in the County’s major watersheds. As such, revisions to the currently approved Divisions are proposed for this latest redistricting effort.

Calaveras County Results

The County Board of Supervisors recently completed a similar redistricting effort aimed at equalizing populations among five representative divisions. The results of their efforts are presented in Attachment B, as adopted by the County on December 7, 2021. Comparison with CCWD proposals is provided for information purposes, as this separate effort did not attempt to optimize CCWD customer bases, County water resources, or other factors relevant to CCWD.

CCWD Development Process

Calaveras County Government provides Census “Population Block” data which divides the County into units based on Census tract data, communities of interest, among other factors. These data were overlaid with CCWD customer parcel-level data, using Geographic Information System (GIS) tools, forming around 2,400 new units which detail population and CCWD customer figures (Customer-Population Units, or CP Units). CCWD staff developed a Python programming tool to automatically assign CP Units to five new Divisions based on maximization of a Customer/Population Ratio, constrained by contiguous boundary assignment (i.e., selected CP Units must border one another when selected to be part of the same Division). This assignment of CP Units to each Division ensured an unbiased creation of the CCWD Divisions, while providing a foundation for further review using GIS mapping tools.

CCWD staff performed manual adjustment of Division-assigned CP Units along borders to ensure community continuity and to better reflect County geographic details (e.g., terrain and watershed boundaries). CCWD’s water and wastewater service areas do not have equal numbers of customers, and are in different portions of the County, as such, population and customer data are not equal but ultimately were divided between each Division to the most practical extent. A map of the proposed Divisions is provided in Attachment C, and comparison statistics are provided in Attachment D.

Key Proposal Changes

Key changes between the current Divisions and the proposal are as follows:

- Division 1 to include portions of Jenny Lind and Rancho Calaveras communities, located north and west of the Calaveras River, recognizing areas of potential growth and continuity in CCWD's Jenny Lind and Wallace Service Areas.
- Division 2 to include Mokelumne Hill, Paloma, and other areas in northeastern portion of County corresponding with the Mokelumne River Watershed and including CCWD's West Point and Sheep Ranch Service Areas.
- Division 3 to retain areas along Highway 4 Corridor in northeastern portion of County corresponding with the Stanislaus River Watershed and CCWD's Ebbetts Pass Service Area.
- Division 4 largely unchanged and retains communities of Angels Camp and Copperopolis/Copper Cove (CCWD's Copper Cove Service Area), and portions of Salt Springs Valley.
- Division 5 to include New Hogan Reservoir, Valley Springs, and areas surrounding San Andreas, including portions of CCWD's Jenny Lind Service Area and Calaveras River Watershed sources.

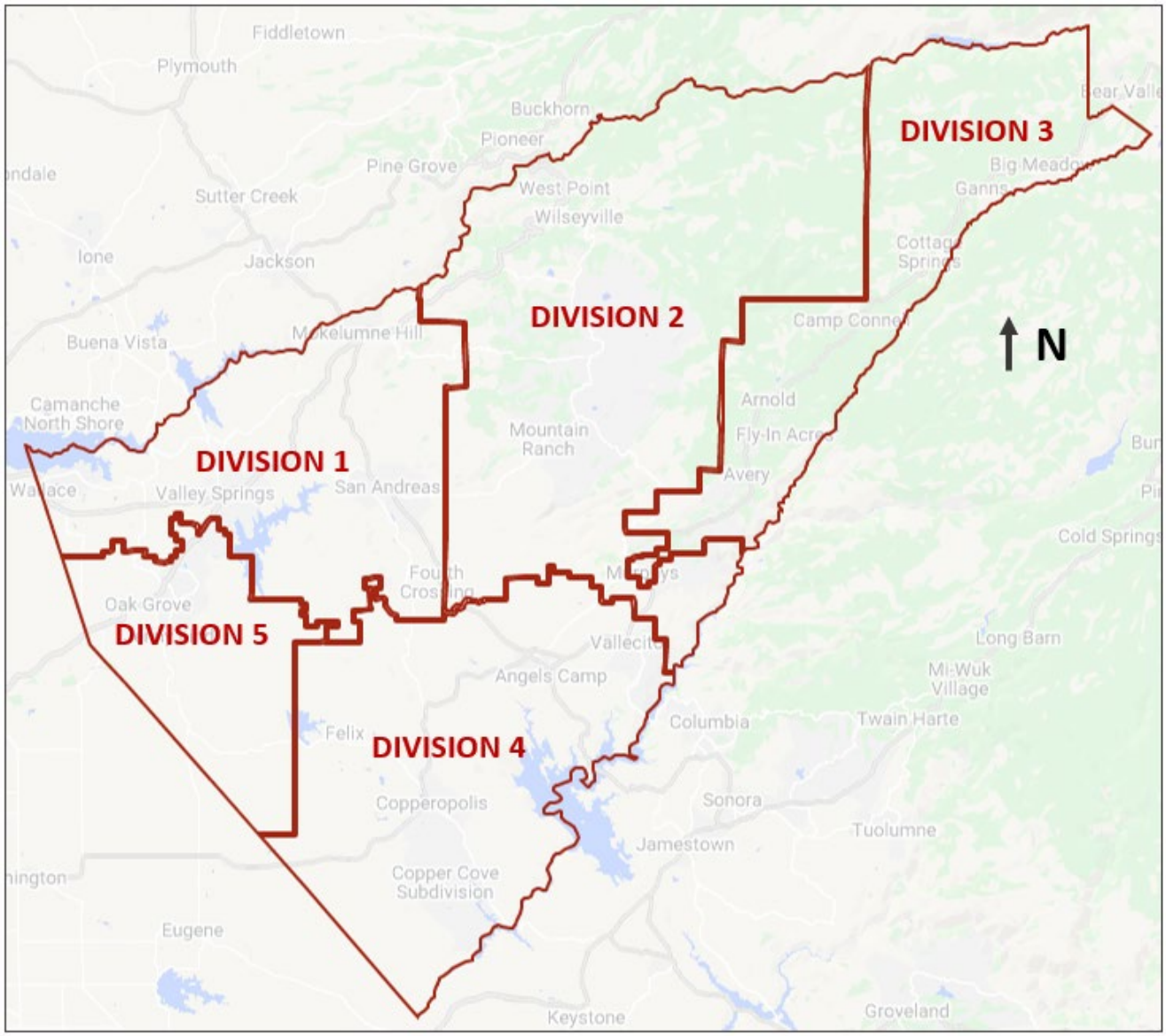
FINANCIAL CONSIDERATIONS

None

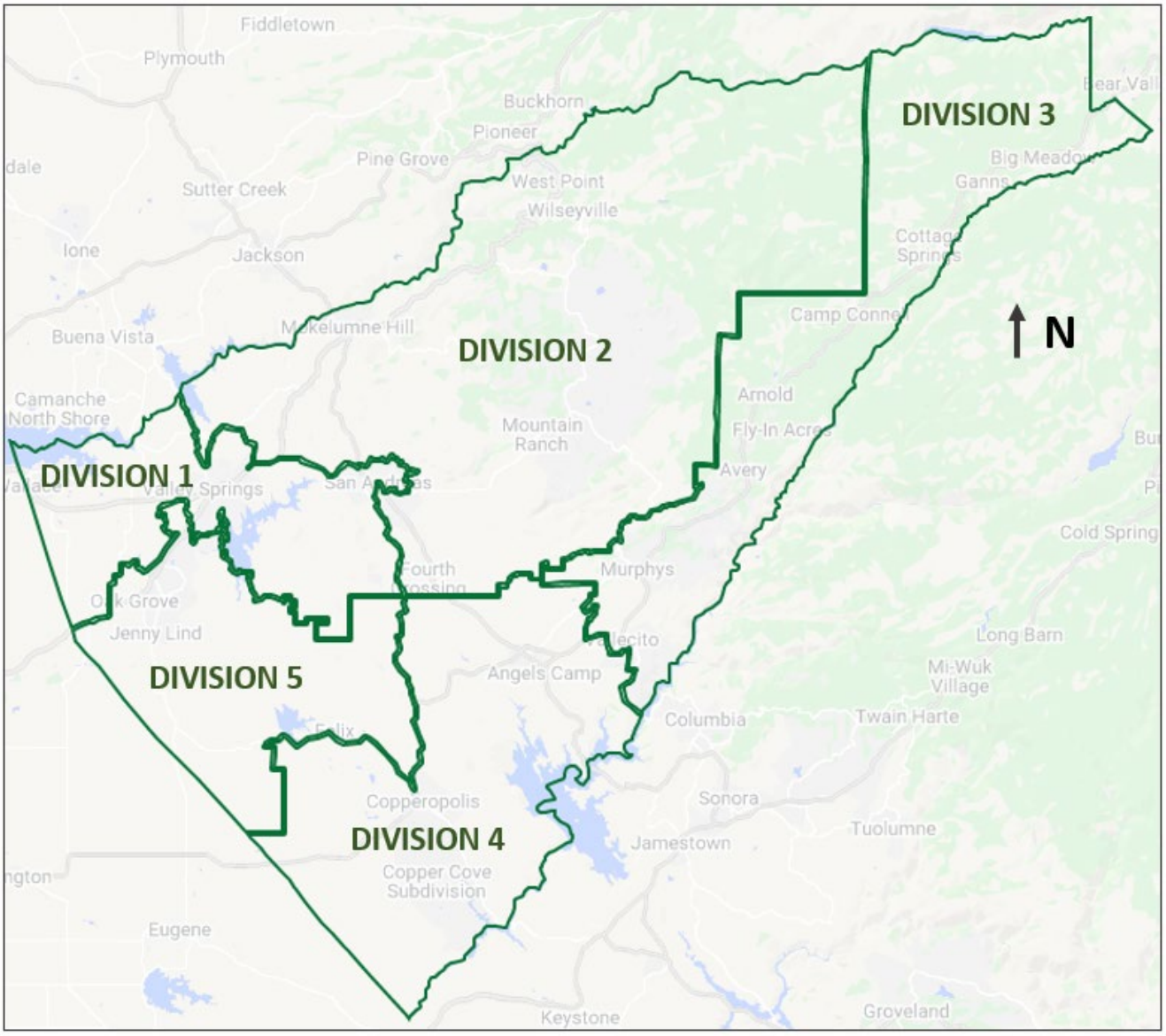
ATTACHMENTS

A. Current CCWD Divisions Map
B. Calaveras County Adopted Divisions Map
C. Proposed CCWD Divisions Map (with Details)
D. CCWD Division Statistics

ATTACHMENT A
CURRENT CCWD DIVISIONS

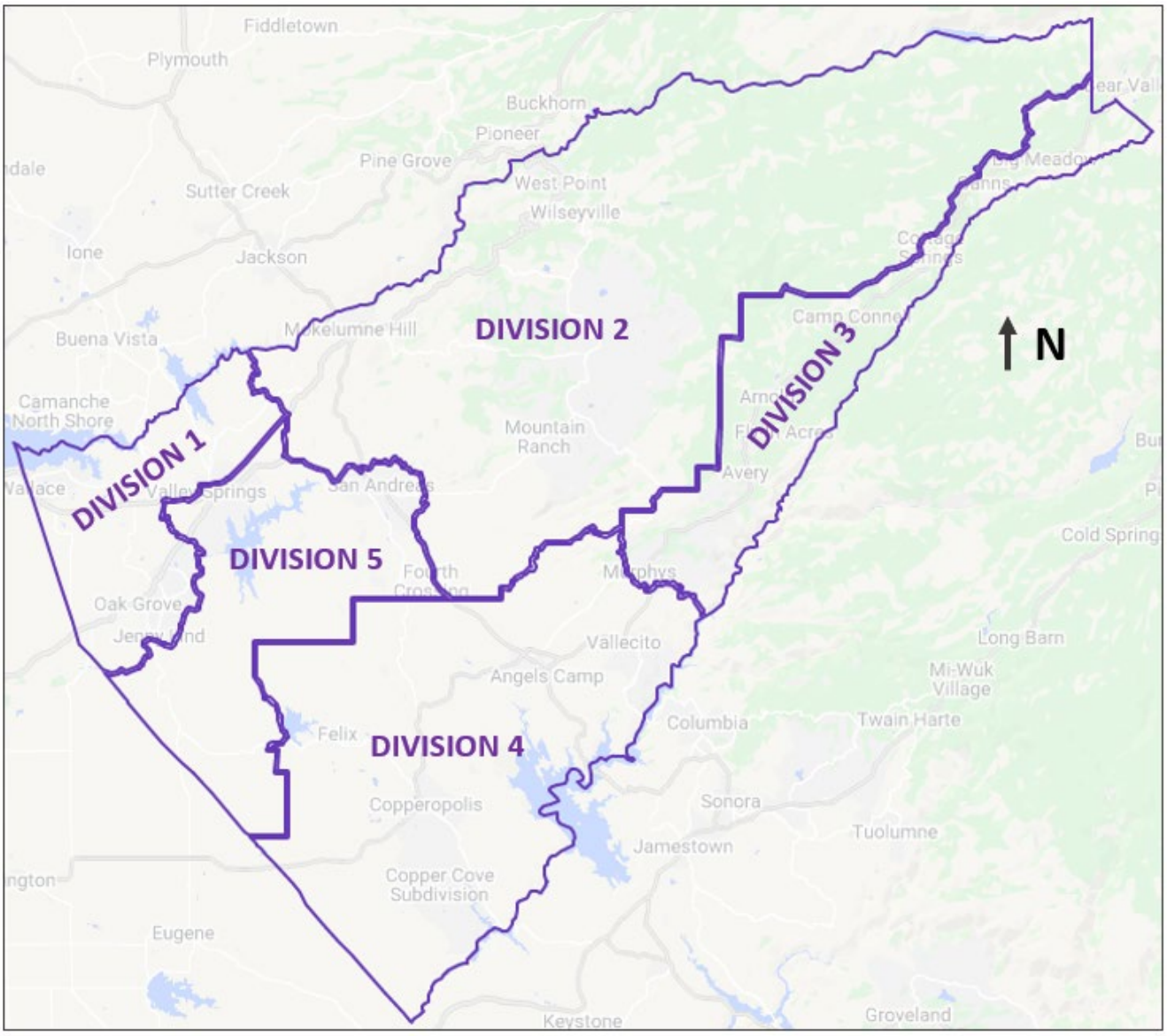


ATTACHMENT B
CALAVERAS COUNTY ADOPTED DIVISIONS



Adopted by Calaveras County Board of Supervisors on December 7, 2021.

ATTACHMENT C
PROPOSED CCWD DIVISIONS



ATTACHMENT D
CCWD DIVISION STATISTICS

Table 1. Division Land Area

Division	Original CCWD		CalCo Adopted		Proposed	
	Acres	%Total	Acres	%Total	Acres	%Total
1	120,205	18%	70,261	11%	55,403	9%
2	219,924	33%	260,320	39%	284,390	43%
3	110,047	17%	131,372	20%	73,771	11%
4	151,179	23%	124,164	19%	167,660	25%
5	62,278	9%	77,517	12%	82,409	12%

Table 2. Division Population Base

Division	Original CCWD		CalCo Adopted		Proposed	
	People[1]	%Total	People[1]	%Total	People[1]	%Total
1	9,957	22%	8,840	20%	10,700	24%
2	6,972	15%	8,759	19%	7,341	16%
3	7,337	16%	9,556	21%	7,954	18%
4	10,655	24%	9,395	21%	11,437	25%
5	10,371	23%	8,742	19%	7,860	17%

[1] Based on 2020 Census data.

Table 3. Division Customer Base

Division	Original CCWD		CalCo Adopted		Proposed	
	Cust.	%Total	Cust.	%Total	Cust.	%Total
1	511	4%	1,165	9%	2,506	18%
2	714	5%	602	4%	602	4%
3	5,905	44%	6,249	46%	5,907	44%
4	2,922	22%	2,690	20%	3,032	22%
5	3,504	26%	2,850	21%	1,509	11%

Table 4. Division Percent Key Watershed/Basin Features

Div.	Original CCWD (%Total Area)			
	MokeRiv	CalavRiv	StanRiv	GWBasin
1	20%	30%		52%
2	55%	36%	8%	
3	25%	7%	21%	
4		11%	62%	
5		16%	9%	48%

Div.	CalCo Adopted			
	MokeRiv	CalavRiv	StanRiv	GWBasin
1	13%	17%		63%
2	62%	51%		2%
3	25%	8%	32%	
4		7%	53%	
5		17%	15%	35%

Div.	Proposed (%Total Area)			
	MokeRiv	CalavRiv	StanRiv	GWBasin
1	15%	9%		23%
2	82%	46%		
3	3%	8%	25%	
4		20%	13%	
5		17%	62%	77%