COASTSIDE COUNTY WATER DISTRICT

766 MAIN STREET

HALF MOON BAY, CA 94019

REGULAR MEETING OF THE BOARD OF DIRECTORS

Tuesday, September 10, 2024 - 7:00 p.m.

AGENDA

The Public may attend this meeting in person at the District Office located at 766 Main Street, Half Moon Bay or choose to watch and/or participate in the public meeting by joining the meeting through the Zoom Videoconference link provided below. The public may also join the meeting by calling the below listed teleconference phone number.

The meeting will begin at 7:00 p.m.

Join Zoom Meeting
https://us06web.zoom.us/j/81277240724?pwd=XJ7TeJrfranJhOfbPSvqFqeIky9RPI.1

Meeting ID: 812 7724 0724
Passcode: 513540
One tap mobile
+16699006833,,81277240724#,,,,*513540# US (San Jose)

Dial by your location
• +1 669 900 6833 US (San Jose)

Meeting ID: 812 7724 0724
Passcode: 513540
Find your local number: https://us06web.zoom.us/u/kb6E8hiiR

Procedures to make a public comment with Zoom Video/Conference – All participants except the Board Members and Staff are muted on entry and video is disabled. Participants may not unmute themselves unless asked to unmute by the Moderator.

- ***From a computer:*** *(1) Using the Zoom App. at the bottom of your screen, click on "Participants" and then "Raise Hand". Participants will be called to comment in the order in which they are received.*
- ***From a phone:*** *Using your keypad, dial *9, and this will notify the Moderator that you have raised your hand. The Moderator will call on you by stating the last 4 digits of your phone number.*

The Coastside County Water District (CCWD) does not discriminate against persons with disabilities. Upon request, the agenda and agenda packet materials can be provided in a format to accommodate special needs. If you require a copy of the agenda or related materials in an alternative format to accommodate a disability, or if you wish to attend this public meeting and will require special assistance or other special equipment, please call the District at (650) 726-4405 in advance and we will make every reasonable attempt to provide such an accommodation.

All public records relating to an open session item on this agenda, which are not exempt from disclosure pursuant to the California Public Records Act, that are distributed to a majority of the legislative body will be available for public inspection at the CCWD District Office, located at 766 Main Street, Half Moon Bay, CA at the same time that the public records are distributed or made available to the legislative body.

This agenda and accompanying materials can be viewed on Coastside County Water District's website located at: www.coastsidewater.org.

The Board of the Coastside County Water District reserves the right to take action on any item included on this agenda.

1) ROLL CALL

2) PLEDGE OF ALLEGIANCE

3) PUBLIC COMMENT

At this time members of the public may address the Board of Directors on issues not listed on the agenda which are within the purview of the Coastside County Water District. Comments on matters that are listed on the agenda may be made at the time the Board is considering each item. Each speaker is allowed a maximum of three (3) minutes. Members of the public attending in-person must complete and submit a speaker slip. Members of the public attending via Zoom must first "raise hand" and the Moderator will "ask to unmute". The President of the Board will recognize each speaker, at which time the speaker can provide their comments to the Board.

4) CONSENT CALENDAR

The following matters before the Board of Directors are recommended for action as stated by the General Manager. All matters listed hereunder constitute a Consent Calendar, are considered as routine by the Board of Directors, and will be acted upon by a single vote of the Board. There will be no separate discussion of these items unless a member of the Board so requests, in which event the matter shall be removed from the Consent Calendar and considered as a separate item.

A. Approval of disbursements for the month ending August 31, 2024:
Claims: $ 1,307,329.75; Payroll: $ 332,081.52 for a total of $ 1,639,411.21 (attachment)
August 2024 Monthly Financial Claims reviewed and approved by Director Muller

B. Acceptance of Financial Reports (attachment)

C. Approval of Minutes of August 13, 2024, Regular Board of Directors Meeting (attachment)

D. Approval of Minutes of August 21, 2024, Special Board of Directors Meeting (attachment)
E. Installed Water Connection Capacity and Water Meters Report (attachment)
F. Total CCWD Production Report (attachment)
G. CCWD Monthly Sales by Category Report – August 2024 (attachment)
H. Leak/Flushing Report – August 2024 (attachment)
I. Monthly Rainfall Reports (attachment)

5) MEETINGS ATTENDED / DIRECTOR COMMENTS

6) GENERAL BUSINESS

A. Authorize the General Manager to Enter Into an Agreement with Freyer & Laureta, Inc. for Construction Management Services for the Carter Hill Prestressed Concrete Tank and Seismic Upgrades Project (attachment)
B. Award of Contract to GSW Construction, Inc. for the Nunes Water Treatment Plant Hypochlorite Room Improvements Project (attachment)
C. Authorize the General Manager to Enter Into Agreements for the Denniston Water Treatment Plant Contact Clarifier Hatch Replacement and Tanks Coating Project Including: 1) Waive the District's Procedural Requirements for Sealed Competitive Bids and Authorize Award of Contract to Lefevre Welding Inc. for the Contact Clarifier Hatch Replacements; 2) Authorize Award of Contract to Euro Style Management, Inc. for Coating of the Contact Clarifiers and Other Tanks; and 3) Authorize Entering Into a Professional Services Agreement with Freyer & Laureta, Inc. for Engineering Services During Construction. (attachment)
D. Waive the District's Procedural Requirements for Sealed Competitive Bids and Authorize the General Manager to Award a Contract to Pump Repair Service Company for Cleaning and Rehabilitating Pilarcitos Canyon Wells (attachment)
E. Approval of Professional Services Agreement with Balance Hydrologics, Inc. for Denniston/San Vicente Stream Gaging, Groundwater Monitoring, and Data Collection (attachment)
F. Receive the "Recycled Water Feasibility Study" Prepared by Waterworks Engineers, LLC. (attachment)
G. Authorize the General Manager to Enter into an Agreement with D.A. Davidson & Co. for Underwriting Services related to the Financing of the District's Carter Hill Prestressed Concrete Tank and Seismic Upgrades Project (attachment)

7) MONTHLY INFORMATIONAL REPORTS

A. General Manager's Report (attachment)
B. Operations Report (attachment)

8) DIRECTOR AGENDA ITEMS – REQUESTS FOR FUTURE BOARD MEETINGS

9) CLOSED SESSION

A) Conference with Legal Counsel – Existing Litigation
Pursuant to California Government Code Section 54956.9(d)(1)
Name of Case: Coastside County Water District v. Mary Alice Cozzolino, Trustee of the James and Alice Cozzolino Trust, et al., Case No. 24-civ-05456.

B) Conference with Legal Counsel – Existing Litigation
Pursuant to California Government Code Section 54956.9(d)(1)
Name of Case: Coastside County Water District v. James Salvatore Cozzolino, a Married Man as His Sole and Separate Property, and Linda Jean Cozzolino, a Single Woman, as Tenants in Common, et al., Case No.24-civ-05502.

10) RECONVENE TO OPEN SESSION

Public Report of closed session action.

11) ADJOURNMENT

COASTSIDE COUNTY WATER DISTRICT
CLAIMS FOR AUGUST 2024

CHECKS				
CHECK DATE	**CHECK NO.**	**VENDOR**		**AMOUNT**
08/08/2024	34039	ADP, INC.	$	801.00
08/08/2024	34040	ANDREINI BROS. INC.	$	1,960.00
08/08/2024	34041	HEALTH BENEFITS ACWA-JPIA	$	44,783.27
08/08/2024	34042	ACWA/JPIA	$	61,490.73
08/08/2024	34043	BALANCE HYDROLOGICS, INC	$	14,351.12
08/08/2024	34044	BAY ALARM COMPANY	$	3,204.36
08/08/2024	34045	BSK ASSOCIATES	$	1,132.00
08/08/2024	34046	CALIFORNIA C.A.D. SOLUTIONS, INC	$	700.00
08/08/2024	34047	BRANDON WRIGHT	$	3,550.00
08/08/2024	34048	CHEMTRADE CHEMICALS US LLC	$	3,638.11
08/08/2024	34049	EMSL ANALYTICAL, INC	$	726.00
08/08/2024	34050	HARO, KASUNICH & ASSOCIATES, INC	$	158.85
08/08/2024	34051	HASSETT HARDWARE	$	2,529.90
08/08/2024	34052	HDR ENGINEERING, INC	$	19,634.21
08/08/2024	34053	HUE & CRY, INC.	$	12.00
08/08/2024	34054	IRVINE CONSULTING SERVICES, INC.	$	5,737.50
08/08/2024	34055	TERRY S LARSON	$	15,000.00
08/08/2024	34056	MONTEREY BAY ANALYTICAL SERVICES, INC.	$	852.00
08/08/2024	34057	PACIFIC GAS & ELECTRIC CO.	$	60,267.22 - VOID
08/08/2024	34058	REPUBLIC SERVICES	$	636.37
08/08/2024	34059	SCAPES, INC	$	380.00
08/08/2024	34060	TYLER TECHNOLOGIES, INC	$	105.00
08/08/2024	34061	UPS STORE	$	174.41
08/08/2024	34062	HD SUPPLY INC	$	974.40
08/08/2024	34063	WATER RESOURCES ECONOMICS	$	2,500.00
08/08/2024	34064	CALIFORNIA C.A.D. SOLUTIONS, INC	$	750.00
08/08/2024	34065	EMSL ANALYTICAL, INC	$	40.44
08/08/2024	34066	ON COMPUTER SERVICES, LLC	$	18,856.94
08/08/2024	34067	PACIFIC GAS & ELECTRIC CO.	$	93.76
08/08/2024	34068	PACIFIC GAS & ELECTRIC CO.	$	60,173.46
08/08/2024	34069	JAMSHID GHAFOURPOUR	$	8,059.59
08/08/2024	34070	LOGAN FRAHM	$	14.66
08/08/2024	34071	JENNIFER ELISE BENELLI	$	48.08
08/15/2024	34072	AMAZON CAPITAL SERVICES, INC.	$	470.26
08/15/2024	34073	AT&T MOBILTY	$	126.72
08/15/2024	34074	BAY ALARM COMPANY	$	4,250.00
08/15/2024	34075	CALCON SYSTEMS, INC.	$	18,720.00
08/15/2024	34076	COMCAST	$	213.01
08/15/2024	34077	JAMES COZZOLINO, TRUSTEE	$	275.00
08/15/2024	34078	DE LAGE LANDEN FINANCIAL SERVICES, INC.	$	1,108.98
08/15/2024	34079	GEO BLUE CONSULTING, INC.	$	7,585.39
08/15/2024	34080	GRAINGER, INC.	$	474.12
08/15/2024	34081	HACH CO., INC.	$	4,299.55
08/15/2024	34082	HDR ENGINEERING, INC	$	3,671.46
08/15/2024	34083	MISSION UNIFORM SERVICES INC.	$	204.50
08/15/2024	34084	MONTEREY BAY ANALYTICAL SERVICES, INC.	$	1,024.45
08/15/2024	34085	JOHN MULLER	$	80.00
08/15/2024	34086	SAN MATEO CTY PUBLIC HEALTH LAB	$	990.00
08/15/2024	34087	SM CTY ENVIRONMENTAL HEALTH	$	2,510.00
08/15/2024	34088	STATE WATER RESOURCES CONTROL BD	$	90.00
08/15/2024	34089	TEAMSTERS LOCAL UNION #856	$	1,757.00
08/15/2024	34090	TPX COMMUNICATIONS	$	2,070.02
08/15/2024	34091	TRI COUNTIES BANK	$	4,215.87

08/15/2024	34092	UGSI CHEMICAL FEED, INC.	$	3,684.89
08/15/2024	34093	UNDERWOOD & ROSENBLUM INC	$	4,480.00
08/15/2024	34094	HD SUPPLY INC	$	16.99
08/15/2024	34095	RAYMOND WINCH	$	227.72
08/21/2024	34096	AMAZON CAPITAL SERVICES, INC.	$	68.06
08/21/2024	34097	BADGER METER, INC.	$	3,745.16
08/21/2024	34098	FIRST FOUNDATION PUBLIC FINANCE	$	348,540.88
08/21/2024	34099	JESSE MACK COMPANY INC.	$	123.58
08/21/2024	34100	MONTEREY BAY ANALYTICAL SERVICES, INC.	$	1,340.00
08/21/2024	34101	SAN FRANCISCO WATER DEPT.	$	321,108.28
08/21/2024	34102	UNDERGROUND REPUBLIC WATER WORKS, INC.	$	277.63
08/21/2024	34103	HD SUPPLY INC	$	195.76
08/21/2024	34104	ELDORADO FORKLIFT COMPANY	$	1,950.00
08/21/2024	34105	SEAN & KATHLEEN FREITAS	$	1,239.22
08/21/2024	34106	PUMP REPAIR SERVICE CO. INC.	$	4,947.66
08/21/2024	34107	SIMMS PLUMBING & WATER EQUIP, INC.	$	808.47
08/21/2024	34108	HD SUPPLY INC	$	709.39
08/23/2024	34109	ANDREINI BROS. INC.	$	157.50
08/23/2024	34110	AT&T	$	601.48
08/23/2024	34111	AT&T	$	608.51
08/23/2024	34112	BADGER METER, INC.	$	4,932.40
08/23/2024	34113	BAY ALARM COMPANY	$	1,768.47
08/23/2024	34114	CALCON SYSTEMS, INC.	$	328.13
08/23/2024	34115	CINTAS FIRST AID & SAFETY	$	365.26
08/23/2024	34116	C.J. BROWN & COMPANY, CPAS	$	6,272.00
08/23/2024	34117	DATAPROSE, LLC	$	8,452.97
08/23/2024	34118	EMSL ANALYTICAL, INC	$	32.03
08/23/2024	34119	FREYER & LAURETA, INC.	$	9,700.00
08/23/2024	34120	GRAINGER, INC.	$	190.01
08/23/2024	34121	HMB BLDG. & GARDEN INC.	$	248.28
08/23/2024	34122	HANSONBRIDGETT. LLP	$	19,971.50
08/23/2024	34123	IRVINE CONSULTING SERVICES, INC.	$	4,786.83
08/23/2024	34124	DUSTIN JAHNS	$	200.00
08/23/2024	34125	CHRISTOPHER JONES	$	55.50
08/23/2024	34126	MISSION UNIFORM SERVICES INC.	$	72.56
08/23/2024	34127	PACIFICA COMMUNITY TV	$	300.00
08/23/2024	34128	PASTORINO, HENRY R TRUST	$	250.00
08/23/2024	34129	PITNEY BOWES GLOBAL FINANCIAL SERVICES LLC	$	750.11
08/23/2024	34130	REDWOOD TRADING POST	$	14,013.40
08/23/2024	34131	TODD SCHMIDT	$	58.00
08/23/2024	34132	THERESA ROSE SCHMIEDER, TRUSTEE AND MARILYN CANADAS, TRUSTEE	$	250.00
08/23/2024	34133	UPS STORE	$	150.92
08/23/2024	34134	JUAN CARLOS SALAZAR	$	2,970.00
08/29/2024	34135	CARSON ANDERSON	$	219.83
08/29/2024	34136	EKI INC.	$	34,697.78
08/29/2024	34137	GRAINGER, INC.	$	103.86
08/29/2024	34138	HMB BLDG. & GARDEN INC.	$	301.86
08/29/2024	34139	GLENNA LOMBARDI	$	86.00
08/29/2024	34140	UBEO WEST, LLC	$	1,013.91
08/29/2024	34141	MULTI SERVICE TECHNOLOGY SOLUTIONS, INC.	$	478.93
08/29/2024	34142	ULINE, INC	$	220.07
08/29/2024	34143	UNDERGROUND REPUBLIC WATER WORKS, INC.	$	2,633.32
08/29/2024	34144	VERIZON WIRELESS	$	2,132.28
08/29/2024	34145	US BANK NA	$	1,026.91
08/29/2024	34146	WESTERN STATES TOOL & SUPPLY CORPORATION	$	654.03
08/30/2024	34147	PETTY CASH	$	92.39
08/30/2024	34148	COMCAST	$	213.01
08/30/2024	34149	HDR ENGINEERING, INC	$	29,692.93

08/30/2024	34150	IRVINE CONSULTING SERVICES, INC.		$	1,379.94
08/30/2024	34151	PROJECT ENERGY SAVERS LLC		$	1,598.55
08/30/2024	34152	SMDJ LLC		$	1,192.50
08/30/2024	34153	RYAN H. STOLL		$	170.61
08/30/2024	34154	JAMES TETER		$	480.00
08/30/2024	34155	THE ADAM-HILL COMPANY		$	372.48
			SUBTOTAL CLAIMS FOR MONTH	$	1,237,182.45

		WIRE PAYMENTS			
08/07/2024	DFT0000558	EMPOWER RETIREMENT, LLC		$	2,643.96
08/07/2024	DFT0000559	PUB. EMP. RETIRE SYSTEM		$	20,343.14
08/07/2024	DFT0000560	VALIC		$	4,908.48
08/23/2024	DFT0000561	EMPOWER RETIREMENT, LLC		$	2,643.96
08/23/2024	DFT0000562	PUB. EMP. RETIRE SYSTEM		$	19,814.57
08/23/2024	DFT0000563	CALPERS		$	1,050.00
08/23/2024	DFT0000564	VALIC		$	4,908.48
08/30/2024	DFT0000565	EMPOWER RETIREMENT, LLC		$	2,643.96
08/30/2024	DFT0000566	VALIC		$	5,008.48
8/31/2024		BANK AND CREDIT CARD FEES		$	6,182.27
			SUBTOTAL WIRE PAYMENTS FOR MONTH	$	70,147.30

TOTAL CLAIMS FOR THE MONTH	**$**	**1,307,329.75**

Coastside County Water District

Monthly Budget Report

Account Summary

For Fiscal: 2024-2025 Period Ending: 08/31/2024

		August Budget	August Activity	Variance Favorable (Unfavorable)	Percent Variance	YTD Budget	YTD Activity	Variance Favorable (Unfavorable)	Percent Variance	Total Budget
Revenue										
RevType: 1 - Operating										
1-4120-00	Water Revenue	1,406,000.00	1,300,029.08	-105,970.92	-7.54%	2,755,000.00	2,630,183.34	-124,816.66	-4.53%	13,684,409.00
	Total RevType: 1 - Operating:	**1,406,000.00**	**1,300,029.08**	**-105,970.92**	**-7.54%**	**2,755,000.00**	**2,630,183.34**	**-124,816.66**	**-4.53%**	**13,684,409.00**
RevType: 2 - Non-Operating										
1-4170-00	Water Taken From Hydrants	6,000.00	11,095.67	5,095.67	84.93%	12,000.00	20,065.84	8,065.84	67.22%	52,000.00
1-4180-00	Late Notice - 10% Penalty	8,400.00	8,367.35	-32.65	-0.39%	16,800.00	18,494.69	1,694.69	10.09%	100,000.00
1-4230-00	Service Connections	1,300.00	421.19	-878.81	-67.60%	2,600.00	1,990.92	-609.08	-23.43%	15,000.00
1-4920-00	Interest Earned	33,000.00	44,525.80	11,525.80	34.93%	69,000.00	84,535.16	15,535.16	22.51%	300,000.00
1-4930-00	Tax Apportionments/County Checks	0.00	122.30	122.30	0.00%	0.00	122.30	122.30	0.00%	1,092,000.00
1-4950-00	Miscellaneous Income	400.00	0.00	-400.00	-100.00%	800.00	0.00	-800.00	-100.00%	5,000.00
1-4955-00	Cell Site Lease Income	16,900.00	18,992.98	2,092.98	12.38%	33,800.00	37,900.43	4,100.43	12.13%	203,000.00
1-4965-00	ERAF Refund - County Taxes	291,000.00	340,700.20	49,700.20	17.08%	291,000.00	340,700.20	49,700.20	17.08%	600,000.00
	Total RevType: 2 - Non-Operating:	**357,000.00**	**424,225.49**	**67,225.49**	**18.83%**	**426,000.00**	**503,809.54**	**77,809.54**	**18.27%**	**2,367,000.00**
	Total Revenue:	**1,763,000.00**	**1,724,254.57**	**-38,745.43**	**-2.20%**	**3,181,000.00**	**3,133,992.88**	**-47,007.12**	**-1.48%**	**16,051,409.00**
Expense										
ExpType: 1 - Operating										
1-5130-00	Water Purchased	369,231.00	248,355.28	120,875.72	32.74%	682,462.00	605,803.20	76,658.80	11.23%	2,587,024.00
1-5230-00	Nunes T P Pump Expense	5,000.00	5,539.94	-539.94	-10.80%	10,000.00	11,264.15	-1,264.15	-12.64%	65,550.00
1-5231-00	CSP Pump Station Pump Expense	70,000.00	63,218.03	6,781.97	9.69%	130,000.00	107,559.52	22,440.48	17.26%	500,000.00
1-5232-00	Other Trans. & Dist Pump Expense	2,500.00	2,796.47	-296.47	-11.86%	5,000.00	6,063.32	-1,063.32	-21.27%	31,050.00
1-5233-00	Pilarcitos Canyon Pump Expense	2,200.00	1,845.88	354.12	16.10%	3,700.00	3,379.67	320.33	8.66%	79,350.00
1-5234-00	Denniston T P Pump Expense	21,000.00	13,740.53	7,259.47	34.57%	31,000.00	25,221.95	5,778.05	18.64%	102,350.00
1-5242-00	CSP Pump Station Operations	1,200.00	948.29	251.71	20.98%	2,200.00	1,421.95	778.05	35.37%	13,000.00
1-5243-00	CSP Pump Station Maintenance	4,000.00	3,045.50	954.50	23.86%	8,000.00	6,877.10	1,122.90	14.04%	45,000.00
1-5246-00	Nunes T P Operations - General	9,000.00	6,905.39	2,094.61	23.27%	18,000.00	13,543.50	4,456.50	24.76%	109,000.00
1-5247-00	Nunes T P Maintenance	11,000.00	12,305.21	-1,305.21	-11.87%	22,000.00	21,719.51	280.49	1.27%	135,000.00
1-5248-00	Denniston T P Operations-General	6,000.00	16,649.53	-10,649.53	-177.49%	13,000.00	17,939.21	-4,939.21	-37.99%	78,000.00
1-5249-00	Denniston T.P. Maintenance	14,000.00	9,027.67	4,972.33	35.52%	28,000.00	12,312.17	15,687.83	56.03%	165,000.00
1-5250-00	Laboratory Expenses	7,000.00	13,940.12	-6,940.12	-99.14%	14,000.00	18,739.23	-4,739.23	-33.85%	81,000.00
1-5260-00	Maintenance - General	35,000.00	29,901.51	5,098.49	14.57%	70,000.00	69,008.53	991.47	1.42%	421,000.00
1-5261-00	Maintenance - Well Fields	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%	50,000.00
1-5263-00	Uniforms	1,000.00	10,486.15	-9,486.15	-948.62%	4,700.00	10,486.15	-5,786.15	-123.11%	14,700.00
1-5318-00	Studies/Surveys/Consulting	10,000.00	7,666.07	2,333.93	23.34%	15,000.00	12,176.07	2,823.93	18.83%	160,000.00
1-5321-00	Water Resources	1,600.00	161.57	1,438.43	89.90%	3,200.00	323.14	2,876.86	89.90%	20,000.00

		August Budget	August Activity	Variance Favorable (Unfavorable)	Percent Variance	YTD Budget	YTD Activity	Variance Favorable (Unfavorable)	Percent Variance	Total Budget
1-5322-00	Community Outreach	3,000.00	2,118.62	881.38	29.38%	6,000.00	2,118.62	3,881.38	64.69%	68,000.00
1-5381-00	Legal	9,700.00	9,454.50	245.50	2.53%	19,400.00	19,154.50	245.50	1.27%	116,000.00
1-5382-00	Engineering	7,500.00	8,764.84	-1,264.84	-16.86%	15,000.00	15,000.76	-0.76	-0.01%	90,000.00
1-5383-00	Financial Services	0.00	6,722.00	-6,722.00	0.00%	5,000.00	6,722.00	-1,722.00	-34.44%	24,150.00
1-5384-00	Computer Services	31,000.00	36,805.91	-5,805.91	-18.73%	62,000.00	68,746.56	-6,746.56	-10.88%	375,000.00
1-5410-00	Salaries/Wages-Administration	117,859.00	102,799.73	15,059.27	12.78%	246,943.00	234,669.14	12,273.86	4.97%	1,459,211.00
1-5411-00	Salaries & Wages - Field	169,089.00	124,409.96	44,679.04	26.42%	354,281.00	319,710.58	34,570.42	9.76%	2,093,480.00
1-5420-00	Payroll Tax Expense	20,548.00	15,392.09	5,155.91	25.09%	43,053.00	40,428.58	2,624.42	6.10%	254,404.00
1-5435-00	Employee Medical Insurance	40,375.00	39,744.31	630.69	1.56%	80,750.00	79,915.74	834.26	1.03%	520,835.00
1-5436-00	Retiree Medical Insurance	4,840.00	4,712.51	127.49	2.63%	9,680.00	8,799.87	880.13	9.09%	62,407.00
1-5440-00	Employees Retirement Plan	58,985.00	46,317.20	12,667.80	21.48%	117,970.00	111,461.71	6,508.29	5.52%	707,803.00
1-5445-00	Supplemental Retirement 401a	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%	38,016.00
1-5510-00	Motor Vehicle Expense	7,700.00	3,881.95	3,818.05	49.59%	15,400.00	11,076.48	4,323.52	28.07%	95,000.00
1-5620-00	Office & Billing Expenses	33,500.00	30,309.31	3,190.69	9.52%	67,000.00	56,595.05	10,404.95	15.53%	418,000.00
1-5625-00	Meetings / Training / Seminars	4,400.00	333.24	4,066.76	92.43%	8,800.00	366.71	8,433.29	95.83%	52,300.00
1-5630-00	Insurance	16,200.00	17,273.25	-1,073.25	-6.63%	32,400.00	34,298.04	-1,898.04	-5.86%	209,000.00
1-5687-00	Membership, Dues, Subscript.	6,458.00	3,479.78	2,978.22	46.12%	24,791.00	19,882.80	4,908.20	19.80%	125,000.00
1-5688-00	Election Expenses	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%	30,000.00
1-5689-00	Labor Relations	500.00	0.00	500.00	100.00%	1,000.00	0.00	1,000.00	100.00%	6,000.00
1-5700-00	San Mateo County Fees	2,750.00	3,500.00	-750.00	-27.27%	5,500.00	7,061.00	-1,561.00	-28.38%	33,000.00
1-5705-00	State Fees	1,500.00	0.00	1,500.00	100.00%	1,500.00	639.31	860.69	57.38%	50,600.00
	Total ExpType: 1 - Operating:	**1,105,635.00**	**902,552.34**	**203,082.66**	**18.37%**	**2,176,730.00**	**1,980,485.82**	**196,244.18**	**9.02%**	**11,485,230.00**
ExpType: 4 - Capital Related										
1-5715-00	Debt Service/CIEDB 11-099	0.00	0.00	0.00	0.00%	278,127.00	278,126.96	0.04	0.00%	335,173.00
1-5716-00	Debt Service/CIEDB 2016	0.00	0.00	0.00	0.00%	242,657.00	242,657.22	-0.22	0.00%	321,412.00
1-5717-00	Chase Bank - 2018 Loan	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%	432,821.00
1-5718-00	First Foundation Bank - 2022	348,541.00	348,540.88	0.12	0.00%	348,541.00	348,540.88	0.12	0.00%	417,434.00
	Total ExpType: 4 - Capital Related:	**348,541.00**	**348,540.88**	**0.12**	**0.00%**	**869,325.00**	**869,325.06**	**-0.06**	**0.00%**	**1,506,840.00**
	Total Expense:	**1,454,176.00**	**1,251,093.22**	**203,082.78**	**13.97%**	**3,046,055.00**	**2,849,810.88**	**196,244.12**	**6.44%**	**12,992,070.00**
	Report Total:	**308,824.00**	**473,161.35**	**164,337.35**		**134,945.00**	**284,182.00**	**149,237.00**		**3,059,339.00**

COASTSIDE COUNTY WATER DISTRICT
MONTHLY INVESTMENT REPORT
August 31, 2024

RESERVE BALANCES	**Current Year as of 08/31/2024**	**Prior Year as of 08/31/2023**
CAPITAL AND OPERATING RESERVE	$11,693,150.29	$12,748,280.98
RATE STABILIZATION RESERVE	$250,000.00	$250,000.00
TOTAL DISTRICT RESERVES	**$11,943,150.29**	**$12,998,280.98**

ACCOUNT DETAIL

ACCOUNTS WITH TRI COUNTIES BANK		
CHECKING ACCOUNT	$2,078,857.66	$1,810,536.43
CSP T & S ACCOUNT	$666,282.93	$104,170.29
MONEY MARKET GEN. FUND (Opened 7/20/17)	$19,824.09	$19,807.56
LOCAL AGENCY INVESTMENT FUND (LAIF) BALANCE	$9,177,385.61	$11,062,966.70
DISTRICT CASH ON HAND	$800.00	$800.00
TOTAL ACCOUNT BALANCES	**$11,943,150.29**	**$12,998,280.98**

This report is in conformity with CCWD's Investment Policy.

COASTSIDE COUNTY WATER DISTRICT 9/6/2024

CAPITAL IMPROVEMENT PROJECTS - STATUS REPORT 8/31/2024

FISCAL YEAR TO DATE 2024/2025 - AUGUST 31, 2024

* Approved June 2024

		Status	Approved* CIP Budget FY24/25	Actual To Date FY24/25	Projected FY24/25	Variance vs. Budget	% Completed	Project Status/ Comments
Equipment Purchases & Replacement								
06-03	SCADA/Telemetry/Electrical Controls Replacement	ongoing	$ 50,000		$ 50,000	$ -	n/a	
99-02	Vehicle Fleet Replacement	ongoing	$ 50,000		$ 50,000	$ -	0%	
Facilities & Maintenance								
09-09	Fire Hydrant Replacement	ongoing	$ 140,000		$ 140,000	$ -	0%	
23-13	Pilarcitos Canyon Culvert Replacement	in design	$ 400,000	$ 6,068	$ 400,000	$ -	0%	Engineering; surveying; geotech in process
99-01	Meters	ongoing	$ 10,000		$ 10,000	$ -	n/a	
Pipeline Projects								
14-01/23-10	Highway 92 Potable Water Pipeline Emergency Restoration Project	Bid Ready	$ 3,000,000	$ 79,131	$ 3,000,000	$ -	0%	
21-01	Pipeline Replacement Projects: Alcatraz and Santa Cruz Aves/Redondo Beach Loop/Ocean Colony	In design	$ 400,000	$ 6,552	$ 400,000	$ -	100%	
Pump Stations / Tanks / Wells								
21-07	Carter Hill Tank Improvement Project	In design	$ 4,000,000	$ 13,123	$ 4,000,000	$ -	0%	
16-08	Denniston Well Field Replacements	TBD	$ 450,000		$ 450,000	$ -	0%	
23-11	CSP Screens - Intake Valves	Feasibility	$ 50,000		$ 50,000	$ -	0%	
19-05	Tanks - THM Control	Ongoing	$ 50,000		$ 50,000	$ -	0%	
Water Supply Development								
14-25	San Vicente/Denniston Water Supply Development	ongoing	$ 2,000,000	$ 84,087	$ 2,000,000	$ -	n/a	
25-02	Denniston Sluice Gates	TBD	$ 50,000		$ 50,000	$ -	0%	
Water Treatment Plants								
23-05	Sodium Hypochlorite Generator Replacement (Nunes)	bid ready	$ 200,000	$ 8,000	$ 200,000	$ -	50%	On September 2024 agenda to award contract
23-06	Existing Sedimentation Basin Rehabilitation	TBD	$ 300,000		$ 300,000	$ -	0%	
UNSCHEDULED/NEW CIP ITEMS FOR CURRENT FISCAL YEAR 2024/2025								
25-01	Nunes Water Treatment Plant Paving Project			$ 5,716	$ 350,000	$ (350,000)		Project awarded in August 2024
23-09	Denniston Contact Clarifier Hatch Replacements			$ 9,700	$ 9,700	$ (9,700)		In CIP in future years
NN-00	Unscheduled CIP		$ 100,000		$ 100,000	$ -	0%	
	NEW FY2024/2025 CIP TOTAL		**$ 11,250,000**	**$ 212,376**	**$ 11,609,700**	**$ (359,700)**		

COASTSIDE COUNTY WATER DISTRICT 9/6/2024

CAPITAL IMPROVEMENT PROJECTS - STATUS REPORT 8/31/2024

FISCAL YEAR TO DATE 2024/2025 - AUGUST 31, 2024

* Approved June 2024

		Status	Approved* CIP Budget FY24/25	Actual To Date FY24/25	Projected FY24/25	Variance vs. Budget	% Completed	Project Status/ Comments
FY2023/2024 CIP Carryover Projects								
20-14	Nunes Water Treatment Plant Improvement Project	complete		$ 3,671	$ 3,671	$ (3,671)	100%	
22-07	Alameda Ave Crossing at Medio Creek			$ 2,136	$ 2,136	$ (2,136)		
24-01	Myrtle/2nd Ave Valve Replacement			$ 2,494	$ 2,494	$ (2,494)		
23-03	CSP Fire Sprinklers	in process				$ -	50%	
FY2022/2023 CARRYOVER PROJECTS			**$ -**	**$ 8,301**	**$ 8,301**	**$ (8,301)**		
Green = approved by the Board/in process								
TOTAL - FY 2023/2024 CIP + PRIOR YEAR CARRYOVER			**$ 11,250,000**	**$ 220,678**	**$ 11,618,001**	**$ (368,001)**		

Legal Cost Tracking Report
12 Months At-A-Glance

Acct. No.5681
Patrick Miyaki - HansonBridgett, LLP
Legal

Month	Admin (General Legal Fees)	Water Supply Development	Recycled Water	Uninstalled Connection Transfer Program	Capital Improvement Projects	Labor & Employment	Cell Tower Leases	Public Records Requests	Litigation	Non CIP / Infrastructure (Project Review) *Reimbursable*	Total
Sep-23	4,620			1,113	3,363		2,814				**11,910**
Oct-23	1,764	210		606			3,444		1,386		**7,410**
Nov-23	7,278			252	378	1,176	1,596		1,470		**12,150**
Dec-23	3,486		2,814	564	4,980		168		2,424		**14,436**
Jan-24	2,790				624			546	399		**4,359**
Feb-24	3,783			897	6,398		846		178		**12,101**
Mar-24	2,622	223		178	1,830		979				**5,831**
Apr-24	5,485	2,003	356	1,342	3,239		223		89		**12,736**
May-24	6,817	89		178	11,676	401	846				**20,006**
Jun-24	4,420	1,691	490		3,821	6,497					**16,919**
Jul-24	14,688				14,213	1,388	1,495				**31,783**
Aug-24	6,663			267	10,550	2,359	134				**19,972**

TOTAL	**64,415**	**4,215**	**3,660**	**5,397**	**61,071**	**11,820**	**12,543**	**546**	**5,946**	**0**	**169,611**

Engineer Cost Tracking Report
12 Months At-A-Glance

Acct. No. 5682
JAMES TETER
Engineer

Month	Admin & Retainer	CIP	Studies and Non - CIP Project	TOTAL	Reimburseable from Projects
Sep-23	480			**480**	
Oct-23	480			**480**	
Nov-23	480			**480**	
Dec-23	480			**480**	
Jan-24	480			**480**	
Feb-24	480			**480**	
Mar-24	480			**480**	
Apr-24	480			**480**	
May-24	480			**480**	
Jun-24	480			**480**	
Jul-24	480			**480**	
Aug-24	480			**480**	
TOTAL	**5,760**	**0**	**0**	**5,760**	**0**

Calcon T&M Projects Tracking

8/31/2024

Project No.	Name	Status	Proposal Date	Approved Date	Project Budget	Project Billings FY2024-2025
FY 2024-2025 Open Projects:						
		Open Projects - Subtotal				$0.00
Other:	**Monthly Maintenance**					
	Tanks					
	Crystal Springs Maintenance					
	Nunes Maintenance					$ 4,610.00
	Denniston Maintenance					$ 5,880.00
	Distribution System					$ 8,230.00
	Wells					
	Cellular Telemetry					$ 328.13
		Subtotal Maintenance				$ 19,048.13
		FINAL TOTAL FY 2024/2025				$19,048.13

EKI Environment & Water
Engineering Services Billed FY 2022-2023 to FY 2024-2025
Billed through 8/31/2024

		Contract Date	Not to Exceed Budget	Status	FY2022-2023	FY 2023-2024	FY 2024-2025
CIP Project Management							
Fiscal Year 2021-2022 - Non-Complex Main line Extension Services		10.15.2021	$ 25,000.00	Complete	$ 10,438.74	$ 4,201.34	
Fiscal Year 2023-2024 - Non-Complex Main line Extension Services				Open		$ 11,801.40	
Fiscal Year 2024-2025-Capital Improvement Management		1.9.2024	$ 100,000.00	Open		$ 62,469.90	$ 24,988.34
Fiscal Year 2022-2023 - Capital Improvement Management		4.20.2022	$ 117,000.00	Complete	$ 71,198.60	$ 34,038.14	
Fiscal Year 2022-2023 - Emergency Engineering Services		2.10.2023	$ 28,000.00	Complete	$ 26,164.58		
Fiscal Year 2022-2023 - Emergency FEMA Grant Application			$ 15,000.00	Complete	$ 16,568.76		
Sub Total - CIP Project Management Services			$ 285,000.00		$ 124,370.68	$ 112,510.78	$ 24,988.34
Highway 92 Potable Water Pipeline Phase 1 (2023)	**14-01**	6.13.2023	$ 135,400.00	Open	$ 22,894.82	$ 70,887.84	
Highway 92 Environmental Permitting - Emergency Restoration	**23-10**	3.15.2023	$ 44,800.00	Open	$ 321.36	$ 47,121.55	$ 345.02
Highway 92 Potable Water Pipeline Emergency Geotechnical	**23-10**	3.3.2023	$ 63,400.00	Open	$ 52,946.71		
Highway 92 Potable Water Pipeline Emergency Restoration-Design	**23-10**	3.15.2023	$ 247,600.00	Open	$ 55,017.03	$ 125,635.28	$ 676.00
Highway 92 Potable Water Pipeline Future Phases Geotechnical	**14-01**	3.3.2023	$ 54,200.00	Open	$ 26,884.03	$ 23,313.72	
Miramontes Point Road Water Main Replacement	**22-01**	7.14.2021	$ 177,300.00	Open	$ 46,900.62		
Medio Creek and Magellan Pipeline/Miramar Deadends Design	**22-07**	3.15.2023	$ 138,900.00	Open	$ 39,015.39	$ 50,313.73	$ 2,136.16
EG Tank #1 - Pre-design for New Pump Station	**19-01**	6.13.2023	$ 25,000.00	Open	$ 1,046.76	$ 23,917.66	
Highway 92 - Environmental Permitting Strategies	**23-10**	5.24.2023	$ 29,700.00	Open		$ 28,207.05	
Miramar Deadends Project - Biological Resources Assessment	**22-07**	5.24.2023	$ 18,200.00	Open		$ 17,581.46	
Alcatraz Ave, Santa Rosa Ave, and Ocean Colony Pipeline Projects	**21-01**	1.9.2024	$ 66,200.00	Open		$ 41,027.74	$ 6,552.26
Highway 92 - 2017 Easements Land Description Packages	**14-01**	8.18.2023	$ 14,000.00	Complete		$ 14,000.00	
Medio Crossing-Alternatives Evaluation for Pipeline Replacement	**22-07**	4.25.2022	$ 20,400.00	Complete	$ 13,419.12		
Poplar Street Water Main Replacement Project	**23-02**	10.3.2022	$ 29,200.00	Complete	$ 22,944.36	$ 6,199.05	
Grandview Crossing at Hwy 1	**20-08**	2.9.2021	$ 156,500.00	Complete	$ 32,891.30		
Grandview Crossing at Hwy 1 - Construction Management Services	**20-08**	9.16.2022	$ 132,800.00	Complete	$ 106,755.71		
Pilarcitos Creek Crossing Water Main Replacement Design	**13-02**	7.14.2020	$ 99,900.00	Complete	$ 28,025.40		
Pilarcitos Creek Crossing Water Main Replacement Field Surveys/Land Descriptions	**13-02**	9.13.2022	$ 28,600.00	Complete	$ 4,681.04		
Highway 92 Potable Water Pipeline Replacement Project Design	**14-01**	7.2.2021	$ 24,800.00	Complete	$ 6,631.56		
Total - All Services					**$ 584,745.89**	**$ 560,715.86**	**$ 34,697.78**

COASTSIDE COUNTY WATER DISTRICT

766 MAIN STREET

HALF MOON BAY, CA 94019

MINUTES OF THE REGULAR MEETING OF THE BOARD OF DIRECTORS

Tuesday, August 13, 2024

The Public was able to participate in the public meeting by joining the meeting in person or through the Zoom Video Conference link provided. The public was also able to join the meeting by calling a provided teleconference phone number.

1) ROLL CALL – President Mickelsen called the meeting to order at 7:00 p.m. Present at roll call: Vice President Reynolds, Director Ken Coverdell, Director Bob Feldman, and Director John Muller.

Also present: Mary Rogren, General Manager, Jeffery Schneider, Asst. General Manager Finance/Admin., Patrick Miyaki, Legal Counsel, Gina Brazil, Office Manager, and Lisa Sulzinger, Administrative Analyst

2) PLEDGE OF ALLEGIANCE

3) PUBLIC COMMENT –

- Virgina Chang Kiraly – introduced herself and serves on the following Boards: San Mateo County Harbor Board of Commissioners, Menlo Park Fire Protection District Board of Directors, and San Mateo LAFCo Commission representing Special Districts. Her comment is regarding Article 34 of the California Constitution which requires voter approval for development of local affordable housing. The San Mateo County Board of Supervisors has asked for input from city councils on a proposed November 2024 ballot measure which would allow development of low-income housing units without voter approval. Ms. Kiraly is encouraging Boards of Special Districts that provide essential services such as fire, water, and sewer, to provide comment on the proposed ballot measure given that special districts could be impacted by the measure.
- Kathryn Slater-Carter introduced herself and serves on the following Boards: San Mateo County Harbor Board of Commissioners, Montara Water and Sanitary District Board of Directors, Sewer Authority Mid-Coastside Board of Directors, CSDA Board of Directors as the Bay Area Network Commissioner and San Mateo LAFCo Commission representing Special Districts as an Alternate Member. As Special Districts are essential service providers to their local

communities, Ms. Slater-Carter is encouraging Special Districts to stand up and protect their rights to be able to provide comment on water supply, storm water runoff, and sewers on low-income housing projects. She looks forward to a continued good working relationship between the agencies on the Coastside, and will continue to keep Special Districts up to date on legislative items.

4) CONSENT CALENDAR

A. Approval of disbursements for the month ending July 31, 2024:
Claims: $ 2,425,837.27; Payroll: $ 244,794.18 for a total of $ 2,670,631.45
July 2024 Monthly Financial Claims reviewed and approved by Director Coverdell
B. Acceptance of Financial Reports
C. Approval of Minutes of July 9, 2024, Special Board of Directors Meeting
D. Approval of Minutes of July 9, 2024, Regular Board of Directors Meeting
E. Approval of Minutes of July 31, 2024, Special Board of Directors Meeting
F. Installed Water Connection Capacity and Water Meters Report
G. Total CCWD Production Report
H. CCWD Monthly Sales by Category Report – July 2024
I. Leak/Flushing Report – July 2024
J. Monthly Rainfall Reports
K. SFPUC Hydrological Conditions Report – June 2024 and July 2024
L. Notice of Completion – Nunes Water Treatment Plant Upgrades Project
M. Notice of Completion – Magellan Avenue at Highway 1 and Medio Creek Pipeline Rehabilitation Project

Director Coverdell stated he reviewed the monthly financial claims and found all to be in order.

ON MOTION BY Director Muller and seconded by Vice President Reynolds, the Board voted by roll call vote to approve the Consent Calendar:

Director Coverdell	**Aye**
Director Feldman	**Aye**
Director Muller	**Aye**
Vice-President Reynolds	**Aye**
President Mickelsen	**Aye**

5) MEETINGS ATTENDED / DIRECTOR COMMENTS

- Director Muller reported that the California State Water Board has adopted new conservation regulations that will take effect in 2025.

6) GENERAL BUSINESS

A. <u>Schedule a Public Hearing on Proposed Rate Adjustments and Authorize the Issuance of a Notice of Public Hearing for Proposed Rate Increases effective January 20, 2025, January 19, 2026, and January 18, 2027</u>

Mr. Schneider summarized that at the November 14, 2023, Board meeting, the Board of Directors authorized Water Resources Economic LLC to conduct a comprehensive water rate study consisting of a five-year Financial Plan, a Cost-of-Service Analysis based on the most recent financial data, a Rate Design including a three-year water rate schedule effective January 2025, January 2026, and January 2027 and corresponding three-year Water Shortage Rates and Rate Study documentation, including a 2024 Water Rate Study Report.

Mr. Schneider then provided a brief overview of the District's numerous budget process meetings referencing the five budget related public Regular and Special Board of Directors' meetings, five Finance Committee meetings, four Facilities Committee meetings and a Board Workshop with Water Resources Economics, LLC. This has all led to the completion of the 2024 Water Rate Study Report and the proposed rate adjustments.

Mr. Schneider informed the Board that to comply with the requirements of Proposition 218, the recommended Board action will be to schedule a Public Hearing for Tuesday November 12, 2024, at 7:00 p.m. at the Regular Board of Directors' Meeting on the proposed rate adjustments and authorize the issuance of a Notice of Public Hearing for the proposed rate increases effective January 20, 2025, January 19, 2026, and January 18, 2027.

ON MOTION BY Vice President Reynolds and seconded by Director Muller, the Board voted by roll call vote to schedule a Public Hearing for Tuesday, November 12, 2024, at 7:00 p.m. during the Regular Board of Directors' Meeting on proposed rate adjustments and authorize the issuance of a Notice of Public Hearing for the proposed rate increases effective January 20, 2025, January 19, 2026, and January 18, 2027

Director Coverdell	**Aye**
Director Feldman	**Aye**
Director Muller	**Aye**
Vice-President Reynolds	**Aye**
President Mickelsen	**Aye**

B. <u>Award of Contract for Engineering Services During Construction to HDR Engineering, Inc. for the Carter Hill Prestressed Concrete DN Tank and Seismic Upgrades Project</u>

Ms. Rogren summarized that in February 2021, the District engaged HDR Engineering, Inc. to provide design engineering and bid support services for the Carter Hill Prestressed Concrete DN Tank and Seismic Upgrades Project. Staff recently requested a proposal from HDR for Engineering Services during construction to support the construction of the DN Tank project. These tasks include

providing contract clarifications; submittal and change order review; project management and other related tasks. Staff feels that HDR is the best fit for providing Engineering Services during construction since they are the Design Engineer on the project, and they also provided similar services during the Nunes Water Treatment Plant Upgrades Project.

ON MOTION BY Director Coverdell and seconded by Director Feldman, the Board voted by roll call vote to authorize the General Manager to enter into a professional services agreement with HDR Engineering, Inc. to provide Engineering Services During Construction for the Carter Hill Prestressed Concrete DN Tank and Seismic Upgrades Project for $371,044

Director Coverdell	**Aye**
Director Feldman	**Aye**
Director Muller	**Aye**
Vice-President Reynolds	**Aye**
President Mickelsen	**Aye**

C. <u>Award of Contract to Andreini Bros., Inc. for the Nunes Treatment Plant Paving Project</u>

Ms. Rogren summarized that the Nunes Water Treatment Plant Upgrades Project is complete and construction crews have demobilized. The remaining work includes paving around the treatment plant to include 18,270 square feet of roadway and pavement. Staff received seven bids with Andreini Bros., Inc. coming is at the lowest bid of $333,438.88.

ON MOTION BY Director Muller and seconded by President Mickelsen, the Board voted by roll call vote to authorize the General Manager to enter into a contractual agreement with Andreini Bros., Inc. for the Nunes Treatment Plant Paving Project for a total cost of $333,438.88

Director Coverdell	**Aye**
Director Feldman	**Aye**
Director Muller	**Aye**
Vice-President Reynolds	**Aye**
President Mickelsen	**Aye**

D. <u>Purchase of Hydrants from Underground Republic Water Works, Inc.</u>

The District's Capital Improvement Program includes $140,000 per year for dry barrel hydrant replacement through FY 33/34. Staff submitted a request for bids for 28 hydrants to three vendors and received two responses back. Underground Republic Water Works, Inc. was the lowest bidder. The 28 hydrants will cost $139,994.

ON MOTION BY Vice President Reynolds and seconded by Director Muller, the Board voted by roll call vote to authorize the general Manager to procure 28 Clow 2065 bronze wet barrel hydrants for $139,994 from Underground Republic Water Works, Inc.

Director Coverdell	**Aye**
Director Feldman	**Aye**
Director Muller	**Aye**
Vice-President Reynolds	**Aye**
President Mickelsen	**Aye**

E. <u>Waive the District's Procedural Requirements for Sealed Competitive Bids and Authorize the General Manager to Purchase Earthquake Expansion Joints for the Crystal Springs Pump Station</u>

Ms. Rogren reported that during a recent valve installation at Crystal Spring Pump Station, Pump Repair Services Company found considerable wear on the existing earthquake expansion joints with one showing signs of corrosion. The current expansion joints were installed when Crystal Springs was built 35 years ago and the District does not have any spare expansion joints. Staff researched manufacturers with the assistance of Underground Water Works Inc. and found only one manufacturer, The Metraflex Company, who will custom make these joints. Staff requested that the Board waive the competitive bidding requirements of Resolution 2016-09 to sole source these expansion joints manufactured by The Metraflex Company and distributed by Underground Republic Water Works.

ON MOTION BY Vice President Reynolds and seconded by Director Feldman, the Board voted by roll call vote to waive the District's competitive bidding requirement of Resolution 2016-09 and authorize the General Manager to purchase (4) earthquake expansion joints for the Crystal Springs Pump Station from Underground Republic Water Works Inc. for $65,800 (plus shipping and handling.)

Director Coverdell	**Aye**
Director Feldman	**Aye**
Director Muller	**Aye**
Vice-President Reynolds	**Aye**
President Mickelsen	**Aye**

F. <u>Consider Resolution 2024-05, a Resolution of the Board of Directors of the Coastside County Water District Expressing Intent to Reimburse Project Expenditures From Tax-Exempt Financing</u>

Mr. Schneider summarized the necessity for obtaining financing for the Carter Hill Prestressed Concrete DN Tank Project. In order to preserve maximum flexibility on its expenditures, and for the District to be able to reimburse itself for costs of the project incurred prior to debt financing is available, Jones Hall recommended that the Board adopt a "Reimbursement Resolution". By passing this resolution, the

District will be able to reimburse certain costs going back 60 days from the adoption of the resolution.

ON MOTION BY Vice President Reynolds and seconded by Director Coverdell, the Board voted by roll call vote to approve Resolution 2024-05, a Resolution of the Coastside County Water District expressing intent to reimburse project expenditures from tax-exempt financing

Director Coverdell	**Aye**
Director Feldman	**Aye**
Director Muller	**Aye**
Vice-President Reynolds	**Aye**
President Mickelsen	**Aye**

G. Approval of an Amended Salary Schedule for Fiscal Year 2024-2025

Mr. Schneider summarized that CALPERS requires the Board approval of the District's salary schedule. At its June 10, 2024, meeting the Board of Directors approved the Fiscal Year 2024-2025 Salary Schedule effective July 1, 2024. Two temporary positions have now been added to the amended Salary Schedule, one Customer Service and one Maintenance.

ON MOTION BY Director Coverdell and seconded by Director Feldman, the Board voted by roll call vote to approve an amended fiscal year 2024-2025 Salary Schedule, effective August 13, 2024

Director Coverdell	**Aye**
Director Feldman	**Aye**
Director Muller	**Aye**
Vice-President Reynolds	**Aye**
President Mickelsen	**Aye**

7) MONTHLY INFORMATIONAL REPORTS

A. General Manager

One August 3, 2024, Ms. Brazil, Office Manager, and Ms. Barr, Customer Service Specialist, represented the District promoting careers in water at a job fair hosted by the Opportunity Center of the Coastside.

B. Operations Report

Ms. Rogren summarized the Operation Highlights for the month of July 2024.

8) DIRECTOR AGENDA ITEMS – REQUESTS FOR FUTURE BOARD MEETINGS

There were no requests for future agenda items from the Board members.

9) CLOSED SESSION

A) Conference with Real Property Negotiators
Pursuant to California Government Code Section 54956.8

1. Property: Acquisition of multiple permanent and temporary easements along Highway 92, Half Moon Bay, CA [APN 056 341 -180, 190, 200, 210, 230, 056-331-110, 056-331-120 and 130]
   Agency Negotiators: Mary Rogren, General Manager
   Negotiating Parties: Mary Alice Cozzolino, Surviving Co-Trustees of the James and Alice Cozzolino 1998 Family Trust
   Under Negotiation: Price and Terms of Payment

2. Property: Acquisition of multiple permanent and temporary easements along Highway 92, Half Moon Bay, CA [APN 056-341-220]
   Agency Negotiators: Mary Rogren, General Manager
   Negotiating Parties: James Salvatore Cozzolino, a married man, as his sole and separate property, and Linda Jean Cozzolino, a single woman, as tenants-in-common
   Under Negotiation: Price and Terms of Payment

10) RECONVENE TO OPEN SESSION – at 8:27 p.m.

Public Report of closed session action– Mr. Miyaki reported:
Closed session item 1 - Direction was given to agency negotiator
Closed session item 2 - Direction was given to agency negotiator

11) ADJOURNMENT – Board Meeting Adjourned at 8:28 p.m.

Respectfully submitted,

_____
Mary Rogren, General Manager
Secretary to the District

_____
Chris Mickelsen, President
Board of Directors

COASTSIDE COUNTY WATER DISTRICT

766 MAIN STREET

HALF MOON BAY, CA 94019

MINUTES OF THE SPECIAL MEETING OF THE BOARD OF DIRECTORS

Wednesday, August 21, 2024

The Public was able to participate in the public meeting by joining the meeting in person or through the Zoom Video Conference link provided. The public was also able to join the meeting by calling a provided teleconference phone number.

1) ROLL CALL – President Mickelsen called the meeting to order at 3:30 p.m. Present at roll call: Vice President Reynolds, Director Ken Coverdell, Director Bob Feldman, and Director John Muller.

Also present: Mary Rogren, General Manager, Patrick Miyaki, Legal Counsel; Laura Ratcliffe, Legal Counsel and Lisa Sulzinger, Administrative Analyst

Also Participating: Jonathan Sutter, EKI Environment and Water, Inc.

2) PLEDGE OF ALLEGIANCE

3) PUBLIC COMMENT – There were no public comments.

4) CLOSED SESSION

A) Conference with Real Property Negotiators
Pursuant to California Government Code Section 54956.8

1. Property: Acquisition of multiple permanent and temporary easements along Highway 92, Half Moon Bay, CA [APN 056 341 -180, 190, 200, 210, 230, 056-331-110, 056-331-120 and 130]
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   Negotiating Parties: James Salvatore Cozzolino, a married man, as his sole and separate property, and Linda Jean Cozzolino, a single woman, as tenants-in-common
   Under Negotiation: Price and Terms of Payment

5) RECONVENE TO OPEN SESSION – at 4:04 p.m.

Public Report of closed session action – Mr. Miyaki reported:
Closed session item 1, Direction was given to Real Property Negotiator
Closed session item 2, Direction was given to Real Property Negotiator

6) ADJOURNMENT – Special Board Meeting Adjourned at 4:05 p.m.

Respectfully submitted,

_____
Mary Rogren, General Manager
Secretary to the District

_____
Chris Mickelsen, President
Board of Directors

COASTSIDE COUNTY WATER DISTRICT
Installed Water Connection Capacity & Water Meters

FY 2024 / 2025

Installed Water Meters	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
HMB Non-Priority													
0.5" capacity increase													**0**
5/8" meter	1	1											**2**
3/4" meter													**0**
1" meter													**0**
1 1/2" meter													**0**
2" meter													**0**
3" meter													**0**
HMB Priority													
0.5" capacity increase													**0**
5/8" meter													**0**
3/4" meter													**0**
1" meter													**0**
1 1/2" meter													**0**
2" meter													**0**
County Non-Priority													
0.5" capacity increase													**0**
5/8" meter													**0**
3/4" meter													**0**
1" meter													**0**
County Priority													
5/8" meter													**0**
3/4" meter													**0**
1" meter													**0**
1.5" meter													**0**
2" meter													**0**
Totals	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**

5/8" meter = 1.0 connection
3/4" meter = 1.5 connections
1" meter = 2.5 connections
1.5" meter = 5.0 connections
2" meter = 8 connections
3" meter= 17.5 connections

FY 23/24 Capacity (5/8" connection equivalents)	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Totals
HMB Non-Priority	1.0	1.0											**2.0**
HMB Priority													**0.0**
County Non-Priority													**0.0**
County Priority													**0.0**
Total	**1.0**	**1.0**	**0**	**0**	**0.0**	**0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2.0**

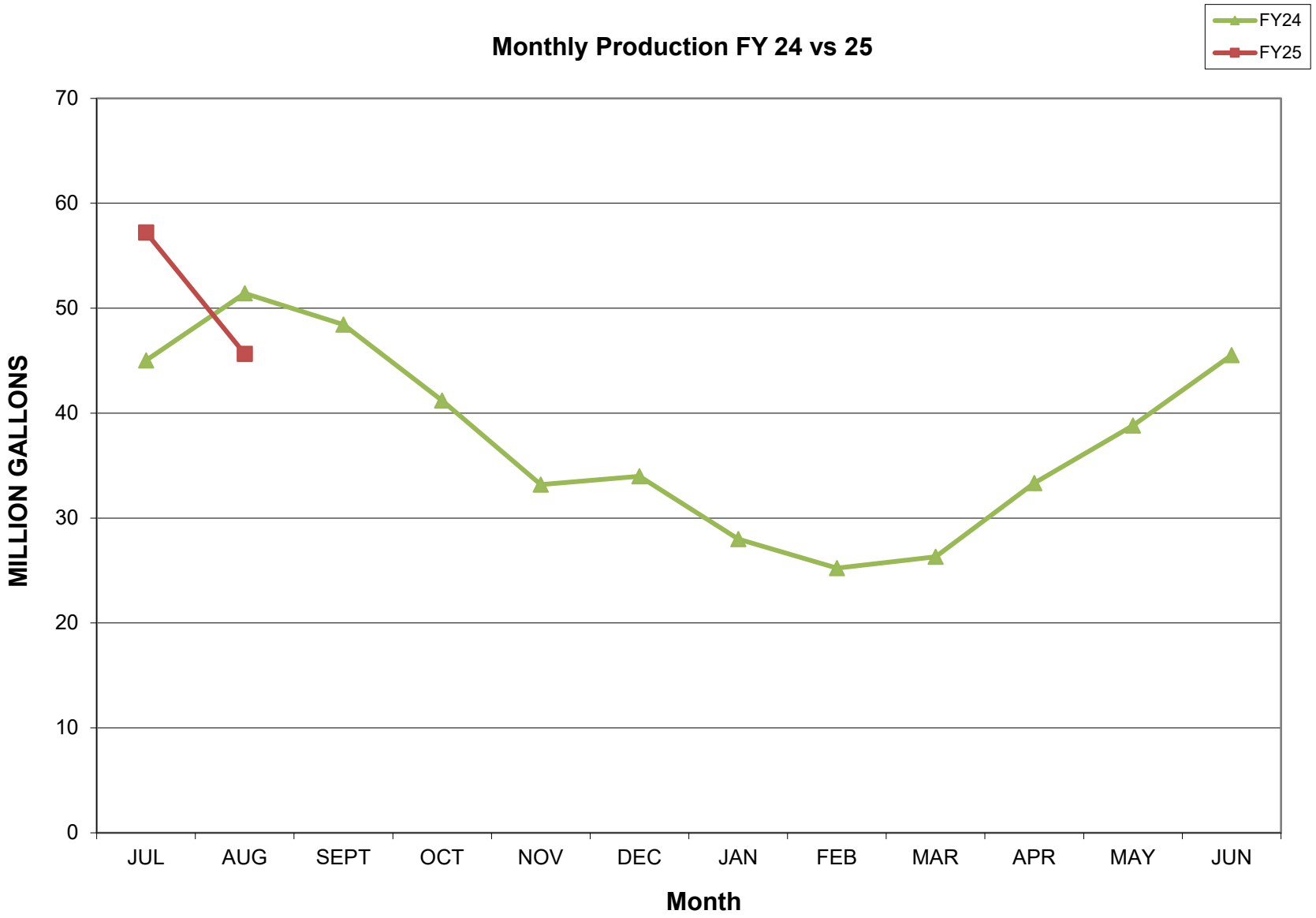
TOTAL CCWD PRODUCTION (MG) ALL SOURCES- FY 2025

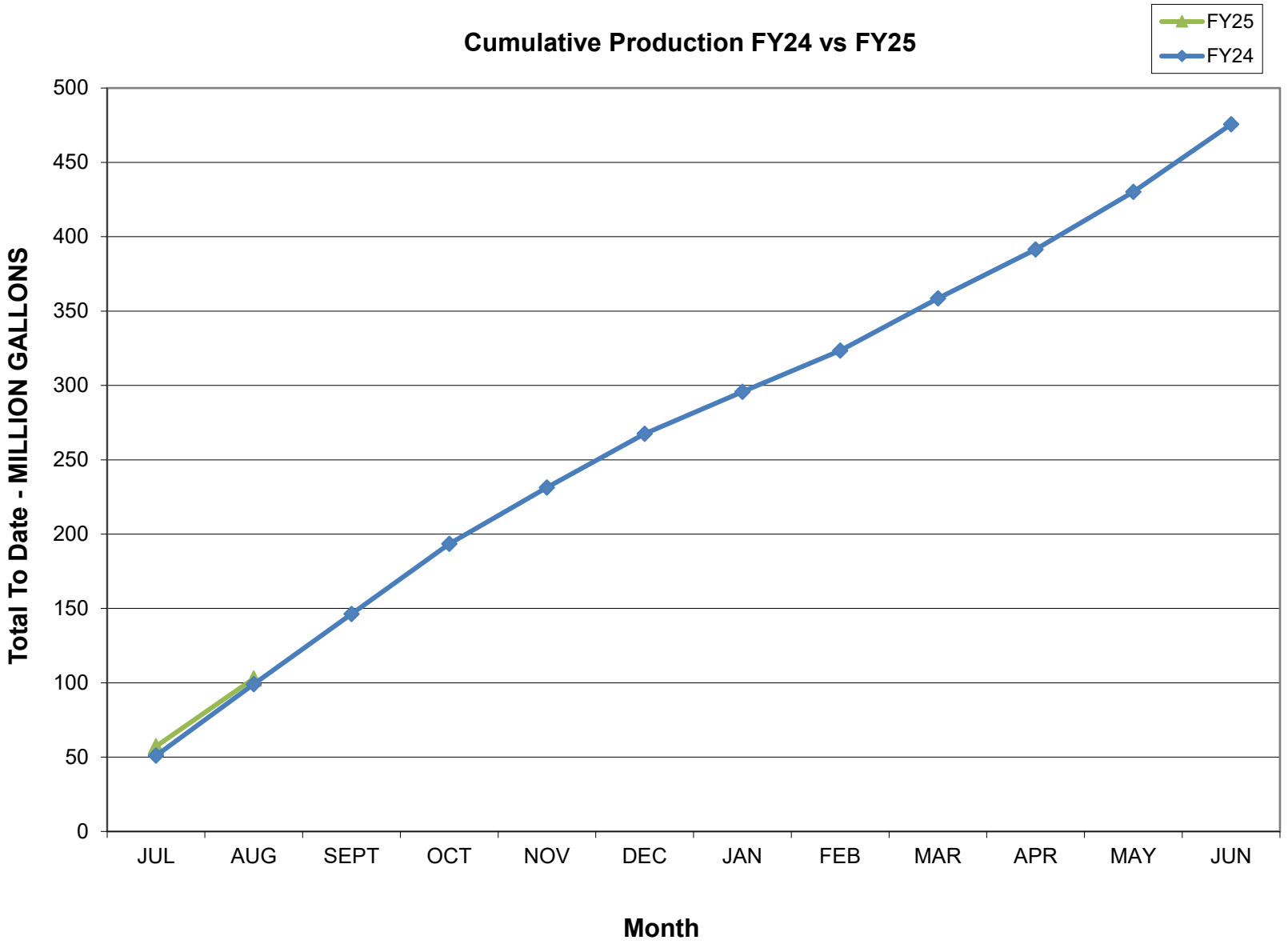
	CCWD Sources			SFPUC Sources				
	DENNISTON WELLS	DENNISTON RESERVOIR	PILARCITOS WELLS	PILARCITOS LAKE	CRYSTAL SPRINGS RESERVOIR	RAW WATER TOTAL	UNMETERED WATER	TREATED TOTAL
JUL	0.00	13.20	0.00	26.41	21.34	60.95	3.73	57.22
AUG	0.00	14.60	0.00	9.07	24.80	48.47	2.82	45.65
SEPT								
OCT								
NOV								
DEC								
JAN								
FEB								
MAR								
APR								
MAY								
JUN								
TOTAL	0.00	27.80	0.00	35.48	46.14	109.42	6.55	102.87
% MONTHLY TOTAL	0.0%	30.1%	0.0%	907.0%	51.2%	100.0%	5.8%	94.2%
% ANNUAL TO DATE TOTAL	0.0%	25.4%	0.0%	32.4%	42.2%	100.0%	6.0%	94.0%

CCWD vs SFPUC- month	30.1%
CCWD vs SFPUC- annual	25.4%

TOTAL CCWD PRODUCTION (MG) ALL SOURCES- FY 2024

	CCWD Sources			SFPUC Sources				
	DENNISTON WELLS	DENNISTON RESERVOIR	PILARCITOS WELLS	PILARCITOS LAKE	CRYSTAL SPRINGS RESERVOIR	RAW WATER TOTAL	UNMETERED WATER	TREATED TOTAL
JUL	0.32	17.08	0.00	30.54	6.02	53.64	2.66	50.98
AUG	2.37	22.03	0.00	23.30	6.40	51.73	3.69	48.04
SEPT	2.31	18.49	0.00	24.22	8.42	51.13	3.87	47.26
OCT	0.51	6.09	0.00	37.04	6.54	49.67	2.58	47.09
NOV	0.05	15.80	11.9	9.68	2.94	40.32	2.42	37.90
DEC	0.00	7.40	17.29	11.08	2.46	38.23	2.03	36.20
JAN	0.00	4.60	15.68	10.14	0.00	30.42	2.11	28.31
FEB	0.00	0.00	15.84	13.16	0.00	29.00	1.37	27.63
MAR	0.00	2.90	13.13	16.81	4.33	37.17	1.94	35.23
APR	0.00	12.90	0.00	22.99	1.09	36.98	4.19	32.79
MAY	0.14	6.30	0.00	34.52	3.13	43.95	5.11	38.84
JUN	0.00	6.60	0.00	40.43	2.47	49.50	4.15	45.35
TOTAL	5.70	120.19	73.84	273.91	43.80	511.74	36.12	475.62
% Annual Total	n/a	23.5%	14.4%	53.5%	8.6%	100.0%	7.1%	92.9%


Monthly Production FY 24 vs 25
FY24
FY25
MILLION GALLONS
70
60
50
40
30
20
10
0
JUL
AUG
SEPT
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
Month


Cumulative Production FY24 vs FY25
FY25
FY24
Total To Date - MILLION GALLONS
500
450
400
350
300
250
200
150
100
50
0
JUL
AUG
SEPT
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
Month

Coastside County Water District Monthly Sales By Category (MG)
FY2025

	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	MG to Date
RESIDENTIAL	27.94	27.90											**55.84**
COMMERCIAL	3.21	3.18											**6.39**
RESTAURANT	1.83	1.85											**3.68**
HOTELS/MOTELS	2.65	3.14											**5.79**
SCHOOLS	0.77	0.70											**1.47**
MULTI DWELL	2.72	2.77											**5.49**
BEACHES/PARKS	0.85	0.99											**1.84**
AGRICULTURE	1.92	2.15											**4.07**
RECREATIONAL	0.23	0.25											**0.48**
MARINE	0.36	0.38											**0.74**
RES. IRRIGATION	1.65	1.68											**3.33**
DETECTOR CHECKS	0.02	0.03											**0.05**
NON-RES. IRRIGATION	2.48	1.52											**4.00**
RAW WATER	4.20	4.98											**9.18**
PORTABLE METERS	0.34	0.46											**0.80**
CONSTRUCTION	0.38	0.37											**0.75**
TOTAL - MG	**51.55**	**52.35**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**103.90**

Non Residential Usage	23.61	24.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Running 12 Month Total		**481.35**										
12 mo Residential		**275.02**										
12 mo Non Residential		**206.33**										

FY2024

	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	MG to Date
RESIDENTIAL	24.40	25.26	26.27	24.96	22.90	21.49	20.13	17.91	19.14	19.21	21.74	25.46	**268.84**
COMMERCIAL	2.73	2.96	2.92	2.93	2.66	2.74	2.33	2.39	2.50	2.54	2.80	3.21	**32.72**
RESTAURANT	1.50	1.54	1.70	1.57	1.46	1.28	1.26	1.17	1.31	1.37	1.45	1.62	**17.22**
HOTELS/MOTELS	2.56	2.65	2.73	2.51	2.24	1.92	1.85	1.51	1.86	1.77	2.11	2.46	**26.18**
SCHOOLS	0.41	0.79	0.68	0.48	0.45	0.25	0.14	0.16	0.15	0.19	0.20	0.36	**4.25**
MULTI DWELL	2.41	2.55	2.60	2.46	2.44	2.34	2.32	2.11	2.32	2.23	2.33	2.56	**28.67**
BEACHES/PARKS	0.48	0.49	0.39	0.37	0.33	0.26	0.16	0.13	0.18	0.19	0.24	0.55	**3.78**
AGRICULTURE	1.86	3.04	1.63	1.46	1.63	1.43	1.19	1.25	1.77	1.88	1.99	2.06	**21.22**
RECREATIONAL	0.18	0.16	0.17	0.15	0.14	0.14	0.11	0.11	0.15	0.15	0.16	0.26	**1.88**
MARINE	0.28	0.35	0.35	0.26	0.28	0.27	0.28	0.45	0.34	0.24	0.26	0.29	**3.65**
RES. IRRIGATION	1.25	1.38	1.40	1.32	0.90	0.56	0.29	0.23	0.17	0.17	0.70	1.19	**9.56**
DETECTOR CHECKS	0.01	0.02	0.02	0.01	0.03	0.01	0.01	0.01	0.02	0.01	0.01	0.02	**0.16**
NON-RES. IRRIGATION	0.33	0.71	1.31	0.35	0.31	0.18	0.15	0.11	0.05	0.08	0.17	1.16	**4.91**
RAW WATER	3.49	7.33	5.45	8.34	4.22	2.24	0.00	0.00	0.00	4.93	0.00	3.85	**39.85**
PORTABLE METERS	0.17	0.24	0.20	0.21	0.12	0.04	0.08	0.02	0.06	0.07	0.23	0.40	**1.85**
CONSTRUCTION	0.50	0.53	0.52	0.47	0.44	0.43	0.40	0.38	0.36	0.37	0.41	0.46	**5.27**
TOTAL - MG	**42.54**	**50.00**	**48.35**	**47.87**	**40.54**	**35.57**	**30.72**	**27.95**	**30.39**	**35.38**	**34.78**	**45.90**	**470.00**

Running 12 Month Total	**470.00**
12 mo Residential	**268.84**
12 mo Non Residential	**201.16**

MONTH	August-24										
Coastside County Water District Monthly Discharge Report											
EMERGENCY MAIN AND SERVICE REPAIRS											
Count	Date Reported Discovered	Time Reported	Date Repaired	Time Repaired	Estimated Duration of Leak	(Identifier) Location	Estimated Water Volume Loss (MG)	Class Type	Material Type	Size (Inches)	Work Order Number
1	8/22/2024	0730	8/22/2024	2000	12.5 Hours	Miramontes Point Road at Salal Road	0.001	Main	DI	10"	8427
2											
3											
4											
5											
6											
7											
8											
						Total	**0.001**				

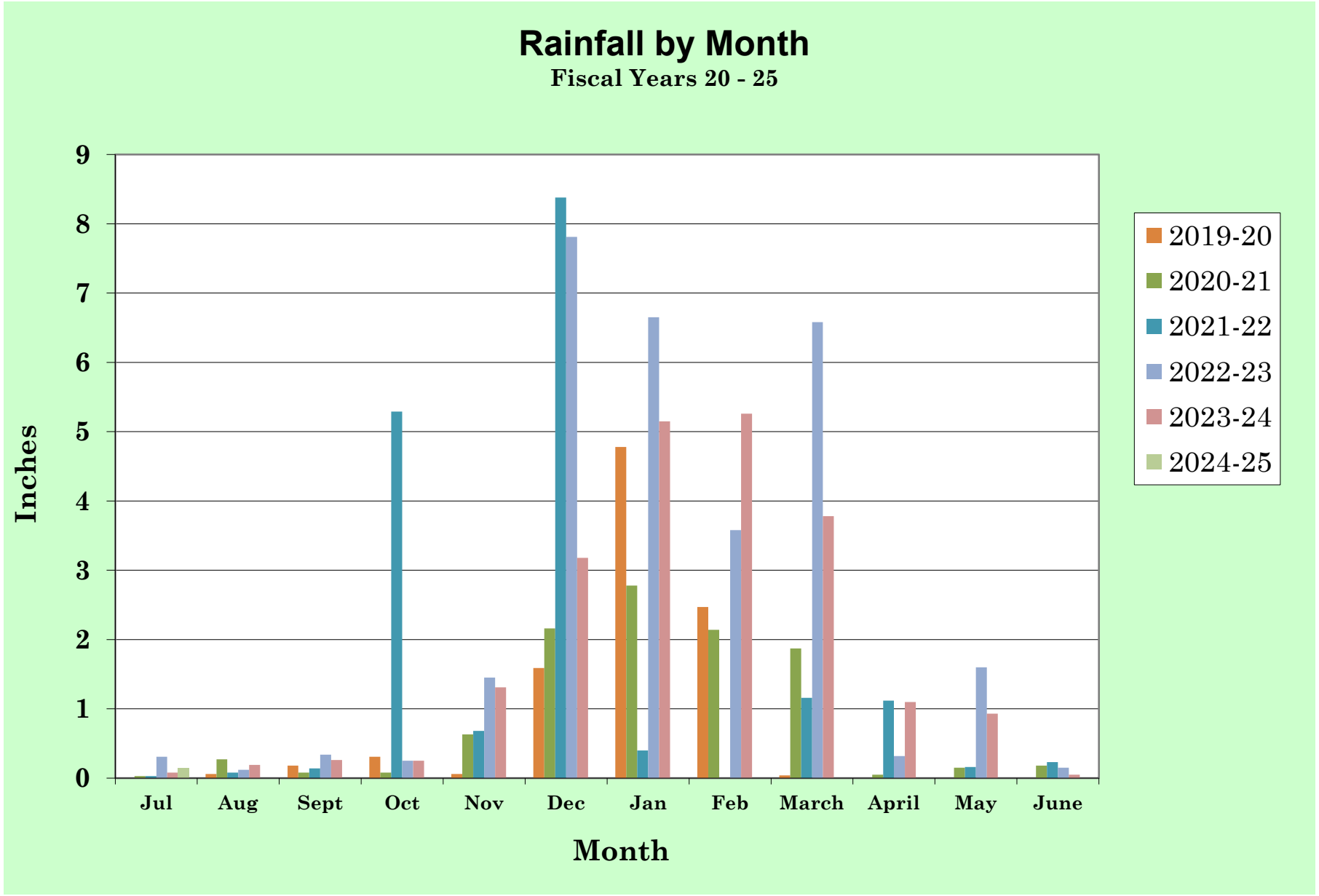
OTHER DISCHARGES	
Total Volumes (MG)	
Flushing Program	0.025
Reservoir Cleaning	0.000
Automatic Blowoffs	0.165
Dewatering Operations	0.000
Other (includes flow testing)	0.018
DISCHARGES GRAND TOTAL (MG)	
0.208	

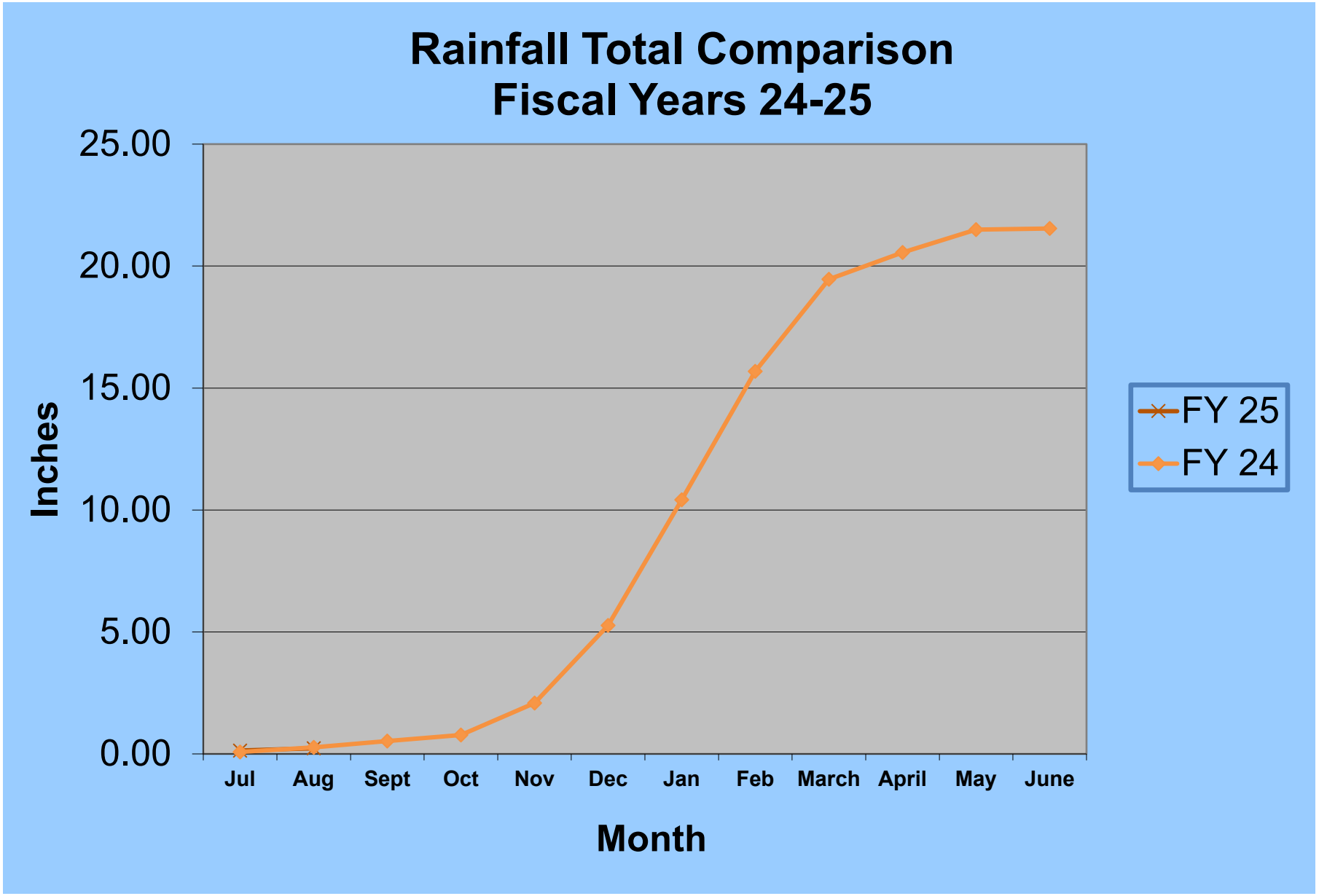
Coastside County Water District
766 Main Street
July 2024 - June 2025

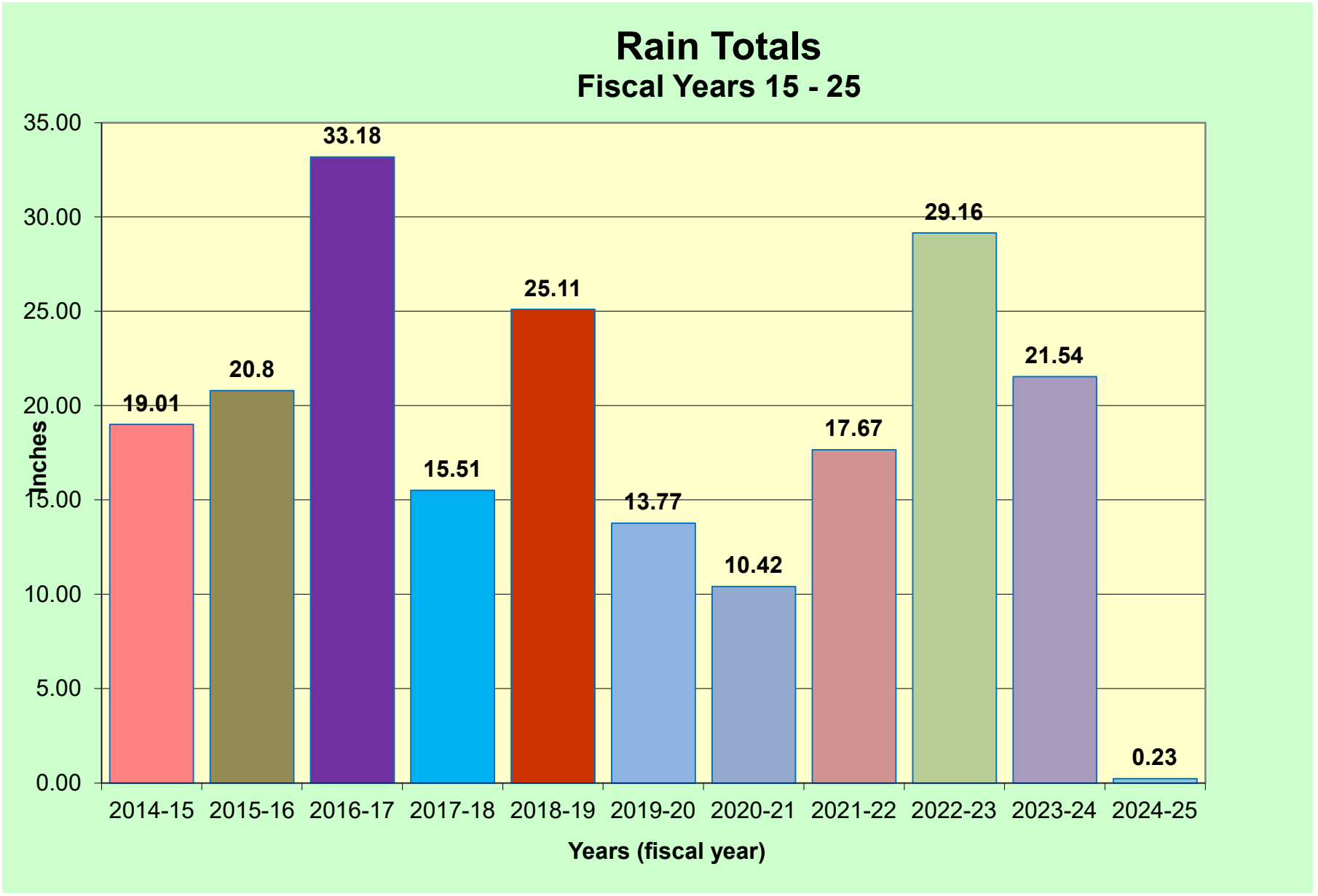
Nunes
Rainfall in Inches

	2024		2025									
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
1	0.01	0.01										
2	0	0.01										
3	0	0										
4	0	0.01										
5	0	0.01										
6	0	0										
7	0	0										
8	0.01	0										
9	0	0										
10	0	0										
11	0.01	0.01										
12	0	0.01										
13	0	0										
14	0.01	0										
15	0	0										
16	0	0										
17	0	0.02										
18	0	0.01										
19	0	0										
20	0	0										
21	0.01	0										
22	0	0										
23	0	0										
24	0	0										
25	0	0										
26	0	0										
27	0.01	0										
28	0.01	0										
29	0.02	0										
30	0.04	0										
31	0.01	0										
Mon.Total	0.14	0.09	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00
Year Total	0.14	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23

Coastside County Water District




Rainfall Total Comparison
Fiscal Years 24-25
25.00
20.00
15.00
10.00
5.00
0.00
Inches
Jul
Aug
Sept
Oct
Nov
Dec
Jan
Feb
March
April
May
June
Month
FY 25
FY 24


Rain Totals
Fiscal Years 15 - 25
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Inches
19.01
20.8
33.18
15.51
25.11
13.77
10.42
17.67
29.16
21.54
0.23
2014-15
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
2023-24
2024-25
Years (fiscal year)

STAFF REPORT

To:	**Coastside County Water District Board of Directors**
From:	**Mary Rogren, General Manager**
Agenda:	**September 10, 2024**
Date:	**September 6, 2024**
Agenda Title:	Authorize the General Manager to Enter Into an Agreement with Freyer & Laureta, Inc. for Construction Management Services for the Carter Hill Prestressed Concrete Tank and Seismic Upgrades Project

---

Recommendation/Motion:

Authorize the General Manager to enter into an agreement with Freyer & Laureta, Inc. for Construction Management Services for the Carter Hill Prestressed Concrete Tank and Seismic Upgrades Project for a not to exceed amount of $881,700.

Background:

The Carter Hill tank site, located adjacent to the Nunes Water Treatment Plant, currently has three water storage tanks at the site: HMB 1: built 1950, .4 Million Gallons; HMB 2: built 1955, .6 Million Gallons; and HMB 3: built 1963, 1.5 Million Gallons. At the July 9, 2024 Regular Board of Directors meeting, the Board authorized the General Manager to enter into an agreement with DN Tanks, LLC. for the construction of a new prestressed concrete tank for $10,968,951 at the Carter Hill site.

The Carter Hill Prestressed Concrete Tank and Seismic Upgrades Project ("Project") involves the demolition and removal of tanks HMB 1 and HMB 2 and existing yard piping and constructing a new 2.1 million gallon AWWA D110 Type 1 Prestressed Concrete DN Tank and new yard piping and related infrastructure. The Project is scheduled to commence in Fall of 2024, with scheduled completion in March 2026 (480 days.)

Given the complexity of the project, staff recommends engaging a firm to provide construction management services for the project. The construction manager is the agent for the project "owner", the District, and enforces the contract documents through critical review of contractor communications, field observation of the work and management of 3rd party inspections, and maintenance of needed documentation. They

also serve as a liaison between the District, contractor and subcontractors, and the District's design engineer and mediate as issues are identified.

Staff solicited proposals and interviewed (4) firms to provide construction management services for the project. Although all of the firms were qualified, staff recommends that the District contract with Freyer & Laureta, Inc. ("F&L") to perform the construction management services on this project given F&L's successful history with working on other District projects. Principals Jeffrey Tarantino and Josh Kimbrell have successfully assisted the District with construction management on many past projects including: 1) Denniston Water Treatment Plant Improvements Project (2011); 2) Nunes Short Term Improvements Project (2010); 3) El Granada Emergency Generators Project (2016); and 4) most recently, the Nunes Water Treatment Plant Improvements Project (2021-2024). On the recent Nunes project, F&L assisted the District in keeping change orders to a minimum (4.4% of the base contract price) despite encountering delays due to supply chain issues. F&L's construction management services on the Nunes project came in as originally budgeted ($566,600.)

Included in F&L's proposal is $114,000 for special inspections and testing to be performed by Apex Testing Laboratories Inc., a very reputable testing firm based in San Francisco and who has performed materials testing and special inspections for the District on past projects.

In addition, F&L has included Tom Bloomer, PE with Peterson Structural Engineers, as a Tank Design Technical Advisor to F&L's Construction Management team. Mr. Bloomer has worked on planning, specifications, estimating, design, and/or construction of over 350 prestressed concrete tanks. From 2011–2018, he was employed by DN Tanks, LLC.

Fiscal Impact: $881,700. The DN Tank project is included in the District's Capital Improvement Program.

Attachment A: F&L Proposal for Construction Management Services

?rr_afkclr?

FREYER & LAURETA, INC.

Coastside County Water District

F&L Proposal for Construction Management Services

Carter Hill Prestressed Concrete Tank and Seismic Upgrades Project

Civil Engineers

Surveyors

Construction Managers

July 31, 2024

FREYER & LAURETA, INC.
Civil Engineers – Surveyors – Construction Managers

Mary Rogren
General Manager
Coastside County Water District
766 Main Street
Half Moon Bay, CA 94019

VIA ELECTRONIC MAIL: July 31, 2024

RE: **Proposal for Construction Management Services**
Carter Hill Prestressed Concrete Tank and Seismic Upgrades Project
Coastside County Water District, Half Moon Bay, California

Dear Mary,

Freyer & Laureta, Inc. (F&L) is pleased to present this proposal to the Coastside County Water District (CCWD) to provide construction management services for the Carter Hill Prestressed Concrete Tank and Seismic Upgrades project (Project). In this proposal, F&L will demonstrate our understanding of the Project, our team members' experience with similar projects, and our approach to providing construction management services to deliver the Project to CCWD that conforms with the requirements developed by HDR.

The proposal is structured as follows:

- Project Understanding
- Statement of Qualifications for F&L and proposed key personnel
- Project Approach
- Scope of Work
- Compensation
- Attachment A: Key Personnel Resumes to supplement the information provided in the Statement of Qualifications
- Attachment B: Contractor's Preliminary Schedule
- Attachment C: Apex Testing Laboratories Inc. Firm Information
- Attachment D: Charge Rate Schedule

F&L staff are proud to have supported CCWD for three previous major capital improvement projects at the Nunes and Denniston Water Treatment Plants between 2010 and 2024. The F&L team has the experience and the detailed project-focused approach to work with DN Tanks and the rest of the team to deliver the Project that will provide CCWD with the necessary water system improvements to provide safe, reliable, and affordable water service.

HEADQUARTERS
150 Executive Park Blvd.
Suite 4200
San Francisco, CA 94134
(415) 534-7070

EAST BAY
1101 Marina Village Pkwy.
Suite 104
Alameda, CA 94501
(510) 937-2310

NORTH BAY
505 San Marin Dr.
Suite A220
Novato, CA 94945
(415) 534-7070

SOUTH BAY
20863 Stevens Creek Blvd.
Suite 400
Cupertino, CA 95014
(408) 516-1090

PROJECT UNDERSTANDING

CCWD's mission is to develop and provide its customers with high-quality water and service at the lowest possible price, in accordance with the following values:

- Reliability and sustainability of system facilities
- Timeliness of District policies, procedures, actions and decisions
- 50-year outlook when replacing infrastructure
- Legality of all District actions and behaviors
- Culture of openness, fairness and inclusiveness

CCWD is undertaking a project at Carter Hill to replace two existing water storage tanks with a single, larger prestressed concrete tank to maximize potable water storage with a low maintenance and seismically resilient tank. We understand the construction contract is being awarded to DN Tanks with a contract value of approximately $11 million. DN Tanks will serve as the general contractor and intends to subcontract with Andreini Bros. for site work, Half Moon Bay Building and Garden for concrete supply, Atlas Pellizzari for electrical, Calcon Systems for instrumentation, and JM Environmental for demolition.

The Project includes the following main scopes of construction work:

- Construction of a new underground duct bank and coordination with PG&E, Verizon, and AT&T for relocated cabling. Removal of the existing Verizon antennas and cabling from the existing tank.
- Construction of a temporary 24-inch diameter pipeline for bypassing the project area from tank "HMB 3" to downstream outlet distribution piping.
- Demolition and removal of the existing 400,000 gallon "HMB Tank No. 1" and 600,000 gallon "HMB Tank No. 2" and yard piping.
- Shoring, excavation, site grading, and asphalt paving around the tank.
- Structural engineering design and construction of a new 2.1 million gallon AWWA D110 Type 1 prestressed concrete tank, aggregate base course, 30-mil leak detection liner, foundation, and appurtenances. The tank is designed to have a 97-foot inner diameter and an approximately 103-foot outer diameter, including the foundation. The water level is designed to be 38.5 feet deep with a 44-foot wall height. The roof will be a free-spanning concrete dome.
- Construction of new yard piping including 16-inch diameter inlet pipe and valve, 24-inch diameter outlet piping, 2-inch diameter services line, 16-inch diameter overflow piping, 6-inch diameter drain piping, 20-inch diameter interconnection piping, and leak detection.
- Electrical work for provision of power to new equipment.
- Installation of process and instrumentation components.
- Site restoration and asphalt paving of the existing road.

F&L will collaborate with CCWD, HDR, and DN Tanks to deliver the Project that meets the intended goals and objectives while supporting CCWD's overall mission.

STATEMENT OF QUALIFICATIONS

Firm Information

F&L is an award-winning Bay Area civil engineering and surveying firm with offices in Novato, Alameda, San Francisco, and Cupertino. For more than 27 years, F&L has provided a full range of survey, civil design, and construction management services for a wide range of infrastructure and development projects. We believe the best opportunity for project success results when the owner, design team, and regulators create a collaborative work environment. We pride ourselves on promoting open and active dialogue amongst the team throughout the planning, design, and implementation stages to reduce potential costly changes during the construction phase.

We are particularly proud of our deep history within the San Francisco Bay Area – offering the District more than 150+ years of combined experience from our firm's principals leading multidisciplinary design teams. F&L's officers are experts in executing complex design and construction management services for a wide breadth of public works and special district projects in established communities.

Our firm's extensive experience has guided our team's thorough understanding of the technical and non-technical drivers that must be considered when implementing capital improvement programs. At F&L, we understand the importance of identifying and providing detailed documentation of potential non-technical requirements that may impact project costs and implementation strategies.

We will utilize our experience throughout the Bay Area in order to provide the necessary construction management services to ensure that the CCWD construction project is completed on time and in conformance with the contract documents.

LEGAL NAME	Freyer & Laureta, Inc.
LOCATIONS	**F&L Headquarters - Main for Project** 150 Executive Park Blvd., Ste 4200 San Francisco, CA 94134 (415) 534-7070 **East Bay Office** 1101 Marina Village Pkwy, Ste 104 Alameda, CA 94501 (510) 937-2310 **South Bay Office** 20863 Stevens Creek Blvd., Ste 400 Cupertino, CA 95014 (408) 516-1090 **North Bay Office** 505 San Marin Dr., Ste A220 Novato, CA 94945 (415) 534-7070
ESTABLISHED	1997, California S-Corporation
LEADERSHIP	• Richard Laureta, P.E., President, Civil Engineer CA No. 55783 • Jeffrey Tarantino, P.E., Executive Vice President, Civil Engineer CA No. 63936 • Josh Kimbrell, PE, QSD/P, LEED Green Assoc., Vice President, Civil Engineer CA No. 77666 • David Freyer, P.E., Vice President, Civil Engineer CA No. 30060 • Lorraine Htoo, PE, LEED AP, Civil Engineer CA No. 79542 • Eric Biland, P.E., QSD/P, LEED AP, QISP Civil Engineer CA No. 75125

Key Staff

F&L's proposed project team includes our most experienced construction management staff with extensive experience working with CCWD. The key F&L staff highlighted in the following paragraphs have the ability to enforce the contract documents, collaborate with CCWD and HDR to resolve contractor questions, anticipate potential field conditions which may increase the risk for changes, and confirm the proposed startup and testing plan to deliver the improvements in a timely manner.

Josh Kimbrell, P.E., QSD/P, LEED Green Associate, Vice President

Josh will be the team's construction manager/principal-in-charge. Josh brings over 17 years of experience in civil engineering design, project management, construction management, program management, cost estimating, and preparation of construction documents for public infrastructure and private development projects. His areas of expertise include construction management, infrastructure design, hydrology/hydraulics, low-impact development, stormwater management/compliance, land development, grading, and AutoCAD Civil 3D. Josh has performed construction management for three major capital improvement projects at the Nunes and Denniston Water Treatment Plants between 2010 and 2024. Josh will provide day-to-day oversight of the F&L inspection team and special inspection subconsultant. Josh will serve as the primary point of contact for CCWD, HDR, and DN Tanks.

Jeff Tarantino, P.E., Executive Vice President

Jeff will be the team's QA/QC officer. Jeff will provide as-needed construction facilitation support and will assist the team in overall leadership and vision. Jeff brings over 25 years of experience with the management, planning, design, and construction of a variety of public agency projects including water treatment plant upgrade projects. He has significant experience providing program management services for public agency capital improvement projects with a focus on potable water including assisting agencies with coordinating with the SWRCB. Jeff has extensive experience with the planning, design, and construction management of water treatment projects including for three major capital improvement projects at the Nunes and Denniston Water Treatment Plants between 2010 and 2024.

Jackson Lo, E.I.T., Associate Engineer

Jackson will be the team's resident engineer performing day-to-day construction management activities and document administration. Jackson brings over 10 years of experience in civil design, construction administration, and preparation of construction documents for public infrastructure and private development projects. He has assisted with various public and private projects as a project engineer, with extensive experience with wet utility design, traffic operations analysis, project site plan review, traffic simulation, parking studies, lighting analysis, and safety assessments. Jackson also has experience working with the staff at different Bay Area governmental agencies and conducting meetings with officials and members of the public. Jackson recently served as resident engineer performing construction management for CCWD's Nunes WTP Upgrades project from 2021 through 2024.

Tom Bloomer, P.E., Peterson Structural Engineers (Structural Advisor)

Tom will be the team's structural advisor, available to the project team on an as-needed basis. He is a former Engineering Manager of DN Tanks, experienced in the design of prestressed concrete tanks, and a member of the AWWA D110 committee, which specifies the engineering guidelines for prestressed concrete tanks.

Tom brings the depth and breadth of working on planning, specifications, estimating, design,

and/or construction of more than 350 circular prestressed concrete tanks in the Western United States, including new tank designs, tank rehabilitations, and tank assessments. Tom is especially well-versed in designs in high seismic regions. As a voting member of the American Water Works Association's Standard D110, Wire- and Strand-Wound, Circular, Prestressed Concrete Water Tanks, he is able to keep current on requirements for the design and constructability and ensure our clients benefit from this information. Additionally, Tom's familiarity with construction allows him to work in a collaborative manner with contractors to provide cost-effective and proven solutions in a timely manner.

Examples of F&L staff's construction management experience that is similar to the Project scope include:

- Coastside County Water District (CCWD) Nunes Water Treatment Plant Upgrades Project: Provided construction management services for the following items of work:
    - Filter improvements to four existing filters including media replacement, underdrain replacement, addition of air scour system and blowers, new filter-to-waste pumps and piping, and associated electrical/instrumentation improvements.
    - Addition of a new plate settler sedimentation basin and associated electrical/instrumentation work.
    - Chemical system improvements including the addition of a caustic soda bulk tank and transfer pump.
    - Concrete repair and coating for the filters and existing clearwell.
    - Process improvements including replacement and addition of valves, flowmeters, and miscellaneous piping.
    - Civil improvements, including a soil-nail retaining wall, asphalt pavement, aggregate-based access road, site drainage, and grading.
    - Electrical improvements including addition of a new MCC and miscellaneous electrical improvements.
- CCWD's Denniston and Nunes Water Treatment Plants Improvements Projects: Provided construction management services for two projects overseeing a variety of improvements at CCWD's two primary treatment facilities. The chemical feed systems at both Nunes and Denniston were replaced including converting both facilities from chlorine to onsite generation of sodium hypochlorite. In addition to the chemical system replacement at Denniston, the project included the construction of new sludge handling facilities and primary clarification improvements that included constructing two new, cast-in-place solids settling tanks and one new, bolted steel tank used for storing backwash supply water for the new primary clarification facilities. The team was responsible for oversight of the construction contract, coordination with the design teams, review and management of requests for information, review and approval of contractor progress payment applications, evaluation and negotiation of contractor notices of potential changes, and reporting to the General Manager and Board of Directors.
- City of Burlingame Water Storage Tank Improvement Projects: Provided project management and construction manager for several water storage tank projects for the City of Burlingame. Services provided include project management and oversight of the Mills Tank Seismic Retrofit project, which involved the seismic retrofit of Burlingame's existing 1.0 million gallon prestressed concrete tank. Responsibilities included coordination

of the design phase providing peer and constructability review of the contract documents, management of the bid process, review and award of the construction contract, contract administration including progress payment application review and approval, and progress reporting to the Public Works Director.

The Donnelly and Alcazar Tanks Retrofit Project, which included the steel roof improvement and recoating of four, 50,000 gallon bolted steel tanks. The team provided technical oversight for the preparation of construction documents, managed the bid and construction contract award, managed all specialty inspection's provided by the design and construction management team, provided review of technical submittals, responded to requests for information, reviewed and approved progress payment applications, provided technical review and negotiation of contractor change order requests, and progress reporting to the City Engineer.

- City of Calistoga Kimball Water Treatment Plant Retrofit Project: Provided design and construction management services for the Kimball Water Treatment Plant (WTP) and Kimball Reservoir Improvement Projects for the City of Calistoga. These projects, funded by the United States Department of Agriculture's (USDA's) Rural Development Program, included performing clarifier and filter modifications at the City's WTP to improve particle removal, therefore improving reliability of the treated water pump station through pump replacement. Provided program management and engineering design services to implement safety improvements on the Kimball Reservoir spillway, improve efficiency of existing flocculating clarifier, provide redundancy for existing dual-media filtration system, provide redundancy for existing process pumps, and upgrade existing online water quality monitoring systems to comply with current regulatory requirements. In addition, Provided construction management services including full-time field observation, contract management, submittal review, response to RFIs, and change order negotiations.

Resumes for F&L staff are included with Attachment A to this proposal.

PROJECT APPROACH

All construction projects present unique challenges based on the type of construction and the project location. This Project involves numerous construction activities including excavation, structural concrete, mechanical equipment and piping installation, electrical, instrumentation and controls. It is critical for the construction management team to help manage these challenges through a careful approach to both contract management and people management.

Project Schedule

The Project is scheduled to start in July or August 2024 with a Limited Notice to Proceed to begin relocation of the PG&E and telecommunications duct bank, along with installation of stormwater pollution prevention plan (SWPPP) measures, and work on structural design and project submittals. The Project is anticipated to be completed in March 2026 for a total of 480 calendar days following a Full Notice to Proceed (anticipated for November 2024). Please refer to Attachment B for DN Tank's anticipated project schedule.

F&L has reviewed the proposed Project schedule and understands that one of the construction manager's critical roles is to collaborate with the construction contractor to manage and progress the construction schedule. The importance of performing critical review of the contractor's proposed baseline schedule cannot be understated because it is the first opportunity for the construction manager to identify potential risk factors that could be

embedded in the contractor's proposed schedule. The baseline schedule review also allows F&L to identify critical points of inspection, special inspection needs, and recognize the contractor's planned construction sequencing that may influence the prioritization for HDR's submittal and RFI review.

Once the baseline schedule is favorably reviewed, F&L works closely with the contractor to review both three-week look-ahead schedules identifying detailed construction sequencing and monthly schedule updates to validate progress and projected completion dates. By working closely with the construction contractor to evaluate the three-week look ahead including validation initially against the baseline schedule and then with the monthly schedule updates as the project progresses. Identifying schedule risks early allows the construction manager to review potential mitigation measures with the contractor to reduce potential risks from adversely impacting the overall construction schedule.

Safety

Although the construction contractor is primarily responsible for the safety of everyone at the site, the construction manager must review and be familiar with the contractor safety protocols, consider project-specific safety risks, and observe the contractor's field work. F&L will follow all contractor safety protocols but recognizes the importance of raising safety concerns to the contractor's project manager and superintendent that the contractor may need to address.

F&L staff understands inherent dangers associated with heavy construction activities. We must work collaboratively with the contractor to protect the safety of all workers as well as the public. Critical review of the contractor's safety protocols, trucking plans, delivery and material handing plans, and construction schedule allow the F&L team to be aware of all potential safety risks and observe the contractor's work strategy to validate that all necessary safety protocols are being implemented by the contractor.

Project Team

One construction challenge that merits careful consideration is the interaction between team members, including CCWD, HDR, the contractor, and the construction manager. The construction manager can help CCWD coordinate the "spokes of the wheel" to maintain project progress.

F&L has consistently demonstrated an ability to manage complex projects with multiple team members. Whether we are acting as the construction manager, overall program manager, or as technical lead, we have a track record of successful projects involving multiple parties with diverse interests.

As construction managers, our primary responsibility is to enforce the Contract Documents through critical review of contractor communications, field observation of the work, and maintenance of needed documentation. The role is, in cooperation with CCWD, the overall management of the construction process to help keep the project on track. At times, F&L will need to be the "mediator" between two or more parties as issues are identified. We believe it is key that our involvement promotes the timely identification of issues, including the development and implementation of solutions that consider project costs and schedule, while giving CCWD overall control over the process.

To do this, we need to help the team sit at the same table and constructively discuss the issues at hand. Every construction project has multiple parties and each party has its own perspective. The owner has a need to upgrade or replace an existing facility. The design engineer creates the Contract Documents to facilitate the construction of a project that the

owner has determined is needed. The general contractor assembles a team of specialty subcontractors to implement the project presented in the Contract Documents. F&L believes that it is important to recognize each party's perspective early in the construction phase in order to have a successful project.

Beginning with the preconstruction meeting, F&L will lead a discussion among the project parties to identify critical issues that are important to each party. We believe that identifying the critical issues helps foster an open discussion. We have found that there are many common issues amongst project parties and the discussion of those issues can be used as a springboard to foster a team atmosphere.

Creating a team atmosphere early in the project can promote more open discussions throughout the project. If each party feels part of a team with a common objective, the differing opinions that almost always occur during the Project construction be openly discussed, which can help to come to an amenable resolution in a timely manner.

Unanticipated Field Conditions

Subsurface construction and modification of existing facilities always raise the possibility of unanticipated field conditions regardless of the effort made during the design to review available records. The entire construction team (i.e., CCWD, contractor, construction manager, etc.) must be alert to changes in field conditions and implement an approach to field conditions in a timely manner before a problem can grow.

Unanticipated field conditions can greatly impact cost and schedule as well as can lead to claims if not addressed in a timely and organized manner. F&L has provided construction management services for numerous projects, including excavation, new utility installation, and modifications to existing facilities. Our experience has taught us that establishing communication protocols before fieldwork begins is critical to addressing changes in field conditions in a timely manner.

When an unanticipated field condition is identified or alleged, F&L will promptly investigate the field situation, evaluating the actual field conditions compared to what is presented in the Contract Documents. F&L believes our responsibility is to provide a comprehensive evaluation of actual field conditions compared with those shown in the Contract Documents, coupled with a list of potential actions for CCWD consideration, including potential costs and pros and cons. Once we have a clear understanding of the issues including potential alternative solutions, F&L will then involve both CCWD and HDR to review the issue. Ultimately, HDR, with concurrence from CCWD, must confirm that the preferred solution meets the overall intent of the Contract Documents.

As described above, F&L's approach to managing unanticipated field conditions can only be successful if there are regular discussions among all parties. Regular face-to-face discussions allow both simple and complex issues to be thought through in a professional and efficient manner. Each party will still want to have its own private discussions about specific issues, and these discussions are necessary. The construction manager must bring all the parties to the table before and after private discussions to resolve issues in a timely and cost-effective manner.

Document Management

Document management is one of the most critical tasks any construction manager provides. Whether it is the submittals or Requests for Information process, it is necessary for the construction manager to have a system in place to log and track the status of every piece of communication. Document control activities are necessary for a number of reasons, including

but not limited to identifying what outstanding information the design engineer needs to review prior to the contractor initiating certain construction activities, tracking questions raised by the contractor, and documenting changes in the work. The construction manager must be organized and maintain a streamlined system that can help facilitate progress but also generate status reports whenever requested.

Although document management is one of the most critical activities, the construction manager must also implement a simple approach to document management. Any document management system, both the hard copy and electronic database components, needs to be user-friendly. A person must be able to easily determine the status of a submittal or find a hard copy of a letter documenting a scope change. Without a user-friendly system, there is always the potential for a dispute with the contractor over prior correspondence that could lead to unnecessary schedule and/or cost impacts.

F&L has developed a series of electronic logs that allows our staff to easily document status of submittals, RFIs, issues, potential change orders, and approved change orders. The logs are maintained on a daily basis and can easily be distributed to the project team through cloud-based document sharing via Microsoft SharePoint. The logs also shape the agendas for weekly meetings and help the team members prevent critical items from "falling off the table." Finally, when a submittal, RFI, or issue is closed, the logs are updated to reflect the completion of a specific task in order to close the loop on all items.

Enforce the Contract Documents

The Contract Documents serve as the "rulebook" for the Project. Although the design engineer takes reasonable steps to produce Contract Documents that are clear and concise, it is not uncommon that some parts of the Contract Documents can be interpreted differently by each of the parties. There can also be changes in field conditions that require modifications to the Contract Documents in order to build the project desired by the owner. The construction manager must strictly enforce the Contract Documents, including processes for resolving disputes.

In order to enforce the Contract Documents, the Construction Manager must be intimately familiar with the documents. F&L takes the time to review the Contract Documents in detail not only at the beginning of the project but also on a daily basis. During the initial review of the Contract Documents at project initiation, it is necessary to have a firm understanding of the project requirements and final product requirements. The daily review of the Contract Documents is completed in conjunction with daily schedule reviews with the general contractor to understand each detailed requirement for the work to occur that day. F&L has found this approach allows us to assist the owner, the design engineer, and the general contractor to complete the project in accordance with the intent of the Contract Documents.

SCOPE OF WORK

All construction projects present unique challenges based on the type of construction and the project location. This Project involves numerous construction activities including excavation, structural concrete, mechanical equipment and piping installation, electrical, instrumentation and controls. It is critical for the construction management team to help manage these challenges through a careful approach to both contract management and people management.

F&L has developed the scope of work below based on our experience with similar projects and we also identify key deliverables.

Task 1: Construction Management

F&L will provide the following tasks:

- Prepare for and administer a preconstruction meeting, including but not limited to reviewing the baseline schedule, communication protocols, and owner expectations.
- Set up document management system including SharePoint site for use by CCWD, HDR, and the selected construction contractor.
- Coordination with the Project team during Limited Notice to Proceed to ensure the Contractor is taking the opportunity to progress submittals, structural tank design, stormwater pollution prevention plan (SWPPP) and construction access work, and project planning, in preparation for Full Notice to Proceed while coordination with PG&E, AT&T, and Verizon is underway.
- Review of baseline schedules including ensuring adequate planning and coordination for maintenance of plant operation (MOPO) activities to minimize disruption of Nunes operations. Three critical plant shutdowns identified are below:
    - Shutdown No. 1 – connection of the temporary outlet pipe to HMB Tank No. 3 and distribution pipe.
    - Shutdown No. 2 – installation of the 16-inch diameter valve on the existing HMB Tank No. 2 inlet pipe.
    - Shutdown No. 3 – connection of the combined 24-inch diameter outlet pipe to HMB Tank No. 3 and distribution piping.
- Review contractor schedules on an ongoing basis, including:
    - Three-week look ahead schedules anticipated to be submitted weekly.
    - Monthly schedule updates anticipated to be submitted with monthly payment application requests, and
    - Provide contractor with written comments on schedule submittals.
- Review contractor non-technical submittals (e.g. Division 0 and Division 1 submittals) including distributing to CCWD with F&L comments. The submittals are anticipated to include but not limited to contractor prepared site specific health and safety plan, traffic control plan, truck routing plan, material handling and storage plan, copies of business licenses, and copies of permits required by the contract documents.
- Review contractor prepared schedule of submittals including contractor prepared procurement schedule to document anticipate material and equipment deliveries for tracking against schedule submittals identified above.
- Coordinate with the contractor to identify special inspection requirements including identifying the parties to be present during all special inspections.
- Receive, perform completeness review, distribute to HDR and CCWD, and return to contractor all submittals and shop drawings including tracking received date, ball in court status, and return date with review status.
- Manage Requests for Information (RFI) processes.
- Manage Potential Change Orders (PCOs) processes.
- Manage Design Changes and Issues.
- Conduct field visits to document and observe all major items of work to ensure compliance

with the construction drawings and specifications.

- Perform site visits four times per week on average for the 20-month duration of construction including preparing Daily Field Reports to document:
  - Personnel on site
  - Equipment on site
  - Material on site
  - Weather
  - Summary of work completed
  - Identify potential issues and challenges
  - Document planned work and actual work completed
  - Summary work planned for the following workdays until F&L next site visit.
- Daily phone calls with contractor superintendent to review planned work for each workday, summary of personnel, material, and equipment on site, discuss any anticipated challenges or information needs from the contractor, and confirm current weather to allow F&L to provide daily work summary.
- Facilitate weekly progress meetings including preparing agenda and minutes. It is anticipated that the weekly progress meeting will occur on a day that F&L would typically plan to be on site in the week.
- Facilitate value engineering discussions and documentation with RFIs and Design Change documents.
- Ensure geotechnical soil and earthwork inspection and testing are being adequately performed by the contractor's testing firm.
- Prepare weekly statement of workdays to track contract time.
- Prepare and submit monthly Board meeting PowerPoint slides summarizing project status along with photos.
- Prepare punch list and maintain punch list until such time that the contractor achieves final completion as defined in the contract documents.

Scope of Special Inspections and Testing Services

F&L will be subcontracting with Apex Testing Laboratories, Inc. (Apex) for special inspection and materials testing. Please refer to Attachment C for Apex's qualifications and firm information. The scope of special inspections and testing is anticipated to be as follows:

- Inspection of reinforcing steel, including strand-wrapping, prestressing vertical tendons, and placement.
- Inspection of anchors cast into concrete.
- Inspection of anchors post-installed in hardened concrete members.
- Verification of correct concrete mix design and review of delivery tickets.
- At the time fresh concrete is sampled to fabricate specimens for strength test, perform slump tests and record the temperature of the concrete. Air content testing is excluded as we understand DN Tanks submitted an RFI during bidding and HDR (the engineer of record) agreed to remove the air-entraining admixture from the concrete mix as Half Moon Bay is

not a freeze/thaw climate. CCWD agreed that the air content testing requirement should be removed as well per direction from Sean Donovan via email dated July 23, 2024 with Cc to Mary Rogren and Darin Sturdivan.

- Take concrete specimens for strength tests to be performed in lab. A minimum of four cylinders shall be made. Test one at seven days and two at 28-days. The fourth cylinder shall be tested at 28-days if one or both of the 28-day cylinder results are below required strength.
- Perform concrete strength testing in lab.
- Maintain a spreadsheet showing date, sequential order of strength test results and indicate running average.
- Post-installed anchors epoxy installed reinforcing.
- Measure floor flatness and levelness as needed when questionable surfaces are observed.
- Inspection of concrete and shotcrete placement for proper application techniques.
- Inspection for maintenance of specified curing temperature and techniques.
- Inspection of prestressed concrete: Application of prestressing forces; epoxying of bonded prestressing tendons in the vertical bars.
- Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.
- Inspection of formwork for shape, location and dimensions of the concrete member being formed.
- Inspection of field welding.
- Conduct weekly visual observation of the structural systems for general conformance to the construction documents. Prepare weekly report of observations describing work progress and non-conforming items.
- Examine designated seismic systems requiring seismic qualification and verify that the label, anchorage or mounting conforms to the certificate of compliance.
- Inspection of anchorage of electrical equipment.
- Inspection of installation and anchorage of piping systems, ductwork and their associated mechanical units designed to carry hazardous materials.
- Inspection of installation and anchorage of vibration isolation systems where the construction documents require a nominal clearance of ¼-inch or less between the equipment support frame and restraint.
- We understand that geotechnical testing will be the responsibility of the Contractor.

Deliverables

1. Document management system, including user instructions.
2. Weekly updated logs for submittals, RFIs, and field correspondence.
3. Weekly meeting agendas and minutes.
4. Weekly statement of workdays.
5. Daily field reports when performing site visits.

6. Daily phone reports from daily calls with superintendent.
7. Punch list, including weekly updates.

Assumptions

- Active construction period is anticipated to be 20 months, including startup and commissioning.
- F&L's site visits will average four days per week for the duration of construction, but the actual number of weekly visits may vary depending on the work being performed.
- Each site visit will not exceed 8 hours and will occur Monday through Friday during normal business hours.
- All documents will be managed electronically; no hard copies will be required.
- Weekly meetings will occur at the Project site in space provided by the construction contractor.

Task 2: Contract Payment Management

F&L will provide the following tasks:

- Review and comment on contractor-provided Schedule of Values submittal that will serve as the basis of monthly progress payments.
- Review and come to agreement on monthly progress payment applications from the contractor including all required Conditional and Unconditional Lien Releases.
- Present the monthly progress payment to CCWD with recommendation for payment.
- Track monthly progress payment status, including documentation of payment status, retainage, and other key financial information.

Deliverables

1. Comments on Schedule of Values.
2. Monthly Progress Payments for CCWD processing

Assumptions

- Contractor will provide progress payment applications by the 25th day of each month.
- F&L will not process the progress payment applications until the contractor has provided all required Conditional and Unconditional Lien Releases.
- No more than 20 monthly progress payments will be required.

Task 3: Startup and Commissioning Support

F&L will provide the following tasks:

- Review startup and commissioning plan prepared by the contractor and coordinate with HDR to validate contractor's plan completeness.
- Perform equipment review to verify power and visual functionality.
- Coordinate on site training from equipment vendors.

- Assist CCWD to coordinate with SWRCB to confirm SWRCB approval for performing startup including scheduling SWRCB staff to be present, if required.
- Witness contractor performed startup and commissioning including documenting observed conditions.

Deliverables

1. Comments on contractor startup and commission plan.
2. Field reports from startup and commissioning witnessing.

Assumptions

- Contractor will be responsible for all materials, equipment, and specialty contractors/ vendors required for the startup and commissioning phase.
- On site training for CCWD operators will occur at the project site and all training materials will be provided by the Contractor.
- Contractor is responsible for ensuring all vendors are present and perform all required checkout installation verification prior to scheduling the startup and commissioning.
- Startup and commissioning will occur within assumed 20 month active construction window.

Task 4: Project Closeout

F&L will provide the following tasks:

- Perform Substantial Completion walkthough and forms.
- Perform Final Completion walkthrough to verify that all punch list items have been completed.
- Verify that all spare parts and materials required by the contract documents have been delivered to the Site and safely stored.
- Collect and review As-Built Record Drawings from contractor and engineer.
- Manage closeout documents including lien releases, final change order letter, unconditional waiver, and warranty letter.
- Prepare final pay application including verify Final Conditional Lien Release is provided by the contractor.
- Assist with Notice of Completion for CCWD use to file with San Mateo County.
- Review equipment vendor provided operation and maintenance manuals.
- Submit all final documents and photos to CCWD.

Deliverables

1. All final documents and photos to CCWD.

Assumptions

- CCWD will be responsible for filing the Notice of Completion with San Mateo County.
- CCWD will process final payment and retention release no sooner than 30 days following date of recordation of the Notice of Completion.

COMPENSATION

F&L proposes to provide its services on a time and materials basis with a not to exceed fee of $881,700 in accordance with our Charge Rate Schedule dated January 1, 2024. Table 1 included as an attachment to this proposal provides the estimated level of effort by task.

F&L brings the level of experience and local presence that we understand to be desired by CCWD. We have proposed the staff that will be able to work collaboratively with CCWD, HDR, and DN Tanks to oversee and manage the construction project to meet the desired schedule and within budget.

Please contact Josh at (808) 779-5988 or kimbrell@freyerlaureta.com with any questions or comments on this proposal. We look forward to discussing our proposal with you and supporting CCWD on this important project.

Sincerely,

FREYER & LAURETA, INC.

Josh Kimbrell, P.E., QSD/P, LEED Green Associate
Vice President, Freyer & Laureta, Inc.
(415) 534-7070 x108 (O) | (808) 779-5988 (M)
kimbrell@freyerlaureta.com

Jeffrey Tarantino, P.E.
Executive Vice President, Freyer & Laureta, Inc.
(510) 937-2310 x201 (O) | (650) 619-3226 (M)
tarantino@freyerlaureta.com

Cc: Joanne Yau (Freyer & Laureta, Inc.)

Attachments

Table 1: Estimated Budget for Construction Management Services
Attachment A: Key F&L Personnel Resumes
Attachment B: Contractor's Preliminary Schedule
Attachment C: Apex Testing Laboratories Inc. Firm Information
Attachment D: Charge Rate Schedule dated January 1, 2024

Attachments

Table 1

Estimated Budget for Construction Management Services

TABLE 1: ESTIMATED BUDGET FOR CONSTRUCTION MANAGEMENT SERVICES

TASKS	ESTIMATED LABOR (Hours) Personnel & Rates ($/hr)			TOTAL LABOR COST ($)	EXPENSES AND ADMINISTRATION				ESTIMATED COST	
					UNIT	QNTY	UNIT COST ($)	8% MARKUP ($)	TOTAL COST PER ITEM ($)	SUB TOTALS ($) (1)
	Staff Engineer I	Resident Engineer/ Associate Engineer	Construction Manager/ Principal-in-Charge							
	$152	$194	$263							
Task 1 - Construction Management										
Review project and set up document management	24	12	4	$7,028					$7,028	
Prepare for and administer preconstruction meeting	4	4	2	$1,910					$1,910	
Manage Contractor Submittals process (Assume 4 hours per week for first 6 months)	78	26	12	$20,056					$20,056	
Manage RFI process (Assume 2 hours per week for 20 months)	174	60	24	$44,400					$44,400	
Manage Potential Change Orders (PCOs) process (Assume 1 hour per week for 20 months)		87	16	$21,086					$21,086	
Manage Design Changes and Issues (Assume 1 hour per week for 20 months)		87	16	$21,086					$21,086	
Review baseline schedule and weekly schedule review (Assume 1/2 hour per week for 20 months)		44	12	$11,692					$11,692	
Perform average of four 6-hour site visits per week and prepare daily field reports (including travel time)	2,100			$319,200					$319,200	
Resident Engineer and Construction Manager site visit allowance		696	260	$203,404					$203,404	
Prepare weekly meeting agendas and minutes (Assume 1.5 hours per week for 20 months)		130		$25,220					$25,220	
Attend weekly meetings		87	87	$39,759					$39,759	
Prepare weekly statement of work days	44			$6,688					$6,688	
Prepare and submit monthly Board meeting slides summarizing status along with photos	20	8	4	$5,644					$5,644	
Prepare and manage punch list	16	4	2	$3,734					$3,734	
Allowance for Special Inspections and Testing					ls	1	$95,750	$7,660	$103,410	
Allowance for Industrial Coatings inspection					ls	1	$10,000	$800	$10,800	
Subtotal Labor Hours - Task 1	2,460	1,245	439	**$730,907**	Estimated Cost - Task 1					**$845,100**
Task 2 - Contract Payment Management										
Review and come to agreement on Contractor monthly pay applications (Assume 1.5 hours per month for 20 months)		30	8	$7,924					$7,924	
Coordination with CCWD		5	2	$1,496					$1,496	
Manage contract price tracking	10	4	2	$2,822					$2,822	
Subtotal Labor Hours - Task 2	10	39	12	**$12,242**	Estimated Cost - Task 2					**$12,200**
Task 3 - Startup and Commissioning										
Review startup and commissioning plan		4	2	$1,302					$1,302	
Assist CCWD to coordinate with SWRCB		4	2	$1,302					$1,302	
Coordinate with HDR and CCWD		4	2	$1,302					$1,302	
Witness startup and commissioning	40	16	8	$11,288					$11,288	
Subtotal Labor Hours - Task 3	40	28	14	**$15,194**	Estimated Cost - Task 3					**$15,200**
Task 4 - Project Closeout										
Substantial Completion walkthrough and forms		4	2	$1,302					$1,302	
Final Completion walkthrough and forms		4	2	$1,302					$1,302	
Collect and review As-Built Record Drawings		4	2	$1,302					$1,302	
Review O&M manual submittals	4	2	2	$1,522					$1,522	
Manage closeout documents including lien releases, final change order letter, unconditional waiver, and warranty letter		4	2	$1,302					$1,302	
Assist with Notice of Completion and submit all final documents and photos to CCWD	8	4	2	$2,518					$2,518	
Subtotal Labor Hours - Task 4	12	22	12	**$9,248**	Estimated Cost - Task 4					**$9,200**
Total Labor Hours	**2,522**	**1,334**	**477**	**$767,591**	**Total Estimated Cost**					$881,700

Notes

(1) Totals rounded to nearest $100.

Attachement A

Key Personnel Resumes

Josh Kimbrell, P.E., QSD/P, LEED Green Associate

VICE PRESIDENT

Josh Kimbrell has over 17 years of experience in civil engineering design, project management, construction management, capital improvement program management, cost estimating, and preparation of construction documents for public infrastructure and private development projects. His areas of expertise include infrastructure design, hydrology/hydraulics, low-impact development, stormwater management/compliance, land development, grading, and AutoCAD Civil 3D. He has served as project management and engineer on a wide range of project types, including:

PROJECTS

Public Works & Municipal Infrastructure

Centennial Plaza Improvements, San Bruno; Treasure Island Redevelopment Stage 2/3, Treasure Island Utility Conditions Assessment, Treasure Island Water Resources Recovery Facility; Nunes Treatment Plant Upgrades, Nunes Hypochlorite Room Improvements, Denniston Treatment Plant Improvements, El Granada Generators, Coastside County Water District; City and Facilities Parking Lot Improvements, Sanchez Lagoon Storm Drains, Waterline Replacement Projects, Storm Drain Improvements, El Portal/Trousdale Creek Repair, City of Burlingame; Crespi/Hwy 1 Sewer Repair, Santa Rosa Storm Drain Outfall Improvements, City of Pacifica; San Francisquito Creek Sewer, East Palo Alto Sanitary District; Pump Station Improvements, SVCW SWPPP, Silicon Valley Clean Water; John Daly Blvd Complete Streets, City of Daly City; Arlington Sanitary Sewer, City of Berkeley; Oak Springs Stormwater Improvements, City of Orinda; Werder & Destination Parks, City of Foster City; Wet Weather Flow, Sewer Authority Mid-Coastside; Kimball Treatment Plant, City of Calistoga

Land Development & Campus

UCSF – Mission Bay 2nd Parcel Infrastructure & Childcare Center, Minnesota Street Affordable Housing, Campus Wide Trip Hazard Reduction Project, Northwest Parking Lots & EV Charging Project; Zuckerberg San Francisco General Hospital, 681 Florida Street Family Housing; Candlestick Point/Hunters Point Master Plans, Alexandria Real Estate 1450 Owens Street, San Francisco; The Cove at Oyster Point, Genentech, Misc. Projects, So. San Francisco; LinkedIn Campus Exterior Improvements, Sunnyvale; 3045 & 2747 Park Blvd., Hewlett Packard Exterior Improvements, Palo Alto; Hines Campus 3125 Clearview Way, San Mateo; East Bay BMW, Pleasanton.

Roadway & Infrastructure

Naval Training Center Drainage Design, San Diego; Rankin Pump Station Design, San Francisco; Ralston Avenue Grade Separation, Belmont; Special Weapons Area Pump Station, NAS North Island; Sutro Tower Improvements & Pier 45 Seismic Retrofit, San Francisco; Guadalupe River Retaining Walls, San Jose Bollman; Water Treatment Plant Expansion, Concord

Office, Commerical & Residential

Britannia Oyster Point, South San Francisco; Hercules Properties PUD, Hercules; McGrath Rentcorp Offices, Livermore; Children's Center, NAS North Island, San Diego; Marriott Courtyard & Bay West Cove, So. San Francisco; Channel Street (SF) Partners, One Mission Bay; BOSA, Arden, San Francisco

EDUCATION

- Bachelor of Science in Civil Engineering
- Santa Clara University, Santa Clara, CA

CONTACT

415-534-7070
kimbrell@freyerlaureta.com

150 Executive Park Blvd., Ste 4200
San Francisco, CA 94134

KEY EXPERIENCE

- Municipal Water, Stormwater & Sewer Design
- Water Treatment Plant & Pump Station Improvements
- Mixed-Use & Residential Urban & Suburban Developments and Master Planning
- Streetscape & Surface Improvements: Parking Lots, Roadways, Sidewalks, & Stormwater Treatment
- Park Projects, Including Water Services, Grading, and Drainage
- ADA Accessible Walkways & Curb Ramps
- University & Life Science Campus Development & Infrastructure

Jeffrey J. Tarantino, P.E

EXECUTIVE VICE PRESIDENT

Jeff Tarantino has an extensive civil engineering design and construction background developed during his 24 years of civil and environmental work experience. He has served as project manager and QA/QC on numerous program management, planning, design, permitting, and construction management projects, with a focus on civil site development, water supply treatment and distribution, wastewater treatment and collection, water reuse treatment and distribution, flood control, groundwater extraction and treatment systems, and water quality.

Jeff serves as the primary point of contact with permitting and environmental resources agencies on behalf of clients to facilitate open dialogue with the agencies. Jeff has demonstrated a unique ability to assist clients in bridging technical and non-technical challenges to deliver multi-beneficial projects within budget and on schedule.

PROJECTS

Infrastructure Design & Planning

City of Pacifica 2022 Storm Drainage Master Plan Update; San Carlos Pulgas Creek Watershed Study & Managment Plan; City of Burlingame Neighborhood Storm Drain Capital Improvement Program; Wastewater Collection for the City of Pacifica; SFPUC Treasure Island Water Resource Recovery Facility; Water Distribution for the City of Burlingame, Town of Hillsborough, Valley of the Moon Water District, & Menlo Park; Water Treatment, City of Calistoga; City of San Mateo, City of Los Altos, & Town of Los Altos.

Program & Project Management

Monterey County Water Resources Agency, Water Supply; City of Lathrop, Water Reuse; City of Burlingame, Stormwater; City of East Palo Alto, Water Distribution; Santa Clara Valley Water District, Flood Control; City of Tracy, Water Supply; City of San Mateo, Street Rehabilitation

Infrastructure Construction Management

City of Burlingame, Water Storage; Coastside County Water District & City of Calistoga, Water Treatment; Sewer Authority Mid-Coastside, Wastewater Storage; Town of Los Altos Hills, Wastewater Collection; City of East Palo Alto Groundwater Treatment

Development & Campus

UCSF: Minnesota Street Student House; Campus Wide Technical Criteria Development; Weill Institute for Neuroscience, Zuckerberg San Francisco General Hospital's UCSF Research & Academic Building; UC Berkeley, Berkeley Way Project; 100 Channel Street (SF) Owner, One Mission Bay; Uber Headquarters, 1455 & 1515 Third Street; TNDC Candlestick Block 10A; Mission Bay: Park P2-P8; Park P3; TNDC, 681 Florida Street

EDUCATION

- Bachelor of Science in Civil Engineering
- Santa Clara University, Santa Clara, CA

CONTACT

650-619-3226
tarantino@freyerlaureta.com

150 Executive Park Blvd., Ste 4200
San Francisco, CA 94134

KEY EXPERIENCE

- Experienced with planning, design, and construction of infrastructure improvement projects.
- Project Manager for several utility improvement projects throughout San Mateo County including the City of San Mateo.
- Project Manager Pedro Point Sanitary Sewer Rehabilitation and Replacement Project that was selected for the APWA & ASCE Project of Year.

Jackson Lo, E.I.T

PROJECT ENGINEER

Jackson Lo has over 10 years of experience in civil design, construction administration, and preparation of construction documents for public infrastructure and private development projects. As a project engineer, Jackson has assisted with a variety of public and private projects. He has extensive experience with wet utility design, traffic operations analysis, project site plan review, traffic simulation, parking studies, lighting analysis and safety assessments. Jackson also has experience working with staff at different Bay Area governmental agencies and conducting meetings with officials and members of the public.

His current and past engineering public work projects for F&L include:

PROJECTS

Public Works Projects

- City of San Bruno Centennial Plaza Improvements, San Bruno, CA
- Cal Water Operations Yard Improvements Project, Los Altos, CA
- San Mateo Basin D Sanitary Sewer Rehabilitation Phase 1, San Mateo, CA
- Nunes Water Treatment Plant Upgrades, Half Moon Bay, CA
- Denniston Water Treatment Plant Contact Clarifier Hatch Replacement, Half Moon Bay, CA
- Nunes Water Treatment Plant Hypochlorite Room Improvements, Half Moon Bay, CA
- City of Burlingame Bayside Fields Improvements, Burlingame, CA
- City of Burlingame Parking Lot X and Fire Station 35 Improvements, Burlingame, CA
- Treasure Island Stage 2/3 Streets & Infrastructure, San Francisco, CA
- Treasure Island Utility Conditions Assessment, San Francisco, CA
- Hillsborough Creek Bank Repair Project, San Mateo, CA
- Equalization Basin, City of Pacifica
- The Collection System (Pipe Bursting), City of Pacifica
- Clarendon Drainage Study, City of Pacifica
- Crespi Pipe Bursting, City of Pacifica
- Palmetto & Montecito Storm Drain Improvements, City of Pacifica

EDUCATION

- Bachelor of Science in Civil Engineering
- California Polytechnic State University, San Luis Obispo

CONTACT

415-534-7070
lo@freyerlaureta.com

150 Executive Park Blvd., Ste 4200
San Francisco, CA 94134

KEY EXPERIENCE

- Extensive condition assessment experience, including the Treasure Island Utility Conditions Assessment
- Expertise in storm drainage studies and improvements
- Numerous public work projects centering around collection system rehabilitation and improvements

Tom Bloomer, PE

Role: Tank Design Technical Advisor

Tom brings the depth and breadth of working on planning, specifications, estimating, design and/or construction of more than 350 circular prestressed concrete tanks in the Western United States including new tank designs, tank rehabilitations, and tank assessments. Tom is especially well versed with designs in high seismic regions. As a voting member of American Water Works Association's Standard D110, Wire- and Strand-Wound, Circular, Prestressed Concrete Water Tanks he is able to keep current on requirements for the design and constructability and ensure our clients benefit from this information. Additionally, Toms' familiarity with construction allows him to work in a collaborative manner with contractors to provide cost-effective and proven solutions in a timely manner.

Relevance and Benefits to the District

- Depth and breadth of working on over 350 circular, prestressed concrete tank projects
- Tom has worked on over 50 tanks in the Bay Area for a total volume of nearly 200 MG!
- Designs that are practical, cost-effective, and constructible which are the result of time spent in the field during the construction phase
- Voting AWWA D110 member means current design requirements are met

Project Experience

San Jose Water Company, (two 8 MG) Cambrian Reservoir Replacement, San Jose, CA
PSE is providing structural Design for two new water storage tanks for San Jose Water Company to replace an existing in-ground embankment style reservoir built in 1916. The tanks are designed as a circular, prestressed concrete potable water tank, meeting or exceeding the requirements found in American Water Works Association Standard (AWWA) D110, ASCE 7 and ACI 350. The site-specific seismic design parameters are based on ASCE 7, Chapter 21. Tom was responsible for the design of the complete tank structure, including the specialty prestressing operations (circumferential and vertical) specified for the tank. The design also required a finite element model of the floor slab for the total and differential settlements at the site.

Town of Hillsborough, Darrell (2.0 MG) Prestressed Concrete Tank, *Hillsborough, CA*
PSE was contracted for the design of a new 2 MG prestressed concrete tank to replace two existing, aging 0.5 MG welded steel tanks for the Town of Hillsborough. The new tank is an at-grade prestressed concrete structure (AWWA D110, Type I) located adjacent to the San Andreas Fault. The large seismic accelerations expected at the site resulted in a calculated slosh wave height of 9-feet and required the tank design to incorporate a deep keyway to address global sliding stability. The new tank is in a residential neighborhood which limited the overall height of the tank to 24-feet to minimize visibility, requiring tie-down cables between the wall top and roof to address the uplift pressure from the slosh wave. Project scope includes work from predesign through to construction services. The design required a finite element analysis of the floor slab, using SAFE.

East Bay Municipal Utility District, 9.0 MG Tank, Castro Valley, CA*
New water storage tank for East Bay Municipal Utility District. The 9 MG tank is designed as a circular, prestressed concrete potable water tank, meeting or exceeding the requirements found in American Water Works Association Standard (AWWA) D110, ASCE 7 and ACI 350. Tom was responsible for the design of the complete tank structure, including the specialty prestressing operations (circumferential and vertical) specified for the tank. Design details also included pipe penetrations through the floor and wall of the tank. Tom was also responsible for technical support to in-field personnel during construction.

** Denotes work with a previous firm*

PSE
PETERSON STRUCTURAL ENGINEERS

JOB TITLE
Firm Principal

YEARS WITH PSE
3 years

EXPERIENCE
26 years

PRIMARY OFFICE LOCATION
San Diego Office
10650 Treena Street, Suite 208
San Diego, CA 92131
t: 858.326.3022
e: tom.bloomer@psengineers.com

EDUCATION
BS, Civil Engineering
San Diego State University

REGISTRATIONS
Professional Engineer: CA

MEMBERSHIPS
American Water Works Association (AWWA)
» Standard D110 Voting Member

American Water Works Association (AWWA)
» Standard D108 Voting Member

Tau Beta Pi Life Member

ABDEL KHELIFA
PRESIDENT / CEO / PROJECT DIRECTOR

As President, Mr. Khelifa has developed and instituted a superior level of client service. This involves on-time service, professional ethics, and anticipation of the client's needs, sometimes before the client realizes their needs. Fifteen years of professional experience including civil, geotechnical, special inspection and material testing. Project engineering and management. Technical, financial, and legal experience, including contract negotiations. Extensive office and field experience in construction inspection of high rise buildings, highways and bridges. Planning and bid document review, change orders, preparing cost estimates, checking shoring, false work and field work progress, and laboratory correspondence test reports. Supervising soil sampling and grading, compaction tests in field and laboratory, pile driving and pier drilling, field testing and inspection of concrete, post-tensioned concrete, asphalt concrete, aggregate base and sub grade soils. Quality control and supervision of inspection of structural steel welding and painting.

Education:

M.S. Civil Engineering Northeastern University, Boston, MA

Professional Licensure:

CA Civil Engineering License (P.E.) C057368

Certifications:

- ICBO - International Conference of Building Officials: Reinforced Concrete, Structural Masonry, Pre-stressed concrete, Structural Steel Welding
- Ultrasound Testing Level II
- Magnetic Particle Testing Level II
- CALTRANS Certificate of Proficiency in Material Testing
- ACI Concrete Field Technician - Grade I
- Pacific Nuclear Technology Co. Moisture Density Gauge
- FEMA Housing Inspection Certificate

Apex Teseting Laboratories, Inc. San Francisco, CA
1997 - Present: President and Project Manager
Quality control division manager. Worked and supervised field and lab engineering technicians. Inspected rebar and concrete pour placement, metal deck and welded studs, and high strength bolting. Conducted concrete slump, air, and compression strength tests. Inspection of field work progress and participated in solving field problems. Supervised laboratory testing of concrete, asphalt and soil according to AASHTO, ASTM, and CALTRANS methods.

Project Experience:
- City College of San Francisco– Various Projects San Francisco International Airport
- San Francisco BART-SFO Extension
- San Francisco Pacific Bell Ball Park
- San Francisco San Francisco Housing Authority Mission Bay High-rise Building,
- San Francisco Housewives Market
- Oakland City of San Francisco Seismic Retrofit Projects
- City of BurlingameAsphalt Pavement
- City of Brisbane Asphalt Pavement
- City of Foster City Asphalt Pavement
- CALTRANS Freeway I-80 Widening
- CALTRANS Patton Street Seismic Retrofit

Attachement B

Contractor's Preliminary Schedule

Half Moon Bay Project Schedule

Coastside County Water District, 2.10 MG Tank

Limited NTP - July 12, 2024

Kickoff Meeting

SWPPP, Submittals & Relocation of the P&E and Telecomms Duct Bank

Full NTP - November 7, 2024

Temporary Piping & Steel Tank Demolition

Install Piping & Vales

Tank Subgrade preparation

Prestressed Concrete Tank Construction

Floor Placement◊Erect Walls◊Roof Placement◊Prestressing

Electrical & Instrumentation

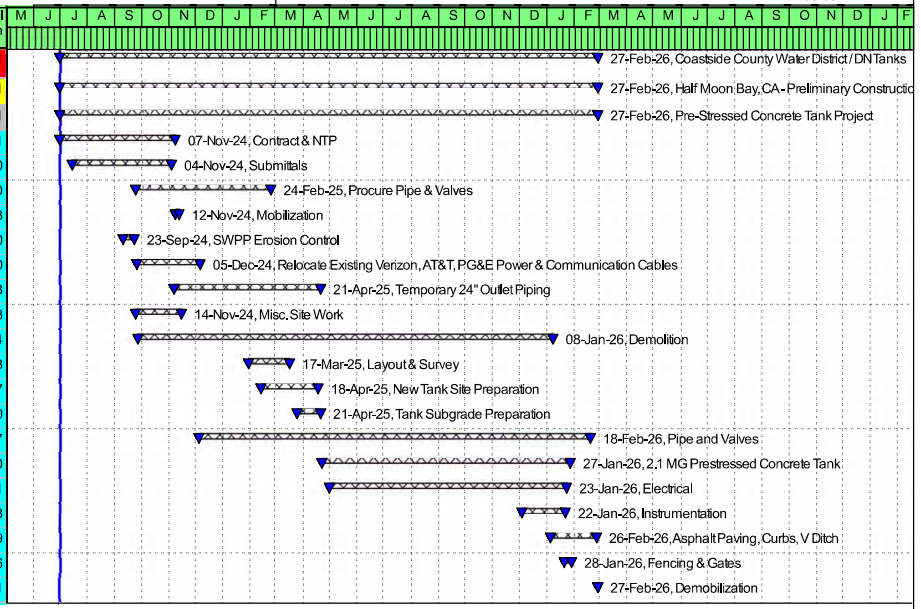
Testing & Commissioning of Tank

Site Restoration & Paving

Final Completion

July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2024						2025												2026		

Activity ID	Activity Name	Start	Finish	Original Duration
	Coastside County Water District / DN Tanks	01-Jul-24	27-Feb-26	411
	Half Moon Bay, CA - Preliminary Construction Schedule	01-Jul-24	27-Feb-26	411
	Pre-Stressed Concrete Tank Project	01-Jul-24	27-Feb-26	411
	Contract & NTP	01-Jul-24	07-Nov-24	91
	Submittals	15-Jul-24	04-Nov-24	80
	Procure Pipe & Valves	24-Sep-24	24-Feb-25	100
	Mobilization	08-Nov-24	12-Nov-24	3
	SWPP Erosion Control	10-Sep-24	23-Sep-24	10
	Relocate Existing Verizon, AT&T, PG&E Power & Communication Cables	25-Sep-24	05-Dec-24	50
	Temporary 24" Outlet Piping	07-Nov-24	21-Apr-25	108
	Misc. Site Work	24-Sep-24	14-Nov-24	38
	Demolition	27-Sep-24	08-Jan-26	314
	Layout & Survey	29-Jan-25	17-Mar-25	33
	New Tank Site Preparation	12-Feb-25	18-Apr-25	47
	Tank Subgrade Preparation	25-Mar-25	21-Apr-25	20
	Pipe and Valves	04-Dec-24	18-Feb-26	297
	2.1 MG Prestressed Concrete Tank	22-Apr-25	27-Jan-26	190
	Electrical	01-May-25	23-Jan-26	181
	Instrumentation	04-Dec-25	22-Jan-26	33
	Asphalt Paving, Curbs, V Ditch	05-Jan-26	26-Feb-26	39
	Fencing & Gates	21-Jan-26	28-Jan-26	6
	Demobilization	27-Feb-26	27-Feb-26	1

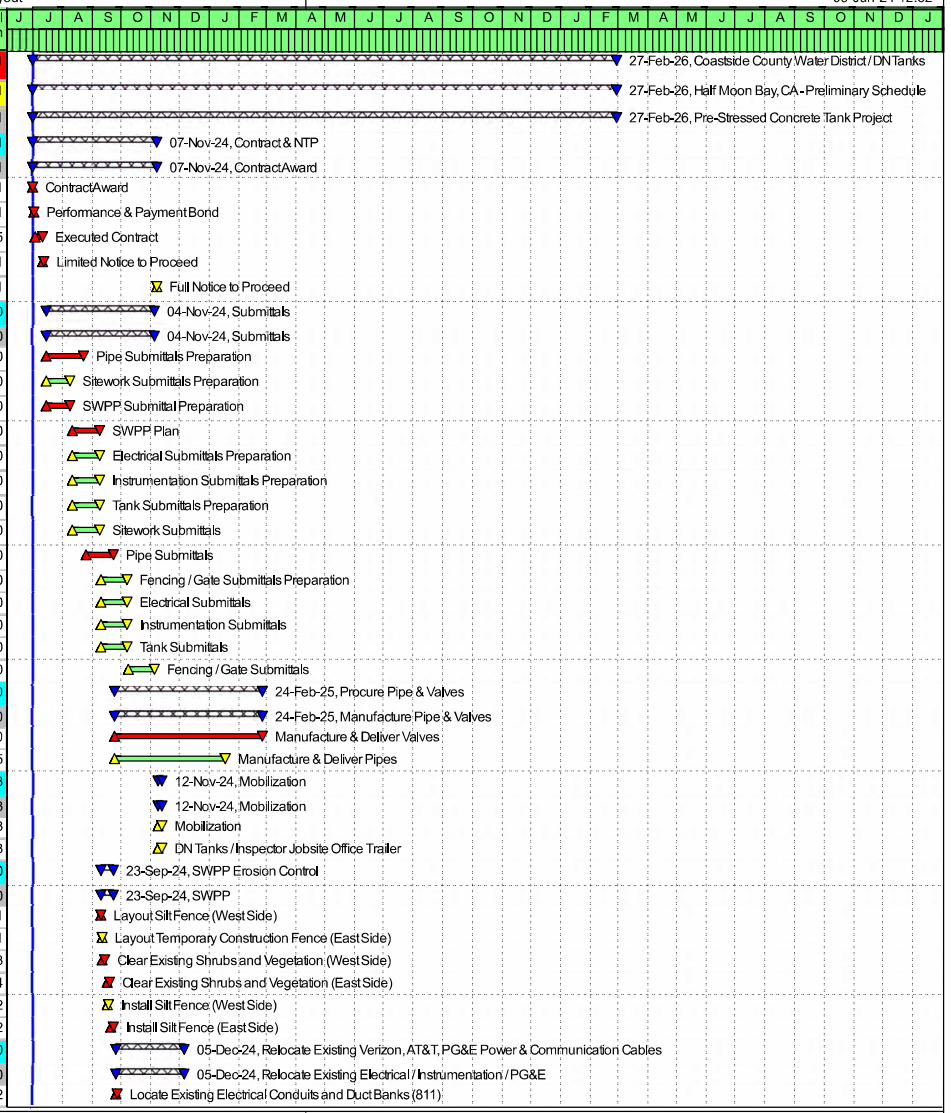


Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

Half Moon Bay | DN Layout | 06-Jun-24 12:52

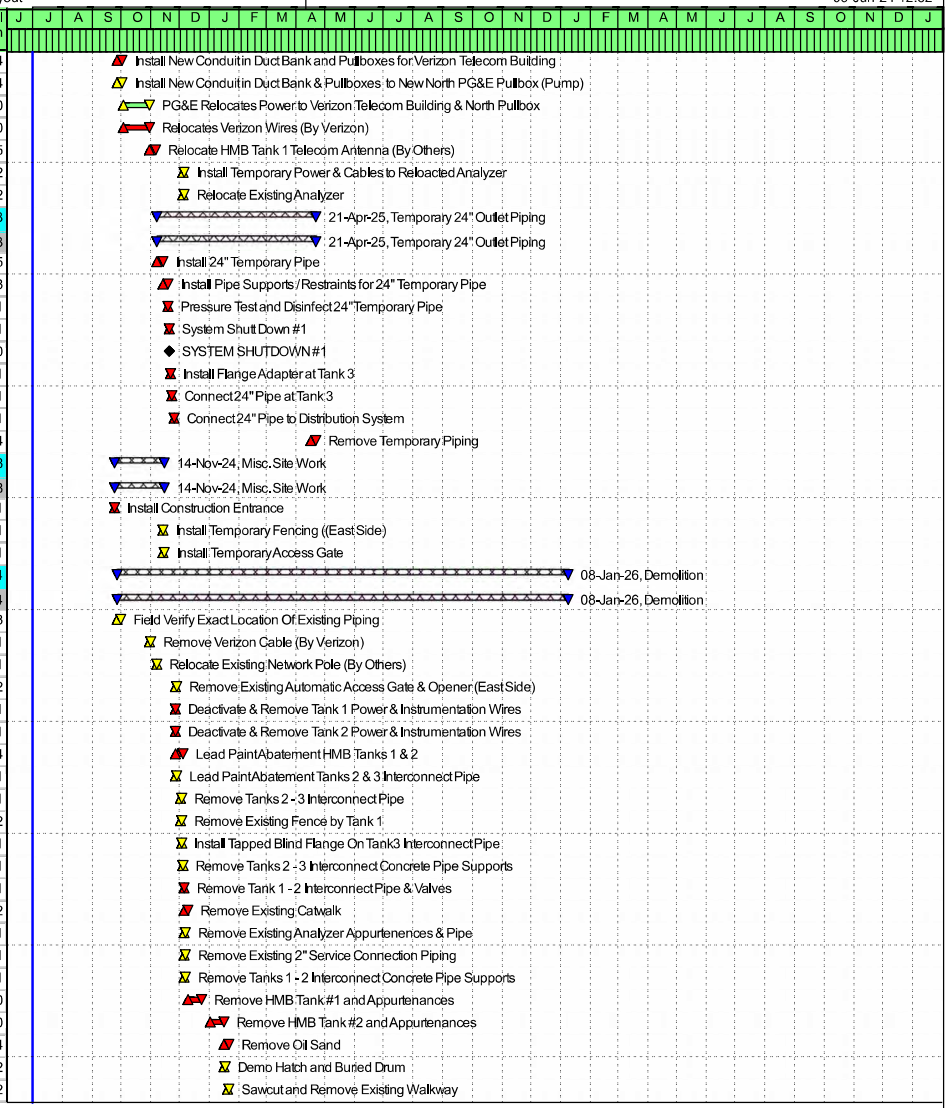
Activity ID	Activity Name	Start	Finish	Original Duration
Coastside County Water District / DN Tanks		01-Jul-24	27-Feb-26	411
Half Moon Bay, CA - Preliminary Schedule		01-Jul-24	27-Feb-26	411
Pre-Stressed Concrete Tank Project		01-Jul-24	27-Feb-26	411
Contract & NTP		01-Jul-24	07-Nov-24	91
Contract Award		01-Jul-24	07-Nov-24	91
A0010	ContractAward	01-Jul-24	01-Jul-24	1
A1000	Performance & Payment Bond	02-Jul-24	02-Jul-24	1
A1160	Executed Contract	03-Jul-24	11-Jul-24	5
A3780	Limited Notice to Proceed	12-Jul-24	12-Jul-24	1
A1170	Full Notice to Proceed	07-Nov-24	07-Nov-24	1
Submittals		15-Jul-24	04-Nov-24	80
Submittals		15-Jul-24	04-Nov-24	80
A1100	Pipe Submittals Preparation	15-Jul-24	23-Aug-24	30
A1120	Sitework Submittals Preparation	15-Jul-24	09-Aug-24	20
A3560	SWPP Submittal Preparation	15-Jul-24	09-Aug-24	20
A1010	SWPP Plan	12-Aug-24	09-Sep-24	20
A3520	Electrical Submittals Preparation	12-Aug-24	09-Sep-24	20
A3530	Instrumentation Submittals Preparation	12-Aug-24	09-Sep-24	20
A3540	Tank Submittals Preparation	12-Aug-24	09-Sep-24	20
A3580	Sitework Submittals	12-Aug-24	09-Sep-24	20
A3570	Pipe Submittals	26-Aug-24	23-Sep-24	20
A3550	Fencing / Gate Submittals Preparation	10-Sep-24	07-Oct-24	20
A3590	Electrical Submittals	10-Sep-24	07-Oct-24	20
A3600	Instrumentation Submittals	10-Sep-24	07-Oct-24	20
A3610	Tank Submittals	10-Sep-24	07-Oct-24	20
A3620	Fencing / Gate Submittals	08-Oct-24	04-Nov-24	20
Procure Pipe & Valves		24-Sep-24	24-Feb-25	100
Manufacture Pipe & Valves		24-Sep-24	24-Feb-25	100
A3760	Manufacture & Deliver Valves	24-Sep-24	24-Feb-25	100
A3750	Manufacture & Deliver Pipes	24-Sep-24	17-Jan-25	75
Mobilization		08-Nov-24	12-Nov-24	3
Mobilization		08-Nov-24	12-Nov-24	3
A1020	Mobilization	08-Nov-24	12-Nov-24	3
A2070	DN Tanks /Inspector Jobsite Office Trailer	08-Nov-24	12-Nov-24	3
SWPP Erosion Control		10-Sep-24	23-Sep-24	10
SWPP		10-Sep-24	23-Sep-24	10
A2000	Layout Silt Fence (West Side)	10-Sep-24	10-Sep-24	1
A1990	Layout Temporary Construction Fence (East Side)	11-Sep-24	11-Sep-24	1
A2020	Clear Existing Shrubs and Vegetation (West Side)	11-Sep-24	13-Sep-24	3
A1700	Clear Existing Shrubs and Vegetation (East Side)	16-Sep-24	19-Sep-24	4
A2010	Install Silt Fence (West Side)	16-Sep-24	17-Sep-24	2
A1180	Install Silt Fence (East Side)	20-Sep-24	23-Sep-24	2
Relocate Existing Verizon, AT&T, PG&E Power & Communication Cables		25-Sep-24	05-Dec-24	50
Relocate Existing Electrical / Instrumentation / PG&E		25-Sep-24	05-Dec-24	50
A1590	Locate Existing Electrical Conduits and Duct Banks (811)	25-Sep-24	26-Sep-24	2



Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

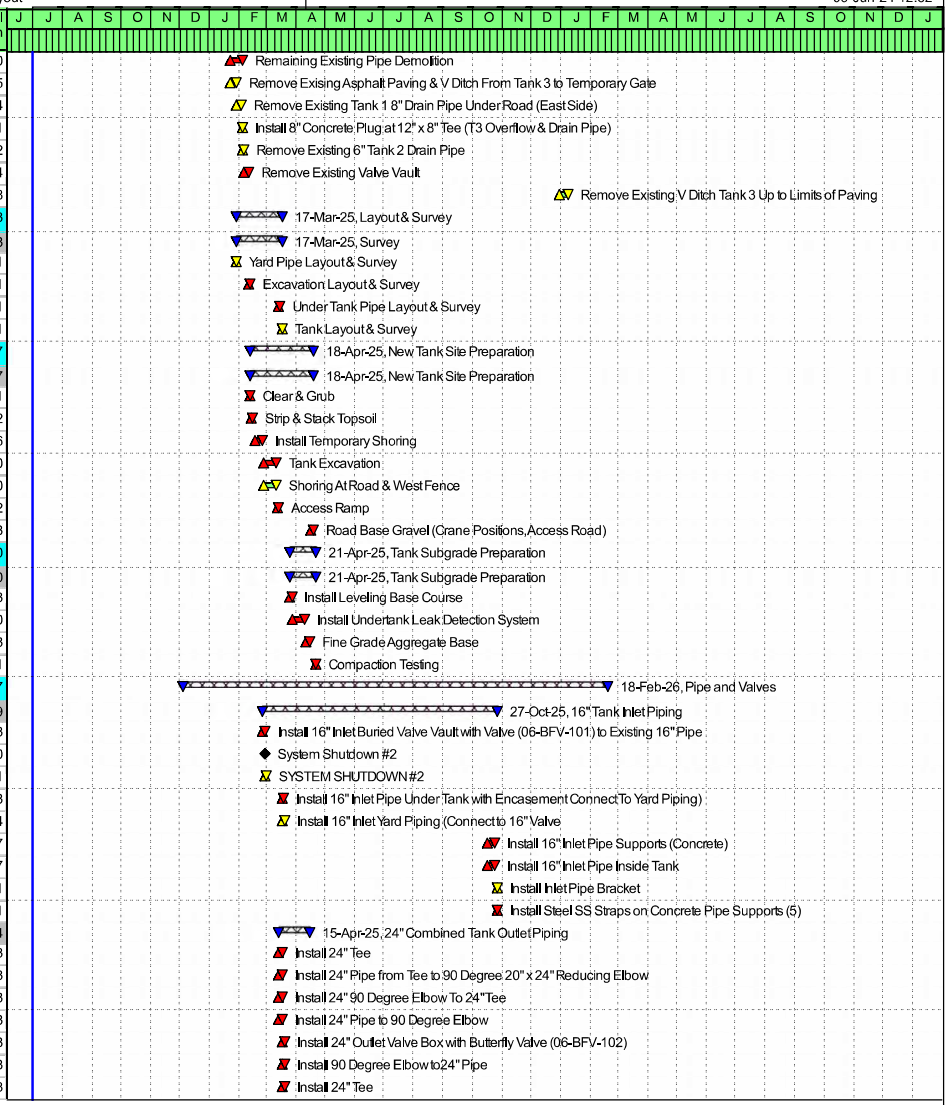
Activity ID	Activity Name	Start	Finish	Original Duration
A1970	Install New Conduit in Duct Bank and Pullboxes for Verizon Telecom Building	27-Sep-24	02-Oct-24	4
A1980	Install New Conduit in Duct Bank & Pullboxes to New North PG&E Pullbox (Pump)	27-Sep-24	02-Oct-24	4
A2080	PG&E Relocates Power to Verizon Telecom Building & North Pullbox	03-Oct-24	30-Oct-24	20
A2090	Relocates Verizon Wires (By Verizon)	03-Oct-24	30-Oct-24	20
A1650	Relocate HMB Tank 1 Telecom Antenna (By Others)	31-Oct-24	06-Nov-24	5
A1660	Install Temporary Power & Cables to Reloacted Analyzer	04-Dec-24	05-Dec-24	2
A2100	Relocate Existing Analyzer	04-Dec-24	05-Dec-24	2
Temporary 24" Outlet Piping		07-Nov-24	21-Apr-25	108
Temporary 24" Outlet Piping		07-Nov-24	21-Apr-25	108
A3640	Install 24" Temporary Pipe	07-Nov-24	13-Nov-24	5
A3690	Install Pipe Supports / Restraints for 24" Temporary Pipe	14-Nov-24	18-Nov-24	3
A3680	Pressure Test and Disinfect 24" Temporary Pipe	19-Nov-24	19-Nov-24	1
A3700	System Shutt Down #1	20-Nov-24	20-Nov-24	1
A3710	SYSTEM SHUTDOWN #1	20-Nov-24		0
A3650	Install Flange Adapter at Tank 3	21-Nov-24	21-Nov-24	1
A3660	Connect 24" Pipe at Tank 3	22-Nov-24	22-Nov-24	1
A3670	Connect 24" Pipe to Distribution System	25-Nov-24	25-Nov-24	1
A3830	Remove Temporary Piping	16-Apr-25	21-Apr-25	4
Misc. Site Work		24-Sep-24	14-Nov-24	38
Misc. Site Work		24-Sep-24	14-Nov-24	38
A1030	Install Construction Entrance	24-Sep-24	24-Sep-24	1
A2050	Install Temporary Fencing ((East Side)	13-Nov-24	13-Nov-24	1
A2060	Install Temporary Access Gate	14-Nov-24	14-Nov-24	1
Demolition		27-Sep-24	08-Jan-26	314
Demolition		27-Sep-24	08-Jan-26	314
A1680	Field Verify Exact Location Of Existing Piping	27-Sep-24	01-Oct-24	3
A1760	Remove Verizon Cable (By Verizon)	31-Oct-24	31-Oct-24	1
A1670	Relocate Existing Network Pole (By Others)	07-Nov-24	07-Nov-24	1
A2040	Remove Existing Automatic Access Gate & Opener (East Side)	26-Nov-24	27-Nov-24	2
A3080	Deactivate & Remove Tank 1 Power & Instrumentation Wires	26-Nov-24	26-Nov-24	1
A3090	Deactivate & Remove Tank 2 Power & Instrumentation Wires	26-Nov-24	26-Nov-24	1
A1040	Lead Paint Abatement HMB Tanks 1 & 2	27-Nov-24	04-Dec-24	4
A1270	Lead Paint Abatement Tanks 2 & 3 Interconnect Pipe	27-Nov-24	27-Nov-24	1
A1400	Remove Tanks 2 - 3 Interconnect Pipe	02-Dec-24	02-Dec-24	1
A2730	Remove Existing Fence by Tank 1	02-Dec-24	03-Dec-24	2
A2270	Install Tapped Blind Flange On Tank3 Interconnect Pipe	03-Dec-24	03-Dec-24	1
A3630	Remove Tanks 2 - 3 Interconnect Concrete Pipe Supports	04-Dec-24	04-Dec-24	1
A2240	Remove Tank 1 - 2 Interconnect Pipe & Valves	05-Dec-24	05-Dec-24	1
A1640	Remove Existing Catwalk	06-Dec-24	09-Dec-24	2
A2740	Remove Existing Analyzer Appurtenences & Pipe	06-Dec-24	06-Dec-24	1
A2900	Remove Existing 2" Service Connection Piping	06-Dec-24	06-Dec-24	1
A3730	Remove Tanks 1 - 2 Interconnect Concrete Pipe Supports	06-Dec-24	06-Dec-24	1
A1190	Remove HMB Tank #1 and Appurtenances	10-Dec-24	23-Dec-24	10
A1630	Remove HMB Tank #2 and Appurtenances	02-Jan-25	15-Jan-25	10
A1690	Remove Oil Sand	16-Jan-25	21-Jan-25	4
A1710	Demo Hatch and Buried Drum	16-Jan-25	17-Jan-25	2
A1720	Sawcut and Remove Existing Walkway	20-Jan-25	21-Jan-25	2



Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Start	Finish	Original Duration
A1200	Remaining Existing Pipe Demolition	22-Jan-25	04-Feb-25	10
A1550	Remove Exising Asphalt Paving & V Ditch From Tank 3 to Temporary Gate	22-Jan-25	28-Jan-25	5
A1570	Remove Existing Tank 1 8" Drain Pipe Under Road (East Side)	29-Jan-25	03-Feb-25	4
A2030	Install 8" Concrete Plug at 12" x 8" Tee (T3 Overflow & Drain Pipe)	04-Feb-25	04-Feb-25	1
A2720	Remove Existing 6" Tank 2 Drain Pipe	04-Feb-25	05-Feb-25	2
A2910	Remove Existing Valve Vault	05-Feb-25	10-Feb-25	4
A2930	Remove Existing V Ditch Tank 3 Up to Limits of Paving	30-Dec-25	08-Jan-26	8
Layout & Survey		29-Jan-25	17-Mar-25	33
Survey		29-Jan-25	17-Mar-25	33
A3770	Yard Pipe Layout & Survey	29-Jan-25	29-Jan-25	1
A1050	Excavation Layout & Survey	11-Feb-25	11-Feb-25	1
A1210	Under Tank Pipe Layout & Survey	14-Mar-25	14-Mar-25	1
A1220	Tank Layout & Survey	17-Mar-25	17-Mar-25	1
New Tank Site Preparation		12-Feb-25	18-Apr-25	47
New Tank Site Preparation		12-Feb-25	18-Apr-25	47
A1060	Clear & Grub	12-Feb-25	12-Feb-25	1
A1230	Strip & Stack Topsoil	13-Feb-25	14-Feb-25	2
A3140	Install Temporary Shoring	17-Feb-25	25-Feb-25	6
A1240	Tank Excavation	26-Feb-25	11-Mar-25	10
A1260	Shoring At Road & West Fence	26-Feb-25	11-Mar-25	10
A1250	Access Ramp	12-Mar-25	13-Mar-25	2
A1320	Road Base Gravel (Crane Positions,Access Road)	16-Apr-25	18-Apr-25	3
Tank Subgrade Preparation		25-Mar-25	21-Apr-25	20
Tank Subgrade Preparation		25-Mar-25	21-Apr-25	20
A1070	Install Leveling Base Course	25-Mar-25	27-Mar-25	3
A1290	Install Undertank Leak Detection System	28-Mar-25	10-Apr-25	10
A1300	Fine Grade Aggregate Base	11-Apr-25	15-Apr-25	3
A1310	Compaction Testing	21-Apr-25	21-Apr-25	1
Pipe and Valves		04-Dec-24	18-Feb-26	297
16" Tank Inlet Piping		25-Feb-25	27-Oct-25	169
A1430	Install 16" Inlet Buried Valve Vault with Valve (06-BFV-101) to Existing 16" Pipe	25-Feb-25	27-Feb-25	3
A3810	System Shutdown #2	28-Feb-25		0
A3820	SYSTEM SHUTDOWN #2	28-Feb-25	28-Feb-25	1
A1080	Install 16" Inlet Pipe Under Tank with Encasement Connect To Yard Piping)	17-Mar-25	19-Mar-25	3
A1600	Install 16" Inlet Yard Piping (Connect to 16" Valve	17-Mar-25	20-Mar-25	4
A1470	Install 16" Inlet Pipe Supports (Concrete)	16-Oct-25	24-Oct-25	7
A1330	Install 16" Inlet Pipe Inside Tank	16-Oct-25	24-Oct-25	7
A2200	Install Inlet Pipe Bracket	27-Oct-25	27-Oct-25	1
A2250	Install Steel SS Straps on Concrete Pipe Supports (5)	27-Oct-25	27-Oct-25	1
24" Combined Tank Outlet Piping		13-Mar-25	15-Apr-25	24
A2540	Install 24" Tee	13-Mar-25	17-Mar-25	3
A2550	Install 24" Pipe from Tee to 90 Degree 20" x 24" Reducing Elbow	13-Mar-25	17-Mar-25	3
A2560	Install 24" 90 Degree Elbow To 24" Tee	13-Mar-25	17-Mar-25	3
A2580	Install 24" Pipe to 90 Degree Elbow	13-Mar-25	17-Mar-25	3
A1440	Install 24" Outlet Valve Box with Butterfly Valve (06-BFV-102)	18-Mar-25	20-Mar-25	3
A2570	Install 90 Degree Elbow to 24" Pipe	18-Mar-25	20-Mar-25	3
A2590	Install 24" Tee	18-Mar-25	20-Mar-25	3



Remaining Level of Effort | Actual Work | Critical Remaining Work
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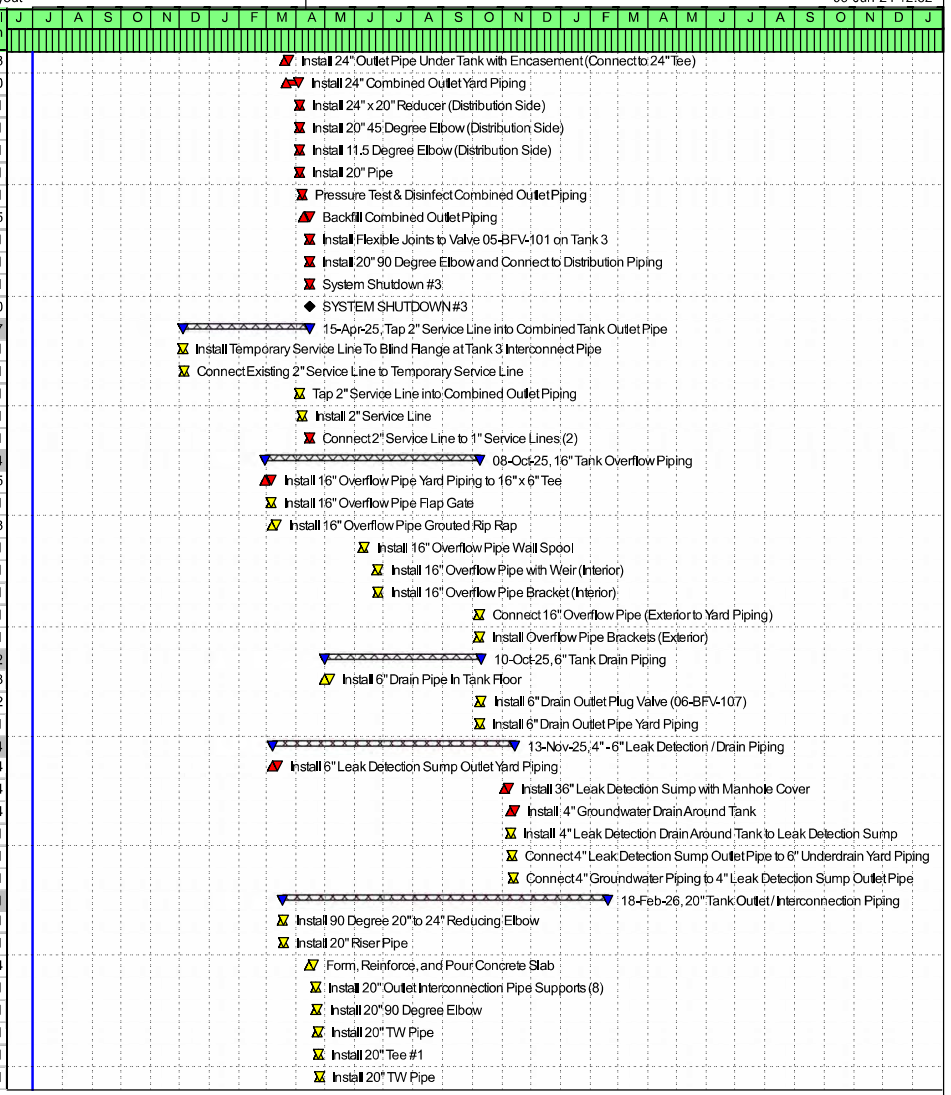
TASK filter: All Activities

Activity ID	Activity Name	Start	Finish	Original Duration
A1370	Install 24" Outlet Pipe Under Tank with Encasement (Connect to 24" Tee)	20-Mar-25	24-Mar-25	3
A1480	Install 24" Combined Outlet Yard Piping	21-Mar-25	03-Apr-25	10
A2810	Install 24" x 20" Reducer (Distribution Side)	04-Apr-25	04-Apr-25	1
A2820	Install 20" 45 Degree Elbow (Distribution Side)	04-Apr-25	04-Apr-25	1
A2830	Install 11.5 Degree Elbow (Distribution Side)	04-Apr-25	04-Apr-25	1
A2840	Install 20" Pipe	04-Apr-25	04-Apr-25	1
A2780	Pressure Test & Disinfect Combined Outlet Piping	07-Apr-25	07-Apr-25	1
A2790	Backfill Combined Outlet Piping	08-Apr-25	14-Apr-25	5
A2800	Install Flexible Joints to Valve 05-BFV-101 on Tank 3	15-Apr-25	15-Apr-25	1
A2850	Install 20" 90 Degree Elbow and Connect to Distribution Piping	15-Apr-25	15-Apr-25	1
A2860	System Shutdown #3	15-Apr-25	15-Apr-25	1
A3720	SYSTEM SHUTDOWN #3	15-Apr-25		0
Tap 2" Service Line into Combined Tank Outlet Pipe		04-Dec-24	15-Apr-25	87
A2880	Install Temporary Service Line To Blind Flange at Tank 3 Interconnect Pipe	04-Dec-24	04-Dec-24	1
A2890	Connect Existing 2" Service Line to Temporary Service Line	05-Dec-24	05-Dec-24	1
A2750	Tap 2" Service Line into Combined Outlet Piping	04-Apr-25	04-Apr-25	1
A2760	Install 2" Service Line	07-Apr-25	07-Apr-25	1
A2770	Connect 2" Service Line to 1" Service Lines (2)	15-Apr-25	15-Apr-25	1
16" Tank Overflow Piping		28-Feb-25	08-Oct-25	154
A1410	Install 16" Overflow Pipe Yard Piping to 16" x 6" Tee	28-Feb-25	06-Mar-25	5
A1500	Install 16" Overflow Pipe Flap Gate	06-Mar-25	06-Mar-25	1
A1490	Install 16" Overflow Pipe Grouted Rip Rap	07-Mar-25	11-Mar-25	3
A1520	Install 16" Overflow Pipe Wall Spool	10-Jun-25	10-Jun-25	1
A1540	Install 16" Overflow Pipe with Weir (Interior)	24-Jun-25	24-Jun-25	1
A1530	Install 16" Overflow Pipe Bracket (Interior)	25-Jun-25	25-Jun-25	1
A1380	Connect 16" Overflow Pipe (Exterior to Yard Piping)	08-Oct-25	08-Oct-25	1
A1379	Install Overflow Pipe Brackets (Exterior)	08-Oct-25	08-Oct-25	1
6" Tank Drain Piping		01-May-25	10-Oct-25	112
A1390	Install 6" Drain Pipe In Tank Floor	01-May-25	05-May-25	3
A1450	Install 6" Drain Outlet Plug Valve (06-BFV-107)	09-Oct-25	10-Oct-25	2
A2290	Install 6" Drain Outlet Pipe Yard Piping	09-Oct-25	09-Oct-25	1
4" - 6" Leak Detection / Drain Piping		07-Mar-25	13-Nov-25	174
A1091	Install 6" Leak Detection Sump Outlet Yard Piping	07-Mar-25	12-Mar-25	4
A1081	Install 36" Leak Detection Sump with Manhole Cover	04-Nov-25	07-Nov-25	4
A2230	Install 4" Groundwater Drain Around Tank	10-Nov-25	13-Nov-25	4
A2370	Install 4" Leak Detection Drain Around Tank to Leak Detection Sump	10-Nov-25	10-Nov-25	1
A2360	Connect 4" Leak Detection Sump Outlet Pipe to 6" Underdrain Yard Piping	11-Nov-25	11-Nov-25	1
A2350	Connect 4" Groundwater Piping to 4" Leak Detection Sump Outlet Pipe	12-Nov-25	12-Nov-25	1
20" Tank Outlet / Interconnection Piping		18-Mar-25	18-Feb-26	231
A2340	Install 90 Degree 20" to 24" Reducing Elbow	18-Mar-25	18-Mar-25	1
A2380	Install 20" Riser Pipe	19-Mar-25	19-Mar-25	1
A2600	Form, Reinforce, and Pour Concrete Slab	15-Apr-25	18-Apr-25	4
A1560	Install 20" Outlet Interconnection Pipe Supports (8)	21-Apr-25	21-Apr-25	1
A2460	Install 20" 90 Degree Elbow	22-Apr-25	22-Apr-25	1
A2610	Install 20" TW Pipe	23-Apr-25	23-Apr-25	1
A2430	Install 20" Tee #1	24-Apr-25	24-Apr-25	1
A2620	Install 20" TW Pipe	25-Apr-25	25-Apr-25	1



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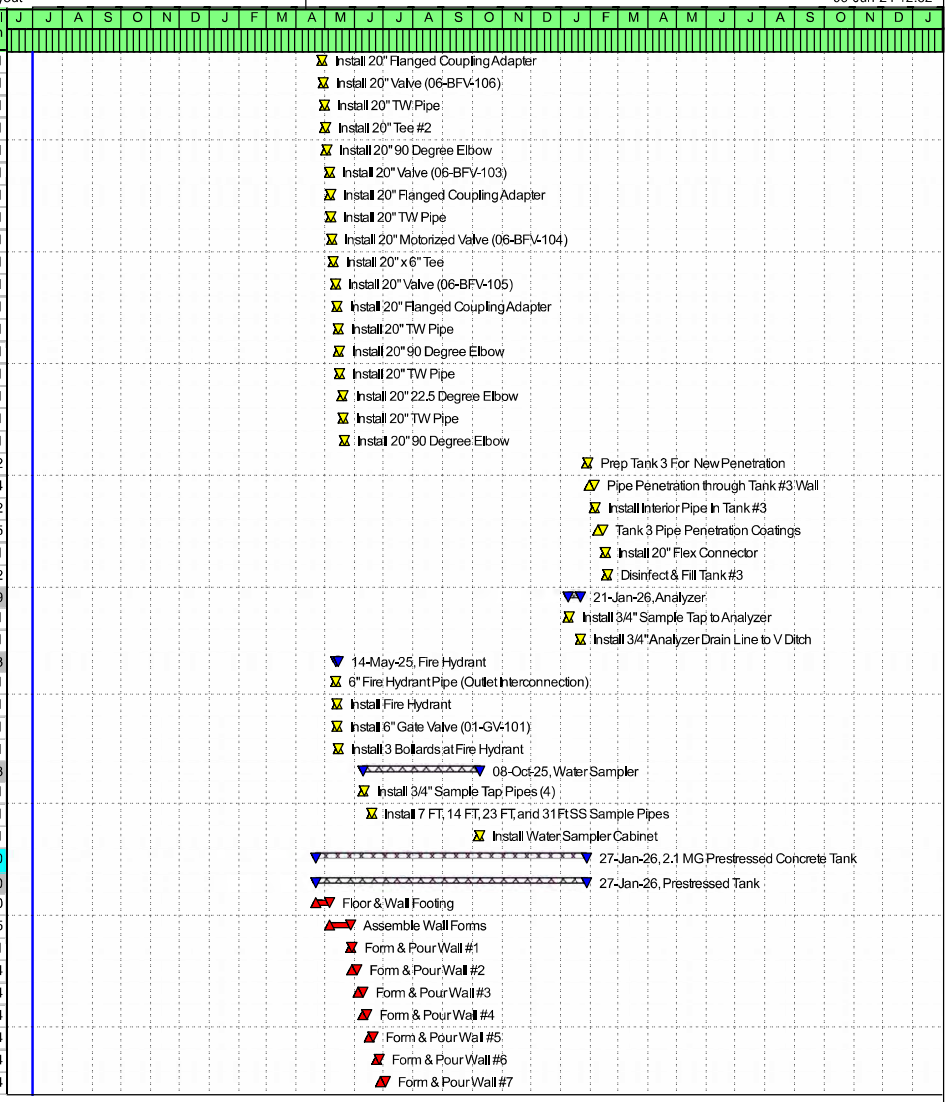
TASK filter: All Activities

Activity ID	Activity Name	Start	Finish	Original Duration
A2650	Install 20" Flanged Coupling Adapter	28-Apr-25	28-Apr-25	1
A2310	Install 20" Valve (06-BFV-106)	29-Apr-25	29-Apr-25	1
A2640	Install 20" TW Pipe	30-Apr-25	30-Apr-25	1
A2440	Install 20" Tee #2	01-May-25	01-May-25	1
A2690	Install 20" 90 Degree Elbow	02-May-25	02-May-25	1
A2320	Install 20" Valve (06-BFV-103)	05-May-25	05-May-25	1
A2410	Install 20" Flanged Coupling Adapter	06-May-25	06-May-25	1
A2630	Install 20" TW Pipe	07-May-25	07-May-25	1
A2400	Install 20" Motorized Valve (06-BFV-104)	08-May-25	08-May-25	1
A2420	Install 20" x 6" Tee	09-May-25	09-May-25	1
A2330	Install 20" Valve (06-BFV-105)	12-May-25	12-May-25	1
A2660	Install 20" Flanged Coupling Adapter	13-May-25	13-May-25	1
A2470	Install 20" TW Pipe	14-May-25	14-May-25	1
A2700	Install 20" 90 Degree Elbow	15-May-25	15-May-25	1
A2670	Install 20" TW Pipe	16-May-25	16-May-25	1
A2450	Install 20" 22.5 Degree Elbow	19-May-25	19-May-25	1
A2680	Install 20" TW Pipe	20-May-25	20-May-25	1
A2390	Install 20" 90 Degree Elbow	21-May-25	21-May-25	1
A2710	Prep Tank 3 For New Penetration	28-Jan-26	29-Jan-26	2
A2510	Pipe Penetration through Tank #3 Wall	30-Jan-26	04-Feb-26	4
A2520	Install Interior Pipe In Tank #3	05-Feb-26	06-Feb-26	2
A2870	Tank 3 Pipe Penetration Coatings	09-Feb-26	13-Feb-26	5
A2500	Install 20" Flex Connector	16-Feb-26	16-Feb-26	1
A2530	Disinfect & Fill Tank #3	17-Feb-26	18-Feb-26	2
Analyzer		09-Jan-26	21-Jan-26	9
A1750	Install 3/4" Sample Tap to Analyzer	09-Jan-26	09-Jan-26	1
A1740	Install 3/4" Analyzer Drain Line to V Ditch	21-Jan-26	21-Jan-26	1
Fire Hydrant		12-May-25	14-May-25	3
A1580	6" Fire Hydrant Pipe (Outlet Interconnection)	12-May-25	12-May-25	1
A1510	Install Fire Hydrant	13-May-25	13-May-25	1
A2300	Install 6" Gate Valve (01-GV-101)	13-May-25	13-May-25	1
A2280	Install 3 Bollards at Fire Hydrant	14-May-25	14-May-25	1
Water Sampler		10-Jun-25	08-Oct-25	83
A1420	Install 3/4" Sample Tap Pipes (4)	10-Jun-25	10-Jun-25	1
A2480	Install 7 FT, 14 FT, 23 FT, and 31 Ft SS Sample Pipes	18-Jun-25	18-Jun-25	1
A1460	Install Water Sampler Cabinet	08-Oct-25	08-Oct-25	1
2.1 MG Prestressed Concrete Tank		22-Apr-25	27-Jan-26	190
Prestressed Tank		22-Apr-25	27-Jan-26	190
A1770	Floor & Wall Footing	22-Apr-25	05-May-25	10
A1780	Assemble Wall Forms	06-May-25	27-May-25	15
A1790	Form & Pour Wall #1	28-May-25	28-May-25	1
A1800	Form & Pour Wall #2	29-May-25	03-Jun-25	4
A1810	Form & Pour Wall #3	04-Jun-25	09-Jun-25	4
A1820	Form & Pour Wall #4	10-Jun-25	13-Jun-25	4
A1830	Form & Pour Wall #5	16-Jun-25	20-Jun-25	4
A1840	Form & Pour Wall #6	23-Jun-25	26-Jun-25	4
A1850	Form & Pour Wall #7	27-Jun-25	02-Jul-25	4



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TASK filter: All Activities

Activity ID	Activity Name	Start	Finish	Original Duration
A1860	Dome Roof Shoring	07-Jul-25	25-Jul-25	15
A1870	Pull & Epoxy Vertical Tendons	28-Jul-25	30-Jul-25	3
A1890	Install Dome Roof Hatches and Scuppers	28-Jul-25	30-Jul-25	3
A3150	Install Level Sensor Pipe Spool	28-Jul-25	28-Jul-25	1
A1880	Install Dome Roof Reinforcing Steel	31-Jul-25	08-Aug-25	7
A1900	Pour Dome Roof	11-Aug-25	11-Aug-25	1
A1910	Cure Dome Roof	12-Aug-25	25-Aug-25	10
A1920	Prestressing Mobilization	26-Aug-25	26-Aug-25	1
A1940	Set Up Prestressing Machine	27-Aug-25	29-Aug-25	3
A1950	Abrasive Blast Corewall	02-Sep-25	08-Sep-25	5
A1960	1st Layer Wrapping	09-Sep-25	12-Sep-25	4
A1930	1st Layer Strand Cover Shotcrete	15-Sep-25	15-Sep-25	1
A2120	2nd Layer Wrapping	16-Sep-25	18-Sep-25	3
A2130	Shotcrete Cover	19-Sep-25	26-Sep-25	6
A3000	Strip Dome Roof Shoring	29-Sep-25	15-Oct-25	12
A2140	Cure Shotcrete	29-Sep-25	07-Oct-25	7
A2110	Install Interior Ladder	16-Oct-25	16-Oct-25	1
A2160	Install Roof Vent	16-Oct-25	16-Oct-25	1
A2210	Install Fall Restraint Straps	17-Oct-25	17-Oct-25	1
A2490	Install PAX Mixer	17-Oct-25	17-Oct-25	1
A2180	Install Downspouts	20-Oct-25	20-Oct-25	1
A1090	Install Bird Netting	21-Oct-25	23-Oct-25	3
A2170	Leak Test Tank	28-Oct-25	03-Nov-25	5
A1280	Backfill Tank	14-Nov-25	20-Nov-25	5
A2150	Install Exterior Ladder	21-Nov-25	21-Nov-25	1
A2980	Fine Grading Around Tank	21-Nov-25	25-Nov-25	3
A2220	Install Roof Handrail	24-Nov-25	24-Nov-25	1
A3800	Disinfect & Fill Tank	26-Jan-26	26-Jan-26	1
A3190	New Tank In Service	27-Jan-26	27-Jan-26	1
A3790	NEW TANK IN SERVICE		27-Jan-26	0
Electrical		01-May-25	23-Jan-26	181
Electrical		01-May-25	23-Jan-26	181
A3130	Install Tank Ground System (Tank Floor Rebar)	01-May-25	02-May-25	2
A2970	Install Type 233 LA Landhole	26-Nov-25	03-Dec-25	4
A3010	Install Power Conductors Conduit & Ductbank	04-Dec-25	10-Dec-25	5
A3020	Install Tank Mixer Power Conduits & Ductbank	04-Dec-25	08-Dec-25	3
A3030	Install Analyzer Power Conduits & Ductbank	09-Dec-25	11-Dec-25	3
A3210	Install 4 x 4 Hatch Power & Multiconductor Conduits & Ductbank	12-Dec-25	16-Dec-25	3
A3170	Install Tank Ground System (Exterior)	17-Dec-25	23-Dec-25	5
A3160	Install Ground Test Well	29-Dec-25	29-Dec-25	1
A3200	Backfill Ductbanks	30-Dec-25	02-Jan-26	4
A3060	Install 4 x 4 Roof Hatch Door Position Multiconductor Conduits & Struts	05-Jan-26	06-Jan-26	2
A3230	Pull Wires for Power Conductors	16-Jan-26	19-Jan-26	2
A3240	Pull Power Wires for Tank Mixer Power	16-Jan-26	16-Jan-26	1
A3250	Pull Power Wires for Analyzer	19-Jan-26	19-Jan-26	1
A3410	Connect Power Wires for Tank Mixer	19-Jan-26	19-Jan-26	1
A3280	Pull Wires for 4 x 8 Roof Hatch Power & Door Position	20-Jan-26	20-Jan-26	1

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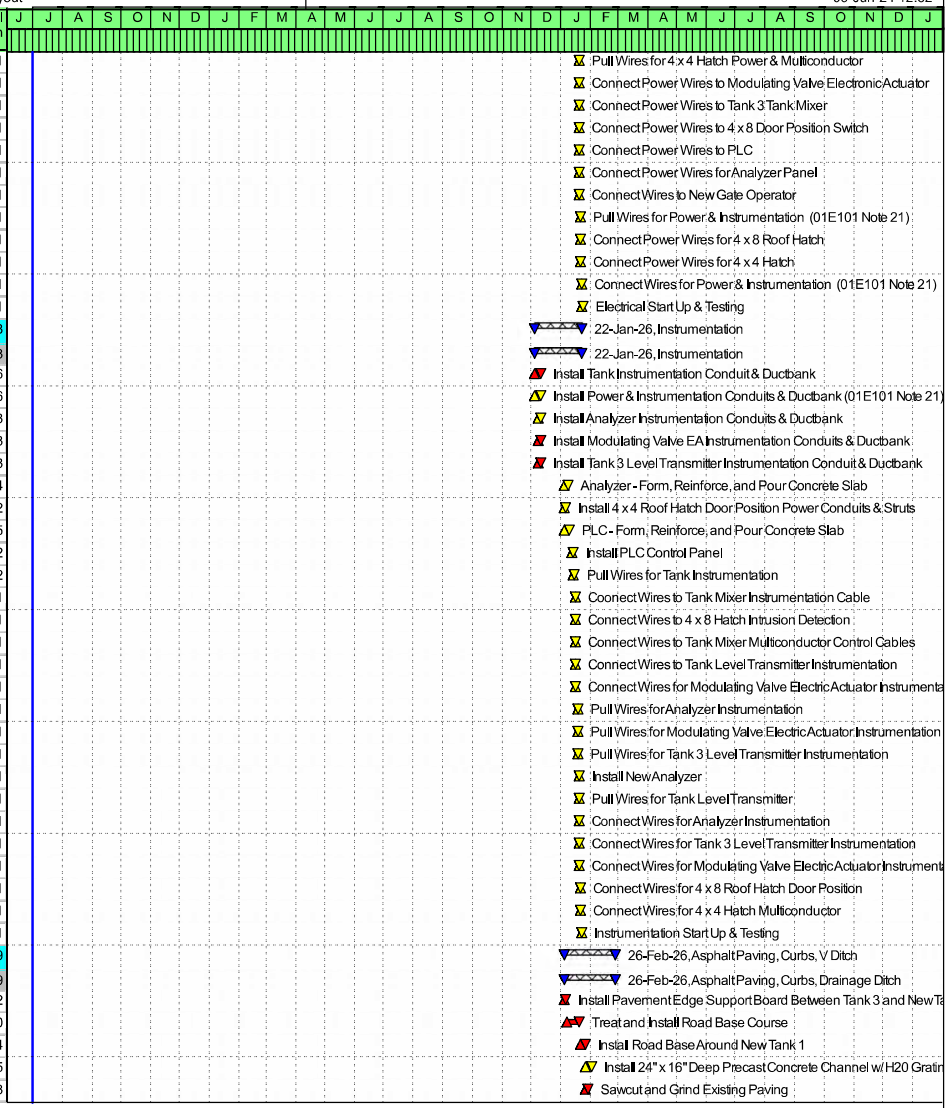
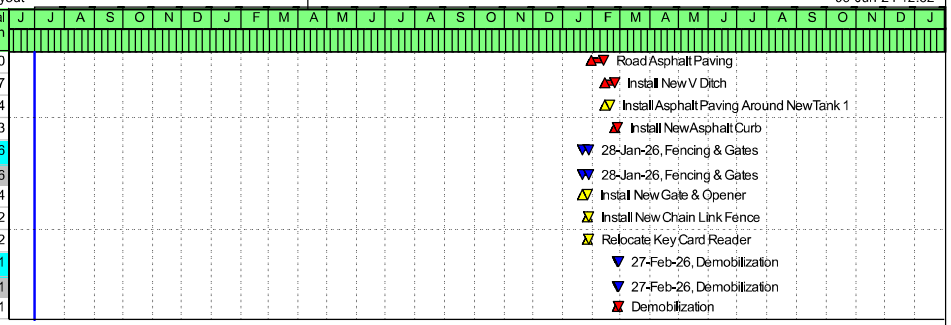
Activity ID	Activity Name	Start	Finish	Original Duration
A3320	Pull Wires for 4 x 4 Hatch Power & Multiconductor	20-Jan-26	20-Jan-26	1
A3370	Connect Power Wires to Modulating Valve Electronic Actuator	20-Jan-26	20-Jan-26	1
A3380	Connect Power Wires to Tank 3 Tank Mixer	20-Jan-26	20-Jan-26	1
A3390	Connect Power Wires to 4 x 8 Door Position Switch	20-Jan-26	20-Jan-26	1
A3400	Connect Power Wires to PLC	20-Jan-26	20-Jan-26	1
A3420	Connect Power Wires for Analyzer Panel	20-Jan-26	20-Jan-26	1
A3740	Connect Wires to New Gate Operator	20-Jan-26	20-Jan-26	1
A3300	Pull Wires for Power & Instrumentation (01E101 Note 21)	21-Jan-26	21-Jan-26	1
A3440	Connect Power Wires for 4 x 8 Roof Hatch	21-Jan-26	21-Jan-26	1
A3480	Connect Power Wires for 4 x 4 Hatch	21-Jan-26	21-Jan-26	1
A3490	Connect Wires for Power & Instrumentation (01E101 Note 21)	22-Jan-26	22-Jan-26	1
A3840	Electrical Start Up & Testing	23-Jan-26	23-Jan-26	1
Instrumentation		04-Dec-25	22-Jan-26	33
Instrumentation		04-Dec-25	22-Jan-26	33
A2990	Install Tank Instrumentation Conduit & Ductbank	04-Dec-25	11-Dec-25	6
A3100	Install Power & Instrumentation Conduits & Ductbank (01E101 Note 21)	04-Dec-25	11-Dec-25	6
A3040	Install Analyzer Instrumentation Conduits & Ductbank	09-Dec-25	11-Dec-25	3
A3070	Install Modulating Valve EA Instrumentation Conduits & Ductbank	09-Dec-25	11-Dec-25	3
A3110	Install Tank 3 Level Transmitter Instrumentation Conduit & Ductbank	09-Dec-25	11-Dec-25	3
A2260	Analyzer - Form, Reinforce, and Pour Concrete Slab	05-Jan-26	08-Jan-26	4
A3050	Install 4 x 4 Roof Hatch Door Position Power Conduits & Struts	05-Jan-26	06-Jan-26	2
A3180	PLC - Form, Reinforce, and Pour Concrete Slab	05-Jan-26	09-Jan-26	5
A3120	Install PLC Control Panel	12-Jan-26	13-Jan-26	2
A3220	Pull Wires for Tank Instrumentation	14-Jan-26	15-Jan-26	2
A3330	Coonect Wires to Tank Mixer Instrumentation Cable	16-Jan-26	16-Jan-26	1
A3340	Connect Wires to 4 x 8 Hatch Intrusion Detection	16-Jan-26	16-Jan-26	1
A3350	Connect Wires to Tank Mixer Multiconductor Control Cables	16-Jan-26	16-Jan-26	1
A3360	Connect Wires to Tank Level Transmitter Instrumentation	16-Jan-26	16-Jan-26	1
A3500	Connect Wires for Modulating Valve Electric Actuator Instrumentation	16-Jan-26	16-Jan-26	1
A3260	Pull Wires for Analyzer Instrumentation	19-Jan-26	19-Jan-26	1
A3270	Pull Wires for Modulating Valve Electric Actuator Instrumentation	19-Jan-26	19-Jan-26	1
A3310	Pull Wires for Tank 3 Level Transmitter Instrumentation	19-Jan-26	19-Jan-26	1
A1130	Install New Analyzer	20-Jan-26	20-Jan-26	1
A3290	Pull Wires for Tank Level Transmitter	20-Jan-26	20-Jan-26	1
A3430	Connect Wires for Analyzer Instrumentation	20-Jan-26	20-Jan-26	1
A3460	Connect Wires for Tank 3 Level Transmitter Instrumentation	20-Jan-26	20-Jan-26	1
A3510	Connect Wires for Modulating Valve Electric Actuator Instrumentation	20-Jan-26	20-Jan-26	1
A3450	Connect Wires for 4 x 8 Roof Hatch Door Position	21-Jan-26	21-Jan-26	1
A3470	Connect Wires for 4 x 4 Hatch Multiconductor	21-Jan-26	21-Jan-26	1
A3850	Instrumentation Start Up & Testing	22-Jan-26	22-Jan-26	1
Asphalt Paving, Curbs, V Ditch		05-Jan-26	26-Feb-26	39
Asphalt Paving, Curbs, Drainage Ditch		05-Jan-26	26-Feb-26	39
A2940	Install Pavement Edge Support Board Between Tank 3 and New Tank 1	05-Jan-26	06-Jan-26	2
A1340	Treat and Install Road Base Course	07-Jan-26	20-Jan-26	10
A2950	Install Road Base Around New Tank 1	21-Jan-26	26-Jan-26	4
A1730	Install 24" x 16" Deep Precast Concrete Channel w/ H20 Grating	27-Jan-26	02-Feb-26	5
A2920	Sawcut and Grind Existing Paving	27-Jan-26	29-Jan-26	3



Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Start	Finish	Original Duration
A1350	Road Asphalt Paving	30-Jan-26	12-Feb-26	10
A1620	Install New V Ditch	13-Feb-26	23-Feb-26	7
A2960	Install Asphalt Paving Around New Tank 1	13-Feb-26	18-Feb-26	4
A2190	Install New Asphalt Curb	24-Feb-26	26-Feb-26	3
Fencing & Gates		21-Jan-26	28-Jan-26	6
Fencing & Gates		21-Jan-26	28-Jan-26	6
A1360	Install New Gate & Opener	21-Jan-26	26-Jan-26	4
A1110	Install New Chain Link Fence	27-Jan-26	28-Jan-26	2
A1610	Relocate Key Card Reader	27-Jan-26	28-Jan-26	2
Demobilization		27-Feb-26	27-Feb-26	1
Demobilization		27-Feb-26	27-Feb-26	1
A1140	Demobilization	27-Feb-26	27-Feb-26	1



Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

Attachement C

Apex Testing Laboratories Inc. Firm Information

ON-CALL MATERIALS TESTING AND INSPECTION SERVICES

Apex Testing Labs
San Francisco, California
2024

Apex Testing Laboratories Inc.
1790 Yosemite Ave.
San Francisco, CA 94124

T: (415) 550-9800
Year Established: 2005
Federal Tax ID: 13-4351450
Type of Organization: Corporation
Vendor Number: 74874
Classi ications: SBE, LBE, MBE

Key Personnel Managment
Abdel Khelifa, MSCE, P.E. President/Owner (Main Contact)
E: abdel@apextestinglabs.com
Weimin Jiang, PhD Laboratory Manager

Apex transforms materials testing and special inspections with expertise and proactive solutions. At Apex Testing Labs, our track record in the Bay Area Speaks for Itself, with a legacy of 20+ years delivering materials testing and inspection services to both public and private sectors. We guarentee success and client satisfaction by ensuring our team, processes, and protocols are fully aligned before any project begins.

Our multidisciplinary approach not only ensures excellence but also introduces cost-effective strategies. Our unique model allows us to diploy versatile inspectors, skilled in multiple disciplines, reducing the need for multiple personnel, increase testing and delivery speeds, and significantly reduce costs.

On-Call Materials Testing Services

Services

- Materials Testing
- Quality Control
- Geotechnical
- Environmental
- Mechanical
- Structural
- Soils
- Asphalt
- Concrete

- Water
- Masonry
- Reinforcing Steel
- Structural Steel
- Fireproofing
- Epoxy
- Floor Levelness
- Floor Flatness
- Fireproofing
- Coating

Professional Memberships and Associations

- American Society of Civil Engineers (ASCE)
- American Concrete Institute (ACI)
- National Society of Professional Engineers (NSPE)
- American Construction Inspectors Association (ACIA)
- International Conference of Building Officials (ICBO)
- American Welding Society (AWS)
- International Association of Electrical Inspectors (IAEI)
- Structural Engineers Associations of Northern and Southern California (SEANC, SEASC)
- National Association ofCorrosion Engineers (NACE)
- International Code Council (ICBO/ICC)
- Special Inspection Committee (SIC)
- Cement and Concrete Reference laboratory (CCRL)
- American Association of State Highway and Transportation Officials (AASHTO)
- American Society of Non-Destructive Testing (ASNT)
- California Department of Transportation (CALTRANS)
- Department of State Architects (DSA)
- Office of Statewide Health Planning & Development (OSHPD) and Nuclear Gauge Certified (soils and asphalt)

Team Availability throughout Duration of Project:

Apex's office and lab in San Francisco will manage and service this project. The office and laboratory have ample capacity to complete the services quickly. Apex has all its state-of-the-art testing equipment at our headquarters in San Francisco. Our inspectors are also distributed in a way for us to access all regions of the Greater Bay Area. With ample experience working around Constra Costa County and Fremont, we are confident in our abilities to facilitate and serve your project.

Names	Position	2024 Availability
Abdel Khelifa	Principle in Charge	50%
Abdulsalam Alrifai	Project Manager	70%
Weimin Jiang	Lab Manager	60%
Anthony Omonigho	Multidisciple Inspector	50%
Hasibullah Aref	Soil / Concrete / Asphalt	65%
Hatem Alrifai	Soil / Concrete / Asphalt	70%
Milton Kamarah	Soil / Concrete / Asphalt	50%
Abdelkader Gasri	Soil / Concrete / Asphalt	40%
Robert Morales	Structural Steel Welding	50%
Jagdev Thind	Structural Steel Welding	90%

Project Approach

Abdel Khelifa will serve as the primary point of contact for all critical matters related to this contract. He is available at all times, including after hours and during emergencies, to ensure seamless communication and rapid response.

Apex is committed to accommodating client needs, even on short notice. We have consistently fulfilled dispatch requests within 2-4 hour windows, demonstrating our flexibility and dedication to client service.

Based on our extensive experience, we recommend scheduling preliminary meetings with project staff, contractors, and subcontractors a few weeks before the commencement of fieldwork or laboratory activities. These meetings can be conducted virtually, via telephone, or in person, depending on the project's needs and urgency. For projects that require on-call services, these preparatory discussions may be scheduled closer to the start date, or even on the day of dispatch to the project site.

These sessions, whether held in-person or online, will cover the review of contract requirements, identificatoin of key contacts, and approval of submittals. This process is designed to solidify the project timeline and budget expectations. Our proactive approach aims to address and resolve potential issues before the commencement of work, thereby minimizing the incidence of non-compliance during the construction phase.

Multi-Discliplinary Staff

Our multi-disciplinary staff enables us to implement effective cost control strategies and budgeting methodologies.

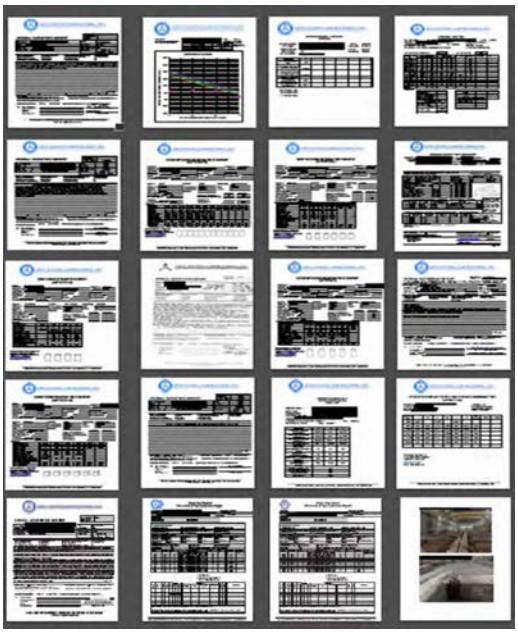
For instance, within the inspection scope, we can significantly reduce costs by deploying inspectors who hold certifications in multiple disciplines. A practical example of this is the ability to schedule a Certified Welding Inspector (CWI) who is also qualified to conduct soil compaction inspections using nuclear gauge techniques. This dual certification allows a single inspector to perform both types of inspections, which typically would require dispatching two separate inspectors to the site. This approach not only cuts down on labor costs but also reduces travel expenses and the environmental impact associated with deploying multiple personnel.

Software and Equipment

Apex Staff arrives on project sites prepared with high speed, reliable communication tools like phones and internet enabled iPads. Each devices has the necessary reporting tools, virus protection, cameras Adobe Acrobas, Microsoft Suite, Email Application, and access to our inhouse cloud-computing software. Our inspectors always take photos of inspections and fill out testing and reporting forms in a clear and concise manner. Our Laboratory staff has internet enabled laboratory software that enables imediate sharing of test results and soil impaction curves.

Document Control/Tracking and Accounting

Documen control and tracking will be coordinated with the dispatcher and Apex's dedicated document control team that is responsible for compiling, organizing and uploading reports. We have administrative staff who are assigned separately for testing reports and special inspection reports. We will appoint administrative personnel and accountants who have extensive experience working with Public Works Departments to take care of progress payments and monthly status reports to identify resource capacity, near completion dates, and budhet burndown rates.



Quality Control Program

Apex has a Quality Control Program to provide quality service to all clients as requested. Due to the page limit of this Proposal, our QCP is available upon request.

Equal Employment Opportunity

It is the policy of Apex not to discriminate against any applicant for employment, or any employee because of age, color, sex, disability, national origin, race, religion, or veteran status. Our offical EEO Policy is available on request.

Project Team

Refer to the Appendix to View Personnel Resumes

Project Manager

Abdel Khelifa, with a distinguished career spanning over three decades, will serve as the Project Manager for your project. His expertise is broad, having over 30 years of professional experience, covering a range of disciplines from civil, geotechnical, spe-cial inspections, and materials testing. Mr. Khelifa is not only adept in project engineering and management, but also possesses substantial knowledge of technical, financial, and legal aspects including contract negotiations.

His professional experience is built of extensive office and field experience in the con-struction inspection of high-rise buildings, highways, bridges, and water works. With a commitment to quality, Mr. Khelifa excels in supervising soil sampling and grading, and conducting compaction.

Mr. Khelifa is a proud alumnus of Northeastern University in Boston, MA, where he earned his Master of Science in Civil Engineering. He holds a Professional Engineer (P.E) license in the state of California, with the civil Engineering License Number C057368. His extensive experience and professional qualifications make him a invaluable asset to your project, ensuring both technical excellence and client satisfaction.

Dispatcher and Project Engineer

Abdulsalam Alrifai will be assigned to your project as Dispatcher to manage and oversee the technical staff and to ensure client satisfaction throughout the project. Mr. Alrifai has over twenty (20) years of experience in the construction industry honing his skills in project management, personal relations, contract administration, billing, and documentation matters.

Lead Inspector

We propose Dr. Weimin Jiang as the proposed lead inspector for this project. Jiang brings a rich academic background, having earned his Ph.D. in Material Science from Pennsylvania State University. With over two decades of professional experience in the realms of civil and geotechnical engineering, inspection, and materials testing, his expertise is both broad and deep.

Dr. Jiang has amassed extensive field experience in special inspections of diverse structure types. His technical skills are extensive and he holds certifications in all critical areas of concrete, structural steel welding, and soils, reflecting his comprehensive knowledge and commitment to excellence in his field. Additionally, his qualifications are further solidi-fied by his OSHPD Class A and DSA certifications, portraying his readiness to contribute thot his projects success with his expertise.

Structural Masonry Inspector and Other Special Inspectors

We also propose one of the few and most qualified Masonry inspectors in the Bay Area, Juanita Barron. Apex currently employs more than 20 inspectors that are certified in various disciplines including concrete, soil, reinforcing steel, welding etc. They are ACI, ICC, CALTRANS, DSA and CWI certified therefore Apex has the qualifications and more than sufficient inspectors to work on a project of this size.

Project/Construction Inspectors

Apex has about 25-30 field inspectors and 5 laboratory personnel that are fully trained to provide testing and observation services during the construction stage of your project. Apex expertise includes welding inspections, concrete inspections, and soil/asphalt inspections. In addition we offer floor flatness and floor levelness testing and other various construction related testing and inspections.

Appendix - Personnel Resumes

Names	Position	Time With Firm	Licenses	Project Experience
Abdel Khelifa	Principle in Charge	27 Years	•ICBO: Reinforced Concrete, Masonry, Welding •CALTRANS Material Testing •FEMA Housing Inspection	•San Francisco BART-SFO Extension •SF Housing Authority Mission Bay High-rise •City College of San Francisco • UCSF Minnesota Street
Abdul-salam Alrifai	Project Manager	13 Years	•ACI &Nuclear Gauge •General Engineering A&B •Construction Quality Man.	• UCSF Minnesota Street • New SFO Grand Hyatt Hotel • NASA Ames Research Center
Weimin Jiang	Lab Manager	26 Years	•ICBO Reinforced Concrete, Structural Masonry, Welding •AWS Welding Inspector •ACI Concrete Strength	• San Francisco BART-SFO Extension • Folsom Dam Bridge • UCSF Minnesota Street • SFMTA Munincipal T-Line Chinatown Extension
Faida Sebuhoro	Lab Assistant	1 Years	•ACI Aggregate Base •ACI Concrete Strength •Pacific Nuclear Gauge •CALTRANS	• San Francisco Veterans Hospital Car Park • Folsom Dam Bridge • The Golden One Arena • UC Davis Five Story Parking Lot
Alpha Renigen	Administrator	9 Years		•San Francisco Public Utilities Commission • East Contra Costa Bart Extension Project • San Francisco International Airport • East Bay Municipal Water District
Juanita Barron	Lead Inspector Soil/Concrete/ Asphalt Inspector	6 Years	•ACI Concrete Field Testing •ICC Reinforced Concrete •ICC Structural Masonry •ICC Sprayed Fireproofing	• Sutro Tower • Tri-Met's Light Rail Junction Station • San Francisco Veterans Hospital Car Park • Folsom Dam Bridge
Milton Kamarah	Inspector Soil/Concrete/ Asphalt/Welding	8 Years	•ACI Concrete Field Testing •TROXLER Nuclear Gauge •ICC Masonry •ICC Reinforced Concrete	• San Francisco Veterans Hospital Car Park • Folsom Dam Bridge • The Golden One Arena • UC Davis Five Story Parking Lot
Abdel Gasri	Inspector Soil / Concrete / Asphalt	6 Years	•ACI Concrete Field Testing •Medical Interpereteing •Pacific Nuclear Gauge •CALTRANS	• SFMTA UCSF Platform and Track Improvment • NASA Ames Research Center • AFO Airtrain program • BART Berryessa and Milpitas Station
Robert Morales	Inspector Structual Steel Welding	13 Years	•CWI Certified •Level II UT •Level II Magnetic Particle •Level II Liquid Penetrant	• SFO Boarding Area East • Transbay Bus Ramps • UCSF Minnesota Street • SFMTA Munincipal T-Line Chinatown Extension
Anthony Omoni	Inspector Soil / Concrete / Str. Steel, Fire-proofing	3 Years	•ACI Concrete Field Testing •ICC Reinforced Concrete •ICC Structural Masonry •ICC Sprayed Fireproofing	• SFO Boarding Area East • Transbay Bus Ramps • UCSF Minnesota Street • SFMTA Munincipal T-Line Chinatown Extension

Attachement D

Charge Rate Schedule

FREYER & LAURETA, INC.

Effective January 1, 2024

CHARGE RATE SCHEDULE

Professional & Technical Services of Freyer & Laureta, Inc. staff are provided on a fixed fee or an hourly rate basis as follows:

Fixed Fee

Where a definitive scope of work can be established, many of our clients prefer that a specific fee be agreed upon in advance. Billings are submitted monthly based upon percent complete as of the last accounting day of the month.

Hourly Rate

Applicable to Plan Preparation, Design, and Report services where the scope of work must remain open, Freyer & Laureta, Inc. utilizes the following hourly charge rate basis for billing purposes.

Consulting Category	2024 Rate
Production Aide - Clerical	$105
Drafter I - Technical Typist - Survey Tech II	$110
Drafter II - Word Processor	$116
Engineering Tech I - Drafter III	$131
Staff Engineer I - Engineering Tech II - Survey Tech III	$152
Staff Engineer II - Engineering Tech III - Survey Tech IV	$158
Staff Engineer III - Senior Engineering Tech	$163
Staff Engineer IV - Survey Tech V - Construction Inspector	$179
Associate Engineer - Associate Surveyor (L.L.S.)	$194
Senior Engineer - Construction Manager	$205
Senior Construction Inspector	$205
Project Manager - Principal Surveyor (L.L.S.)	$221
Senior Project Manager - Principal Surveyor (L.L.S.)	$236
Associate Principal	$247
Principal	$263
Forensic Engineering	$357
Deposition & Court Appearance	$446
Subconsultant, Reproduction, Printing, Travel, Mailing & Delivery - Cost plus 10%	

Interest Charge - Billings are due and payable within 30 days. A monthly interest charge equal to the Federal Discount Rate plus 5% will be applied on the next billing beyond the 30-day payment period.

The foregoing Charge Rate Schedule is incorporated into the Agreement for the Services of Freyer & Laureta, Inc. and may be updated annually.

FREYER & LAURETA, INC.

HEADQUARTERS

150 Executive Park Blvd.
Suite 4200
San Francisco, CA 94134
(415) 534-7070

EAST BAY

1101 Marina Village Pkwy.
Suite 104
Alameda, CA 94501
(510) 937-2310

NORTH BAY

505 San Marin Dr.
Suite A220
Novato, CA 94945
(415) 534-7070

SOUTH BAY

20863 Stevens Creek Blvd.
Suite 400
Cupertino, CA 95014
(408) 516-1090

STAFF REPORT

To:	**Coastside County Water District Board of Directors**
From:	**Mary Rogren, General Manager**
Agenda:	**September 10, 2024**
Date:	**September 6, 2024**
Agenda Title:	Award of Contract to GSW Construction, Inc. for the Nunes Water Treatment Plant Hypochlorite Room Improvements Project

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Recommendation/Motion:
Authorize the General Manager to enter into a contractual agreement with GSW Construction, Inc. for the Nunes Water Treatment Plant Hypochlorite Room Improvements Project for a total cost of $155,600.

Background:

In December, 2022, the District engaged Freyer and Laureta, Inc. (F&L) to provide design services for the Nunes Water Treatment Plant (WTP) Hypochlorite Room Improvements Project. As the existing onsite sodium hypochlorite generator is over 12 years old, staff identified the need to install a redundant unit as a backup in the event that the older generator has a failure and/or needs proactive replacement of components. (This generator makes a liquid chlorine solution out of a salt brine solution.)

At the August 8, 2023 Regular Board of Directors Meeting, the Board approved the purchase of a redundant sodium hypochlorite generator for $179,793 which was received in April 2024. The District is now ready to install the new generator at the Nunes WTP.

The Nunes Water Treatment Plant Hypochlorite Room Improvements Project includes the installation of the new sodium hypochlorite generator, air blower, and hydrogen detector. The contractor will field fit plumbing piping and supports, construct a reinforced concrete equipment pad for the sodium hypochlorite generator, install electrical improvements for the new equipment, repair concrete spalling on the floor, and apply chemical-resistant coating on the new pad and hypochlorite room floor.

Staff received one bid at the bid opening held on August 13, 2024 from GSW Construction, Inc. ("GSW") in the amount of $184,200.

The District met onsite at the Nunes WTP with GSW and F&L to consider value engineering ideas. GSW incorporated the following changes that reduced the pricing to $155,600:

- Eliminate the area drain. (The District agrees it is not necessary.) The existing drain will be left in place, covered, and will remain beneath the new concrete pad.
- Eliminate the roofing/waterproofing work. This will be handled by the District's roofing contractor. GSW will connect to a 4" PVC pipe stubbing down into the Hypochlorite Room.
- Change coating to Enduraflex.
- Delete the spec requirement for Contractor-provided coating inspection.
- Provide more flexibility to GSW in terms of contract duration (160 day project duration) so it can be done through the winter.

Fiscal Impact: Construction costs of $155,600. The FY2025 Capital Improvement Program includes a budget of $200,000.

STAFF REPORT

To:	**Coastside County Water District Board of Directors**
From:	**Mary Rogren, General Manager**
Agenda:	**September 10, 2024**
Date:	**September 6, 2024**
Agenda Title:	Authorize the General Manager to Enter Into Agreements for the Denniston Water Treatment Plant Contact Clarifier Hatch Replacement and Tanks Coating Project Including: 1) Waive the District's Procedural Requirements for Sealed Competitive Bids and Authorize Award of Contract to Lefevre Welding Inc. for the Contact Clarifier Hatch Replacements; 2) Authorize Award of Contract to Euro Style Management Inc. for Coating of the Contact Clarifiers and Other Tanks; and 3) Authorize Entering Into a Professional Services Agreement with Freyer & Laureta, Inc. for Engineering Services During Construction.

Recommendation/Motion:

Authorize the General Manager to enter into agreements for the Denniston Water Treatment Plant Contact Clarifier Hatch Replacement and Tanks Coating Project including: 1) Waive the District's procedural requirements in Resolution 2016-09 for sealed competitive bids and authorize an award of contract to Lefevre Welding Inc. for the contact clarifier hatch replacements for $101,510; 2) Authorize award of contract to Euro Style Management, Inc. for coating of the contact clarifiers and other tanks for $173,000; and 3) Authorize entering into a professional services agreement with Freyer & Laureta, Inc. for engineering services during construction for $39,900.

Background:

In June 2022, Staff engaged Freyer & Laureta, Inc. ("F&L") for engineering design services for replacement of four manway hatches on the existing contact clarifiers at the Denniston Water Treatment Plant. Staff had observed corrosion on each of the hatches including the coating in limited areas of the pressure vessel shell adjacent to the manway hatches.

In June, 2024, staff observed that the apparent corrosion at the hatch seals on the contact clarifiers was getting much worse and leaking was occurring. Staff would like to expedite the replacement of the contact clarifier hatches in Fall 2024 while the plant is not operational. In June, the District engaged F&L to update the plans and to also develop a recoating plan for the contact clarifiers to be completed after the hatch replacement. F&L also developed plans to recoat the exteriors of the coagulation tank and the filters #1, #2, and #3 as these tanks are also in need of painting (as the current coating is over 20 years old.) Recoating these tanks all at once will be more efficient and only requires one mobilization of a painting contractor.

This project consists of the following:

1) Replacement of the contact clarifier hatches and welding the hatches in place.
2) Coating the interior surface of the contact clarifiers with a protective coating where the new hatches are connected. Coating the exterior of the contact clarifiers as well as the exterior of the coagulation tank and filters #1, #2, and #3. Coating of the coagulation tank and filter will also include lead abatement procedures in compliance with air quality requirements.
3) Engineering services during construction including coating inspection services.

These items are explained below:

Item 1: Replacement of the contact clarifier hatches – Determination of waiving competitive bidding requirements

The fabrication of the contact clarifier hatches and installation requires the service of a welder who is certified to work on pressurized vessels. This certification is specialized and there are very few welders who have this designation. District staff has worked with LeFevre Welding Inc. on past welding projects and is confident in their ability to perform on this project. LeFevre Welding staff also coordinated with District staff, F&L, and the hatch door fabricator to arrive at the optimal design for the hatch doors. Staff is requesting the Board to waive the competitive bidding requirements of Resolution 2016-09 in order to procure the services from LeFevre Welding Inc. for $101,510. (See Attachment A.)

Item 2: Coating the contact clarifiers and exteriors of the coagulation tank, and filters #1, #2, and #3 – Award of Contract

The District competitively bid the coating portion of the project and received the following bids at the 9/3/2024 bid opening:

Euro Style Management, Inc.	$173,000
Unified Field Services Corporation	$252,525

F&L and their coating inspector reviewed the Euro Style Management proposal and the documents appear to be in order. The coating inspector has worked with Euro Style Management in the past. Staff recommends that the Board awards a contract to Euro Style Management for $173,000 for the coating portion of the project.

Item 3: Engineering Services During Construction: Authorize Entering Into a Professional Services Agreement with Freyer & Laureta, Inc. for Engineering Services During Construction

F&L has proposed to provide engineering services during construction for $39,900 (see Attachment B) which includes $32,780 for coating inspection services performed by Bay Area Coating Consultants (BACC) and $7,120 for F&L's coordination of the construction on the project.

Staff recommends the Board approve the three items listed above for a total of $314,410.

Fiscal Impact: $314,410. The Capital Improvement Program includes $75,000 in FY 26/27.

Attachment A

LeFevre Welding Inc.

2511 Isabelle Ave, San Mateo, CA 94403
650-642-5029 cell * 650-525-1280 fax
Contractor's License #989319 LBE certified. License #HRC041215593
Email LEFEVRESWELDING@AOL.COM

August 28, 2024

Denniston Clarifier Hatch Replacement
Coast Side Water/Sean Donovan

LeFevre Welding Inc Welding Union Rate

Parts
Welding Consumables
Lift

2 each 30" hinged manways including 30" slip on flange, hinged blind flange w/SS hinge pin. Bare x Bare
2 each 30" hinged manways including 30" slip on flange, hinged counter weighted blind flanges w/SS hinge pin. Bare x Bare
3'of 30" OD x 3/8" WSP bare
All testing, PQR, Certs WPS, Drug testing, Covid testing
Bonding if need
Restrooms
Fire watch
Blowers, Monitors Ladders and any other safety equipment needed for project.
All consumables- rods wire, Co2, wire wheels, grinding wheels, oxygen and acetylene
No Retention held
Net 14 days

$53410

Labor $47600
Delivery $500
Please allow 4 to 6 weeks for fabrication

Total $101,510.00

LeFevre Welding Inc responsible for:
Will follow all Contractors safety rules and will attend all weekly safety meetings.
Welding rig with welding machine, leads, torch and hose, wire box and some small hand tools.
Prices good for 60 days.
Please contact me if you have any questions.

Thank you
Lynn LeFevre

Attachment B

FREYER & LAURETA, INC.
Civil Engineers – Surveyors – Construction Managers

September 4, 2024

Mary Rogren
General Manager
Coastside County Water District
766 Main Street
Half Moon Bay, CA 94019
mrogren@coastsidewater.org

RE: PROPOSAL FOR ENGINEERING SERVICES DURING CONSTRUCTION
Denniston Water Treatment Plant Hatch Replacements and Tanks Coating Projects
Coastside County Water District, Half Moon Bay, California

Dear Mary,

Freyer & Laureta, Inc. (F&L) is pleased to provide this proposal to the Coastside County Water District (CCWD) to provide engineering services during construction for CCWD's Denniston Water Treatment Plant Hatch Replacements and Tanks Coating projects (Projects). The Projects involve replacement of the four access hatches on the two existing contact clarifiers; and protective coatings of the two contact clarifiers, coagulation tank, and three filters as two separate (but coordinated) construction contractor scopes.

Scope of Work

Construction consultation services will be provided to assist the City in obtaining construction work that is in substantial conformance to the contract documents. Our construction services will consist of the following:

Task 1: Engineering Services during Construction

- Coating inspection performed by Bay Area Coating Consultants (BACC).
- Prepare agendas, coordinate, and conduct pre-construction meetings for the Projects, both anticipated to be on-site (separately).
- Construction Drawings updates as-needed and preparation of a Conformed Set of plans for initiation of construction.
- Construction Administration
    - Submittal Review (review of Contractor's submitted cut-sheets, shop drawings, and plans for conformance with the Contract Documents).
    - Review and respond to Contractor's Requests for Information (RFIs).
    - Assistance in review of Contract Change Orders (CCOs).
- As-needed site meetings/conference calls to resolve field issues.

- Prepare Record Drawings
    - Drafting of Contractor As-Builts into AutoCAD drawings for CCWD archiving.
    - Incorporate all plan drawing and specification RFI Responses, Instructional Bulletins, and Clarifications. Changes will be clouded and tracked with numbered deltas symbols associating each change to its dated source. At CCWD's request we can also provide a second record set without clouds and deltas.

Assumptions/Exclusions

- This proposal is limited to the services that are specifically described above.

Schedule

F&L will provide the Scope of Services described above on a mutually agreeable schedule, anticipated to occur in September and October 2024.

FREYER & LAURETA, INC.
Civil Engineers – Surveyors – Construction Managers

Proposed Budget

F&L proposes to provide our services on a time and materials basis in accordance with the Charge Rate Schedule dated January 1, 2024. Please refer to Table 1 (attached) for the detailed fee breakdown for these design services. A summary is shown below.

Engineering Fees

Task Number	Description	Fee
1	Engineering Services during Construction	$39.900
	Total	**$39,900**

Thank you for the opportunity to present this proposal to the District. We look forward to continued collaboration with you and the rest of the team on this project. Please contact me at (808) 779-5988 or kimbrell@freyerlaureta.com with any questions or comments regarding our proposal.

Very truly yours,
FREYER & LAURETA, INC.

Joshua R. Kimbrell, P.E., QSD/P, LEED Green Associate
Vice President, Freyer & Laureta, Inc.
(415) 534-7070 x108 (O) | (808) 779-5988 (M)

Cc: Joanne Yau (Freyer & Laureta, Inc.)

Attachments

- Table 1 – Fee Estimate: Civil Engineering Services
- F&L Charge Rate Schedule dated January 1, 2024
- BACC's Proposal dated July 10. 2024

TABLE 1 – FEE ESTIMATE: CIVIL ENGINEERING SERVICES DURING CONSTRUCTION

DENNISTON WATER TREATMENT PLANT

CLARIFIER HATCH REPLACEMENTS AND TANKS COATING PROJECTS

Coastside County Water District, Half Moon Bay, California

Task Hours	Principal	Associate Engineer	Staff Engineer II	Subconsultant Costs		Total Cost Per Task
				Unit Cost	8% Markup	
Task 1: Engineering Services During Construction – Hatch Replacements and Tanks Coating projects						
Coating Inspection by Bay Area Coating Consultants				$30,352	$2,428	$32,780
Prepare Agenda, coordinate, and conduct pre-construction meetings (two, onsite)	3	4				$1,565
Construction Drawings updates as-needed and preparation of a Conformed Set	1	2	4			$1,283
Contractor Submittal Review and coordination		1	4			$826
Review and respond to Contractor's Requests for Information (RFIs)	1	2	4			$1,283
Assistance in review of Contract Change Orders (CCOs)	1					$263
As-needed site meetings/conference calls to resolve field issues		2	2			$704
Prepare Record Drawings (one set for each project, two total)		2	2			$704
Project management, team coordination	1	1				$457
Task Subtotal:	**7**	**14**	**16**			**$39,900**
Reimbursable Expenses						**$0**
FEE ESTIMATE TOTAL:						$39,900
F&L Hourly Rates (2024)	$263	$194	$158			

Notes:

1. Not all staff positions are listed. Other staff positions may be utilized and will be billed at hourly rates according to F&L's 2024 Rate Schedule. Not to Exceed Budget remains the same.
2. Breakdown by task is for estimating purposes only. Level of effort between tasks may vary.
3. Total and subtotals are rounded to nearest $100.

FREYER & LAURETA, INC.

Effective January 1, 2024

CHARGE RATE SCHEDULE

Professional & Technical Services of Freyer & Laureta, Inc. staff are provided on a fixed fee or an hourly rate basis as follows:

Fixed Fee

Where a definitive scope of work can be established, many of our clients prefer that a specific fee be agreed upon in advance. Billings are submitted monthly based upon percent complete as of the last accounting day of the month.

Hourly Rate

Applicable to Plan Preparation, Design, and Report services where the scope of work must remain open, Freyer & Laureta, Inc. utilizes the following hourly charge rate basis for billing purposes.

Consulting Category	2024 Rate
Production Aide - Clerical	$105
Drafter I - Technical Typist - Survey Tech II	$110
Drafter II - Word Processor	$116
Engineering Tech I - Drafter III	$131
Staff Engineer I - Engineering Tech II - Survey Tech III	$152
Staff Engineer II - Engineering Tech III - Survey Tech IV	$158
Staff Engineer III - Senior Engineering Tech	$163
Staff Engineer IV - Survey Tech V - Construction Inspector	$179
Associate Engineer - Associate Surveyor (L.L.S.)	$194
Senior Engineer - Construction Manager	$205
Senior Construction Inspector	$205
Project Manager - Principal Surveyor (L.L.S.)	$221
Senior Project Manager - Principal Surveyor (L.L.S.)	$236
Associate Principal	$247
Principal	$263
Forensic Engineering	$357
Deposition & Court Appearance	$446
Subconsultant, Reproduction, Printing, Travel, Mailing & Delivery - Cost plus 10%	

Interest Charge - Billings are due and payable within 30 days. A monthly interest charge equal to the Federal Discount Rate plus 5% will be applied on the next billing beyond the 30-day payment period.

The foregoing Charge Rate Schedule is incorporated into the Agreement for the Services of Freyer & Laureta, Inc. and may be updated annually.

BACC
BAY AREA
COATING CONSULTANTS INC.
Integrity Since 1987

Celebrating our Thirty-Seven Years of Experience & Integrity

July 10, 2024

Mr. Josh Kimbrell, P.E.
Freyer & Laureta, Inc.
150 Executive Park Blvd., Suite 4200
San Francisco, California 94134

Subject: NACE Coating Inspections and Consulting for the CCWD Denniston Water Treatment Plant, Half Moon Bay Project.

Dear Mr. Kimbrell:
Bay Area Coating Consultants, Inc., will assist Freyer & Laureta, Inc. with completing the districts contract requirements for the lining inspection of the Denniston Water Treatment Plant painting project. BACC will provide a NACE Certified inspector to observe the mixing, surface preparation, application of the coating system, and finial testing. BACC will provide daily reports on the Contractors operations. BACC will provide a daily written report on our findings. BACC will follow all SSPC, NACE, ICRI, AWWA, and ASTM current guidelines and standards. All reports will be e-mailed to you for your review. All BACC employees are confined space certified and lead awareness, scaffolding trained, and fit tested. The Contractor shall be responsible for safe entry.

BUILDING/CONSTRUCTION INSPECTOR TESTER GROUP 4 (NACE Certified) Prevailing Wage Billing Rates 2024 DIR Public Works Contractor (PWC) Registration #1000005228 Expires 06/30/2027 State of California Small Business (Micro) Public Works Certification No. 2005005 Expires 01/31/2025
Billing Rate $119.70per Hour
Time X 1.5 Billing Rate $159.94 per Hour
Double Time: Billing Rate $189.78 per Hour
Truck/Equipment Charge: $15.80 per Hour
Four Hour Minimum: 4.0 hours

Northern California (888)-384-6839
Southern California (661) 873-3601 **Reno Nevada** (888) 384-6839
P.O. Box 867 / Denair CA. 95316
Proud Member: SSPC AWWA NACE ASTM API

We do not have the contractors' actual project schedule, so we are basing this estimate of similar size and scope.

2022 (NACE Certified Inspection) Estimate			
Task	**Hours**	**Overtime X 1.5**	**Overtime X 2.0**
Coagulation Tank	64.0 hours	0.0 hours	0.0 hours
	$8,672.00	$0.0	$0.0
Filters 1 thru 3	80.0 hours	0.0 hours	0.0 hours
	$10,840.00		
2Two Contact Clarifiers	80.0 hours	0.0 hours	0.0 hours
	$10,840.00	$0.0	$0.0
Total: $30,352.00			

Please call if you have any questions or if you want to further discuss the information contained in this proposal.

Respectfully Submitted,

Ed Darrimon
President
Bay Area Coating Consultants, Inc.
edarrimon@bayareacoating.com
www.bayareacoating.com

SSPC Certified Inspection Company

BACC Safety and Drug Testing Compliance Partners

STAFF REPORT

To:	**Coastside County Water District Board of Directors**
From:	**Mary Rogren, General Manager**
Agenda:	**September 10, 2024**
Date:	**September 6, 2024**
Agenda Title:	Waive the District's Procedural Requirements for Sealed Competitive Bids and Authorize the General Manager to Award a Contract to Pump Repair Service Company for Cleaning and Rehabilitating Pilarcitos Canyon Wells

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Recommendation/Motion:
Waive the District's competitive bidding requirement of Resolution 2016-09 and authorize the General Manager to award a contract to Pump Repair Service Company for the cleaning and rehabilitation of Pilarcitos Canyon Wells #1, #3A and #4A for $74,441.

Background:

The District has a State-issued water rights license for the period from November 1 through March 31 of each year to pump water from infiltration wells located in Pilarcitos Creek Canyon.

In anticipation of the upcoming pumping season beginning November 1, staff plans to clean and rehabilitate three existing wells before the season starts. Work includes labor and materials to pull the wells; conduct pre-rehab videos; treat and scrub; airlift and swab bail any remaining material; discard material into a water truck; and conduct post rehab videos.

The quote from Pump Repair Service Company totals $74,441 and is included as Attachment A.

Determination of Waiving Competitive Bidding Requirements:

District staff have sought out other pump contractors but have not found parties willing to do the well rehabilitation work in this short time frame. The District has utilized Pump Repair Service on many pump and well projects over the years and has found them to be a

reliable contractor. Staff is requesting to waive the competitive bidding requirements of Resolution 2016-09 in order to sole source the purchase of services from Pump Repair Service Company.

Fiscal Impact: $74,441 charged to Well Maintenance.

PUMP REPAIR SERVICE CO.

August 13, 2024

Coastside County Water District
766 Main Street
Half Moon Bay, CA 94019

Attn: Darin Sturdivan

SUBJECT: PILARCITOS CANYON WELLS #1 , #3A AND #4A WELL CLEANING AND REHAB

Dear Darin,

We are pleased to provide you with an estimated proposal to clean and rehab the (3) wells based off of past history work.

Pre rehab video wells #1, #3A and #4A..... $2,800.00
Post rehab video wells #1, #3A and #4A..... $2,800.00

Rehab and cleaning Well #1

55 Gallons - Water Safe AR		$60.00	$3,300.00
2 Gallons - Aqua Clear PDF		$120.00	$240.00
4 Gallons - Sodium Hypochloritte NSF approved		$25,00	$100.00
4 Each - Soda Ash (50 lb bag)		$60.00	$240.00
Materials			$3,880.00
		Sales tax 9 3/8%	$363.75
Mobilization	8 hours	$400.00	$3,200.00
Shop loading/unloading Tooling			
Chemistry	8 hours	$150.00	$1,200.00
Bail well to total depth	1 hour	$400.00	$400.00
Inject Chemistry & Swabbrush casing	4 hours	$400.00	$1600.00
Airlift Swab & neutralize Chemistry	8 hours	$400.00	$3,200.00
Bail any accumulated fill & swab in CL2	4 hours	$400.00	$1,600.00
Per Diem (2 men, 2 nights)		$300.00	$1,200.00
Estimated Labor Costs			**$12,400.00**
Equipment and Rentals			
Swab and Brush	1 day	$1,200.00	$1,200.00
185 CFM Compressor	8 hours	$250.00	$2,000.00
Estimated Equipment and Rental Costs			**$3,200.00**
Estimated Total			**$19,843.75**

ESTABLISHED 1941
PO BOX 34327 SAN FRANCISCO, CA 94134-0327 415.467.2150 FAX 415.467.7442
www.pumprepairservice.com

Rehab and cleaning Well #3A

55 Gallons - Water Safe AR		$60.00	$3,300.00
2 Gallons - Aqua Clear PDF		$120.00	$240.00
4 Gallons - Sodium Hypochloritte NSF approved		$25,00	$100.00
4 Each - Soda Ash (50 lb bag)		$60.00	$240.00
Materials			$3,880.00
		Sales tax 9 3/8%	$363.75
Mobilization	8 hours	$400.00	$3,200.00
Shop loading/unloading Tooling			
Chemistry	8 hours	$150.00	$1,200.00
Bail well to total depth	1 hour	$400.00	$400.00
Inject Chemistry & Swabbrush casing	4 hours	$400.00	$1600.00
Airlift Swab & neutralize Chemistry	8 hours	$400.00	$3,200.00
Bail any accumulated fill & swab in CL2	4 hours	$400.00	$1,600.00
Per Diem (2 men, 2 nights)		$300.00	$1,200.00
Estimated Labor Costs			**$12,400.00**
Equipment and Rentals			
Swab and Brush	1 day	$1,200.00	$1,200.00
185 CFM Compressor	8 hours	$250.00	$2,000.00
Estimated Equipment and Rental Costs			**$3,200.00**
Estimated Total			**$19,843.75**

Rehab and cleaning Well #4A

55 Gallons - Water Safe AR		$60.00	$3,300.00
2 Gallons - Aqua Clear PDF		$120.00	$240.00
4 Gallons - Sodium Hypochloritte NSF approved		$25,00	$100.00
4 Each - Soda Ash (50 lb bag)		$60.00	$240.00
Materials			$3,880.00
		Sales tax 9 3/8%	$363.75
Mobilization	8 hours	$400.00	$3,200.00
Shop loading/unloading Tooling			
Chemistry	8 hours	$150.00	$1,200.00
Bail well to total depth	1 hour	$400.00	$400.00
Inject Chemistry & Swabbrush casing	4 hours	$400.00	$1600.00
Airlift Swab & neutralize Chemistry	8 hours	$400.00	$3,200.00
Bail any accumulated fill & swab in CL2	4 hours	$400.00	$1,600.00
Per Diem (2 men, 2 nights)		$300.00	$1,200.00
Estimated Labor Costs			**$12,400.00**
Equipment and Rentals			
Swab and Brush	1 day	$1,200.00	$1,200.00
185 CFM Compressor	8 hours	$250.00	$2,000.00
Estimated Equipment and Rental Costs			**$3,200.00**
Estimated Total			**$19,843.75**

Estimated Field labor to remove
And reinstall all (3) well at the
Same time..... 6,960.00
Boom truck/service truck..... 2,350.00
Estimated Total $9,310.00

If you have any questions on the above, please give me a call.

Sincerely,

TOTAL $74,441.25

Wayne Archer

Wayne Archer

WA/dm

STAFF REPORT

To: **Coastside County Water District Board of Directors**

From: **Mary Rogren, General Manager**

Agenda: **September 10, 2024**

Report Date: **September 6, 2024**

Agenda/Title: Approval of Professional Services Agreement with Balance Hydrologics, Inc. for Denniston/San Vicente Stream Gaging, Groundwater Monitoring, and Data Collection

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Recommendation/Motion:

Authorize the General Manager to enter into a Professional Services Agreement with Balance Hydrologics, Inc. for Water Year 2025 stream gaging, groundwater monitoring, and data analysis for the Denniston Creek and San Vicente Creek watersheds for an estimated time-and-materials cost of $124,689.

Background:

Quantifying the amount of water available for diversion from Denniston and San Vicente Creeks is vitally important to the District's efforts to secure its water rights on those streams. Balance Hydrologics (Balance) has provided stream gaging, monitoring, and analysis services to the District starting with Water Year 2011 (WY11 - October 1, 2010 to September 30, 2011). Balance's proposal dated August 26, 2024 (Attachment A) covers WY25 continuation of gaging services for stations on Denniston and San Vicente Creeks, and groundwater monitoring. Services to be provided are similar to those provided for WY24. In addition, the proposal reflects labor and materials for the replacement and calibration of aging pressure sensors and leveloggers. This equipment has a useful life of ap. 6-8 years.

Fiscal Impact:

Cost of $124,689 is included in the Capital Improvement Program for Denniston/San Vicente. (For comparison purposes, the Water Year 2024 agreement was approved for $99,906 in October 2024.)

Balance Hydrologics

800 Bancroft Way • Suite 101 • Berkeley, CA 94710 • (510) 704-1000
224 Walnut Avenue • Suite E • Santa Cruz, CA 95060 • (831) 457-9900
12020 Donner Pass Road • Unit B1 • Truckee, CA 96161 • (530) 550-9776
www.balancehydro.com • email: office@balancehydro.com

August 26, 2024

Mary Rogren, General Manager
Coastside County Water District
766 Main Street
Half Moon Bay, California 94019-1995

RE: Proposal to Gage Denniston Creek, San Vicente Creek and Monitor Inactive Wells and Hydrologic Conditions, Water Year 2025

Dear Ms. Rogren:

It is our pleasure to provide you with this letter proposal containing our recommended scope to continue surface-water monitoring in Denniston and San Vicente Creeks, and nearby unconsolidated aquifers. This proposal encompasses continuation of the water year[1] 2011 (WY2011) through WY2024 baseline stream gaging effort through the end of WY2025. Results will extend the flow record, which will help the Coastside County Water District (CCWD) evaluate (a) streamflow availability and (b) meet regulatory-staff expectations. Extending the monitoring period for basic streamflow and geomorphic observations will facilitate CCWD's environmental and permitting process and will be beneficial for assessing diversion strategies that meet your expectations for yield and for site-appropriate watershed protection.

During WY2024 we (a) continued monitoring five stream gages and (b) concurrently monitored water levels (and quarterly measurements of salinities) in three wells and the three multi-level piezometers beneath Pillar Point Marsh. Please see attached Figure 1 that shows past and current monitoring locations.

In WY2025 we propose to (a) continue monitoring five stream gages, and (b) concurrently monitor water levels in three wells, three piezometers, and in Pillar Point Marsh (See Work Scope, below).

[1] A "water year" (WY) is defined as the period from October 1st of the preceding year through September 30th of the named year. For example, water year 2025 (WY2025) starts October 1, 2024, and ends September 30, 2025.

To address the objectives of this work, we present a technical scope of work outlined under the following tasks:

1. *Water year 2025 stream gaging and monitoring, and provide online access to the provisional gage data*
2. *Draft and final water year 2025 data presentation technical memorandum*
3. *Golden Gate National Recreation Area (GGNRA) permit compliance reporting*
4. *Other studies not presently part of the scope of work which you may request and authorize.*
5. *Project administration*

The next section elaborates on this proposed approach.

Work Scope

Task 1. Water year 2025 monitoring

The water year 2025 monitoring effort will include (a) approximately monthly site visits to the five gaging locations, SVAD (San Vicente Creek above the diversion), SVAE (San Vicente Creek at Etheldore), SVCA (San Vicente Creek at California Street), DCAD (Denniston Creek above the CCWD diversion), and DCBC (Denniston Creek below Capistrano Way) to collect baseline data, (b) approximately quarterly visits to monitor groundwater levels (and salinities) at three wells, three piezometers, and in the Pillar Point Marsh, (c) up to 3 - 4 additional visits during storms, and (d) purchase and deploy new sensors for the entire aging fleet of sensors.

Monthly Streamflow Measurements

To the extent possible under dynamic field conditions, measurements conform with the standard of care for the California Division of Water Rights. Monthly visits allow us to calibrate flow measurement at stations by performing a flow (discharge) measurement and staff plate (gage height) readings over a wide range of streamflow levels. During quarterly visits we will also download data from the Solinst Leveloggers® (San Vicente above diversion) and make channel observations (such as new high-water marks, bed conditions, and changes in the riffles and/or woodjams and logs which control flow at the various gages, all of which are crucial for calibrating the record of stage and flow), plus perform maintenance and calibration. During winter storms when flows are elevated, we will endeavor to make supplemental field visits to measure flow and other observations (i.e., identify high-water marks, field-meter measurements and measurements qualitative observations of water quality, when and where logjams form and dissipate, etc.). These visits are used to complete the stage-to-discharge rating curve(s) through the highest flows observed, and to adjust the rating curve (as needed) to account for changes in sedimentation, channel shape, vegetation growth, or debris accumulation. In the office, we will calculate the flow, enter the information into the station log, plot the data on a stage-to-discharge rating curve, add the downloaded data to the station spreadsheet, and reduce the data to daily mean flow values and otherwise meet the standards for continuous flow monitoring. We also check, maintain, and service the field equipment owned by CCWD.

We recommend continuation of the low-flow synoptic measurements at both the station in Denniston Canyon just downstream of the Canyon Field diversion (DCAAD) and the former DCBD (Denniston Creek below the dam) location to characterize potential gains and losses between the reservoir and mouth of Denniston Creek at station DCAD (above Denniston Reservoir, at the water treatment plant bridge).

Presently, the preliminary station data are made available via our real-time system on the Balance Hydrologics website for the four real-time stations, SVAE, SVCA, DCAD and DCBC. This feature provides real-time information to both the CCWD staff and Balance staff. You have chosen to make the highlights of the information collected at DCBC available to the community at large, such that GGNRA and resource-agency staff as well as residents of the area can come to better understand the local streams. Finally, in addition to CCWD uses of the real-time data portal, having this information available remotely will continue to improve the efficiency of winter storm monitoring, warns us of gage malfunctions, and allows us to continue to monitor in a more cost-effective manner.

Storm Streamflow Measurements

Due to the highly mobile sandy beds on both Denniston Creek and San Vicente Creeks, gaging these creeks is particularly challenging relative to channels that have more stable bedrock, cobble-boulder, or even gravel beds. To meet this challenge, we will continue to regularly visit the sites, particularly during high-flow events. During WY2025 we will continue to refine the low end of the rating curves, but also refine the high end of the rating curves, getting better estimates of flow during storm or post-storm runoff, when diversions can most easily be accommodated with minimal environmental effects. As such, we will continue to make regular site visits are intervals of about a month throughout the year, in addition to a number of planned storm visits.

Measuring Shallow Groundwater and Surface-Groundwater Interaction

Each of the monitoring wells (Inactive wells 7 and 9) are currently equipped with a Solinst Levelogger® that records water level and temperature every hour. Inactive Well 4 was observed to be uncapped and the logger was missing in July 2024. We propose to re-install a new logger at this location once CCWD repairs the well cap. In addition, we are proposing to continue to monitor the three-piezometer nest (three co-located piezometers screened at staggered depths) located at the north flank of West Avenue at Pillar Point Marsh. The three piezometers, initially constructed in 1989, are instrumented with Solinst Leveloggers®. These data help us to identify the lower boundary condition for the shallow aquifer system adjacent to San Vicente and Denniston Creeks, an anticipated contentious issue with both the Coastal Commission and the Division of Water Rights.

This task provides time for us to measure depth-to-water and specific conductance in the three monitoring wells and three Pillar Point Marsh piezometers and download data during four quarterly site visits. In the office, we will enter the information into the station log, add the downloaded data to the station spreadsheet, calibrate and plot the hourly data. We will develop graphics comparing the water levels in each of the wells, and rate at which the water table is recharged during storm the winter or falls during the late summer months.

Periodic Maintenance

It has been about 7 years since CCWD purchased sensors for this monitoring effort and many sensors are showing signs of age, and some sensors have failed (Piezometer 1 in WY23, and Piezometer 2 in WY24). Other sensors are showing clear signs of aging (cracking on sensor wires, difficulty in connecting and downloading data, etc.). In WY24, we replaced two sensors at SVCA with 1 brand new sensor and one sensor from the demobilized Pilarcitos gage, and we replaced one sensor at SVAE with one used sensor from the demobilized Pilarcitos gage. We propose purchasing 7 new sensors to replace (2) sensors at DCAD, (2) sensors at DCBC, (2) sensors at SVAE, and (1) sensor at SVCA. This number will fully replace the aging pressure transducers (sensors) at the real-time stream gages. Additionally, we recommend purchasing 10 new Solinst loggers to replace (2) loggers at SVAD stream gage, (3) loggers for the three piezometers, (3) loggers for Well 4, Well 7 and Well 9, (1) logger for Pillar Point Marsh, and (1) barometric pressure logger (Solinst Barologger®) which is used to remove fluctuations in barometric pressure from the Leveloggers®. Several of these Leveloggers® have already failed, and Balance has deployed Balance-owned loggers temporarily to avoid data gaps. We have included the cost of 7 sensors, 9 Solinst Leveloggers®, and 1 Solinst Barologger® to be purchased on behalf of CCWD in Table 2. We have also included time to order, inspect, launch, and install this equipment under Task 1.

Deliverables: Provisional real-time data describing current conditions at four stream gages (SVAE, SVCA, DCAD, and DCBC).

Task 2. Draft and final water year 2025 reporting

Following the agreed upon reporting format implemented in WY2024, we have included budget to support preparation of a brief technical memorandum that will present the flow forms, figures tables, and will summarize precipitation, flow metrics for the water year, and a summary of important maintenance events or changes to the gaging program that occurred during the year (if any). Data interpretation will not be included, but should the need arise to interpret collected data to answer questions related to CCWD operations, we can assist with those under separate authorization. The written memo will include a summary form for each station tabulating the daily mean discharge data and identifying station descriptors, plots of the data, and water-surface elevation time series data for the monitoring wells, piezometers and Pillar Point Marsh water level gage. We will submit the draft report to you, and then prepare a final report responding to your comments.

Deliverables: Draft technical memorandum in pdf and Microsoft Word formats, presenting the finalized water level records at 3 wells, 3 piezometers, and the Pillar Point Marsh, and flow records at 5 stream gages for WY2025. Final report in pdf format.

Task 3. Permit compliance reporting

Since 2016, GGNRA has managed much of San Vicente and Denniston Creek watersheds. CCWD is now required to submit data reports as part of the scientific sampling permit which GGNRA has issued to you. The data reports are submitted for one gage on San Vicente Creek (SVAD) and one gage on Denniston Creek (DCAD), both of which are within or adjacent to GGNRA jurisdiction. We will prepare the annual data forms for submittal by CCWD.

Deliverable: Draft cover letter for the permit compliance submittal with forms and table attachments.

Task 4. Tasks to be authorized during the year, if any.

It is possible that other work may be needed during the course of the water year. This work may include as-needed assistance with regulatory work, purchasing additional equipment on behalf of CCWD, etc. Should CCWD-owned equipment in the field be damaged or vandalized, Balance would purchase replacement equipment under this task after written authorization from CCWD. We have already included costs for WY2025 equipment replacement in Table 2, but this task would be intended to cover other unanticipated issues with equipment not covered by stated equipment costs in Table 2. You may wish to request additional site or storm visits following a future earthquake swarm or watershed-disturbing rainfall, wildfire or windstorms. If and as you ask for additional services, we will track these as tasks 4a, 4b, etc., so that you have clarity on what these additional assignments may cost, which may also aid in cost recovery.

Task 5. Project administration

This task provides time to help schedule and administer the project in a way that best helps you and us regularly track schedule and budget. We aspire to re-invigorate our check-in process to share our observations and listen to your observations and questions. We will target hosting these calls on a 6-month recurring schedule.

Anticipated Costs

Our estimates of staff assignments and level of effort for each task are shown in Table 1. The estimated total costs to complete this work are shown at the bottom of Table 2. In addition, Table 2 covers expenses not allocated to individual tasks, such as mileage. The rental fees include modem line fees and travel and equipment fees, and the purchase of hardware to replace aging sensors. As you may recall, we released our new real-time system over the course of Water Year 2023. We hope that the new, more secure, mobile-friendly, reliable, and more user-friendly interface serves your monitoring and management goals. The new real-time interface allows for more customization; please reach out if you think we may be able to improve your experience. As part of this service, we are now charging $90 per month for a single station, which comes to $360/month for 4 sites and includes a discount for hosting multiple sites. In addition, we pass through modem connection costs at $50/month.

As is customary for field-related jobs, our costs also include a $5,000 contingency allowance. The contingency allows for a smoother absorption of additional costs beyond our control (or yours) which inhibit the efficient completion of our work. Examples of situations that might require use of the contingency allowance are labor and materials associated with repair and/or replacement of hydrologic equipment or data damaged by high flows, earthquakes or other “Acts of God”, changes requested by your staff or a landowner, a very wet year requiring additional visits, or shifts in regulatory requirements as well as lost samples due to lab or shipping company errors. We have decreased the recommended contingency from 10 to 5 percent, as the monitoring stations and procedures have become progressively

more robust. Also, a breakdown of rental costs associated with this project is available upon request. We have also assumed that CCWD will continue to help obtain ready access to the gages and wells.

We have made every effort to minimize the impact of these changes by allocated staff hours in a prudent, technically sound, but cost-effective manner. The monitoring assignment has been spread to more junior staff to conserve costs, while also maintaining sufficient senior staff involvement to maintain quality and sustain professional registration. The spread amongst our staff allows work to be mobilized either from Berkeley or Santa Cruz as conditions dictate.

Although we have made out best effort to provide an accurate estimate to you, our work is done on a time-and-expense basis, so costs could be somewhat higher or lower than these estimates.

Anticipated Schedule

We anticipate drawing from this budget for data collection that takes place after WY2024 ends (Sept. 30, 2024). We will conclude monitoring on or about September 30, 2025. We will provide a completed draft report to the District in a timely manner. If needed earlier for regulatory purposes, we will attempt to adjust the timeline accordingly.

Proposed Project Staff

Scott Brown will step in as the principal-in-charge, and act as senior reviewer. Eric Donaldson will serve as project manager. Emma Goodwin is lead hydrologist and she will be supported by field hydrologists Anders de Wit, Mark Woyshner (from Balance's Berkeley office), Jason Parke, and Chelsea Neill (Santa Cruz office) who have been servicing the stream gaging stations and wells and working with the data. Other staff may be called upon during winter storm flow monitoring. We have assigned more field staff to this project than usual, so that storm assignments can be discharged either from Berkeley or Santa Cruz, since access to this part of San Mateo County can be problematic during winter weather.

Closing

Thank you for asking that we prepare this proposal, and we appreciate the opportunity to discuss potential updates to the monitoring program leading up to submittal of this proposal. We always aim to keep our work focused on the necessary questions and it is helpful for us to revisit that with you annually.

We appreciate the opportunity to continue the streamflow gaging and monitoring groundwater through the next water year and look forward to supporting your water information needs through the ongoing and future work.

Please let us know if you have questions, or suggestions, or if your needs and schedule differ from our assumptions, above.

Sincerely,

BALANCE HYDROLOGICS, INC.

Emma Goodwin
Hydrologist

Eric Donaldson, P.G.
Project Manager

Scott Brown, P.G.
Principal Hydrologist

Enclosures: Figure 1. Site map: Past and current gaging locations
Budget Tables 1 and 2 for WY2025

Table 1. Anticipated Staff Hours by Task

225057 Coastside County Water District Hydrologic Monitoring, WY2025

Task Number and Description	Sr. Principal	Principal	Senior Professional	Project Professional	Sr. Staff Professional	Staff Professional	Assistant Professional	GIS/CADD Senior Analyst	Sr. Proj Admin	Sr. Report Specialist	Hydrologic Tech	Labor Costs For Task
Hourly Rate	*$270*	*$245*	*$210*	*$195*	*$190*	*$170*	*$155*	*$155*	*$145*	*$120*	*$105*	
Task 1. Water Year 2025 monitoring		30	30		158	200						$77,670.00
Task 2. Draft and final water year 2025 reporting		4	10		32	12		4		8		$12,780.00
Task 3. Permit compliance reporting		1	3							1		$995.00
Task 4. Tasks to be authorized during the year, if any					No work presently authorized							
Task 5. Project administration		1	10			2			12			$4,425.00
Subtotal Hours		36	53		190	214		4	12	9		
Total Hours	**518**											

Notes:

TOTAL LABOR	**$95,870.00**
Expenses from Table 2	***$23,819.20***
Contingency from Table 2	***$5,000.00***
GRAND TOTAL	**$124,689.20**

Table 2. Estimated Costs

225057 Coastside County Water District Hydrologic Monitoring, WY2025

Professional Fees	Rate	Hours		Allocation
Sr. Principal	$270	0		$0.00
Principal	$245	36		$8,820.00
Senior Professional	$210	53		$11,130.00
Project Professional	$195	0		$0.00
Senior Staff Professional	$190	190		$36,100.00
Staff Professional	$170	214		$36,380.00
Assistant Professional	$155	0		$0.00
Junior Professional	$140	0		$0.00
GIS/CADD Senior Analyst	$155	4		$620.00
GIS/CADD Analyst	$145	0		$0.00
Senior Project Administrator	$145	12		$1,740.00
Senior Report Specialist	$120	9		$1,080.00
Report Specialist	$105	0		$0.00
Hydrologic Technician	$105	0		$0.00
			Labor Subtotal (Table 1)	$95,870.00

Expenses

Direct Expenses

Mileage	**1860**	miles @	$0.72	$1,339.20
Mileage, 4-Wheel Drive*		miles @	$0.75	$0.00
Vehicle Rental				$0.00
Replacement pressure transducers	**7**	@	$1,300.00	$9,100.00
Replacement Solinst Leveloggers	**9**	@	$800.00	$7,200.00
Replacement Solinst Barologger	**1**	@	$460.00	$460.00
Equipment Rental Fees (Sampling gear during site visits, e.g, flow meter, etc.)				$800.00
Cell modem fees			$50/mo for 4 realtime sites	$600.00
Real-time data access			4 realtime sites @ $90/mo each	$4,320.00

Reimbursable Costs

Other Travel, Subsistence		trips @		$0.00
Express Mail, Deliveries				$0.00
Maps and Aerial Photos				$0.00
Outside Copying, Blueprint				$0.00
Outside Consultants				$0.00
Analytical Laboratory Fees				$0.00
Materials and Supplies				$0.00
Permits, Licenses or Agency Inspection fees	***client responsibility***			$0.00
Printing+				$0.00
Other				$0.00
			Expenses Subtotal	$23,819.20
			ESTIMATED TOTAL	**$119,689.20**
			Contingency	**$5,000.00**
Notes			**TOTAL w/ CONTINGENCY**	**$124,689.20**

* 4WD rates apply only if required by site conditions. See Balance policy re 4WD.

+Plotting costs vary according to complexity of design

Project-related expenses will be billed at cost plus 10%; including work by outside consultants and analytical or testing laboratories.

STAFF REPORT

To:	**Coastside County Water District Board of Directors**
From:	**Mary Rogren, General Manager**
Agenda:	**September 10, 2024**
Report Date:	**September 6, 2024**
Agenda Title:	Receive the "Recycled Water Feasibility Study" Prepared by Waterworks Engineers, LLC.

Information Only:

Receive the "Recycled Water Feasibility Study" prepared by Waterworks Engineers, LLC.

Background:
As the water retailer for the City of Half Moon Bay, and the surrounding communities of unincorporated San Mateo County, the District is committed to pursuing a resilient, sustainable, and integrated water supply for the Coastside including evaluating options for alternative water supplies involving water reuse. Since the late 1990's, the District has conducted and participated on numerous studies in conjunction with other Coastside agencies (including Sewer Authority Mid- Coastside, the City of Half Moon Bay, Granada Community Services District, and Montara Water & Sanitary District) investigating the possibilities of implementing recycled water on the Coastside.

Given predicted climate change impacts to water resources, projected cost increases of SFPUC wholesale water, and changes in water reuse regulations, in 2023, the District decided to take a fresh look at the feasibility of water reuse . In June 2023, the District entered into an agreement with Water Works Engineers, LLC. ("Waterworks") to conduct a feasibility study to assess the hydrogeology of the region, technical, regulatory, permitting requirements, and economic feasibility in order to derive and evaluate potential alternatives for water reuse.

Feasibility Study Scope:
The scope of the study focused on looking at a range of alternatives to diversify the District's water supply portfolio including 1) non-potable reuse; 2) indirect potable reuse; 3) direct potable reuse; 4) projects with environmental benefits. A primary component of the study was the development of a hydrogeologic report prepared

by ROUX Associates, Inc. ("ROUX"), an environmental consulting firm subcontracted by Water Works, to determine if using recycled water for environmental benefit and ground water replenishment were feasible options within the Half Moon Bay Terrace Basin as it overlaps the District's boundaries.

The study focused on recycled water uses within the District's jurisdictional boundaries and Skylawn Memorial Park . The average dry weather flow of wastewater attributable to the District's service area between 2018 to 2022 was 1.18 MGD and was assumed as the available flow for purposes of this study. Waterworks considered the geography of the District and land use zoning (e.g., 81% of the land is zoned residential; 18% commercial; 1% agricultural) as well as population trends and land use restrictions given that the District's service area is within the Coastal Zone. Waterworks also reviewed potential customers in the service area for the recycled water.

The options considered for this study by category are included below:

Non-Potable Reuse	Indirect Potable Reuse	Direct Potable Reuse	Environmental Benefit
Fill Station(s)	Groundwater Replenishment	Direct Potable Reuse at Nunes WTP	Pilarcitos Creek Augmentation or Other Creek Augmentation
Landscape Irrigation	Reservoir Augmentation		Wetland Enhancement
Agricultural Irrigation			
Skylawn Irrigation			
Ocean Colony Golf Course Irrigation			

Waterworks considered both cost/benefit and non-cost criteria in their analysis of the options. From a cost perspective, Waterworks considered 20-year life cycle costs (including initial capital outlay plus annual O&M costs) and calculated the net present value per million gallons produced over 20 years for purposes of ranking alternatives. Waterworks also considered economic benefits to the District of alternative water sources that could be available for the beneficial use of the District's customers.

Non-cost criteria considered includes 1) environmental and social impacts/benefits; 2) ease of implementation and regulatory compliance; 3) engineering, construction, and operations; and 4) climate hazard and resiliency.

Study Findings:

Historically, studies conducted by the District and other Coastside agencies have focused on the possibilities of non-potable reuse centering around irrigation (and

potentially the need to install non-potable distribution infrastructure "purple pipe" in the community.) In assessing the non-potable reuse opportunities on the coast, Waterworks concluded that there are very few customers within the District's service area who might be willing to take recycled water given that the cost would be higher than their current sources of water.

A sizable portion of Waterworks' efforts focused on the feasibility of indirect potable reuse options including groundwater replenishment. As such, Waterworks engaged ROUX to conduct a hydrogeological investigation and groundwater modeling. Given the low porosity of the soils and rock in the Half Moon Bay Terrace Groundwater Basin, the slow "seepage velocity" from percolating or injecting recycled water would result in groundwater "mounding" and a lack of effect on recharging downgradient wells in the 60-day water movement radius. ROUX also considered surface water augmentation. Given that there are over 100 water rights on local creeks, such augmentation is difficult given that recycled water cannot impair the quality of a rightsholder's source of irrigation water.

Waterworks overall assessments of the feasibility of recycled water project alternatives are summarized in the table below:

Alternative	Feasible	Reasoning
Fill Station(s)	No	Little demand for recycled water within service area.
Landscape and Agricultural Irrigation	No	Little demand for recycled water within service area.
Skylawn Memorial Park Irrigation	No	Park not within service area, so would not be able to deliver recycled water.
Ocean Colony Golf Course and Landscape Irrigation	No	Ocean Colony has other water supplies that are more cost effective than recycled water and therefore, does not have a demand for recycled water.
Pilarcitos Creek Augmentation or Other Creek Augmentation	No	Does not offset groundwater use or provide additional water resources from indirect or direct potable reuse.
Wetland Enhancement	No	Does not offset groundwater use or provide additional water resources from indirect or direct potable reuse.
Groundwater Replenishment	No	1. There are private wells in the service area that limits where water may be replenished. 2. A limited amount of water that can be replenished at one location due to mounding
Reservoir Augmentation	No	There is no known partner who has a reservoir available for augmentation.
Direct Potable Reuse at Nunes WTP	Further study needed	Next steps are to find potential funding sources and continue technical studies.

Waterworks offered the following conclusion regarding the study: Of the recycled water alternatives evaluated, direct potable reuse is the only one that should be pursued as it has the potential to provide diversity to the District's water supply portfolio (although further study is needed to determine if it is economically viable.)

In the table below, Waterworks calculated that a $63 Million investment in capital costs is needed to pursue direct potable reuse, and annual O&M costs of $6.19 Million (in 2023 $). The net present value per Million Gallon (MG) over 20 years is $24,000 per Million Gallons. (The District's current cost of raw water from SFPUC is ap. $7,000/MG.) The maximum "delivered water" for direct potable reuse is estimated at .9 MGD.

Table 15. Life Cycle Costs

Alternative		Capital Cost (a)	Annual O&M Cost	20 Year Net Present Worth (b)	Delivered Water in 20 Years (MG)	Net Present Worth/ MG	Rank
Non-Potable Reuse	Fill Station(s)	$3.50 M	$0.10 M	$5.07 M	183	$28,000	4
	Landscape and Agricultural Irrigation	$27.2 M	$1.07 M	$44.0 M	600	$73,000	6
	Skylawn Memorial Park Irrigation	$29.4 M	$1.16 M	$47.6 M	1,000	$48,000	5
	Ocean Colony Golf Course and Landscape Irrigation	$22.0 M	$1.20 M	$40.9 M	1,830	$22,000	1
Indirect Potable Reuse	Groundwater Replenishment	$38.8 M	$3.53 M	$94.2 M	913	$103,000	7
	Reservoir Augmentation	$65.7 M	$4.85 M	$142 M	6,570	$22,000	1
Direct Potable Reuse	Direct Potable Reuse at Nunes WTP	$63.0 M	$6.19 M	$160 M	6,570	$24,000	3

(a) Costs are in 2023 dollars. Cost estimates are considered Class 5 by AACE International and have an accuracy of +50 percent and -30 percent.
(b) Assumes Inflation is 3%, nominal discount rate is 5.5%, and real discount rate is 2.4%.

In December 2023, the State Water Resources Control Board approved regulations for direct potable reuse allowing water systems to develop treatment protocols to convert wastewater into high quality drinking water. Although direct potable reuse is still in its pilot stages and is mostly being pursued by a few large California water agencies, the District, in conjunction with Sewer Authority Mid-Coast and other local stakeholders should consider implementation of direct potable reuse in long-term (10^+ years) planning of drinking water and wastewater facilities.

Waterworks also noted that "to be feasible, proposed recycled water projects need partners that want to collaborate with the District and a reason to pursue the project such as a policy or economic reason." The District recognizes that to pursue recycled water on the Coastside requires collaboration with local stakeholders (Sewer Authority Mid-Coast, member agencies and other Coastside agencies) and

broader stakeholders such as SFPUC, BAWSCA, County of San Mateo, and State and Federal agencies to find funding and support for recycled water projects on the Coastside.

Attachments:

Exhibit A: Recycled Water Feasibility Study – Waterworks Engineers, LLC.

Exhibit B: Roux Report – Executive Summary – Roux, Inc.

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EXHIBIT A

Coastside County Water District
Recycled Water Feasibility Study

Date: 3/20/2024
Prepared by: Lanie Carl, E.I.T., Cindy Bertsch, PE

1 Contents

Tables

Figures

1 Executive Summary

Coastside County Water District (CCWD or District) contracted Water Works Engineers to complete a recycled water feasibility study to look at a range of alternatives to diversify their water supply portfolio. The alternatives evaluated include non-potable reuse, indirect potable reuse (IPR), and direct potable reuse (DPR). As part of the feasibility study, a hydrogeologic report was prepared. The purpose of this feasibility study is to provide an adaptable roadmap for the District to implement recycled water projects. Changing water supply reliability and shifting regulatory frameworks will affect the preferred recycled water projects over time.

1.1 Alternatives

The below recycled water alternatives were studied.

- Non-potable reuse alternatives included a fill station, landscape irrigation, agricultural irrigation and irrigation of specific areas including the Skylawn Memorial Park and the Ocean Colony Golf Course.
- Indirect potable reuse alternatives included groundwater replenishment and reservoir augmentation.
- Direct potable reuse included adding advanced treated water to the Nunes Water Treatment Plant.
- Environmental benefit alternatives included including creek augmentation or wetland enhancement.

1.2 Wastewater

Sewer Authority Mid-Coastside (SAM) provides wastewater treatment services and contract collection maintenance services. The majority of the SAM sewer pump stations convey wastewater generated within the CCWD jurisdictional area except for the Montara and Vallemar pump stations. The Montara pump station transfers wastewater to the Vallemar pump station, so the amount of SAM wastewater that is attributable to CCWD may be determined by subtracting the Vallemar pump station flow from the total influent flow at the SAM wastewater treatment plant. To not include inflow and infiltration, available flows were evaluated during the dry season months of April to September. The average dry weather flow of wastewater attributable to CCWD from 2018 to 2022 was 1.18 MGD. Wastewater is evenly distributed throughout the service area. Because the wastewater is evenly distributed through a large geographic area the potential to harvest wastewater and treat it at a remote location is not feasible since there is not enough raw wastewater at one location to use. Harvesting wastewater was not assessed further.

1.3 Half Moon Bay Hydrogeologic Report Summary

The hydrogeologic report was created to determine if using recycled water for environmental benefit or groundwater replenishment options were feasible as discussed below.

1.3.1 Environmental Benefit

There are over 100 water rights filed within the Project Area. If CCWD chooses surface water augmentation, there will need to be consideration as to how it will affect existing surface water rights. For example, along Pilarcitos Creek there are six licensed and/or claimed water rights for domestic purposes. Most of these locations are in the upper reaches of the stream between Pilarcitos Lake and Highway 92. If CCWD were to augment Pilarcitos Creek with recycled water, the quality of the recycled water cannot impair an individual's source of domestic water.

Additionally, the same can be said about irrigation water. Along Pilarcitos Creek there are seven licensed and/or claimed water rights for irrigation purposes. Most of these rights are along the reach of the creek that runs parallel to Highway 92. The users of these irrigation water rights divert water from Pilarcitos Creek for various agricultural purposes, like crops, flowers, Christmas trees, and some irrigated pasture. Although California allows the use of recycled municipal wastewater for agriculture, if CCWD were to augment Pilarcitos Creek with recycled water, the quality of the recycled water cannot impair an individual's source of irrigation water. For example, if the recycled water has salinity levels above a crop's salinity threshold it could negatively impact the yield of a crop.

1.3.2 Groundwater Replenishment

The key issues that would affect the physical feasibility of this option include the presence or absence of groundwater wells within a 60-day water movement radius from the site based on California state requirements, and to consider the scale and extent of groundwater mounding as a result of percolation or injection of the recycled water. Because of the absence of site-specific hydraulic information, the analyses were conceptual and actual parameter values could vary widely. Despite these uncertainties, the conditions that lead to a slow seepage velocity and therefore, lack of effect on downgradient wells in the 60-day period, also lead to excessive mounding. If hydraulic conditions are such that the mounding presented would be less than assumed, those conditions would likely also indicate conditions producing a higher seepage velocity, and the greater likelihood of affecting downgradient wells in the 60-day period.

While an expensive, site-specific geotechnical and hydrologic field investigation and associated modeling would refine these analyses and provide greater confidence in this alternative as a feasible option for recharging groundwater using recycled water, the relationships between seepage velocity and mounding lead to this alternative unlikely to be a feasible option.

1.3.3 Hydrogeologic Recommendations

There are several data gaps that were identified during the course of this report. These data gaps include:

- The absence of geotechnical or hydrogeologic data in the groundwater replenishment basin area;
- Limited aquifer test data and absence of raw data for previous aquifer tests;
- Limited information relating to effects of faulting on groundwater movement;
- Limited information for much of the basin outside of the Half Moon Bay Terrace Groundwater Basin watershed; and
- Lack of information relating to the number of identified wells that are no longer in use or have been abandoned and where they are located.

To address these issues, three general recommendations were provided to provide information and/or tools for water resource management.

1. The first recommendation is related to the condition whereby private wells (not belonging to CCWD) are allowed within the CCWD service area. Given instances such as in the groundwater replenishment option where distances to domestic wells is a key parameter, the knowledge of which wells are no longer active or have been abandoned could provide substantially more flexibility for decision-making around topics for which there are concerns about domestic wells. A well-canvassing effort is recommended to be

conducted to identify which of those wells are operational and which can be deemed to be unusable or no longer existing to rule out future decisions that may be based on obsolete consideration.

2. The construction of a numerical groundwater flow model is recommended. That would provide CCWD with a tool that could then be used to quantitatively evaluate effects of various groundwater management scenarios that may arise. Numerical groundwater flow modeling not only provides a tool for evaluating groundwater flow and water budget conditions, but also is the only method to evaluate the internal consistency of the assumptions built into the understanding of the groundwater basin. A model would enhance the confidence in construction of new wells or well-fields designed in a manner that reduces well interference and could be used to optimize groundwater use alternatives.
3. The last recommendation is to conduct site-specific hydraulic testing (aquifer testing). The construction of a numerical model would substantially benefit from additional hydraulic testing under controlled pumping and recovery conditions. Thus, evaluating the hydraulic characteristics of aquifer materials in a more widespread area of the Half Moon Bay Terrace Groundwater Basin Watershed.

1.4 Alternative Comparison

Alternatives were compared based on non-cost criteria and cost based on the amount of water produced.

1.4.1 Non-Cost Criteria

The non-cost criteria were divided into four categories:

- environmental and social impacts/benefits
- ease of implementation and regulatory compliance
- engineering, construction, and operations
- climate hazard and resiliency

Without considering how much recycled water is used the top alternatives are the non-potable fill station, landscape irrigation and agricultural irrigation. However, a project that uses more recycled water is desirable for the District. Therefore, when ranking alternatives based on non-cost criteria and by how much recycled water would be used, then the most desirable alternatives included direct potable reuse, reservoir augmentation, and irrigation of Ocean Colony Golf Course.

1.4.2 Cost

The 20-year life cycle costs were developed as well as the cost per million gallons produced over 20 years. Comparing the net present worth per million gallon, the top three alternatives are reservoir augmentation, irrigation at Ocean Colony Golf Course, and direct potable reuse.

1.5 Conclusions

To be feasible, proposed recycled water projects need partners that want to collaborate with CCWD and a reason to pursue the project such as a policy or economic reason. The feasibility of the projects with the current conditions are summarized in Table ES-1.

Table ES-1. Feasibility of Project by Alternative

Alternative	Feasible	Reasoning
Fill Station(s)	No	Little demand for recycled water within service area.
Landscape and Agricultural Irrigation	No	Little demand for recycled water within service area.
Skylawn Memorial Park Irrigation	No	Park not within service area, so would not be able to deliver recycled water.
Ocean Colony Golf Course and Landscape Irrigation	No	Ocean Colony has other water supplies that are more cost effective than recycled water and therefore, does not have a demand for recycled water.
Pilarcitos Creek Augmentation or Other Creek Augmentation	No	Does not offset groundwater use or provide additional water resources from indirect or direct potable reuse.
Wetland Enhancement	No	Does not offset groundwater use or provide additional water resources from indirect or direct potable reuse.
Groundwater Replenishment	No	1. There are private wells in the service area that limits where water may be replenished. 2. A limited amount of water that can be replenished at one location due to mounding
Reservoir Augmentation	No	There is no known partner who has a reservoir available for augmentation.
Direct Potable Reuse at Nunes WTP	Further study needed	Next steps are to find potential funding sources and continue technical studies.

Of the recycled water alternatives evaluated, currently the direct potable reuse alternative is the only alternative that should be pursued because the project has potential to provide diversity to the District's water supply portfolio. However, further study is needed for the direct potable reuse alternative to determine if the project is economically viable.

2 Introduction

Coastside County Water District (CCWD or District) contracted Water Works Engineers to complete a recycled water feasibility study to look at a range of alternatives to diversify their water supply portfolio. The alternatives evaluated included non-potable reuse, indirect potable reuse (IPR), and direct potable reuse (DPR). As part of the feasibility study, ROUX (as a subconsultant to Water Works Engineers) prepared a hydrogeologic report that is included in Appendix A. The purpose of this feasibility study is to provide an adaptable roadmap for the District to implement recycled water projects. Changing water supply reliability and shifting regulatory frameworks will affect the preferred recycled water projects over time.

2.1 Study Area

Per District direction, this study focuses on recycled water uses within the District boundaries or where the water use may benefit the District.

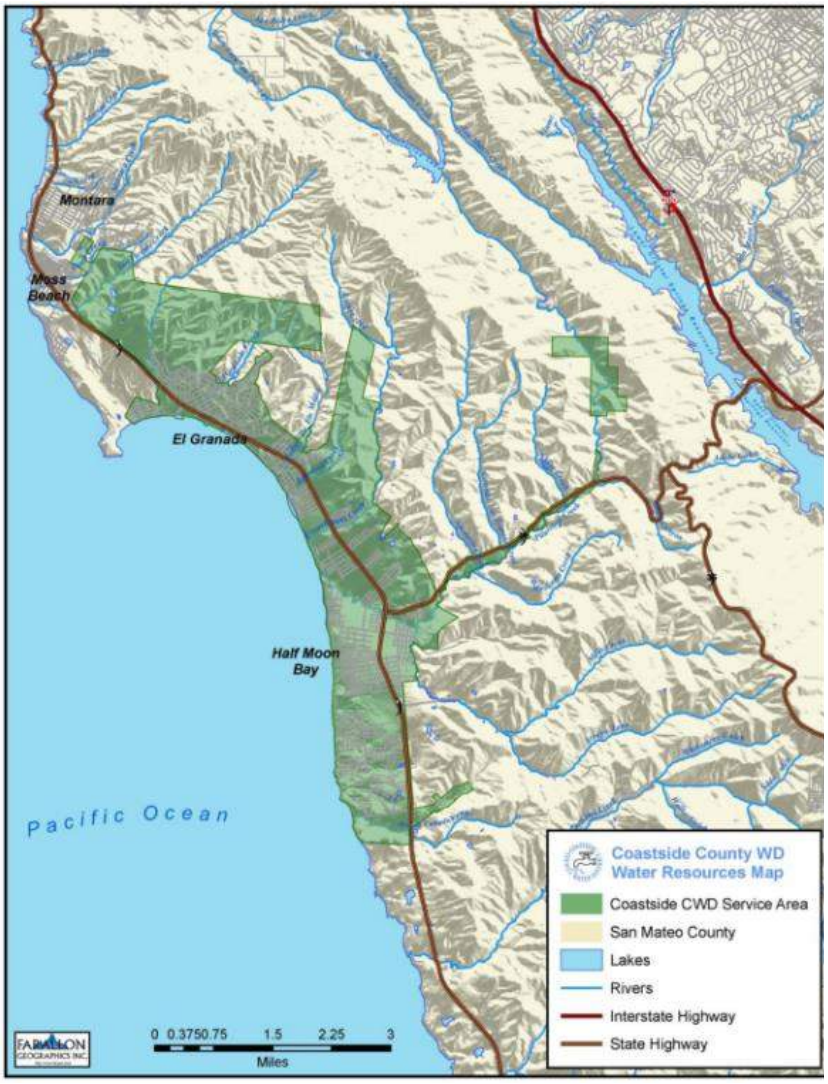


Figure 1. Coastside County Water District Jurisdictional Area

2.2 District Description

CCWD is an urban water district in San Mateo County. CCWD supplies potable water to the City of Half Moon Bay and the unincorporated communities of El Granada, Miramar, and Princeton by the Sea. The wastewater from these communities is treated by Sewer Authority Mid-Coastside (SAM). SAM is a separate agency from CCWD.

CCWD is located on the coast of the Pacific Ocean, approximately 69 feet above sea level. The areas served by CCWD are about 30 miles south of San Francisco. To the east of the District are the northernmost portion of the Santa Cruz Mountains. The District's boundaries are shown in Figure 1.

2.3 Land Use and Land Use Trends

Land use planning within the District is performed by the City of Half Moon Bay and San Mateo County. San Mateo County determines the land use of the unincorporated areas of El Granada, Miramar, and Princeton by the Sea.

Approximately 81% of the land is zoned for residential use. The remainder is about 18% commercial and less than 1% agriculture (floriculture). The commercial zoning is along the highly populated and highly traveled areas near State Route 1 and Highway 92.

Future development within the District has a focus on climate resilient planning and sustainable approaches that support all types of land uses. The City of Half Moon Bay Coastal Land Use Plan prioritizes agricultural and coastal dependent uses over other development types such as visitor-serving commercial recreation facilities.

The District's service area is within the boundaries of the Coastal Zone and the jurisdiction of the California Coastal Commission. Restrictions from Coastal Development Permits issued to the District in 1985 and 2003 prohibit the District from creating more connections or expanding its jurisdictional boundaries until the transportation system on mid-Coastside can meet specific levels of service. As of 2020, the District provided water service to approximately 7,600 interconnections.

Within the City of Half Moon Bay, residential growth is capped at 1.5% per year in downtown units and 1% for the rest of the residential areas in the City. Accessory dwelling units have become common in the City and fall under the City's jurisdiction to approve.

Growth within the unincorporated areas is managed by San Mateo County's Local Coastal Program[1]. For all unincorporated areas of San Mateo County, growth is limited to 125 units/year with only a portion of the unincorporated areas being within the District's jurisdiction. The San Mateo County Local Coastal Program also states that development will not happen without the approval of the District first.

2.4 Population Trends

From the District's 2020 Urban Water Management Plan (UWMP)[2], it was estimated that in 2020 the District's service area population was 18,738. The Association of Bay Area Governments (ABAG) 2040 population projection data was used to forecast the population growth that the District will experience. The current and projected populations served by the District are listed in Table 2.

Table 2. Current and Projected Population

Population Served (a)	2020	2025	2030	2035	2040
	18,738	18,991	19,238	19,371	19,472

(a) From 2020 UWMP

2.5 Tsunami Zone

A portion of the District and the SAM wastewater treatment plant is within a tsunami zone as shown in Figure 2. The tsunami zone designation may limit future construction and development options. For example, in 2013, the Coastal Commission denied the City of Morro Bay's proposal for redevelopment of their wastewater treatment

[1] Accessed October 9 https://www.smcgov.org/planning/local-coastal-program
[2] Accessed October 9 https://www.coastsidewater.org/reports_and_studies/2020-Urban-Water-Management-Plan.pdf

plant in-place based on inconsistencies regarding avoiding coastal hazards, land use priorities, recycled water provisions, and public view protections[3]. The Commission required that Morro Bay relocate their wastewater treatment plant outside of the tsunami zone instead of retrofitting their existing plant. Because of the requirements Morro Bay faced and the precedence of limiting new construction in a tsunami zone, when possible, alternatives were placed outside of the tsunami zone.

Figure 2. Tsunami Zone

2.6 Stakeholders

Collaborating with stakeholders is critical to determine the most beneficial use for the water in the region. There are many potential stakeholders for potential recycled water projects as listed below.

- San Mateo County
  - permitting agency including the Local Coastal Program
- SAM and member agencies
  - provides wastewater collection and treatment
- City of Half Moon Bay
  - permitting agency for projects within city limits
- San Mateo County Resource Conservation District
- Regulators
- Elected officials
- Public and Special Interest Groups
- Recycled water users for non-potable water reuse alternatives
  - landscape irrigation
  - agriculture
- San Mateo County Farm Bureau
- San Francisco Public Utilities Commission (SFPUC)
- Individual residential and nonresidential well owners within the CCWD service area
- Bay Area Water Supply and Conservation Agency (BAWSCA)

[3]Accessed October 9 https://morrobaywrf.com/wp-content/uploads/RevisedFinalPlan.pdf

3 Water and Wastewater Facilities

3.1 Water

CCWD has four water supply sources: Pilarcitos Reservoir, Upper Crystal Springs Reservoir, Pilarcitos Well Field, Denniston Well Field, and Denniston Creek. Approximately 72% of the District's water supply is purchased from SFPUC and comes from Pilarcitos Reservoir and Upper Crystal Springs Reservoir. The remaining 28% is supplied from Pilarcitos Creek Infiltration Well Field and the Denniston supplies, which are owned by CCWD.

3.1.1 Treatment and Distribution Facilities

CCWD operates two water treatment plants (WTPs) to provide drinking water to the District.

3.1.1.1 Nunes WTP

Nunes WTP treats water from Pilarcitos Reservoir, Upper Crystal Springs Reservoir, and Pilarcitos Well Field. Nunes WTP began operating in 1982 with an initial treatment capacity of 2.5 milling gallons per day (MGD). Nunes WTP has since been upgraded and now has a capacity of 4.5 MGD.

3.1.1.2 Denniston WTP

Denniston WTP treats water supplied by the Denniston Reservoir and Denniston Well Field.

3.1.1.3 Distribution System

CCWD is responsible for 100 miles of transmission and distribution pipelines. The distribution system has seven pump stations, 660 hydrants, and 79 miles of water mains. CCWD has a program for ongoing replacement of pipelines depending on age and condition. CCWD also owns 9 treated water storage tanks with a combined capacity of 7.8 million gallons. The water facilities are shown in Figure 3.

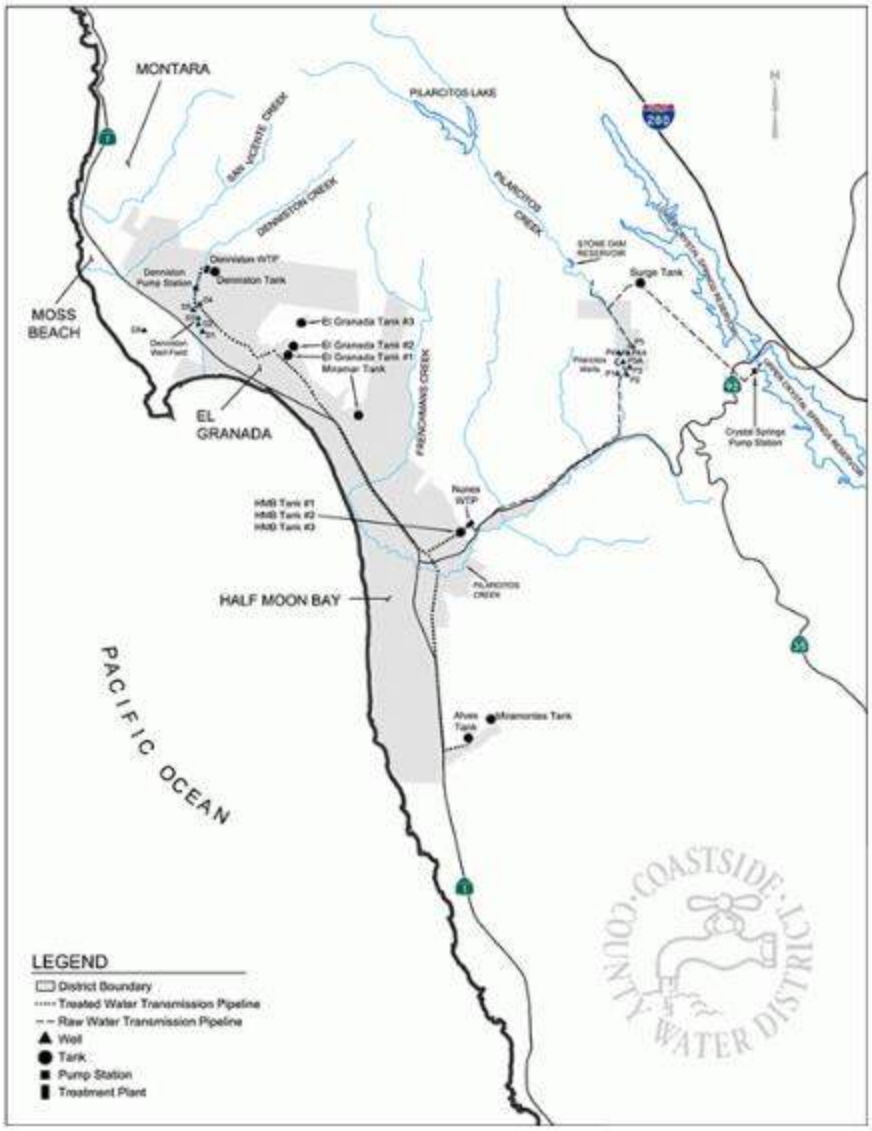


Figure 3. Map Of CCWD's Major Water Facilities

3.2 Wastewater

SAM provides wastewater treatment services and contract collection maintenance services for a population of approximately 27,000 in the following areas:

- City of Half Moon Bay
- El Granada
- Miramar
- Montara
- Moss Beach
- Princeton Harbor

SAM is a California joint powers authority (JPA) with Montara Water and Sanitary District (MWSD), Granada Community Services District (GCSD), and the City of Half Moon Bay. The SAM wastewater treatment plant

produces secondary effluent that is discharged through an ocean outfall. The plant is permitted to treat 4.0 MGD average dry weather flow per NPDES Permit CA0038598[4].

The layout of SAM's intertie pipeline system and pump stations is shown in Figure 4, which is taken from the 2009 *Intertie Pipeline System Review And Evaluation Report*[5]. SAM has flow meter data at the pump stations. Most of the SAM sewer pump stations convey wastewater generated within the CCWD jurisdictional area (Figure 1), except for Montara and Vallemar pump stations. The Montara pump station transfers wastewater to the Vallemar pump station, so the amount of SAM wastewater that is attributable to CCWD may be determined by subtracting the Vallemar pump station flow from the total influent flow at the SAM wastewater treatment plant. To not include inflow and infiltration, available flows were evaluated during the dry season months of April to September. The average dry weather flow of CCWD water is shown in Table 3.

Table 3. Average Dry Weather Flow of Wastewater Attributable to CCWD

Time Period	Average Dry Weather Flow of CCWD Attributable Water (MGD) (a)
Apr-Sept 2018	1.23
Apr-Sept 2019	1.29
Apr-Sept 2020	1.15
Apr-Sept 2021	1.11
Apr-Sept 2022	1.12
Average	1.18

(1) Data emailed from SAM on August 11, 2023.

The average dry weather flow of wastewater attributable to CCWD from 2018 to 2022 was 1.18 MGD. Wastewater is evenly distributed throughout the service area. Because the wastewater is evenly distributed through a large geographic area the potential to harvest wastewater and treat it at a remote location is not feasible since there is not enough raw wastewater at one location to use. Harvesting wastewater was not assessed further.

[4] Accessed October 31 https://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2023/R2-2023-0002.pdf
[5] Accessed October 19 https://samcleanswater.org/vertical/sites/%7B1307B359-C05A-436D-AC1C-9EB8D6FFB4A3%7D/uploads/SAM_Intertie_Pipeline_System_Review_and_Evaluation_SRT_2009.pdf

Figure 4. SAM Collection System Infrastructure

4.1 Half Moon Bay Hydrogeologic Summary

The surface water and groundwater within the study area are discussed in detail in the Hydrogeologic Report in Appendix A. The study area is within the Half Moon Bay Terrace Groundwater Basin and the Pilarcitos Creek Watershed.

The Half Moon Bay Terrace Groundwater Basin watershed drains westward toward Half Moon Bay and the Pacific Ocean. Elevations range from approximately 2,000 feet above mean sea level for Montara Mountain and Kings Mountain to sea level. Vegetation in the Project Area is primarily grassland and herbaceous forest. Most of the land in the Project Area is classified as undeveloped by the CDFW and is privately owned. However, of the land that is developed, most of it is along the stream valleys or the coast.

The hydrogeologic report was created to determine if using recycled water for environmental benefit or groundwater replenishment options were feasible as discussed below.

4.1.1 Environmental Benefit

There are over 100 water rights filed within the Project Area. If CCWD chooses surface water augmentation, there will need to be consideration as to how it will affect existing surface water rights. For example, along Pilarcitos Creek there are six licensed and/or claimed water rights for domestic purposes. Most of these locations are in the upper reaches of the stream between Pilarcitos Lake and Highway 92. If CCWD were to augment Pilarcitos Creek with recycled water, the quality of the recycled water cannot impair an individual's source of domestic water.

Additionally, the same can be said about irrigation water. Along Pilarcitos Creek there are seven licensed and/or claimed water rights for irrigation purposes. Most of these rights are along the reach of the creek that runs parallel to Highway 92. The users of these irrigation water rights divert water from Pilarcitos Creek for various agricultural purposes, like crops, flowers, Christmas trees, and some irrigated pasture. Although California allows the use of recycled municipal wastewater for agriculture, if CCWD were to augment Pilarcitos Creek with recycled water, the quality of the recycled water cannot impair an individual's source of irrigation water. For example, if the recycled water has salinity levels above a crop's salinity threshold it could negatively impact the yield of a crop.

4.1.2 Groundwater Replenishment

The key issues that would affect the physical feasibility of this option include the presence or absence of groundwater wells within a 60-day water movement radius from the site based on California state requirements, and to consider the scale and extent of groundwater mounding as a result of percolation or injection of the recycled water. Because of the absence of site-specific hydraulic information, the analyses were conceptual and actual parameter values could vary widely. Despite these uncertainties, the conditions that lead to a slow seepage velocity and therefore, lack of effect on downgradient wells in the 60-day period, also lead to excessive mounding. If hydraulic conditions are such that the mounding presented would be less than assumed, those conditions would likely also indicate conditions producing a higher seepage velocity, and the greater likelihood of affecting downgradient wells in the 60-day period.

While an expensive, site-specific geotechnical and hydrologic field investigation and associated modeling would refine these analyses and provide greater confidence in this alternative as a feasible option for recharging groundwater using recycled water, the relationships between seepage velocity and mounding lead to this alternative unlikely to be a feasible option.

4.1.3 Hydrogeologic Recommendations

There are several data gaps that were identified during the course of this report. These data gaps include:

- The absence of geotechnical or hydrogeologic data in the groundwater replenishment basin area;
- Limited aquifer test data and absence of raw data for previous aquifer tests;
- Limited information relating to effects of faulting on groundwater movement;
- Limited information for much of the basin outside of the Half Moon Bay Terrace Groundwater Basin watershed; and
- Lack of information relating to the number of identified wells that are no longer in use or have been abandoned and where they are located.

To address these issues, three general recommendations were provided to provide information and/or tools for water resource management.

1. The first recommendation is related to the condition whereby private wells (not belonging to CCWD) are allowed within the CCWD service area. Given instances such as in the groundwater replenishment option where distances to domestic wells is a key parameter, the knowledge of which wells are no longer active or have been abandoned could provide substantially more flexibility for decision-making around topics for which there are concerns about domestic wells. A well-canvassing effort is recommended to be conducted to identify which of those wells are operational and which can be deemed to be unusable or no longer existing to rule out future decisions that may be based on obsolete consideration.
2. The construction of a numerical groundwater flow model is recommended. That would provide CCWD with a tool that could then be used to quantitatively evaluate effects of various groundwater management scenarios that may arise. Numerical groundwater flow modeling not only provides a tool for evaluating groundwater flow and water budget conditions, but also is the only method to evaluate the internal consistency of the assumptions built into the understanding of the groundwater basin. A model would enhance the confidence in construction of new wells or well-fields designed in a manner that reduces well interference and could be used to optimize groundwater use alternatives.
3. The last recommendation is to conduct site-specific hydraulic testing (aquifer testing). The construction of a numerical model would substantially benefit from additional hydraulic testing under controlled pumping and recovery conditions. Thus, evaluating the hydraulic characteristics of aquifer materials in a more widespread area of the Half Moon Bay Terrace Groundwater Basin Watershed.

5 Project Alternatives

Recycled water alternatives studied included non-potable reuse, indirect potable reuse, and direct potable reuse as discussed in this section.

5.1 Non-Potable Reuse Alternatives

The non-potable reuse alternatives analyzed in this study were fill stations, agricultural irrigation, landscape irrigation, and golf course irrigation. To produce non-potable water for reuse, tertiary treatment would be needed including disc filtration and ultraviolet (UV) disinfection would have to be added, as shown in Figure 5. Disinfected tertiary water would be pumped from the WWTP to the use areas. The non-potable reuse alternatives may be combined when the level of necessary treatment is similar.

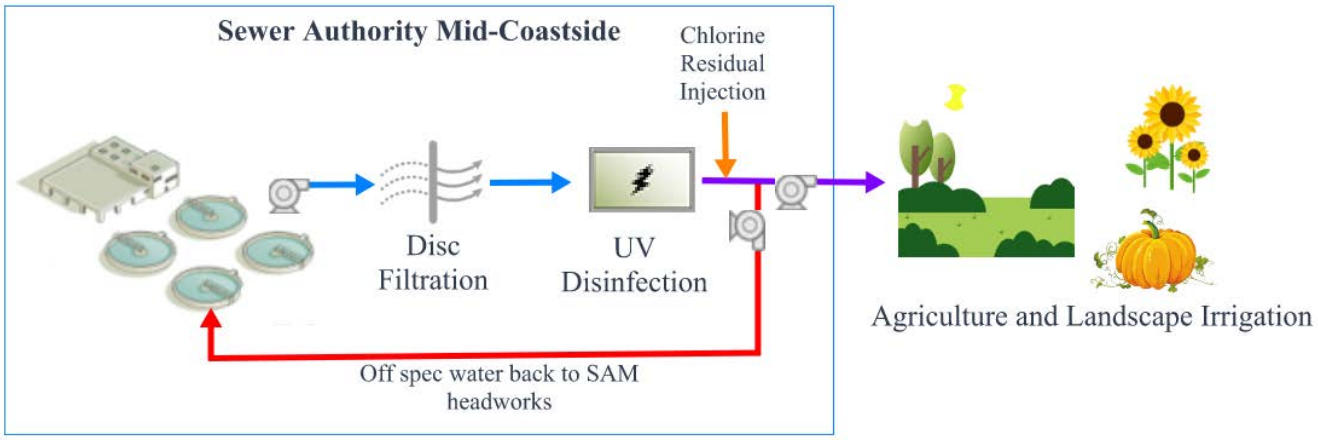


Figure 5. Non-Potable Reuse Process Flow Diagram

5.1.1 Permitting

Permitting for non-potable reuse is through the San Francisco Regional Water Quality Control Board (RWQCB). To produce non-potable water for reuse, a permit is required from the RWQCB that regulates the treatment process for production of the recycled water.

Non-potable reuse also requires a Water Reclamation Requirements for Recycled Water Use (Order WQ 2016-0068-DDW)[6] permit. This permit regulates the use of the recycled water. For the alternatives that include more than one recycled water user (i.e., fill station and agriculture irrigation), this permit should be obtained by an agency who will function as the permit administrator. The permit administrator should be the agency that is legally responsible for the distribution of the recycled water. This agency would likely be CCWD. For the alternatives that have one main recycled water user, that user may obtain the use permit.

[6] Accessed on Oct 19 wqo2016_0068_ddw (ca.gov)

5.1.2 Non-Potable Reuse Projects

5.1.2.1 Fill Station

One or more fill stations could be located throughout the District area. The fill station(s) would provide disinfected tertiary recycled water for unrestricted use on residential landscaping or construction water. The District could require the use of recycled water for construction water if the project were within a certain distance of the fill station. For example, the city of San Jose requires recycled water to be used for construction water if the project is within five miles of a fill station.

5.1.2.1.1 Advantages and Disadvantages

The advantages and disadvantages for this alternative are shown below.

Table 4. Fill Station Advantages and Disadvantages

Advantages for CCWD	Disadvantages for CCWD
• Simple • Combinable with other alternatives • Provides public education • May be used as first step	• Does not offset much potable water use

5.1.2.1.2 Next Steps

The following steps have been identified to implement this project. Implementation of the project is expected to take up to five years from initial design through final design and not including financing.

1. Identify location for fill station(s) and acquire access to the location through easement or purchasing.
2. Coordinate with SAM.
3. Design and implement treatment processes and distribution system.
4. Permit the treatment, distribution, and use of recycled water.
5. Consider enacting an ordinance require using recycled water for construction water within a certain distance from the fill station(s).
6. Determine a recycled water rate schedule.

5.1.2.2 Agricultural and Landscape Irrigation

Disinfected tertiary recycled water may be used for row crops such as brussels sprouts and artichokes. In this study, the District wanted to restrict agricultural irrigation to be within District boundaries. There is not much existing agriculture within District boundaries since the District is an urban water supplier. Furthermore, a portion of the existing agriculture within the District boundary is floriculture which may require a higher level of water treatment then disinfected tertiary recycled water. Areas that could potentially support future agriculture are highlighted on the Figure 6 including the Urban Reserve, Open Space Reserve, and Extensive Floriculture zones from the city of Half Moon Bay zoning map. The advantages and disadvantages for this alternative are shown below.

Table 5. Agricultural and Landscape Irrigation Advantages and Disadvantages

Advantages for CCWD	Disadvantages for CCWD
• Supports sustainability	• Recycled water only used during dry season • Water could not be used for other purposes in the future • Limited landscaping and agricultural land within District boundaries • Does not offset much potable water use • Within District there is limited irrigation opportunities near a sewer with enough flow to harvest wastewater at a satellite treatment plant • Existing use sites would require retrofitting to meet recycled water standards

5.1.2.2.1 Next Steps

The following steps have been identified to implement this project. Implementation of the project is expected to take up to 10 years from initial design through final design and not including financing.

1. Identify recycled water users that are interested in recycled water. Confirm if need to stay within District boundary for recycled water deliveries.
2. Coordinate with SAM
3. Design and implement treatment processes and distribution system.
4. Permit the treatment, distribution, and use of recycled water.
5. Determine a recycled water rate schedule.

SAM: Sewer Authority Mid-Coastside
GPD: Gallons per Day
MGD: Million Gallons per Day
RW: Recycled Water

Distance shown in miles
Shaded parcels potential irrigation areas

4" Pipeline to Split Flow
4" Northbound Pipeline
4" Southbound Pipeline
4" Eastbound Pipeline

2.23

1.99

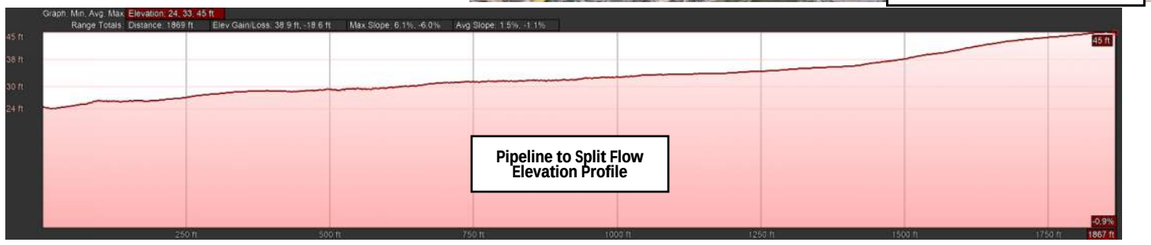
1.32

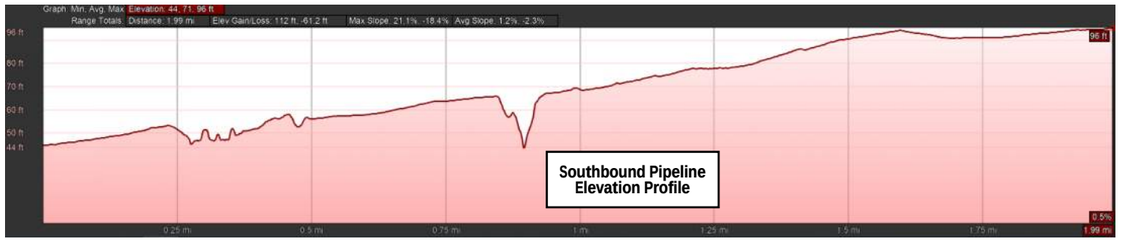
0.35

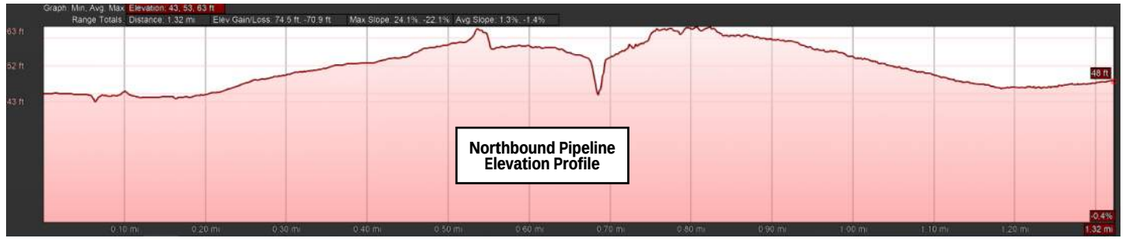
SAM 0.16 MGD
Tertiary Treatment
and RW Pump Station
El. 25'

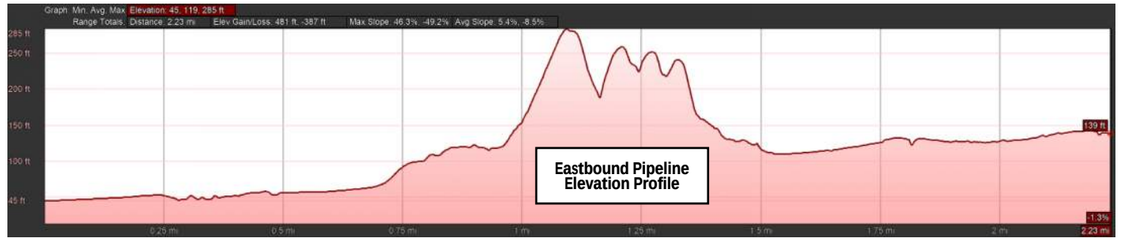
Half Moon Bay

Miramar









CCWD Recycled Water Feasibility Study	Non-Potable Reuse: Landscape and Agriculture Irrigation Proposed Distribution System	WATERWORKS ENGINEERS	FIGURE 6

5.1.2.3 Skylawn Memorial Park Irrigation

Skylawn Memorial Park (Park) which is outside of CCWD boundaries has large landscape irrigation needs that disinfected tertiary recycled water could be used for. The layout of the recycled water facilities is shown on Figure 7. The Park currently irrigates with the District's surplus raw water. The Park is approximately 5 miles east and 1,100 feet in elevation above the SAM WWTP. The pipeline route would follow existing District pipeline alignments.

5.1.2.3.1 Advantages and Disadvantages

The advantages and disadvantages for this alternative are shown below.

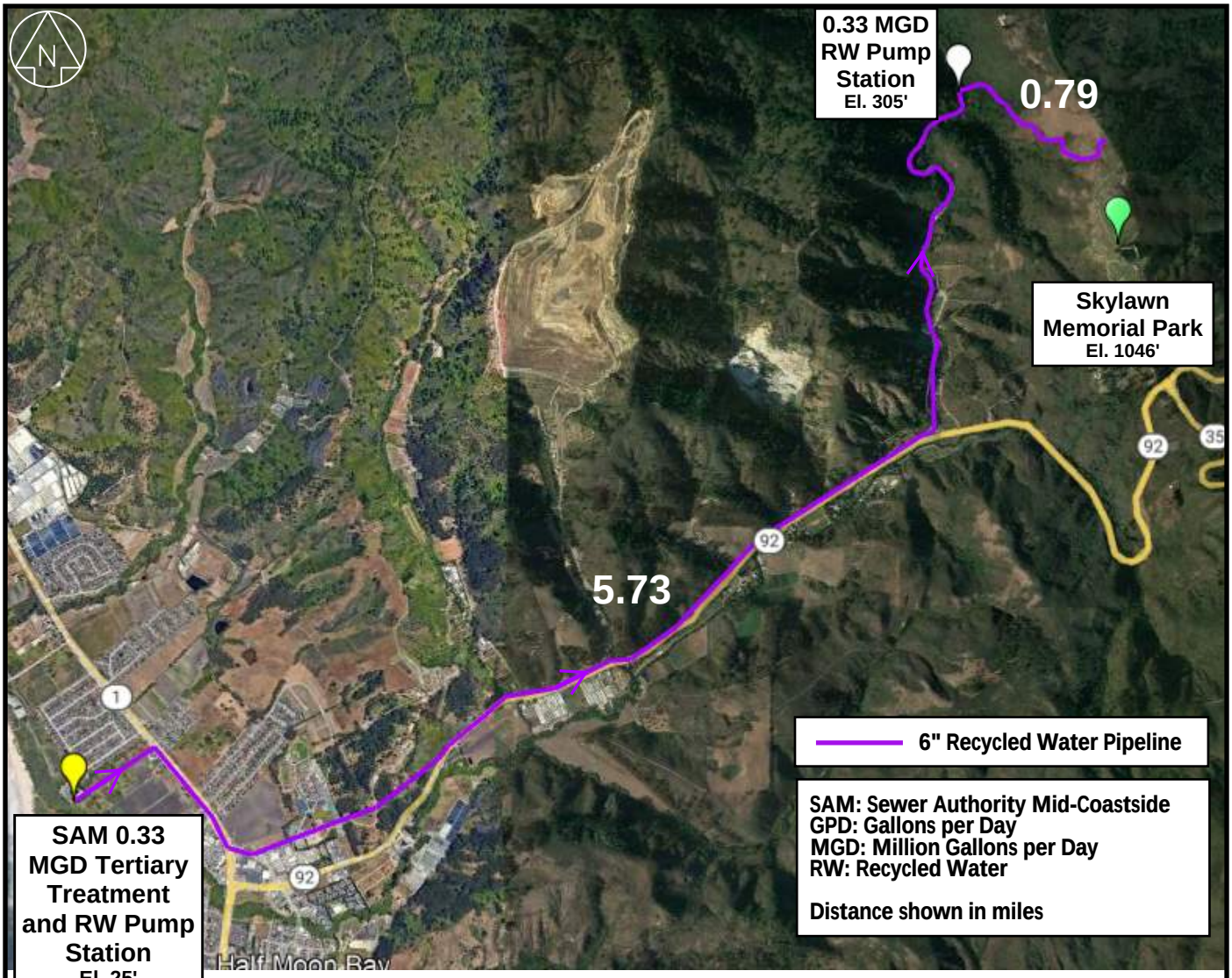
Table 6. Skylawn Memorial Park Irrigation Advantages and Disadvantages

Advantages for CCWD	Disadvantages for CCWD
• May generate a source of income	• Long pipeline route • Water only used during dry season • Water could not be used for other purposes in the future • Existing use sites would require retrofitting to meet recycled water standards • Using recycled water would replace the Park's raw water purchases • Harvesting wastewater at a satellite treatment plant is not feasible for this option

5.1.2.3.2 Next Steps

The following steps have been identified two implement this project. Implementation of the project is expected to take up to 10 years from initial design through final design and not including financing.

1. Coordinate with Skylawn Memorial Park to determine if recycled water makes financial sense for the District and the Park and the quality of water needed for irrigation.
2. Confirm recycled water could be delivered outside of District.
3. Coordinate with SAM.
4. Design and implement treatment processes and distribution system.
5. Permit the treatment, distribution, and use of recycled water.
6. Determine a recycled water rate schedule.



Pipeline Elevation Profile

CCWD Recycled Water Feasibility Study	Non-Potable Reuse: Skylawn Memorial Park Irrigation Proposed Distribution System	WATERWORKS ENGINEERS	FIGURE 7

5.1.2.4 Golf Course and Landscape Irrigation

The landscaping within Ocean Colony neighborhood and the Half Moon Bay Golf Links may be irrigated with disinfected tertiary recycled water. This feasibility study assumes that the total dissolved solids (TDS) levels are not acceptable, and a portion of the effluent flow would need to be treated using reverse osmosis, as shown in Figure 8. The layout of the recycled water facilities is shown in Figure 9. The grasses at golf courses are sensitive to salt, so the TDS in SAM's effluent must be studied prior to final treatment process design, including seasonal TDS fluctuations. There is minimal existing effluent TDS available now.

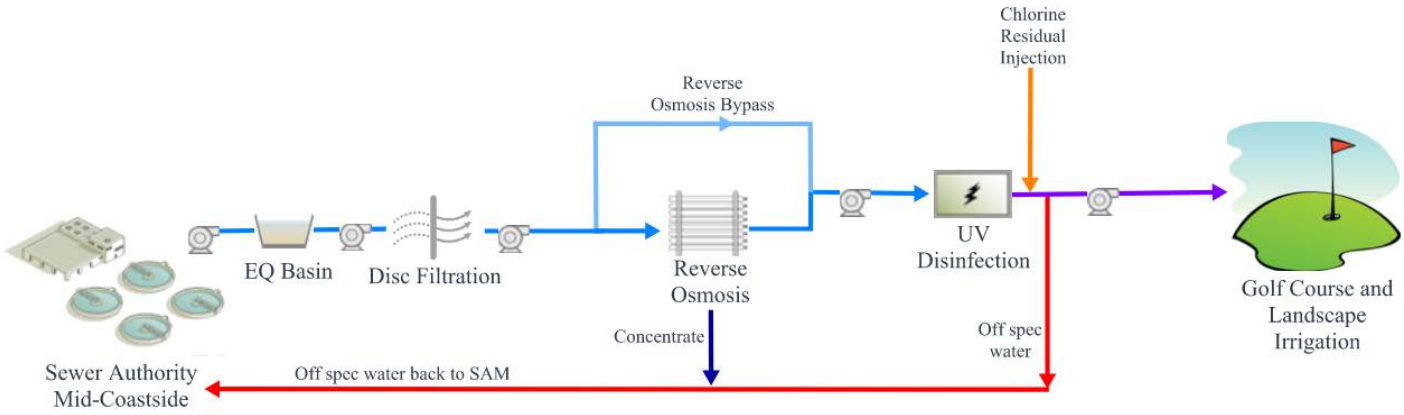


Figure 8. Non-Potable Reuse Golf Course Irrigation Process Flow Diagram

5.1.2.4.1 Advantages and Disadvantages

The advantages and disadvantages for this alternative are shown below.

Table 7. Golf Course and Landscape Irrigation Advantages and Disadvantages

Advantages for CCWD	Disadvantages for CCWD
• May reduce the amount of groundwater pumping. Note that Ocean Colony has stated that they will retain their wells even if using recycled water.	• Additional wastewater sampling needed to determine level of treatment required for irrigation at course • Water only used during growing season • Water could not be used for other purposes in the future • Limited offset of potable water use. Additional groundwater extraction infrastructure would be needed to take advantage of additional available groundwater • There is not sufficient sewage nearby to harvest locally at a satellite treatment facility • Existing use sites would require retrofitting to meet recycled water standards

5.1.2.4.2 Next Steps

The following steps have been identified two implement this project. Implementation of the project is expected to take up to 12 years from initial design through final design and not including financing.

1. Coordinate with Ocean Colony on operational concerns to determine if recycled water makes sense

2. Collect wastewater treatment plant total dissolved solids (TDS) samples for a year to determine if there are seasonal TDS differences.
3. Coordinate with SAM.
4. Design and implement treatment processes and distribution system
5. Permit the treatment, distribution, and use of recycled water.
6. Determine a recycled water rate schedule.

CCWD Recycled Water Feasibility Study	Non-Potable Reuse: Golf Course Irrigation Proposed Distribution System	WATERWORKS ENGINEERS	FIGURE 9

5.1.3 Environmental Benefit Projects

5.1.3.1 Pilarcitos Creek Augmentation or Other Creek Augmentation

Per California Water Code, if recycled water is added to Pilarcitos Creek it may not be used as potable water supply downstream. Therefore, if recycled water is added to Pilarcitos Creek, the recycled water would add environmental benefits such as habitat restoration, but the alternative would not create additional potable water supply.

5.1.3.1.1 Advantages and Disadvantages

The advantages and disadvantages for this alternative are shown below.

Table 8. Pilarcitos Creek Augmentation or Other Creek Augmentation Advantages and Disadvantages

Advantages for CCWD	Disadvantages for CCWD
• Supports regional desire for more water in the creek	• Pilarcitos Creek has six licensed water rights claims for domestic purposes and seven licensed water rights for irrigation. The quality of recycled water cannot impact an individual's source of water • Cannot be used as indirect potable reuse as the creek is not considered an environmental buffer like a reservoir or the groundwater aquifer • Environmental studies required • Additional wastewater treatment infrastructure required • Need partner for funding treatment system upgrades • Need funding for annual O&M costs

5.1.3.1.2 Next Steps

The following steps have been identified two implement this project. Implementation of the project is expected to take up to 25 years from initial design through final design and not including financing.

1. Determine partners who will fund planning, design, and construction.
2. Work with stakeholders to define the project.
3. Determine wastewater treatment location.
4. Work with RWQCB to obtain new NPDES permit.

5.1.3.2 Wetlands Enhancement

Another alternative that would provide environmental benefit, is to create wetlands. For example, the city of Pacifica added a polishing wetland for the treatment of their tertiary effluent in Calera Creek. The wetland restoration improves the referring waters and wetland ecosystem functions including hydrology, water quality, plant community maintenance and habitat support. The San Mateo County Resource Conservation District has studied the improvement of Pilarcitos Creek as described in the 2008 *Pilarcitos Integrated Watershed Management Plan*.

5.1.3.2.1 Advantages and Disadvantages

The advantages and disadvantages for this alternative are shown below.

Table 9. Wetlands Enhancement Advantages and Disadvantages

Advantages for CCWD	Disadvantages for CCWD
• Supports regional desire for more water in the creek	• Environmental studies required • Additional wastewater treatment infrastructure required • Need partner for funding treatment system upgrades • Need funding for annual O&M costs

5.1.3.2.2 Next Steps

The following steps have been identified two implement this project. Implementation of the project is expected to take up to 25 years from initial design through final design and not including financing.

1. Determine partners who will fund planning, design, and construction.
2. Work with stakeholders to define the project.
3. Determine wastewater treatment location.
4. Work with RWQCB to obtain new NPDES permit.

5.2 Indirect Potable Reuse Alternatives

The indirect potable reuse alternatives analyzed in this study were groundwater replenishment and reservoir augmentation. The treatment process flow diagram for indirect potable reuse is shown in Figure 10. Indirect potable reuse would require a new Advanced Purified Water Facility (APWF) consisting of tertiary treatment by disc filters, reverse osmosis (RO), and UV disinfection. It is assumed that this facility would have to be built outside of the tsunami zone based on precedent set by the Coastal Commission with Morro Bay. For the purposes of this feasibility study, an area near the high school was chosen for the APWF because it is outside of this tsunami zone and near the Nunes WTP. Additional studies would be needed to determine the optimal location for the facility.

Secondary effluent pumped from SAM would be treated at the APWF. Approximately 75 percent of the APWF water would be available for use after membrane treatment and 25 percent would be concentrate needing disposal. Concentrate from the membrane filtration would be returned to the SAM treatment plant. There would be no additional TDS load to the ocean outfall compared to if the secondary effluent had been discharged. Any out of specification water from the APWF would also be discharged to the start of the plant.

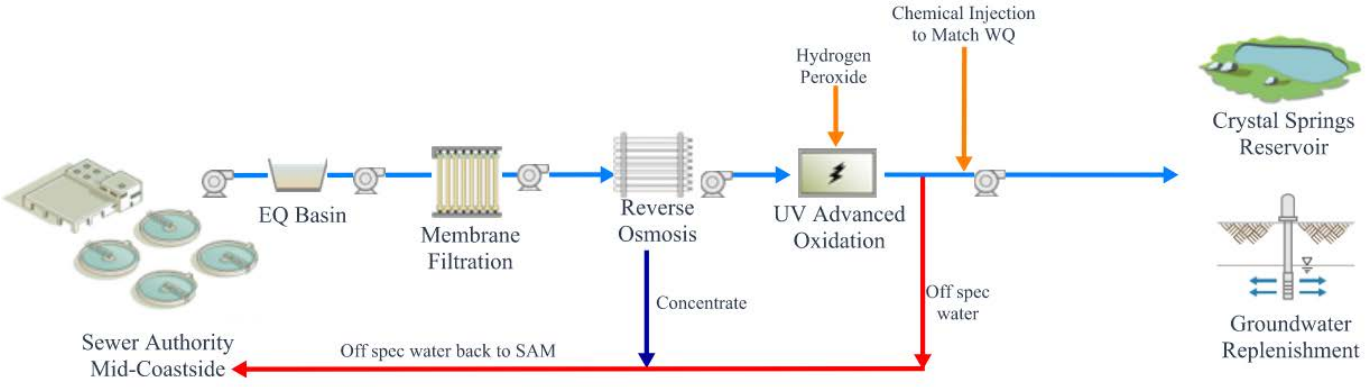


Figure 10. Indirect Potable Reuse Process Flow Diagram

5.2.1 Groundwater Replenishment

Advanced treated water would be used to replenish groundwater by either injection or infiltration/spreading basins. The key issues that would affect the physical feasibility of this option include (1) the presence or absence of groundwater wells within a 60-day water movement radius from the replenishment site based on California state requirements, and (2) to consider the scale and extent of groundwater mounding as a result of percolation or injection of the recycled water. Because of the absence of site-specific hydraulic information, the analyses were conceptual in nature, and actual parameter values could vary widely. However, despite these uncertainties, the conditions that lead to a slow seepage velocity and therefore, lack of effect on downgradient wells in the 60-day period, also lead to excessive mounding. If hydraulic conditions are such that the mounding presented would be less than assumed, those conditions would likely also indicate conditions producing a higher seepage velocity, and the greater likelihood of affecting downgradient wells in the 60-day period.

While an expensive, site-specific geotechnical and hydrologic field investigation and associated modeling would refine these analyses and provide greater confidence in this alternative as a feasible option for recharging groundwater using recycled water, the relationships between seepage velocity and mounding lead to this alternative unlikely to be a feasible option.

For the purposes of this feasibility study, it was assumed that the groundwater replenishment facility would be located at the APWF. Per the Hydrogeologic Report in Appendix A, only about 125,000 gpd could be replenished without significant mounding. The replenished water would need to be stored in the aquifer for the 60 days before reaching any extraction well, including private domestic wells[7]. Tracer tests and additional studies would be required to ensure the 60-day detention time is met. The layout of the recycled water facilities is shown on Figure 11.

5.2.2 Permitting

Indirect potable reuse via groundwater replenishment is regulated by General Waste Discharge Requirements for Aquifer Storage and Recovery Projects that Inject Drinking Water Into Groundwater (Order WQ 2012-0010)[8]. This

[7] Accessed on Oct 19 View Document - California Code of Regulations (westlaw.com)
[8] Accessed on Oct 19 State Water Resources Control Board Water Quality Order 2012-0010 General Waste Discharge Requirements for Aquifer Storage and Recovery Projects That Inject Drinking Water Into Groundwater (ca.gov)

permit should be obtained by the entity that oversees the advanced treatment and injection of the recycled water which likely would be CCWD.

5.2.3 Advantages and Disadvantages

The advantages and disadvantages for this alternative are shown below.

Table 10. Groundwater Replenishment Advantages and Disadvantages

Advantages for CCWD	Disadvantages for CCWD
• Adds to groundwater supply (although minimal volume and very localized location)	• Extensive studies required • Minimal volume of water can be replenished due to mounding and the water not traveling in the aquifer • Limited locations to replenish water because of the numerous domestic wells throughout the service area. Current regulations would allow new homeowner wells to be built. The water cannot be extracted for at least 60 days by any well • Water may need treatment when pumped out of the aquifer • Infrastructure required to pump the water back out of the ground • Extensive infrastructure and management for indirect potable reuse • Needs extensive public outreach

5.2.4 Next Steps

The following steps have been identified to implement this project. Implementation of the project is expected to take up to 25 years from initial design through final design and not including financing.

1. Complete an existing well survey.
2. Prepare a groundwater aquifer model.
3. Perform aquifer testing.
4. Reassess if groundwater replenishment makes sense.

4" Recycled Water Pipeline

SAM: Sewer Authority Mid-Coastside
MGD: Million Gallons per Day
RW: Recycled Water

Distance shown in miles
Concentrate disposal line not shown

Pipeline Elevation Profile

CCWD Recycled Water Feasibility Study	Indirect Potable Reuse: Groundwater Replenishment Proposed Infrastructure	WATERWORKS ENGINEERS	FIGURE 11

5.2.5 Reservoir Augmentation

The closest reservoir to the study area that is large enough for reservoir augmentation is the Lower Crystal Springs Reservoir. SFPUC is also looking to add treated water to the reservoir as part of their future water supply portfolio. However, SFPUC would prefer direct potable reuse compared to putting treated water into the Crystal Springs Reservoir for operational reasons. Crystal Springs Reservoir is used as part of their operational balancing and any additional advanced treated water that is put in the reservoir, would mean less water could be conveyed from the Sierras if the reservoir was full. Before pursuing this alternative further, CCWD should discuss reservoir augmentation possibilities with SFPUC. For this study, it is assumed that SFPUC would credit the amount of water discharged into the reservoir for the District's use. The cost to convey and treat the water from the reservoir at Nunes WTP is not included in this study. The layout of the recycled water facilities is shown on Figure 12.

5.2.5.1 Permitting

There are no general permits that regulate indirect potable reuse via reservoir augmentation. If this alternative is pursued, CCWD should contact the RWQCB to determine if an individual permit is required[9]. A theoretical retention time of the recycled water in Lower Crystal Springs must be proposed by CCWD and approved by the RWQCB prior to construction[10]. Determining a theoretical retention time would require additional studies.

5.2.6 Advantages and Disadvantages

The advantages and disadvantages for this alternative are shown below.

Table 11. Reservoir Augmentation Advantages and Disadvantages

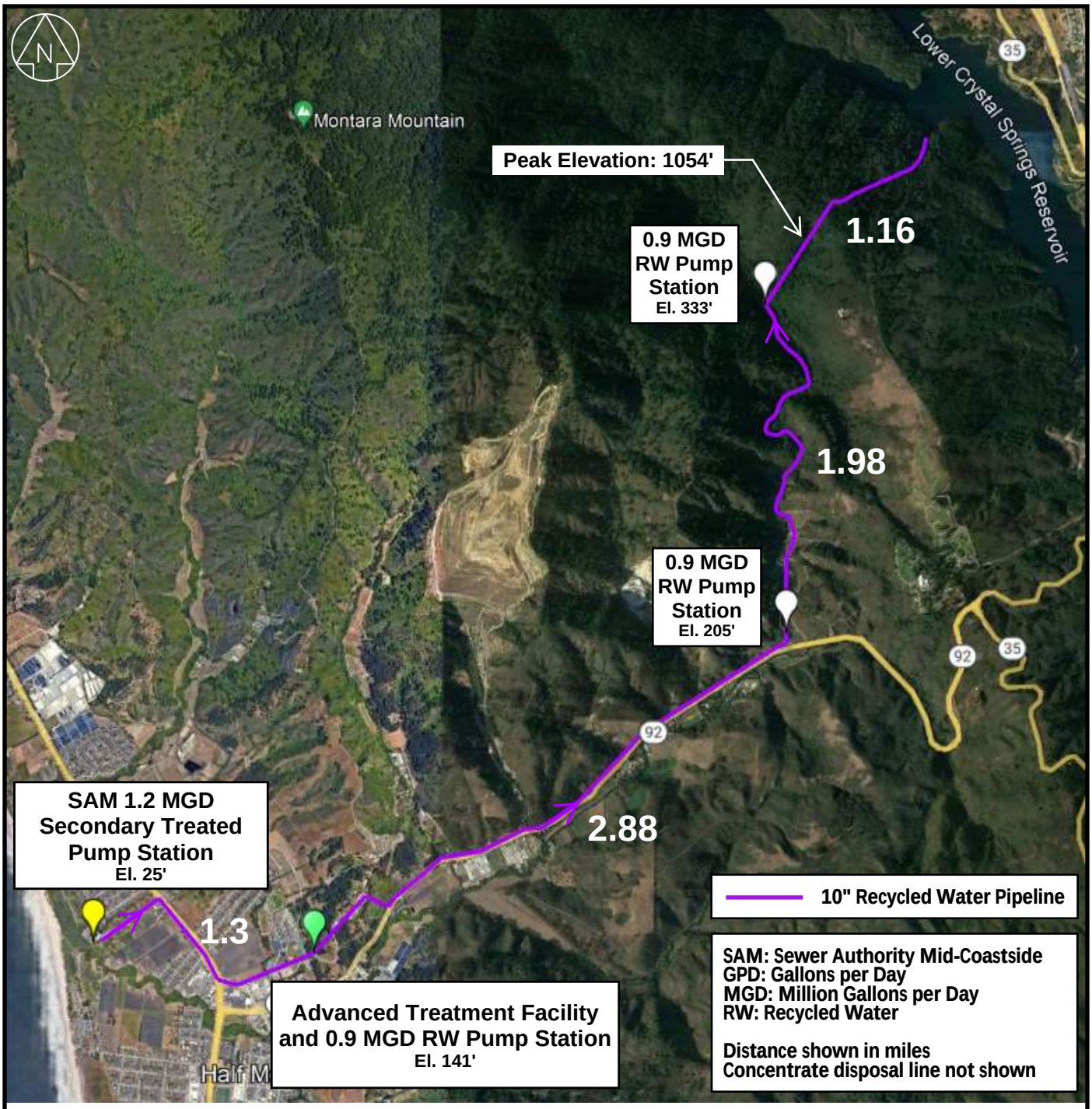
Advantages for CCWD	Disadvantages for CCWD
• Adds a raw water source assuming SFPUC will allow the water to be extracted from reservoir	• Long pipeline route • Extensive infrastructure and management for indirect potable reuse • Infrastructure required to convey and treat additional water from the reservoir • Water would need to be pumped to and from the Lower Crystal Springs Reservoir. • Some water would be lost to evaporation from reservoir

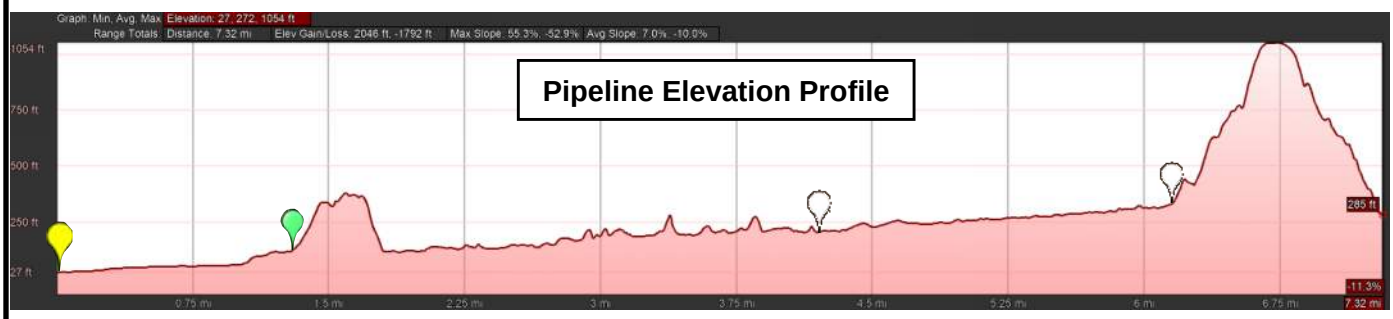
[9] Accessed on Oct 19 wastewaterrecyclingandreuse | San Francisco Bay Regional Water Quality Control Board (ca.gov)
[10] Accessed on Oct 19 https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/swa/apregtext.pdf

5.2.7 Next Steps

The following steps have been identified to implement this project. Implementation of the project is expected to take up to 25 years from initial design through final design and not including financing.

1. Coordinate with SFPUC to determine what their requirements will be and if the advanced treated water would be available to use for the District.
2. Start a water planning process including
    a. setting the foundation
    b. establishing direction
    c. developing framework
    d. engaging stakeholders





CCWD Recycled Water Feasibility Study	Indirect Potable Reuse: Reservoir Augmentation Proposed Infrastructure	WATERWORKS ENGINEERS	FIGURE 12

5.3 Direct Potable Reuse

5.3.1 Distribution and Treatment

The treatment process flow diagram for direct potable reuse is shown in Figure 13 . The treatment process was determined based on regulations from the State Water Resources Control Board. The direct potable reuse alternative requires extensive treatment and source water management. The layout of infrastructure for direct potable reuse is shown in Figure 14. The location of the APWF is the same as what is described in the indirect potable reuse section.

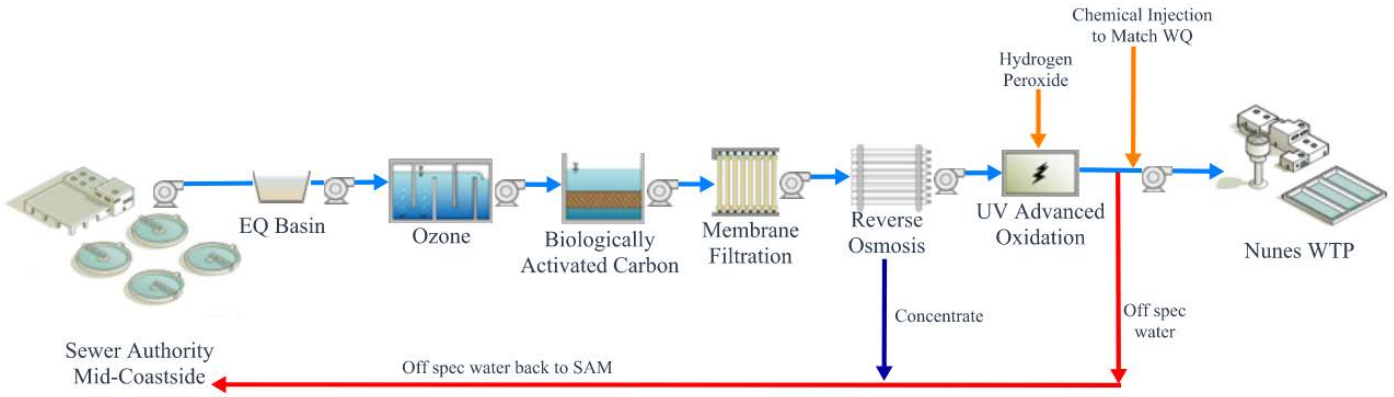


Figure 13. Direct Potable Reuse Process Flow Diagram

The water would be conveyed to the Nunes WTP for further treatment. The cost for treatment at Nunes WTP is not included in this study.

5.3.2 Permitting

Regulations regarding DPR were published by the State Water Resources Control Board (SWRCB) on December 18, 2023[11].

5.3.3 Advantages and Disadvantages

The advantages and disadvantages for this alternative are shown below.

Table 12. Direct Potable Reuse Advantages and Disadvantages

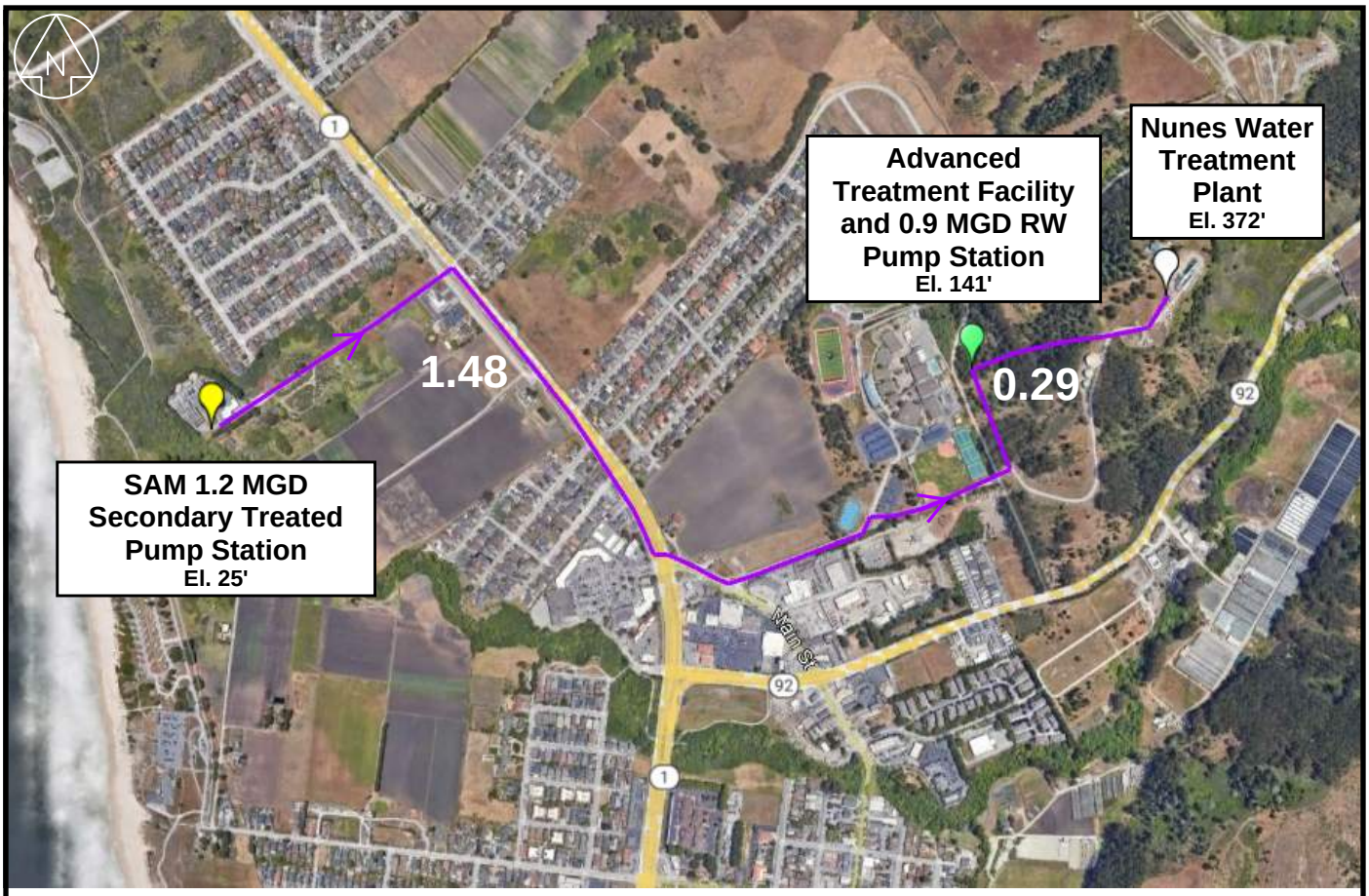
Advantages for CCWD	Disadvantages for CCWD
• Adds a raw water source to the water treatment plant	• Extensive infrastructure and management for direct potable reuse • Infrastructure required to treat additional water • Needs extensive public outreach

[11] Accessed on Oct 19,2023 Direct Potable Reuse | California State Water Resources Control Board

5.3.4 Next Steps

The following steps have been identified two implement this project. Implementation of the project is expected to take up to 30 years from initial design through final design and not including financing.

1. Start a water planning process including
    a. setting the foundation
    b. establishing direction
    c. developing framework
    d. engaging stakeholders
2. Identify funding sources for technical studies and constructing the project.



10" Recycled Water Pipeline

SAM: Sewer Authority Mid-Coastside
GPD: Gallons per Day
MGD: Million Gallons per Day
RW: Recycled Water

Distance shown in miles
Concentrate disposal line not shown

Pipeline Elevation Profile

CCWD Recycled Water Feasibility Study	Direct Potable Reuse at Nunes WTP Proposed Infrastructure	WATERWORKS ENGINEERS	FIGURE 14

6 Non-Cost Alternative Evaluation

Alternatives were evaluated based on non-cost criteria and life cycle costs. The District expressed that the volume of produced water was important for this study, so the alternatives were also evaluated on the amount of water that would be produced over 20 years.

6.1 Recycled Water Flow Summary By Alternative

The assumed recycled water flow rates for each alternative are shown in Table 13.

Table 13. Recycled Water Flow Summary by Alternative

Alternative		Flow Rate (MGD) (a)	Days Per Year	Source
Non-Potable Reuse	Fill Station(s)	0.05	183	In design, should be combined with other alternatives. Assumes five 4,000-gallon trucks a day are serviced in a 10-hour period $0.05\ MGD = \frac{5\ trucks\ x\ 4{,}000\frac{gal}{truck}}{10\ hours} * \frac{24\frac{hrs}{day}}{1x10^6 MG}$
	Landscape and Agricultural Irrigation	0.16	183	Users will need to be identified after clarifying if water needs to stay within District boundaries. Assumed to be 30 MG in 6 months based on Fiscal Year 2023 water usage.
	Skylawn Memorial Park Irrigation	0.27	183	Per CCWD uses about 50 MG/year. Assumes the amount is used in 6 months.
	Ocean Colony Golf Course and Landscape Irrigation	0.5	183	Per information provided by the golf course in September 2023, the average use is 550,000 gallons per day.
Indirect Potable Reuse	Groundwater Replenishment	0.125	365	From Hydrogeologic Report
	Reservoir Augmentation	1.2	365	ADWF of the portion of the total SAM wastewater flow from the CCWD service area using 2018 to 2022 SAM flow data.
Direct Potable Reuse	Direct Potable Reuse at Nunes WTP	1.2	365	ADWF of the portion of the total SAM wastewater flow from the CCWD service area using 2018 to 2022 SAM flow data.
Environmental Benefit	Pilarcitos Creek Augmentation or Other Creek Augmentation	0	0	Does not offset groundwater use.
	Wetland Enhancement	0	0	Does not offset groundwater use.

(a) Daily recycled water produced multiplied by the days in service per year and multiplied by twenty years. Recycled water would offset groundwater use or be used for indirect or direct potable reuse.

Without considering how much recycled water is used the top alternatives are the non-potable fill station, landscape irrigation and agricultural irrigation. However, a project that uses more recycled water is desirable for the District. Therefore, when ranking alternatives based on non-cost criteria and by how much recycled water would be used, then the most desirable alternatives included direct potable reuse, reservoir augmentation, and irrigation of Ocean Colony Golf Course.

6.2 Non-Cost Criteria

The alternatives were ranked on a scale of 1 (least desirable) to 3 (most desirable) based on which alternative was most desirable based on non-cost criteria. Each alternative's score was also weighted by the amount of water produced. The non-cost criteria were divided into four categories:

- environmental and social impacts/benefits
- ease of implementation and regulatory compliance
- engineering, construction, and operations
- climate hazard and resiliency

Each non-cost criteria category had subcategories which are defined below.

6.2.1 Environmental and Social Impacts/Benefits

The subcategories analyzed in this category are distribution system energy use, treatment system energy, and public/political acceptance. Higher distribution system and treatment system energy use is less desirable. Public/political acceptance is desired because it reduces the amount of public outreach required for an alternative.

6.2.2 Ease of Implementation and Regulatory Compliance

The subcategories analyzed in this category are whether a stakeholder(s) interested in collaborating, design readiness, and recycled water permit requirements. These subcategories relate to the ease of designing and permitting a recycled water system.

6.2.3 Engineering, Construction, and Operations

The subcategories analyzed in this category are land/easement acquisition, ease of operation, and ease of pipeline construction. These subcategories consider the difficulty in constructing and operating a recycled water system.

6.2.4 Climate and Hazard Resiliency

The subcategories analyzed in this category are tsunami zone construction and susceptibility to climate change. Susceptibility to climate change analyzed how susceptible an alternative is to effects of climate change such as increased flooding, landslides, wildfires, and sea level rise. This subcategory considers the risk of the project compared to potential hazards.

Non-cost criteria are defined in Table B-1 in Appendix B and the full non-cost criteria comparison is shown in Table B-2 in Appendix B. The non-cost criteria are summarized in Table 14.

A higher non-cost criteria score is better. Without taking into account how much recycled water is used then the top alternatives are non-potable reuse including the fill station, landscape irrigation and agricultural irrigation. However, a project that uses more recycled water is desirable. Therefore, when ranking alternatives based on non-cost criteria and by how much recycled water would be used, then the most desirable alternatives include direct potable reuse, reservoir augmentation and irrigation of the golf course.

Table 14. Summary of Non-Cost Criteria

Alternative	Criteria Sub-criteria	Delivered Water in 20 Years (Million Gallons) (a)	Total Non-Cost Criteria Score	Rank by Non-Cost Score	(Total score) x (delivered water per 20 years)/ (10,000) (b)	Weighted Rank by Produced Water
Non-Potable Reuse	Fill Station(s)	183	30	1	0.5	8
	Landscape Irrigation	600	26	2	1.6	6
	Agricultural Irrigation	600	26	2	1.6	6
	Skylawn Memorial Park Irrigation	1,000	21	5	2.0	4
	Ocean Colony Golf Course and Landscape Irrigation	1,830	25	4	4.6	3
Indirect Potable Reuse	Groundwater Replenishment	913	18	7	1.6	5
	Reservoir Augmentation	6,570	15	10	9.9	2
Direct Potable Reuse	Direct Potable Reuse at Nunes WTP	6,570	19	6	12.5	1
Environmental Benefit	Pilarcitos Creek Augmentation or Other Creek Augmentation	0	18	7	0.0	9
	Wetland Enhancement	0	18	7	0.0	9

(a) Daily recycled water produced multiplied by the days in service per year and multiplied by twenty years. Recycled water would offset groundwater use or be used for indirect or direct potable reuse.
(b) Weighting total score so alternatives that produce more water are higher rated.

6.3 Alternative Summary

The following alternatives are considered further in the next section for their cost.

- Fill Station(s)
- Landscape and Agricultural Irrigation
- Skylawn Memorial Park Irrigation
- Ocean Colony Golf Course and Landscape Irrigation
- Groundwater Replenishment
- Reservoir Augmentation
- Direct Potable Reuse at Nunes WTP

The following alternatives are not considered further because they do not offset groundwater use or provide additional water resources from indirect or direct potable reuse.

- Pilarcitos Creek Augmentation or Other Creek Augmentation Next Steps
- Wetlands Enhancement Option

7 Costs

Planning-level lifecycle costs were estimated for each alternative and shown in Table 15. More detailed cost estimates are shown in Appendix C. Cost estimates are considered Class 5 by AACE International and have an accuracy of plus 50 percent and minus 30 percent.

7.1 Capital Costs

Capital costs include design, construction, and startup of new facilities. Capital costs are estimated based on information from manufacturers and previous projects. The following assumptions were made during the development of the capital cost estimates.

- The new pump stations were located to try to maintain 200 psi or less of pressure in the pipelines.
- SAM WWTP secondary effluent is the source for all advanced treatment processes.
- Treatment processes were based on industry-standard processes by recycled water use.
- Return of the concentrate to SAM is assumed to be by gravity and no pump is included.

7.2 Operational Costs

Operational costs include distribution system and treatment energy costs, replacement of equipment, maintenance, compliance testing and security, labor, and source control costs. The following assumptions were used in the analysis.

- Power cost is 39.3 cents per kilowatt hour.
- The distribution system energy cost is based on pump horsepower.
- The treatment energy costs are estimated on pump horsepower to provide the necessary pressure for the treatment processes.
- For non-potable uses, the pumps are assumed to be run 12 hours a day for six months year.
- For indirect potable reuse and direct potable reuse, the pumps are assumed to run 24 hours a day and 365 days a year.
- The pump efficiency is assumed to be 50 percent.
- Chemical costs are based on the chemicals used for each process.
- Replacement of equipment is assumed to be at 2% of the treatment process capital costs.
- Maintenance costs are assumed to be 1.7% of the treatment process capital costs.
- Compliance Testing and Security costs are based on the type of water being produced and the type of use.
- Labor costs are based on the number of full-time equivalent employees.
- Annual source control costs are based on the type of recycled water produced.

The operational costs and estimated staffing requirements for each alternative are shown in Appendix C.

7.2.1 Life Cycle Costs

A 20-year life cycle cost are shown in Table 15 and the costs per million gallons produced over 20 years are also included. The parameters that were used for the life cycle cost evaluation are listed in Table 16. Comparing the net present worth per million gallon, the top three alternatives are reservoir augmentation, irrigation at Ocean Colony Golf Course and direct potable reuse.

Table 15. Life Cycle Costs

Alternative		Capital Cost (a)	Annual O&M Cost	20 Year Net Present Worth (b)	Delivered Water in 20 Years (MG)	Net Present Worth/ MG	Rank
Non-Potable Reuse	Fill Station(s)	$3.50 M	$0.10 M	$5.07 M	183	$28,000	4
	Landscape and Agricultural Irrigation	$27.2 M	$1.07 M	$44.0 M	600	$73,000	6
	Skylawn Memorial Park Irrigation	$29.4 M	$1.16 M	$47.6 M	1,000	$48,000	5
	Ocean Colony Golf Course and Landscape Irrigation	$22.0 M	$1.20 M	$40.9 M	1,830	$22,000	1
Indirect Potable Reuse	Groundwater Replenishment	$38.8 M	$3.53 M	$94.2 M	913	$103,000	7
	Reservoir Augmentation	$65.7 M	$4.85 M	$142 M	6,570	$22,000	1
Direct Potable Reuse	Direct Potable Reuse at Nunes WTP	$63.0 M	$6.19 M	$160 M	6,570	$24,000	3

(a) Costs are in 2023 dollars. Cost estimates are considered Class 5 by AACE International and have an accuracy of +50 percent and -30 percent.

(b) Assumes Inflation is 3%, nominal discount rate is 5.5%, and real discount rate is 2.4%.

(c) Flow rate for fill station, irrigation, and flow rate available after advanced water treatment accounting for concentrate.

(d) Assumes irrigation and fill station use occurs for 6 months of the year. Assumes indirect and direct potable reuse occur year-round.

Table 16. Net Present Worth Values

Parameter	Value	Notes
Inflation	3.0%	
Nominal Discount Rate	5.5%	
Real Discount Rate	2.4%	((1+discount rate)/(1+inflation rate))-1
Years	20	
Present Worth Factor	15.70	

8 Conclusions

To be feasible, proposed recycled water projects need partners that want to collaborate with CCWD and a reason to pursue the project such as a policy or economic reason. The feasibility of each alternative is discussed in this section.

8.1 Fill Station

8.1.1 Potential Partners

Potentially the fill station could offset the use of potable water for construction water. However, there is not much construction water use in the District.

8.1.2 Project Driver

Since there would be little demand for the recycled water, there is no economic driver for this project.

8.1.3 Feasibility

This project is currently considered infeasible because there are no partners, and the project is not economically viable. CCWD should consider whether adding a fill station is useful for other reasons such as public outreach about recycled water.

8.2 Landscape and Agricultural Irrigation

8.2.1 Potential Partners

Within the District there is limited landscaping or agricultural irrigation that could be offset by recycled water use.

8.2.2 Project Driver

Since there would be little demand for the recycled water, there is no economic driver for this project.

8.2.3 Feasibility

This project is currently considered infeasible because there are no partners, and the project is not economically viable. CCWD should determine if recycled water could be served outside of District boundaries to potentially develop a larger customer base.

8.3 Skylawn Memorial Park Irrigation

8.3.1 Potential Partners

Since the Park is outside of District boundaries, recycled water cannot be delivered and used there. Therefore, there is no partner for this project.

8.3.2 Project Driver

There is no economic driver for this project since there is no partner to sell the water to.

8.3.3 Feasibility

This project is currently considered infeasible because there are no partners, and the project is not economically viable. CCWD should determine if recycled water could be used outside of District boundaries.

8.4 Ocean Colony Golf Course and Landscape Irrigation

8.4.1 Potential Partners

Ocean Colony has other water supplies that are more cost effective than recycled water so does not have a demand for recycled water.

8.4.2 Project Driver

Since there is no demand for the recycled water at the golf course and associated landscaping, there is no economic driver for this project.

8.4.3 Feasibility

This project is currently considered infeasible because there are no partners, and the project is not economically viable. CCWD should check in with the Ocean Colony periodically to see if their water needs have changed.

8.5 Pilarcitos Creek Augmentation or Other Creek Augmentation Next Steps

8.5.1 Potential Partners

There are currently no partners for this alternative. CCWD would need to identify partners if there is an interest in creek augmentation. An example of potential partners would be local environmental protection groups.

8.5.2 Project Driver

There is no economic reason to pursue this project.

8.5.3 Feasibility

This project is currently considered infeasible because there are no partners, and the project is not economically viable. CCWD should periodically check with neighboring agencies to see if there is an interest in creek augmentation.

8.6 Wetlands Enhancement Option

8.6.1 Potential Partners

There are currently no partners for this alternative. CCWD would need to identify partners if there is an interest in wetland enhancement.

8.6.2 Project Driver

There is no economic reason to pursue this project.

8.6.3 Feasibility

This project is currently considered infeasible because there are no partners, and the project is not economically viable. CCWD should periodically check with neighboring agencies to see if there is an interest in wetlands enhancement.

8.7 Groundwater Replenishment

8.7.1 Potential Partners

There are currently no partners for this alternative. CCWD would need to identify partners if there is an interest in groundwater replenishment. Local private well users will need to be a partner if this project is to be feasible.

8.7.2 Project Driver

There is no economic reason to pursue this project as it would add a limited quantity of new water supply to the District.

8.7.3 Feasibility

This project is currently considered infeasible because there are no partners, and the project is not economically viable.

8.8 Reservoir Augmentation

8.8.1 Potential Partners

There is no known partner who has a reservoir available for augmentation. SFPUC may be a potential partner.

8.8.2 Project Driver

The project driver is providing a new water source to the District's water supply portfolio.

8.8.3 Feasibility

This project is currently considered infeasible because there is no reservoir available to augment. CCWD should discuss potential reservoir augmentation alternatives with SFPUC.

8.9 Direct Potable Reuse at Nunes WTP

8.9.1 Potential Partners

Partners would need to be defined to make this alternative feasible.

8.9.2 Project Driver

The project driver is providing a new water source to the District's water supply portfolio.

8.9.3 Feasibility

Further study is needed to determine if this project is an economically viable alternative to add a new water supply to the District's water portfolio.

8.10 Summary

The feasibility of the projects with the current conditions are present summarized in Table 17.

Table 17. Feasibility of Project by Alternative

Alternative	Feasible	Reasoning
Fill Station(s)	No	Little demand for recycled water within service area
Landscape and Agricultural Irrigation	No	Little demand for recycled water within service area
Skylawn Memorial Park Irrigation	No	Park not within service area, so would not be able to deliver recycled water.
Ocean Colony Golf Course and Landscape Irrigation	No	Ocean Colony has other water supplies that are more cost effective than recycled water and therefore, does not have a demand for recycled water.
Pilarcitos Creek Augmentation or Other Creek Augmentation	No	Does not offset groundwater use or provide additional water resources from indirect or direct potable reuse.
Wetland Enhancement	No	Does not offset groundwater use or provide additional water resources from indirect or direct potable reuse.
Groundwater Replenishment	No	1. There are private wells in the service area that limits where water may be replenished. 2. A limited amount of water that can be replenished at one location due to mounding
Reservoir Augmentation	No	There is no known partner who has a reservoir available for augmentation.
Direct Potable Reuse at Nunes WTP	Further study needed	Next steps are to find potential funding sources and continue technical studies.

Of the recycled water alternatives evaluated, currently the direct potable reuse alternative is the only alternative that should be pursued because the project has potential to provide diversity to the District's water supply portfolio. However, further study is needed for the direct potable reuse alternative to determine if the project is economically viable.

1. Start a water planning process including
    a. setting the foundation
    b. establishing direction
    c. developing framework
    d. engaging stakeholders
2. Establish contracts with partners
3. Identify funding source for the studies and construction of the project.
4. Collaborate with stakeholders to further define the project and perform the required studies necessary for final design.
5. Implement an extensive public education program.
6. Design the advanced water treatment plant
7. Construct the improvements.
8. Complete permitting.
9. Increased staffing to operate the new facilities.

9 References

Carollo Engineers, 2002. Preliminary Economic Feasibility Study, Water Reclamation Program. Prepared for CCWD, dated December 2002.

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DWR, 2020. California's Groundwater, State of California Department of Water Resources Bulletin 118, Update 2020.

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PWA, 2018. Pilarcitos Integrated Watershed Management Plan prepared for San Mateo County Resource Conservation District and California State Water Resources Control Board, dated 24 October 2008.

SFPUC, 2018. Amended and Restated Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo and Santa Clara County, prepared by SFPUC, dated November 2018.

SRT Consultants, 2015. 2015 Update of the 2010 Recycled Water Facilities Planning Study, prepared for SAM, dated 12 August 2015.

West Yost, 2021. Coastside County Water District 2020 Urban Water Management Plan, prepared for CCWD, dated 10 June 2021.

Appendix A – Hydrogeologic Report

(Provided under separate cover)

Appendix B – Alternative Comparison Using Non-Cost Criteria

Table B-1. Decision Matrix Criteria and Ranking Definitions

Criteria	Sub-criteria	Score range/scale		
		1	2	3
1. Environmental and social impacts/benefits	Distribution system energy use	• Highest energy use compared to other alternatives.	• Average energy use.	• Lowest energy use compared to other alternatives.
	Treatment system energy use	• Highest energy use compared to other alternatives.	• Average energy use.	• Lowest energy use compared to other alternatives.
	Public/political acceptance	• Known public unease with potable reuse or known public unease with proposed use of site(s) for new facilities.	• Public support neutral or unknown.	• Known public support of elements of potable reuse plans and/or proposed use of site(s) for new facilities.
2. Ease of implementation and regulatory compliance	Willing stakeholder(s) interested in collaborating	• Stakeholders have not communicated in past about collaboration. Unsure of how willing partners will be to collaborate.	• Stakeholders have communicated in the past and have expressed interest.	• Stakeholders have communicated recently and direct interest has been expressed.
	SAM collaboration	• Majority of new facilities will be at SAM, so CCWD has little control over recycled water quality. Requires more coordination with SAM.	• Part of new facilities will be at SAM, so CCWD has little control over recycled water quality. Requires more coordination with SAM.	• All new facilities will not be located at SAM. SAM only required for flow diversion approval and use of outfall for concentrate.
	Design readiness	• Alternative requires further testing (tracer studies) and alternative specific feasibility studies before design can begin.	• Alternative requires further research before design can begin.	• Alternative may begin design.
	Recycled water permit requirements	• Permitting requirements have not been defined.	• Permitting is known to be difficult.	• Permitting is known to be straight forward.
3. Engineering, construction, and operations	Land and easement acquisition	• Land for treatment is not currently available for use and has known litigation or zoned for other uses. • Many easements need to be acquired for distribution system.	• Land for treatment is not currently available for use. Land is held privately and will need to be purchased. • Some easements need to be acquired for distribution system.	• No known land acquisition issues other than price negotiation. • Little to no easements need to be acquired for distribution system.
	Ease of operation	• Facility operation requires more technical expertise. • Operator must be on call 24/7.	• Facility operation requires moderate technical expertise.	• Facility operation is simple.
	Ease of pipeline construction	• Proposed pipeline alignments have significant potential construction or engineering challenges, such as Caltrans longitudinal highway piping, creek crossings, and steep grades.	• Proposed pipeline alignments have moderate potential construction or engineering challenges.	• Proposed pipeline construction is straightforward. • Majority of pipeline construction is not longitudinally on Caltrans highway.
4. Climate and hazard resiliency	Tsunami Zone Construction	• Majority of construction in tsunami zone.	• Some of construction in tsunami zone.	• Majority of construction not in tsunami zone.
	Susceptibility to Climate Change (a)	• At risk of serious damage.	• Moderate risk.	• Little to no risk.

Acronyms

SAM - Sewer Authority Mid-Coastside

WTP - Water Treatment Plant

Notes:

(a) How will the project be effected by increased flooding, landslides, wildfires, and sea level rise.

Table B-2. Non-Cost Criteria

Alternative	Criteria	1. Environmental and social impacts/benefits			2. Ease of implementation and regulatory compliance			3. Engineering, construction, and operations			4. Climate and hazard resiliency		Delivered Water in 20 Years (Million Gallons) (a)	Total non-cost criteria score	Rank by non-cost score	(Total score) x (delivered water per 20 years)/ (10,000) (b)	Weighted rank by produced water
	Sub-criteria	Distribution system energy use	Treatment system energy use	Public/ political acceptance	Willing stakeholder(s) interested in collaborating	Design readiness	Recycled water permit requirements	Land and easement acquisition	Ease of operation	Ease of pipeline construction	Tsunami zone construction	Susceptibility to climate change					
Non-Potable Reuse	Fill Station(s)	3	3	3	3	3	3	3	3	3	1	2	183	30	1	0.5	8
	Landscape Irrigation	3	3	3	1	3	3	2	3	2	1	2	600	26	2	1.6	6
	Agricultural Irrigation	3	3	3	1	3	3	2	3	2	1	2	600	26	2	1.6	6
	Skylawn Memorial Park Irrigation	1	3	3	2	2	3	1	2	1	1	1	1,000	20	5	2.0	4
	Ocean Colony Golf Course and Landscape Irrigation	3	2	3	3	2	3	2	2	2	1	2	1,830	25	4	4.6	3
Indirect Potable Reuse	Groundwater Replenishment	2	1	2	1	1	2	1	1	2	3	2	913	18	7	1.6	5
	Reservoir Augmentation	1	1	2	1	1	2	1	1	1	3	1	6,570	15	10	9.9	2
Direct Potable Reuse	Direct Potable Reuse at Nunes WTP	2	1	1	3	1	1	1	1	2	3	3	6,570	19	6	12.5	1
Environmental Benefit	Pilarcitos Creek Augmentation or Other Creek	3	1	3	1	1	2	1	1	3	1	1	0	18	7	0.0	9
	Wetland Enhancement	3	1	3	1	1	2	1	1	3	1	1	0	18	7	0.0	9

Scoring

See Table B-1. with 1 being less desirable and 3 being more desirable

Acronyms

SAM - Sewer Authority Mid-Coastside

WTP - Water Treatment Plant

Notes:

(a) Daily recycled water produced multiplied by the days in service per year and multiplied by twenty years. Recycled water would offset groundwater use or be used for indirect or direct potable reuse.

(b) Weighting total score so alternatives that produce more water are higher rated.

Appendix C - Cost Opinions

WATERWORKS ENGINEERS

Title: Summary of Costs

Date: 10/31/2023

Alternative		Capital Cost (a)	Annual O&M Cost	20 Year Net Present Worth (b)	Delivered Water (MGD) (c)	Days in Service per Year (d)	Delivered Water in 20 Years (MG)	Net Present Worth/ MG	Rank
Non-Potable Reuse	Fill station(s) for unrestricted residential or commercial use	$3.50 M	$0.10 M	$5.07 M	0.05	183	183	$28,000	4
	Landscape and agricultural irrigation with disinfected tertiary recycled water	$27.2 M	$1.07 M	$44.0 M	0.16	183	600	$73,000	6
	Skylawn Memorial Park irrigation with disinfected tertiary recycled water	$29.4 M	$1.16 M	$47.6 M	0.27	183	1,000	$48,000	5
	Ocean Colony golf course and landscape irrigation with reverse osmosis treated water	$22.0 M	$1.20 M	$40.9 M	0.50	183	1,830	$22,000	1
Indirect Potable Reuse	Groundwater replenishment with advanced treated water	$38.8 M	$3.53 M	$94.2 M	0.125	365	913	$103,000	7
	Reservoir augmentation with advanced treated water	$65.7 M	$4.85 M	$142 M	0.90	365	6,570	$22,000	1
Direct Potable Reuse	Advanced treated water to Nunes WTP	$63.0 M	$6.19 M	$160 M	0.90	365	6,570	$24,000	3

Acronyms:

MG - Million Gallons

MGD - Million Gallons per Day

O&M - Operations and Maintenance

WTP - Water Treatment Plant

Notes:

(a) Costs are in 2023 dollars. Cost estimates are considered Class 5 by AACE International and have an accuracy of +50 percent and -30 percent.

(b) Assumes Inflation is 3%, nominal discount rate is 5.5%, and real discount rate is 2.4%.

(c) Flow rate for fill station, irrigation, and flow rate available after advanced water treatment accounting for concentrate.

(d) Assumes irrigation and fill station use occurs for 6 months of the year. Assumes indirect and direct potable reuse occur year round.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Distribution - Fill Station

	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
	50,000 Gallon Equalization Basin at SAM	50,000	Gallon	$2	$100,000
	Pump Station at SAM	5	Horsepower	$5,000	$25,000
	3" Pipeline to Fill Station	0.35	Mile	$2,000,000	$700,000
	50,000 Gallon Tank at Fill Station	50,000	Gallon	$2	$100,000
			Construction Subtotal		**$900,000**
			Project Preliminary Design Contingency	30%	$300,000
			Subtotal		**$1,200,000**
			Contractor General, Mobilization, Overhead & Profit	15%	$200,000
			General Conditions, Bonds, Insurance & Taxes	4%	$48,000
PROBABLE CONSTRUCTION COST					**$1,448,000**
			Construction Contingency	10%	$140,000
			Design and Services During Construction	12%	$170,000
			Permitting (effort and fees)	2%	$30,000
TOTAL CAPITAL PROJECT COST					**$1,800,000**

Acronyms:

SAM - Sewer Authority Mid-Coastside

Notes:

1. No cost escalation is used.
2. No land or easement acquisition is included.
3. Assumed pipeline distance as the location of the fill station needs to be determined.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Distribution - Landscape and Agricultural Irrigation

	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
	50,000 Gallon Equalization Basin at SAM	50,000	Gallon	$2	$100,000
	50,000 Gallon Storage Tank at SAM	50,000	Gallon	$2	$100,000
	Pump Station at SAM	10	Horsepower	$5,000	$50,000
	4" Pipeline to Flow Split	0.35	Mile	$2,000,000	$700,000
	4" Recycled Water Pipe North of SAM	1.32	Mile	$2,000,000	$2,640,000
	4" Recycled Water Pipe East of SAM	2.23	Mile	$2,000,000	$4,460,000
	4" Recycled Water Pipe South of SAM	1.99	Mile	$2,000,000	$3,980,000
	4"/8" Pipe-Bore and Jack	1,000	Linear feet	$600	$600,000
	Construction Subtotal				**$12,600,000**
	Project Preliminary Design Contingency			30%	$3,800,000
	Subtotal				**$16,400,000**
	Contractor General, Mobilization, Overhead & Profit			15%	$2,500,000
	General Conditions, Bonds, Insurance & Taxes			4%	$700,000
PROBABLE CONSTRUCTION COST					**$19,600,000**
	Construction Contingency			10%	$1,960,000
	Design and Services During Construction			12%	$2,350,000
	Permitting (effort and fees)			2%	$390,000
TOTAL CAPITAL PROJECT COST					**$24,300,000**

Acronyms:

SAM - Sewer Authority Mid-Coastside

Notes:

1. Does not include the cost to retrofit the recycled water use sites.
2. No cost escalation is used.
3. No land or easement acquisition is included.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Distribution - Golf Course Irrigation

	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
	50,000 Gallon Equalization Basin at SAM	50,000	Gallon	$2	$100,000
	Pump Station at SAM	50	Horsepower	$5,000	$250,000
	6"/10" Pipe-Bore and Jack	600	Linear Feet	$600	$360,000
	6" Recycled Water Pipe South of SAM	3.54	Mile	$2,000,000	$7,080,000
			Construction Subtotal		**$7,800,000**
			Project Preliminary Design Contingency	30%	$2,300,000
			Subtotal		**$10,100,000**
			Contractor General, Mobilization, Overhead & Profit	15%	$1,500,000
			General Conditions, Bonds, Insurance & Taxes	4%	$400,000
PROBABLE CONSTRUCTION COST					**$12,000,000**
			Construction Contingency	10%	$1,200,000
			Design and Services During Construction	12%	$1,440,000
			Permitting (effort and fees)	2%	$240,000
TOTAL CAPITAL PROJECT COST					**$14,900,000**

Acronyms:

SAM - Sewer Authority Mid-Coastside

Notes:

1. Does not include the cost to retrofit the recycled water use sites.
2. No cost escalation is used.
3. No land or easement acquisition is included.
4. Assumes storage is available at golf course ponds.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Distribution - Skylawn Memorial Park Irrigation

	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
	50,000 Gallon Equalization Basin at SAM	50,000	Gallon	$2	$100,000
	Pump Station at SAM	50	Horsepower	$5,000	$250,000
	6" Pipeline to Pump Station 1	5.73	Mile	$2,000,000	$11,460,000
	Pump Station 1	90	Horsepower	$5,000	$450,000
	6" Pipeline to Skylawn	0.79	Mile	$2,000,000	$1,580,000
			Construction Subtotal		**$13,700,000**
			Project Preliminary Design Contingency	30%	$4,100,000
			Subtotal		**$17,800,000**
			Contractor General, Mobilization, Overhead & Profit	15%	$2,700,000
			General Conditions, Bonds, Insurance & Taxes	4%	$700,000
PROBABLE CONSTRUCTION COST					**$21,200,000**
			Construction Contingency	10%	$2,120,000
			Design and Services During Construction	12%	$2,540,000
			Permitting	3%	$640,000
TOTAL CAPITAL PROJECT COST					**$26,500,000**

Acronyms:

SAM - Sewer Authority Mid-Coastside

Notes:

1. Does not include the cost to retrofit the recycled water use sites.
2. No cost escalation is used.
3. No land or easement acquisition is included.
4. Assumes storage is available in Skylawn Pond.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Distribution - Reservoir Augmentation

	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
	Pump station at SAM to APWF	70	Horsepower	$5,000	$350,000
	10" Pipeline to APWF	1.30	Mile	$2,000,000	$2,600,000
	4" Concentrate Pipeline	1.48	Mile	$2,000,000	$2,960,000
	APWF Influent Equalization Basin	250,000	Gallons	$2	$500,000
	Pump station at APWF to Pump Station 1	80	Horsepower	$5,000	$400,000
	10" Pipeline to Pump Station 1	2.88	Mile	$2,000,000	$5,760,000
	Pump station 1	40	Horsepower	$5,000	$200,000
	10" Pipeline to Pump Station 2	1.98	Mile	$2,000,000	$3,960,000
	Pump station 2	280	Horsepower	$5,000	$1,400,000
	10" Pipeline to Reservoir	1.16	Mile	$2,000,000	$2,320,000
	Construction Subtotal				**$20,500,000**
	Project Preliminary Design Contingency			30%	$6,200,000
	Subtotal				**$26,700,000**
	Contractor General, Mobilization, Overhead & Profit			15%	$4,000,000
	General Conditions, Bonds, Insurance & Taxes			4%	$1,100,000
PROBABLE CONSTRUCTION COST					**$31,800,000**
	Construction Contingency			10%	$3,180,000
	Design and Services During Construction			12%	$3,820,000
	Permitting			3%	$950,000
TOTAL CAPITAL PROJECT COST					**$39,800,000**

Acronyms:

SAM - Sewer Authority Mid-Coastside

APWF - Advanced Purified Water Facility

Notes:

1. No cost escalation is used.
2. No land or easement acquisition is included.
3. Does not include cost to convey or treat the additional water from Crystal Springs Reservoir.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Distribution - Groundwater Replenishment

	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
	Pump station at SAM to APWF	20	Horsepower	$5,000	$100,000
	4" Pipeline to APWF	1.48	Mile	$2,000,000	$2,960,000
	APWF Influent Equalization Basin	250,000	Gallons	$2	$500,000
	4" Concentrate Pipeline	1.48	Mile	$2,000,000	$2,960,000
	Pump station at APWF to Replenishment	20	Horsepower	$5,000	$100,000
			Construction Subtotal		**$6,600,000**
			Project Preliminary Design Contingency	30%	$2,000,000
			Subtotal		**$8,600,000**
			Contractor General, Mobilization, Overhead & Profit	15%	$1,300,000
			General Conditions, Bonds, Insurance & Taxes	4%	$300,000
PROBABLE CONSTRUCTION COST					**$10,200,000**
			Construction Contingency	10%	$1,020,000
			Design and Services During Construction	12%	$1,220,000
			Permitting	4%	$410,000
TOTAL CAPITAL PROJECT COST					**$12,900,000**

Acronyms:

SAM - Sewer Authority Mid-Coastside

APWF - Advanced Purified Water Facility

Notes:

1. Does not include the cost to inject or percolate water.
2. No cost escalation is used.
3. No land or easement acquisition is included.
4. Assumes percolation/injection at APWF for replenishment.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Distribution - Direct Potable Reuse

	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
	Pump Station at SAM to APWF	180	Horsepower	$5,000	$900,000
	12" Pipeline to APWF	1.48	Mile	$2,000,000	$2,960,000
	APWF Influent Equalization Basin	250,000	Gallons	$2	$500,000
	4" Concentrate Pipeline	1.48	Mile	$2,000,000	$2,960,000
	Pump station at APWF to Nunes WTP	90	Horsepower	$5,000	$450,000
	10" Pipeline to Nunes WTP	0.29	Mile	$2,000,000	$580,000
			Construction Subtotal		**$8,400,000**
			Project Preliminary Design Contingency	30%	$2,500,000
			Subtotal		**$10,900,000**
			Contractor General, Mobilization, Overhead & Profit	15%	$1,600,000
			General Conditions, Bonds, Insurance & Taxes	4%	$400,000
PROBABLE CONSTRUCTION COST					**$12,900,000**
			Construction Contingency	10%	$1,290,000
			Design and Services During Construction	12%	$1,550,000
			Permitting	4%	$520,000
TOTAL CAPITAL PROJECT COST					**$16,300,000**

Acronyms:

SAM - Sewer Authority Mid-Coastside

WTP - Water Treatment Plant

APWF - Advanced Purified Water Facility

Notes:

1. No cost escalation is used.
2. No land or easement acquisition is included.
3. Does not include cost for treatment of additional water at Nunes WTP.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Non-Potable Reuse Treatment: Fill Station

	ITEM		COST
	Treatment Processes		$400,000
	Process Equipment Install	25%	$100,000
	Site Work	5%	$20,000
	Electrical and Instrumentation	30%	$120,000
	Mechanical	15%	$60,000
	Piping and Valves	20%	$80,000
	Construction Subtotal		**$800,000**
	Project Preliminary Design Contingency	30%	$200,000
	Subtotal		**$1,000,000**
	Contractor General, Mobilization, Overhead & Profit	15%	$200,000
	General Conditions, Bonds, Insurance & Taxes	4%	$40,000
PROBABLE CONSTRUCTION COST			**$1,240,000**
	Construction Contingency	10%	$120,000
	Design and Services During Construction	12%	$150,000
	Construction Management	10%	$120,000
	Permitting	2%	$20,000
TOTAL CAPITAL COST (Construction Total + Implementation Total)			**$1,700,000**

Notes:

1. No cost escalation is used.
2. No land or easement acquisition is included.
3. No public outreach is included.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Non-Potable Reuse Treatment: Landscape and Agriculture Irrigation

ITEM		COST	
	Treatment Processes		$700,000
	Process Equipment Install	25%	$180,000
	Site work	5%	$40,000
	Electrical and Instrumentation	30%	$210,000
	Mechanical	15%	$110,000
	Piping and Valves	20%	$140,000
Construction Subtotal			**$1,400,000**
Project Preliminary Design Contingency		30%	$400,000
Subtotal			**$1,800,000**
Contractor General, Mobilization, Overhead & Profit		15%	$300,000
General Conditions, Bonds, Insurance & Taxes		4%	$100,000
PROBABLE CONSTRUCTION COST			**$2,200,000**
Construction Contingency		10%	$220,000
Design and Services During Construction		12%	$260,000
Construction Management		10%	$220,000
Permitting		2%	$40,000
TOTAL CAPITAL COST (Construction Total + Implementation Total)			**$2,900,000**

Notes:

1. No cost escalation is used.
2. No land or easement acquisition is included.
3. No public outreach is included.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Non-Potable Reuse Treatment: Golf Course Irrigation

	ITEM		COST
	Treatment Processes		$1,600,000
	Process Equipment Install	25%	$400,000
	Site work	5%	$80,000
	Electrical and Instrumentation	50%	$800,000
	Mechanical	15%	$240,000
	Piping and Valves	20%	$320,000
	Construction Subtotal		**$3,400,000**
	Project Preliminary Design Contingency	30%	$1,000,000
	Subtotal		**$4,400,000**
	Contractor General, Mobilization, Overhead & Profit	15%	$700,000
	General Conditions, Bonds, Insurance & Taxes	4%	$200,000
PROBABLE CONSTRUCTION COST			**$5,300,000**
	Construction Contingency	10%	$530,000
	Design and Services During Construction	12%	$640,000
	Construction Management	10%	$530,000
	Permitting	2%	$110,000
TOTAL CAPITAL COST (Construction Total + Implementation Total)			**$7,110,000**

Notes:

1. No cost escalation is used.
2. No land or easement acquisition is included.
3. No public outreach is included.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Indirect Potable Reuse Treatment

	ITEM		COST
	Treatment Processes		$4,900,000
	Process Equipment Install	25%	$1,230,000
	Site Work	15%	$740,000
	Electrical and Instrumentation	50%	$2,450,000
	Mechanical	15%	$740,000
	Piping and Valves	20%	$980,000
	Upfront Source Control		$400,000
	Treatment Building		$1,500,000
	Construction Subtotal		**$12,900,000**
	Project Preliminary Design Contingency	30%	$3,900,000
	Subtotal		**$16,800,000**
	Contractor General, Mobilization, Overhead & Profit	15%	$1,900,000
	General Conditions, Bonds, Insurance & Taxes	4%	$500,000
PROBABLE CONSTRUCTION COST			**$19,200,000**
	Construction Contingency	10%	$1,920,000
	Engineering	20%	$3,840,000
	Permitting (effort and fees)	4%	$770,000
	Construction Management	10%	$190,000
TOTAL CAPITAL COST (Construction Total + Implementation Total)			**$25,900,000**

Notes:

1. No cost escalation is used.
2. No land or easement acquisition is included.
3. No public outreach is included.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Direct Potable Reuse Treatment			
ITEM		**COST**	
	Treatment Processes		$8,600,000
	Process Equipment Install	25%	$2,150,000
	Site work	15%	$1,290,000
	Electrical and Instrumentation	60%	$5,160,000
	Mechanical	15%	$1,290,000
	Piping and Valves	20%	$1,720,000
	Upfront Source Control		$500,000
	Treatment Building		$2,500,000
Construction Subtotal			**$23,200,000**
Project Preliminary Design Contingency		30%	$7,000,000
Subtotal			**$30,200,000**
Contractor General, Mobilization, Overhead & Profit		15%	$3,500,000
General Conditions, Bonds, Insurance & Taxes		4%	$900,000
PROBABLE CONSTRUCTION COST			**$34,600,000**
Construction Contingency		10%	$3,460,000
Engineering		20%	$6,920,000
Permitting (effort and fees)		4%	$1,380,000
Construction Management		10%	$350,000
TOTAL CAPITAL COST (Construction Total + Implementation Total)			**$46,700,000**

Notes:

1. No cost escalation is used.
2. No land or easement acquisition is included.
3. No public outreach is included.

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Operational and Maintenance Costs

Alternative		Distribution System Energy Costs	Treatment Energy Costs	Treatment Chemical Costs	Equipment Replacement (a)	Maintenance Costs (b)	Other Costs (c)	Labor Costs	Annual Source Control Costs	Total Annual O&M Cost
Non-Potable Reuse	Fill station(s) for unrestricted residential or commercial use	$ 3,200	$ 40,000	$ 25,000	$ 8,000	$ 7,000	$ 5,000	$ 10,000	$ -	**$ 100,000**
	Landscape and agricultural irrigation with disinfected tertiary recycled water	$ 6,400	$ 90,000	$ 25,000	$ 14,000	$ 12,000	$ 25,000	$ 900,000	$ -	**$ 1,070,000**
	Skylawn Memorial Park irrigation with disinfected tertiary recycled water	$ 90,000	$ 90,000	$ 25,000	$ 14,000	$ 12,000	$ 25,000	$ 900,000	$ -	**$ 1,160,000**
	Ocean Colony golf course and landscape irrigation with reverse osmosis treated water	$ 32,000	$ 150,000	$ 35,000	$ 32,000	$ 27,000	$ 25,000	$ 900,000	$ -	**$ 1,200,000**
Indirect Potable Reuse	Groundwater replenishment with advanced treated water	$ 51,000	$ 80,000	$ 100,000	$ 98,000	$ 83,000	$ 100,000	$3,000,000	$20,000	**$ 3,530,000**
	Reservoir augmentation with advanced treated water	$1,000,000	$ 450,000	$ 100,000	$ 98,000	$ 83,000	$ 100,000	$3,000,000	$20,000	**$ 4,850,000**
Direct Potable Reuse	Advanced treated water to Nunes WTP	$ 620,000	$1,100,000	$ 150,000	$ 172,000	$ 146,000	$ 150,000	$3,800,000	$50,000	**$ 6,190,000**

Notes:

(a) 2% of treatment processes cost.

(b) 1.7% of treatment processes cost.

(c) Compliance Testing and Security

WATERWORKS ENGINEERS	Title:	CCWD Recycled Water Feasibility Study
	Date:	10/31/2023

Staff Requirements: Full-Time Equivalents (FTE)

Alternative		Advanced Purified Water Facility	Senior Maintenance Staff	Maintenance Staff	Senior Instrumentation Tech	Senior Lab Staff	Lab Staff	Regulatory and Compliance	Other Administrative	Total
Non-Potable Reuse	FTE	0	1	1	1	0	0	1	0	
	Salary	$ 252,000	$ 252,000	$ 210,000	$ 252,000	$ 252,000	$ 210,000	$ 210,000	$ 252,000	
	Cost	$ -	$ 252,000	$ 210,000	$ 252,000	$ -	$ -	$ 210,000	$ -	**$ 900,000**
Indirect Potable Reuse	FTE	2	1	1	1	1	4	2	1	
	Salary	$ 252,000	$ 252,000	$ 210,000	$ 252,000	$ 252,000	$ 210,000	$ 210,000	$ 252,000	
	Cost	$ 504,000	$ 252,000	$ 210,000	$ 252,000	$ 252,000	$ 840,000	$ 420,000	$ 252,000	**$ 3,000,000**
Direct Potable Reuse	FTE	5	1	1	1	1	4	2.5	1	
	Salary	$ 252,000	$ 252,000	$ 210,000	$ 252,000	$ 252,000	$ 210,000	$ 210,000	$ 252,000	
	Cost	$ 1,260,000	$ 252,000	$ 210,000	$ 252,000	$ 252,000	$ 840,000	$ 525,000	$ 252,000	**$ 3,800,000**

EXHIBIT B

Half Moon Bay Terrace Groundwater Basin Watershed Hydrogeologic Report

Half Moon Bay, California

January 31, 2024

Prepared for:

Coastside County Water District

Prepared by:
Roux Associates, Inc.
555 12th Street, Suite 250
Oakland, California 94607

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Table of Contents

Table of Contents (Continued)

Tables

Figures

Table of Contents (Continued)

Appendices

Executive Summary

This hydrogeologic report supporting a feasibility study related to proposed water recycling by Coastside County Water District (Coastside CWD) was prepared by Roux Associates, Inc. (Roux) on behalf of Water Works Engineers (WWE), the prime contractor for the feasibility study. The report covers conditions within the watershed of the Half Moon Bay Terrace Groundwater Basin (Groundwater Basin Number 2-22).

The goal of the overall project is to identify a preferred project for recycled water use within the Coastside CWD service area. Recycled water would serve as a supplemental source of water supply to meet Coastside CWD's anticipated future needs and reduce dependency during drought periods on water imported through the San Francisco Public Utilities Commission's (SFPUC's) Regional Water System (RWS), for example Crystal Springs Reservoir.

Currently, Coastside CWD gets water from the following sources: (1) imported water from SFPUC (Crystal Springs Reservoir and Pilarcitos Reservoir); (2) local surface water (e.g., Pilarcitos Creek); and (3) groundwater. While these sources are anticipated to be sufficient to meet existing and future water demands in normal years, significant water-supply shortages may occur during periods of drought. The addition of recycled water would both diversify and supplement the water portfolio available to Coastside CWD.

Three alternatives are being considered for recycled water including non-potable reuse, indirect potable reuse, and direct potable reuse. For the non-potable reuse option, recycled water could be used at a new fill station, habitat restoration, and/or landscape irrigation. For the indirect potable reuse option, recycled water could serve to replenish the groundwater aquifer or could be used for surface water augmentation. For the direct potable reuse option, this would involve introducing the recycled water back to the existing potable water system.

For this report, the study area is within the Half Moon Bay Terrace Groundwater Basin (groundwater basin) and surrounding Pilarcitos Creek Watershed (watershed for the groundwater basin).[1] This area will be referred to as the "Half Moon Bay Terrace Groundwater Basin Watershed" or "Project Area" throughout this report (Figure 1.1).

Roux has prepared this technical report which not only provides a primer on key groundwater concepts that relate to the Proposed Recycled Water Project, but also provides a description of the proposed project and conceptual groundwater model of the Half Moon Bay Terrace Groundwater Basin Watershed. The technical report focuses on areas affected by the Proposed Recycled Water Project inclusive of surface water characteristics, water rights/uses, groundwater inflows and outflows, hydraulic characteristics of groundwater units, storage characteristics, permitting requirements, and the identification of data gaps, and recommendations.

The recommendations not only include alternative-specific technical considerations, regulatory considerations, and discussion of hydrogeologic feasibility, but also provide recommendations for Coastside CWD to consider. Thus, providing information for Coastside CWD to evaluate future groundwater management in a more granular means, beyond the conceptual discussions that have been presented in this and prior hydrogeologic reports.

[1] Note, in some reports the Pilarcitos Creek Watershed is also referred to as the Arroyo Leon Watershed.

1. Introduction

This hydrogeologic report supporting a feasibility study related to proposed water recycling by Coastside County Water District (Coastside CWD) was prepared by Roux Associates, Inc. (Roux) on behalf of Water Works Engineers (WWE). WWE is the prime contractor for the feasibility study. The report covers conditions within the watershed of the Half Moon Bay Terrace Groundwater Basin (Groundwater Basin Number 2-22).

The goal of the overall project is to identify a preferred project for recycled water use within the Coastside CWD service area. Recycled water would serve as a supplemental source of water supply to meet Coastside CWD's anticipated future needs, provide resiliency to the coastline during natural disasters and emergencies, and reduce dependency during drought periods on water imported through the San Francisco Public Utilities Commission's (SFPUC's) Regional Water System (RWS), for example Crystal Springs Reservoir.

Proposed Recycled Water Project

Currently, the Coastside CWD uses water from the following sources:

- Imported water from SFPUC (Crystal Springs Reservoir and Pilarcitos Reservoir);
- Local surface water (e.g., Pilarcitos Creek); and,
- Groundwater.

While these sources are anticipated to be sufficient to meet existing and future water demands in normal years, significant water-supply shortages may occur during periods of drought. The addition of recycled water would both diversify and supplement the water portfolio available to Coastside CWD. Three alternatives are being considered for recycled water including non-potable reuse, indirect potable reuse, and direct potable reuse.

1.1 Current Scope of Work

The scope of work described below was designed to anticipate issues based on the proposed water-recycling scenarios and to provide hydrogeological background to the feasibility investigation. Additionally, data gaps were identified for refining key aspects of the hydrogeological investigation inclusive of a review of water rights along streams considered for flow augmentation. The current proposed work is foundational to more detailed groundwater modeling that may be required should the groundwater replenishment remain an option after the completion of the feasibility study.

Numerous technical studies have been conducted relating to aspects of the groundwater system that include conceptual model reports, discussions relating to additional groundwater production, water recycling and other aspects of the groundwater basin. These will be discussed in the report in the sections for which their conclusions and recommendations are most relevant. For the purposes of this hydrogeologic review, the current scope of work comprises the following tasks listed below.

Data Review

Roux reviewed hydrogeologic conditions in the Half Moon Bay Terrace Groundwater Basin within San Mateo County, California (Figure 1.1) inclusive of aspects of the groundwater conceptual model. These aspects included inflow and outflow components, hydraulic characteristics of principal water-bearing units, geologic structures, surface flow, and water quality of stream waters considered for flow augmentation. Additionally, a review of water rights along those streams was conducted.

Field Visit

Roux conducted field reconnaissance visits to observe and evaluate key areas of importance relating to proposed project alternatives and the information developed in the data review task. The focus of the field visits was visiting stream reaches where potential recycled water could be used to supplemental flow, and potential recharge areas. Additionally, areas of key hydrogeologic importance were visited as identified during the data and literature search and review.

Regulatory Review

Roux conducted a regulatory review of potential discharge permitting requirements that would be required including additional investigations for a potential stream augmentation scenario for the recycle water. This included a water rights review as they related to the streams where potential recycled water could be used to supplement flow.

Reporting

Roux prepared this technical report which not only provides a primer on key groundwater concepts that relate to the Proposed Recycled Water Project but also provides a description of the proposed project and conceptual groundwater model of the Half Moon Bay Terrace Groundwater Basin Watershed. The technical report focuses on areas affected by the Proposed Recycled Water Project inclusive of surface water characteristics, water rights/uses, groundwater inflows and outflows, hydraulic characteristics of groundwater units, storage characteristics, identification of data gaps, and recommendations. Additionally, in the case of groundwater replenishment either through percolation or injection, the potential extent of groundwater mounding is considered and discussed with respect to groundwater conditions including potential water quality considerations. Climate change effects have also been reviewed and are discussed.

1.2 Location and Physiographic Setting

For this report, the study area is within the Half Moon Bay Terrace Groundwater Basin (groundwater basin) and surrounding Pilarcitos Creek watershed (watershed for the groundwater basin).[2] This area will be referred to as the "Half Moon Bay Terrace Groundwater Basin watershed" or "Project Area" throughout this report (Figure 1.1).[3]

The Half Moon Bay Terrace Groundwater Basin watershed is bounded by the Pacific Ocean on the west, Martini Creek on the north, Tunitas Creek on the south, and by the Montara Mountains/Santa Cruz Mountains to the east. Elevations in the Project Area range from zero at the Pacific coastline, to 2,080 feet above mean sea level (amsl) at King Mountain. Numerous creeks cross the Project Area (see Section 2), with Pilarcitos Creek being the most prominent with the largest watershed.

The Half Moon Bay Terrace Groundwater Basin as defined by the California Department of Water Resources (DWR), is comprised of the basin-fill deposits extending from the base of the Santa Cruz Mountains on the east, to the Pacific coastline on the west (California DWR, 2014). While the groundwater basin (as defined by DWR) covers an area of approximately 9,000 acres, the watershed for the basin covers an area of approximately 18,400 acres (Figure 1.2).

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[2] Note, in some reports the Pilarcitos Creek Watershed is also referred to as the Arroyo Leon Watershed.

[3] Roux was initially asked to focus our efforts solely on Pilarcitos Creek for this report. However, to gather a greater understanding of the area, Roux decided to look at all the sections of the creeks in the area that falls within the Pilarcitos Creek Watershed and the Half Moon Bay Terrace Groundwater Basin (Figure 1.1).

1.3 Climate

The Project Area has been described as having a Mediterranean climate with precipitation generally in the form of winter and spring rains. Summers are typically dry, although regional fog moderates temperatures, reducing evapotranspiration, and meeting some moisture requirements for plants (California DWR, 1999; California DWR, 2014).

The average annual precipitation at the Half Moon Bay Terrace station (period of record from 1939 through 2016) at an elevation of approximately 40 feet amsl is 26.2 inches, with more than half of that precipitation falling during November through February. The average maximum high temperature is 62.2°F and average minimum is 47.1°F. Mean monthly high temperatures range from 58.4°F in January to 66.8°F in September. Mean monthly low temperatures in Half Moon Bay range from 42.9°F in January to 52.7°F in August. Generally, temperatures decrease, and precipitation increases in the surrounding mountains with increasing elevation.

1.3.1 Climate Change Effects

The effects of climate change in California are generally assumed to result in warmer, higher intensity storms that produce more frequent flash flood runoff events, greater evapotranspiration (from both warmer temperatures and longer growing seasons), and reduced groundwater recharge resulting from these described phenomena. These changes are anticipated to be incremental in nature, but of sufficient significance to account for these future climate-related impacts in long-term groundwater management planning. Rising sea level may also result in landward movement of the fresh-salt groundwater interface, resulting in saltwater intrusion to the groundwater basin.

According to the California DWR Sustainable Groundwater Management Act (SGMA) Data Viewer (California DWR, 2023a), the Half Moon Bay Terrace Groundwater Basin has among the highest density (on a percentage basis) of domestic wells that are susceptible to going dry. The decreased groundwater recharge that would be anticipated could exacerbate this issue, if indeed drying domestic wells remains, or is, an issue. Generally, groundwater levels have been relatively stable in the basin so the reduction of groundwater recharge as a result of climate change would need to be of sufficient scale to noticeably affect groundwater levels that lead to the drying of wells.

Roux applied the Cal-Adapt climate data tool (Cal-Adapt, 2023) to develop a Half Moon Bay Local Climate Change Snapshot Report for the Project Area that is provided in Appendix 1.1. The climate report is consistent with observations above, with significant average temperature increases anticipated in the next 40 years of 2 to 4 degrees Fahrenheit while precipitation remains relatively constant. The San Francisco Bay Area Regional Climate Change Assessment (Ackerley et.al., 2018) indicates that the effect of warming temperatures on the presence of the marine-layer clouds and fog and their buffering effects on warm temperatures is still unclear, but that during recent heat waves, marine fogs were absent.

With respect to sea-level rise (that has corresponding effects on groundwater levels inland within the Half Moon Bay Terrace Groundwater Basin and inland migration of the freshwater/seawater interface), the Statewide Summary Report – California's Fourth Climate Change Assessment (Bedsworth, et.al., 2018) and the San Francisco Bay Area Regional Climate Change Assessment presents an analysis of sea-level rise in southern California indicating 3 to more than 6 feet of sea level rise by the end of the century, with values dependent on the emissions assumptions used in the analysis (Ackerley, 2018). Effects of sea-level rise on groundwater elevations and the freshwater-seawater interface could be evaluated more robustly using numerical groundwater modeling tools.

1.4 Land Use

The land use within the Project Area is quite diverse, ranging from mixed use (which contains residential properties) to agricultural, industrial, recreational, and open space (Figure 1.3). In San Mateo County, definitions for land use are provided in the Zoning Regulations by the Planning and Building Department (County of San Mateo, 2022). In addition to San Mateo County's land use definitions, the City of Half Moon Bay has its own zoning regulations (Half Moon Bay Municipal Code, 2023).

For the Feasibility Study, Coastside CWD will need to consider the land use surrounding their proposed recycled water project. For example, if proposing to use the recycled water for agricultural irrigation – where are those agricultural lands located and how far will the recycled water get from the proposed treatment plant to the agricultural land? Will groundwater mounding from groundwater replenishment of recycled water affect surface, or near-surface infrastructure? Additionally, Coastside CWD will need to address how the land use and proposed project might affect nearby water rights (which is discussed further in this report in Section 4.2).

The following sub-sections explain the land use within the Half Moon Bay Terrace Groundwater Basin and the Pilarcitos Creek Watershed (Figure 1.2).

1.4.1 Half Moon Bay Terrace Groundwater Basin

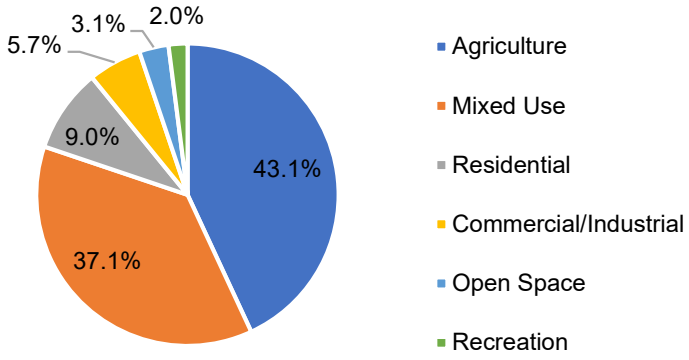
In the Half Moon Bay Terrace Groundwater Basin, the land use is primary agricultural – accounting for over 40% of the total basin, followed closely by mixed use at around 37% (Table 1.1). Mixed use zoning contains a mixture of commercial and residential land. After mixed use, is residential, commercial/industrial (combined),[4] open space, and then recreational (Figure 1.3).

Table 1.1. Half Moon Bay Terrace Groundwater Basin Land Use

Land Use Type	Approximate Acreage	Land Use Percentage
Agriculture	3,884	43.1%
Mixed Use	3,343	37.1%
Residential	808	9.0%
Airport	314	3.5%
Open Space	282	3.1%
Recreation	183	2.0%
Industrial	109	1.2%
Institutional	67	0.7%
Commercial	27	0.3%
Total	**9,017**	**100%**

[4] For commercial/industrial land use, the following land use types were combined: airport, industrial, institutional, and commercial.

Figure 1.4. Half Moon Bay Terrace Groundwater Basin Land Use – Combined



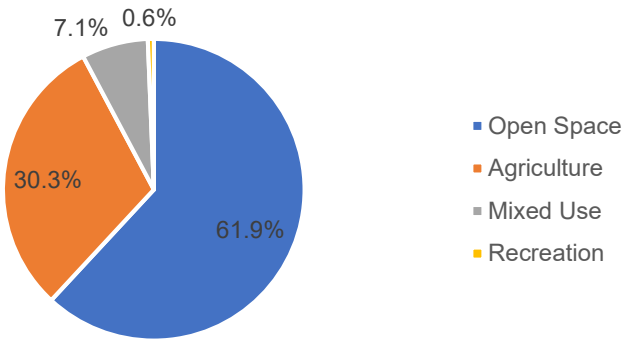
1.4.2 Pilarcitos Creek Watershed Basin

In the Pilarcitos Creek Watershed Basin (also known as the Arroyo Leon Watershed Basin [USGS, 2023i]), the land use is primary open space – accounting for over 60% of the total basin, followed by agricultural at around 30%. After agricultural, is mixed use then recreation (Table 1.2 and Figure 1.5).

Table 1.2. Pilarcitos Creek Watershed Basin Land Use

Land Use Type	Approximate Acreage	Land Use Percentage
Open Space	11,384	61.9%
Agriculture	5,580	30.3%
Mixed Use	1,310	7.1%
Recreation	119	0.6%
Total	**18,392**	**100%**

Figure 1.5. Pilarcitos Creek Watershed Basin Land Use



1.5 Water Rights

In California, there are two types of water with respect to the law: groundwater and surface water. Water flowing in a subterranean stream is treated as surface water in California; however, percolating water is not treated as surface water (California SWRCB, 2020; California SWRCB, 2022; TPL, 2003). A general discussion of the water rights related to groundwater and surface water is provided in Appendix 1.4.

Additionally, a brief summary of the water rights located within the Project Area is included. The implications of existing water rights as they relate to the Proposed Recycled Water use options are described in Section 4.

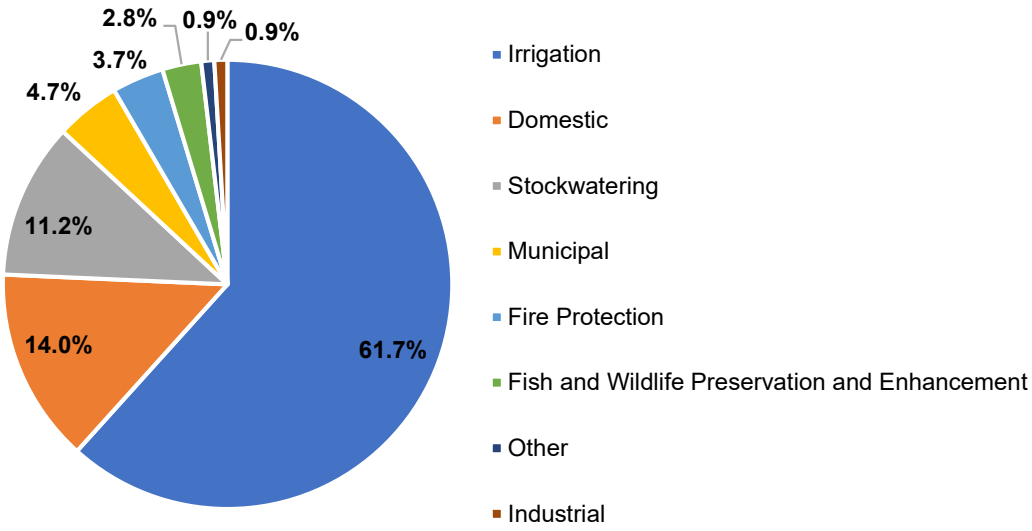
1.5.1 Water Rights in the Project Area

Within the Project Area there are 107 posted water rights, with 77 unique application identification numbers (California SWRCB, 2023a; California SWRCB, 2023b).[5] Of the 107 posted water rights, 50 are located within the Pilarcitos Creek Watershed outside of the groundwater basin boundary, 32 are located within the Half Moon Bay Terrace Groundwater Basin outside of the Pilarcitos Creek Watershed, and the remaining are located in the area overlapped by both the Pilarcitos Creek Watershed and the Half Moon Bay Terrace Groundwater Basin.

Around half (52%) the water rights within the Project Area are appropriative rights. The remaining water rights include temporary permits (around 4%) and statements of intended diversion and use (around 44%).[6] The water rights associated with the statements of intended diversion and use include a mix of riparian and appropriative water rights. A list of these water rights is included on Table 1.3, and if available, corresponding documentation for the water rights is included within Appendix 1.2. The locations of these water rights are provided in Figure 1.6 and Appendix 1.3.

Of the water rights within the Project Area, the water is used for the following beneficial uses: irrigation, domestic, stockwatering, municipal, fire protection, fish and wildlife preservation and enhancement, other, and industrial. Figure 1.7 below breaks down the percentages for each of these beneficial uses. As you can see, within the Project Area, most water rights are used for irrigation purposes (over 60%).

Figure 1.7. Beneficial Uses of Water Rights within the Project Area

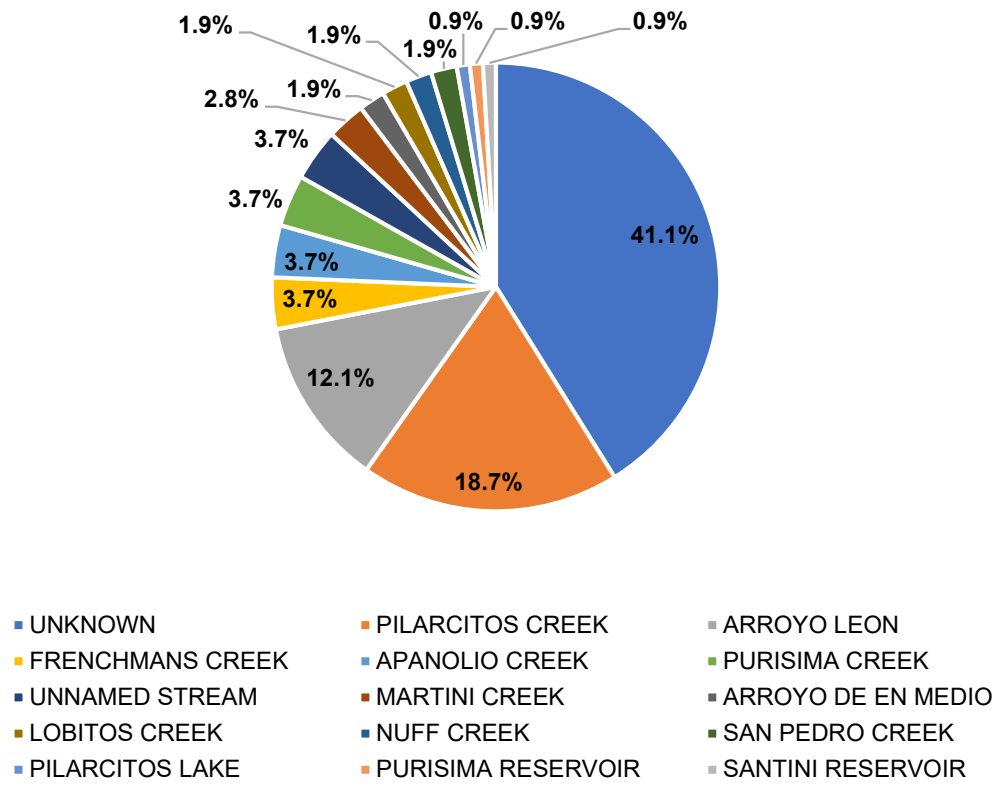


[5] Within the Project Area, water rights were researched in July 2023. It should be noted that some of the posted water rights may be duplicative. In Table 1.3, even if an Application ID is listed more than once, it is included within the table – mainly to track why an application may have changed.

[6] Statement of Diversion and Use: California Water Code §5101 requires each person or organization that uses diverted surface water or pumped groundwater from a known subterranean stream after December 31, 1965 to file with the State Water Board a Statement of Water Diversion and Use prior to February 1 of the following year (California SRWCB, 2022).

Within the Project Area, there are a number of sources which have posted water rights. These sources include unknown (or unlisted water sources), Pilarcitos Creek, Arroyo Leon, and various others. Figure 1.8 below breaks down the percentages for each of these water sources. Within the Project Area, most of the known water rights (as in not including the "unknown" water sources) are located along Pilarcitos Creek (around 19%).

Figure 1.8. Sources of Water Rights within the Project Area



The three largest holders of water rights within the Project Area are Peninsula Open Space Trust (POST, 18.7%), Sky Lawn Memorial Park (10.3%), and Coastside CWD (9.3%). POST has 20 water rights within the Project Area, only 1 is considered inactive. The primary beneficial use of their water rights is for stockwatering and irrigation. Sky Lawn Memorial Park has 11 water rights; however, only 3 remain active – which are all used for irrigation. Coastside CWD has 10 water rights, with 6 active licenses – which are all used for domestic purposes. For information related to the remaining water rights owners within the Project Area refer to Table 1.3.

Of the water rights that are posted within the Project Area, around 30% are either cancelled, revoked, or inactive. However, the remaining water rights (70%) are either licensed, permitted, or claimed. For the status definitions of these water rights, refer to Table 1.3.

1.6 Groundwater Management

The Coastside CWD was formed in 1947 and provides treated water to the City of Half Moon Bay and to the unincorporated communities of Princeton, Miramar, and El Granada. Private wells are permitted within the Coastside CWD service area; therefore, groundwater usage in the Coastside CWD service area is likely higher than the groundwater-supplies utilized by the Coastside CWD. The Half Moon Bay Terrace

Groundwater Basin is not within the boundary of a Groundwater Sustainability Agency under Sustainable Groundwater Management Act (SGMA). The Coastside CWD's distribution of potable water is regulated by the California State Water Resources Control Board (Drinking Water Division) that oversees large water systems that provide drinking water for most of the public.

Groundwater quality issues in the basin are regulated by the California State Water Resources Control Board – San Francisco Bay Region (CRWQCB-SFB). San Mateo County conducts water-related activities such as issuing well permits through the San Mateo County Health Department (Environmental Health Division), and water-quality functions such as monitoring groundwater conditions, overseeing clean-up of pollution caused by leaking underground tanks and chemical spills, and work with other agencies, such as the Environmental Protection Agency (EPA) and the Water Quality Control Boards, to make sure the clean-up process follows State and local laws. The San Mateo County Health Department also manages a Small Water Systems Program regulating these smaller water systems through inspections and other activities (San Mateo County Health Department, 2023a). Other community planning and environmental review activities are conducted through the San Mateo County Planning Department.

A figure with the location of the groundwater wells within the Project Area is shown on Figure 1.9.

1.7 Sources of Information

Roux obtained groundwater and surface water information from Coastside CWD, California DWR, California Department of Fish and Wildlife (CDFW), California SWRCB, CRWQCB-SFB, California Department of Toxic Substances Control (DTSC), California Department of Conservation, EPA, San Mateo County, local newspaper articles, U.S. Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), published articles, and Roux's own library. For a full list of references, refer to Section 6.

2. Surface Water Conditions

Within the Project Area, the following streams (located from north to south) discharge into the Half Moon Bay Terrace Groundwater Basin (Figure 1.2):

- Martini Creek;
- San Vicente Creek;
- Denniston Creek;
- Arroyo de en Medio;
- Frenchman's Creek;
- Pilarcitos Creek;
- Arroyo Canada Verde;
- Purisima Creek; and
- Lobitos Creek.

The surface water conditions of these streams are discussed further in the sub-sections below. For the purposes of the Proposed Recycled Water Project, Pilarcitos Creek is of greatest significance in that one of the proposed alternatives for recycled water is supplementing Pilarcitos Creek flows. Descriptions of the other creeks are provided only to provide descriptions and characteristics of other streams within the Project Area, and to better understand potential inflows into the Half Moon Bay Terrace Groundwater Basin (as discussed in Section 3.5).

2.1 Martini Creek

Martini Creek is an approximately two-mile-long creek with headwaters on the north side of Montara Mountain. Martini Creek outflows to the Pacific Ocean at Montara State Beach (California SWRCB, 2023e). The creek's drainage basin is composed of northern coastal scrub habitat and agricultural land. Based on weekly analysis of indicator bacteria (total coliforms, *Enterococcus*, and *Escherichia coli* [E. Coli]), Martini Creek has passed all its water quality tests in 2023 to date. This is an increase from 2021, which only 67% of the weekly analysis past the water quality tests for indicator bacteria (Swim Guide, 2023). There is an unnamed tributary that drains into Martini Creek, approximately 1.2 miles from its headwaters. Based on the documents reviewed, no USGS or NOAA gages are present along the creek.

There are three water rights associated with Martini Creek in the Project Area. These water rights were filed between 1977 and 2020 and are all associated with the Peninsula Open Space Trust for either stockwatering or irrigation. Of the three water rights, one is currently listed as being inactive (Table 1.3).

2.2 San Vicente Creek

The San Vicente Creek is 3.9 miles long. Its headwaters are on the western side of Montara Mountain, and it outflows to the Pacific Ocean at Fitzgerald Marine Reserve in Moss Beach, California. Additionally, San Vicente Creek flows into the Upper and Lower San Vicente Reservoirs just over a mile from its mouth (Coastside CWD, 2011).

San Vicente Creek and its reservoirs were one focus of the Denniston/San Vicente Water Supply Project that was originally proposed by Coastside CWD in 2011. A limited diversion (the "San Vicente Diversion") has

existed on the San Vicente Creek since the 1900s, and a 1969 water permit (this water right, Permit ID 15882, is just outside the Project Area) allows Coastside CWD to divert up to 2 cubic feet per second (cfs) year-round (more discussion on this permit is provided in Section 2.1.3). As of 2021, the San Vicente Diversion consists of a diversion ditch and sandbag impoundment that supplies water to the Upper San Vicente Reservoir through a pipeline. The diversion is maintained by a local farmer with senior water rights who stores water in upper and lower San Vicente reservoirs (Coastside CWD, 2011).

The Denniston/San Vicente Water Supply Project would replace the seasonal diversion structure with a permanent structure and a pump station. Additionally, the project would include a 6,100-foot-long pipeline to convey San Vicente Creek water to the existing Denniston Reservoir pump station. Due to the importance of the San Vicente reservoirs in recharging groundwater levels, the project will not interfere with maintenance of the reservoirs (Coastside CWD, 2011). Based on the documents reviewed, no USGS or NOAA gages are present along the creek.

According to the California SWRCB, there are six water rights located along San Vicente Creek. The primary owner of five of the water rights is G Lea Family Farms LLC and the primary owner of one of the water rights is Coastside CWD. However, within the Project Area (Figure 1.1 and Figure 1.6) there are no water rights associated with San Vicente Creek.[7]

2.3 Denniston Creek

Denniston Creek is a 4.4-mile-long creek with a four-square mile watershed (Coastside CWD, 2011). Its headwaters are less than half a mile north of Montara Mountain, and it flows into the Pacific Ocean at Pillar Point Harbor. Average annual precipitation for the Denniston Creek watershed is approximately 28 inches, and the main sources of water for the creek are fog, rain, and natural springs. The headwaters of Denniston Creek are composed of erodible granitic rocks, and the creek has five unnamed tributaries fed by natural springs that flow through Miramar coarse sandy loam. Unpaved roads run along large sections of Denniston Creek, and there are a few large agricultural fields adjacent to the creek in the upper portion of the valley (TRC, 2006).

Denniston Reservoir is created by a dam on Denniston Creek, approximately 1.2 miles north of Pillar Point Harbor (Coastside CWD, 2011). The Coastside CWD operates several seasonal wells adjacent to Denniston Creek and downstream of the dam. Denniston Reservoir, which was built to supply water for agriculture in the early 1900s and is equipped with a WTP. As of 2021, the reservoir was dredged by Coastside CWD to remove approximately 500 cubic yards of soil (Coastside CWD, 2021).

The original water rights permit for the reservoir (this water right, Permit ID 15882, is just outside the Project Area), were issued by California SWRCB in 1969 and authorized Coastside CWD to divert 2 cfs from both Denniston and San Vicente Creeks on a year-round basis. The 1969 permit also included “a permanent diversion facility on San Vicente Creek consisting of a sump and pump station (a limited seasonal diversion is in place; improvements to diversion and the pump station are part of proposed project); a 6,100-foot-long 8-inch diameter pipeline from the San Vicente diversion to Denniston Reservoir pump station (part of proposed project); a pump station at the westerly end of Denniston Reservoir (in place); a WTP located northerly of this reservoir (in place and with enhanced treatment capacity approved/in place); and a treated water pipeline from the treatment plant to the existing water distribution system via the Coastside CWD’s other WTP (in place)” (Coastside CWD, 2011).

[7] A portion of San Vicente and Denniston Creeks are within the “Project Area”; however, not the whole portion of those creeks. Therefore, this is why although there are water rights along these creeks, there are no water rights within the “Project Area.”

Based on the documents reviewed, no USGS or NOAA gages are present on Denniston Creek. According to the California SWRCB, there are seven water rights located along Denniston Creek. The primary owners of the water rights include G Lea Family Farms LLC (four water rights), Peninsula Open Space Trust (two water rights), and Coastside CWD (one water right). However, within the Project Area (Figure 1.1 and Figure 1.6) there are no water rights associated with Denniston Creek.[8]

2.4 Arroyo de en Medio

The Arroyo de en Medio is 2.5 miles long and has headwaters approximately 1.5 miles south of Montara Mountain. The Arroyo de en Medio outflows to the Pacific Ocean at Miramar Beach in Miramar, CA. There are no tributaries to the Arroyo de en Medio (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). Based on the documents reviewed, no USGS or NOAA gages are present along the creek.

There are two water rights associated with Arroyo de en Medio in the Project Area. These water rights were filed between 1956 and 2008 and are used for irrigation purposes. Of the two water rights, only one is currently listed as being active (Table 1.3).

2.5 Frenchman's Creek

Frenchman's Creek is an approximately four-mile-long creek located between the towns of Half Moon Bay, and Miramar, California. Its headwaters are approximately 0.25 miles northwest of Scarper Peak, and it outflows to the Pacific Ocean at Venice Beach in the town of Miramar. (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). Based on the documents reviewed, no USGS or NOAA gages are present along Frenchman Creek.

There are four water rights associated with Frenchman's Creek in the Project Area. These water rights were filed between 1946 and 2016 and are used for irrigation and stockwatering purposes – all of which are still active (Table 1.3).

Main Tributaries of Frenchman's Creek

Locks Creek

Locks Creek is an approximately two-mile-long tributary of Frenchman Creek. Its headwaters are on the southeastern side of Montara Mountain, and it flows into Frenchman Creek approximately three miles above the mouth of Frenchman Creek (California SWRCB, 2023e; USGS, 1994; USGS, 2023c). Based on the documents reviewed, no USGS or NOAA gages are present along Locks Creek.

According to the California SWRCB, there are no water rights associated with Locks Creek in the Project Area. However, it should be noted that this tributary is located outside the Project Area.

2.6 Pilarcitos Creek

One of the recycled water use alternatives being considered by Coastside CWD is supplementing flow to Pilarcitos Creek. Pilarcitos Creek, the largest stream within the Project Area, is an approximately 13.5-mile-long creek with headwaters along the northeast side of North Peak Mountain, approximately 1.5 miles above Pilarcitos Lake. The creek drains westward and discharges into the Pacific Ocean between Venice Beach and Elmar Beach in the City of Half Moon Bay, California (California SWRCB, 2023e; USGS, 1994; USGS, 2023c). Elevations along the creek range from over 2,000 ft amsl to sea level. Vegetation along Pilarcitos

[8] A portion of San Vicente and Denniston Creeks are within the "Project Area"; however, not the whole portion of those creeks. Therefore, this is why although there are water rights along these creeks, there are no water rights within the "Project Area."

Creek consists primarily of shrubs and grasslands (Todd, 2003). Near the headwaters of Pilarcitos Creek is Pilarcitos Lake (also known as Pilarcitos Reservoir). Pilarcitos Lake is a reservoir maintained and operated by SFPUC.

The water quality of Lower Pilarcitos Creek is lower when compared to other coastal streams within the Project Area. For example, Pilarcitos Creek consistently shows high fecal coliform counts compared to other coastal streams. Additionally, Pilarcitos Creek historically has had high levels of total dissolved solids (TDS), total suspended solids (TSS), zinc, copper, nitrate, and orthophosphate. Potential sources of contamination include horse manure, fecal waste from seagulls, agricultural activity, and the Ox Mountain Landfill (PWA, 2008). For a list of sites of environmental concern within the Project Area, refer to Section 3.7.

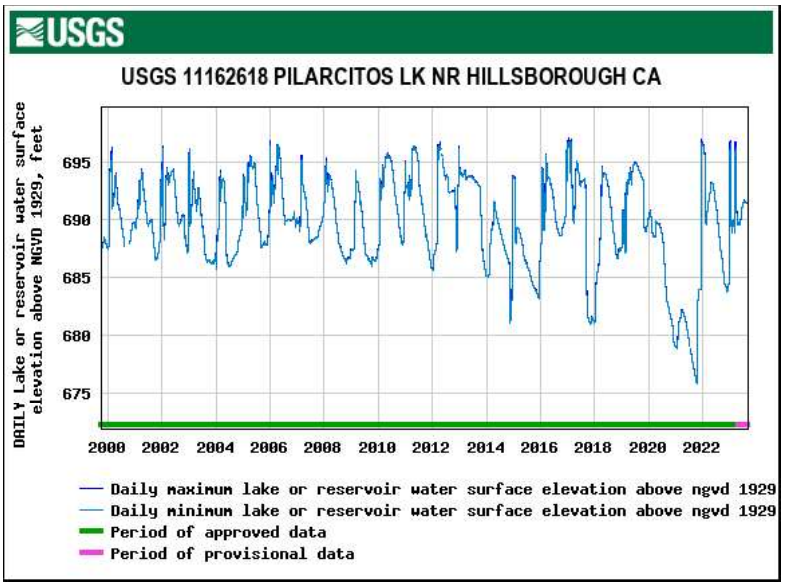
There are several main tributaries along Pilarcitos Creek: Apanolio Creek, Arroyo Leon, Corrinda Las Trancos Creek, Madonna Creek, Mills Creek, and Nuff Creek. Descriptions of these tributaries are provided below. Most of the lands around Pilarcitos Creek and its tributaries consist of agricultural land, primarily for flowers, crops, Christmas trees, and irrigated pasture. It should be noted that significant portions of the land around Upper Pilarcitos Creek and its tributaries are protected by the SFPUC. Additionally, much of the land between Pilarcitos Creek and Arroyo Leon is protected from urban development by POST. However, there are some residential lands present, especially along Highway 92 (Todd, 2003).

The USGS operates five gages along Pilarcitos Creek (starting from the headwaters, downstream to the mouth of the creek): Pilarcitos Lake (USGS, 2023c), Pilarcitos Creek below spillway (USGS, 2023d), Pilarcitos Creek above stone dam (USGS, 2023e), Pilarcitos Creek below stone dam (USGS, 2023f), and Pilarcitos Creek at Half Moon Bay (USGS, 2023g). The first four USGS gages are located in the highlands and the last gage is located in the lowlands. Pilarcitos Creek at Half Moon Bay began collecting data in 1966, Pilarcitos Creek below Stone Dam began collecting data in 1997, Pilarcitos Lake began collecting data in 1999, Pilarcitos Creek above Stone Dam began collecting data in 2022, and Pilarcitos Creek below spillway also began collecting data 2022. A summary of the data from each of these gages is provided below and included within Appendix 2.1.

USGS 11162618, Pilarcitos Lake (USGS, 2023c)

Measurements at the USGS gage at Pilarcitos Lake began in 1999 (Appendix 2.1). Data from this gage include daily records of the lake surface water elevation (Figure 2.1 below). Based on the data, the highest surface water measurement was recorded in February 2017 and lowest surface water measurement was recorded in September 2021.

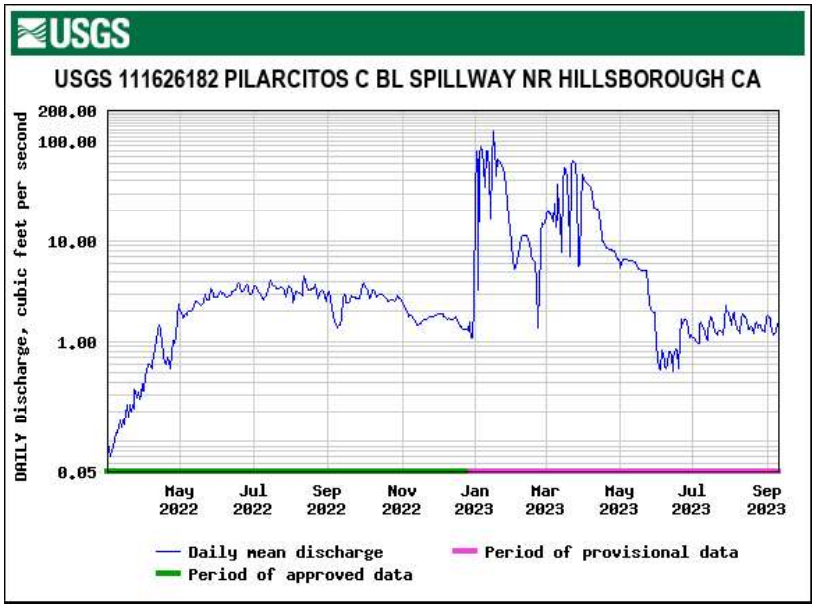
Figure 2.1. Pilarcitos Lake Surface Water Elevation



USGS 111626182, Pilarcitos Creek Below Spillway (USGS, 2023d)

Measurements from the USGS gage on Pilarcitos Creek, below the spillway, began in 2022. Data from this gage includes daily recordings of stream discharge, peak streamflow, and field measurements. Based on the data, the highest average stream discharge was recorded on January 16, 2023 at 124 cfs and the lowest average stream discharge was recorded on March 4, 2022 at 0.07 cfs (Figure 2.2). The channel at this location along the creek is described as having a soft stability, even terrane, and consisting of sand and silt-like materials (Appendix 2.1). Given the recency of installation, this data record only reflects conditions during a record wet season, and a longer data record is needed to evaluate streamflow characteristics at this location.

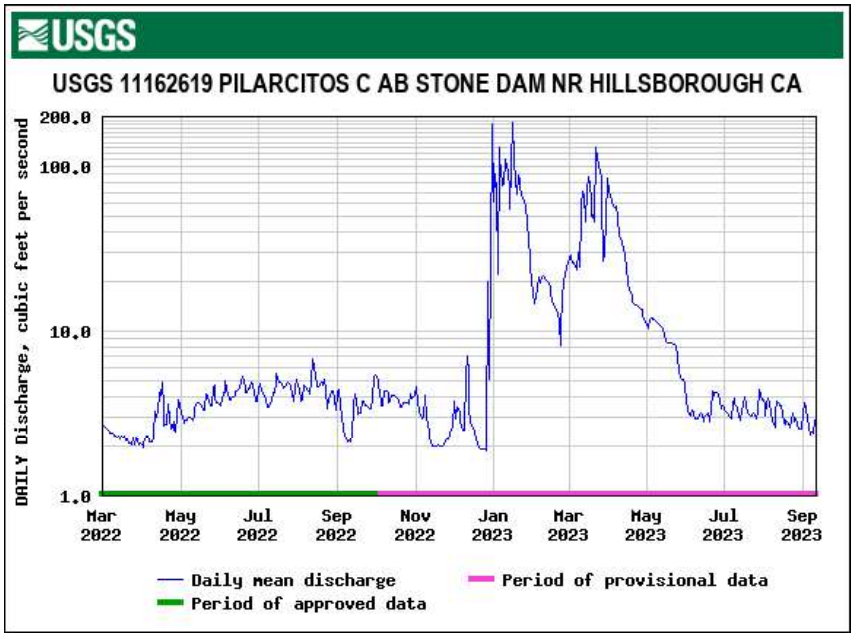
Figure 2.2. Pilarcitos Creek Below Spillway Daily Stream Discharge



USGS 11162619, Pilarcitos Creek Above Stone Dam (USGS, 2023e)

Measurements from the USGS gage on Pilarcitos Creek, above the stone dam, began in 2022. Data from this gage includes daily recordings of stream discharge, peak streamflow, and field measurements. Based on the data, the highest average stream discharge was recorded on January 1, 2023 at 186 cfs and the lowest average stream discharge was recorded on December 26, 2022 at 1.83 cfs (Figure 2.3). The channel at this location along the creek is described as having a predominately firm stability, even terrane, and consisting of gravel and sand-like materials (Appendix 2.1). Similar to the previous station, this record only presents data from a record wet season and the data record is insufficient to evaluate stream characteristics.

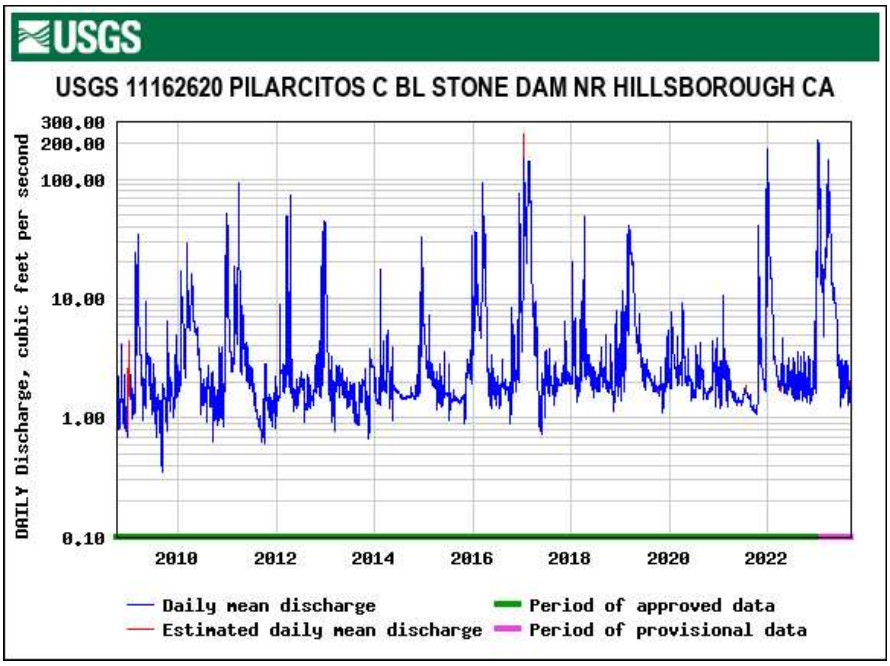
Figure 2.3. Pilarcitos Creek Above Stone Dam Daily Stream Discharge



USGS 11162620, Pilarcitos Creek Below Stone Dam (USGS, 2023f)

Measurements from the USGS gage on Pilarcitos Creek, below the stone dam, began in 1997. Data from this gage includes daily recordings of stream discharge, peak streamflow, field measurements, and water quality. Based on the data, the highest daily stream discharge was recorded on January 10, 2017 (240 cfs) and the lowest daily stream discharge was recorded on August 30, 2009 at 0.35 cfs (Figure 2.4). Throughout the dataset, the temperature ranged from 38.3˚F (December 10, 2013) to 55.3˚F (August 14 and August 15, 2020). The channel at this location along the creek is described as having a predominately firm stability, a mixture of even and uneven terrane, and consisting of gravel, cobbles, and boulders (Appendix 2.1).

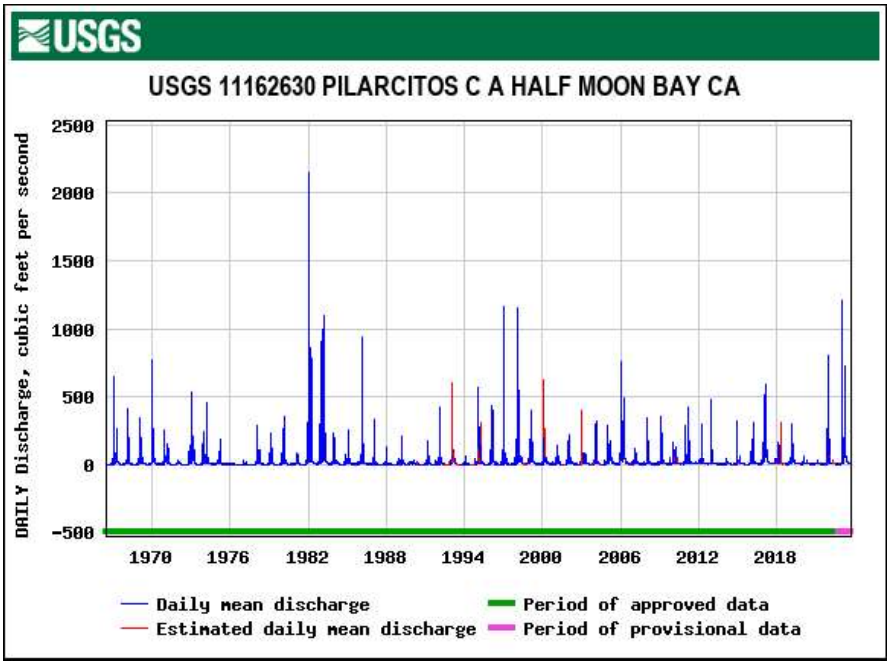
Figure 2.4. Pilarcitos Creek Below Stone Dam Daily Stream Discharge



USGS 11162630, Pilarcitos Creek at Half Moon Bay (USGS, 2023g)

Measurements from the USGS gage on Pilarcitos Creek, at Half Moon Bay, began in 1966. Data from this gage includes daily recordings of stream discharge, peak streamflow, field measurements, and water quality. Based on the data, the highest average stream discharge was recorded on January 4, 1985 at 2,150 cfs and the lowest average stream discharge was 0.00 cfs, for multiple dates (Figure 2.5). The channel at this location along the creek is described as having soft and firm stability, having predominantly even terrane, and consisting of gravel, sand, and silt-like materials (Appendix 2.1).

Figure 2.5. Pilarcitos Creek at Half Moon Bay Daily Stream Discharge



Based on these USGS data, the portion of Pilarcitos Creek with the highest average daily discharge is the location at Half Moon Bay. Here, the average daily discharge is generally an order of magnitude larger than the other creek gage locations. That being said, it is also the location that has some of the lowest daily discharge rates. For example, at the Pilarcitos Creek gage at Half Moon Bay, there are several dates throughout the dataset in which the daily discharge is 0.00 cfs (Appendix 2.1). Based on the information available on USGS' website, it is unclear why this location experiences such a fluctuation in stream discharge. However, it is likely the result of drought conditions and surface water usage patterns. This could also be an effect of other surface water management activities.

There are 20 water rights associated with Pilarcitos Creek in the Project Area – the highest number of water rights out of the creeks that drain into the Half Moon Bay Terrace Groundwater Basin. These water rights were filed between 1955 and 2014 and used for the following beneficial purposes: irrigation (55%), domestic (30%), fire protection (10%), and industrial (5%). Out of the 20 water rights, only 5 are listed as either revoked or inactive (Table 1.3). The implications of these water rights for the Proposed Recycled Water Project are discussed in Section 4.

Main Tributaries of Pilarcitos Creek

The following tributaries to Pilarcitos Creek are also important to understand relative to the Proposed Recycled Water Project. These streams are largely undeveloped and can be prone to flooding during storm events. These conditions could make discharging recycled water to Pilarcitos Creek problematic during periods of the wet season.

Apanolio Creek

Apanolio Creek (also referred to as Digges Canyon) is a 3.6-mile-long tributary to Pilarcitos Creek that drains an approximately 2.1-square mile watershed (CDFW, 2013a). Its headwaters are less than a mile southeast of Ox Hill, and it flows south through Diggs Canyon to meet Pilarcitos Creek approximately 2.5 miles from Half Moon State Beach, where the Pilarcitos outflows into the Pacific Ocean (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). Elevations in the Apanolio watershed range from about 105 feet at the mouth of the creek to 1,742 feet at the headwaters. Vegetation in the watershed is primarily grassland and herbaceous forest. Ninety-nine percent (99%) of the land in the watershed is classified as undeveloped by the California CDFW, while less than 1% is classified as urban or agricultural. Additionally, 99% of the land in the Apanolio Creek watershed is privately owned (CDFW, 2013a). Based on the documents reviewed, no USGS or NOAA gages are present along Apanolio Creek.

There are 4 water rights associated with Apanolio Creek in the Project Area. These water rights were filed between 1955 and 2011 and used for the following beneficial purposes: irrigation and domestic. Out of the 4 water rights, there are currently 2 listed as inactive (Table 1.3).

Arroyo Leon

Arroyo Leon is a 6.5-mile-long tributary to Pilarcitos Creek that drains an 8.6-square mile watershed (CDFW, 2013b). Its headwaters are approximately half a mile west of King's Mountain, and it flows west through Higgins Canyon to meet Pilarcitos Creek just 1.5 miles from the Pacific Ocean. Mills Creek is a tributary of the Arroyo Leon (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). Based on the documents reviewed, no USGS or NOAA gages are present along the Arroyo Leon Creek.

There are 13 water rights associated with the Arroyo Leon in the Project Area. These water rights were filed between 1977 and 2014 and used for the following beneficial purposes: irrigation (around 54%);

stockwatering (around 23%); domestic (around 15%); and other (around 7%). Out of the 13 water rights, there are currently 4 listed as either cancelled or inactive (Table 1.3).

Corrinda Los Trancos Creek

Corrinda Los Trancos Creek is an approximately 1.5-mile-long tributary to Pilarcitos Creek. Its headwaters are less than half a mile south of the end of Digges Canyon Road, and it joins the Pilarcitos approximately 3 miles from the mouth of the Pilarcitos (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). The Corrinda Los Trancos Creek was impacted by a flood event the week of December 12, 2021. Debris from Corrinda Los Trancos clogged a culvert operated by Caltrans, causing flooding on Highway 92. On December 14, the town of Half Moon Bay reported 4.87 inches of rain in the past 72 hours, almost exceeding the average December rainfall total in the town of 5.17 inches. Flooding was also observed in Pilarcitos Creek during this rain event (Half Moon Bay Review, 2021). Based on the documents reviewed, no USGS or NOAA gages are present along the Corrinda Los Trancos Creek.

According to the California SWRCB, there are no water rights associated with Corrinda Los Trancos Creek in the Project Area.

Madonna Creek

Madonna Creek is an approximately 2.5-mile-long tributary of Pilarcitos Creek. Its headwaters are about a mile north of Burleigh H. Murray Ranch State Park, and Madonna Creek joins the Pilarcitos approximately 2.5 miles before the confluence of Pilarcitos Creek and the Pacific Ocean (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). In 2020, the Midpeninsula Regional Open Space District detected high concentrations of lead and petroleum in soils at a junk yard at the former Madonna Creek Ranch. These chemicals, primarily from three cars and more than 30 car batteries dumped at the site, were detected 20 feet below the ground in some areas. Due to the site's proximity to Madonna Creek, Midpeninsula Regional Open Space District contracted Engineering/Remediation Resources Group Inc. to remove contaminated soil. Tests confirmed that contaminants were removed from the area (Half Moon Bay Review, 2020). Based on the documents reviewed, no USGS or NOAA gages are present along the Corrinda Los Trancos Creek.

According to the California SWRCB, there are no water rights associated with Madonna Creek in the Project Area.

Mills Creek

Mills Creek is an approximately four-mile-long tributary to the Arroyo Leon (which is a tributary of the Pilarcitos Creek). Its headwaters are approximately a mile to the northwest of King's Mountain, and it flows into the Arroyo Leon 1.4 miles before the confluence of the Arroyo Leon and the Pilarcitos Creek (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). Based on the documents reviewed, no USGS or NOAA gages are present along Mills Creek.

According to the California SWRCB, there are no water rights associated with Mills Creek in the Project Area.

Nuff Creek

Nuff Creek is an approximately two-mile-long tributary of Pilarcitos Creek. Its headwaters are on the southern side of Corrinda Los Trancos Mountain, and it joins the Pilarcitos approximately 4.2 miles from the mouth of the Pilarcitos (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). Based on the documents reviewed, no USGS or NOAA gages are present along Nuff Creek.

There are two water rights associated with Nuff Creek in the Project Area. These water rights were filed in 1975 and 2014 and are used for fish and wildlife preservation and enhancement as well as irrigation – both of which are still active (Table 1.3).

2.7 Arroyo Canada Verde

Arroyo Canada Verde (also known as Canada Verde Creek) is an approximately 2.5-mile-long creek south of the town of Half Moon Bay, California. Its headwaters are approximately 0.5 miles west of McGovern Ridge, and it flows into the Pacific Ocean at Manhattan Beach, approximately 0.2 miles south of Miramontes Point (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). There are no significant tributaries along Arroyo Canda Verde, and based on the documents reviewed, no USGS or NOAA gages are present along the Arroyo Canada Verde.

According to the California SWRCB, there are no water rights associated with Arroyo Canda Verde in the Project Area.

2.8 Purisima Creek

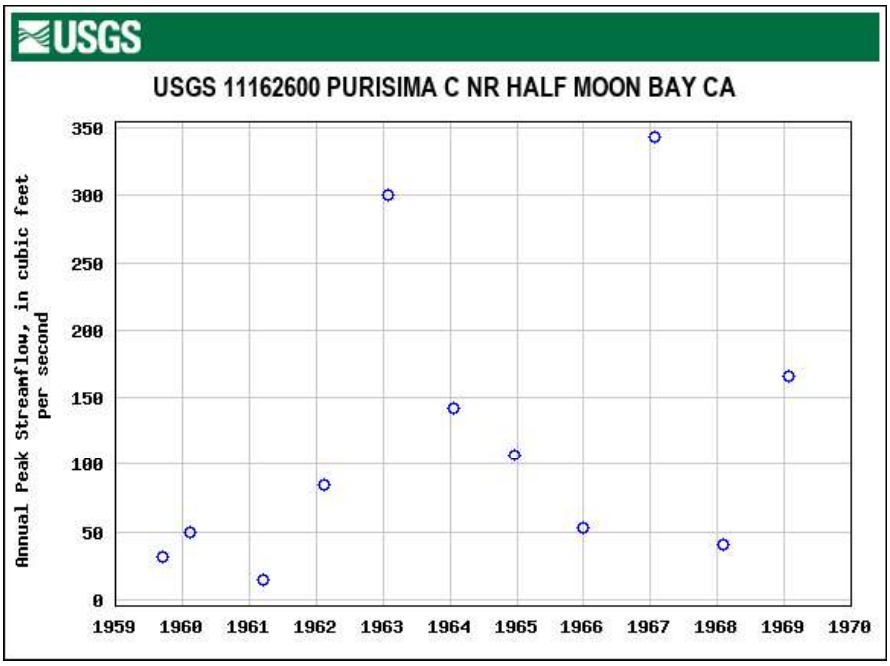
Purisima Creek is an eight-mile-long creek with headwaters on the south side of King's Mountain in San Mateo County and a drainage area of 4.83 square miles (USGS, 1994; USGS, 2023b). The creek flows a narrow, bedrock canyon before outflowing to the Pacific Ocean approximately 4.5 miles south of Half Moon Bay (USGS, 1994).

One USGS gage (Purisima C NR Half Moon Bay, USGS 11162600) was located downstream of Walker Gulch, approximately 4.1 miles from the mouth of Purisima Creek (USGS, 2023a; USGS, 2023b). The gage operated from October 1958 through October 1969 and recorded 4,021 daily stream discharge measurements. In addition to stream discharge, the gage also collected peak streamflow data (1959 through 1969; 11 data points), field measurements (2015 and 2021; 2 data points), and field water quality samples (1977 and 2015; 2 data points). The USGS does not provide an explanation for why the Purisima Creek gage went offline in 1969 (USGS, 2023b).

The mean daily discharge records (in cfs) from October 1, 1958 through October 3, 1969 are provided on Table 2.1. Based on the stream gage data exported from USGS, it appears that Purisima Creek has the highest stream discharge in the months of January (mean 7.7 cfs) and February (8.3 cfs), while the lowest stream discharge occurs in the months of August and September (both with a mean of 0.8 cfs). This is concurrent with the highest precipitation occurring in the winter months within the Project Area.

The annual peak streamflow for the gage on Purisima Creek is shown on Figure 2.6 below. Based on the data, it appears that the highest annual peak streamflow was documented in 1967 and the lowest annual peak streamflow was documented in 1961 (USGS, 2023b).

Figure 2.6. Purisima Creek Annual Peak Streamflow



On September 2, 2015 and September 2, 2021, the USGS collected manual field measurements of streamflow, channel width, channel velocity, channel stability, channel material, and channel evenness (see Table 2.2 below). This data shows that the Purisima Creek material changed from gravel to silt, the creek nearly doubled in width, and the channel velocity and streamflow decreased from 2015 to 2021. A large storm event may have widened the channel and transported gravel sediments from upstream of the sample point. However, the cause of this change is unclear from the available USGS data. USGS does not provide context for why these additional field measurements were collected. (USGS, 2023b).

Table 2.2. Purisima Creek Field Measurements

Sample Date	Streamflow (cfs)	Channel Width (ft)	Channel Area (ft^2)	Channel Velocity (ft/s)	Channel Stability	Channel Material	Channel Evenness
2015-09-02	0.34	3.50	0.67	0.51	Firm	Gravel	Even
2021-09-02	0.30	6.50	2.78	0.11	Soft	Silt	Even

Additionally, USGS collected water quality samples at the gage location on August 29, 1977 and September 2, 2015. The 1977 surface water sample was analyzed for general water quality parameters (temperature, specific conductance, dissolved oxygen [DO], pH), inorganic anions (chloride, nitrate and nitrite, sulfate), metals (iron, boron, silica), and alkalinity (bicarbonate, carbonate, hardness). However, fewer parameters were analyzed from the 2015 surface water sample, which included stream width, temperature, and specific conductance (USGS, 2023b). Table 2.3 provides a summary of the water quality data collected by USGS at the Purisima Creek gage.

There are four water rights associated with Purisima Creek in the Project Area. These water rights were filed between 1995 and 2011 and are used for irrigation and domestic purposes. Of the four water rights, only one is currently listed as being active (Table 1.3).

Main Tributaries of Purisima Creek

Higgins Purisima Creek

Higgins Purisima Creek is an approximately three-mile-long tributary of Purisima Creek. Higgins Purisima Creek flows into Purisima Creek at Whittemore Gulch, approximately 4.5 miles from the mouth of Purisima Creek (California SWRCB, 2023e; USGS, 1994; USGS, 2023c). It should be noted that some agencies identify this portion of the creek as part of Purisima Creek and not as a tributary to Purisima Creek .

According to the California SWRCB, there are no water rights associated with Higgins Purisima Creek in the Project Area.

2.9 Lobitos Creek

Lobitos Creek is an approximately 4.8-mile-long creek with headwaters on the north side of Bald Knob. The creek flows into the Pacific Ocean at Martin's Beach, six miles south of the town of Half Moon Bay, California. Lobitos Creek has no significant confluences (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). Based on the documents reviewed, no USGS or NOAA gages are present along Lobitos Creek.

There are two water rights associated with Lobitos Creek in the Project Area. These water rights were filed in 1960 and 2007 and are used for irrigation and domestic purposes – both of which are still active (Table 1.3).

Main Tributaries of Lobitos Creek

School House Creek

School House Creek is 0.5-mile-long tributary of Lobitos Creek. School House Creek flows into Lobitos Creek at the junction of Lucy Lane and Verde Road in Lobitos, California, approximately 0.75 miles before Lobitos Creek meets the Pacific Ocean at Martin's Beach. The headwaters of School House Creek are southeast of the confluence with Lobitos Creek, and the creek follows Lobitos Creek Cut-Off Road (California SWRCB, 2023e; USGS, 1994; USGS, 2023h). Based on the documents reviewed, no USGS or NOAA gages are present along School House Creek.

According to the California SWRCB, there are no water rights associated with School House Creek in the Project Area.

3. Half Moon Bay Terrace Groundwater Basin Watershed – Conceptual Model

3.1 Geologic Conditions and Regional Setting

The Project Area consists of the Half Moon Bay Terrace Groundwater Basin and Pilarcitos Creek watershed (Figure 1.1). In this report, the Project Area may also be referred to as the "Half Moon Bay Terrace Groundwater Basin watershed." The Project Area is located along the Pacific Coast, in San Mateo Couty – south of the City of San Francisco. The Half Moon Bay Terrace Groundwater Basin watershed drains westward toward Half Moon Bay and the Pacific Ocean (Figure 1.2). Elevations range from approximately 2,000 feet amsl (Montara Mountain and Kings Mountain) to sea level. Vegetation in the Project Area is primarily grassland and herbaceous forest (CDFW, 2013b). Most of the land in the Project Area is classified as undeveloped by the CDFW and is privately owned (CDFW, 2013b). However, of the land that is developed, most of it is along the stream valleys or the coast (Todd, 2003).

The watersheds that surround the Project Area include, the following: San Pedro Creek, Denniston Creek, San Mateo Creek, and Purisima Creek. The location of these watersheds is shown on Figure 3.1. In addition to the Pilarcitos Creek Watershed (also known as the Arroyo Leon Watershed), the following other watersheds also drain into the Half Moon Bay Terrace Groundwater Basin: Denniston Creek and Purisima Creek.

The Project Area is marked by several unique features, including preserved records of sea level change in the marine terraces, wave-cut cliffs, evidence of folding (synclines and anticlines) and faulting, bluffs, sea stacks, sea caves, groves of ancient redwood trees, landslides, mountains, ridges, valleys, and beaches. These features display the range of topography within the Project Area.

The Project Area is within the Coast Range geomorphic province, which is substantially comprised of a thick sequence of Mesozoic and Cenozoic-aged sedimentary strata. The province is spilt into two portions, a northern and a southern portion, separated by the San Francisco Bay. The Coast Range consists of northwest-trending mountains and valleys that are subparallel to the San Andreas Fault. East of the San Andreas Fault is the Jurassic-Cretaceous Franciscan Complex and west of the San Andreas is the Cretaceous Salinian Block (CGS, 2002). The Franciscan Complex consists predominately of sandstone (graywacke) and mudstone (shale) with minor amounts of chert, limestone, greenstone, serpentinite, and mélanges. The Franciscan Complex is highly prone to landslides, due to the presence of serpentine. The Salinian Block consists of granitic rocks, which represent a piece of the old volcanic arc that was transported northward along the San Andreas Fault and placed outboard (west) of the Franciscan Complex (Anderson, 2001). Within the Coast Range geomorphic province, the coastline is uplifted, terraced, and wave-cut (CGS, 2002). These characteristics are present in the Half Moon Bay area.

To further understand the regional changes that the Proposed Recycled Water Project could have on the Project Area, a qualitative conceptual model was developed. This conceptual model consists of a description of the hydrogeologic units, geologic structure, aquifer characteristics, groundwater inflows and outflows, trends in groundwater elevation, and groundwater water quality within the Project Area.

3.2 Aquifer Characteristics and Hydrogeologic Units

For the purposes of this report, the aquifer characteristics (effective porosity, transmissivity, and hydraulic conductivity) are of substantial importance in evaluating the effects of the proposed recycled water alternatives, particularly those effects of using recycled water for groundwater replenishment. The effective porosity of a soil or rock is the available open space between particles available for water to flow through. It is typically expressed in terms of a percentage. Transmissivity is a measure of an aquifer's ability to transmit groundwater, while the related term "hydraulic conductivity" is equivalent to the aquifer's permeability and is equal to the transmissivity divided by the saturated thickness of the aquifer. When discussing the ability for a soil or rock to transmit water in terms of a constant then, hydraulic conductivity can be most useful as the transmissivity of an aquifer will vary with changing aquifer or groundwater level conditions. The following paragraph provides a summary of the published available aquifer characteristics within the Project Area:

> *"… the marine terrace aquifer near the proposed Lower Pilarcitos Creek wellfield has a transmissivity of about 16,000 gpd/ft [gallons per day per foot], an aquifer thickness of about 32 feet, a resulting hydraulic conductivity of approximately 500 gpd/ft^2 [gallons per day per square foot] and is confined. The marine terrace aquifer near the Balboa wellfield has a transmissivity of about 9,400 gpd/ft, an aquifer thickness of about 42 feet, a resulting hydraulic conductivity of about 224 gpd/ft^2, and a storativity of 0.0011 (confined aquifer). In regions south of the proposed Lower Pilarcitos Creek wellfield, the transmissivity is lower, ranging between 1,500 and 7,000 gpd/ft. Regional informal pumping tests and empirical analysis of the data suggest that the transmissivity may range between 1,000 and 5,500 gpd/ft for bedrock and marine terrace aquifers, respectively. In general, the informal pumping test data are consistent with formal aquifer and well testing" (Todd, 2003).*

The Project Area consists of sedimentary, igneous, and metamorphic rocks with recent alluvium and colluvium (California Department of Conservation, 2015; Figure 3.2). The Half Moon Bay Terrace Groundwater Basin Watershed is situated on a westward sloping marine terrace, composed of four main hydrogeologic units, from youngest to oldest: recent alluvium (Holocene alluvium); marine terrace deposits (Pleistocene-age); consolidated sedimentary rocks (Pliocene Purisima Formation); and igneous rocks (Cretaceous Montara Granitic rocks). A description of these hydrogeologic units is provided in the sub-sections below.

3.2.1 Holocene Alluvium

The Holocene alluvium consists of unconsolidated, moderately-sorted sand and gravel (California DWR, 1999; California DWR, 2014). Within the Project Area, coarse-grained alluvium is present along the stream floodplains, colluvium is present in the upper reaches of Pilarcitos Creek, beach and sand dunes are present along the coastline, artificial fill is present around urban areas, and alluvial fans are present along the coastline (California DWR, 1999; California DWR, 2014; Todd, 2003). Because these surficial materials are thin and limited in extent, they are not significant aquifers within the Project Area (Todd, 2003).

3.2.2 Pleistocene Marine Terrace Deposits

The Pleistocene-aged marine terrace deposits consist of poorly to moderately consolidated marine, eolian, and alluvial sand, silt, gravel, and clay. The marine terrace deposits lie unconformably on top of the Purisima Formation and are located along the coastline (California DWR, 2014). These deposits are approximately 30 to 60 feet thick and make up the main aquifer in the Half Moon Bay Terrace Groundwater Basin (Todd, 2003).

Previous investigations have been conducted on the marine terrace deposits throughout the Project Area to better understand its hydraulic properties. The investigations determined that transmissivity values range from 1,500 gpd/ft (south of the Lower Pilarcitos Creek wellfield) to 16,000 gpd/ft (near the Lower Pilarcitos

Creek wellfield), that hydraulic conductivity values range from 224 gpd/ft^2 (near the Balboa wellfield) to 500 gpd/ft^2 (near the Lower Pilarcitos Creek wellfield), and that the marine terrace aquifer's storativity is 0.0011 – indicating a confined aquifer. Fine-grained deposits at the distal portion of an alluvial fan reduce the hydraulic connection between a surface water and associated underlying aquifer materials (Reading, 1981; Walker, 1981). Therefore, within the Project Area, it is likely that the fine-grained (clay and silt) deposits (from the Holocene alluvium) created a relatively impermeable cap to the marine terrace aquifer, resulting in the confined aquifer conditions (Todd, 2003).

3.2.3 Pliocene Purisima Formation

The Pliocene-aged Purisima Formation consists of highly fractured, well-indurated, soft- to medium-hard, fossiliferous mudstone, siltstone, and sandstone. The formation rests nonconformably on top of the Cretaceous Montara Mountain granitic rock and is believed to be hundreds of feet thick. Within the Project Area, the Purisima Formation outcrops just west of the Half Moon Bay Airport and underlies most of the Pleistocene marine terrace deposits (California DWR, 1999; California DWR, 2014). The Purisima Formation is considered nonwater bearing; however, where groundwater is present in fractures, the water quality is usually poor, with elevated concentrations of TDS, chloride, iron, and manganese (Todd, 2003).

3.2.4 Cretaceous Montara Mountain Granitic Rock

The Cretaceous-aged Montara Mountain granitic rock is part of a much larger magmatic arc complex known as the Salinian Block. The Montara Mountain granitic rocks consist of highly fractured, medium to coarsely–grained crystalline rock. Within the Project Area, the granitic rock forms the mountains directly east of the coastline and underlies the younger geologic formations (California DWR, 1999; California DWR, 2014).

3.3 Geologic Structure

The Project Area bedrock has been heavily faulted and folded by north-northwest trending strike-slip faults (Figure 3.2). The most significant faults passing through the Project Area include the Pilarcitos Fault and the Seal Cove Fault (a splay of the San Gregorio Fault Zone [USGS, 2014]). These faults are right-lateral strike-slip faults trending northwest-southeast. Other smaller faults, likely associated with the aforementioned, make up the fault zones associated with the Pilarcitos and Seal Cove Faults. The San Andreas Fault, although outside of the Project Area, boarders the Project Area to the east. Although the lateral motion of the strike-slip faulting dominates the tectonic regime throughout the Project Area, thrust faulting resulting from the oblique geometry of the local fault zones is also present.

The compressional forces (i.e., thrust faulting) along the Pilarcitos and Seal Cove fault zones has resulted in the uplift and deformation of bedrock in the Project Area (USGS, 2014a). Most notably, right-lateral motion along the Pilarcitos and Seal Cove Faults have created a synclinal fold (a U-shaped folding of bedrock) dipping to the west-northwest, sub-perpendicular to the trend of local strike-slip faults, in rocks consisting of Miocene to Paleocene-age (5.3 to 66 million years old) marine rocks (i.e., sandstone, shale, siltstone, conglomerate, and breccia). The synclinal fold dips to the northwest away from the Santa Cruz Mountains to the east (USGS, 2014).

Faults commonly serve as barriers to groundwater movement, while in rock aquifers, the broken areas along faults may provide conduits to flow. The effects of these geologic structures on the hydraulic characteristics of the aquifers (e.g., the ability for the faults to impede groundwater movement) is unclear. At this time, we do not have the raw data for the aquifer testing reported in Todd (2003). Should those data become available, review may provide insight into this issue.

3.4 Regional Groundwater Inflow and Outflow

The volume of water in storage is an important aspect of the groundwater system. Changes in storage are identified in the field by changes in groundwater levels. A fundamental groundwater equation and the basis for evaluations of groundwater budgets (inflow vs. outflow estimates) is provided below:

Inflow – Outflow = Change in Storage

When outflow (groundwater discharge both directly in-basin or through underflow to surrounding basins) exceeds inflow (groundwater recharge in basin plus contributions from surrounding basins), there is a negative change in groundwater in storage and groundwater levels can be expected to decline. When inflow exceeds outflow, the reverse is true. When the system is in equilibrium, water levels will generally remain relatively constant despite short-term fluctuations. Where they occur, long-term groundwater level declines are a clear indication that outflow has been exceeding inflow for an extended period. It should also be noted that in many areas, the recovery of groundwater levels following groundwater being removed from storage can take much longer than the period it took to decline, depending on the volume removed from storage, groundwater recharge, precipitation trends, and the geology of the basin.

Many factors affect the ability of water to reach the groundwater system as recharge (e.g., inflow), including the character of the rainfall events, surface soil characteristics, and evaporation rate. Frequently it is simpler, and more accurate, in a basin with relatively stable groundwater levels to calculate outflows and then assume that the total outflows are equal to the total inflows (groundwater recharge in the Project Area being the largest contributor).

With respect to the Proposed Recycled Water Project, each alternative will result in their own specific effects on the groundwater budget. Numerical groundwater models are ideal tools for evaluating these changes as they can evaluate the interdependency of these aspects of the aquifer system(s). They also provide a means for evaluating the internal consistency of the assumptions in the conceptual model.

3.4.1 Inflow Components

The primary inflows to the Project Area include rainfall recharge, deep percolation from irrigation water, subsurface inflow, stream recharge, and leakage from pipelines. See Table 3.1 for the average inflow values estimated by others for the Project Area. In the sub-sections below, only the inflows with significant contributions to regional groundwater are discussed in detail.

Rainfall Recharge

This is the portion of precipitation that falls on the land surface and percolates directly to recharge. As previously mentioned, the average annual precipitation at the Half Moon Bay Terrace station (period of record from 1939 through 2016) is 26.2 inches, with more than half of that precipitation falling during November through February. A portion of that precipitation will percolate to the aquifer system as recharge.

Percolation from Irrigation Water

Within the Project Area, irrigation is used primarily for agricultural and landscaping purposes. A portion of the water that is applied for irrigation percolates down through the soil and into the groundwater basin. Note, if the water applied for irrigation comes from a source outside the Project Area, then it represents inflow. However, if the irrigation source is from local groundwater, it is not considered an inflow, but rather a return flow of groundwater back into the basin.

As previously discussed, within the Half Moon Bay Terrace Groundwater Basin, most of the land (over 40%) is used for agricultural purposes. Therefore, the amount of inflow due to percolation from irrigation water is significant.

Subsurface Inflow

Due to the bedrock units of the Santa Cruz Mountains surrounding the Project Area, underflow from surrounding groundwater basins is likely to be minimal.

Stream Recharge

This is the recharge that percolates to groundwater from streams. Within the Project Area, the following streams (from north to south) discharge into the Half Moon Bay Terrace Groundwater Basin (Figure 1.2; Figure 3.1):

- Martini Creek;
- San Vicente Creek;
- Denniston Creek;
- Arroyo de en Medio;
- Frenchman's Creek;
- Pilarcitos Creek;
- Arroyo Canada Verde;
- Purisima Creek; and
- Lobitos Creek.

The surface water conditions of these creeks were previously discussed in Section 2.

Leakage from Pipelines

Coastside CWD completed a water supply evaluation that discussed leakage from pipes, which represents an inadvertent inflow of imported water to the Half Moon Terrace Groundwater Basin. According to Coastside CWD, unmetered water includes authorized uses such as pipeline flushing and firefighting. It also includes unauthorized uses, such as meter inaccuracy and pipeline leaks (Coastside CWD, 2002; Todd, 2003).

3.4.2 Outflow Components

The primary outflows from the Project Area include subsurface outflow to the Pacific Ocean, groundwater pumping, and hydrophyte and phreatophyte water consumption. See Table 3.2 for the average outflow values estimated by others for the Project Area. In the sub-sections below, only the outflows with significant contributions to regional groundwater are discussed in detail.

Subsurface Outflow to the Ocean

Within the Project Area, the marine terrace aquifer is relatively thin (30 to 50 feet thick) and slopes from east to west, extending under the Pacific Ocean. Similarly, groundwater levels decline from east to west, indicating groundwater flows towards the ocean and out of the groundwater basin (Todd, 2003).

Groundwater Pumping

Groundwater is pumped for agricultural irrigation, landscape irrigation, and domestic use. Of the groundwater pumped, some is returned to the Project Area via percolation (as discussed above); however, some is consumed leading to an outflow of the regional groundwater basin. Ocean Colony Partners operates four wells at the north end of Balboa Boulevard near Kelly Avenue. The water is pumped to irrigate 210 acres of the Half Moon Bay Golf Links (Todd, 2003).

Hydrophyte and Phreatophyte Water Consumption

Along the creeks (Section 2.1) within the Project Area, there is riparian vegetation – which includes hydrophytes and phreatophytes. Hydrophytes are plants that require the presence of surface water. Phreatophytes are deep-rooted plants that obtain a significant portion of their water requirements from groundwater (like the blue gum eucalyptus, which are prevalent along Pilarcitos Creek [PWA, 2008]). Hydrophytes and phreatophytes transpire more water than other plants and often require more water than rainfall can provide.

3.5 Groundwater Elevation Trends

Within the Project Area, there are a number of groundwater wells (Figure 1.9), consisting of domestic, irrigation, industrial, monitoring, municipal, and water supply wells (GAMA, 2023a; GAMA, 2023b). Where available, information related to water elevation (or depth to water) was extracted and compiled to understand groundwater trends within the Project Area – as displayed in Table 3.3 and Appendix 3.1. Additionally, if available, Well Completion Reports (WCRs)[9] were tabulated and downloaded for selected groundwater monitoring wells (Appendix 3.2). Not only are the downloaded WCRs within Appendix 3.2, but also a Google Earth KMZ of the wells in the Project Area with links to their corresponding WCRs is provided as well. Groundwater elevation data was obtained from the California DWR (California DWR, 2023b), including their California Statewide Groundwater Elevation Monitoring (CASGEM) program (CASGEM, 2023).

Based on records from the California DWR, the current groundwater trends within the Project Area, specifically the Half Moon Bay Terrace Groundwater Basin, are stable (Appendix 3.1; California DWR, 2014). The current, seasonal, and long-term groundwater trends show that the groundwater elevations within the Project Area display either “no trend” (that groundwater levels have neither increased nor decreased) or an increasing trend (that groundwater levels have increased somewhere between 5 to 25 feet; California DWR, 2023c). Rising groundwater levels may be in part a result of the end of a period of prolonged drought conditions. Although stable, depths in groundwater do fluctuate throughout the year, with the depth to groundwater generally the greatest in the summer and shallowest in the winter (California DWR, 2014).

Given the limited thickness of the marine terrace deposits, and stable groundwater levels, a limited volume of storage appears to be available for recycled water if used for groundwater replenishment. Particularly during periods of groundwater highs (e.g. during winter), there may be limitations to the volume of groundwater that can be physically recharged absent a wide-spread recharge design/network instead of a specific groundwater recharge facility with limited surface area.

The following hydrographs below (which are also located in Appendix 3.3), show a couple examples of the observed groundwater elevations within the Project Area.

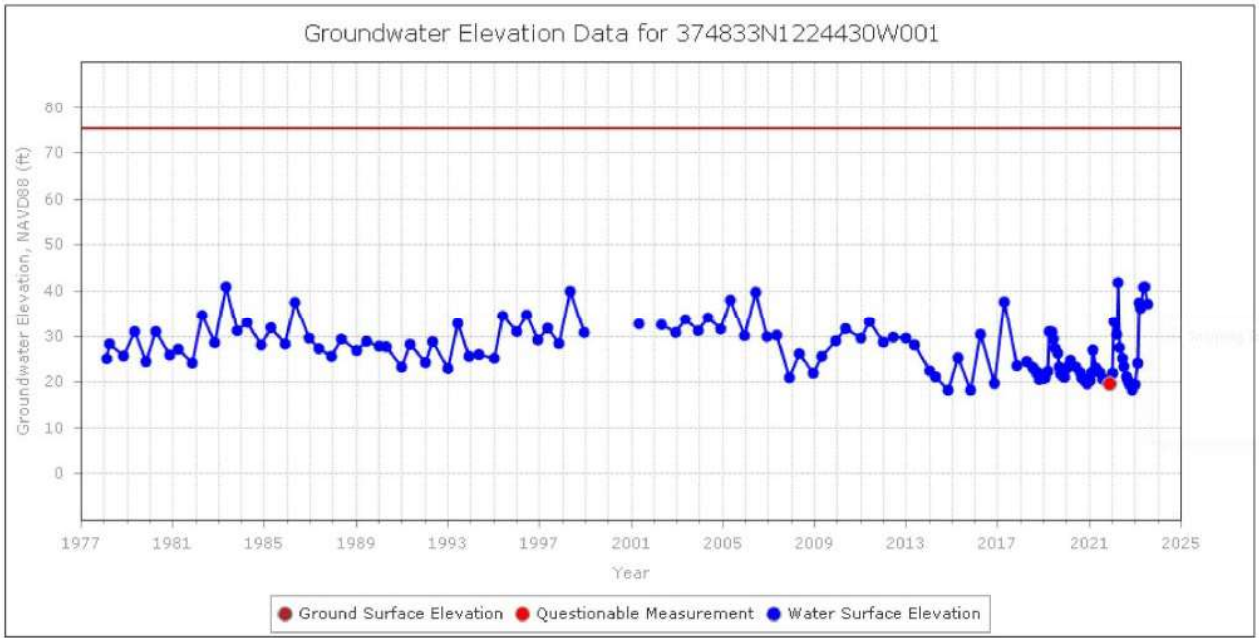
[9] It should be noted that the California DWR is currently working on a Well Completion Report Map Application; however, it is not finalized as the date of this report (California DWR, 2023d).

CASGEM Well ID 7004

CASGEM Well ID 7004 (also referred to as well 374833N1224430W001) is located near Half Moon Bay, California, along Frenchman's Creek Road (see Figure 3.3 below). According to the hydrograph for this well (see Figure 3.4 below), since the late-1970s the groundwater elevations in the well have fluctuated somewhere between 20 and 40 feet amsl. Between the late 1970s and early 2000s, the groundwater elevations had less variation than what is currently observed. Although present day groundwater elevations are approximately 20 feet higher than they were in the late 1970s, they appear to be trending slightly downward (California DWR, 2023c).

Figure 3.3. CASGEM Well ID 7004 Location

Figure 3.4. CASGEM Well ID 7004 Hydrograph

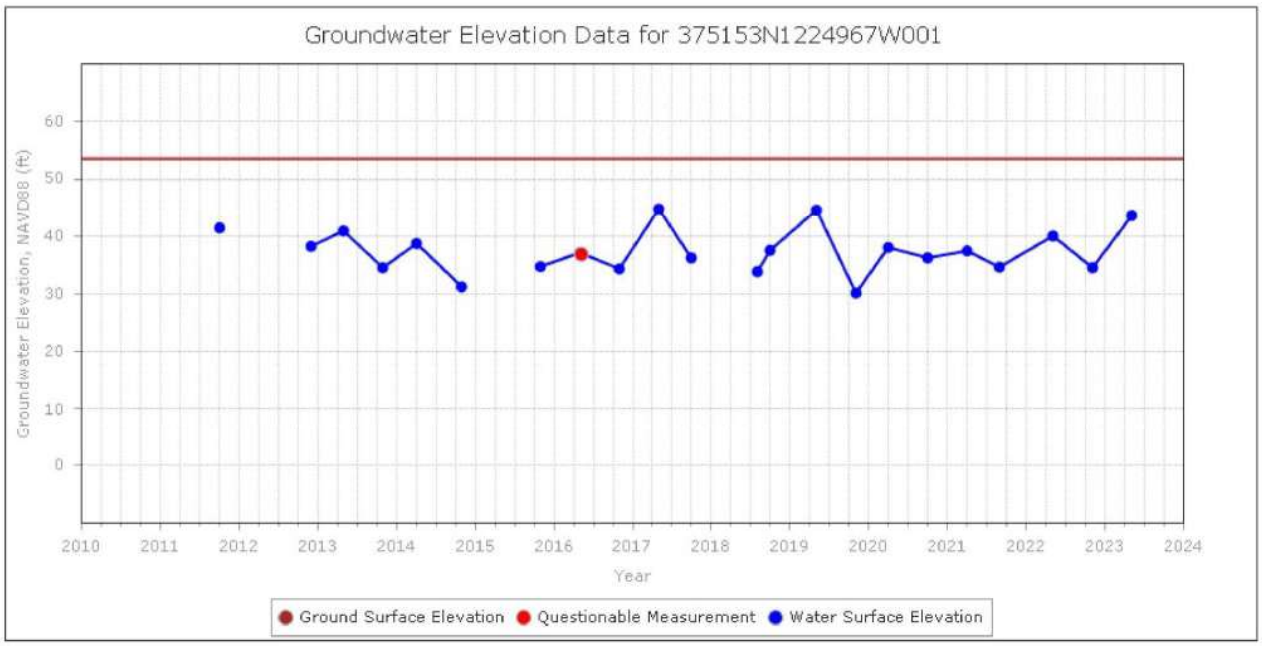


CASGEM Well ID 48471

CASGEM Well ID 48471 (also referred to as well 375153N1224967W001) is located in Moss Beach, California, adjacent to the airport (see Figure 3.5 below). According to the hydrograph for this well (see Figure 3.6 below), since the 2010s the groundwater elevations in the well have fluctuated somewhere between 30 and 45 feet amsl. However, the current groundwater elevations are comparable to the first recorded groundwater elevations in the early 2010s (California DWR, 2023c).

Figure 3.5. CASGEM Well ID 48471 Location

Figure 3.6. CASGEM Well ID 48471 Hydrograph



For additional hydrographs within the Project Area, refer to Appendix 3.3.

3.6 Regional Groundwater Water Quality

The regional groundwater quality surrounding the Project Area has been affected by various human activities, including but not limited to, agriculture (crops and pastureland), gas stations, airports, military facilities, landfills, and private residences. Additionally, natural bedrock may also be impacting the regional groundwater (Todd, 2003).

In previous investigations, groundwater quality was documented as a concern within the Project Area. This is because high concentrations of TDS, iron, and manganese were documented within groundwater wells (California DWR, 2014; Todd, 2003). The TDS concentrations ranged from 300 milligrams per liter (mg/L) to over 700 mg/L, which exceeds the secondary drinking water standard of 500 mg/L. Additionally, concentrations of iron and manganese exceeded their respective drinking water standards. The excessive iron and manganese may originate from the underlying Purisima Formation, which is characterized regionally with high iron and manganese. However, the excessive iron and manganese may also reflect inadequate test well development and removal of suspended sediment (Todd, 2003). The distribution of TDS, iron, and manganese in groundwater within the Project Area is tabulated in Table 3.4 and provided in Appendix 3.4.

Additional details regarding regional groundwater water quality conditions, which include environmental cleanup sites within the Project Area and their potential risk to the underlying aquifer, are discussed in the sub-sections below.

3.6.1 Environmental Cleanup Sites

Within the Project Area, there are 79 environmental cleanup sites listed on the SWRCB's Geotracker website and DTSC's Envirostor website (Table 3.5).[10] These environmental cleanup sites consist of leaking underground storage tank (LUST) sites, cleanup program sites, military cleanup sites, school investigations, and voluntary cleanups. Of the 79 environmental cleanup sites, 60 (over 75%) are related to LUST sites. Of the 79 environmental cleanup sites, 78 have received either a "Completed – Case Closed" or "No Further Action" from SWRCB and/or DTSC. The remaining open case (a LUST cleanup site) is for a private residence in Moss Beach (Envirostor, 2023; GeoTracker, 2023a).

According to the SWRCB, the private residence is a home located on Stetson Street in Moss Beach, California. The nearest surface water is the Pacific Ocean, located approximately 1,000 feet west of the site. Additionally, a portion of the Fitzgerald State Marine Reserve, which the California RWQCB designated as an area of special biological significance, is directly west of the subject site (GeoTracker, 2023b).

In 2002, a 500-gallon heating oil underground storage tank (UST) was removed from the Moss Beach private residence and "significant contamination" was observed in soil beneath the former UST. In 2003, an onsite environmental investigation was conducted, which detected total petroleum hydrocarbons (TPHs) in soil and groundwater at and beneath the site. In 2005, the footprint of the former UST was over-excavated, and 60-tons of TPH-impacted soil was removed from site. In 2008, groundwater monitoring wells were installed at the Moss Beach private residence and quarterly groundwater monitoring began (GeoTracker, 2023b).

[10] Note some of the environmental cleanup sites are duplicative as they are listed in multiple database (i.e., in both GeoTracker and Envirostor).

Even though the site is still listed as “open” and “active,” the last groundwater monitoring report uploaded to GeoTracker was in 2016 (GeoTracker, 2023b). In the 2016 groundwater monitoring report, free product was observed in groundwater at the Moss Beach private residence (TEC Environmental, 2016). Given that no further documents were uploaded to GeoTracker, the status of the cleanup at this site is unknown. For more information related to the Moss Beach private residence environmental cleanup site refer to Appendix 3.5.

3.6.1 Aquifer Risk

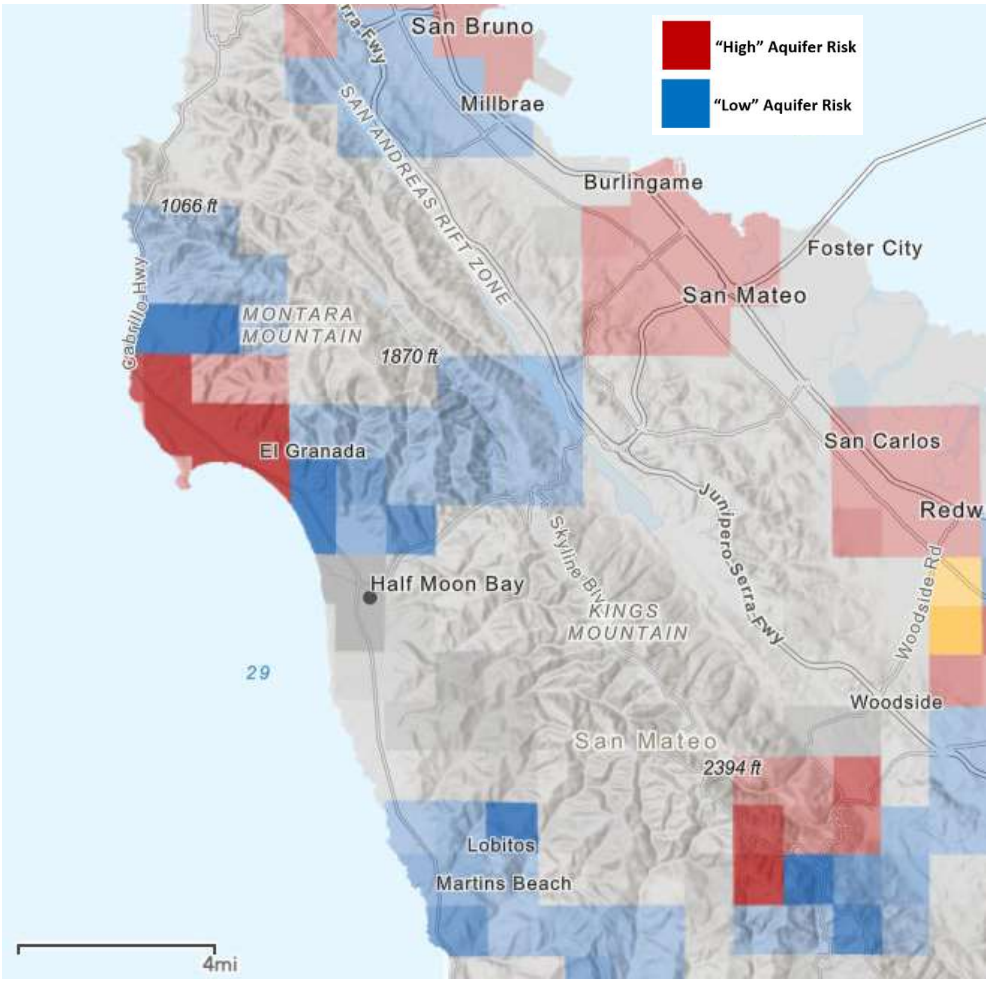
Under SWRCB’s Groundwater Ambient Monitoring and Assessment Program (GAMA) there is a feature called the “Aquifer Risk Map.” This is an interactive tool designed to identify areas where domestic wells (serving less than five connections) and state small water systems (serving between 5 and 15 connections) may be at a relatively higher risk of accessing groundwater that does not meet primary drinking water standards.[11] The Aquifer Risk Map displays “Sections” with unique identification numbers (called a “Section Number” in this report) and ranks the water quality risk as “high,” “medium,” or “low.” Associated with a Section Number is also information related to the contaminants of concern (COC; chemicals above or near their respective primary or secondary MCL) and number of domestic wells within that section (GAMA, 2023c).

Within the Project Area, there are approximately 80 Sections on the Aquifer Risk Map. Of these Sections, 17 are listed as having a “high” aquifer risk because at least one COC is observed in groundwater above its respective MCL. Additionally, other COCs were observed in groundwater close to their respective MCLs. In the Sections with “high” aquifer risk, 15 have domestic groundwater wells present. See Table 3.6 for a full listing of the Aquifer Risk Map Sections within the Project Area.

Figure 3.7, shown below, displays a zoomed-out output from the Aquifer Risk Map near the Project Area. The areas in red are associated with Sections that have a “high” aquifer risk, the areas in blue are associated with Sections that have a “low” aquifer risk, and the areas in gray have no data available (GAMA, 2023c). Based on the output, most of the Sections flagged as having “high” water quality risks are located along the Pacific Ocean, between the towns of Montara and Miramar. For a more detailed version of the Aquifer Risk Map within the Project Area, refer to Appendix 3.6.

[11] The Aquifer Risk Map was developed to fulfill requirements included in Senate Bill 200 (Monning, statues of 2019) and is a component of California’s Safe and Affordable Funding for Equity and Resilience (SAFER) program. The primary purpose of this map interface is to inform Water Boards staff in support of the SAFER annual Fund Expenditure Plan.

Figure 3.7. Aquifer Risk Map Output for the Project Area



Based on the Aquifer Risk Map, the groundwater COCs within the Project Area include the following: 1,2,3-trichloroprone (1,2,3-TCP),[12] aluminum, barium, fluoride, nitrate as nitrogen (NO_3N), and lead (GAMA, 2023a; GAMA, 2023c). The groundwater analytical results for these COCs are displayed in Table 3.7 and Appendix 3.7. Sources of 1,2,3-TCP include industrial areas (like the airport) and landscaping/agricultural areas. Sources of nitrate could include leakage from septic tanks as well as pesticide application. As for aluminum, barium, fluoride, and lead, these COCs are likely from the natural bedrock within the Project Area. However, there are also exceedances of aluminum, barium, and lead around the Ox Mountain Landfill (discussed further below).[13] The presence of aluminum in the groundwater monitoring wells is unusual. Generally, dissolved aluminum is not present in groundwater unless very acidic (pH < 4) or alkaline (pH > 10) conditions are present. Therefore, the aluminum present in the groundwater monitoring wells throughout the Project Area likely exists in the suspended sediment load (Todd, 2003).

Although the Aquifer Risk Map identified the area along the coast, between the towns of Montara and Miramar, as having a "high" risk for groundwater contamination, the distribution for some of the COCs (aluminum, barium, and lead) identifies another potential source: the Ox Mountain Landfill (also known as

[12] 1,2,3-TCP is a man-made hydrocarbon, used as a degreasing and/or cleaning agent. Additionally, 1,2,3-TCP has been found to be an impurity resulting from the production and use of soil fumigants (EPA, 2017).

[13] Note, the Ox Mountain Landfill was not located within either SWRCB's website (GeoTracker) or DTSC's website (Envirostor).

the Corinda Los Trancos Landfill). The Ox Mountain Landfill is located at 12310 San Mateo Road in Half Moon Bay, California – along Corinda Los Trancos Creek and in between Nuff Creek and Apanolio Creek, three tributaries that feed into Pilarcitos Creek. This area was likely not flagged by the Aquifer Risk Map, since groundwater wells surrounding the landfill are probably not used for domestic purposes (GAMA, 2023a). The landfill has been used as a solid waste disposal site since 1976 and currently serves as the major disposal site for San Mateo County. The major water quality concern with any landfill is the potential for migration of leachate (Todd, 2003). However, it appears that the landfill has a program in place to reduce the migration of leachate offsite. For additional information about the Ox Mountain Landfill, refer to Appendix 3.8 - which includes responses to public records requests and online queries.

Based on the alternatives being considered, recycled water alternatives such as groundwater replenishment and supplemental flow to Pilarcitos Creek would be in areas of low risk.

4. Findings

4.1 Recycled Water Use and Hydrogeologic Conditions

4.1.1 Groundwater Replenishment Option

Roux evaluated the groundwater replenishment option assuming a recharge facility immediately west of the Half Moon Bay High School (Figure 4.1). The location was provided by WWE. This is an area with "Low Aquifer Risk" as defined in Section 3.7.1. While it is recognized that recharge operations could occur elsewhere, this was assumed the most likely place where a replenishment option could be realized. The key issues that would affect the physical feasibility of this option include the presence or absence of groundwater wells within a 60-day water movement radius from the site based on California state requirements, and to consider the scale and extent of groundwater mounding as a result of percolation or injection of the recycled water in a defined footprint.

Roux used the USEPA seepage calculator (USEPA, 2023) to estimate seepage velocity. The resulting seepage velocity could then be used to estimate an approximation of the 60-day travel distance, based on advection and sorption. Although other factors, for example dispersion, could affect velocity, the lack of hydraulic data in the specific area of the proposed recharge facility, and the associated uncertainty, results in this approximation providing a reasonable, environmentally conservative estimation for the purposes of this report.

Seepage velocity is a function of hydraulic conductivity, the groundwater gradient, and the effective porosity of the soils or rock present. As described earlier, assumptions were made based on results of aquifer testing conducted in the test wells described in Todd (2003) using a range of transmissivities derived from the test wells in the Lower Pilarcitos Wellfield (713 gpd/ft^2, 523 gpd/ft^2, and 302 gpd/ft^2 for high, average, and low values), an assumed hydraulic gradient based on the cross-sections prepared by Todd of 0.01, and a range of effective porosity values of 0.1 to 0.4 (10 to 40 percent). Based on these results, the calculated seepage velocities ranged from 1 ft/day to 9.5 ft/day with a most likely value of 4.75 ft/day (assuming average hydraulic conductivity and 0.2 effective porosity). The resulting 60-day travel distances ranged from 60 feet to 570 feet with a most likely distance of 285 feet. There are no wells within that radius for the proposed recharge location.

Following that review, Roux used the USGS groundwater mounding analysis spreadsheet based on Carleton (2010) that uses the Hantush equation (1967) for estimating mounding beneath an infiltration basin, to evaluate the effect of conducting recharge of recycled water at the location presented in Figure 4.1. Infiltration was assumed at an average recharge of 500,000 GPD and after one year of operation (see Figure 4.2 below). The results indicated that the formation would not be able to accept those volumes of recharge as the predicted groundwater mound was approximately 25 feet, and possibly above ground surface. An average recharge of 125,000 GPD for one year produced results that were more reasonable with mounding of approximately 9 feet (see Figure 4.3 below), and likely 8 feet under the high school facilities. In either case, in the absence of test wells and on-site groundwater data at the proposed location, it was calculated that mounding above the depth to groundwater would occur if recycled water were percolated or injected into groundwater at the proposed location. It is unknown whether mounding of this scale would affect existing underground (or above-ground) infrastructure. It would follow that if the locations of groundwater recharge were more dispersed (e.g. injection wells dispersed widely across the basin), the aquifer system would be

more likely to accept the groundwater recharge without excessive mounding. This would also lead to substantially more infrastructure to move the recycled water to widely dispersed locations.

With all of these estimations, the absence of site-specific hydraulic information makes these analyses conceptual in nature, and actual parameter values could vary widely. However, despite these uncertainties, the conditions that lead to a slow seepage velocity and the lack of effect on downgradient wells in the 60-day period, also lead to excessive mounding. If hydraulic conditions are such that the mounding presented would be less than shown, those conditions would likely also indicate conditions producing a higher seepage velocity, and the greater likelihood of affecting downgradient wells in the 60-day period.

While an expensive, site-specific geotechnical and hydrologic field investigation and associated modeling would refine these analyses and provide greater confidence in this alternative as a feasible option for recharging groundwater using recycled water, the relationships between seepage velocity and mounding lead to this alternative unlikely to be a feasible option.

Figure 4.2 - Mounding 500,000 GPD (y-axis equals mounding in feet, x-axis equals distance from recharge zone)

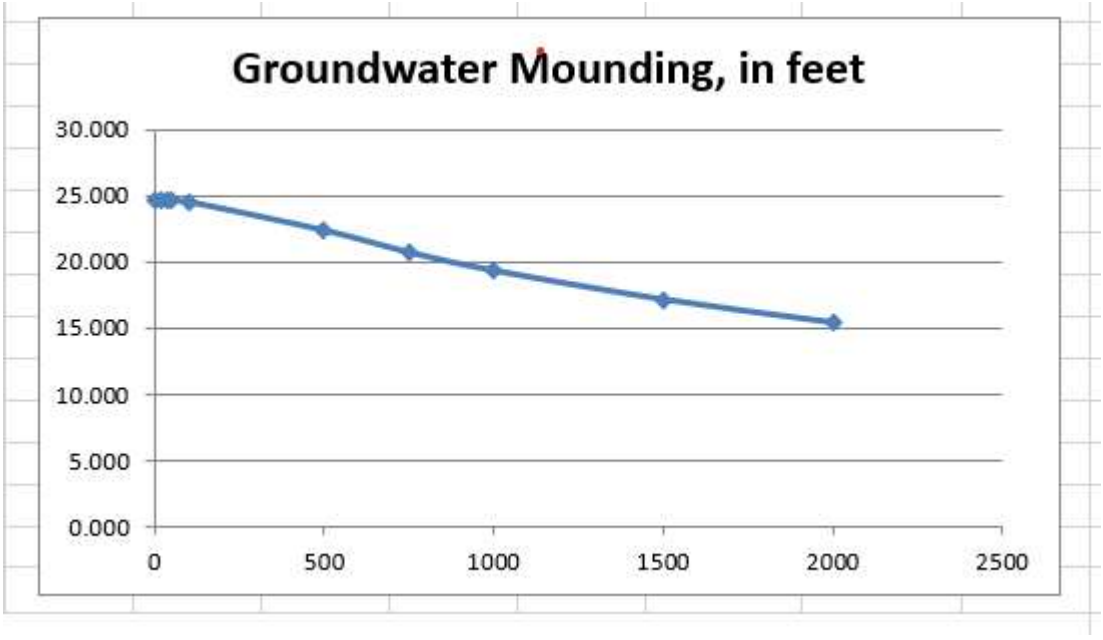
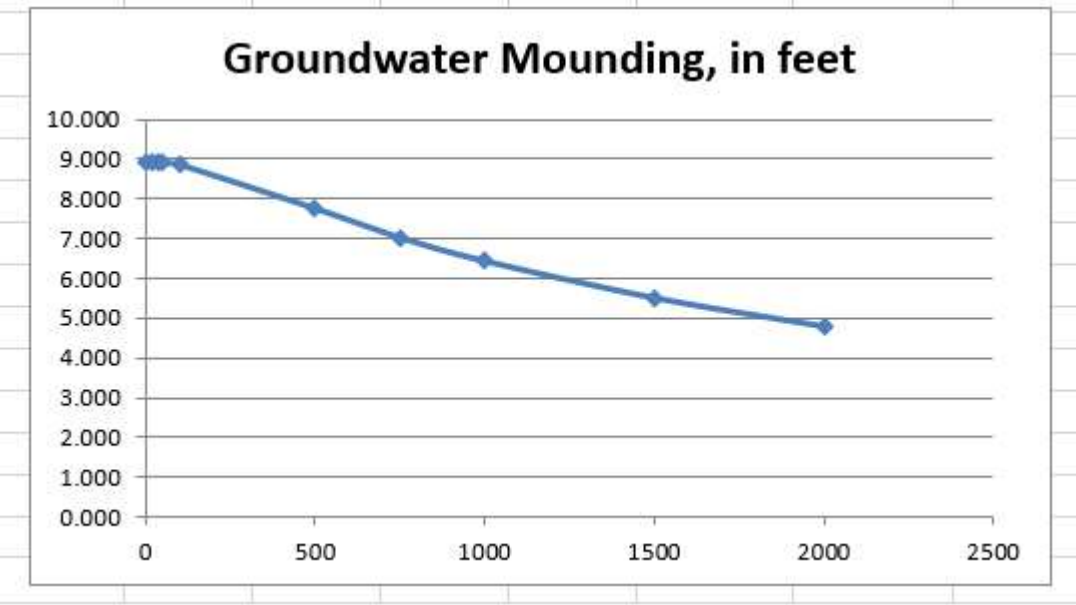


Figure 4.3 - Mounding 125,000 GPD (y-axis equals mounding in feet, x-axis equals distance from recharge zone)



The injection of recycled water into groundwater is considered an indirect potable reuse of recycled water and would be regulated by the State Water Board and the installation of injection wells in the Project Area is under the oversight of the San Mateo Environmental Health Department. Well permits would be required for all drilling activities including aquifer test wells and final groundwater injection wells. Additionally, State Water Board approval of a groundwater injection system would be required.

4.1.2 Surface Water Augmentation Option

As previously discussed in Section 1.5, there are over 100 water rights filed within the Project Area (Table 1.3). For the Proposed Recycled Water Project, if Coastside CWD chooses the Surface Water Augmentation Option, there will need to be consideration as to how it will affect existing surface water rights. For example, along Pilarcitos Creek there are six licensed and/or claimed water rights for domestic purposes. Most of these locations are in the upper reaches of the stream - between Pilarcitos Lake and Highway 92 (Figure 1.6). If Coastside CWD were to augment Pilarcitos Creek with recycled water, the quality of the recycled water cannot impair an individual's source of domestic water.

Additionally, the same can be said about irrigation water. Along Pilarcitos Creek there are seven licensed and/or claimed water rights for irrigation purposes. Most of these rights are along the reach of the creek that runs parallel to Highway 92 (Figure 1.6). The users of these irrigation water rights divert water from Pilarcitos Creek for various agricultural purposes, like crops, flowers, Christmas trees, and some irrigated pasture (Todd, 2003). Although California allows the use of recycled municipal wastewater for agriculture (EPA, 2023), if Coastside CWD were to augment Pilarcitos Creek with recycled water, the quality of the recycled water

cannot impair an individual's source of irrigation water. For example, if the recycled water has salinity levels above a crop's "salinity threshold"[14] it could negatively impact the yield of a crop (Grattan, 2003).

Also, there are water reuse specifications when using recycled water for agricultural purposes – which contains water quality and sampling requirements based on crop type (EPA, 2023). Table 4.1 summarizes these reuse specifications, which includes:

- Food crops where the recycled water has come into contact with the edible portion of the plant, daily Total Coliform sampling is required;
- Food crops where the recycled water has come into contact with the edible portion of the plant, continuous sampling of turbidity is required; and
- Ornamental nursery stock, where irrigation does not occur 14-days prior to harvesting, sampling of dissolved oxygen, nitrogen, and phosphorous is required (although sampling frequency is not stated).

Although the Surface Water Augmentation Option is not necessarily direct discharge of recycled water to agricultural lands, the water reuse specifications should be considered to ensure that water right holders are not negatively affected by the proposed recycled water project. Due to the discharge of recycled water to a water body of the United States and the anticipated hydrologic and biological impacts of increased flow to Pilarcitos Creek, an NPDES and Lake and Streambed Alteration (LSA) permit will likely be required to implement such a reuse scenario. A General Permit for the discharge of recycled water to Waters of the State does not exist and as a result, an Individual NPDES Permit would be required. Individual Permits are evaluated on a case-by-case basis and may require rigorous technical assessment to confirm discharged water would not exceed project specific effluent limits.

Other considerations to deliberate regarding the Surface Water Augmentation Option, is how discharge of recycled water may (1) alter the stream's characteristics (such as stream discharge, peak streamflow, stream channel width and depth) and (2) impact animal and plant species within the riparian area. For example, will surface water augmentation cause flooding and/or bank erosion if the addition of recycled water accidentally increased stream discharge beyond what the stream channel can naturally manage? Also, will the addition of recycled water accidentally impact federally-listed threated species like the steelhead trout (PWA, 2008)? Due to the likelihood of stream bank and channel alteration resulting from an increased flow of water to Pilarcitos Creek, a LSA permit would be required prior to project implementation. In addition to the standard ecological and hydrologic investigation activities required for an LSA permit, CEQA analysis of the project's impacts may be required. A CEQA analysis can result in a rigorous inquiry into a wide range of impacts including impacts to biological resources, water quality, etc.

The Pilarcitos Integrated Watershed Management Plan provides a summary of the existing conditions along Pilarcitos Creek, as well as the other main creeks within the watershed basin (PWA, 2008). This report should be referred to if the Surface Water Augmentation Option is further considered along Pilarcitos Creek.

4.1.3 Wetlands Enhancement Option

Wetland enhancement is not a common use of recycled water; however, examples of this type of reuse have been identified in Pacifica, California, north of the Project Area. Wetland enhancement is the enhancement of existing wetlands that increase a particular function of a wetland while wetland restoration is used to refer to the return of a wetland to a former condition. All wetland enhancement projects are coordinated with the guidance of the CDFW Wetland Conservation Program (CDFW, 2023). As all wetlands are unique, there is

[14] Salinity threshold: the maximum amount of salt a crop can tolerate in the rootzone without reduction in yield.

no established regulatory structure for the enhancement of wetlands; however, the permitting requirements discussed in the following section are likely to apply to any wetland enhancement project.

4.2 Recycled Water Use and Permitting Requirements

This section details the permits that will likely be required to implement the proposed reuse options. This section begins with a general summary of the different permits associated with recycled water reuse and then details the specific permit requirements that should be anticipated for each reuse scenario. For additional information regarding permits, refer to Appendix 4.1.

National Pollution Discharge Elimination System (NPDES) Permit

The NPDES is a federal program authorized under the Clean Water Act of 1977 (EPA, 2010). The State of California has been delegated by the federal government to implement the NPDES program through the State Water Resources Control Board (State Water Board) and the nine Water Quality Control Boards (Regional Water Boards) of California. In California, NPDES permits are also referred to as waste discharge requirements (WDRs) regulating discharged wastewater from municipal and industrial facilities. The San Francisco Regional Water Quality Control Board (SFRWQCB) is the agency branch that issues NPDES permits in the San Francisco Bay Basin including Half Moon Bay. NPDES permit requirements may apply to the stream augmentation and wetland enhancement recycled water reuse options evaluated in this analysis (EPA, 2010).

For effluent discharged to waters of the United States, NPDES permits are required. There are two types of NPDES permits; Individual Permits and General Permits that are issued by the SFRWQCB to allow discharge of wastewater to the waters of the United States within the San Francisco Bay Area (EPA, 2010). Both permit types share many similar components (the general outline of each permit type includes effluent limitations, monitoring and reporting requirements, special conditions, and standard conditions), however, the process of permit issuance varies between Individual and General Permits.

An Individual Permit is issued to a specific facility and is based on specific information the from the permit application and associated sources (i.e., previous permit requirements, discharge monitoring reports, technology and water quality standards, total maximum daily loads, ambient water quality data, and special studies). Following submittal of a permit application, the major steps in the permit development process include: (1) establishing the technology-based effluent limitations; (2) derivation of effluent limitations protective of state water quality standards; (3) anti-backsliding analysis; (4) application of final effluent limitations; (5) development of monitoring and reporting requirements; (6) development of special conditions; (7) incorporation of standard conditions; (8) preparation and publication of fact sheet for review by the public; (9) public comment and response period; (10) Environmental Protection Agency review or Clean Water Act certification; (11) final permit issuance. Upon Individual Permit issuance, the permit is valid for a specific period not to exceed 5 years. Reapplication every five years, at a minimum, is required (EPA, 2010).

A general permit is a pre-established permit permitting the release of a certain type of discharge from common facilities (EPA, 2010). General Permits are issued to permit multiple facilities with similar functions and discharges under the same permit. A facility seeking to discharge effluent regulated under an existing general Permit may apply to be included within the umbrella of that specific general permit. A facility permitted under a general permit can avoid the rigorous permitting process of the individual permit if it can prove that its discharge qualifies under an already established General Permit. The steps to develop a General Permit are similar to the steps detailed above for the Individual Permit, with the addition of an initial study to confirm the following:

- A large number of facilities will be covered by the General Permit;
- The facilities have similar production processes or activities;
- The facilities generate similar pollutants; and,
- Whether uniform water quality-based effluent limitations will appropriately implement water quality standards.

Once the permitting authority has confirmed the above criteria and completed the permitting process as outlined above for the Individual Permit process, the final permit will establish the requirements for the specific information that must be submitted by a facility that wishes to be covered under the General Permit. For a new facility to apply for discharge under an existing General Permit, the facility would only be required to demonstrate compliance with the requirements of the General Permit to be included under the applicable General Permit. The catalogue of NPDES General Permits falls under a list of Program Areas. These program areas include various agricultural, municipal, industrial, and stormwater discharge categories (EPA, 2010).

Lake and Streambed Alteration Permit

The CDFW, under California Code of Regulations (CCR), Fish and Game Code (FGC) Section 1602, manages the LSA Program to protect lakes and streams from potential adverse impacts related to human alterations of water bodies throughout California (CDFW, 2023b). The CDFW requires application for a LSA permit for the following lake and streambed alteration activities:

- Diversion or obstruction of natural flow of any river, stream, or lake;
- Any modification of the bed, channel, or bank of any river, stream, or lake;
- The use of material from any river, stream, or lake; and,
- The deposition or disposal of materials into any river, stream, or lake.

The LSA Program requirements may apply to the following water reuse options evaluated in this analysis:

- Stream augmentation; and,
- Wetland enhancement/restoration.

The LSA Program defines “any river, stream, or lake” as those that are both perennial and episodic in flow. Although CCR FGC 1602 does not speak specifically to the discharge of recycled water to streamflow, the alteration of the streambank at the point of discharge is often observed in the form of erosion and/or armoring of the streambank, construction along the creek for the discharge infrastructure would be required, and the recycled water entering Pilarcitos Creek could be considered disposal of materials. Through the FGC 1602 process, if the proposed project could adversely affect a fish and wildlife resource, appropriate avoidance, minimization, and mitigation would be required. A key concept to tease out in this would be if the proposed discharge could cause hydromodification (alteration of streambed or stream bank as a result of increased flow) that results in a stream alteration.

Notification of any LSA project requires notification through the CDFW Environmental Permit Information Management System (EPIMS). This includes an LSA application and fee in excess of $14,000 (CDFW, 2023c). At the time of project notification, a selection of an LSA Agreement type will be required. Due to the proposed permanent augmentation to Pilarcitos Creek, a long-term Standard Agreement would be the most suitable agreement type for this proposed recycled water use scenario. This agreement is a type of permit and will include the necessary measures, as determined by CDFW, to protect existing fish and wildlife resources within the stream proposed for augmentation. These measures may include installation, repair, or

maintenance of water diversions, culverts, stream crossings, or any other modification of a lake or streams bed, bank, or channel including extraction or deposition of material (i.e., sand or gravel) from/into the stream proposed for augmentation. At the time of application submittal, detailed project design specifications must be submitted, and the project must be prepared to begin in order to qualify for the Standard Agreement.

Additionally, FGC 5650 limits the discharge of any material considered harmful to biological resources into waters of the State of California. Although FGC 5650 does not specify water quality standards, it would prevent the discharge of recycled water impacted with chlorine, organic matter, sediment, or other contaminants that can be harmful to aquatic life (CDFW, 2023b).

California Environmental Quality Act (CEQA) Considerations

Prior to issuance of a LSA Permit, the CDFW is required to comply with all CEQA requirements. CEQA compliance may include any of the following (CDFW, 2023b):

- Negative Declaration: a written statement that an Environmental Impact Review (EIR) is not required because a project will not have a significant adverse impact on the environment.
- Mitigated Negative Declaration (MND): a document that describes a project and its potential environmental impacts and explains how the project has been revised or mitigated to avoid or reduce those impacts to a less than significant level.
- Environmental Impact Review (EIR): an environmental analysis containing information on potential effects, measures to mitigate those effects, and an analysis of alternatives to a proposed project. CEQA requirements may apply to all of the recycled water reuse options evaluated in this analysis.

If an MND or EIR declaration is determined appropriate for the proposed stream augmentation scenario, a specific environmental analysis of the proposed project may be required. A filing fee of approximately $4,000.00 is charged by CDFW to cover the cost of participating in the CEQA review process (CDFW, 2023d).

California Endangered Species Act (CESA) Considerations

An additional consideration of an LSA Permit may include an assessment of endangered or listed species that may be impacted by a stream augmentation project (CDFW, 2023b). A biological assessment of biological resources of Pilarcitos Creek may be required to confirm the presence or absence of endangered and/or listed species prior to the discharge of recycled water. If endangered and/or listed species are identified, an Incidental Take Permit may be required by CDFW prior to implementation of a stream augmentation project.

CESA and incidental take permit requirements may apply to the stream augmentation and wetland enhancement recycled water reuse options evaluated in this analysis.

Well Construction Permits

Subsurface drilling permits in San Mateo County are issued by the San Mateo County Health, Land Use, Septic System, and Water Wells Program (SMCH). The SMCH issues well drilling permits for the installation of new wells (SMCH, 2019). A complete PE 4666 Well Drilling Permit application is submitted to the SMCH for review and approval. The application includes site information, well owner information, property owner information, and drilling contractor information. The fee for a well drilling permit for the 2023/2024 fiscal year is $1,992 per well (SMCH, 2023b).

SMCH permit requirements would only apply to the injection of recycled water under a groundwater replenishment water reuse scenario, or production wells designed to capture replenished groundwater for other uses.

4.3 Data Gaps and Recommendations

There are several data gaps that were identified during the course of this report. These data gaps include:

- The absence of geotechnical or hydrogeologic data in the groundwater replenishment basin area;
- Limited aquifer test data and absence of raw data for previous aquifer tests;
- Limited information relating to effects of faulting on groundwater movement;
- Limited information for much of the basin outside of the Half Moon Bay Terrace Groundwater Basin watershed; and
- Lack of information relating to the number of identified wells that are no longer in use or have been abandoned and where they are located.

In order to address some of the more key issues listed above, Roux is providing three general recommendations, that while enhancing the Proposed Recycled Water Project analysis, would also provide valuable information and/or tools for water resource management.

The first recommendation is related to the condition whereby private wells (not belonging to Coastside CWD) are allowed within the Coastside CWD service area. Given instances such as in the groundwater replenishment option where distances to domestic wells is a key parameter, the knowledge of which wells are no longer active or have been abandoned could provide substantially more flexibility for decision-making around topics for which there are concerns about domestic wells. Roux is providing in this report information related to existing wells, such as well logs, for wells within the Coastside CWD service area and beyond (Appendix 3.2). We recommend that a well-canvassing effort be conducted to identify which of those wells are operational and which can be deemed to be unusable or no longer existing to rule out future decisions that may be based on obsolete consideration.

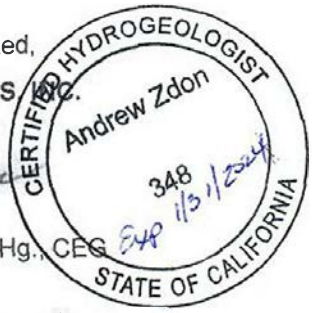
Roux also recommends the construction of a numerical groundwater flow model. That would provide Coastside CWD with a tool that could then be used to quantitatively evaluate effects of various groundwater management (and some surface water management) scenarios that may arise. As described earlier, numerical groundwater flow modeling not only provides a tool for evaluating groundwater flow and water budget conditions, but also is the only method to evaluate the internal consistency of the assumptions built into the understanding of the groundwater basin. This is an important quality assurance/quality control step for decision-making. A model would enhance the confidence in construction of new wells or well-fields designed in a manner that reduces well interference and could be used to optimize groundwater use alternatives. Further, a model could be used to evaluate groundwater-surface water interactions under different groundwater usage scenarios.

The last recommendation is to conduct site-specific hydraulic testing (aquifer testing). The construction of a numerical model would substantially benefit from additional hydraulic testing under controlled pumping and recovery conditions. Thus, evaluating the hydraulic characteristics of aquifer materials in a more widespread area of the Half Moon Bay Terrace Groundwater Basin Watershed.

5. Signatures of Participating Professionals

Respectfully submitted,

ROUX ASSOCIATES, INC.



Andy Zdon, P.G., C.Hg., CEG
Technical Director

Rachel Maxwell
Senior Scientist I

Josh Osborne
Project Geologist

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Recycled Water Feasibility Study

COASTSIDE COUNTY WATER DISTRICT

REGULAR MEETING OF THE BOARD OF DIRECTORS

SEPTEMBER 10, 2024

Background

- Since the late 1990's , the District has participated in numerous studies with other Coastside agencies to pursue recycled water on the coast (including with Sewer Authority Mid-Coast and its member agencies)
- Given emerging technologies, climate change, and the changing regulatory environment, as the water retailer, the District decided to take a fresh look at recycled water on the Coastside.
- In Summer 2023, District contracted with Waterworks Engineers, LLC. ("Waterworks") to conduct a feasibility study

Scope

- Goal of study: to assess the hydrogeology of the region; the technical, regulatory, and permitting requirements and the economic feasibility to derive and evaluate potential alternatives for water reuse
- Focus was to review a range of alternatives including:
  - Non-potable reuse
  - Indirect potable reuse
  - Direct potable reuse
  - Projects with environmental benefits
- Primary component: Hydrogeologic report (prepared by Roux Associates, Inc.) to determine if using recycled water for groundwater replenishment or environmental benefit are feasible options

Scope

Study focused on recycled water uses within the District's jurisdictional boundaries. Options considered:

Non-Potable Reuse	Indirect Potable Reuse	Direct Potable Reuse	Environmental Benefit
Fill Station(s)	Groundwater Replenishment	Direct Potable Reuse at Nunes WTP	Pilarcitos Creek Augmentation or Other Creek Augmentation
Landscape Irrigation	Reservoir Augmentation		Wetland Enhancement
Agricultural Irrigation			
Skylawn Irrigation			
Ocean Colony Golf Course Irrigation			

Key Findings

- Hydrogeological conditions (assessed by ROUX) show limited feasibility of use of recycled water for indirect potable reuse and groundwater replenishment.
  - Given low porosity of soils in the HMB Terrace Groundwater Basin, the slow “seepage velocity” from percolating or injecting recycled water would result in groundwater “mounding”
  - Limitations given private wells in the service area
- Surface water augmentation is difficult due to water rights on local creeks/cannot impair quality of a rightsholder’s source of irrigation water

Alternative	Feasible	Reasoning
Fill Station(s)	No	Little demand for recycled water within service area.
Landscape and Agricultural Irrigation	No	Little demand for recycled water within service area.
Skylawn Memorial Park Irrigation	No	Park not within service area, so would not be able to deliver recycled water.
Ocean Colony Golf Course and Landscape Irrigation	No	Ocean Colony has other water supplies that are more cost effective than recycled water and therefore, does not have a demand for recycled water.
Pilarcitos Creek Augmentation or Other Creek Augmentation	No	Does not offset groundwater use or provide additional water resources from indirect or direct potable reuse.
Wetland Enhancement	No	Does not offset groundwater use or provide additional water resources from indirect or direct potable reuse.
Groundwater Replenishment	No	1. There are private wells in the service area that limits where water may be replenished. 2. A limited amount of water that can be replenished at one location due to mounding
Reservoir Augmentation	No	There is no known partner who has a reservoir available for augmentation.
Direct Potable Reuse at Nunes WTP	Further study needed	Next steps are to find potential funding sources and continue technical studies.

Waterworks Criteria – Ranking of Options

- Cost Criteria: 20-year life cycle costs (including capital outlay plus annual O&M costs
- Non-cost Criteria:
  - Environmental and social impacts/benefits
  - Ease of implementation and regulatory compliance
  - Engineering, construction and operations
  - Climate resiliency

Table 15. Life Cycle Costs

Alternative		Capital Cost (a)	Annual O&M Cost	20 Year Net Present Worth (b)	Delivered Water in 20 Years (MG)	Net Present Worth/ MG	Rank
Non-Potable Reuse	Fill Station(s)	$3.50 M	$0.10 M	$5.07 M	183	$28,000	4
	Landscape and Agricultural Irrigation	$27.2 M	$1.07 M	$44.0 M	600	$73,000	6
	Skylawn Memorial Park Irrigation	$29.4 M	$1.16 M	$47.6 M	1,000	$48,000	5
	Ocean Colony Golf Course and Landscape Irrigation	$22.0 M	$1.20 M	$40.9 M	1,830	$22,000	1
Indirect Potable Reuse	Groundwater Replenishment	$38.8 M	$3.53 M	$94.2 M	913	$103,000	7
	Reservoir Augmentation	$65.7 M	$4.85 M	$142 M	6,570	$22,000	1
Direct Potable Reuse	Direct Potable Reuse at Nunes WTP	$63.0 M	$6.19 M	$160 M	6,570	$24,000	3

The District's current cost of raw water from SFPUC is $7,000/MG

Table 14. Summary of Non-Cost Criteria

Alternative	Criteria Sub-criteria	Delivered Water in 20 Years (Million Gallons) (a)	Total Non-Cost Criteria Score	Rank by Non-Cost Score	(Total score) x (delivered water per 20 years)/ (10,000) (b)	Weighted Rank by Produced Water
Non-Potable Reuse	Fill Station(s)	183	30	1	0.5	8
	Landscape Irrigation	600	26	2	1.6	6
	Agricultural Irrigation	600	26	2	1.6	6
	Skylawn Memorial Park Irrigation	1,000	21	5	2.0	4
	Ocean Colony Golf Course and Landscape Irrigation	1,830	25	4	4.6	3
Indirect Potable Reuse	Groundwater Replenishment	913	18	7	1.6	5
	Reservoir Augmentation	6,570	15	10	9.9	2
Direct Potable Reuse	Direct Potable Reuse at Nunes WTP	6,570	19	6	12.5	1
Environmental Benefit	Pilarcitos Creek Augmentation or Other Creek Augmentation	0	18	7	0.0	9
	Wetland Enhancement	0	18	7	0.0	9

Conclusions

- Of the alternatives evaluated, Waterworks concluded that direct potable reuse is the most promising . . .
  - Has potential to diversify the District's water supply portfolio
  - New regulations
    - In December 2023, State Water Resources Control Board approved regulations for direct potable reuse
    - Direct potable reuse is in pilot stages in a few large agencies, but will become viable for smaller agencies in the future

The District with SAM (Sewer Authority Mid-Coast) and other local stakeholders should consider direct potable reuse in long term planning of drinking water and wastewater facilities . . .

Final Thoughts

- Waterworks: “to be feasible, proposed recycled water projects need partners that want to collaborate with the District and a reason to pursue the project such as a policy or economic reason . . .”
- To make recycled water a reality on the Coastside will require collaboration with local stakeholders (SAM and member agencies and other Coastside agencies) and broader stakeholders such as SFPUC, BAWSCA, County of San Mateo, State and Federal agencies to find funding and support for recycled water project on the Coastside.

STAFF REPORT

To:	**Board of Directors**
From:	**Jeffrey Schneider, Assistant General Manager**
Agenda:	**September 10, 2024**
Report Date:	**September 6, 2024**
Agenda Title:	Authorize the General Manager to Enter into an Agreement with D.A. Davidson & Co. for Underwriting Services related to the Financing of the District's Carter Hill Prestressed Concrete Tank and Seismic Upgrades Project

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Recommendation/Motion:

Authorize the General Manager to enter into an agreement with D.A. Davidson & Co. for underwriting services related to the financing of the District's Carter Hill Prestressed Concrete Tank and Seismic Project in the amount of $41,608, which assumes a PAR amount of $8,000,000.

Background:

Should the District opt to issue tax-exempt bonds to help finance its Carter Hill Prestressed Concrete Tank and Seismic Upgrades Project, underwriting services will be required. In brief, the underwriter will play a critical role in the process of bringing the District's bonds to market and will work alongside the District and its recently retained Financial Advisor, Brant Smith of Backstrom McCarley Berry & Co, LLC (Backstrom), and Bond/Disclosure Counsel, James Wawrzyniak of Jones Hall, to support the District's efforts to sell its bonds.

Backstrom issued an RFP for underwriting services in late July, 2024. The four firms who responded to the RFP are: Oppenheimer & Co., Stifel, D.A. Davidson, and Hilltop Securities.

The District's Advisor, Brant Smith, ranked the proposals based on the criteria set forth in the RFP, and determined that D.A. Davidson was the highest ranked proposer.

Staff is in agreement with Mr. Smith's ranking and places particular emphasis on the fact that the highest ranked firm, D.A. Davidson, recently completed a $20M financing for North Coast Water District. Beyond the great reference from North

Coast, D.A. Davidson is very experienced with issuances for many California water utilities.

D.A. Davidson's fees for the transaction, which will be paid out of the financing proceeds and contingent upon the successful completion of the bond sale, will total $41.6k. Here is a breakdown of the fees from D.A. Davidson:

Takedown	$30,000	(based on $8.0 million PAR value - @ $3.75 per $1,000)
Expenses:	$7,500	Underwriter counsel
	$4,108	Miscellaneous administrative costs
Total	$41,608	

Attachment: D.A. Davidson's proposal.

Attachment A

Coastside County Water District

Request for Proposals

For Investment Banking & Underwriting Services

Series 2024 Revenue Bonds

August 9, 2024

D|A DAVIDSON
FIXED INCOME CAPITAL MARKETS
D.A. Davidson & Co. member SIPC

Mr. Jeffrey Schneider
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Mr. Brant Smith
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Ms. Amelia Threatt
Backstrom McCarley Berry & Co., LLC
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On behalf of D.A. Davidson & Co. (D.A. Davidson), we present our qualifications and ideas for the proposed Series 2024 Revenue Bonds in response to the Request for Proposal from Coastside County Water District (District).

The following summarizes our response and highlights the advantages that D.A. Davidson can offer.

California and Water District Expertise

D.A. Davidson will support the District with a combination of members from our California Public Finance and National Utility Teams. Richard Han manages our California Public Finance Group and will serve as co-lead. Members from our National Utility Team will include Tom Innis, who co-manages the team and has senior managed over $12 billion of water utility financings over a 20+ year career, and Greg Swartz, who has underwritten, consulted, or advised several California multi-source funding sewer/water projects. Most relevant, Tom served as sole manager for North Coast County Water District's most recent inaugural financing, lives in the Bay Area and will be available for any face-to-face meetings or Board presentations.

In 2023, D.A. Davidson ranked in the top 5 in the Nation for number of senior managed negotiated underwritings across all types of bonds and ranked **#1 for number of senior managed utility financings** *(Source: Thomson Reuters).*

Three-Prong Strategy to Achieve Optimal Financing

Similar to our strategy with North Coast County Water District as reflected in the case study herein, we propose to concurrently initiate our internal protocols for a public offering and circulate a term sheet and RFP to potential placement purchasers to enable the Finance Team to select the best financing option. As a third prong in our strategy, given our experience working with I-Bank, we will also pursue a financing through I-Bank. Ultimately, we have unmatched capabilities and experience to pursue the optimal financing for the District.

Marketing, Underwriting, Sales, and Distribution Contributions

D.A. Davidson intends to utilize its California sales staff and retail advisors in 11 offices throughout the State, with over $9 billion in assets, to target buy-and-hold institutional investors and direct/professional retail. Furthermore, understanding that the District is deliberating between issuing Certificates of Participation on its own or Revenue Bonds through a conduit, our underwriting desk has proven ability to minimize any pricing differential between Revenue Bonds and Certificates of Participation as that decision and associated extra steps are considered.

Contributions from an Established and Motivated Firm

As other underwriting firms exit public finance or question their commitment, our team will seek greater visibility and responsibility with the District for transactions through a combination of our national resources/capability, California presence, and water district expertise.

Beginning with Series 2024, we will earn the trust and confidence of the District and its Finance Team and make ongoing contributions. If there is any additional information needed to assess and compare our qualifications, please do not hesitate to contact us. Thank you for your consideration.

Sincerely,



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Table of Contents

Required Disclosure

This proposal is submitted in response to your Request for Proposals to Serve as Underwriter dated August 9, 2024. The contents of this proposal and any subsequent discussions between us, including any and all information, recommendations, opinions, indicative pricing, quotations and analysis with respect to any municipal financial product or issuance of municipal securities, are provided to you in reliance upon the exemption provided for responses to requests for proposals or qualifications under the municipal advisor rules (the "Rules") of the Securities and Exchange Commission (Rule 15Ba1-1 et seq.).

In submitting this proposal, we are not undertaking to act as a "municipal advisor" to you or any other person within the meaning of Section 15B of the Securities Exchange Act of 1934 and the Rules. In connection with this proposal and the transactions described herein, we are not acting as a financial advisor or municipal advisor to you or any other person and are not subject to any fiduciary duty to you or to any other person. We understand that you will consult with and rely on the advice of your own municipal, financial, tax, legal and other advisors in connection with your evaluation of this proposal and the transactions described herein.

Neither this material nor any of its contents may be disclosed, sold, or redistributed, electronically or otherwise, without prior written consent of D.A. Davidson Companies. The information presented herein is based on public information we believe to be reliable, prevailing market conditions, as well as our views at this point in time. We make no representation or warranty with respect to the accuracy or completeness of this material. Past performance is not necessarily indicative of future results. D.A. Davidson Companies does not assume any liability for any loss which may result from the reliance by any person upon such material. We make no representations regarding the legal, tax, regulatory, or accounting implications of entering into a Transaction.

Required Disclosure Pursuant to MSRB Rule G-23: An underwriter's primary role will be to purchase as principal or arrange for the placement of the securities in a commercial arm's length transaction with the issuer and may have financial and other interests that differ from those of the issuer.

D.A. Davidson & Co. is providing the information contained herein for informational purposes only in anticipation of being engaged as underwriter. The primary role of an underwriter is to purchase securities with a view to distribution in an arm's-length, commercial transaction with the issuer.

Responses to Questions

1. **Provide your firm's proposed project team, including your lead banker and underwriter. Please include resumes and roles of each team member.**

Proposed Project Team

With the goal of earning Coastside County Water District's ("CCWD", or the "District") long-term trust and confidence, D.A. Davidson will dedicate eight banking, underwriting, and support personnel for the proposed Series 2024 transaction, as well as future transactions. Tom Innis and Greg Swartz will serve as co-leads for this financing bringing industry leading water utility financing expertise as described herein. Rick Han, who co-leads our California efforts with Tom, will coordinate the personnel listed below, and will coordinate other resources as required. Attachment A includes resumes of our key personnel.

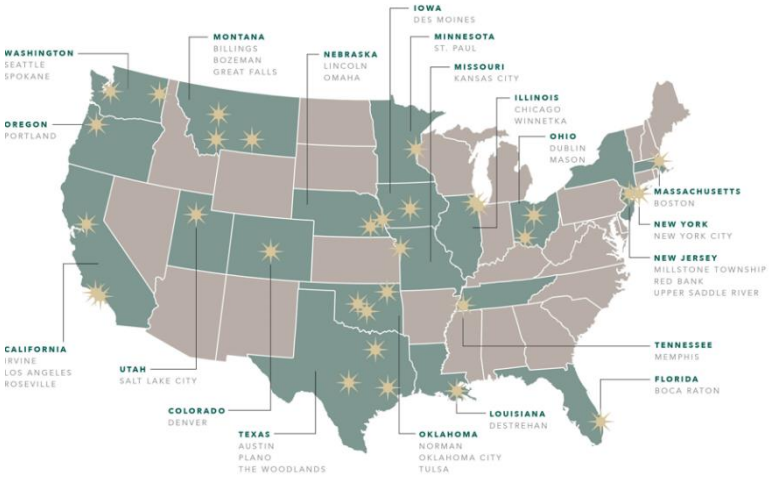
National Utility Team		California Public Finance	
Tom Innis	**Greg Swartz**	**Rick Han**	**Nate Despain**
San Francisco, CA	Phoenix, AZ	Roseville, CA	Irvine, CA
tinnis@dadco.com	gswartz@dadco.com	rhan@dadco.com	ndespain@dadco.com
415-848-6708	303-764-5765	916-622-8767	714-850-8331
Analytical & Support		**Underwriting & Sales**	
Dana Cojocaru-Ivoska	**Gina Pappas**	**Brian Courtney**	**Peter Bouzane**
Roseville, CA	Roseville, CA	Denver, CO	Los Angeles, CA
danacojocaru-ivoska@dadco.com	gpappas@dadco.com	bcourtney@dadco.com	pbouzane@dadco.com
916-744-7560	303-764-5756	303-764-6044	213-244-9226

2. **List or summarize your team's experience as senior manager for enterprise revenue bonds and/or certificates of participation over the last three years.**

Firm Experience

Established in 1935, D.A. Davidson is an employee-owned financial services firm with over 1,600 employees across the U.S. D.A. Davidson includes three divisions: Fixed Income Capital Markets, Equity Capital Markets, and Wealth Management. Our four major office hubs include Chicago, Denver, Los Angeles, and Seattle.

The Fixed Income Capital Markets division, which includes Public Finance, has underwritten, placed, consulted, and advised 2,386 issues for $101.2 Billion for state, local, and non-profit clients across the U.S. over the last three years. Our performance and consistent top five national rankings rely on a combination of:



Management Commitment to Public Finance	**Sales Staff & Retail Advisors Across U.S.**	**Assertive Underwriting Backed by Clean Balance Sheet**	**Bankers Residing in the Communities We Serve**

Given the proposed role as senior/sole underwriter, please see National rankings for number of senior managed underwritings over the past three years on the following page.

Calendar Year	# of Issues	U.S. Rank	Market Share	Par (Billions)
2023	220	5	5.3%	$2.4
2022	292	5	6.4%	$3.6
2021	416	5	5.9%	$4.9

Since 2021, D.A. Davidson has ranked in the top 5 for number of senior managed underwritings. In 2023, we completed 220 senior or sole managed negotiated underwritings – again ranking the firm 5th in the nation. *(Source: Thomson Reuters – 2024 National Negotiated Rankings by Number of Issues)*.

Water Utility Experience

As a subset of our national experience, over the past three years we have underwritten, placed, consulted, and advised 348 drinking water, irrigation, recycled water, stormwater, and wastewater financings for $6.2 Billion. To coordinate our national efforts, in 2021 D.A. Davidson created our National Utility Team (NUT) to collaborate with co-workers, clients, and local finance teams. Tom Innis and Greg Swartz coordinate NUT and will serve as co-leads for the District and its Finance Team. In addition to public offerings and placements, NUT assists finance teams to seek federal and state financial assistance to optimize financing solutions for our clients.

California Experience

Over the past three years, we have senior managed, placed, and co-managed 88 California issues for $ 20.9 Billion. Of note and most relevant to the District, Tom Innis served as sole manager of North Coast County Water District's most recent financing and partnered with Greg Swartz at a prior firm to sole manage Soquel Creek Municipal Water District's most recent financing. This relevant experience with local and peer utilities enables our firm to provide unmatched insights to the finance team. In addition, Richard Han, who leads our California Public Finance Group, will serve the District to coordinate our California resources.

Key Personnel Relevant Experience

Our National Utility Team coordinates with local bankers/advisors across the U.S. to underwrite, place, advise, and consult sewer and water related clients. Over the past three years, our NUT personnel led, co-led, or supported 348 water/wastewater transactions for $6.2 Billion across the U.S. As evidence of our utility expertise, ***D.A. Davidson ranked as the #1 national underwriter for number of senior managed utility financings in 2023.***

Within California, over the past three years Tom and Greg underwrote, placed, or advised 20 California water/wastewater issues for $1.7 Billion while at D.A. Davidson and a prior firm. Please see relevant examples and their roles as lead, co-lead, or support for California water or wastewater utilities summarized in the table below. Please also see Appendix B for a complete list of our experience.

Client	Tom Innis	Greg Swartz	Role
Daly City		Lead	Consultant ~ SRF, WIFIA
Eastern Municipal Water District	Lead		Senior Manager
Las Virgenes Municipal Water District	Co-Lead	Lead	▪ Consultant ~ US BOR SRF, WIFIA ▪ Placement Agent
Mountain House Public Finance Authority		Co-Lead	Senior Manager
North Coast County Water District	Lead		Senior/ Manager
North San Mateo Sanitation District		Lead	Consultant ~ SRF, WIFIA
San Francisco Public Utilities Commission	Co-Lead	Co-Lead	▪ Co-Manager ▪ Consultant ~ SRF, WIFIA
San Juan Water District		Co-Lead	Underwriter
Santa Clara Valley Water District	Co-Lead	Co-Lead	Co-Manager
Santa Paula Utility Authority	Lead		Senior/Sole Manager
Soquel Creek Water District	Co-Lead	Co-Lead	▪ Advisor ~ Co-Bank, Public Offering ▪ Consultant ~ SRF, US BOR, WIFIA
State Water Resources Control Board, SRF	Co-Lead	Co-Lead	▪ Senior Manager ▪ Co-Manager
Triunfo Water and Sanitation District		Lead	Consultant ~ SRF, US BOR, WIFIA
Vallejo		Co-Lead	Senior/Sole Manager
West County Wastewater District		Co-Lead	Senior/Sole Manager
West Sacramento		Co-Lead	Placement Agent

While State and Federal funding may not apply to the District's upcoming financing, given our goal of building a long-term relationship with the District and its Advisor, we provide our experience in this area as it may be beneficial to future financing needs. Given the unprecedented amount of federal funding available through the Bi-Partisan Infrastructure Act, NUT provides a wide range of services to assist finance teams to optimize various combinations of funding from federal, state, and market sources. We have recently assisted the following California communities to originate SRF financial assistance through the State Water Resources and/or originate WIFIA financial assistance (through EPA):

- **Daly City** – We assist Daly City to fund the $150.1 Million Vista Grande Stormwater Project with as much as $70 Million of contributions from up to 12 adjacent local governments or property owners. Currently, our finance plan includes funding the remaining $80.1 Million the project costs with the following sources:
  - $20.0 Million ~ State Water Resources Control Board (SWRCB), Grants
  - $40.1 Million ~ SWRCB, Clean Water SRF
  - $20.0 Million ~ WIFIA / EPA Loan

  We expect to originate SWRCB by October, 2024, and WIFIA by March, 2025.

  Based on input from Proposition 218 experts, managing stormwater is a benefit to groundwater management and regional water quality. Accordingly, Daly City will secure its portion of the debt through their water enterprise.
- **Las Virgenes Municipal Water District –** Las Virgenes will finance an estimated $364 Million "Pure Water Project" with combinations of funding from U.S. Bureau of Reclamation, SWRCB, WIFIA, and, possibly Congressionally Directed Spending of federal SRF appropriations "earmarked" to recipients. Prior to joining D.A. Davidson, Greg Swartz and his prior support staff authored, co-authored, or contributed to multiple sections or components of applications to each of the planned funding sources including a Finance Model that Las Virgenes continues to use to project cash flows and user impacts. Additionally, Greg authored the indicative rating presentation shared, reviewed, and discussed with Kroll in November/December 2023.
- **North San Mateo County Sanitation District** – The Sanitary District is one of 12 local governments affiliated with the Vista Grande Stormwater Project led by Daly City. Based on the most recent version of a cost allocation report, the Sanitary District will serve as an obligor through Joint Powers Finance Authority for as much as 50% of debt originated through SWRCB and WIFIA.
- **San Francisco Public Utilities Commission** – Over a period of years starting with serving as a consultant to originate a WIFIA loan in 2018, both Tom Innis and Greg Swartz have assisted and intend to continue to assist San Francisco to justify and access meaningful amounts of financial assistance through SWRCB and WIFIA. We plan to use our consulting relationship with San Francisco and its Municipal Advisors as a template to assist other California water/wastewater financings.
- **Triunfo Water and Sanitation District –** Triunfo has obligated itself for as much as 30% of the capital and operating costs associated with the "Pure Water Project" affiliated with Las Virgenes. We have assisted Triunfo to transition from placements as their only debt outstanding to public offerings, SRF, and WIFIA. With new lenders and bondholders in the future, we have assisted Triunfo to create or revise debt management policies, supplemental data within annual financial reports, and other procedures or documents expected by rating agencies and the marketplace.

Certificate of Participation (COP) Experience

Regardless if the District issues COPs or revenue bonds through a conduit, we believe the strongest value an underwriter can add is experience with utility/enterprise financings as we described above. That said, D.A. Davidson has significant experience in issuing COPs, or similar debt subject to annual appropriation, with 252 issues for $ $5.6 billion nationally and 17 issues for $1.7 billion in California over the past three years.

3. **Please provide three relevant references for whom your lead banker has provided similar investment banking services to over the last three years.**

References ~ Senior Underwriter

- **Central Contra Costa Sanitary District**
  Roger Bailey, General Manager | 925-228-9500 | rbailey@centralsan.org
  5019 Imhoff Place, Martinez, CA 94553
- **Elsinore Valley Municipal Water District**
  Bob Hartwig, AGM Administrator | 951-674-3146 ext.: 8242 | rhartwig@evmwd.net
  31315 Chaney St., Elsinore Valley, CA 92530
- **North Coast County Water District**
  Adrianne Carr PH.D., General Manager | 650-355-3462 | acarr@nccwd.net
  2400 Francisco Blvd., Pacifica, CA 94044

References ~ Placement

- **Las Virgenes Municipal Water District**
  Don Patterson, Administration & Finance Director | 818-251-2133 | dpatterson@lvmwd.com
  4232 Las Virgenes Road #1994, Calabasas, CA 91302
- **Sanitary District No. 5 of Marin County**
  Tony Rubio, District Manager | 415-435-1501 x106 | trubio@sani5.org
  2001 Paradise Dr., Tiburon, CA 94920
- **Soquel Creek Water District**
  Leslie Strohm, Finance/Business | 831-475-8500 x132 | leslies@soquelcreekwater.org
  5180 Soquel Drive, Soquel, CA 95073

4. **This will be the District's inaugural public offering, and the District will be applying for a rating from Standard & Poor's. Please provide your insights on obtaining the rating and considerations the District should explore when marketing the bonds to investors as a first-time issuer. Additionally, please elaborate on your firm's or your team members' experience in pricing first-time issuers**.

Inaugural Rating Experience and Approach

Our team is eager to work with the District and its Municipal Advisor to obtain an inaugural rating from Standard & Poor's. We have extensive experience with inaugural ratings for peer group issuers including North Coast County Water District's inaugural rating. Tom Innis, as lead underwriter, worked with North Coast and its MA to achieve a AA- rating from S&P. From that and our current work with S&P, our team can hit the ground running from day one to develop a rating presentation and orchestrate rating interactions.

Based on our review of current and projected metrics, we are confident that the District could achieve an inaugural rating in the AA category. This confidence comes from our review of the District's key metrics addressed by S&P. These metrics are on par or better than S&P AA benchmarks :

- Service Area and Customer Base
- Management and Financial Policies
- Economic Data of Service Area
- Water Source
- Historical Demand
- Water Rates, Charges and Structure
- Historical and Projected Debt Service Coverages
- Structure of Financing to include Rate Covenant and Additional Bonds Test

In addition to existing financial policies, we can also work with the District to develop a Debt Management Policy and refine a Rate Stabilization Fund to enable the District to reduce or eliminate a "stagnant" Debt Service Reserve Fund.

Our team is fortunate to have the experience from working with several inaugural utility financings that will enable us

to manage S&P interactions and expectations. We can align S&P's metrics, including cash flows, and make it clear that S&P can justify an AA rating.

A key metric addressed above is debt service coverage. To help with our assessment of the District, we project cash flows and coverage through 2055 based on the most recent rate study by Raftelis, an approximated existing debt service derived from the most recent annual financial report, and our preliminary Series 2024 amortization. Our projected coverages levels are significantly higher than the majority of inaugural utility public offerings we have recently assisted. We include projected cash flows through 2034 as shown below.

Coastside County Water District, Projected Cash Flows & Coverage ~ 2025 to 2034

				Debt Service		
FYE	Revenue	O& M	Revenue	Existing	Series 2024	Coverage
2025	$ 18,294,296	$ 11,892,822	$ 6,401,474	$ 1,477,705	$ 62,942	4.16
2026	19,304,196	12,256,081	7,048,115	1,477,764	494,650	3.57
2027	20,357,642	12,643,438	7,714,204	1,482,064	493,525	3.90
2028	20,968,371	13,212,393	7,755,979	1,480,518	492,150	3.93
2029	21,597,422	13,806,950	7,790,472	1,477,828	495,400	3.95
2030	22,245,345	14,428,263	7,817,082	1,479,362	493,275	3.96
2031	22,912,705	15,077,535	7,835,170	1,479,954	495,775	3.97
2032	23,600,087	15,756,024	7,844,063	1,479,605	492,900	3.98
2033	24,308,089	16,465,045	7,843,044	1,478,314	494,650	3.98
2034	25,037,332	17,205,972	7,831,360	1,044,884	491,025	5.10

First Time Public Offering ~ Marketing Considerations

Assuming the District achieves an AA category rating, we do not see any additional considerations for marketing the financing other than what we address herein. One of those considerations would be to issue debt most commonly accepted in the market. Traditionally that has been 30-year level debt service with a 10-year call. More recently an 8-year call has been accepted without a pricing penalty and we present that as a baseline structure recommendation. We also present a 5-year call option if the District requires more call flexibility to accommodate future financings and is willing to accept higher interest expense from the shorter call. Our desk has the flexibility to test both options up to and including the day of pricing and can adjust if we receive positive investor feedback for an aggressive 5-year call.

5. **Describe your firm's retail, professional retail, and institutional sales capabilities related to tax-exempt financings**

Distribution Overview

D.A. Davidson has the following distribution strengths:

- sales staff across the U.S. dedicated to serving institutional investors ranging from Tier 1 (top 100 municipal bond investors) to professional retail;
- retail advisors/wealth managers across the U.S. dedicated to serving direct retail investors;
- clean/unleveraged balance sheet; and
- management commitment to maintain public finance as a highly visible and empowered business practice.

Retail Distribution

As of June 30, 2024, our Wealth Management Retail Sales Force includes 360 registered advisors in 90 locations across the U.S. managing $75 billion in assets.

Within California, we have 11 locations managing 20,689 accounts and over $9.0 billion in assets. We also have a retail trading desk in downtown Los Angeles with two retail traders dedicated to trading California paper for our California wealth-management clients. When underwriting bonds for California clients, our retail trading desk and our underwriting desk communicate frequently regarding interest-rate levels and demand for California local government

bonds. Please see the table below that summarizes our California retail offices.

D.A. Davidson California Retail Advisors					
Carlsbad ~ 4	Claremont ~ 7	Encino ~ 4	Fresno ~ 3	Long Beach ~ 5	Los Angeles ~ 6
Newport Beach ~ 5	Pasadena – 8	Roseville ~ 8	Santa Barbara ~ 2	Ventura ~ 5	

Institutional Distribution

Institutional investors typically account for more than 90% of the demand in the primary market and can account for more than 95% of "A" rated and higher issues. Typically, Tier 1 institutional investors (top 100) buy bonds and trade or "flip them" to retail and smaller institutional investors.

Our institutional investor capabilities include 80 fixed-income sales and trading personnel managing over 1,700 accounts on behalf of more than 1,200 institutional and professional retail investors.

Within California, our institutional capability includes sales staff able to stimulate demand for the District's obligations from a range of investors from the top 100 investors to professional retail.

6. **Please provide two case studies of your firm's pricing of an AA-rated California credit with a similar par amount over the last three years.**

Case Study 1: North Coast County Water District – Certificates of Participation

In November, 2021, D.A. Davidson senior managed North Coast County Water District's COPs with Tom Innis as lead banker. The table below summarizes our pre-pricing scale, final scale, and scale changes. We note that Tom worked with James Wawrzyniak as Underwriter's Counsel on this financing.

Dual Tracked Approach

Following our appointment as senior manager, we followed a strategy of concurrently initiating a public offering and placement to ensure an optimal borrowing rate and structure. Ultimately, North Coast chose a public offering for a longer term, lower interest rates, and, most importantly, a flexible financing schedule.

As a caveat, if hired by the District, we could offer a similar dual tracked approach if the District is considering a 20-year final maturity. We do not expect demand for a private placement with a final maturity beyond 20 years. Following appointment, we estimate approximately a week to ten days to conduct due diligence and obtain internal approval to issue Series 2024 as a public offering. Concurrently with initiating a public offering, we propose to circulate a term sheet and request for placement bids to targeted banks. The Finance Team can reserve the right to reject all placement bids. The Finance team can review and assess bids against public offering scales and comparable issuers/issues and select the best approach.

Pricing

As shown below/next page, we priced North Coast with 4% coupons. This structure enabled us to balance institutional investor preference for higher/tradable coupons with professional and direct retail preferences with coupons closer to par. With no changes in MMD from pre-pricing to pricing, we priced North Coast with lower yields resulting in a .11% decrease in the true interest cost and $494,000 savings.

Pre-Pricing Scale (000's)	
Par:	$ 20,260
Project Deposit:	$ 23,500
TIC %	2.83%
Debt Service:	$ 35,482

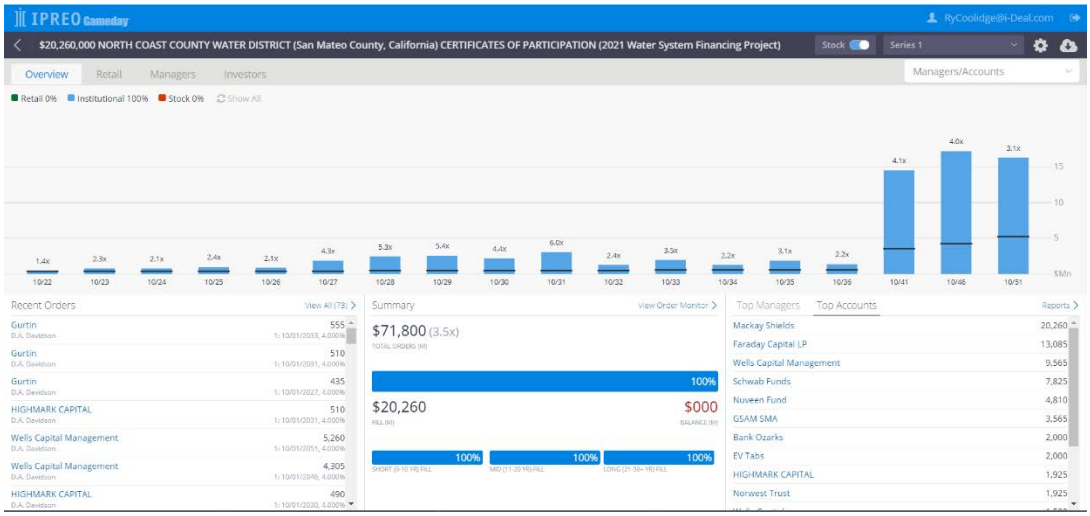
Final Scale (000's)	
Par:	$ 20,210
Project Deposit:	$ 23,500
TIC %	2.72%
Debt Service:	$ 34,988

Changes (000's)	
Par:	$ (50)
Project Deposit:	$ -
TIC %	-0.11%
Debt Service:	$ (494)

Maturity 1-Oct	Principal (000's)	Coupon (Rate)	MMD 11/08/21	DAD Yield (to Call)	Spread	Principal (000's)	Coupon (Rate)	MMD 11/09/21	DAD Yield (to Call)	Spread	Principal (000's)	Coupon (Rate)	MMD	DAD Yield (to Call)	Spread
2022	355	4.00	0.15	0.23	0.08	355	4.00	0.15	0.23	0.08	-	-	-	-	-
2023	370	4.00	0.24	0.33	0.09	370	4.00	0.24	0.33	0.09	-	-	-	-	-
2024	385	4.00	0.32	0.42	0.10	385	4.00	0.32	0.42	0.10	-	-	-	-	-
2025	400	4.00	0.46	0.65	0.19	400	4.00	0.46	0.56	0.10	-	-	-	(0.09)	(0.09)
2026	420	4.00	0.62	0.73	0.11	420	4.00	0.62	0.73	0.11	-	-	-	-	-
2027	435	4.00	0.77	0.89	0.12	435	4.00	0.77	0.85	0.08	-	-	-	(0.04)	(0.04)
2028	455	4.00	0.91	1.04	0.13	450	4.00	0.91	1.00	0.09	(5)	-	-	(0.04)	(0.04)
2029	470	4.00	1.02	1.17	0.15	470	4.00	1.02	1.13	0.11	-	-	-	(0.04)	(0.04)
2030	490	4.00	1.07	1.24	0.17	490	4.00	1.07	1.20	0.13	-	-	-	(0.04)	(0.04)
2031	510	4.00	1.13	1.34	0.21	510	4.00	1.13	1.28	0.15	-	-	-	(0.06)	(0.06)
2032	530	4.00	1.15	1.42	0.27	530	4.00	1.15	1.42	0.27	-	-	-	-	-
2033	555	4.00	1.17	1.47	0.30	550	4.00	1.17	1.44	0.27	(5)	-	-	(0.03)	(0.03)
2034	575	4.00	1.19	1.54	0.35	575	4.00	1.19	1.54	0.35	-	-	-	-	-
2035	600	4.00	1.21	1.61	0.40	600	4.00	1.21	1.59	0.38	-	-	-	(0.02)	(0.02)
2036	625	4.00	1.23	1.68	0.45	625	4.00	1.23	1.68	0.45	-	-	-	-	-
Term 2041	3,520	4.00	1.38	1.93	0.55	3,515	4.00	1.38	1.89	0.51	(5)	-	-	(0.04)	(0.04)
Term 2046	4,305	4.00	1.53	2.11	0.58	4,290	4.00	1.53	2.07	0.54	(15)	-	-	(0.04)	(0.04)
Term 2051	5,260	4.00	1.58	2.16	0.58	5,240	4.00	1.58	2.13	0.55	(20)	-	-	(0.03)	(0.03)

Sales Results

Please see a summary of the sales results below.



While the above screenshot reflects from IPREO only the "Top Accounts", in total we were able to bring in 15 unique investors who we will target for the District's financing. As an aside, we will provide IPREO Gameday services to the District and its Municipal Advisor so that you can see orders as they happen on day of pricing.

Case Study 2; Martinez Unified School District (Contra Costa County)

On April 22, 2024, D.A. Davidson priced $13,610,000 G.O. refunding bonds for a longtime client, Martinez Unified School District in Contra Costa County. This was D.A. Davidson's seventh financing for the District. Moody's affirmed an "Aa3" rating.

The refunding bonds have a true interest cost (TIC) of 2.85%. We issued Series 2024 to refund the District's Series

2011 G.O. Bonds. Our efforts resulted in $790,085 gross savings, $624,716 net present value (NPV) savings, or 4.29% savings of refunded bonds.

Our initial plan was to price the bonds in the bottom half of the week of April 22. Based on prior comparable transactions, our preliminary yields were 5 bps to 7 bps lower to comparable maturities from the AAA MMD scale. On the Friday prior to pricing, we learned that Los Angeles Unified School District scheduled to sell $3 billion on Wednesday, April 24 with a Moody's rating of Aa2 – one notch above Martinez's Aa3. The LAUSD Finance Team released its a preliminary scale 25 bps to 33 bps higher than our Martinez scale in 2025-33. If forced to raise our rates to LAUSD's levels, our refunding would not be practical.

Rather than postpone our sale, our underwriter proposed to price before LAUSD on Monday, April 22. As expected, a number of investors rejected Martinez USD's yields as too low compared to LAUSD, but we generated sufficient orders from investors to complete the sale. Since we the issue was oversubscribed in several maturities, we reduced yields in some maturities for the benefit of Martinez USD. After the order period, we inventoried \$700,000 in unsold bonds and lock the yields. Our efforts led to Martinez pricing 0.24% to 0.33% lower than LAUSD's in 2025-33

The District and the Municipal Advisor were impressed with our underwriting experience, insight, and capabilities, as well as our flexibility to price ahead of LAUSD at much lower yields.

Mat	MARTINEZ UNIFIED SCHOOL DISTRICT UTGO 4/23/2024 D.A. Davidson & Co Moody's: Aa3 S&P: N/A Fitch: Premium Call: N/A; Par Call: N/A MMD 4/19/24 13,610,000			
	Coupon	Yield	Spread to MMD	YTM
2024	5.000	3.650	24	3.650
2025	5.000	3.200	-10	3.200
2026	5.000	3.030	-10	3.030
2027	5.000	2.840	-10	2.840
2028	5.000	2.740	-9	2.740
2029	5.000	2.730	-5	2.730
2030	5.000	2.700	-5	2.700
2031	5.000	2.660	-6	2.660
2032	5.000	2.680	-5	2.680
2033	5.000	2.690	-5	2.690
2034				
2035				

Mat	LOS ANGELES UNIFIED SCHOOL DISTRICT UTGO 4/23/2024 Bank of America Merrill Moody's: Aa2 S&P: N/A Fitch: Premium Call: N/A; Par Call: N/A MMD 4/23/24 2,984,880,000			
	Coupon	Yield	Spread to MMD	YTM
2024	6.000	3.500	9	3.500
2025	5.000	3.430	14	3.430
2026	5.000	3.280	14	3.280
2027	5.000	3.130	18	3.130
2028	5.000	3.010	18	3.010
2029	5.000	2.990	21	2.990
2030	5.000	2.990	24	2.990
2031	5.000	2.990	27	2.990
2032	5.000	2.990	26	2.990
2033	5.000	3.000	26	3.000
2034	5.000	3.010	25	3.010
2035				

7. **Share your ideas on various coupon structures and call features that may be recommendable for the District's proposed transaction**.

Couponing

As you will see in our indicative scale within our response to Question 11, our recommended coupon structures for both the 30-year and 20-year scenarios use 5% coupons across all maturities until the final term bond where we recommend a 4% coupon. Using a 4% coupon in the final term, which includes most of the total to be issued, reduces the debt service by approximately $400k-$750k. We recommend 4% coupons given our first-hand experience for high investor demand for 4% coupons at the end of the yield curve.

Call Options

With little to no pricing penalty, D.A. Davidson can offer the District an 8-year call option. The Finance Team can consider a more aggressive 5-year call but should be prepared for investor concerns and a potential pricing penalty. Historically, 10-year call options have been common practice. However, D.A. Davidson regularly offers clients a shortened, 8-year call option without penalty. Since the District's Series 2024 is tentatively scheduled with a par amount below $10 million, the Finance Team should consider designating the bonds as Bank Qualified (BQ) to target commercial banks in a public offering. With an inverted yield curve, rates within 10 years have been difficult for banks. This allows D.A. Davidson's desk to offer 5-year call options with similar or slightly higher pricing spreads compared to an 8-year call option – should the District utilize the 5-year call option for refunding and future financing flexibility.

We note that shorter calls increase yields to maturity and can lead to higher interest expense if the District does not act on the refunding opportunity. The District's True Interest Cost (TIC) for a 20-Year financing with an 8-year call would be 3.75% -- ***if the District does not refund the bonds in year 8***. In contrast, the TIC is 4.02% for a 5-year call – ***if the District does not refund the bonds in year 5***. For a 30-Year financing, the difference between 8-year and 5-year calls is 4.15% and 4.34% respectively.

Alternative – IBank

As the District is aware from its previous financing with California Infrastructure & Economic Development Bank (IBank), IBank manages the Infrastructure State Revolving Fund (ISRF) as a general-purpose revolving fund. IBank sets a single loan rate based on the average weighted maturity of an ISRF loan at a subsidy at or below IBank's "AAA" cost of borrowing for ISRF.

Similar to other utilities in the ISRF loan portfolio, the District could structure an ISRF loan with the following advantages:

- no rating requirement;
- closing costs limited to the District's Finance Team (i.e., no underwriting fees);
- no insurance requirement;
- no reserve requirement;
- amortize debt service out to thirty (30) years; and
- revenue and additional debt covenants that conform to outstanding debt.

With the above advantages, the District could finance its Series 2024 through IBank/ISRF with potential pricing advantages to a public offering. IBank/ISRF could be a practical alternative subject to:

1. discussing ISRF capacity, timelines, senior liens, and subordinate liens with IBank personnel; and
2. discussing the senior lien provisions with SWRCB – with a possible subordinate lien ISRF loan as a fallback.

With respect to timing, IBank's ISRF application process is comparatively easy, but realistically a financing couldn't be completed until December. D.A. Davidson offers to track this option, given our strong relationship with IBank, as the District moves forward with a public offering.

8. **Discuss your marketing and distribution plan for the bonds**.

Outreach – Post POS Earlier

It is standard practice to post the POS one week or less prior to pricing. Posting the POS earlier – two to four weeks prior to pricing – will enable: (1) the Finance Team to interact with investor targets, (2) potential investors to thoroughly review the credit, and (3) investment committees to authorize the credit. We concede that posting the POS earlier is not a "slick" (or expensive) marketing concept like stimulating demand from overseas investors. Along with other marketing recommendations discussed below, our "nuts and bolts" approach is more likely to have a meaningful impact on pricing Series 2024.

Outreach – Investor Presentation

Typically, investor presentations, or "road shows," are often too little, too late, with too few "views" to serve as an effective outreach tool. As an alternative, the team could post a presentation three to four weeks prior to pricing, circulate presentation links to targets, and notice the availability of finance members on reserved days and times to

discuss Series 2024.

Using the example schedule shown to the right, Jeffrey Schneider, Brant Smith, and members of D.A. Davidson could interact as a group with targeted investors on a reserved day and time slot. We assume a single session with a professional retail or institutional investor would require 15 minutes with four to six sessions within two hours. This form of outreach could reach more investor targets compared to "views" for a "canned" road show – subject to parameters: (1) bond counsel signs off on presentation and draft responses to questions, (2) we brief participants; particularly on how to address unexpected questions, (3) and we post a summary of questions and answers.

			Participants		
Date	Day	Time MT	District	BMCB	DAD
Sep 16	Monday	11 am–1 pm	Jeffrey Schneider	Brant	Tom
Sep 20	Friday	8–10 am	Jeffrey Schneider	Brant	Greg
Sep 23	Monday	11 am–1 pm	Jeffrey Schneider	Brant	Tom
Sep 27	Friday	8-10 am	Jeffrey Schneider	Brant	Greg

Peer Group Investors

Targeting investors holding peer group bonds is an efficient plan to market Series 2024, stimulate demand, and create a diverse investor base. D.A. Davidson has a head start on these targets given our experience with North Coast County Water District and similar inaugural or less frequent issuers within a peer group of utilities.

Buy-and-Hold Investors

We can also rely on bondholder data to identify and target investors more likely to buy-and-hold bonds. Generally, Tier 1 investors include the top 100 investors who dominate bond sales with the intent to buy-sell-trade bonds – often trading/re-trading the same bonds over years. In contrast, Tier 2/3 investors seek stable, predictable income, and hold bonds. While individual Tier 2/3 investors may order fewer bonds than a Tier 1 investor, when aggregated, Tier 2/3 investors can positively impact investor demand and diversity as well as add stability to secondary trading.

Investor Targets –Retail

Direct retail investors – "mom and pop investors" – acquire municipal bonds in the secondary market and are a minor buyer in public offerings. Direct retail investors are bewildered by institutional investor preferences to pay premiums for high rated, lower yield bonds – as trading opportunities.

A subset of the finance team could present a brief (30-minute) on-site presentation to our California retail advisors and, if practical, some direct retail clients. Over time and across multiple issues, such periodic outreach could increase awareness and stimulate demand for the District's bonds structured to accommodate retail preferences for lower coupons/rates and lower premiums.

To access "mom and pop" investors, the District must target professional retail which invests on behalf of a pool of individual investors. Professional retail enables individuals to invest in bonds and diversify investments – particularly for investors who cannot afford typical "block sizes" of bonds ($250,000 or more). As a long-term ongoing strategy, targeting professional retail can increase demand and diversity.

9. **Who do you anticipate the primary investors will be? Which specific investors will your firm target? What strategies will your firm employ to maximize investor demand?**

Target Investors

D.A. Davidson has a significant advantage over other firms to target investors who have proven interest in credits similar to the District. As addressed, we can build from the 15 unique investors we brought to North Coast County Water District's financing. With anchor buyers established, we propose to target additional investors familiar with utility credits. These include institutional investors and professional retail investors who have a preference to buy-and-hold investments through the call date. We will also target medium to small institutional investors seeking reliable fixed income; e.g., insurance companies, trust funds, and professional retail.

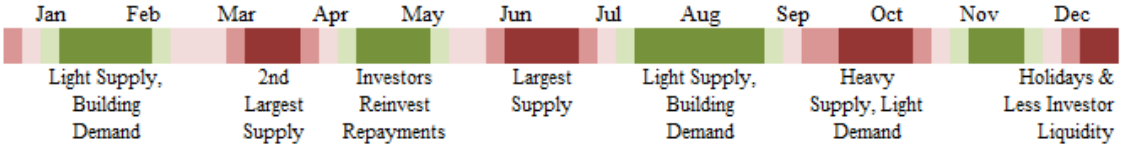
Maximize Demand Through Investor Interactions

We propose to target potential investors with a presentation posted and circulated with reserved windows of availability for targeted investors to directly contact representatives of the District and the Finance Team, as described above.

Pricing Schedule/Strategy

Historical patterns of supply and demand can positively or negatively impact the market's response to the District. Before or during a kick-off call, we propose to discuss the schedule to post the POS and price.

As shown in the timeline below, we encourage clients to market and price in periods of low supply and/or high demand as highlighted in green. In periods of high supply/lower demand (dark red), we recommend: (1) accelerating or deferring pricing, or (2) investing additional time and effort to market the issue prior to the market cacophony typical of heavy supply and light demand.



Historically, the largest bond supply within a calendar year occurs from mid-June to early-July, the second largest supply is mid-March to early-April, and the 3rd largest supply is October. In contrast to March/April and June/July, October can be challenging for both light demand and large supply. As alternatives to pricing in October, the District could consider the following options:

- **Accelerate Pricing** ~ subject to document status and Board actions, we could price in September to aggressively market and price with less supply and higher demand.
- **Defer Pricing** ~ as much or more than 2016 and 2020, the 2024 presidential election will be controversial, emotional, and fractional and could dramatically impact market stability. As soon as practical after the District selects an underwriter, we propose to consider the advantages and disadvantages of pricing after January 1, 2025.
- **Extended Marketing** ~ a "deal" becomes real when the POS is posted, bankers and underwriters initiate internal procedures, and sales staff initiate external marketing. We propose to post the POS two to four weeks prior to an October pricing to distinguish the District when the market will likely be distracted by national politics.

10. **The District is considering both a 20-year and a 30-year structure for its debt issuance. Please provide your insights on the advantages and disadvantages of each structure when coming to market. Are there significant considerations that make one structure preferable over the other? Additionally, what potential market or investor concerns should the District be aware of regarding a 20-year versus a 30-year structure?**

To address the last question first, we see no market or investor concerns regarding a 20-year or 30-year structure. Each structure has its advantages, as the 20-year provides larger block sizes of bonds to attract investors and drive down borrowing costs, while a 30-year structure provides better discount on the long end of the curve to drive down borrowing costs. The biggest question for the District is average debt service and debt service coverage. In our evaluation, the higher debt service and lower coverage from shorter term debt will not impact the District's inaugural rating and market reception. However, should the District want to lock in lower annual debt service for a longer period to help with rate setting, then the 30-year structure should be pursued. We will engage with the District and its MA to assess priorities and continue to evaluate coverage and final maturity options through day of pricing.

11. **Please provide two proposed bond sizing and maturity schedules, including coupons, tax-exempt yields, and spreads to MMD on a maturity-by-maturity basis. Prepare one schedule for a 20-year sizing and another for a 30-year sizing, assuming market conditions as of July 24, 2024.**

Indicative Bond Sizing and Maturity Schedules

As shown on the following page, we include two indicative tax-exempt bond sizing and maturity schedules, along with their associated spreads, based on $8 million par. Our spreads assume market rates as of July 24, 2024, and August principal redemption dates. We have also assumed an AA rating with no insurance as noted on the following page.

$8 Million Water Revenue Bonds
20-Year Term

Maturity (8/1)	Par (000s)	Coupon (%)	MMD (%)	Yield (%)	Spread
2025	240	5.00	2.88	2.83	***-0.05***
2026	250	5.00	2.84	2.80	***-0.04***
2027	265	5.00	2.79	2.76	***-0.03***
2028	280	5.00	2.78	2.76	***-0.02***
2029	295	5.00	2.75	2.73	***-0.02***
2030	310	5.00	2.77	2.77	***0.00***
2031	325	5.00	2.77	2.77	***0.00***
2032	340	5.00	2.77	2.80	***0.03***
2033	360	5.00	2.80	2.83	***0.03***
2034	375	5.00	2.80	2.84	***0.04***
2035	395	5.00	2.83	2.89	***0.06***
2036	415	5.00	2.87	2.95	***0.08***
2037	435	5.00	2.92	3.02	***0.10***
2038	460	5.00	2.96	3.08	***0.12***
2039	485	5.00	3.04	3.18	***0.14***
2040	510	5.00	3.14	3.29	***0.15***
2044[T]	2,260	4.00	3.40	4.05	***0.65***

T indicates term bond

$8 Million Water Revenue Bonds
30-Year Term

Maturity (8/1)	Par (000s)	Coupon (%)	MMD (%)	Yield (%)	Spread
2025	120	5.00	2.88	2.83	***-0.05***
2026	125	5.00	2.84	2.80	***-0.04***
2027	130	5.00	2.79	2.76	***-0.03***
2028	140	5.00	2.78	2.76	***-0.02***
2029	145	5.00	2.75	2.73	***-0.02***
2030	155	5.00	2.77	2.77	***0.00***
2031	160	5.00	2.77	2.77	***0.00***
2032	170	5.00	2.77	2.80	***0.03***
2033	175	5.00	2.8	2.83	***0.03***
2034	185	5.00	2.8	2.84	***0.04***
2035	195	5.00	2.83	2.89	***0.06***
2036	205	5.00	2.87	2.95	***0.08***
2037	215	5.00	2.92	3.02	***0.10***
2038	225	5.00	2.96	3.08	***0.12***
2039	240	5.00	3.04	3.18	***0.14***
2040	250	5.00	3.14	3.29	***0.15***
2041	265	5.00	3.23	3.39	***0.16***
2042	280	5.00	3.29	3.46	***0.17***
2043	290	5.00	3.35	3.53	***0.18***
2044	305	5.00	3.40	3.59	***0.19***
2049[T]	1,790	5.00	3.60	3.80	***0.20***
2054[T]	2,235	4.00	3.68	4.20	***0.52***

T indicates term bond

Certificates of Participation (COPs) vs. Revenue Bonds

Following conversations with the District's Municipal Advisor and Bond Counsel, we understand that the District is still evaluating issuing the debt as COPs or revenue bonds issued through a conduit. We are very familiar with this evaluation of potential pricing advantage of issuing as revenue bonds against the additional cost, steps, timing considerations and additional reporting required with issuing through a conduit. To assist with that evaluation, we are currently seeing a 5-10 basis point pricing advantage for issuing debt as revenue bonds through a conduit. That advantage could change up and through pricing and we will continue to evaluate that advantage against the additional considerations noted.

12. **Provide a detail of your proposed fees and expenses for the financing, and any assumptions used in deriving this fee structure. Include takedowns broken out by maturity. For consistency of comparison, please assume a par amount of $8 million with a 30-year term.**

Overview

We base our proposed fees on: (1) recent comparable transactions by a peer group of similar California water/wastewater utilities, (2) our preliminary scale presented in the prior section, (3) our three-prong approach to optimize the financing, and (4) our first-hand experience with structuring, documenting, marketing, and pricing inaugural pubic offerings by water/wastewater utilities.

We acknowledge the importance of controlling underwriting fees to demonstrate to governing bodies that staff and their advisor are motivated to manage the best interests of the issuer. However, underwriting fees are a relatively low cost compared to total borrowing costs. As an inaugural public offering, we will require more time and effort to document the first public offering, to justify the rating, to market an unknown credit to investors, and to price to a jaded market of grizzled, hardened investors who will push hard for more yield/return on their investment.

Peer Group

As shown below, we identify a peer group of similar California utilities. Initially, we can use this peer group to justify our proposed fees. As we move towards marketing the transaction, we can target current bondholders of the peer group as the most effective and efficient means to market Series 2024.

Peer Group	Recent Series	Debt	Inagural Offering	BQ	Sale	Par $	Ratings F	Ratings S	Insured Rating	COI/ $1,000	UWD/ $1,000	COI+UWD /$1000	Advisor
Brooktrails Township Community Services District	2021	Bond	Yes	Yes	Neg	2,955,000		A	AA	57.0257	15.5000	72.5257	Falwell
Esparto Community Services District, Water	2021A	Bond	Yes	Yes	Neg	2,855,000		A+	AA	48.9926	20.0000	68.9926	Falwell
Esparto Community Services District, Sewer	2021B	Bond	Yes	Yes	Neg	13,050,000		A+	AA	5.5016	2.0000	7.5016	Falwell
North Coast Water District	2021	COP	Yes		Neg	20,210,000		AA-	AA	13.3799	2.7490	16.1289	Wulff Hansen
South Coast Water District Finance Authority	2020	Bond			Neg	32,845,000	AA+			6.2449	3.3500	9.5949	Fieldman
Yucaipa Valley Water Distrct Finance Authority	2021A	2 Yr Note			Neg	81,400,000		AA-		3.0277	1.3612	4.3889	Fielman
Yucaipa Valley Water Distrct Finance Authority	2021B	Bond			Neg	5,795,000		AA-		3.6282	1.3610	4.9892	Fielman
Peer Group Average										19.6858	6.6173	26.3031	

Taking the above information into consideration, we provide below our proposed takedowns by maturity followed by a summary of fees and expenses on the following page. This proposal assumes the District receives a rating in the AA category.

Takedown by Maturity

Maturity	Takedown	Maturity	Takedown	Maturity	Takedown
8/1/25	2.5000	8/1/35	3.0000	8/1/45	4.2500
8/1/26	2.5000	8/1/36	3.2500	8/1/46	4.2500
8/1/27	3.0000	8/1/37	3.2500	8/1/47	5.0000
8/1/28	3.0000	8/1/38	3.2500	8/1/48	5.0000
8/1/29	3.0000	8/1/39	3.2500	8/1/49	5.0000
8/1/30	3.0000	8/1/40	3.5000	8/1/50	5.0000
8/1/31	3.0000	8/1/41	3.5000	8/1/51	5.0000
8/1/32	3.0000	8/1/42	3.5000	8/1/52	5.0000
8/1/33	3.0000	8/1/43	4.2500	8/1/53	5.0000
8/1/34	3.0000	8/1/44	4.2500	8/1/54	5.0000

Proposed Fees

Component		Fee	per $1,000
Management Fee	$	-	0.0000
Underwriting Fee		-	0.0000
Average Takedown		30,000	3.7500
Expenses		11,608	1.4510
Total	$	41,608	5.2010
Comparable Fees	Peer Group		6.6173

Expense Detail	
Underwriter Counsel	$ 7,500
IPREO	803
CUSIP	1,300
Other (a)	2,006
Total	$ 11,608

(a) Day Loan, Discosure, Out-of-Pocket

13. **Include the proposed cost of underwriter's counsel as a fixed expense item, and which firm and contact person you propose to retain**

For underwriter's counsel, we propose Albert Reyes from Kutak Rock for a fixed expense of $7,500 as included in the expense table above.

Attachment A: Resumes of Key Personnel

Water and Wastewater Expertise

Team Member	Responsibility	Resume Highlights
Tom Innis Managing Director  tinnis@dadco.com 415-848-6708	▪ Co-Lead Banker ▪ Day-to-Day Management ▪ Coordinate Firm Resources ▪ Oversee Pre-Marketing, Pricing and Closing	▪ Public Finance Experience: 20+ Years ▪ Head of National Utility Team ▪ Senior Managed $15+ billion of municipal bond transactions, predominantly in utility financings ▪ At prior firms, led utility practices to Top 3 national rankings. ▪ BS, U.S. Military Academy, West Point ▪ Army Veteran ▪ MBA, Wharton School, University of Pennsylvania ▪ FINRA Series 7, 50, 53, 63
Greg Swartz Senior Vice President  gswartz@dadco.com 303-764-5765	▪ Co-Lead Banker ▪ Coordinate Finance Team ▪ Lead or Co-Lead Finance Plan alongside Municipal Advisor ▪ Structures, Analytics, and Amortizations ▪ Coordinate Disclosure and Ratings ▪ Coordinate Pre-Marketing, Pricing and Closing	▪ Public Finance Experience: 20+ Years ▪ Prior Responsibilities: Issuer, Board Member, Advisor, Consultant ▪ Senior Managed $15 + Billion Utility Financings ▪ SRF Manager / Executive Director: AZ, IN, and IL ▪ BS Economics, Butler University ▪ Masters, Public Finance, Indiana University ▪ FINRA Series 7, 50, 63
Gina Pappas Associate  gpappas@dadco.com	▪ Assist Day-to-Day activities. ▪ Manage Schedule ▪ Support Bankers ▪ Support quantitative analysis ▪ Manage processing	▪ Public Finance Experience: 3+ years ▪ 27 senior / sole-managed / co-managed California transactions for over $10 Billion ▪ Previously worked at PIMCO

California Public Finance

Team Member	Responsibility	Resume Highlights
Richard Han Managing Director  rhan@dadco.com 916-744-7261	▪ Coordinate DA Davidson Finance & California Resources ▪ Coordinate National Resources	▪ Public Finance Experience: 16 + Years ▪ California Experience: 160+ bond financings since 2016 ▪ BA, University of California at Berkeley ▪ JD, University of Oregon ▪ MBA, Washington University in St. Louis ▪ Series 7, 66, 53, 50 ▪ Opened D.A. Davidson's California Public Finance Office in 2016.

Analytics & Support

Team Member	Responsibility	Resume Highlights
Dana Cojocaru-Ivoska Senior Vice President  dcojocaru-ivoska@dadco.com 916-744-7560	▪ Day-to-day Banker/Analyst ▪ Coordinate quantitative and qualitative analysis. ▪ Assist in day-to-day responsibilities.	▪ Public Finance Experience: 17+ Years ▪ California Experience: 160+ bond financings since 2016 ▪ Board Member & Founding Member Women Elevating Fixed Income ▪ Member Women in Public Finance ▪ Series 7, 63, 50 ▪ Joined D.A. Davidson after having previously worked at Edward Jones for over 15 years.
Nate Despain Vice President  nrdespain@dadco.com 714-850-8331	▪ Assist Day-to-Day activities. ▪ Quantitative and analytical support	▪ Public Finance Experience: 6+ Years ▪ California Experience: over 100 financings through a combination of Banking and MA roles ▪ BS Economics, Utah State University ▪ MBA, Finance, Cal State Long Beach ▪ Series 50, 52, 63, 79 ▪ Rejoined D.A. Davidson after previously working for Citigroup's Public Finance Department, focusing on Western U.S. clients and specializing in water and education transactions

Placing & Underwriting

Team Member	Responsibility	Resume Highlights
Brian Courtney Managing Director  bcourtney@dadco.com 303-764-6044	▪ Head of Public Finance Underwriting ▪ Lead Underwriter ▪ Market, Price, Allocate, and Distribute Bonds	▪ Experience: 28+ Years ▪ Trader and Underwriter ▪ Market Updates & Commentary ▪ Series 7, 63, 50, 52, 53, 24
Peter Bouzane Senior Vice President  pbouzane@dadco.com 213-244-9226	▪ Coordinate California & U.S. Marketing ▪ Coordinate DA Davidson California Retail Advisors	▪ Experience: 29+ Years ▪ Trader and Underwriter in California ▪ Manages California Municipal Retail desk

Attachment B: California Experience ~ Water Utilities

Section 1: Senior Manager ~ Key Personnel & Role ~ D.A. Davidson as Senior Manager

Issuer	Issue	Par $	Dated	Personnel & Role
Elsinore Valley Municipal Water District	Series 2023 Special Tax, Land Secured IA-4A	7,290,000	11/02/23	Tom Innis, Lead
North Coast County Water District	Series 2021 Certificates of Participation	20,210,000	11/23/21	Tom Innis, Lead
Temescal Valley Water District	Series 2021 Special Tax, Improvement Area No. 2	18,770,000	10/28/21	Tom Innis, Lead
Elsinore Valley Municipal Water District	Series 2021A Special Tax, Improvement Area No 3A	7,550,000	10/14/21	Tom Innis, Lead
Elsinore Valley Municipal Water District	Series 2021A Special Tax, Improvement Area No 1A	4,800,000	09/23/21	Tom Innis, Lead
Elsinore Valley Municipal Water District	Series 2021A Special Tax, Improvement Area No 2A	5,145,000	09/23/21	Tom Innis, Lead
Camarillo Public Finance Authority	Series 2019, Water Revenue	11,800,000	08/27/19	Richard Han, Lead

Section 2: Senior Manager ~ Key Personnel & Role ~ Prior Firms as Senior Manager

Issuer	Issue	Par $	Dated	Personnel & Role
Upper Santa Ana River Watershed Infrastructure Fin Auth	Water Interim Notes	46,910,000	06/15/23	Nate Despain, Support
Upper Santa Ana River Watershed Infrastructure Fin Auth	Water Revenue Refunding Bonds	5,615,000	06/15/23	Nate Despain, Support
Mountain House Public Fin Auth	Utility Systems Revenue Bonds	42,775,000	04/26/23	Greg Swartz, Support
Pittsburg City Public Fin Auth	Water Revenue Bonds	43,870,000	05/11/22	Greg Swartz, Support
San Juan Water Dt	Water Revenue Refunding Bonds	8,153,000	01/31/22	Greg Swartz, Co-Lead
Eastern Municipal Water Dt	Special Tax Bonds	4,185,000	09/28/21	Greg Swartz, Support
West County Facilities Fin Auth	Wastewater Revenue Bonds	79,575,000	09/16/21	Greg Swartz, Co-Lead
Santa Cruz Co	Limited Obligation Imp Bonds	2,615,000	06/30/21	Greg Swartz, Support
Eastern Muni Wtr CFD #2004-35	Special Tax Bonds	1,180,000	05/13/21	Greg Swartz, Support
Vallejo City	Water Revenue Bonds	42,600,000	02/02/21	Greg Swartz, Co-Lead
Eastern Municipal Water Dt	Special Tax Bonds	2,440,000	01/13/21	Greg Swartz, Support

Issuer	Issue	Par $	Dated	Personnel & Role
Palmdale Water Dt	Water Revenue Refunding Bonds	14,555,000	10/21/20	Tom Innis & Greg Swartz, Co-Leads
Santa Paula Utility Authority	Wastewater Enterprise Rev Bonds	3,765,000	10/07/20	Tom Innis, Lead & Greg Swartz, Support
Santa Paula Utility Authority	Wastewater Enterprise Rev Bonds	65,360,000	10/07/20	Tom Innis, Lead & Greg Swartz, Support
Nipomo Community Svcs Dt	Limited Obligation Imp Bonds	11,225,000	08/05/20	Tom Innis & Greg Swartz, Support
Eastern Municipal Water Dt	Special Tax Bonds	4,145,000	05/13/20	Tom Innis & Greg Swartz, Support
Lodi Public Finance Auth	Refunding Water Revenue Bonds	25,390,000	04/09/20	Tom Innis, Lead
Ukiah City	Wastewater Revenue Ref Bonds	25,010,000	02/24/20	Greg Swartz, Support
Santa Paula Utility Authority	Water Revenue Bonds	37,165,000	12/12/19	Tom Innis, Lead & Greg Swartz, Support
La Habra Utility Authority	Refunding Water Revenue Bonds	2,620,000	11/05/19	Tom Innis & Greg Swartz, Co-Leads
La Habra Utility Authority	Refunding Water Revenue Bonds	11,175,000	11/05/19	Tom Innis & Greg Swartz, Co-Leads
Eastern Municipal Water Dt	Special Tax Bonds	1,275,000	10/31/19	Tom Innis & Greg Swartz, Support
Casitas Municipal Water Dt CFD	Special Tax Bonds	8,755,000	10/17/19	Tom Innis & Greg Swartz, Support
Casitas Municipal Water Dt CFD	Special Tax Bonds	3,510,000	10/17/19	Tom Innis & Greg Swartz, Support
California Infrastructure & Economic Development Bank	Infrastructure State Revolving Fund Bonds	83,920,000	04/24/19	Tom Innis & Greg Swartz, Co-Leads

STAFF REPORT

To: **Coastside County Water District Board of Directors**

From: **Mary Rogren, General Manager**

Agenda: **September 10, 2024**

Report Date: **September 6, 2024**

Agenda Title: General Manager's Report

Information Only:

The District received the following update from our SFPUC contact regarding the siphon replacement at Pilarcitos Reservoir. Darin Sturdivan, the District's Distribution Supervisor, was able to see the new siphons firsthand and is pleased with the progress. These siphons will enable the District to continue taking water from the Reservoir as the reservoir levels drop.

From SFPUC:

Project status update for Pilarcitos Dam Siphons Replacement as of August 30, 2024.

Our contract (GSW) has completed all the work for the Pilarcitos Roadway landslide repair site; access to the areas beyond the landslide repair site was established on August 13th. Permit from the USACE for the siphons work were obtained on August 8th. The crews have made good progress to date and have completed the demolition and removal of the damaged siphons, installation of a temporary berm and bypass pipe to divert water, installation of the steel pipe and valves sections, and are currently working on the HDPE section within the spillway. The crane and dive crew mobilized at the end of the month and will be working into the first week of September. GSW is planning on completing startup testing of the siphons by the early half of September.

MONTHLY REPORT

To: **Mary Rogren, General Manager**

From: **Darin Sturdivan, Distribution Supervisor**
Sean Donovan, Treatment Supervisor
Todd Schmidt, Senior Treatment Operator
Dustin Jahns, Senior Distribution Operator

Agenda: **September 10, 2024**
Report Date: **September 6, 2024**

Monthly Highlights

- Completed Lead and Copper Rule Revisions – Service Line Inventory (due to the EPA October 2024)
- Hydraulic Model calibration with EKI
- Interviewed Construction Management Firms for DN Tank Project
- 60% plans for Pilarcitos Canyon repairs.
- Annual PRV inspections.
- Annual staff reviews.

August Sources: Denniston, Pilarcitos Lake, Crystal Springs.

Projects

- SCADA computer replacement
  - SCADA computers replaced at DWTP, NWTP, CSP and Main St.
- Nunes Water Treatment Plant
    - Had existing Sedimentation Basin coating and sludge collection equipment inspected. Staff will start planning a future rehabilitation project.
    - Switched back to main sed basin at Nunes. (Refilled main sed basin after draining and inspections.)
- Pilarcitos Reservoir Flow Rate dropped off in August; Nunes switched to 100% Crystal Springs water on August 20
- Lead and copper sampling plan approved by DDW; Sampling scheduled for September 17. Letters sent to prospective participants on August 29.

- EKI Environment and Water, Inc.
    - Hydraulic Model calibration in Miramar neighborhood.
    - Alcatraz, Santa Rosa and Ocean Colony 90% plans
    - District obtains LSAA from CDFW for Highway 92 project.
- HDR, Inc.
    - HDR is near completion on conforming set of plans for DN Tank Project.
    - HDR continues work with the District on San Vicente Treatability Study.