



# NOTICE OF THE BOARD OF DIRECTORS' REGULAR BI-MONTHLY MEETING

Tuesday, June 18, 2024 at 6:30 PM

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## AGENDA

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### LOCATIONS:

**Open Session to start at or after 6:30 p.m.**

Marin Water Board Room – 220 Nellen Avenue, Corte Madera, CA 94925

### Public Participation:

The public may attend this meeting in-person or remotely using one of the following methods:

On a computer or smart device, go to: <https://marinwater.zoom.us/j/88134852296>

By phone, dial: **1-669-444-9171** and use Webinar ID: **881 3485 2296**

### HOW TO PROVIDE PUBLIC COMMENT:

**During the Meeting:** Typically, you will have 3 minutes to make your public comment, however, the board president may shorten the amount of time for public comment due to a large number of attendees. Furthermore, pursuant to Government Code, section 54954.2 (the Brown Act), the Board may not take action or discuss any item that does not appear on the agenda.

-- **In-Person Attendee:** Fill out a speaker card and provide to the board secretary. List the number/letter (ex: 6a) of the agenda item(s), for which you would like to provide a comment. Once you're called, proceed to the lectern to make your comment.

-- **Remote Attendee:** Use the "raise hand" button on the bottom of the Zoom screen. If you are joining by phone and would like to comment, press \*9. The board secretary will use the last four digits of your phone number to call on you (dial \*6 to mute/unmute).

**In Advance of the Meeting:** Submit your comments by email in advance of the meeting to [boardcomment@marinwater.org](mailto:boardcomment@marinwater.org). To ensure that your comment is provided to the Board of Directors prior to the meeting, please email your comment 24 hours in advance of the meeting start time. Comments received after this cut off time will be sent to the Board after the meeting. Please do not include personal information in your comment such as phone numbers and home addresses.

**AGENDA ITEMS:**

- 1. Call to Order and Roll Call**
- 2. Adoption of Agenda**
- 3. Announcement of Closed Session Item(s); Public Comments on Closed Session Item(s) - None.**
- 4. Reconvene to Open Session; Closed Session Report Out - Not applicable.**
- 5. Public Comment on Non-Agenda Matters**

This is the time when any person may address the Board of Directors on matters not listed on this agenda, but which are within the subject matter jurisdiction of the Board.

- 6. Directors' and General Manager's Announcements (6:40 p.m. – Time Approximate)**
- 7. Board Committee Reports**

Each Committee Chair or Vice Chair will provide a report on recent committee meetings. Directors may ask questions or provide brief comments or requests for additional information on an item.

- 8. Consent Items (6:50 p.m. – Time Approximate)**

All Consent Items will be enacted by a single action of the Board, unless specific items are pulled from Consent by the Board during adoption of the agenda for separate discussion and action.

- a.** Minutes of the Board of Directors' Regular Bi-Monthly Meeting on June 4, 2024

**RECOMMENDATION:** Approve the meeting minutes

- b.** General Manager's Report May 2024

**RECOMMENDATION:** Approve Report

- c.** Award of Contact No. 2014 - 2024 Tiburon Pipeline Replacement Project (D23018) to Corcus Construction, Inc.

**RECOMMENDATION:** Approve a resolution authorizing award of Contract No. 2014, 2024 Tiburon Pipeline Replacement Project, to Corcus Construction, Inc. in the amount of \$2,319,685

- d.** Second Amendment to Professional Services Agreement for Insurance Brokerage Services

**RECOMMENDATION:** Authorize the General Manager to execute the Insurance Brokerage Services Second Amendment with Alliant Insurance Services, Inc. for Fiscal Years 2024/25 and 2025/26

- e.** Second Amendment to Professional Services Agreement for Auditing Services

**RECOMMENDATION:** Authorize the General Manager to execute the Audit Services Second Amendment with Maze and Associates to perform Audit Services for Fiscal Years ending June 30, 2024 and June 30, 2025

- 9. Public Hearing Item (6:55 p.m. – Time Approximate)**

- a.** Adoption of the Final Initial Study/Mitigated Negative Declaration for Phoenix-Bon Tempe Connection Project and Approval of the Phoenix-Bon Tempe Connection Project

**RECOMMENDATION:** Approve a resolution adopting the Final Initial Study/Mitigated Negative Declaration and Mitigation Monitoring Reporting Program for the Phoenix – Bon Tempe Connection Project, approving the Phoenix – Bon Tempe Connection Project, and directing staff to file a Notice of Determination with the Marin County Clerk and State Clearinghouse

**10. Regular Items (7:30 p.m. – Time Approximate)**

**a.** 2024 Annual Strategic Work Plan Quarterly Progress

**RECOMMENDATION:** Receive staff quarterly progress update on the 2024 Annual Strategic Work Plan

**b.** Review of Desalination and Recycled Water Costs

**RECOMMENDATION:** Review of Desalination and Recycled Water Costs

**11. Future Board and Committee Meetings and Upcoming Agenda Items**

This schedule lists upcoming board and committee meetings as well as upcoming agenda items for the next month, which may include Board interest in adding future meeting items. The schedule is tentative and subject to change pending final publication and posting of the meeting agendas.

**a.** Upcoming Meetings

**12. Announcement of Closed Session Item(s); Public Comments on Closed Session Item(s) - None.**

**13. Reconvene to Open Session; Closed Session Report Out - Not applicable.**

**14. Adjournment (9:00 p.m. – Time Approximate)**

**ADA NOTICE AND HEARING-IMPAIRED PROVISIONS**

In accordance with the Americans with Disabilities Act (ADA) and California Law, it is Marin Water’s policy to offer its public programs, services, and meetings in a manner that is readily accessible to everyone, including those with disabilities. If you are an individual with a disability and require a copy of a public hearing notice, an agenda, and/or agenda packet in an appropriate alternative format, or if you require other accommodations, please contact the Board Secretary/ADA Coordinator at 415.945.1448, at least two business days in advance of the meeting. Advance notification will enable Marin Water to make reasonable arrangements to ensure accessibility.

*Information agendas are available for review at the Civic Center Library, Corte Madera Library, Fairfax Library, Mill Valley Library, Marin Water Administration Building, and [marinwater.org](http://marinwater.org).*

Posted: 06-14-2024



# STAFF REPORT

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**Meeting Type:** Board of Directors  
**Title:** Minutes of the Board of Directors' Regular Bi-Monthly Meeting on June 4, 2024  
**From:** Terrie Gillen, Board Secretary  
**Through:** Bret Uppendahl, Acting General Manager  
**Meeting Date:** June 18, 2024

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**TYPE OF ACTION:**     X     Action                                     Information                                     Review and Refer

**RECOMMENDATION:** Approve the meeting minutes

**SUMMARY:** The Board of Directors held a regular meeting on June 4, 2024. The minutes of that meeting are attached.

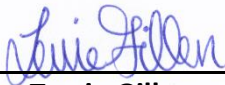
**DISCUSSION:** None.

**ENVIRONMENTAL REVIEW:** Not applicable.

**FISCAL IMPACT:** None.

**ATTACHMENT(S):**

1. Draft Minutes of the Board of Directors' Regular Bi-Monthly Meeting on June 4, 2024

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Communications & Public Affairs Department	 Terrie Gillen Board Secretary	 Bret Uppendahl Acting General Manager



# NOTICE OF THE BOARD OF DIRECTORS' REGULAR BI-MONTHLY MEETING

Tuesday, June 04, 2024 at 6:30 PM

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## MINUTES

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### LOCATIONS:

Open Session to start at or after 6:30 p.m.

Marin Water Board Room – 220 Nellen Avenue, Corte Madera, CA 94925

Outside location for Director Larry Russell, Venetian Hotel, Business Center, 3355 S. Las Vegas Blvd., Las Vegas, NV 89109

Outside location for Director Monty Schmitt, 5932 Miners Creek Road, Etna, CA 96027

### Closed Session to immediately follow

Marin Water Mt. Tam Conference Room, 220 Nellen Avenue, Corte Madera, CA 94925

### Public Participation:

The public attended this meeting in-person or remotely using one of the following methods: on a computer or smart device, <https://marinwater.zoom.us/j/88134852296>, or by phone, 1-669-444-9171, using Webinar ID #: 881 3485 2296.

### AGENDA ITEMS:

#### 1. Call to Order and Roll Call

President Ranjiv Khush called the meeting to order at 6:30 p.m.

#### DIRECTORS PRESENT

Larry Russell

Monty Schmitt

Jed Smith

Matt Samson

Ranjiv Khush

**2. Adoption of Agenda**

A motion was made by Director Smith and seconded by Vice President Samson to adopt the agenda.

There were no public comments.

Voting Yea: Directors Russell, Smith, Samson, and Khush

Absent: Director Schmitt (dropped off the call)

**3. Announcement of Closed Session Item(s); Public Comments on Closed Session Item(s) - None.**

**4. Reconvene to Open Session; Closed Session Report Out - Not applicable.**

**5. Public Comment on Non-Agenda Matters**

There was one (1) public comment.

**6. Directors’ and General Manager’s Announcements**

General Manager Ben Horenstein reported that on May 28, a pile burn on the watershed reignited after the burn was completed, but was quickly extinguished by District and County fire response. General Manager Horenstein also reported that the emergency removal of the damaged power poles and transformers from the Old Mill Valley Air Force Base at West Peak has been completed. Lastly, the General Manager shared that in the town of Fairfax a large grinder fell on top of the District's Fairfax Pump Station causing significant damage. Operations has installed a temporary pump to maintain water service and will evaluate the building and pump as soon as it is safe to do so.

**7. Board Committee Reports**

Director Smith provided a summary of what was discussed at the May 23rd Finance & Administration Committee Meeting.

**8. Consent Items**

- a. Minutes of the Board Directors’ Regular Meeting on May 21, 2024

**RECOMMENDATION:** Approve the meeting minutes

- b. Water and Energy Efficiency Grant Funding

**RECOMMENDATION:** Approve the Water and Energy Efficiency Grant funding and authorize the General Manager to execute the grant agreement with Sonoma Water

- c. Asphalt Concrete Paving and Concrete Work Contract (CN 2031)

**RECOMMENDATION:** Approve a resolution authorizing award of Contract No. 2031, Asphalt Concrete Paving Restoration and Concrete Work Contract to W.K. McLellan Co. Inc.

- d. Award of Contract No. 2032 for the 2024 Anode Replacement Contract (D24024) to Exaro Technologies Corporation

**RECOMMENDATION:** Approve a resolution authorizing award of Contract No. 2032, for the 2024 Anode Replacement Contract, to Exaro Technologies Corporation in the amount of \$67,850

- e. Request for Marin County Elections to Perform Election Services for November 2024 District Elections

**RECOMMENDATION:** Adopt a resolution calling for and consolidating the election of District Directors in Divisions II and V with the November 5, 2024 Statewide General Election, and requesting that the Marin County Elections Department perform all necessary election services and canvassing of said election

A motion was made by Director Smith and seconded by Vice President Samson to approve the Consent Calendar.

There were no public comments.

Voting Yea: Directors Russell, Schmitt, Smith, Samson, and Khush

**9. Regular Items**

- a. Capital Program Update, Request to Fill Two Construction Inspectors and One Environmental Specialist in the Engineering Division

**RECOMMENDATION:**

1. Receive staff update on the status of the Capital Program
2. Authorize the General Manger to recruit and hire two Construction Inspectors in the Engineering Division
3. Authorize the General Manger to recruit and hire one Environmental Specialist in the Engineering Division

Engineering Director Alex Anaya provided an overview of the various capital improvement projects as well as proposed staffing changes.

The Board provided comments.

There was one (1) public comment.

A motion was made by Director Smith and seconded by Vice President Samson to approve the authorization of the General Manager to recruit and hire two Construction Inspectors and one Environmental Specialist.

Voting Yea: Directors Russell, Schmitt, Smith, Samson, and Khush

**10. Future Board and Committee Meetings and Upcoming Agenda Items**

- a. Upcoming Meetings

The Board Secretary announced upcoming internal and external meetings in the month of June.

There were no public comments.

**11. Announcement of Closed Session Item(s); Public Comments on Closed Session Item(s)**

President Khush announced the upcoming Closed Session item.

No public comments were made.

The Board convened to Closed Session and left the dais at approximately 7:15 p.m.

**a. Conference with Legal Counsel - Pending Litigation**  
(California Government Code §54956(a))

Arbitration, Minerva Rogina and Marin Municipal Water District

**12. Reconvene to Open Session; Closed Session Report Out**

At 8:02 p.m., the Open Session reconvened. President Khush announced that the Closed Session adjourned at 8:00 p.m. with no reportable action.

**13. Adjournment**

There being no further business, the Board of Directors' Regular Bi-Monthly Meeting adjourned on June 4, 2024, at 8:02 p.m.

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Board Secretary





# STAFF REPORT

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**Meeting Type:** Board of Directors  
**Title:** General Manager’s Report May 2024  
**From:** Bret Uppendahl, Acting General Manager  
**Meeting Date:** June 18, 2024

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**TYPE OF ACTION:**    X    Action    Information    Review and Refer

**RECOMMENDATION:** Approve Report

**SUMMARY:**

**A. HIGHLIGHTS:**

- The daily average net production for the month of May 2024 was 21.2 MGD compared to 20.1 MGD for the month of May 2023. Typical usage for May is 26.2 MGD.
- The daily average flow from Sonoma County Water Agency for the month of May 2024 was 0.3 MGD compared to 7.6 MGD for the month of May 2023.
- Staff conducted a kickoff meeting with consultant Black & Veatch for the spillway capacity and condition assessment project, which will be evaluating all dam spillways for impacts of climate change and atmospheric river due to climate change.
- Staff applied for a USBR grant for planning and design for spillway modification project, which will allow the District to increase reservoir storage at Nicasio Reservoir providing additional drought resiliency.
- Staff advertised the 2024 Tiburon Pipeline Replacement Project. This project will install approximately 3,490 feet of new pipe to replace old, leak-prone pipe in the Town of Tiburon installed as early as 1922, improving the District’s resiliency and reliability within the community.
- Staff met with a consultant team to review potential pipeline alignments for the Soulajule Pipeline Project and to consider alternatives to proceed with further, design, environmental and right of way. The installation of this pipeline will ensure that pumping from Soulajule goes directly into the main body of Nicasio Reservoir ensuring delivery of water during times of drought.
- Staff responded to 1,214 underground service alert tickets and marked out approximately 23,012 feet of pipe, ensuring that the water infrastructure is not damaged by contractors or homeowners during excavations.

- Staff replaced the failed flowmeter at Wolfback Ridge Pump Station. The flowmeter allows for remote monitoring of pump performance.
- Staff installed and programmed a 3-way ball valve on the pilot assembly for the 14" Ross Reservoir Valve. The 3-way ball valve is programmed to close the valve if the existing close solenoid fails.
- Staff visited East Bay Municipal Utility District (EBMUD) two times. Staff toured their warehouse/pipe yard and got to see some of their work in the field. The work in the field included pressurized curb stop replacements, excavation techniques and a different method for replacing water service laterals.
- Staff replaced two damaged 16" gate valves in San Rafael. One of the valves had a bent stem and was extremely difficult to turn and the second one was stuck in the open position. Staff removed both of the damaged 16" gate valves and installed two new 16" Butterfly valves.
- Staff replaced a worn roof on Greenbrae Pump Station. The work consisted of tearing off existing composite shingles, tar paper, metal flashing and replacing several pieces of plywood due to rot. New tar paper, metal flashing and composite shingles were installed. Staff also repainted the exterior soffits and cleaned off the exterior walls to the building.
- A contractor working for Pacific Gas and Electric (PG&E) was conducting work on a roadway above Fairfax Manor pump station. An accident led to a large pavement grinder rolling down the hill from an elevated location, rendering the Fairfax Manor pump inoperable and damaging the pump building. Staff secured a secondary pumping location and installed a new fire hydrant to facilitate operation. Staff then mobilized a portable diesel powered pump until the primary pump can be assessed and repaired.
- The District continued implementation of Year 5 of the Biodiversity Fire, & Fuels Integrated Plan (BFFIP) through May 2024 with multiple Fuels Reduction, Pile Burning, and Invasive Weed Abatement Projects across the Watershed. In partnership with Marin County Fire Department & Fire Foundry, and under contract with Biswell Forestry and Hanford ARC, the District burned roughly 3,200 piles in FY24, more than twice the previous year.
- Other vegetation management projects include routine Fine Fuel Reduction around Ranger Residences, parking lots, and Watershed Facilities, and hand-pulling of Poison Hemlock.
- The District wrapped up the FY24 portion of a Forestry Corps grant with CCNB focusing on French Broom removal and pile burning, and will revisit that work again in February 2025.
- Staff continues to make progress on the Azalea Hill Trail Project utilizing a CCNB Nature Based Solutions crew. Highlights include 150' of new trail construction past the Site 9 bridge site and rock staging for numerous rock crossings. Piazza Construction has completed drilling, forming and pouring the concrete abutments at the upper Azalea Hill Trail bridge site near Bolinas-Fairfax Road including ongoing bank stabilization.
- Santa Cruz Mountain Trail Stewardship completed a week long training with District staff in the latest trail building techniques including updated BMP's.
- Staff completed the annual RT-130 Fire Training to maintain Red Card certification within the workgroup.
- The Watershed Director and Natural Resources Program Manager (NRPM) attended the CA Trails and Greenways Conference May 30 – June 3, where the NRPM was a panelist on the 'Biodiversity Engagement Zones' breakout session.
- Supporting public outreach for fuel reduction, forest health and work force development, the District participated with a MCF media event at the W. Ridgecrest burn units on May 14<sup>th</sup>.

- On May 29<sup>th</sup>, the One Tam Bee Lab Staff positively identified a few individual 'critically imperiled' ground-nesting bees (*Trachusa gummifera*) at a site near Pine Mountain on the watershed.
- The District opened bids for the Lagunitas Creek Habitat Enhancement Project on May 7 and awarded the construction contract for Phase 1A to Hanford ARC on May 21. Construction is expected to begin in August. Fisheries staff continued to finalize project permitting and landowner access for this project.
- The District accepted a \$600K Fisheries Restoration grant from CDFW to complete final designs and permitting for Phase 2 starting this year.
- The annual Lagunitas Creek salmonid smolt monitoring season was completed in late May, and staff are currently compiling the results.
- Frog Docent and Turtle Observer programs completed for the season. Star Academy high school students participated in watershed stewardship activities on the watershed. Staff led bilingual story time at Pickleweed Library. Nineteen volunteers helped with broom removal work near Phoenix Lake.

## MARIN WATER GRANT STATUS

OPPORTUNITY	FUNDER	FUNDER PRIORITIES	PROJECT DETAILS		DESCRIPTION	STATUS	REQUIREMENTS		BUDGET	
			APPLICATION DATE	MATCHING PROJECT			PREREQUISITE	FUNDS REQUESTED	MATCH REQUIREMENT %	
<b>CURRENT APPLICATIONS</b>									<b>\$42,173,326</b>	
Desal Feasibility Study	USBR	Desalination	2/28/23	Desalination	Exploring new brackish desal in Petaluma	Open	None		\$200,000	50
Prop.1. Round 2 IRWM Disadvantaged Community	DWR	Water Infrastructure	12/1/22	Marin City/San Rafael Infrastructure	Replacing aging transmission lines and laterals in Marin City and San Rafael's Canal District	Funded	IRWM CC Approval		\$6,500,000	0
Forestry Corps	CCNB	Vegetation Management	Jan 2023	Ongoing Forestry work	Workforce development; state funding directly to CCNB to fund crews working on the watershed	Funded	Corps Partnership		\$500,000	0
Fisheries Restoration Grant Program	CDFW	Fisheries	4/20/23	Lagunitas Creek Restoration	Funding for Phase II site design and CEQA	Funded	30% designs		\$723,000	5
Lagunitas Creek Salmonid Spawning Gravel Improvement Project	DWR Riverine	Fisheries	11/1/22	Lagunitas Creek Restoration	Gravel augmentation for Lagunitas Creek	Funded	None		\$590,000	0
Prop 1. Fisheries Restoration	CDFW	Fisheries	7/1/23	Lagunitas Creek Restoration	Lagunitas Creek Restoration Sites 1-6	Funded	60% designs		\$4,422,898	0
CA Division of Boating & Waterways	NRA	Water Quality	7/1/23	Reservoir Water Quality	Monitor and prevent infestation of quagga and zebra mussels	Funded	NA		\$86,800	0
One Tam Forest Health Strategy	CA WCB	Forestry Restoration	11/21/23	BFFIP Implementation	BFFIP Implementation for 2-3 years	Funded	CEQA		\$6,000,000	0
WaterSMART Applied Science	USBR	Fisheries	10/15/2023	Advanced Weather Modeling	Funding for weather modeling to inform water resources management	Funded	TBD		\$150,628.00	50%
Hazard Mitigation Program	FEMA	Natural Hazards	Jan-23	Treatment Plant Clarifiers	Funds to address seismic hazards in water treatment facilities	Open	NOI APPROVAL		\$22,000,000.00	25%
WaterSmart Energy Efficiency	USBR	Conservation	2/22/2024	AMI	Funding to expand AMI	Open	Environmental Compliance		\$1,000,000	50%
One Tam Forest Health Phase II Cal Fire		Forestry Restoration	1/15/2024	BFFIP Implementation	BFFIP Implementation for 2-3 years	Notice of Award	CEQA		TBD	TBD
<b>UPCOMING OPPORTUNITIES</b>									<b>\$0</b>	
Hazard Mitigation Program	FEMA	Natural Hazards	Jan-23	Treatment Plant Clarifiers	Funds to address seismic hazards in water treatment facilities	TBD	NOI APPROVAL		TBD	25%
WaterSMART Planning & Design	USBR	Water Supply	5/20/2024	Water Supply Planning	Funding for advancing implementation of Strategic Water Supply Projects	Open	TBD		TBD	
Environmental Resources Grant	USBR	Forest Health	6/24/2024	BFFIP Implementation	BFFIP Implementation for 2-3 years	Open	TBD		TBD	
<b>LONG TERM OPPORTUNITIES (ongoing development)</b>										
2024 Water Bond	State of CA	Water supply projects	Fall 2024	SWSA Water Supply Projects	Currently in Legislature	In legislature	Voter approval; District participation		TBD	
Water Resources Development Act	Army Corps of Engineers	Water supply projects	FY 2024	SWSA Water Supply Projects	Pursuing for No Regrets and regional projects	In appropriations	Authorization (secured 2022)		\$28,000,000.00	
Small Storage Program	USBR	Water Supply	Fall 2024	Phoenix Lake	Funding for new water supply projects	TBD	Approved Feasibility Study		TBD	

**DISCUSSION**

**B. SUMMARY:**

- AF = Acre Feet
- Mg/L = milligrams per liter
- MPN = most probable number
- MPY = mils per year
- MG = million gallons
- NTU = nephelometric turbidity units

**1. Water Production:**

	FY 2023/24		FY 2022/23	
	(million gallons)	(acre-feet)	(million gallons)	(acre-foot)
<b>Potable</b>				
Total production this FY	6,294	19,314	6,084	18,672
Monthly production, May	654	2,007	624	1,915
Daily average, May	21.09	64.73	20.13	61.79
<b>Recycled</b>				
Total production this FY	216.60	664.73	189.97	583.00
Monthly production, May	25.26	77.52	21.03	64.54
Daily average, May	0.81	2.50	0.68	2.08
<b>Raw Water</b>				
Total production this FY	42.76	131.23	47.02	144.30
Monthly production, May	3.92	12.03	4.21	12.92
Daily average, May	0.13	0.39	0.14	0.42
<b>Imported Water</b>				
Total imported this FY	1,754	5,384	1,222	3,750
Monthly imported, May	8	25	236	725
<b>Reservoir Storage</b>				
Total storage	25,243	77,467	25,466	78,153
Storage change during May	-599	-1,839	-332	-1,020
<b>Stream Releases</b>				
Total releases this FY	2,501	7,675	2,189	6,718
Monthly releases, May	226	692	210	645

<b>2. <u>Precipitation:</u></b>	<u>FY 2023/24 (in.)</u>	<u>FY 2022/23 (in.)</u>
Alpine	47.33	59.05
Bon Tempe	41.66	58.51
Kent	48.85	56.32
Lagunitas *	49.52	48.43
Nicasio	33.70	46.69
Phoenix	47.64	68.24
Soulajule	32.70	46.31
* Average to date = 51.84 inches		

**3. Water Quality:**

<u>Laboratory:</u>	<u>FY 2023/24</u>	<u>FY 2022/23</u>
Water Quality Complaints:		
Month of Record	15	16
Fiscal Year to Date	91	143
Water Quality Information Phone Calls		
Month of Record	16	6
Fiscal Year to Date	72	87

The WQ lab ensured that the water supplied met or surpassed water quality regulations by collecting and analyzing 2,207 analyses on treatment plants and distribution system samples.

Mild steel corrosion rates averaged 1.07 (0.40 – 1.52) MPY. The AWWA has recommended an operating level of <5 MPY with a goal of <1 MPY.

Complaint Flushing: Two flushing events were performed for this month on record related to a complaint and a sampling event.

Disinfection Program: 3,547' of new pipelines were disinfected during the month of May. Performed chlorination on 12 water storage tanks to ensure compliance with bacteriological water quality regulations.

Tank Water Quality Monitoring Program: Performed 10 water quality-monitoring events on storage tanks for various water quality parameters this month to help ensure compliance with bacteriological water quality regulations.

Summary:

The lab analyzed 2,207 water samples, treated 12 storage tanks for low chlorine, and checked an additional 10 tanks for low chlorine residual in May 2024.

**4. Water Treatment:**

<u>Treatment Results</u>	<u>San Geronimo</u>		<u>Bon Tempe</u>		<u>Ignacio</u>	
	Average	Monthly	Average	Monthly	Average	Monthly
		Goal		Goal		Goal
Turbidity (NTU)	0.05	≤ 0.10	0.03	≤ 0.10	0.03	≤ 0.10
Chlorine residual (mg/L)	2.77	2.75 *	2.76	2.75 *	2.86	2.75 *
Color (units)	0.7	≤ 15	0.3	≤ 15	0.0	≤ 15
pH (units)	7.8	7.8*	7.8	7.8*	8.0	8.1**

- \* Set monthly by Water Quality Lab
- \*\* pH to Ignacio is controlled by SCWA

**5. Capital Improvement:**

- a. Pine Mountain Tank Phase 1 – Rough Grading Project (D21043): The Pine Mountain Tunnel Tanks Replacement Project is a multi-year two-phased project that will replace the existing Pine Mountain Tunnel. This project (Phase 1) will excavate approximately 45,000 cubic yards of hillside and will install a soil nail retaining wall in preparation for a future project that will install two 2-million gallon pre-stressed concrete storage tanks (Phase 2). This Phase 1 project will also perform site grading and drainage improvements.
  - Project Budget: \$7,734,575
  - Monthly Activities: The project was winterized and temporarily suspended on January 31, and will restart August 1, 2024. Access is permitted on Concrete Pipe Road and Taylor Trail through the duration of the suspension period.
  
- b. Redwood Drive Pipeline Replacement Project (CN1989): This project is a component of the District’s Fire Flow Improvement Program and will install approximately 4,400 linear feet of 6-inch welded steel pipe to replace old, leak-prone, and fire flow deficient piping installed as early as 1913 in the unincorporated community of Woodacre.
  - Project Budget: \$2,204,075.20
  - Monthly Activities: The Contractor has been installing water facilities along Redwood Drive and has completed more than 3,500 linear feet of water pipe installation. The

Contractor is currently installing water services along Redwood Drive, Park Road, and Conifer Way.

- c. Wolfback Ridge Tanks Rehabilitation Project (CN2016): This project will replace the roof and recoat both the interior and exterior of each tank at Wolfback Ridge in Sausalito.
  - Project Budget: \$950,000
  - Monthly Activities: The project was awarded for construction at the February 13 Board of Directors meeting and the contract has been executed. Preliminary submittal work is underway and field work is expected to begin October.
  
- d. Sir Francis Drake Pipeline Replacement Project (CN1996): This project will install approximately 4,540 linear feet of welded steel pipe to replaced aged, leak-prone cast iron pipe installed as early as 1924 on Sir Francis Drake Boulevard between San Francisco Boulevard and Butterfield Road. Water pipelines will also be replaced on Broadmoor Avenue and Saunders Avenue, each for approximately 250 feet from Sir Francis Drake.
  - Project Budget: \$3,799,400
  - Monthly Activities: The project was awarded for construction at the April 16 Board of Directors meeting and the contract has been executed. Preliminary construction planning work is underway and field work will begin June 17 after school is out of session. The District is working closely with Marin Transit and the Town of San Anselmo to mitigate traffic impacts from construction work on Sir Francis Drake Boulevard.
  
- e. Granada Drive Pipeline Replacement Project (CN2007): This project will install approximately 10,230 linear feet of welded steel pipe to replace old, leak-prone, and seismic-deficient piping in the Town of Corte Madera. The District coordinated with the Town to incorporate the Town’s road reconstruction work into the District’s project to minimize construction impacts to the community.
  - Project Budget: \$5,564,384
  - Monthly Activities: The Contractor has mobilized equipment to the project site and has begun performing potholing, and water main pipeline alignment and installation.
  
- f. Lagunitas Creek Coho Habitat Enhancement Project – Phase 1A (CN2022): Phase 1A of the Lagunitas Creek Coho Habitat Enhancement Project will implement an extensive set of habitat enhancement structures in Lagunitas Creek within Samuel P. Taylor State Park. The work includes the installation of large woody debris, rock, and gravel structures in Lagunitas Creek in support of endangered Coho Salmon, threatened steelhead populations, and freshwater shrimp.
  - Project Budget: \$3,958,000
  - Monthly Activities: The construction contract was awarded at the May 21 Board of Directors Meeting. The Contract has been executed and the pre-construction meeting has been held. The preliminary phases of construction are underway and field work is anticipated to begin later this summer. The construction project will utilize the Irving Picnic Area for construction equipment and materials staging and will access the Lagunitas Creek restoration areas via the Cross Marin Trail. The Cross Marin Trail will remain open to recreation during construction and traffic control measures will be implemented to protect the public.



**6. Other:**

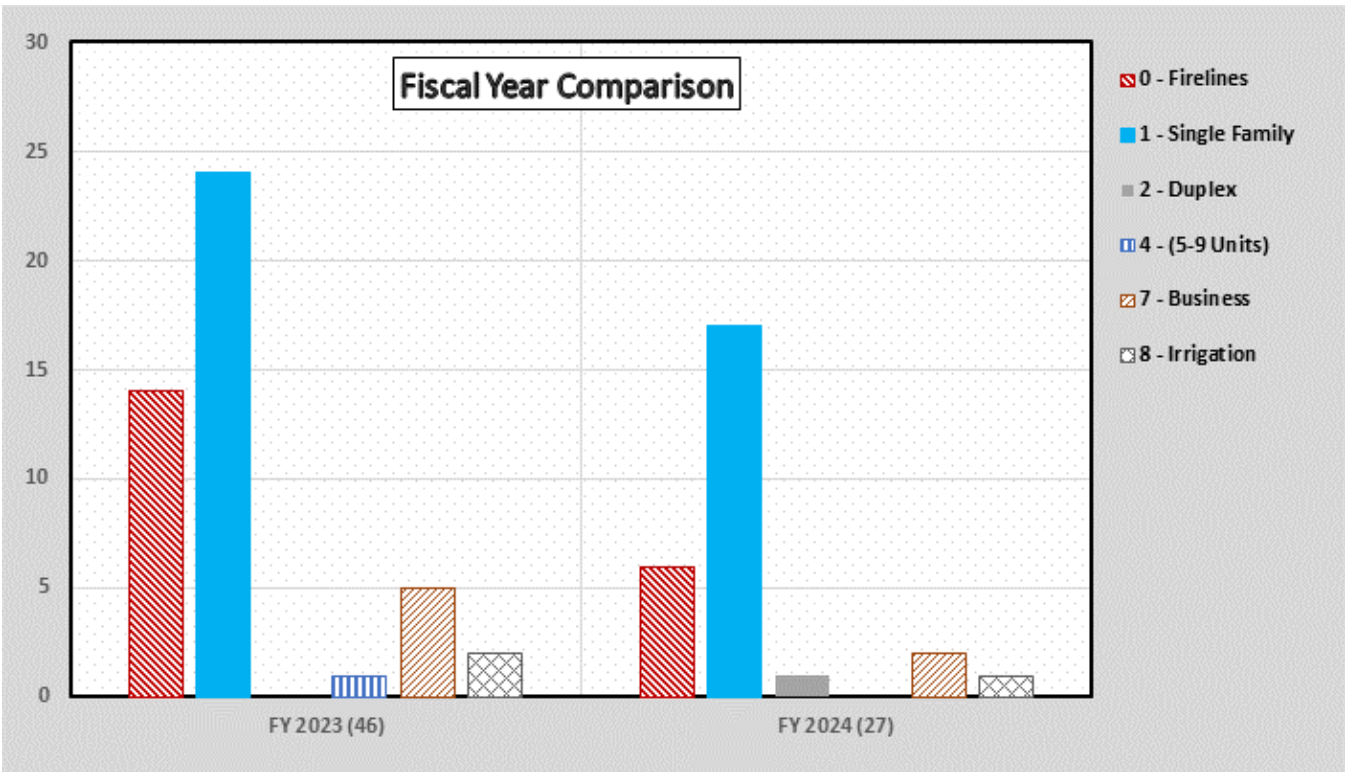
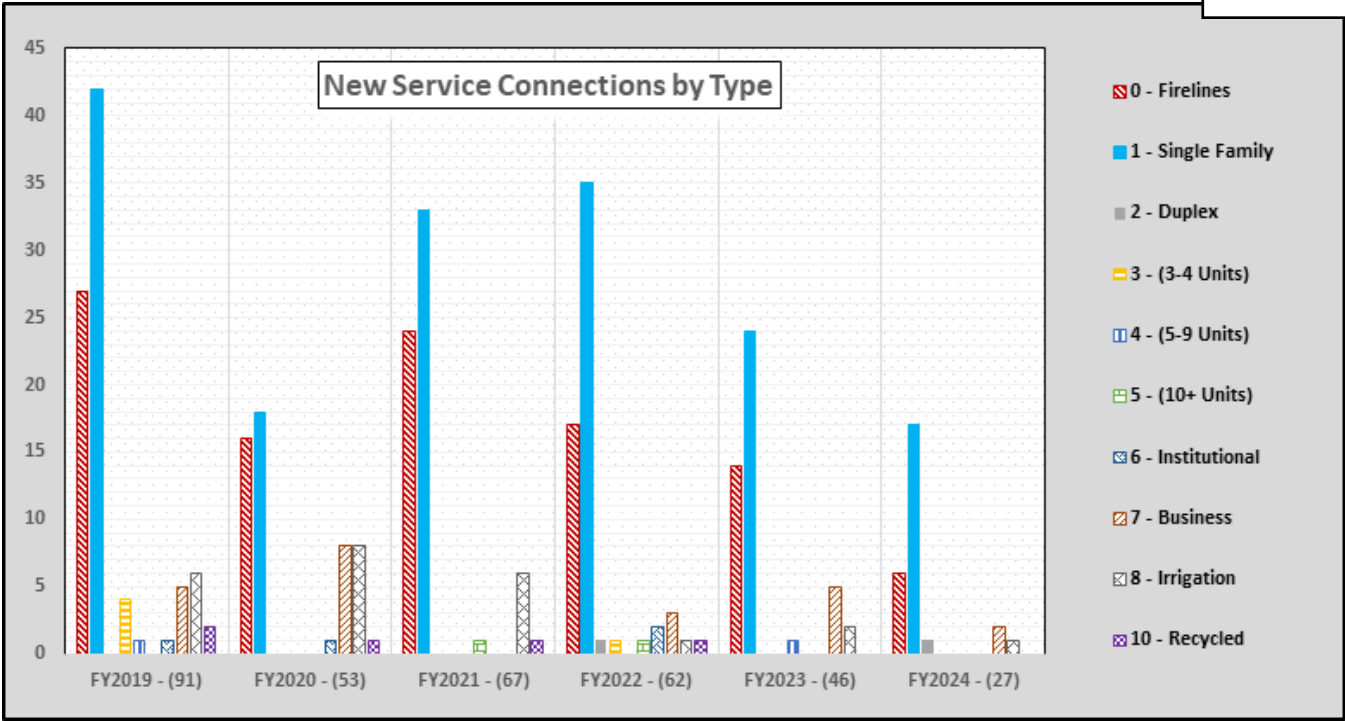
<u>Pipeline Installation</u>	<u>FY2023/24</u>	<u>FY2022/23</u>
Pipe installed during May (feet)	2,321	3,953
Total pipe installed this fiscal year (feet)	4,943	13,037
Total miles of pipeline within the District	908*	908*

*\* Reflects adjustment for abandoned pipelines*

<u>Pipe Locates (1,133 Responses)</u>	<u>FY2023/24</u>	<u>FY2022/23</u>
Month of May (feet)	41,588	27,219
Total this fiscal year (feet)	322,555	237,510

<u>Main Line Leaks Repaired:</u>	<u>FY2023/24</u>	<u>FY2022/23</u>
Month of May	8	11
Total this fiscal year (7/1/23-5/31/24)	114	166

<u>Services:</u>	<u>FY2023/24</u>	<u>FY2022/23</u>
Service upgrades during May	15	26
Total service upgrades this FY	165	160
Service connections installed during May	1	4
Total active services as of June 1st, 2024	60,546	60,744
(Total Including firelines)	61,933	62,133



## **7. Recruitments, Competitive Promotions and New Hires**

The District is currently recruiting for the following positions:

- Engineering Technician-Development Services Supervisor
- Associate/Assistant Engineer
- Supervising Land Surveyor
- Water Conservation Specialist III
- Field Pipeline Locator Intern
- Engineering Technician - Facilities Designer I

Through competitive recruitments, employees promoted to the following positions:

- Controls Technician
- Program Manager (AMI)
- Senior Customer Service Field Inspector

The District recently hired new employees for the following positions:

- Information Systems Analyst I
- Information Systems Analyst Supervisor
- Senior Human Resources Analyst
- Summer Helper – Meter Box Maintenance

8. Demand Management:

	May-24	FY 23/24 TOTAL	FY 22/23 TOTAL	FY 21/22 TOTAL
<b>WATER-EFFICIENCY PROGRAMS</b>				
<b>Water-Use Site Surveys</b>				
Conservation Assistance Program (CAP) Consultations				
Residential properties resi 1-2 (single-family)	65	355	291	731
Residential properties resi 3-5 (multi-family units)	0	5	3	7
Non-residential properties resi 6-7 (commercial)	0	0	3	1
Dedicated irrigation accounts resi 8-10 (large landscape)	0	0	0	3
Marin Master Gardeners' Marin-Friendly Garden Walks				
Residential garden walks	5	141	72	100
<b>Public Outreach and Education, Customer Service</b>				
Public outreach events (number of people attending)	300	1922	17775	1602
Public education events (number of participants)	375	375	328	536
Department customer calls/emails	577	3880	4150	9508
Outreach to new Marin Water customers (letters sent)	170	1908	0	0
<b>School Education</b>				
School assemblies				
Number of activities	0	20	0	0
Number of students reached	0	21850	0	0
Field trips				
Number of activities	0	15	15	0
Number of students reached	0	322	307	0
Classroom presentations				
Number of activities	0	14	17	0
Number of students reached	0	457	531	0
Other (e.g. Earth Day booth events, school gardens)				
Number of activities	0	3	1	0
Number of students reached	0	400	480	0
<b>Incentives</b>				
Number of HECWs approved	8	90	103	190
Number of Rain Barrel/Cisterns approved	0	9	15	76
"Cash for Grass" Turf Replacements approved	6	55	116	402
Number of Laundry-to-Landscape Systems (kits) approved	0	0	7	27
Hot water recirculating system rebates	2	7	30	122
Pool Cover rebates	5	30	27	298
HET rebates	1	12	22	92
Number of Smart Home Water Monitor "Flume Direct Distribution" redeemed	29	513	271	1568
Number of Smart Controllers rebates approved	6	37	35	69
Number of Smart Controllers "RainBird compatible w/Flume" approved	6	115	0	0
Number of Smart Controllers "Rachio Direct Distribution" approved	27	203	77	178
<b>Advanced Metering Infrastructure (AMI)</b>				
AMI leak letters sent to customers (>200 GPD)	148	1219	1168	1050
<b>ORDINANCES</b>				
<b>Water Waste Prevention</b>				
Water Waste Reports Received	26	188	392	4451
Water Waste Notifications Sent	3	36	81	0
<b>Landscape Plan Review</b>				
Plans submitted	5	108	88	77
Plans exempt	1	23	5	1
Plans completed	1	29	20	17
Plans in workflow (pass & fail)	7	159	145	123
<b>Tier 4 Exemption</b>				
Inspections that resulted in a pass	0	2	1	1
<b>Graywater Compliance Form</b>				
Applications Received (as of Dec 2019)	7	139	123	57
Systems installed	1	28	23	13

**9. Watershed Protection:**

**Training for Fire Season**

Staff at Sky Oaks completed their annual RT 130 Training in preparation for the fast approaching fire season. RT 130 is required by the State in order to work on the frontline of a wildland fire. Below, personnel practice mobile attacks.



Ranger Mike Krakauer and Trainees Dianne Dollente on mobile attack

Sky Oaks staff train with Biswell Forestry Management members on setting portable pumps for firefighting. The pumps area used to supply water to firefighters in remote areas. We also use the pumps to supply lake water in remote shore areas from our boat. Biswell is a contractor assisting with pile burns.



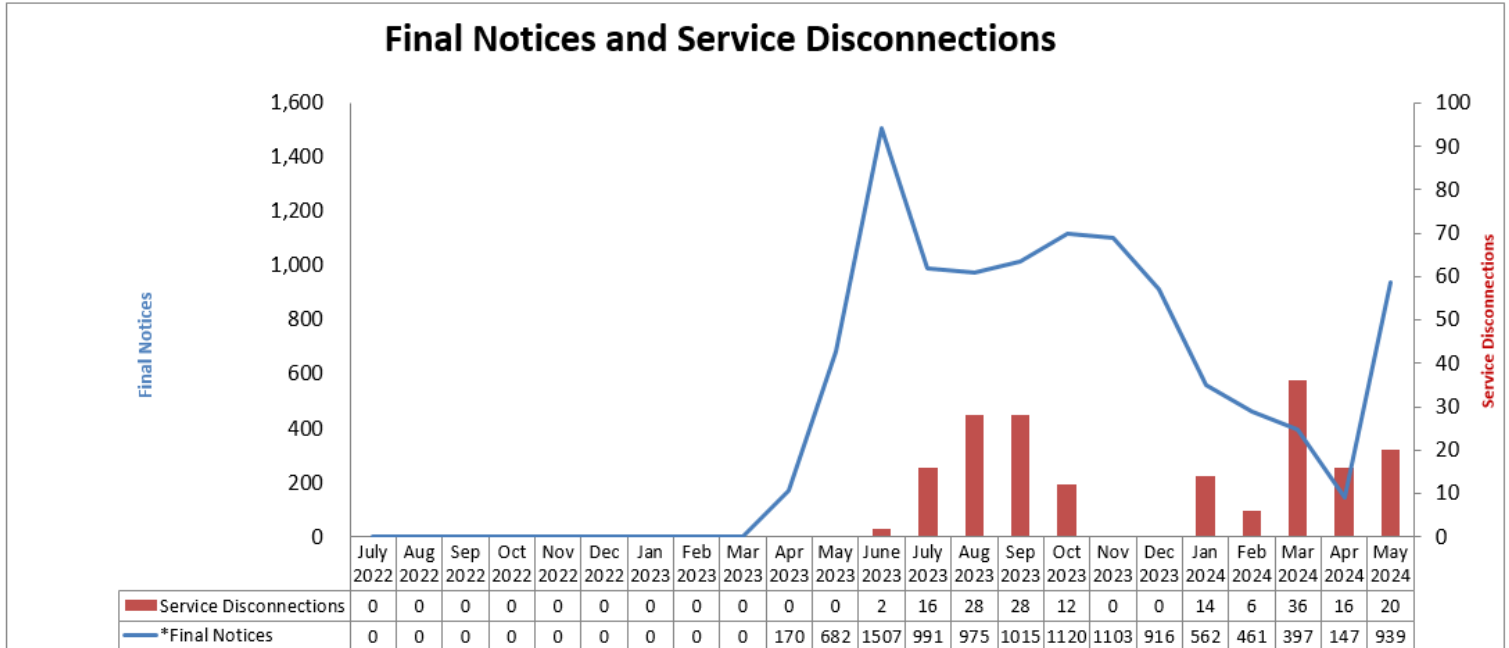
Staff reviewing proper portable pump setup and safety

<b>Incidents and Events</b>	<b>401</b>
Visitor Assists	53
Warnings	23
Assist Watershed Maintenance	11
Dam Check	69
Citations	32
Fish and Game Contact	16
Fire Service	2
Misc Law Enforcement Calls	3
Preventative Search and Rescue	3
Vandalism	15
Warnings	23
Medical Aid	4
Smoking	3
Off Leash Dogs	57
Closed Area	60
Lost Hiker	1
Illegal Trail Work	2
Vehicle Speed	4
Camping	1
Assist Outside Agency	12
Bike Speed	1
Theft	2
Humane/Animal Related	1
Found Property	1
Theft	2
<b>Citations</b>	<b>32</b>
Non-Payment of Parking Fees	25
Closed Area	1
Bike on Trail	6
<b>PATROLS</b>	<b>125</b>
Foot Patrol (Miles)	95
Bike Patrols (Miles)	30



**10. Shutoff Notices and Disconnections:**

*Final Notices
Service Disconnections
* Includes 10 day and final notices



**FISCAL IMPACT:** None.

**ATTACHMENT(S):** None.

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Office of the General Manager	<hr style="width: 50%; margin: 0 auto;"/>	
	<p><b>Bret Uppendahl</b> Acting General Manager</p>	<p><b>Bret Uppendahl</b> Acting General Manager</p>



# STAFF REPORT

**Meeting Type:** Board of Directors

**Title:** Award of Contact No. 2014 - 2024 Tiburon Pipeline Replacement Project (D23018) to Corcus Construction, Inc.

**From:** Alex Anaya, Director of Engineering

**Through:** Bret Uppendahl, Acting General Manager

**Meeting Date:** June 18, 2024

**TYPE OF ACTION:**      X      Action                              Information                              Review and Refer

**RECOMMENDATION:** Approve a resolution authorizing award of Contract No. 2014, 2024 Tiburon Pipeline Replacement Project, to Corcus Construction, Inc. in the amount of \$2,319,685

**SUMMARY:** This item was reviewed by the District Operations Committee on May 17, 2024 and was referred to the Board for contract award. The 2024 Tiburon Pipeline Replacement Project will install approximately 3,490 feet of new pipe to replace old, leak-prone pipe in the Town of Tiburon.

**DISCUSSION:** The 2024 Tiburon Pipeline Replacement Project (Project) is a component of both the District’s Capital Improvement Program and Fire Flow Improvement Program. This Project will install approximately 3,490 feet of 8-inch, 6-inch, and 4-inch welded steel pipe to replace old, leak-prone cast iron pipe installed as early as 1922. See Table 1 for existing pipeline replacement locations and as shown on the map provided in Attachment 2.

The Project will be constructed in coordination with the Town of Tiburon’s upcoming full depth road restoration project. The Town’s project will grind the street down to a depth of 18 inches prior to resurfacing to the existing grade. The District’s existing water main within the Town’s project limits is shallow buried with approximately 20 inches of cover. By replacing this section of the existing cast iron pipe with new welded steel pipe at a depth of 36 inches, the District will ensure the pipe is not damaged during the Town’s road reconstruction process. This will result in a new reliable and seismically resilient section of distribution main along this section of Paradise Drive. Under the terms of this coordination effort, the Town will waive the requirements for the District to perform the full width road resurfacing requirements along Paradise Drive.

The limits of the Town’s paving project and the District pipeline Project will overlap with a portion of the District’s Fire Flow Improvement Program. Approximately 23% of the Tiburon Pipeline Replacement Project is within one of the identified Fire Flow Improvement Program pipeline

replacement project areas. See the Project Budget below for a breakdown of estimated cost.

**Table 1  
Pipeline Replacement Locations**

Street	Length (ft)	Installation Date	Existing Size & Type
Mar West Street	77	1981	8" WSP
Paradise Drive	3413	1922	6" CIP

These street segments were evaluated for the installation of recycled water piping. The nearest existing recycled water pipeline is approximately 12.8 miles away located on the intersection of San Pedro Road and Sequoia Road in the community of Los Ranchitos in San Rafael, CA. The closest wastewater treatment plant, Tiburon Sanitary District 5, is located approximately 20 feet away; however, this facility is not equipped to provide tertiary recycled water.

On May 16, 2024, the District opened four (4) bids, as shown in Table 2, for the Tiburon Pipeline Replacement Project, which involves the installation of 3,490 feet on pipe in support of the District’s Capital Improvement Program and Fire Flow Improvement Program in the Town of Tiburon. Corcus Construction, Inc. submitted the lowest responsive and responsible bid in the amount of \$2,319,685. Therefore, staff recommends that the Board of Directors approve a resolution awarding Contract No. 2014 to Corcus Construction, Inc. in the amount of \$2,319,685 and authorize the General Manager to execute any necessary amendments to Contract No. 2014, which does not exceed \$231,000.

**Table 2  
Bid Results  
2024 Tiburon Pipeline Replacement Project**

Bid Rank	Contractor Name	Bid Amount
1.	Corcus Construction, Inc.	\$ 2,319,685
2.	D&D Pipelines Inc.	\$ 2,368,298
3.	W.R Forde Associates	\$ 2,451,470
4.	Maggiora & Ghilotti Inc.	\$ 2,855,555

Engineer’s Estimate: \$2,160,000

Summaries of the estimated project costs and schedule are provided below.

<u>Budget:</u>	<u>Capital Improvement Program</u>	<u>Fire Flow Program</u>	<u>Total</u>
Contract Award:	\$ 1,786,157	\$ 533,528	\$ 2,319,685
Contingency (10%):	\$ 178,000	\$ 53,000	\$ 231,000
Materials Fees:	\$ 249,480	\$ 74,520	\$ 324,000
District Labor/Inspection:	\$ 182,952	\$ 54,648	\$ 237,600
Total Budget	\$ 2,396,589 (77%)	\$ 715,696 (23%)	\$ 3,112,285
Budget Category:	A1A02A	A2A	

<u>Project Implementation:</u>	
Project Advertisement:	May 2, 2024
Bid Opening:	May 16, 2024
Project Award:	June 18, 2024
Estimated Completion Date:	December 20, 2024
Duration:	185 days




**ENVIRONMENTAL REVIEW:** The Director of Engineering has found that the Project is Categorically Exempt pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15302 (c), Replacement or reconstruction, and statutorily exempt under 21080.21, Pipelines less than one mile. The Project qualifies for exemption pursuant to Section 15302 (c) inasmuch as it is the replacement of existing water pipeline involving negligible or no expansion of capacity and statutorily exempt pursuant to Section 21080.21 since this pipeline replaces less than one mile of pipe.

**FISCAL IMPACT:** The total cost to complete the 2024 Tiburon Pipeline Replacement Project is estimated at \$3,112,285, inclusive of District Labor and contingencies. Funding for this project is included in the Adopted 2 year Capital Improvement Budget (FY 2023-25) and will be split between the District’s Capital Fund and the Fire Flow Program.

**ATTACHMENT(S):**

- 1. Resolution
- 2. Site Map
- 3. Draft Notice of Exemption

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Engineering	 Alex Anaya Engineering Director	 Bret Uppendahl Acting General Manager

**Attachment: 01**

**MARIN MUNICIPAL WATER DISTRICT**

**RESOLUTION NO.**

**A RESOLUTION OF THE BOARD OF THE MARIN MUNICIPAL WATER DISTRICT  
APPROVING AWARD OF CONSTRUCTION CONTRACT NO. 2014 TO CORCUS  
CONSTRUCTION, INC. FOR THE 2024 TIBURON PIPELINE REPLACEMENT PROJECT**

**WHEREAS**, on April 23, 2024, the District advertised Contract No. 2014, 2024 Tiburon Pipeline Replacement Project (D23018), which will replace approximately 3,490 feet of piping; and

**WHEREAS**, the District received and publicly opened four (4) bids on May 9, 2024, of which Corcus Construction, Inc. bid of \$2,319,685 was the lowest responsive and responsible bid.

**NOW, THEREFORE, THE BOARD OF DIRECTORS RESOLVES** that:

1. The bid of \$2,319,685 submitted by the Corcus Construction, Inc. for the Pipeline Replacement Project under Contract No. 2014 (“Contract”) was the lowest responsive and responsible bid submitted therefor, and said bid is hereby accepted.
2. A Contract for this project be awarded to said low bidder, and the General Manager is authorized and directed to execute said Contract on behalf of the District upon receipt of a performance bond, payment bond, proof of insurance, and the executed contract for the work from said bidder.
3. The General Manager is authorized to execute any and all future amendments to the Contract, which he deems necessary, without further Board approval, so long as those amendments to the Contract do not exceed \$231,000.
4. Upon complete execution of said Contract, the bonds and/or checks of the other bidders are to be returned to said other bidders, and all bids other than that of the Corcus Construction, Inc. are to be rejected.
5. The project is Categorically Exempt from review under Section 15302(c) of the CEQA Guidelines inasmuch as it is the replacement of existing water pipeline involving negligible or no expansion of capacity.

- 6. The project is statutorily exempt pursuant to the California Public Resources Code Division 13 Environmental Quality Section 21080.21 inasmuch as the project involves the replacement of less than one mile of pipeline.

**PASSED AND ADOPTED** this 18th day of June, 2024, by the following vote of the Board of Directors.

**AYES:**

**NOES:**

**ABSENT:**

\_\_\_\_\_  
**Ranjiv Khush**  
**President, Board of Directors**

**ATTEST:**

\_\_\_\_\_  
**Terrie Gillen**  
**Board Secretary**

# MARIN MUNICIPAL WATER DISTRICT 2024 TIBURON PIPELINE REPLACEMENT PROJECT TOWN OF TIBURON



# Notice of Exemption

Attachment 3



Filing Requested By and When Filed Return To:  
  
Marin Municipal Water District  
220 Nellen Ave  
Corte Madera, CA 94925  
Attn: Alex Anaya, Director of Engineering

**Project Title:** 2024 Tiburon- Pipeline Replacement Project (D23018)

**Project Location:** Town of Tiburon

**Project Location – County:** Marin

**Project Description:** This Project will install approximately 3,490 feet of new 8-inch, 6-inch, and 4-inch welded steel pipe to replace old, leak-prone cast iron piping as part of the District’s Capital Improvement and Fire Flow Improvement Program.

The roads involved are shown in Figure 1 and described in the table below:

Street	Length (ft)	Installation Date	Existing Size & Type
Mar West Street	77	1981	8” WSP
Paradise Drive	3413	1922	6” CIP

**Public Agency Approving Project:** Marin Municipal Water District

**Name of Person or Agency Carrying Out Project:** Marin Municipal Water District

**CEQA Exemption Status:** Categorical Exemption Section 15302(c), Replacement or Reconstruction and California Public Resource Code Division 13 Environmental Quality Section 21080.21, less than one mile of pipeline.

**Reason for Exemption:** This project qualifies for exemption pursuant to Section 15302(c) of the CEQA Guidelines inasmuch as it is the replacement of existing water pipelines involving negligible or no expansion of capacity. This project is also statutorily exempt pursuant to the California Public Resource Code Division 13 Environmental Quality Section 21080.21 inasmuch as the project involves the replacement of less than one mile of pipeline.

**Project Approval:** The Marin Municipal Water District Board of Directors approved the award of a contract for project construction, which represents project approval as defined by Section 15352 of the Guidelines for Implementation of the California Environmental Quality Act, at their regularly scheduled meeting on June 18, 2024.

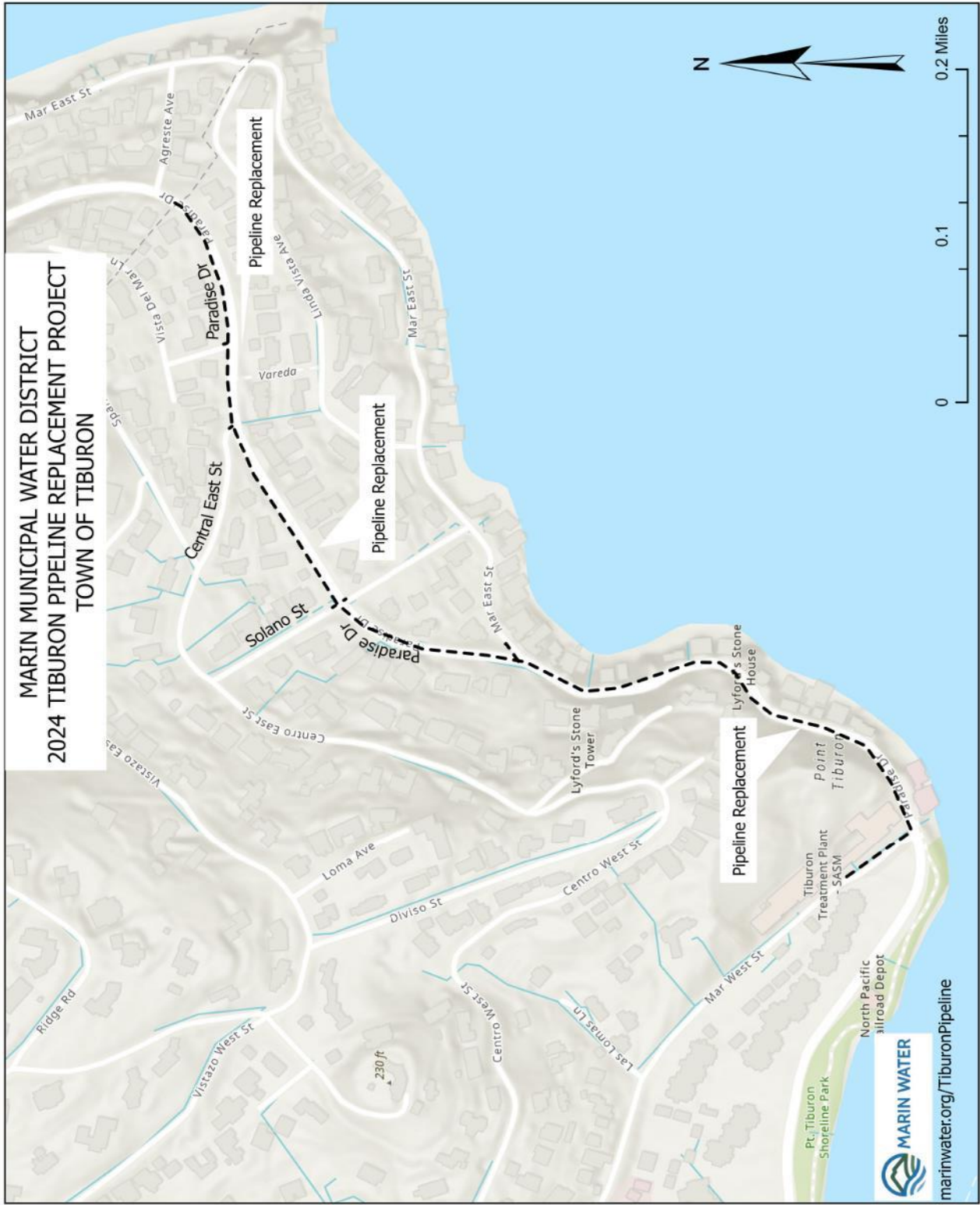
**Lead Agency Contact Person:** Alex Anaya, Marin Municipal Water District

**Telephone:** (415) 945-1588

Alex Anaya, Director of Engineering

Date

Figure 1: 2024 Tiburon- Pipeline Replacement Project



SOURCE: MMWD 2024



# STAFF REPORT

**Meeting Type:** Board of Directors  
**Title:** Second Amendment to Professional Services Agreement for Insurance Brokerage Services  
**From:** Bret Uppendahl, Acting General Manager  
**Meeting Date:** June 18, 2024

**TYPE OF ACTION:**      X      Action                              Information                              Review and Refer

**RECOMMENDATION:** Authorize the General Manager to execute the Insurance Brokerage Services Second Amendment with Alliant Insurance Services, Inc. for Fiscal Years 2024/25 and 2025/26

**SUMMARY:** The District entered into an agreement for insurance brokerage services with Alliant Insurance Services, Inc. on April 19, 2019. An amendment to extend the agreement was approved on February 27, 2023. Staff recommends that the Board authorize the General Manager to execute a two-year agreement for the district’s annual insurance brokerage services with Alliant Insurance Services, Inc. for Fiscal Years 2024/25 and 2025/26.


**DISCUSSION:** Alliant Insurance Services, Inc. is the District’s current insurance brokerage firm and has provided competitive insurance premium rate since FY 2019/20. Alliant Insurance Services, Inc. has requested a nominal increase to the brokerage fee of 4% due to inflation; which equates to annual insurance brokerage fees of \$70,000 for both FY 2024/25 and FY 2025/26, a \$7,250 increase from FY 2023/24.

**ENVIRONMENTAL REVIEW:** Not applicable.

**FISCAL IMPACT:** The FY 2024/25 and FY 2025/26 cost for the annual insurance brokerage fee is \$70,000, an inflationary increase of 4% from the prior year. The brokerage fee is consistent with the adopted budget for FY 2024/25 and will be included in the FY 2025/26 budget request.

**ATTACHMENT(S):**

1. Amendment No. 2 To Agreement For Professional Services between Marin Municipal Water District and Alliant Insurance Services, Inc.

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Finance	<hr/> <b>Bret Uppendahl</b> <b>Acting General Manager</b>	 <hr/> <b>Bret Uppendahl</b> <b>Acting General Manager</b>



AMENDMENT NO. 2 TO  
AGREEMENT FOR PROFESSIONAL SERVICES BETWEEN  
MARIN MUNICIPAL WATER DISTRICT and Alliant Insurance Services, Inc.  
(Miscellaneous Agreement No. 5684)

This Contract Amendment (“Second Amendment”) is entered into by and between Marin Municipal Water District (“District”) and Alliant Insurance Services, Inc. (“Consultant”).

For good and valuable consideration the receipt and adequacy of which is hereby acknowledged, the parties hereto agree as follows:

Section 1. Recitals:

- A. District and Consultant entered into an Agreement for Professional Services dated April 19, 2019 (“Agreement”), which expired in Fiscal Year 2022 and a First Amendment dated February 16, 2023, which expires in Fiscal Year 2024.
- B. The parties desire to enter into a second amendment to the Agreement to extend the annual insurance brokerage services for two (2) subsequent fiscal years.

Section 2. Terms:

- A. Amendment to Agreement: This Second Amendment modifies the Agreement. Except for the modifications contained herein, all the terms of the Agreement shall apply.
- B. Terms:
  - 1. Part A, Section 1(b) entitled “Description of Services and Payment” is hereby amended to read as follows:

The fees and fee payment for such work shall be stipulated under the fee schedule included in Attachments B of this agreement and shall not exceed \$70,000 annually in total through fiscal years 2024-25 and 2025-26.

Dated: \_\_\_\_\_

**ALLIANT INSURANCE SERVICES, INC.**

By \_\_\_\_\_

Dated: \_\_\_\_\_

**MARIN MUNICIPAL WATER DISTRICT**

By \_\_\_\_\_

Bennett Horenstein, General Manager

May 31, 2024

Shelley Reilly  
Finance Manager  
Marin Municipal Water District  
220 Nellen Avenue  
Corte Madera, CA 94925

**Re: Brokerage/Consulting Services Contract Extension**

Dear Shelley:

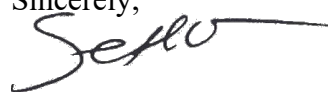
Alliant has had the pleasure of working with the Marin Municipal Water District (MMWD) for the past five years and we appreciate the opportunity to provide a proposal to continue our services. We value our partnership with MMWD and are pleased to provide you with the following proposal to continue offering brokerage and consulting services.

We are suggesting a continued fee for service approach. This annual fee would include the *Scope of Work* covered in the 2019-2022 Agreement for Professional Services.

Contemplating these services, our proposed annual fee is as follows:

	<u>FY 25</u>	<u>FY 26</u>
Annual Fee	\$70,000	\$70,000

We hope this proposal for a continuation of services is acceptable as we most definitely desire to continue our partnership with MMWD. Thank you again for this opportunity and we look forward to hearing from you soon.

Sincerely,  


Seth Cole  
Senior Vice President  
[scole@alliant.com](mailto:scole@alliant.com)

AMENDMENT NO. 1 TO  
AGREEMENT FOR PROFESSIONAL SERVICES BETWEEN  
MARIN MUNICIPAL WATER DISTRICT and Alliant Insurance Services, Inc.  
(Miscellaneous Agreement No. 5684)

This Contract Amendment ("First Amendment") is entered into by and between Marin Municipal Water District ("District") and Alliant Insurance Services, Inc. ("Consultant").

For good and valuable consideration the receipt and adequacy of which is hereby acknowledged, the parties hereto agree as follows:

Section 1. Recitals:

- A. District and Consultant entered into an Agreement for Professional Services dated April 19, 2019 ("Agreement"), which expires in Fiscal Year 2022.
- B. The parties desire to enter into an amendment to the Agreement to extend the annual insurance brokerage services for two (2) subsequent fiscal years.

Section 2. Terms:

- A. Amendment to Agreement: This First Amendment modifies the Agreement. Except for the modifications contained herein, all the terms of the Agreement shall apply.
- B. Terms:
  - 1. Part A, Section 1(b) entitled "Description of Services and Payment" is hereby amended to read as follows:

The fees and fee payment for such work shall be stipulated under the fee schedule included in Attachments B of this agreement and shall not exceed \$67,250 annually in total through fiscal years 2022-23 and 2023-24.

Dated: 2/16/23

ALLIANT INSURANCE SERVICES, INC.

By [Signature]

Dated: 2/27/23

MARIN MUNICIPAL WATER DISTRICT

By [Signature]  
Bennett Horenstein, General Manager

Misc. Agreement No. 5684

**AGREEMENT FOR PROFESSIONAL SERVICES**

The following is an agreement between **Marin Municipal Water District**, hereinafter "MMWD", and Alliant Insurance Service Inc., hereinafter, "Consultant".

**WHEREAS**, Consultant is a duly qualified consulting firm, experienced as an international insurance brokerage and risk management services firm in providing services to public sector clients.

**WHEREAS**, in the judgment of the Board of Directors of the MMWD, it is necessary and desirable to employ the services of the Consultant for the insurance brokerage.

**NOW, THEREFORE**, in consideration of the mutual covenants contained herein, the parties hereto agree as follows:

**PART A-- SPECIFIC PROVISIONS:**

**1. DESCRIPTION OF SERVICES AND PAYMENT:** Except as modified in this agreement, the services to be provided and the payment schedule are:

- a. The scope of work covered by this agreement shall be that included in Attachment A of this agreement.
- b. The fee and fee payment for such work shall be as stipulated under the fee schedule included in Attachment B of this agreement and shall not exceed \$65,000 annually in total from the fiscal years 2019-20 through 2021-22.

**PART B-- GENERAL PROVISIONS**

**1. ASSIGNMENT/DELEGATION:** Except as above, neither party hereto shall assign, sublet or transfer any interest in or duty under this agreement without written consent of the other, and no assignment shall be of any force or effect whatsoever unless and until the other party shall have so consented.

**2. STATUS OF CONSULTANT:** The parties intend that the Consultant, in performing the services hereinafter specified, shall act as an independent contractor and shall have the control of the work and the manner in which it is performed. The Consultant is not to be considered an agent or employee of MMWD, and is not entitled to participate in any pension plan, insurance, bonus or similar benefits MMWD provides its employees.

**3. INDEMNIFICATION:** MMWD is relying on professional ability and training of the Consultant as a material inducement to enter into this agreement. The Consultant hereby warrants that all its work will be performed in accordance with generally accepted professional practices and standards, as well as the requirements of applicable federal, state and local laws, it being understood that acceptance of the Consultant's work by MMWD shall not operate as a waiver or release.

- a. Consultant expressly agrees to defend, indemnify and hold harmless MMWD, its officers, agents, and employees from and against any and all loss, liability, expense, claims, suits and damages, including attorneys' fees, arising out of or pertaining or relating to Consultant's, its associates', employees', subconsultants', or other agents' negligence, recklessness, or willful misconduct, in the operation and/or performance under this Agreement.
- b. With respect to all other than professional services under this agreement, Consultant shall indemnify, hold harmless, release and defend MMWD, its officers, agents and employees from and against any and all actions, claims, damages, disabilities, liabilities and expenses, including attorney's and expert fees and witness costs that may be asserted by any person or entity, including the Consultant, arising out of or in connection with this agreement and the activities necessary to perform those services and complete the tasks provided for herein, but excluding liabilities due to the sole negligence or willful misconduct of MMWD.

This indemnification is not limited in any way by any limitation on the amount or type of damages or compensation payable by or for the MMWD or its agents under workers' compensation acts, disability benefit acts or other employee benefit acts.

**4. PROSECUTION OF WORK:** The execution of this agreement shall constitute the Consultant's authority to proceed immediately with the performance of this contract. Performance of the services hereunder shall be completed before June 30, ending of each fiscal year for the District's insurance to be effective on July 1, beginning of each fiscal year, provided, however, that if the performance is delayed by earthquake, flood, high water or other Act of God or by strike, lockout or similar labor disturbance ("Acts"), the time for the Consultant's performance of this contract shall be extended by a number of days equal to the number of days the Consultant has been delayed by such Acts.

**5. METHOD AND PLACE OF GIVING NOTICE, SUBMITTING BILLS AND MAKING PAYMENTS:** All notices, bills and payment shall be made in writing and may be given by personal delivery or by mail. Notices, bills and payments sent by mail should be addressed as follows:

**MMWD:** Marin Municipal Water District  
Attention: Mikyung Pustelnik, Finance Manager  
220 Nellen Avenue  
Corte Madera CA 94925  
Phone (415) 945-1410

**CONSULTANT:** Alliant Insurance Services Inc.  
Attention: Seth Cole, Sr. Vice President  
100 Pine Street, 11<sup>th</sup> Floor  
San Francisco, CA 94111  
Phone (415) 403-1400

and when so addressed, shall be deemed given upon deposit in the United States Mail, postage prepaid. In all other instances, notices, bills and payments shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the person to whom notices, bills and payments are to be given by giving notice pursuant to this paragraph.

**6. MERGER:** This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms of the agreement, pursuant to California Code of Civil Procedure Section 1856 and as a complete and exclusive statement of the terms of the agreement. No modification of this agreement shall be effective unless and until such modification is evidenced by a writing signed by both parties.

**7. SEVERABILITY:** Each provision of this agreement is intended to be severable. If any term of any provision shall be determined by a court of competent jurisdiction to be illegal or invalid for any reason whatsoever, such provision shall be severed from this agreement and shall not affect the validity of the remainder of the agreement.

**8. TERMINATION:** At any time and without cause, the MMWD shall have the right in its sole discretion, to terminate this agreement by giving written notice to the Consultant. In the event of such termination, MMWD shall pay the Consultant for services rendered to the termination date.

In addition, if the Consultant should fail to perform any of its obligations hereunder, within the time and in the manner herein provided, or otherwise violate any of the terms of this agreement, MMWD may terminate this agreement by giving the Consultant written notice of such termination, stating the reason for such termination. In such event, the Consultant shall be entitled to receive as full payment for all services satisfactorily rendered and expenses incurred hereunder, an amount which bears the same ratio to the total fees specified in the agreement as the services satisfactorily rendered hereunder by the Consultant bear to the total services otherwise required to be performed for such total fee, provided, however, that there shall be deducted from such amount the amount of damage, if any, sustained by MMWD by virtue of the breach of the agreement by the Consultant.

**9. TRANSFER OF RIGHTS/OWNERSHIP OF DATA:** The Consultant assigns to MMWD all rights throughout the work in perpetuity in the nature of copyright, trademark, patent, and right to ideas, in and to all versions of any plans and specifications, reports, video tapes,

photographs, and documents now or later prepared by the Consultant in connection with this contract.

The Consultant agrees to take such actions as are necessary to protect the rights assigned to MMWD in this agreement, and to refrain from taking any action which would impair those rights. The Consultant's responsibilities under this contract will include, but not be limited to, placing proper notice of copyright on all versions of plans and specifications, reports and documents as MMWD may direct, and refraining from disclosing any versions of the reports and documents to any third party without first obtaining written permission of MMWD. The Consultant will not use, or permit another to use, any plans and specifications, reports and documents in connection with this or any other project without first obtaining written permission of MMWD.

All materials resulting from the efforts of MMWD and/or the Consultant in connection with this project, including documents, reports, calculations, maps, photographs, video tapes, computer programs, computer printouts, digital data, notes, and any other pertinent data are the exclusive property of MMWD. Reuse of these materials by the Consultant in any manner other than in conjunction with activities authorized by MMWD is prohibited without written permission of MMWD.

- Attachment A – Insurance Brokerage Service Proposal**
- Attachment B – Fee and Broker Compensation**
- Attachment C – Additional Insured Endorsement**

**Attachments are on final page of this document.**

**10. COST DISCLOSURE:** In accordance with Government Code Section 7550, the Consultant agrees to state in a separate portion of any report provided MMWD, the numbers and amounts of all contracts and subcontracts relating to the preparation of the report.

**11. NONDISCRIMINATION:** The Consultant shall comply with all applicable federal, state and local laws, rules and regulations in regard to nondiscrimination in employment because of race, color, ancestry, national origin, religion, sex, marital status, age, medical condition or physical handicap.

**12. EXTRA (CHANGED) WORK:** Extra work may be required. The Consultant shall not proceed nor be entitled to reimbursement for extra work unless that work has been authorized, in writing, in advance, by MMWD. The Consultant shall inform the District as soon as it determines work beyond the scope of this agreement may be necessary and/or that the work under this agreement cannot be completed for the amount specified in this agreement. Failure to notify the District shall constitute waiver of the Consultant's right to reimbursement.

**13. CONFLICT OF INTEREST:** The Consultant covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. The Consultant further covenants that in the performance of this contract no person having any such interest shall be employed.

**14. INSURANCE:** The Consultant shall obtain insurance acceptable to MMWD in a company or companies with a Best's rated carrier of at least "A". The required documentation of such insurance shall be furnished to MMWD at the time the Consultant returns the executed contract. The Consultant shall not commence work nor shall it allow its employees or subcontractors or anyone to commence work until all insurance required hereunder has been submitted and approved.

The Consultant shall have and maintain at all times during the life of this agreement, up to the date of acceptance, the following policies of insurance:

- a. **Workers' Compensation Insurance:** Workers' Compensation Insurance to cover its employees, as required by the State of California, and shall require all subcontractors similarly to provide Workers' Compensation Insurance as required by the Labor Code of the State of California for all of the subcontractors' employees. All Workers' Compensation policies shall be endorsed with the following specific language:

"This policy shall not be canceled without first giving thirty (30) days prior notice to MMWD, Attn: Finance Manager, by certified mail."

The Workers' Compensation Insurance self-insured deductibles and retentions for both the Consultant and its subcontractors shall not exceed \$1,000.00.

- b. **Public Liability Insurance:** Personal Injury (including bodily injury) and Property Damage Insurance for all activities of the Consultant and its subcontractors arising out of or in connection with this agreement, written on a commercial general liability form which provides coverage at least as broad as ISO Commercial General Liability Occurrence Form CG 00 01 11 85 or 88 or any subsequent revision or equivalent including benefit contractual coverage, completed operations coverage, Consultant's protective coverage, and automobile coverage. The automobile coverage should be at least as broad as ISO Business Auto Form CA001 edition 187 or equivalent including employer's non-ownership liability. All deductibles or self-insured retentions shall not exceed \$1,000.00. Coverage in an amount not less than \$1,000,000.00 combined single limit personal injury, including bodily injury, and property damage for each occurrence is required. Each such policy shall be endorsed with the following language:

- 1. The Marin Municipal Water District, its officers, agents, employees and volunteers are additional insureds under this policy.
- 2. The insurance shall be primary as respects the insured shown in the schedule above.



- 3. The insurance afforded by this policy shall not be canceled except after thirty days prior written notice by certified mail return receipt requested has been given to the MMWD.
- 4. The referenced policy does not exclude explosion, collapse, underground excavation hazards or removal of lateral support.
- 5. The inclusion of more than one insured shall not operate to impair the right of one insured against another insured, and the coverage afforded in the policy shall apply as though separate policies had been issued to each insured.

Consultant's policy shall be endorsed with "Attachment C - Additional Insured Endorsement" form.

The General Aggregate Limits of Insurance in the referenced policies shall be twice occurrence limit.

- c. Professional Liability Insurance: The Consultant shall procure and maintain throughout the term of this agreement, Professional Liability Insurance in an amount not less than \$1,000,000.00. All insurance deductibles or self-insured retentions shall not exceed \$1,000.00. All Professional Liability Insurance policies shall be endorsed with the following specific language:
  - (i) This policy shall not be canceled without first giving thirty (30) days prior notice to MMWD by certified mail.
- d. Documentation: The following documentation of insurance shall be submitted to MMWD:
  - (i) A Certificate of Insurance for Workers' Compensation Insurance for Consultant. A copy of the required policy endorsements specified in subparagraph a. shall be attached to each such Certificate submitted.
  - (ii) Certificates of Liability Insurance showing the limits of insurance provided. Copies of the required endorsements specified in subparagraphs b. and c. shall be attached to each Certificate submitted.

**15. DISPUTE RESOLUTION:** Any dispute or claim in law or equity between District and Consultant arising out of this agreement, if not resolved by informal negotiation between the parties, shall be mediated by referring it to the nearest office of Judicial Arbitration and Mediation Services, Inc. (JAMS) for mediation. Each party shall provide the others with a list of four mediators. The parties shall confer on the list and select a mutually agreeable mediator. Mediation shall consist of an informal, non-binding conference or conferences between the parties and the judge-mediator jointly, then in separate caucuses wherein the judge will seek to

guide the parties to a resolution of the case. If the parties cannot agree to a mutually acceptable member from the JAMS panel of retired judges, a list and resumes of available mediators with substantial experience in mediating claims of the type at issue between the parties, numbering one more than there are parties, will be sent to the parties, each of whom will strike one name leaving the remaining name as the mediator. If more than one name remains, JAMS arbitrations administrator will choose a mediator from the remaining names. The mediation process shall continue until the case is resolved or until such time as the mediator makes a finding that there is no possibility of resolution.

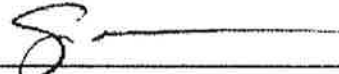
At the sole election of the District, any dispute or claim in law or equity between District and Consultant arising out of this agreement which is not settled through mediation shall be decided by neutral binding arbitration and not by court action, except as provided by California law for judicial review of arbitration proceedings. The arbitration shall be conducted in accordance with the rules of Judicial Arbitration Mediation Services, Inc. (JAMS). The parties to an arbitration may agree in writing to use different rules and/or arbitrators.

**16. BILLING AND DOCUMENTATION:** The Consultant shall bill MMWD for work on a monthly or agreed upon basis or as articulated in Attachment B and shall include a summary of work for which payment is requested. The summary shall include time and hourly rate of each individual, a narrative description of work accomplished, and an estimate of work completed to date.

**17. REASONABLE ASSURANCES:** Each party to this agreement undertakes the obligation that the other's expectation of receiving due performance will not be impaired. When reasonable grounds for insecurity arise, with respect to performance of either party, the other may, in writing, demand adequate assurance of due performance and until the requesting party receives such assurance may, if commercially reasonable, suspend any performance for which the agreed return has not been received. "Commercially reasonable" includes not only the conduct of the party with respect to performance under this agreement but also conduct with respect to other agreements with parties to this agreement or others. After receipt of a justified demand, failure to provide within a reasonable time, not to exceed 30 days, such assurance of due performance as is adequate under the circumstances of the particular case is a repudiation of this agreement. Acceptance of any improper delivery, service, or payment does not prejudice the aggrieved party's right to demand adequate assurance of future performance.

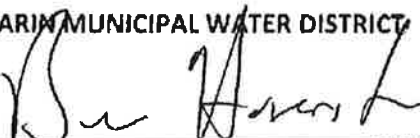
**ALLIANT INSURANCE SERVICES INC.**

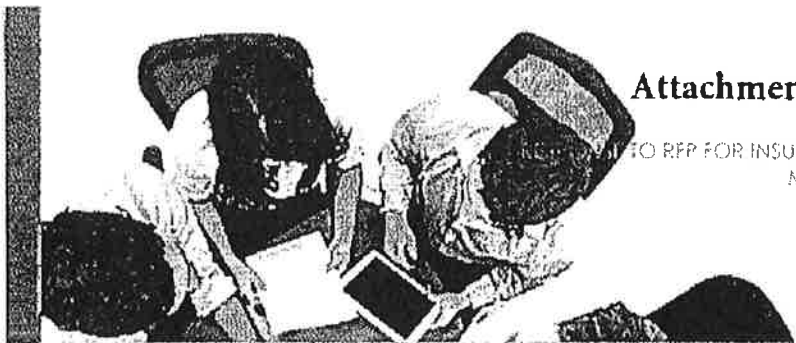
Dated: 4-11-19

By   
Seth Cole, Sr. Vice President

**MARIN MUNICIPAL WATER DISTRICT**

Dated: 4-19-19

By   
Bennett Horenstein, General Manager



# Attachment A

RESPONSE TO RFP FOR INSURANCE BROKERAGE AND RISK MANAGEMENT SERVICES  
MARIN MUNICIPAL WATER DISTRICT | FEBRUARY 22, 2019

## BROKER OF RECORD QUESTIONNAIRE

*BROKER OF RECORD QUESTIONNAIRE (Responses may be submitted on separate sheets with the corresponding headings)*

**CONFIDENTIAL**

Date: February 22, 2019

*Firm Name:* Alliant Insurance Services, Inc.


*Address/Zip Code:* 100 Pine Street, 11<sup>th</sup> Floor, San Francisco, CA 94111

*Phone Number:* (415) 403-1400 *Date Established:* 1925

*Please provide a brief history of your firm and local office.*


Alliant was established in 1925 in San Diego, California as the Robert F. Driver Company. Today, it is still a privately held corporation headquartered in Newport Beach, California. As a firm, we are the largest specialty broker in the country, with our entire focus on selected industry segments including public entity, water agencies, education, construction, real estate, healthcare, tribal nations, hospitality, non-profits and legal professionals. Business Insurance ranks Alliant as the second largest privately held broker and the 10<sup>th</sup> largest broker of U.S. business overall (both based on 2018 brokerage revenue).

FOUNDED IN  
**1925**



Nationwide distribution  
from 100+ offices

**\$14**  
BILLION  
in premium



**10th**  
Largest in U.S.

**\$1.4**  
BILLION  
in revenue

Alliant  
Ownership





Entrepreneurial,  
client-focused culture

**3,650+**  
employees





# BROKER OF RECORD QUESTIONNAIRE

Alliant is majority owned by our employees, which distinguishes us from firms of similar size by making our clients the center of all decision making, not shareholders. Women and minorities play an important role within our company as our goal is to create a diverse and inclusive environment where all perspectives are heard, valued and respected. As a majority employee owned company, roughly 60% of our workforce is female and over 24% of our employees are minorities.

The balance of Alliant stock is owned by private equity and institutional investors. It is our belief that such a combination of ownership allows us both the necessary financial capacity to grow, and the incentive to be fully focus on client service, developing best practices improvement and fostering innovation.

The San Francisco and Newport Beach, California offices compose the core of Alliant's Public Entity Division whose combined resources are believed to be the largest concentrated collection of insurance professionals dedicated solely to the public agency sector, currently placing over \$1 billion in insurance premium on behalf of our public entity clients. We are proposing Alliant's San Francisco office as the servicing office on behalf of the District.

*Provide name, experience and background qualifications of each proposed team member in each category. Specifically include public entity/utility experience with a summary description of the current high deductible programs and specify the amount of the deductible or SIR, and whether they are pool or non-pool accounts that each of the team members manages.*

**a. ACCOUNT SUPERVISION**

*i. Who will be assigned and what will be the specific responsibilities of the:*

**A. Account Executive**

**Seth Cole, Senior Vice President | Account Executive | San Francisco, CA**

As the Account Executive, Seth's responsibilities will include general oversight of the account, development of a marketing strategy and negotiations with insurance markets. He will lead the service team, and has the overall responsibility for the design and implementation of the District's coverage programs. He will also be the lead broker on all casualty placements. Seth has 24 years of experience in the insurance industry, focusing his career on public entities for the past 19 years. Seth is the water and wastewater utility practice leader for Alliant.

Seth's public utility clients include the Metropolitan Water District of Southern California, Central Contra Costa Sanitary District, the California Sanitation Risk Management Authority (members in the North Bay include Central Marin Sanitation Agency, Novato Sanitary District, Sanitary District No. 1 of Marin County, Sewerage Agency of Southern Marin and Sausalito-Marin City Sewer District), ACWA-JPIA (pool) and the District of Columbia Water and Sewer Authority. Liability self-insured retentions for Seth's





## BROKER OF RECORD QUESTIONNAIRE

public utility clients range from \$500,000 to \$25,000,000 and Workers' Compensation self-insured retentions range from \$750,000 to \$5,000,000.

### B Assistant/Account Executive

**Matt McManus, Vice President | Assistant Account Executive | San Francisco, CA**

Matt joined Alliant in 2009 and has been working with public entities ever since. Matt works directly with a variety of public sector related clientele, including cities, counties, hospitals, airports, universities and other special districts. Matt works with multiple public entity and pool accounts in California with high deductible / SIR programs ranging from \$250,000 to \$1,000,000.

Matt has invaluable experience working with large and complex property placements. Throughout his 10+ year career, Matt was recognized as a 2018 Honoree for Business Insurance's Breakout Awards (40 Under 40). This prestigious awards program recognizes elite professionals from across the U.S. who represent the future of our industry. Honorees are recognized for excellence in service, leadership, and industry knowledge. In 2014, Matt was selected for the Andrew Beazley Broker Academy at Lloyd's, which is a prestigious mentorship at Lloyd's of London, where only 20 individuals are carefully chosen every year.

### B INSURANCE MARKETING

#### Who will be assigned and what will be the specific responsibilities of the:

Alliant approaches the servicing of accounts much different than most of our competitors. Our service and marketing philosophy is purposefully straightforward and functionally unlike the models to which most of our competitors have moved. Our clients receive a dedicated team of senior executives that are responsible for all aspects of daily administrative work, marketing, claims and consultation. **The Alliant senior executives we are proposing are Seth Cole and Matt McManus.**

Our senior team members are visible to our clients and do not fall into syndication groups, claims centers, global broking centers or service centers. Our objective is to deliver the service we promise, the financial results we indicate and the unequivocal personal commitment of each team member assigned to your account.

A number of our larger competitors will consolidate the insurance marketing of a client's program to a "marketing center" far away from the office of the particular broker assigned to an account. The creation of such an "internal" marketing unit within a brokers operation tends to distance the broker assigned from the underwriters at an insurance company who are tasked with developing pricing and coverage options.

Our approach is exactly the opposite. Alliant does not support the concept of a global marketing office where your account is assigned to other internal units for marketing purposes. It has been and remains our



## BROKER OF RECORD QUESTIONNAIRE

belief that your account is best represented in the marketplace when the individuals most familiar with the account, who handle it daily, are the ones who also represent it directly to the market (i.e. Seth Cole and Matt McManus).

This approach has been well received by current clients and has led to a 98% client retention ratio, of which we are extremely proud.

### A. Account Executive

**Seth Cole, Senior Vice President | Account Executive | San Francisco, CA**

Please see above for Seth's experience and background qualifications. Seth will be responsible for all aspects of daily administrative work, marketing and claims coordination.

### B. Assistant Account Executive

**Matt McManus, Vice President | Assistant Account Executive | San Francisco, CA**

Please see above for Matt's experience and background qualifications. In addition to Seth, Matt will also be responsible for all aspects of daily administrative work, marketing and claims coordination.

### C. Other marketing team members

**Myron Leavell, Assistant Vice President | Lead Service Representative | San Francisco, CA**

Myron is a lead account executive in Alliant's San Francisco office. His responsibility will be to process either directly, or through others, the administrative aspects of the District's insurance program. Myron will organize staff support providing day-to-day services to the District, including preparation of endorsements, certificates, invoicing and premium accounting. Myron is currently the lead service representative for the California Sanitation Risk Management Authority (pool of 50+ public utilities in California), Delta Diablo, Alameda County Waste Management Authority, and the San Francisco Office of Community Investment and Infrastructure.

**Thary Ou, Assistant Account Manager | Services Representative | San Francisco, CA**

Thary's responsibilities will be to provide day-to-day quality administrative services on the District's property and casualty insurance programs, including such items as certificate processing, endorsement requests, policy reviews, policy summaries, and invoicing. Thary is currently a service representative for the individual members of the California Sanitation Risk Management Authority (pool of 50+ public utilities in California).

**Robert Frey, Senior Vice President | Claims Manager | San Francisco, CA**

As head of Alliant's Public Entity Brokerage Claims department, Bob will be the District's primary contact for reporting claims and working with carriers on all related issues. Bob's role is to ensure that the District





## BROKER OF RECORD QUESTIONNAIRE

is obtaining efficient and equitable claims resolutions. Together with his claims staff, he will ensure the initial reporting of claims to both primary and excess carriers, tracking the status of open claims, and coordinating carrier claims meetings on large or complex claims. Where necessary, Bob will be supported by senior professionals within our office who have substantial experience in helping our public entity clients negotiate settlements on large, complex property and liability claims.

### **Tim Leech, First Vice President | Loss Control Coordinator | Newport Beach, CA**

Tim manages Alliant's Loss Control Services Division. Tim is available to assist in loss control program consulting and implementation under the District's direction. The majority of the work performed by Tim and his team is for public entity clients and their unique exposures (treatment facilities, hospitals, convention & civic centers, public works buildings, athletic venues, transportation hubs, etc.) that accompany them. Tim has over 25 years of experience working in the environmental, health and safety field, as an insurance loss control and insurance broker loss control consultant.

### **Mike Davidson, Vice President | Construction Specialist | San Diego, CA**

Mike will be available to the District to consult on insurance matters related to construction projects and owner controlled insurance programs. Mike is an insurance broker and risk advisor in Alliant's Construction Services Group. Mike is currently the broker for the City of San Jose Wastewater Treatment Plant OCIP.

### **Michael Simmons, Vice Chairman | Peer Review | San Francisco, CA**

Alliant recognizes that no single person has answers or a solution to every need. For this reason, Mike will be available as a "sounding board" or "Peer Review" to the service team and the District, should the need arise. He will consult with Seth and Matt concerning program design and market selection. Mike has over 35 years of expertise exclusively working with public entities and water agencies, and communicates with Seth and Matt on a daily basis.

Resumes for the proposed service team are included in the **Appendix A**.

### **ii. Describe your firm's marketing philosophy approach.**

Through our years of experience, we have obtained valuable resources and the experience to formulate a service and marketing plan that works for each individual client. To make this all happen, our service team is available 24/7 to help you plan the best service and product for your needs.

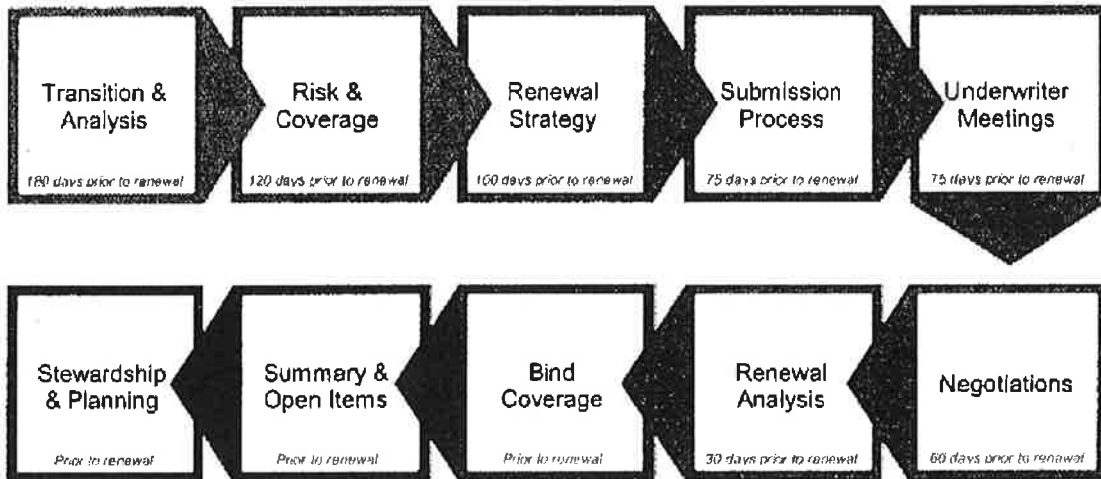
Our Defined Client Service and Marketing Process, a technical practice we employ with all our clients, is the framework for our business approach. Purposefully, this process begins with transition planning, and includes an in-depth risk management analysis, in addition to service and marketing activities. This approach provides consistency in quality service, checkpoints and timelines for monitoring our jointly agreed upon service standards, and ensures the appropriate planning occurs well in advance of the expiration date. We will work closely with the District to ensure that this process aligns with the District's



## BROKER OF RECORD QUESTIONNAIRE

goals. In addition, we use Quality Committees to continuously monitor the implementation of these best practice standards.

What follows is an illustration of this process, with each step containing a detailed explanation along the way. As we base our proprietary Defined Client Service and Marketing Process on our "Risk on a Broader Perspective" philosophy, we are confident in saying that we know of no other broker that adheres to such a process as vigorously as Alliant.



### 1 TRANSITION PLAN/ANALYTICS & DIAGNOSTICS (180 days prior to renewal)

Once appointed as the District's Broker of Record, we will begin to transition the work flow from your current broker(s) to Alliant. Given the absolute importance of a successful transition for each new Alliant client, we will employ the following steps during the implementation of the program to make the transition as seamless as possible for the District.

#### Step 1: Identify Appropriate Personnel and Discuss the Defined Service and Marketing Process

- Identify individuals who will be involved in the transition from Alliant and the District.
- Discuss Defined Service and Marketing Process and tailor it the District's unique needs.
- Facilitate dialogue between key personnel at Alliant and the District; including claims, loss prevention, accounting, board members, etc.





## BROKER OF RECORD QUESTIONNAIRE

### Step 2: Notify Carriers

- Alliant will prepare Broker of Record Letters (BORs) for the District and then file it with the appropriate carriers.
- Confirm acceptance of all BORs filed.

### Step 3: Information Gathering/Data Acquisition

- Financial statements
- Audits
- Actuarial studies
- Bylaws
- Claims data
- Corporate information
- Exposure data
- Draft submissions
- Exposure data
- Historical Policy Digest
- Policies/Summaries
- Schedules or other data elements

### Step 4: Administrative

- Create Open Items Report.
- Further develop annual work plan to include all key stewardship tasks/dates/milestones.
- Develop protocol for execution of all key deliverables.
- Identify and plan for any other key administrative tasks as defined by the District.
- Provide laminated team charts/contact cards.
- Execute service agreement.

### Step 5: Risk Identification

- Review all data accumulated from the information gathering/data acquisition process.
- Discuss with key operational personnel (operations, finance, legal, quality, risk, claims).
- Strategic discussions regarding mission, key the District initiatives, financial goals, short- and long-term operational and financial goals, unique financial issues, risk philosophy.
- Discuss unique claims or risk issues as defined by the District.

### Step 6: Documentation and Implementation

- Prepare a summary report detailing the process, observations, and key findings.
- Review summary document and confirm findings.
- Develop renewal timeline in conjunction with the Annual Work Plan.

Our service team will coordinate these activities to help ease the administrative burden on the District. Our priority is to become intimately familiar with your overall insurance program and unique loss exposures. Therefore, we will get to know the District through a thorough review of your website, financial statements, and loss runs; an analysis of your policy language and coverage to determine the exact coverage being provided; personal discussions; and on-site visits.



## BROKER OF RECORD QUESTIONNAIRE

### 2 RISK & COVERAGE PROFILE *(120 days prior to renewal)*

For coverage assigned to us, we will develop a Risk Profile unique to the District. We will compare this Risk Profile to your current insurance coverage to: determine any serious or unanticipated gaps that exist; review the retentions and insurance limits; and provide you with a written report outlining our observations and recommendations.

### 3 RENEWAL STRATEGY MEETING *(100 days prior to renewal)*

At least 100 days before your major renewal date(s), we will coordinate a Renewal Strategy Meeting to:

- Review our Risk and Coverage Analysis, the resultant Risk Profile and the adequacy of your current insurance portfolio.
- Update the District on the current insurance market.
- Discuss recent renewal results for similar clients.
- Provide an analysis of viable underwriter alternatives, their capacity, and deductible preferences.
- Obtain your thoughts on the desirability of any particular market, i.e., your past history with that carrier, the carrier's financial rating, etc.
- Provide renewal pricing ranges.
- Suggest a renewal timeline and renewal options.

Our goal is to provide you with a concise report outlining our mutually agreed upon game plan.

### 4 UNDERWRITING SUBMISSION & PRESENTATION *(75 days prior to renewal)*

The underwriting submissions we prepare are unrivaled in our industry. Our responsibility is to portray, with integrity, your unique Risk Profile for each line of coverage. Your underwriters will know that our submission will portray your unique risks and operations correctly, succinctly and in a clear and easily understandable format. We encourage meetings between you and the underwriters.

Our goal is to distinguish you from your peers and we do so by creating first class underwriting presentations that demonstrate your unique risk characteristics. We will help you structure the material and provide input and guidance on the graphic representation of your unique results, risks and operations.



## BROKER OF RECORD QUESTIONNAIRE

The underwriting submission and the underwriter presentation will be available to the market at least 75 days prior to your renewal date.

### 5 UNDERWRITER MEETINGS *(75 days prior to renewal)*

We will coordinate all underwriter meetings benefiting the District and our renewal strategy. Where possible, we will attempt to schedule these at your office.

### 6 NEGOTIATIONS *(60 days prior to renewal)*

To execute a successful renewal, we must focus on two key areas – market canvassing and the exploration of options. At our Renewal Strategy Meeting, we will have reviewed the listing of all possible market alternatives, solicited your input and agreed to those we want to approach. We will review alternative limit, retention and coverage structures. We will provide you with weekly renewal updates to keep you informed and to get your feedback and thoughts on the underwriters’ responses.

### 7 RENEWAL PROPOSAL & ANALYSIS *(30 days prior to renewal)*

We are aware that while our clients want to have a bottom line comparison of all renewal alternatives, they also want to know the intricate details of each quotation. Therefore, our renewal proposals feature both an Executive Summary and a detailed Coverage Analysis section. Our analysis will help you make a more educated renewal decision.

### 8 BIND COVERAGE *(Prior to renewal)*

Once you have reviewed your renewal options and have selected an alternative, we will immediately process the following documents, all designed to be completed before your renewal date:

- Confirmations of Coverage
- Certificates of Insurance
- Premium Finance Agreements (if applicable)
- Claims Reporting Instructions
- Program Limits Charts



## BROKER OF RECORD QUESTIONNAIRE

### 9 DESK REFERENCE & OPEN ITEMS REPORTS *(Prior to renewal)*

We will create a Desk Reference that will include insurance summaries of the coverage's bound, claims reporting instructions and contact information for your dedicated service team.

Our Monthly Open Items Reports and meetings are formalized events helping both of us and your underwriters to stay focused on unresolved items as well as, to discuss new risks or operational issues.

### 10 STEWARDSHIP REPORT/STRATEGIC PLANNING MEETING *(Prior to renewal)*

The Stewardship Report and Strategic Planning Meeting are designed to evaluate our performance, review the results of your renewal, discuss any new operations or acquisitions you are contemplating, identify new and emerging risks, update you on recent market conditions/trends, and plan our next renewal strategy meeting.

### S SUMMARY

We appreciate you taking the time to review our Defined Client Service and Marketing Process, which details specific activities related to transitioning your insurance to us. This strategic framework allows us to effectively market your renewal as we gain a better understanding of your coverage and risk exposures. Through this process, you will have an opportunity to evaluate our performance, from which we will collaborate on increasing the likelihood of favorable renewal outcomes for your organization.

#### iii. Will wholesale brokers be used? To what extent?

It is Alliant's practice to access markets directly whenever possible unless there is a strategic reason not to do so. Whether related or unrelated, intermediaries are used selectively when direct access is not allowed, such as the European and Bermuda markets or with certain domestic surplus lines underwriters. Additionally, if an intermediary can bring unique value, leverage, or a specific service to the client, they may then be considered. Use of intermediaries is a key discussion during the Renewal Strategy Meeting and is vetted completely with the client as part of the strategic marketing plan. Our philosophy for accessing a particular wholesaler is predicated on matching clients' needs with the expertise of the wholesale



## BROKER OF RECORD QUESTIONNAIRE

company. We have cultivated relationships with several intermediaries including AmWINS (domestic) and RK Harrison (London).

### RISK MANAGEMENT SERVICES

Who will be assigned to provide each of the risk management services listed? Describe all available services included under the proposed annual fee and list separately any additional/optional services that would be available for an additional fee.

#### Claims Support and Preparation

Alliant fully understands that the true value of any insurance contract can only be determined by its responsiveness to a loss. To that end, Alliant created and maintains a Claims Advocacy department whose sole role and responsibility is to serve as an intermediary and advocate for our clients when interacting with the reinsurance companies, insurance companies and their third party administrators (TPAs). This team is led by Bob Frey and is comprised of seven senior claims professionals including three forensic accountants. Recently, Rachel Wrightson has been added to Bob Frey's claims advocacy team. Having previously served as coverage counsel at a major law firm, and as the Director of Claims at New York University, Rachel is very well suited to be a valuable resource to the District.

#### Claims Success

In the last few years, our claims team has successfully handled several large property losses with claim values ranging between \$10 million and \$41 million. We have handled several crime losses with claim values up to \$17 million. Further, we have worked with and assisted clients in the handling and resolution of various liability claims with settlement values up to \$50 million.

Nothing speaks more to claims advocacy than specific case studies. The following are recent claims that have been negotiated and settled by the Alliant Claims Department on behalf of the client during the adjustment process:

#### Case Study #1

A vacant campus for a School District had been had been vandalized on over 30 different times in a five year period totaling over \$15,000,000 in losses. The District did not realize that they had coverage for these losses. Our claims team engaged the carriers and negotiated coverage, backdating over the five year span. Rather than pay a deductible for every occurrence; we negotiated five deductibles – one for each year.

#### Case Study #2

A turbine for a city's power plant sustained a catastrophic failure, thereby causing irreparable damage to the turbine. Alliant immediately reported the loss and pulled together an adjustment to inspect the damage. An expert was called in to work with the insured to determine the scope of damage. Once it was determined the turbine needed replacing, we collaborated with the client on a best plan approach. The insured was





## BROKER OF RECORD QUESTIONNAIRE

advanced \$10.6 million, with an additional \$6 million paid once repairs were completed. This loss is fully compensable and includes lost revenue and extra expense.

### Case Study #3

A Fire burned a Historical Building on a high profile high school campus. The District had reported a Total Insurable Value (TIV) of \$1,000,000 as the replacement cost. However due to Historical Status, age and unique building materials the cost to replace the building increased to an excess of \$10,000,000. Alliant claims advocates were able to negotiate full replacement cost for the building, which was completely rebuilt.

### Case Study #4

Member cities were impacted by flooding at multiple locations. The policy provided flood coverage for all zones except A and V. Some locations impacted were near zones A and V but not mapped and therefore had no flood zone determination. The carrier denied coverage for these locations claiming they were part of zones A and V. Alliant argued this issue with the carrier, taking the position that the only zones excluded were A and V and no other non A and V zones; not even those that were not mapped, qualified for the exclusion. Alliant was able to overturn the denial and get full payment of the claim.

### Case Study #5

A fire started on the front porch of a city-owned historic mansion. Fire damaged the front entry area of the porch and bled into the front entry hall and living room through the front door and window. The property is a 10,000 square foot structure with four floors. The insured initially thought the damage was not too severe. Upon inspection by Alliant, we found substantial smoke damage on three floors along with water damage in the basement. It took well over a year to fully repair the structure due to the custom wallpaper, rugs, and the need to create special hand tools to re-mill the exterior wood finishes. There was a need for significant art conservation work as well. The total claim was approximately \$2.6 million.

## Risk Control

Alliant risk control consulting offers comprehensive property and liability loss control. We provide integrated loss control management solutions to public and commercial entities in more than 25 states. Our extensive insurance background and unique approach to integrating the management of public entity risks distinguishes Alliant risk control consulting from other firms.

Our risk control team is led by Tim Leech and the team averages more than 25 years of experience providing loss control services to public entity clients. We offer risk control consulting services that focus on the priorities and values of our clients. Our unique service approach and technical competence combine to help clients solve their problems, while saving them time and money.

## Property and Casualty Benchmarking

Alliant often prepares benchmarking studies for our clients. Most of these studies combine information from our large client base, information from our carrier partners and industry available information.



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Additionally, we have purchased access to national benchmarking databases. We work to tailor these benchmarking comparisons to our client’s expectations beyond the normal benchmarking comparison of retentions, limits, premium ratios, losses, program costs, and program structure.

### Property Appraisals

Alliant can provide appraisal services in house or on a subcontract basis, depending on the District’s need. We have partnered with appraisal firms and negotiated below market rates for our clients to take advantage of when having appraisals performed. If the District were to participate in the Alliant Property Insurance Program (APIP), all buildings valued over \$5 million will be appraised at no charge every five years.

### Alternative Risk Transfer and Risk Financing Techniques

Along with the group purchase programs that we have outlined, Alliant has recently participated in the creation of several captives which are viewed as another way to successfully transfer risk. EIO and the Montana Schools Insurance Association MSGIA Captive are two recent examples. The focus of their creation and use is to allow entities to invest more aggressively with their investment funds (equities) otherwise restricted by their state jurisdictions as a public agency.

### Parametric Insurance

For the last several years, Alliant has been exploring ‘Parametric Insurance’ products which showed promise to our public entity clients, as well as coverage through alternative risk financing vehicles such as Contingent Capital, Insurance Linked Securities, Capital Markets, Industry Loss Warranties, and CAT Bonds. Many of these approaches proved to be too complicated and/or more expensive mechanisms than simply borrowing in the open market to fund recovery efforts after a catastrophic earthquake. We continue to monitor the market and worked with large insurers to refine a parametric approach, including a tailored focus on floods and wild fires, to better meet our public sector client’s needs.

### Technology

#### **Technology that Improves our Performance, Organization and your Insurance Program Outcome**

Alliant’s commitment to technology in our business practices is significant, and demonstrated through our recent designation as an InformationWeek Elite 100 winner. This prestigious designation recognizes the most innovative users of business technology in the United States. We offer tools that empower our clients to make sound business decisions that propel their organizations forward. While there are many Alliant technological capabilities we could highlight, we will focus on two systems that we think are most relevant to the District which significantly aides in the management and organization of documents, reports, information and communication during the contract, at renewal and beyond:



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### **AlliantConnect**

This secure, easy-to-use portal enables you to easily access and manage your insurance information from any Internet connection at any time. Your customized portal provides you with a transparent view into your insurance business through easy management and access to all insurance related documents: policies, binders, invoices, proposals, and certificate issuance, etc. In addition, help with risk control is available through a comprehensive library of fact sheets, white papers, presentations, and training videos. Important dates, deadlines, and announcements are also available through the portal, along with direct access to your service team. All client data is secured to the appropriate account teams, and the database itself and all backups are stored in an encrypted format. In addition, all document changes are archived for audit history.



### **Alliant Property Online (Oasys-Net)**

Alliant's Oasys-Net property schedule database was developed to help our clients maintain accurate and detailed information for insurable property, and to be able to convey that information to underwriters in an easy to understand format. While the concept of maintaining an accurate "property schedule" itself is simple, we frequently find that such schedules are stale, inaccurate, incomplete, and poorly reflect actual exposure information. The ramifications of poor housekeeping include: lack of market interest, less competitive pricing, and outdated valuations which are problematic for a whole host of reasons. We have invested in this technology because it enables and encourages our clients to more easily track and maintain their schedules which in turn results in a better property insurance outcome.



### **CSR24**

Our certificate management system is accessed through AlliantConnect. This resource allows clients to request and create certificates of insurance, report/track claims on-line and has the ability to be used as a certificate tracking software for vendors.

### **OCIP/Wrap-Up Capabilities**

In addition to being a leader in the Property and Casualty marketplace, Alliant has the largest Construction Division in the Country, and this is a resource we will be able to offer the District. We have developed an exclusive OCIP platform at Alliant where we allow an owner to purchase workers' compensation and general liability coverages for all project related parties (the owner, general contractor and their subcontractors) under one program for a competitive price and extends to projects as low as \$10,000,000





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in value. We facilitate an enterprise risk model to help our clients determine the best approach for risk-transfer mechanisms, and our Construction Team will be able to assist the District to determine if an OCIP is the best approach for the project in question. If the District decided to engage in an OCIP or Construction project with Alliant, there will be additional costs associated for the service and we will be glad to discuss this opportunity in further detail.

Alliant currently places OCIP programs for some of the largest construction projects in the country. These include:

- *LaGuardia Airport, New York, NY* – Largest public/private project in the country with construction values of \$4 billion.
- *Hudson Yard, New York, NY* – Largest private project in the country with construction values of \$15 billion
- *California High Speed Rail, CA* – Largest public project in the country with an estimated construction value of \$20 billion to \$90 billion.

Alliant's construction team will be able to meet the needs of the District for any construction related placements that may arise as your broker partner.

iii. Of those services listed above that would be provided of an additional fee, please outline the fees for each additional/optional service.

There may be additional charges for Alliant Risk Control and Appraisal Services beyond the risk control consulting services included above and assuming the District did not participate in an Alliant program where certain costs are paid for or subsidized by the program. We have included our Risk Control Consulting Fee Schedule in **Appendix B**.

iv. Insurance Premium Volume of Firm (excluding Personal, Life, Accident and Health)

_____	Under\$50M	_____	\$50M-\$100M	_____	X	_____	Over\$100M
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v. Describe the resources available to you through your organization and/or strategies you will use to assist the DISTRICT in reducing its overall risk management costs. Clearly specify which resources and/or services are included in the base price and the cost for any additional services.

Structuring commercial insurance, especially large and complex programs, requires a unique skillset. In addition to over 350 worldwide carrier relationships, both domestic and overseas, Alliant's creative design of exclusive programs is one of several hallmarks of success. The exclusive programs we develop will vary



## BROKER OF RECORD QUESTIONNAIRE

in terms of size, complexity, and scope depending on the circumstances, but all are designed to provide our clients with an alternative option to the standard marketplace, which is typically broader coverage for lower premiums.

Due to Alliant's specialty in the public sector, we have been able to build and develop exclusive group purchase programs to meet our clients' needs. These programs are in addition to what is available in the worldwide marketplace and cannot be accessed by other brokers. Our ability to bring our clients more options than our competitors gives us leverage while marketing their insurance programs. This is truly one of our greatest differentiators and based on our knowledge of the District's program will be a key contributing factor in our ability to help reduce your insurance cost and enhance your coverage. It is not uncommon for our programs to deliver as much as 25% savings on our clients' behalf.

The success of our programs is achieved by utilizing the strategy of group purchase. Alliant is able to leverage the combined size of the participating group to provide extreme advantages to our clients who participate in them in terms of below market pricing, extremely high limits, and broad manuscript coverage.

Alliant will consider these programs as part of the marketing process. However, please note the existence of our proprietary programs will *not affect* our marketing of the District's insurance program to all potential carriers. First and foremost, we are *your* broker, and will always achieve your goals and objectives. Whether or not the District decides to participate in one of our exclusive programs, *the mere consideration of its availability by the market will drive down the price and enhance coverage terms.*

The above resources are included within Alliant proposed fee.

The following examples will further illustrate how our programs have resulted in our ability to deliver superior results to our clients for their standalone placements.

### Example 1

A large public entity client with placement values in excess of \$12 billion and a 1/1 reinsurance effective date had a very strong relationship with their former property reinsurer who had been in place for many years. When we were given the opportunity to provide this client with a competing option, it was the success of our APIP program that enabled us to save the client money and enhance their coverage significantly. Although the exact amount of savings was never disclosed, it was substantial enough to lead to them breaking a long standing relationship with the incumbent carrier.

### Example 2

A public entity client suffered the largest loss in their history shortly after Alliant was awarded the broker contract and only two months before their 1/1 renewal. As a result of the loss, it was decided that focusing on keeping the renewal with the incumbent carrier would likely have been in the best interest of the public entity. At first, the carrier wanted a 25% rate increase with an increase in deductibles and further reduction of coverage. It was through our negotiation and leverage with the carrier and our high level relationships



## BROKER OF RECORD QUESTIONNAIRE

that allowed us to present an acceptable renewal to the board that still allowed them to stay within their budget and not negatively affect their member's premiums.

### Example 3

Another recent example is our involvement in the formation of a new property insurance carrier for municipalities in Wisconsin, the Municipal Property Insurance Company (MPIC). We created a manuscript reinsurance agreement used to reinsure MPIC's property insurance form. MPIC launched on September 1, 2015 and has grown to over \$17 billion in insured values, and continues to grow. Effective September 1, 2016, MPIC added Equipment Breakdown coverage to its offering.

v. Describe the extent of contract review services your firm provides and identify any additional costs associated with such services.

**Policy/Lease/Contract Review** – The Alliant team members are well versed in policy, lease and contract review. We are able to provide consulting on specific contracts with thorny issues including indemnification provisions in contracts. Alliant is the industry leader, working with insurance carriers and clients to be sure evolving risks are addressed appropriately. Current trends with drone coverage, cyber liability, regionalization of municipal resources, nurse triage, and many more, are areas you can rely on Alliant to provide unparalleled support. The service team is ready to assist with claims management, coverage issues, risk management projects, underwriting submissions, and stewardship.

**Insurance Requirements In Contracts (IRIC) Training** – Our IRIC Manual is available electronically for all of our clients and details recommended insurance requirements for vendors working with our clients. The manual provides guidance to your staff involved in securing contracts with a variety of contractors and vendors. This manual is offered at no additional cost and Alliant is prepared to *offer training presentations to the District departments* involving the concepts contained in our IRIC Manual. Please feel free to review the IRIC manual on our website at the following address: <http://www.alliant.com/Industry-Solutions/Public-Entity/Documents/IRIC.pdf>. The Table of Contents are included as **Appendix C**.

These contract review services are included within Alliant proposed fee.

vi. What characteristics do your firm/your staff possess that make you unique selling you apart from your competitors?

Unique to our firm relative to others which the District will be considering is our joint powers insurance administration practice. While other firms will have individuals who work as brokers to public entities, our brokerage team includes individuals who not only do this in an expert fashion, but who also administer risk sharing programs for pooling clients. This experience provides our team with a unique sensitivity to the needs of the public entity insurance purchaser, as well as with the knowledge and ability to provide risk management consulting service to our clients.



## BROKER OF RECORD QUESTIONNAIRE

Senior Account Managers in Alliant’s Public Entity Group regularly perform analysis on actuarial studies, third party claims administration management, financial modeling, and benchmarking of clients programs. Additionally, with the assistance of loss control consultants, our Senior Brokers develop loss prevention strategies that are targeted directly at the issues that drive client claims.

Alliant personnel, specifically those that would be assigned to the District, spend many hours examining client contracts with third parties to ensure that they are written in the most favorable fashion for our clients. As mentioned briefly above, this experience is reflected in the “Insurance Requirements in Contracts” (IRIC) manual that we have edited, updated and maintained over the years as a reference to be used by any public entity. We have placed it in the public domain for use by any interested party. The manual will provide guidance to your staff involved in securing contracts with a variety of contractors and vendors. Seth Cole is prepared to provide additional future trainings on this topic to District staff.

No other brokerage firm can bring the depth of public entity brokerage experience as well as the volume of public entity premium placements to bear in the service of our clientele. As our firm places literally hundreds of millions of premium dollars into the public entity insurance marketplace, our relationships with underwriters working on public entity risks is second to none.

*vii. How would you characterize your advantage over your competition – that would ultimately improve the DISTRICT’S efficient handling of claims and/or processing of information/communications with your firm?*

### Coverage Dispute Assistance

In assisting our clients with coverage disputes, we recognize that each claim is different and has its own fact pattern. This information is reviewed to determine the best path in dealing with coverage disputes. The facts are examined as they relate to the policy wording and reviewed word by word; often one word can turn a coverage dispute in favor of the insured. We will utilize outside consultants where it is helpful in proving issues such as causation, valuation of damage, historical value, etc.

We often assist our clients in gathering facts, information and knowledge that is used in the discussion and negotiation of disputed claims. In addition, our Claims Group has the ability to call upon the Chairman and the President of Alliant when intervention with a carrier’s executive management is necessary. While this step is not one often utilized, our executives stand ready to assist the District whenever needed.

### Claims Success & Communication

Bob Frey and his staff pride themselves on the orchestration of successful claim resolution. Our claims team works directly with the client to develop plans in handling complex and large losses. Those plans can include selection of experts for claim presentation, review of historical data, obtaining witness statements, photographic review and development and negotiation strategy. It is important to pull all facts and information together in difficult, complex, or large loss situations and put them together in the best light for





## BROKER OF RECORD QUESTIONNAIRE

our client’s claim presentation. Our dedicated work for our clients has resulted in the successful resolution of nearly all significant claims. Bob and his team act as an extension of our client’s staff and take the successful resolution of cases, and more importantly our client’s ultimate satisfaction, very seriously.

We realize the importance and need for good client communication. This will come in the form of onsite meetings, telephone discussions, e-mails and written communication. As the claim develops, we will be in close contact with the District. It is our belief that nobody knows our client’s business better than the client and accordingly, it is critical that we work closely with our clients to learn, gather information and build an appropriate plan for successful resolution. Good communication helps build success and we make the commitment to effectively communicate with you throughout the claims adjustment and settlement process.

### Claim Values

In the last few years, our claims team has successfully handled several large property losses with claim values ranging between \$10 million and \$41 million. We have handled several crime losses with claim values up to \$17 million. Further, we have worked with and assisted clients in the handling and resolution of various liability claims with settlement values up to \$50 million.

### Claims Advocacy – Case Studies

Nothing speaks more to claims advocacy than specific case studies. The following are some examples of claims advocacy on specific property claims that were settled and negotiated your Alliant team.

- A large building had the roof top torn off as a result of Hurricane Ike which resulted in water damage throughout five floors of the building. Alliant was able to negotiate a large partial payment in the amount of \$15 million for this client within 15 days of the storm event.
- Alliant has demonstrated its strong claims advocacy practice assisting the TASB Risk Management Fund in the recovery of over \$45,000,000 in property claims from Hurricane Rita and Ike. These events were a true test of the Fund’s property reinsurance placement, the protocols and reinsurance program placed, and the carrier’s response. Through this process Alliant worked very closely to make sure that interests of both TASB and their school district members were, and continue to be met.
- Other unique claim scenarios include obtaining a business interruption settlement from the carrier as a result of the John Wayne Airport closure after 9/11. While there was no direct physical damage to the airport or its vicinity, we claimed that the loss of income was a direct result of (a covered peril) 9/11 and the civil authority closure. The carrier agreed to a negotiated settlement with the insured. (Prior to 9/11, insurance policies lacked terrorism exclusions). At the time, this was the only loss of its type that we believe settled in favor of the insured.
- As a result of the San Diego wildfires, the San Diego State University campus was closed by order of the President who is delegated the power to do so by the CSU Chancellor. The President is deemed a “civil authority” by the Governor. The carrier rejected the business interruption claim as they did not agree the President was a “civil authority” and rejected the claim in full. We worked with the insured to convince the carrier that the campus President was in fact deemed a civil authority and ultimately obtained a payment on the business interruption claim.



## BROKER OF RECORD QUESTIONNAIRE

- Alliant became the broker for a large regional hospital and renovated their property program. Within 30 days of binding the facility suffered a catastrophic loss due to Hurricane Dolly. Alliant was able to support the client to mitigate the business interruption loss by working with contractors and consultants to shorten the timeline for restoration. A conflict developed between the insurance carrier and the client as to the scope of damage. Alliant located an excellent construction consulting firm that was able to assist the insured and Alliant with supporting the claim from a technical standpoint. We worked with the insured to develop a strategy by which to obtain a maximum recovery.
- A county government client discovered their multi-story building housing seventy five employees had suddenly developed severe cracks. They hired a structural engineer who told them he did not believe the building had major structural issues but would also not tell them if it was safe for occupancy. The client hired a second structural engineer who issued a report stating the building was unsafe for occupancy and needed to immediately be vacated and shored up. Our client did as instructed, moving their staff to temporary quarters. This required set up of all data systems and the physical move of all staff members. The costs to move the staff and shore up the structure totaled \$255,000. We submitted a claim under the Protection and Preservation of Property coverage. Insurers denied the claim based on their own consultant's report that said the building was safe, as had the Insured's first consultant. We worked with the insured, developed appropriate arguments and changed the insurer's position, resulting in a full payment of all incurred expenses.

vii. Who is/are the point(s) of contact within your organization? Describe the level of service that the DISTRICT can expect from this/these person(s).

Seth Cole and Matt McManus will always be the first points of contact at Alliant on behalf of the District.

Alliant takes accountability very seriously and not only expect our clients to hold us accountable, we also expect to hold each other, as a service team, accountable. While Seth will have ultimate responsibility as the lead broker, Matt will also take a very hands on role on the Districts servicing. Alliant has developed internal **Service Standard Guidelines** for servicing accounts. These are minimum standards, while our internal expectation is to always supersede the standard. Shown on the following page is an excerpt from our proposed Service Standards Guidelines that outlines our proposed service delivery commitment.

Customer Service Product	Customer Service Delivery Benchmark
Phone calls returned	Phone calls received in the morning returned in the morning. Calls received in the afternoon returned in the afternoon.
E-mails returned	Review regularly (morning and afternoon) and respond within 24 hours to acknowledge receipt.
Summons and complaint	Upon receipt or prior to end of business day.



## BROKER OF RECORD QUESTIONNAIRE

Customer Service Product	Customer Service Delivery Benchmark
Claim first report to carrier	Immediate or no later than prior to end of business, even if complete data is not available.
Claim follow up with carrier and client	Within 24 hours of first report of loss.
Open activities/suspense	Daily.
Pre-renewal letters to client	100 days prior to expiration.
Renewal business applications to market	90 days prior to expiration.
Binders	Same day coverage is bound. If wholesale broker issued, advise client written confirmation of coverage is on its way.
Agency bill binder billing	No later than the inception date of coverage.
Certificates	Within 24 hours of receipt into the agency.
Policy reviewed for accuracy	Within 10 days from receipt.
Policy delivered to client	Within 10 days from receipt.
Agency bill additional and return premium endorsements	Within 5 days of receipt into the agency.
Claims review with client	45 days prior to expiration.
Audit review and processing	Within 48 hours of receipt.

Based on our team approach, the District will work with Seth and Matt on most day-to-day needs and requests.

**ix. Describe the services you will provide to assist the DISTRICT in gathering information and data required by underwriters for annual insurance renewals.**

In order to successfully market your program we believe that the further in advance and more information we have to present to underwriters the better the results. An important differentiator that separate us from competition is that we do not have one cookie cutter approach to client service; we regard each client relationship as unique; and we approach our relationship without any preconceived notions as to how best to serve clients' needs. We are pleased to pre-fill carrier applications for your review and sign off, completely manage and trend the District's schedule of values (SOV) year over year, whatever we can do to save the District time in the renewal process.

Please also refer to our answer to – b. INSURANCE MARKETING; ii – on page 10.



## BROKER OF RECORD QUESTIONNAIRE

x. Describe how you market your client's insurance programs in a manner that will ensure that renewals are offered with the broadest possible coverage for the most reasonable cost.

Alliant primarily keeps abreast of changes in the market through its daily work with underwriters on hundreds of insurance placements. Importantly, this information is not kept in "silos" but rather is quickly disseminated through our broker network as our brokers work in partnership focused on specific industry niches. As we market insurance programs daily, we keep our fingers on the "pulse" of the market through our daily work. In addition, we subscribe to all the major insurance journals both in print and electronic formats, attend industry conferences and seminars, and meet face to face with underwriters and senior insurance company management. In this way, we are directly involved in not only staying on top of the market, but in shaping it through our insurance placements and program structures. We communicate our knowledge through daily dialogue with our clients, newsletters and webinars.

As mentioned throughout our response, the District will have access to Alliant's *proprietary insurance programs*, representing the broadest coverage available in the marketplace specific to a public entity. The consideration and mere recognition of an Alliant program's availability by the commercial market leads to reductions in price and coverage enhancements for our clients, that otherwise would not have been offered.

xi. What services do you offer to assist your clients in evaluating existing coverages to identify any potential gaps in coverage? If there is an additional cost for these services, please specify the scope of service and associated costs.

We provide full risk identification and analysis as part of our normal broker services. The proposed team that we have assembled has extensive experience in providing traditional broker services as well as acting as consultants to our clients. A significant part of our job as your broker and risk management consultant will be to work with you to determine what exposures you are faced with, and propose methods for managing those exposures. We do this by reviewing contracts, agendas and minutes, future business plans, exclusions in policies, claims reports, loss control analysis and actuarial reports. We carefully review renewal information that is collected to identify exposures and assure that they are being managed appropriately.

We meet with our clients often and encourage dialogue designed to help identify risk exposures. Many of our clients have annual or semi-annual retreats or strategic planning meetings. We take an active role in these meetings, which to identify, discuss and analyze exposures and their treatment.





RESPONSE TO RFP FOR INSURANCE BROKERAGE AND RISK MANAGEMENT SERVICES  
MARIN MUNICIPAL WATER DISTRICT | FEBRUARY 22, 2019

## BROKER OF RECORD QUESTIONNAIRE

xii. Please carefully review the RFP and the attached Sample Contract and confirm your firm's ability and willingness to comply with all of the terms and conditions.

Alliant has reviewed the RFP and the Sample Contract and we confirm our ability and willingness to comply with all of the terms and conditions.

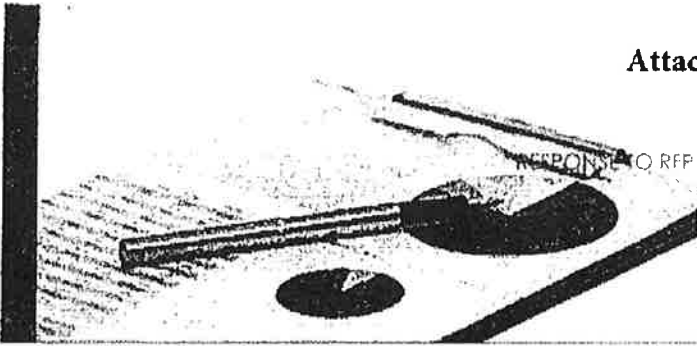
xiii. If you are unable or unwilling to comply with all of the terms and conditions listed in the RFP and/or sample contract, please list each item in that you are unwilling or unable to comply with and clearly outline any counter-proposals specific to each.

N/A

xiv. ASSOCIATE BROKER QUESTIONNAIRE: If you will have a subconsultant or associate broker, please provide the name and a description of the role they will have on the account.

N/A

**Attachment B**



RESPONSE TO RFP FOR INSURANCE BROKERAGE AND RISK MANAGEMENT SERVICES  
MARIN MUNICIPAL WATER DISTRICT | FEBRUARY 22, 2019

**BROKER OF RECORD FEE PROPOSAL**

*Firm:* Alliant Insurance Services, Inc.

Services	2019-20	2020-21	2021-22	2022-23	2023-24
<b>Account Supervision</b>	Included	Included	Included	Included	Included
<b>Risk Management Services</b>	Included	Included	Included	Included	Included
<b>Technical Services</b>	Included	Included	Included	Included	Included
<ul style="list-style-type: none"> <li>• Liability Loss Control Consultation, including contract review and advisement on insurance and indemnification requirements.</li> <li>• Review and update the District standard insurance and indemnification language annually.</li> <li>• Workers' Compensation</li> <li>• Loss Control Consultation</li> <li>• Financial Consultation</li> </ul>					
<b>Claims Management</b>	Included	Included	Included	Included	Included
<ul style="list-style-type: none"> <li>• Claim Consultation and support</li> <li>• Claim Audit Service</li> </ul>					
<b>Insurance Marketing</b>	\$65,000	\$65,000	\$65,000	\$67,250	\$67,250
<ul style="list-style-type: none"> <li>• Casualty Insurance</li> <li>• Property</li> <li>• Boiler &amp; Machinery</li> <li>• Workers' Comp</li> <li>• Crime</li> <li>• Miscellaneous Insurance</li> </ul>					
<b>Other Services Not Listed</b>	**	**	**	**	**
<b>*Proposed Cost Per Year</b>	\$65,000 *	\$65,000 *	\$65,000 *	\$67,250 *	\$67,250 *





## BROKER OF RECORD FEE PROPOSAL

- \* Includes all fees, i.e., staff support, secretarial, clerical, work processing, etc. A contract fee for the authorized years of the contract will be negotiated and approved before the contract is awarded as a flat annual fee and will be paid through the insurance commissions. Any commission funds over the negotiated broker fee will be held in an account with the selected broker and/or returned to the District (at the District's discretion) and will be used to cover urgent or unanticipated risk management services.
- \*\* There may be additional charges for Alliant Risk Control and Appraisal Services assuming the District did not participate in an Alliant program where certain costs are paid for or subsidized by the program. We have included our Risk Control Consulting Fee Schedule in **Appendix B**.



## APPENDIX

### **B. Risk Control Consulting Fee Schedule**

Please refer to the following page(s).



# Risk Control Consulting

Service	Frequency/Comments	Cost
Loss Control Site Visits	As requested	\$175/hour
Infrared Surveys	Daily Rate	\$1,800-\$3,000/day
Enterprise Risk Management		\$200-\$300/hour
Fire Plan Review	As needed	Included
Hot Work Permit Program	Upon Request	Included
Fire Impairment Notification and Tags	Upon Request	Included
Safety Video On-Line Streaming	Upon Request	Included
Preliminary Risk Management Assessment	Upon Request	Included
Pre-Construction Fire Planning	As needed	\$150-\$250/hour
Continuity Planning	Upon request	\$175-\$200/hour
On Site Custom Training	Upon request	\$175-\$250/hour
Industrial Hygiene Services	Upon Request	\$175-\$250/hour
Live Webinar Training	10 Property Webinars Annually. Archived webinars for unlimited playback. Previous sessions include: <ul style="list-style-type: none"> <li>▪ Woodworking Fire Prevention</li> <li>▪ Roof Maintenance</li> <li>▪ Business Occupancy Hazards</li> <li>▪ Commercial Cooking</li> <li>▪ Theft and Crime Prevention</li> <li>▪ High Intensity Lighting</li> <li>▪ Course of Construction Risk</li> <li>▪ Brush Fire Planning</li> <li>▪ Compressed Gas</li> <li>▪ Life Safety</li> <li>▪ Water Intrusion Plans</li> </ul>	Included
Safety Fact Sheet and Template Database	Access to hundreds of documents, power points and templates on a variety of property and safety topics.	Included
Risk Control Newsletter	Quarterly News Letter: Topics range from accident forensics, benefits of infrared surveys, roof inspections, crime prevention, OSHA, claims and many others.	Included
Emergency Plan Mobile App	Annually	\$5,000 per plan
	Multiple plans (more than 2)	\$2,000-\$3,500 per plan
Travel	Based upon project location	Actual Expense



# STAFF REPORT

**Meeting Type:** Board of Directors  
**Title:** Second Amendment to Professional Services Agreement for Auditing Services  
**From:** Bret Uppendahl, Acting General Manager  
**Meeting Date:** June 18, 2024

**TYPE OF ACTION:**      X      Action                              Information                              Review and Refer

**RECOMMENDATION:** Authorize the General Manager to execute the Audit Services Second Amendment with Maze and Associates to perform Audit Services for Fiscal Years ending June 30, 2024 and June 30, 2025

**SUMMARY:** The District entered into an agreement for audit services with Maze and Associates on April 2, 2019, who performed the District audits through Fiscal Year 2022. An amendment to extend the agreement was approved on January 19, 2023 to complete the Fiscal Year 2023 audit. Staff recommends that the Board authorize the General Manager to execute a two-year extension for the District’s annual audit services with Maze and Associates to allow them to perform the District’s audits for Fiscal Years 2024 and 2025.


**DISCUSSION:** Maze and Associates is the District’s current auditing firm and has provided exceptional service in completion of the audit, annual report and accounting support since Fiscal Year 2019. Maze and Associates has requested a nominal increase of \$1,613 for fiscal year end 2024 and \$1,670 for fiscal year end 2025.

**ENVIRONMENTAL REVIEW:** Not applicable.

**FISCAL IMPACT:** The cost for the annual audit services for Fiscal Year 2024 is \$52,471, which includes the cost of the annual audit services of \$47,701 plus a single audit of \$4,770. For Fiscal Year 2025, the cost of the annual audit services is \$49,371. The audit fee is consistent with the adopted budget for FY 2024/25 and will be included in the FY 2025/26 budget request.

**ATTACHMENT(S):**

1. Amendment No. 2 To Agreement For Professional Services Between Marin Municipal Water District and Maze and Associates

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Finance	<hr/> <b>Bret Uppendahl</b> <b>Acting General Manager</b>	 <hr/> <b>Bret Uppendahl</b> <b>Acting General Manager</b>

AMENDMENT NO. 2 TO  
AGREEMENT FOR PROFESSIONAL SERVICES BETWEEN  
MARIN MUNICIPAL WATER DISTRICT AND MAZE AND ASSOCIATES  
(Miscellaneous Agreement No. 5687)

This Contract Amendment (“Second Amendment”) is entered into by and between Marin Municipal Water District (“District”) and Maze and Associates (“Consultant”).

For good and valuable consideration the receipt and adequacy of which is hereby acknowledged, the parties hereto agree as follows:

Section 1. Recitals:

- A. District and Consultant entered into an Agreement for Professional Services dated April 2, 2019 (“Agreement”) and a First Amendment to the Agreement dated January 19, 2023.
- B. The parties desire to enter into this Second Amendment to the Agreement to extend the annual audits of District’s financial statements to include the fiscal years ending June 30, 2024 and June 30, 2025.

Section 2. Terms:

- A. Amendment to Agreement: This Second Amendment modifies the Agreement. Except for the modifications contained herein, all the terms of the Agreement shall apply.
- B. Terms:
  - 1. Part A, Section 1 entitled “Description of Services and Payment” is hereby amended to read as follows:

The scope of work, fees and fee payment for such work shall be stipulated under the fee schedule included in Attachments B-1 and B-2, which are attached hereto and incorporated by this reference, and shall not exceed \$52,471 for the fiscal year 2024 audit including a single audit and \$49,371 for the fiscal year 2025 audit.

- 2. Section 4 entitled “Prosecution of Work” is hereby amended to read as follows:

The execution of this agreement shall constitute the Consultant's authority to proceed immediately with the performance of this contract. Performance of the services hereunder shall be completed within six (6) months following fiscal years ending June 30, 2024 and June 30, 2025 respectively provided, however, that if the performance is delayed by earthquake, flood, high water or other Act of God or by strike, lockout or similar labor disturbance ("Acts"), the time for the Consultant's performance of this contract shall be extended by a number of days equal to the number of days the Consultant has been delayed by such Acts.

Dated: \_\_\_\_\_

**MAZE AND ASSOCIATES**

By \_\_\_\_\_



Dated: \_\_\_\_\_

**MARIN MUNICIPAL WATER DISTRICT**

By \_\_\_\_\_  
Bennett Horenstein, General Manager



April 9, 2024

Shelly Reilly, Finance Manager  
Marin Municipal Water District  
220 Nellen Avenue  
Corte Madera, CA 94925

Dear Shelly:

We are pleased to confirm our understanding of the services we are to provide for the Marin Municipal Water District for the year ended June 30, 2024.

### **Audit Scope and Objectives**

The services we have been engaged to provide are outlined below, but we are also available to provide additional services at your request:

- 1) Audit of the basic financial statements, preparation of Memorandum on Internal Control, assistance with the preparation of the Annual Comprehensive Financial Report, and review of Management's Discussion & Analysis.

Accounting standards generally accepted in the United States of America (GAAP) provide for certain required supplementary information (RSI), such as management's discussion and analysis, to supplement the District's basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. As part of our engagement, we will apply certain limited procedures to the District's RSI in accordance with auditing standards generally accepted in the United States of America (GAAS). These limited procedures will consist of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We will not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

If the District's financial statements are accompanied by supplementary information other than RSI, we will subject the supplementary information to the auditing procedures applied in our audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with GAAS, and we will provide an opinion on it in relation to the financial statements as a whole, in a report combined with our auditor's report on the financial statements.

In connection with our audit of the basic financial statements, we will read the other information accompanying the financial statements and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

The objectives of our audit are to obtain reasonable assurance as to whether the financial statements as a whole are free from material misstatement, whether due to fraud or error; issue an auditor's report that includes our opinion about whether your financial statements are fairly presented, in all material respects, in conformity with generally accepted accounting principles (GAAP); and report on the fairness of the accompanying supplementary information when considered in relation to the financial statements as a whole. Reasonable assurance is a high level of assurance, but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. Misstatements, including omissions, can arise from fraud or error and are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment of a reasonable user made based on the financial statements.

### **Auditor's Responsibilities for the Audit of the Financial Statements**

We will conduct our audit in accordance with GAAS and will include tests of the accounting records and other procedures we consider necessary to enable us to express such opinions. As part of an audit in accordance with GAAS, we exercise professional judgment and maintain professional skepticism throughout an audit.

We will evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management. We will also evaluate the overall presentation of the financial statements, including the disclosures, and determine whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation. We will plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether from (1) errors, (2) fraudulent financial reporting, (3) misappropriation of assets, or (4) violations of laws or governmental regulations that are attributable to the District or to acts by management or employees acting on behalf of the District.

Because of the inherent limitations of an audit, combined with the inherent limitations of internal control, and because we will not perform a detailed examination of all transactions, there is an unavoidable risk that some material misstatements may not be detected by us, even though the audit is properly planned and performed in accordance with GAAS. In addition, an audit is not designed to detect immaterial misstatements or violations of laws or governmental regulations that do not have a direct and material effect on the financial statements. However, we will inform the appropriate level of management of any material errors, fraudulent financial reporting, or misappropriation of assets that comes to our attention. We will also inform the appropriate level of management of any violations of laws or governmental regulations that come to our attention, unless clearly inconsequential. Our responsibility as auditors is limited to the period covered by our audit and does not extend to any later periods for which we are not engaged as auditors.

We will also conclude, based on the audit evidence obtained, whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the government's ability to continue as a going concern for a reasonable period of time.

Our procedures will include tests of documentary evidence supporting the transactions recorded in the accounts, and may include tests of physical existence of inventories, and direct confirmation of cash, investments and certain other assets and liabilities by correspondence with selected customers, creditors and financial institutions. We will also request written representations from your attorneys as part of the engagement, and they may bill the District for responding to this inquiry.

We may from time to time, and depending on the circumstances, use third-party service providers in serving your account. We may share confidential information about you with these service providers, but remain committed to maintaining the confidentiality and security of your information. Accordingly, we maintain internal policies, procedures, and safeguards to protect the confidentiality of your personal information. In addition, we will secure confidentiality agreements with all service providers to maintain the confidentiality of your information and we will take reasonable precautions to determine that they have appropriate procedures in place to prevent the unauthorized release of your confidential information to others. In the event that we are unable to secure an appropriate confidentiality agreement, you will be asked to provide your consent prior to the sharing of your confidential information with the third-party service provider. Furthermore, we will remain responsible for the work provided by any such third-party service providers.

**Audit Procedures - Internal Control**

We will obtain an understanding of the District and its environment, including internal control relevant to the audit, sufficient to identify and assess the risks of material misstatement of the financial statements, whether due to error or fraud, and to design and perform audit procedures responsive to those risks and obtain evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentation, or the override of internal control. An audit is not designed to provide assurance on internal control or to identify deficiencies in internal control. Accordingly, we will express no such opinion. However, during the audit, we will communicate to management and the Board internal control related matters that are required to be communicated under AICPA professional standards.

**Audit Procedures - Compliance**

As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we will perform tests of the District’s compliance with provisions of applicable laws, regulations, contracts, and agreements. However, the objective of our audit will not be to provide an opinion on overall compliance, and we will not express such an opinion.

**Responsibilities of Management for the Financial Statements**

Our audit will be conducted on the basis that you acknowledge and understand your responsibility for designing, implementing, and maintaining internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error, including monitoring ongoing activities; for the selection and application of accounting principles; and for the preparation and fair presentation of the financial statements in conformity with GAAP with the oversight of those charged with governance.

Management is responsible for making drafts of financial statements, all financial records and related information available to us and for the accuracy and completeness of that information (including information from outside of the general and subsidiary ledgers) and for the evaluation of whether there are any conditions or events, considered in the aggregate, that raise substantial doubt about the District’s ability to continue as a going concern for the 12 months after the financial statement date or shortly thereafter (for example, within an additional three months if currently known). We understand that the District will provide us with the Closing Checklist information required for our audit and that the District is responsible for the accuracy and completeness of that information. Management is also responsible for providing us with (1) access to all information of which you are aware that is relevant to the preparation and fair presentation of the financial statements, such as records, documentation, identification of all related parties and all related-party relationships and transactions, and other matters, (2) additional information that we may request for the purpose of the audit; and (3) unrestricted access to persons within the government from whom we determine it necessary to obtain audit evidence. At the conclusion of our audit, we will require certain written representations from management about the financial statements and related matters.

Management’s responsibilities include adjusting the financial statements to correct material misstatements and confirming to us in the management representation letter that the effects of any uncorrected misstatements aggregated by us during the current engagement and pertaining to the latest period presented are immaterial, both individually and in the aggregate, to the financial statements of each opinion unit taken as a whole.

Management is responsible for the design and implementation of programs and controls to prevent and detect fraud, and for informing us about all known or suspected fraud affecting the District involving (1) management, (2) employees who have significant roles in internal control, and (3) others where the fraud could have a material effect on the financial statements. Management’s responsibilities include informing us of its knowledge of any allegations of fraud or suspected fraud affecting the District received in communications from employees, former employees, regulators, or others. In addition, management is responsible for identifying and ensuring that the District complies with applicable laws and regulations.

With regard to including the auditor's report in an exempt offering document, you agree that the aforementioned auditor's report, or reference to Maze & Associates, will not be included in any such offering document without our prior permission or consent. Any agreement to perform work in connection with an exempt offering document, including an agreement to provide permission or consent will be a separate engagement. With regard to an exempt offering document with which Maze & Associates is not involved, you agree to clearly indicate in the exempt offering document that Maze & Associates is not involved with the contents of such offering document.

Management is responsible for the preparation of the supplementary information in conformity with GAAP. Management agrees to include our report on the supplementary information in any document that contains and indicates that we have reported on the supplementary information. Management also agrees to include the audited financial statements with any presentation of the supplementary information that includes our report thereon. Management's responsibilities include acknowledging to us in the representation letter that: (1) management is responsible for presentation of supplementary information in accordance with GAAP; (2) that management believes the supplementary information, including its form and content, is fairly presented in accordance with GAAP; (3) that the methods of measurement or presentation have not changed from those used in the prior period (or, if they have changed, the reasons for such changes); and (4) management has disclosed to us any significant assumptions or interpretations underlying the measurement or presentation of the supplementary information.

With regard to the electronic dissemination of audited financial statements, including financial statements published electronically on your website, you understand that electronic sites are a means to distribute information and, therefore, we are not required to read the information contained in these sites or to consider the consistency of other information in the electronic site with the original document.

In connection with this engagement, we may communicate with you or others via email transmission. As emails can be intercepted and read, disclosed, or otherwise communicated by an unintended third party, or may not be delivered to each of the parties to whom they are directed and only to such parties, we cannot guarantee or warrant that emails from us will be properly delivered and read only by the addressee. Therefore, we specifically disclaim and waive any liability or responsibility whatsoever for interception or unintentional disclosure of emails transmitted by us in connection with the performance of this engagement. In that regard, you agree that we shall have no liability for any loss or damage to any person or entity resulting from the use of email transmissions, including any consequential, incidental, direct, indirect or special damages, such as loss of revenues or anticipated profits, or disclosure or communication of confidential or proprietary information.

### **Other Services**

We will also assist in preparing the financial statements and related notes in conformity with GAAP based on information provided by you.

We will perform the services in accordance with applicable professional standards. The other services are limited to the financial statement services previously defined. We, in our sole professional judgment, reserve the right to refuse to perform any procedures or take any action that could be construed as assuming management responsibilities.

Management agrees to assume all management responsibilities for the financial statement preparation services and any other nonattest services we provide; oversee the services by designating an individual, preferably from senior management, with suitable skill, knowledge, or experience; evaluate the adequacy and results of the services; and accept responsibility for them.

**Engagement Administration, Fees, and Other**

The audit documentation for this engagement is our property and constitutes confidential information. However, subject to applicable laws and regulations, audit documentation and appropriate individuals will be made available upon request and in a timely manner to a federal agency providing direct or indirect funding, or the U.S. Government Accountability Office for purposes of a quality review of the audit, to resolve audit findings, or to carry out oversight responsibilities. We will notify you of any such request. If requested, access to such audit documentation will be provided under the supervision of Maze & Associates personnel. Furthermore, upon request, we may provide copies of selected audit documentation to the aforementioned parties. These parties may intend or decide to distribute the copies or information contained therein to others, including other governmental agencies. We will retain audit documentation for this engagement for seven years after the report release date pursuant to state regulations.

As an attest client, we cannot retain your documents on your behalf. This is in accordance with ET 1.295.143 of the *AICPA Code of Professional Conduct*. The District is responsible for maintaining its own data and records.

SharePoint/OneDrive are used solely to transmit data or as a method of exchanging information and is not intended to store the District's information. The District is responsible for downloading any deliverables and other records from the SharePoint/OneDrive that it wishes to retain for its own records at the completion of the engagement. For multi-year engagements, such downloading should occur annually.

Upon completion of the engagement, data and other content will either be removed from SharePoint/OneDrive or become unavailable to the District within a reasonable timeframe (generally one week after issuance of our report). For multi-year engagements, completion of the engagement occurs when the deliverables are completed for that year.

We expect to begin our audit in April 2024 and to issue our reports no later than December 2024. David Alvey is the engagement partner and is responsible for supervising the engagement and signing the report or authorizing another individual to sign it.

To ensure that Maze & Associates' independence is not impaired under the *AICPA Code of Professional Conduct*, you agree to inform the engagement partner before entering into any substantive employment discussions with any of our personnel.

Our fees for these services are billed based on our contract with the District. Our standard hourly rates vary according to the degree of responsibility involved and the experience level of the personnel assigned to your audit. Our invoices for these fees will be rendered each month as work progresses and are payable on presentation. In accordance with our firm policies, work may be suspended if the District's account becomes thirty days or more overdue and may not be resumed until the District's account is paid in full. If we elect to terminate our services for nonpayment, our engagement will be deemed to have been completed upon written notification of termination, even if we have not completed our report(s). You will be obligated to compensate us for all time expended and to reimburse us for all out-of-pocket costs through the date of termination.

These fees are based on anticipated cooperation from District personnel, the completion of schedules and data requested on our Checklists by District personnel, preparation of audit confirmations we request by District personnel, location of any documents selected by us for testing, and the assumption that there will be no unexpected increases in work scope, such as new debt issues, etc., or delays which are beyond our control, as discussed on the Fees Attachment to this letter. If significant additional time is necessary, we will discuss it with District management and arrive at a new fee before we incur any additional costs.

We understand you will provide us with basic workspace sufficient to accommodate the audit team assigned to your audit. We understand the basic workspace will be equipped with a telephone and direct Internet access, preferably a temporary network outside of your network, a public IP address and a wired connection. We understand you will also provide us with access to a fax machine and read only access to your general ledger system.

You may request that we perform additional services not addressed in this engagement letter. If this occurs, we will communicate with you regarding the scope of the additional services and the estimated fees. We also may issue a separate engagement letter covering the additional services. In the absence of any other written communication from us documenting such additional services, our services will continue to be governed by the terms of this engagement letter.

Our most recent peer review report accompanies this letter.

**Reporting**

We will issue a written report upon completion of our audit of the District’s financial statements, which, if the financial statements include information other than RSI and supplemental information, will also address other information in accordance with AU-C 720, *The Auditor’s Responsibilities Relating to Other Information Included in Annual Reports*. Our reports will be addressed to the Board of Directors. Circumstances may arise in which our report may differ from its expected form and content based on the results of our audit. Depending on the nature of these circumstances, it may be necessary for us to modify our opinions, add a separate section, or add an emphasis-of-matter or other-matter paragraph to our auditor’s report, or if necessary, withdraw from this engagement. If our opinions are other than unmodified, we will discuss the reasons with District management in advance. If, for any reason, we are unable to complete the audit or are unable to form or have not formed opinions, we may decline to express opinions or may withdraw from this engagement.

\*\*\*\*\*

We appreciate the opportunity to be of service to the District and believe this letter accurately summarizes the significant terms of our engagement. If you have any questions, please let us know. If you agree with the terms of our engagement as described in this letter, please sign and return a full copy of this letter to us.

*Maze & Associates*

Maze & Associates

RESPONSE:

This letter correctly sets forth the understanding of the District.

By: Shelley Reitz

Title: Finance Manager

Date: 4-10-24

Marin Municipal Water District  
Engagement Letter  
Fees Attachment  
June 30, 2024

Our fees for the work described in the attached engagement letter will be as follows, unless they are adjusted for one or more of the items below.

Service	Total
Annual Comprehensive Financial Report & MOIC	\$47,701
Single Audit (One Major Program)	4,770
Total	<u>\$52,471</u>

**2024 Fees** – Our recurring fees have been based on our letter with the District dated November 2, 2022.

**PDF Copies of Reports** – print to PDF copies of the above reports are provided at no charge. These report copies are high quality, but do not include any bookmarks or hyperlinks and the file sizes may be large, depending on the length of the report. If you would like a higher quality PDF file with bookmarks and hyperlinks in the table of contents, we have listed three options below. Please contact us for more information on the specifics of these options. **Please contact us if you would like us to prepare one of the following three options** for your Annual Comprehensive Financial Report, or if you’d like a quote for the preparation of a file for another type of report. In addition, should you decide on one of the following options, please let us know at least a week in advance.

1. WEB PDF Annual Comprehensive Financial Report - \$875
2. CAMERA READY PDF Annual Comprehensive Financial Report - \$1,225
3. INDIVIDUAL PDF Annual Comprehensive Financial Report PAGES - \$235

**Additional Services** - The above fees are for audit and assurance services described in the accompanying engagement letter. They do not include fees for assisting with closing the books nor providing other accounting services. Should the District require assistance beyond audit services we will provide an estimate before proceeding.

**Report Finalization** - Our fee is based on our understanding that all information and materials necessary to finalize all our reports will be provided to us before we complete our year-end fieldwork in your offices. In the case of financial statements, this includes all the materials and information required to print the financial statements. As in the past, we will provide final drafts of all our reports before we leave your offices. We will schedule a Final Changes Meeting with you for a date no more than two weeks after we complete our fieldwork. At that meeting, we will finalize all reports for printing. After that date, report changes you make, and changes required because information was not received timely, will be billed at our normal hourly rates.

**Post-Closing Client Adjusting Entries** - The first step in our year-end audit is the preparation of financial statement drafts from your final closing trial balance. That means any entries you make after handing us your closing trial balance must be handled as audit adjustments, or in extreme cases, by re-inputting the entire trial balance, even if the amounts are immaterial. If you make such entries and the amounts are in fact immaterial, we will bill you for the costs of the adjustments or re-input at our normal hourly rates.

**Recurring Audit Adjustments** - Each year we include the prior year’s adjusting entries as new steps in our Closing Checklist, so that you can incorporate these entries in your closing. If we are required to continue to make these same adjustments as part of this year’s audit, we will bill for this service at our normal hourly rates.



**Annual Comprehensive Financial Report Printing** - As a convenience, we can send your Annual Comprehensive Financial Report to a printer we use locally. We do not charge for delivering camera-ready print masters to any printer of your choice and delivering the Annual Comprehensive Financial Reports or BFS to you. However, we will bill you for any additional time spent on the Annual Comprehensive Financial Report printing at our normal hourly rates. This includes changes after the report goes to the printer, obtaining, reviewing and / or delivering printer's proofs, etc.

We can also help with Annual Comprehensive Financial Report design, including covers, tabs, dividers, color choices, bindings, organization charts, maps, etc. We will estimate these costs for you before proceeding.

**Grant Programs Requiring Separate Audit** - Grant programs requiring separate audits represent a significant increase in work scope, and fees for these audits vary based on the grant requirements. If you wish us to determine and identify which programs are subject to audit, we will bill you for that time at our normal hourly rates.

**Changes in District Personnel** - Our experience is that changes and /or reductions in Finance Department staff can have a pronounced impact on costs of performing the audit. If such changes occur, we will meet with you to assess their impact and arrive at a new fee before we begin the next phase of our work. However, we reserve the right to revisit this subject at the conclusion of the audit, based on your actual performance and our actual costs.



November 2, 2022

Shelly Reilly, Finance Manager  
Marin Municipal Water District  
220 Nellen Avenue  
Corte Madera, CA 94925

Dear Shelly:

Pursuant to the District's recent request, coupled with the terms of the District's most recent engagement letter dated June 21, 2022 we are pleased to offer to extend our audit contract to include the fiscal years ended June 30, 2023 to June 30, 2025 at the following prices:

	2023	(optional) 2024	(optional) 2025
Annual Comprehensive Financial Report and Management Letter	\$46,088	\$47,701	\$49,371

We appreciate the opportunity and we look forward to continuing to improve our service to you.

Yours very truly,

*Maze + Associates*

Maze & Associates

RESPONSE:

If you agree with the terms of this contract modification, please sign below and return a copy to our office.

By: *Shelly Reilly*  
 Title: Finance manager  
 Date: 11-8-22

Accountancy Corporation  
3478 Buskirk Avenue, Suite 215  
Pleasant Hill, CA 94523

T 925.930.0902  
F 925.930.0135  
E maze@mazeassociates.com  
W mazeassociates.com

AMENDMENT NO. 1 TO  
AGREEMENT FOR PROFESSIONAL SERVICES BETWEEN  
MARIN MUNICIPAL WATER DISTRICT AND MAZE AND ASSOCIATES  
(Miscellaneous Agreement No. 5687)

This Contract Amendment (“First Amendment”) is entered into by and between Marin Municipal Water District (“District”) and Maze and Associates (“Consultant”).

For good and valuable consideration the receipt and adequacy of which is hereby acknowledged, the parties hereto agree as follows:

Section 1. Recitals:

- A. District and Consultant entered into an Agreement for Professional Services dated April 2, 2019 (“Agreement”).
- B. The parties desire to enter into this First Amendment to the Agreement to extend the annual audit of District’s financial statement to include the fiscal year ending June 30, 2023, with the a District option to have Consultant audit District financial statements for each of the two (2) subsequent fiscal years.

Section 2. Terms:

- A. Amendment to Agreement: This First Amendment modifies the Agreement. Except for the modifications contained herein, all the terms of the Agreement shall apply.
- B. Terms:
  - 1. Part A, Section 1(b) entitled “Description of Services and Payment” is hereby amended to read as follows:

The fees and fee payment for such work shall be stipulated under the fee schedule included in Attachments B and B-1, which is attached hereto and incorporated by this reference, and shall not exceed \$46,088 in total for the fiscal year 2023 audit and if subsequent options to extend are exercised by the District, \$47,701 for the fiscal year 2024 audit and \$49,371 for the fiscal year 2025 audit.

- 2. Section 4 entitled “Prosecution of Work” is hereby amended to read as follows:

The execution of this agreement shall constitute the Consultant's authority to proceed immediately with the performance of this contract. Performance of the services hereunder shall be completed within six (6) months following fiscal year ended June 30, 2023 provided, however, that if the performance is delayed by earthquake, flood, high water or other Act of God or by strike, lockout or similar labor disturbance ("Acts"), the time for the Consultant's performance of this contract shall be extended by a number of days equal to the number of days the Consultant has been delayed by such Acts. If District exercises future options to extend the term of the Agreement for fiscal years 2024 and 2025, Consultant shall complete those services within six (6) months following the end of fiscal year(s) 2024 and 2025.

Dated: 1/18/2023

MAZE AND ASSOCIATES

By [Signature]

Dated: 1/19/2023

MARIN MUNICIPAL WATER DISTRICT

By [Signature]  
Bennett Horenstein, General Manager

Misc. Agreement No. 5687

**AGREEMENT FOR PROFESSIONAL SERVICES**

The following is an agreement between **Marin Municipal Water District**, hereinafter "MMWD", and Maze and Associates, hereinafter, "Consultant".

**WHEREAS**, Consultant is a duly qualified certified public accounting firm, experienced with performing governmental agency audits in accordance with generally accepted auditing standards.

**WHEREAS**, in the judgment of the Board of Directors of the MMWD, it is necessary and desirable to employ the services of the Consultant for the purpose of conducting the annual audit of MMWD financial statements for the fiscal year ending June 30, 2019 and June 30, 2020, with the option to audit MMWD's financial statements for each of the two (2) subsequent fiscal years.

**NOW, THEREFORE**, in consideration of the mutual covenants contained herein, the parties hereto agree as follows:

**PART A-- SPECIFIC PROVISIONS:**

**1. DESCRIPTION OF SERVICES AND PAYMENT:** Except as modified in this agreement, the services to be provided and the payment schedule are:

- a. The scope of work covered by this agreement shall be that included in **Attachment A** of this agreement.
- b. The fee and fee payment for such work shall be as stipulated under the fee schedule included in **Attachment B** of this agreement and shall not exceed \$40,750.00 in total for the first fiscal year audit and if necessary \$4,115.00 for a single audit in the first fiscal year of the contract.
- c. The schedule and order of tasks shall be in accordance with that included in **Attachment A** of this agreement (Scope of Work).

**PART B-- GENERAL PROVISIONS**

**1. ASSIGNMENT/DELEGATION:** Except as above, neither party hereto shall assign, sublet or transfer any interest in or duty under this agreement without written consent of the other, and no assignment shall be of any force or effect whatsoever unless and until the other party shall have so consented.

**2. STATUS OF CONSULTANT:** The parties intend that the Consultant, in performing the services hereinafter specified, shall act as an independent contractor and shall have the control of the work and the manner in which it is performed. The Consultant is not to be considered an agent or employee of MMWD, and is not entitled to participate in any pension plan, insurance, bonus or similar benefits MMWD provides its employees.

**3. INDEMNIFICATION:** MMWD is relying on professional ability and training of the Consultant as a material inducement to enter into this agreement. The Consultant hereby warrants that all its work will be performed in accordance with generally accepted professional practices and standards, as well as the requirements of applicable federal, state and local laws, it being understood that acceptance of the Consultant's work by MMWD shall not operate as a waiver or release.

- a. Consultant expressly agrees to defend, indemnify and hold harmless MMWD, its officers, agents, and employees from and against any and all loss, liability, expense, claims, suits and damages, including attorneys' fees, arising out of or pertaining or relating to Consultant's, its associates', employees', subconsultants', or other agents' negligence, recklessness, or willful misconduct, in the operation and/or performance under this Agreement.
- b. With respect to all other than professional services under this agreement, Consultant shall indemnify, hold harmless, release and defend MMWD, its officers, agents and employees from and against any and all actions, claims, damages, disabilities, liabilities and expenses, including attorney's and expert fees and witness costs that may be asserted by any person or entity, including the Consultant, arising out of or in connection with this agreement and the activities necessary to perform those services and complete the tasks provided for herein, but excluding liabilities due to the sole negligence or willful misconduct of MMWD.

This indemnification is not limited in any way by any limitation on the amount or type of damages or compensation payable by or for the MMWD or its agents under workers' compensation acts, disability benefit acts or other employee benefit acts.

**4. PROSECUTION OF WORK:** The execution of this agreement shall constitute the Consultant's authority to proceed immediately with the performance of this contract. Performance of the services hereunder shall be completed within six (6) months following fiscal year ended June 30, provided, however, that if the performance is delayed by earthquake, flood, high water or other Act of God or by strike, lockout or similar labor disturbance ("Acts"), the time for the Consultant's performance of this contract shall be extended by a number of days equal to the number of days the Consultant has been delayed by such Acts.

**5. METHOD AND PLACE OF GIVING NOTICE, SUBMITTING BILLS AND MAKING PAYMENTS:** All notices, bills and payment shall be made in writing and may be given by personal delivery or by mail. Notices, bills and payments sent by mail should be addressed as follows:

**MMWD:** Marin Municipal Water District  
Attention: Finance Manager  
220 Nellen Avenue  
Corte Madera CA 94925

**CONSULTANT:** Maze & Associates, Accountancy Corporation  
Attention: David Alvey, Audit Partner & Vikki C. Rodriguez, Audit Partner  
3478 Buskirk Avenue, Suite 215  
Pleasant Hill, CA 94523  
Telephone (925) 930-0902

and when so addressed, shall be deemed given upon deposit in the United States Mail, postage prepaid. In all other instances, notices, bills and payments shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the person to whom notices, bills and payments are to be given by giving notice pursuant to this paragraph.

**6. MERGER:** This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms of the agreement, pursuant to California Code of Civil Procedure Section 1856 and as a complete and exclusive statement of the terms of the agreement. No modification of this agreement shall be effective unless and until such modification is evidenced by a writing signed by both parties.

**7. SEVERABILITY:** Each provision of this agreement is intended to be severable. If any term of any provision shall be determined by a court of competent jurisdiction to be illegal or invalid for any reason whatsoever, such provision shall be severed from this agreement and shall not affect the validity of the remainder of the agreement.

**8. TERMINATION:** At any time and without cause, the MMWD shall have the right in its sole discretion, to terminate this agreement by giving written notice to the Consultant. In the event of such termination, MMWD shall pay the Consultant for services rendered to the termination date.

In addition, if the Consultant should fail to perform any of its obligations hereunder, within the time and in the manner herein provided, or otherwise violate any of the terms of this agreement, MMWD may terminate this agreement by giving the Consultant written notice of such termination, stating the reason for such termination. In such event, the Consultant shall be entitled to receive as full payment for all services satisfactorily rendered and expenses incurred hereunder, an amount which bears the same ratio to the total fees specified in the agreement as the services satisfactorily rendered hereunder by the Consultant bear to the total services otherwise required to be performed for such total fee, provided,

however, that there shall be deducted from such amount the amount of damage, if any, sustained by MMWD by virtue of the breach of the agreement by the Consultant.

**9. TRANSFER OF RIGHTS/OWNERSHIP OF DATA:** The Consultant assigns to MMWD all rights throughout the work in perpetuity in the nature of copyright, trademark, patent, and right to ideas, in and to all versions of any plans and specifications, reports, video tapes, photographs, and documents now or later prepared by the Consultant in connection with this contract.

The Consultant agrees to take such actions as are necessary to protect the rights assigned to MMWD in this agreement, and to refrain from taking any action which would impair those rights. The Consultant's responsibilities under this contract will include, but not be limited to, placing proper notice of copyright on all versions of plans and specifications, reports and documents as MMWD may direct, and refraining from disclosing any versions of the reports and documents to any third party without first obtaining written permission of MMWD. The Consultant will not use, or permit another to use, any plans and specifications, reports and documents in connection with this or any other project without first obtaining written permission of MMWD.

All materials resulting from the efforts of MMWD and/or the Consultant in connection with this project, including documents, reports, calculations, maps, photographs, video tapes, computer programs, computer printouts, digital data, notes, and any other pertinent data are the exclusive property of MMWD. Reuse of these materials by the Consultant in any manner other than in conjunction with activities authorized by MMWD is prohibited without written permission of MMWD.

**Attachment A - Scope of Work**

**Attachment B - Fee Schedule**

**Attachment C - Additional Insured Endorsement (mandatory inclusion)**

**Attachments are on final page of this document.**

**10. COST DISCLOSURE:** In accordance with Government Code Section 7550, the Consultant agrees to state in a separate portion of any report provided MMWD, the numbers and amounts of all contracts and subcontracts relating to the preparation of the report.

**11. NONDISCRIMINATION:** The Consultant shall comply with all applicable federal, state and local laws, rules and regulations in regard to nondiscrimination in employment because of race, color, ancestry, national origin, religion, sex, marital status, age, medical condition or physical handicap.



**12. EXTRA (CHANGED) WORK:** Extra work may be required. The Consultant shall not proceed nor be entitled to reimbursement for extra work unless that work has been authorized, in writing, in advance, by MMWD. The Consultant shall inform the District as soon as it determines work beyond the scope of this agreement may be necessary and/or that the work under this agreement cannot be completed for the amount specified in this agreement. Failure to notify the District shall constitute waiver of the Consultant's right to reimbursement.

**13. CONFLICT OF INTEREST:** The Consultant covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. The Consultant further covenants that in the performance of this contract no person having any such interest shall be employed.

**14. INSURANCE:** The Consultant shall obtain insurance acceptable to MMWD in a company or companies with a Best's rated carrier of at least "A". The required documentation of such insurance shall be furnished to MMWD at the time the Consultant returns the executed contract. The Consultant shall not commence work nor shall it allow its employees or subcontractors or anyone to commence work until all insurance required hereunder has been submitted and approved.

The Consultant shall have and maintain at all times during the life of this agreement, up to the date of acceptance, the following policies of insurance:

- a. **Workers' Compensation Insurance:** Workers' Compensation Insurance to cover its employees, as required by the State of California, and shall require all subcontractors similarly to provide Workers' Compensation Insurance as required by the Labor Code of the State of California for all of the subcontractors' employees. All Workers' Compensation policies shall be endorsed with the following specific language:

"This policy shall not be canceled without first giving thirty (30) days prior notice to:

Marin Municipal Water District  
Attention: Finance Manager  
220 Nellen Avenue  
Corte Madera, CA 94925

by certified mail."

The Workers' Compensation Insurance self-insured deductibles and retentions for both the Consultant and its subcontractors shall not exceed \$1,000.00.

- b. **Public Liability Insurance:** Personal Injury (including bodily injury) and Property Damage Insurance for all activities of the Consultant and its

subcontractors arising out of or in connection with this agreement, written on a commercial general liability form which provides coverage at least as broad as ISO Commercial General Liability Occurrence Form CG 00 01 11 85 or 88 or any subsequent revision or equivalent including benefit contractual coverage, completed operations coverage, Consultant's protective coverage, and automobile coverage. The automobile coverage should be at least as broad as ISO Business Auto Form CA001 edition 187 or equivalent including employer's non-ownership liability. All deductibles or self-insured retentions shall not exceed \$1,000.00. Coverage in an amount not less than \$1,000,000.00 combined single limit personal injury, including bodily injury, and property damage for each occurrence is required. Each such policy shall be endorsed with the following language:

1. The Marin Municipal Water District, its officers, agents, employees and volunteers are additional insureds under this policy.
2. The insurance shall be primary as respects the insured shown in the schedule above.
3. The insurance afforded by this policy shall not be canceled except after thirty days prior written notice by certified mail return receipt requested has been given to the MMWD.
4. The referenced policy does not exclude explosion, collapse, underground excavation hazards or removal of lateral support.
5. The inclusion of more than one insured shall not operate to impair the right of one insured against another insured, and the coverage afforded in the policy shall apply as though separate policies had been issued to each insured.

Consultant's policy shall be endorsed with "**Attachment C - Additional Insured Endorsement**" form.

The General Aggregate Limits of Insurance in the referenced policies apply separately to this project.

- c. Professional Liability Insurance: The Consultant shall procure and maintain throughout the term of this agreement, Professional Liability Insurance in an amount not less than \$1,000,000.00. All insurance deductibles or self-insured retentions shall not exceed \$1,000.00. All Professional Liability Insurance policies shall be endorsed with the following specific language:

- (i) This policy shall not be canceled without first giving thirty (30) days prior notice to MMWD by certified mail.
- d. Documentation: The following documentation of insurance shall be submitted to MMWD:
  - (i) A Certificate of Insurance for Workers' Compensation Insurance for Consultant. A copy of the required policy endorsements specified in subparagraph a. shall be attached to each such Certificate submitted.
  - (ii) Certificates of Liability Insurance showing the limits of insurance provided. Copies of the required endorsements specified in subparagraphs b. and c. shall be attached to each Certificate submitted.

**15. DISPUTE RESOLUTION:** Any dispute or claim in law or equity between District and Consultant arising out of this agreement, if not resolved by informal negotiation between the parties, shall be mediated by referring it to the nearest office of Judicial Arbitration and Mediation Services, Inc. (JAMS) for mediation. Each party shall provide the others with a list of four mediators. The parties shall confer on the list and select a mutually agreeable mediator. Mediation shall consist of an informal, non-binding conference or conferences between the parties and the judge-mediator jointly, then in separate caucuses wherein the judge will seek to guide the parties to a resolution of the case. If the parties cannot agree to a mutually acceptable member from the JAMS panel of retired judges, a list and resumes of available mediators with substantial experience in mediating claims of the type at issue between the parties, numbering one more than there are parties, will be sent to the parties, each of whom will strike one name leaving the remaining name as the mediator. If more than one name remains, JAMS arbitrations administrator will choose a mediator from the remaining names. The mediation process shall continue until the case is resolved or until such time as the mediator makes a finding that there is no possibility of resolution.

At the sole election of the District, any dispute or claim in law or equity between District and Consultant arising out of this agreement which is not settled through mediation shall be decided by neutral binding arbitration and not by court action, except as provided by California law for judicial review of arbitration proceedings. The arbitration shall be conducted in accordance with the rules of Judicial Arbitration Mediation Services, Inc. (JAMS). The parties to an arbitration may agree in writing to use different rules and/or arbitrators.

**16. BILLING AND DOCUMENTATION:** The Consultant shall bill MMWD for work on a monthly or agreed upon basis or as articulated in **Attachment B** and shall include a summary of work for which payment is requested. The summary shall include time and hourly rate of each individual, a narrative description of work accomplished, and an estimate of work completed to date.

**17. REASONABLE ASSURANCES:** Each party to this agreement undertakes the obligation that the other's expectation of receiving due performance will not be impaired. When reasonable grounds for insecurity arise, with respect to performance of either party, the other may, in writing, demand adequate assurance of due performance and until the requesting party receives such assurance may, if commercially reasonable, suspend any performance for which the agreed return has not been received. "Commercially reasonable" includes not only the conduct of the party with respect to performance under this agreement but also conduct with respect to other agreements with parties to this agreement or others. After receipt of a justified demand, failure to provide within a reasonable time, not to exceed 30 days, such assurance of due performance as is adequate under the circumstances of the particular case is a repudiation of this agreement. Acceptance of any improper delivery, service, or payment does not prejudice the aggrieved party's right to demand adequate assurance of future performance.

**MAZE & ASSOCIATES**

Dated: 4/1/19

By   
David Alvey, Audit Partner

**MARIN MUNICIPAL WATER DISTRICT**

Dated: 4-2-2019

By   
Bennett Horenstein, General Manager

Attachment A

**AUDIT SCOPE AND PROVISIONS**

*Scope of Work*

We are proposing to provide services in order to achieve the scope of work as detailed in Section III Nature of Services Required of the District's Request for Proposals for Auditing Services.

*Audit Plan*

Our audit strategy is designed specifically for municipalities. We perform half our audit well before year-end so we can identify problems early. Our strategy maximizes our efficiency and lessens the load on our clients. When engaged to prepare the financial statements, we prepare proformas of them for your review, well before year-end and we give you detailed interim and final-phase checklists of all the items we will need from you months in advance.

**We will plan the audit in detail and prepare an Audit Plan** which details the information we will need from you to complete our interim and year-end audits, along with the person responsible for preparing it and the date they will have it ready. We tailor it to refer directly to the schedules you already prepare.

**We do not require special reports or reconciliations just for our audit.** We have found that coordinating our team and our client's staff works very well because it helps minimize the impact on your staff at year end. This way the Audit Plan includes most data we need from you so you and your staff can plan and schedule your work accordingly. **Our clients know from prior experience with our firm, that we excel at minimizing our impact on your staff.**

*Specific Audit Strategy—Interim*

Unlike older-style firms, **we perform most of our important work at interim**, well before the end of the fiscal year. We use our interim work to identify and solve problems and plan the year-end closing and audit in detail. Well before we begin our interim work we will send you a list of the items we need, so you will have time to prepare.

We forecast many year-end amounts at interim, so that we can limit the amount of work required at year-end and concentrate instead on areas of concern. For example, we normally perform all our cash and investment testing at interim, including sending confirmation letters to depositories and determining financial statement categorizations. Performing these last two steps at interim allows plenty of time to follow up on confirmations or resolve questions about the proper categorization of an investment without delaying the audit. As another example, we test long-term debt at interim and forecast year-end balances and transactions for each debt issue.

We use **remote inquiry** as much as possible at interim, in order to increase our efficiency and reduce our impact on your staff. We can download Board minutes and other documents from your website for review. Combining these abilities with our checklists has allowed us to perform larger portions of the audit in our own offices and reduce our questions to writing so that you have more time to deal with them.

*Laws, Regulations and Compliance*

Our audits are designed to ensure that we test transactions for compliance with the Single Audit Act and other applicable laws and regulations, including the California Government Code, provisions of applicable grant guidelines, etc. We identify applicable laws and regulations as part of our audit planning each year.

The California Government Code has many provisions and underlying regulations relating to investments and the investment policy, all of which are tested as part of our audit of cash and investments.

**AUDIT SCOPE AND PROVISIONS (Continued)**

*Specific Audit Strategy – Analytical Procedures and Year End*

At year-end we do not repeat any of the work we performed at interim. Instead, we focus on the items in your Audit Plan and on the Basic Financial Statements. **Our year-end audit field-work actually starts in our office**, so that when we do arrive in your offices we are fully prepared and we minimize our impact on your operations.

In our offices, we cross-reference or reconcile your Audit Plan information, reports and schedules. The Engagement Partner **performs our detailed Analytical Procedures review of balances and emails our questions to you in advance of our arrival** in your offices. Our experience is that this Analytical Procedure review identifies any issues remaining after our interim work, as well as most potential audit adjustments.

This gives all of us time to address these items in person while the audit field-work is proceeding, instead of by telephone and e-mail afterward.

As part of the analytical procedures, when we start work in your offices, we will need you to complete your responses to the Analytical Review, but we will not need much of your time and we will not ask for more schedules or reports. Our Engagement Partner, Manager and Supervisor will meet with you on the first day of the year-end audit to discuss any remaining unanswered Analytical Review questions, review the status of the year-end closing and to determine if modifications to our year-end approach are needed. This meeting sets the stage for the year-end audit; by this time the format and content of the financial statements is pretty well set and most audit adjustments have been identified. If we find any material adjustments, we will discuss them with you immediately and provide you with the journal entries required; we do not propose adjustments that are not material.

At the conclusion of our year-end work, our Engagement Partner, Manager and Supervisor, will review the final financial statement drafts with you and your staff. The following week, a second partner not involved with the audit will perform a “quality assurance review” of the financial statements and workpapers so that we will be ready to sign the financial statement opinions as soon as the District approves them.

You will find our strategy allows you to control the audit process, enables you to spread the work over the year as you wish and greatly reduces the pressure at year end.

*Local Expertise and Resources*

Our expertise and resources are local which provides our clients with timely on-the-spot responses to issues and questions as they arise. Our Audit Supervisors are on site daily while the audit team is in the field. Our Engagement Partner and Manager are on site at least weekly checking on progress, discussing and resolving issues with the Audit Team, as well as meeting with our client as needed. In cases of highly complex operations or unusual issues, our Technical Review Partner is brought out to meet with the audit team and provide technical support, consultation and participate in meetings with our clients as needed. With all our resources available locally, our clients are assured of in depth, timely audits and expedient resolutions to questions and issues as they arise.

**AUDIT SCOPE AND PROVISIONS (Continued)**

*Information System Review*

Information System Security became an important part of financial statement audits and we have performed an Information Systems Review (ISR) with every audit since 2001. Unlike our competitors, we extend our review to not only encompass the financial system, but also the network environment that houses that system. From our perspective, the internal controls that are present in the overall network environment are critical to understanding the internal controls over the financial system.

**Unlike financial statements, there are currently no authoritative standards that local governments must employ to ensure that adequate and appropriate IT controls are designed and implemented.** We extensively researched this area and concluded it was most appropriate to base our ISR on the certification and accreditation framework developed by the National Institute of Standards and Technology (NIST) for the Federal Information Security Management Act (FISMA) which is the minimum security required for federal government agencies information systems. NIST recommends states, local governments and Indian tribes comply with these standards as well. **Our reviews include procedures to determine that your systems are adequately protected from unauthorized internal access, provide for reasonable measures to ensure continuation of service, provide for security of data from physical or network access and have internet access defenses including hacker prevention, detection and deterrent systems.**

Our information systems reviews are performed by qualified information security professionals who hold at least the Information Systems Audit and Control Association's (ISACA) Certified Information Systems Auditor (CISA) or the (ISC)<sup>2</sup>'s Certified Information Systems Security Professional (CISSP). Both certifications require continuing professional education. As a value added service we will provide the District with a matrix of the maturity as compared with NIST's certification and accreditation framework.

*System Controls, Transaction Cycle Processing Verification and Sample Sizes*

With any data processing system upon which we intend to rely as a means of reducing substantive testing, we perform a variety of tests to verify the accuracy of transaction processing, the reliability of system control points and authorization controls, appropriateness of profile structures including Super-user rights access, and automated functionality such as sub-ledger integration and auto-journal entry validity and set up controls.

Gaining an understanding of the design of relevant procedures, controls and authorization levels is integrated with our risk assessment procedures discussed under the *Client Tailored Risk Assessment* section below. As part of our risk assessment process we identify those transaction cycles we intend to rely on. Both processing procedures and controls that are to be relied on are tested with our audits.

Transaction cycle processing and control tests typically involve sampling techniques. Most of our transaction samples are selected and tested during the interim portion of our work. Each sample will run from twenty-five to sixty transactions in size. We use interval and judgment sampling techniques with a high degree of stratification. Transaction cycles we sample are dependent on materiality to each client's financial statements but typically include, payroll, disbursements, receipts, loans receivable, investments and budget transactions and in accordance with the requirements of Statement of Auditing Standards #99 we also sample journal entries. Samples from each grant audit or major federal award program are also made. Samples are triple purpose samples and we test for correct recording, compliance with applicable policy or regulation and key control attributes – both manual and automated. This includes verification of sub-ledger integration and auto-journal entry validity, if needed.

**AUDIT SCOPE AND PROVISIONS (Continued)**

***Profiles, Access and Setup Controls***

Despite advances in information technology automation and system control features, classic segregation of duties concepts remain a mainstay for providing adequate internal controls. What has changed however, is the necessity to determine system profile structures and actual system access. We inquire how our clients establish and maintain system profiles for relevant staff with the objective of determining whether controls are in place to provide for adequate segregation of duties and to determine if system profiles are appropriate based on the individual's duties. We also determine how our clients monitor access and we test access through reviews of access logs, observation and in some extreme cases, with fully observed access attempts.

We will also inquire about procedures and controls used to ensure only those system functions and controls assigned to an employee are in fact setup in system profiles. Considerations include Super User Rights, system profile set up, and system authorization functionality such as transaction initiation, review and approval, automated entry setup and posting. Work typically involves inquiry of staff with Super-User Rights and determining how the organization provides a check and balance against the possibility that one person with Super-User Rights can intentionally or inadvertently assign unauthorized access. We often review access logs and examine approvals of profile changes and review authorization levels.

***Data Extraction***

We employ rather simple data extraction techniques these days since most modern systems provide easy download capabilities to text or Excel files. We have been utilizing data extraction for over fifteen years. We first began data extraction as a means of downloading data from our client's financial systems for upload directly into the financial statements. Then we expanded this to include transaction details, account information and other data contained in our clients systems that we need for audit. Our Chief Operations Officer, Chris Hunt, oversees our data extraction needs and has successfully worked with all of our clients and their systems to achieve data extractions for our use. We are extremely adept at converting from text, delimited and fixed width files, and with every system used by clients.

***Assessing Risks – Interim Phase***

Beginning with fiscal year 2007-2008 audits, a new set of Statements of Auditing Standards became effective and required that most auditors change the way they audit. Much of this new guidance came out of the aftermath of highly publicized audit failures such as Enron, Global Crossings and the like. The Statements make it clear that a generalized one-size-fits all audit approach will not be permitted. An audit must be based on a unique audit strategy customized to fit each client and its industry.

The primary objective of these Standards is to require the auditor's application of an audit risk model. The concept is that a set of financial statements should be evaluated for the underlying risks of material misstatement. Then, a customized audit should be tailored to test for misstatements and verify that controls are designed and in place to prevent and detect misstatements.

**We have consistently employed a risk based concept from our firm's inception.** Our audit checklists and programs were originated by reference to *Audits of Local Governments* published by the Practitioners' Publishing Company (PPC), a third party vendor specializing in producing audit guides for unique industries. But, we have not simply used their guide as our approach. We have customized it further for the simple reason that California municipalities have many unique risks not faced by municipalities in other states. As you know, California state law and applicable regulations cover a wide variety of areas such as cash and investment management, redevelopment compliance, transportation development act programs, and child development programs.



**AUDIT SCOPE AND PROVISIONS (Continued)**

Our primary objective in an audit of each client's financial statements is to opine on whether the financial statements, including disclosures, are free of material misstatement. Our opinion must be based on sufficient, appropriate audit evidence that we obtain and this evidence must be documented. To achieve this objective, we further refine our approach to be responsive to each individual audit. We may reduce the scope of our substantive audit tests provided we conclude there are effective specific controls in place which would detect and correct misstatements due to errors or fraud.

***Fraud Considerations***

Beginning with our 2004 audits, we employed additional audit steps required by Statement of Auditing Standards #99, *Consideration of Fraud in a Financial Statement Audit*. SAS #99 requires auditors to consider risk areas that may be susceptible to fraud and to then modify their audit strategy. We have been employing a variation of the SAS #99 concept since the early 1990's. For example, for many of our recurring clients, we visited all of their cash collection sites. We performed cash counts and reviewed cash handling practices and procedures, including security measures employed to limit access to cash. This and our planning meetings with our clients' staff have resulted in the inclusion of a variety of special emphasis areas in our audits. We combine our fraud consideration brain storming sessions with our overall risk assessment process discussed below.

***Client Tailored Risk Assessment***

Our strategy to assessing risk begins with a brainstorming session of our audit team where they review your prior year financial statements and operations to identify areas of major audit risk. We also incorporate our consideration of other factors such as the risk of fraud, the economy, regulatory complexities or changes, credit market conditions and others into our initial assessment. We may also compare unusual transactions and estimates to those used by other municipalities or to current trends and issues. Since we are a niche firm specializing in California municipalities this is relatively easy. For example, certain development agreements are unique to municipalities. These agreements usually contain complex financial transactions and legal restrictions. With so much experience in this area we can quickly design an efficient response to these risks.

Major audit risks are further evaluated through consideration of relevant assertions to determine inherent risk due to error or fraud. For example, cash on hand has a relative higher inherent risk of loss due to theft than an infrastructure asset. High and medium inherent risk audit areas are further evaluated to determine relevant internal controls needed to prevent, detect and correct errors or fraud.

We start our evaluation of your internal controls by interviewing staff and meeting with Department heads as needed. We review policies and procedure manuals and other documentation to determine the design of procedures and controls. As part of our evaluations we document narrative memoranda outlining the duties of each pertinent person as well as our GRID evaluation of the important nexus control points. The GRID is our own design; it is a two-axis chart we use to identify potential conflicts of duties in your controls. We enhance our evaluation by reviewing system profile reports, paying special attention to super-user rights. This data is then used to determine the presence or absence of compensating controls designed to mitigate conflicts of duties vested in a single individual.

We then test to verify that procedures and controls are operating effectively such that they reduce the risk that errors or fraud could occur and go undetected and uncorrected. We use a variety of techniques to verify controls are effective including: sampling, observation, documentation of reviews, examining system access reports and comparisons with other data.

**AUDIT SCOPE AND PROVISIONS (Continued)**

After this has been completed, we assess the risk of material misstatement which is determined by the relative inherent risk of an area and the associated control risk to plan our substantive tests. That is, the risk that controls are not in place or are not operating effectively. Areas with a low risk of material misstatement assessment may receive limited substantive procedures while those with a high risk of material misstatement will receive significant substantive procedures.

**We then design our final phase audit plan to ensure we obtain sufficient appropriate evidence about the financial statements and disclosures.** Specific audit procedures are developed and documented in our audit programs and we develop potential internal control points for further evaluation as to significance and communicate those to staff.

*Client Participation in the Risk Assessment Process*

Of course, any risk assessment process is incomplete without our clients' active participation. We hold meetings with senior finance staff and others within the organization to discuss their views and assessments of risks affecting the financial statements. Our inquiries are backed up by reviews of the annual budget, mid-year budget revisions, internal audit reports, grantor performance and monitoring correspondence and any other pertinent data we deem relevant.

We must also establish two-way communication with the Board and Finance Committee which we typically accomplish by meeting to discuss the audit process and timing, management representations and fraud considerations.

*Assessing Risks – Final Phase*

Although the majority of our evaluations and testing of internal controls is completed with our interim testing, it is during the final phase that actual year end balances, transactions and disclosures are known and our substantive procedures are employed. These procedures and data often reveal unusual or unexpected results that must be considered in the risk assessment process. Risk assessment processes are iterative and cumulative. That is, we must continually re-evaluate our assessments based on information and procedures gathered. It is not uncommon for an initial assessment and the corresponding substantive audit work to be restructured as a result of new data. Indeed, it is the intent of current audit standards that the audit be responsive to risks.

Our substantive procedures are selected to be responsive to the assessed risk and relevant assertion and typically involve analytical procedures, third-party confirmation, estimation techniques, mini-max tests, trend analyses, recomputations, corroboration with other tests, tests in total, sampling and comparisons to data gathered in other municipal audits.

Risk assessment procedures would be incomplete without an evaluation of the adequacy of our evidence obtained including internal control tests, any significant deficiencies or material weaknesses and substantive test results. **These factors are considered prior to the release of our opinion in a final re-assessment process that includes our quality assurance review.**

**AUDIT SCOPE AND PROVISIONS (Continued)**

*Communication and Coordination*

**We will meet with you at the start of each phase of work and conduct an exit conference at the end of each phase of work. This will ensure you know everything we do, with plenty of time to address any issues.**

Two key objectives for a well-run audit are to ensure timely communication of the audit results and to provide for seamless coordination of the external auditors with staff. The concept is virtually identical to our Accounting Issues Memorandum and detailed Interim and Closing Checklists that we typically prepare for our clients.

The Accounting Issues Memorandum concept was originated by one of our staff over two decades ago to function as a partner's brief of an engagement's status. It worked so well we expanded it to all our audits and share it with our clients. It has proven to be an indispensable communication and coordination tool ever since. This informal memo condenses and summarizes the audit status and issues as of the end of our interim work. It includes housekeeping matters, major and minor potential findings, scheduled audit fieldwork start and finish dates, etc. We produce this memo right in your office before the conclusion of our interim work, so you have an idea of what we've found so far and whether there are areas that need work.

Our Memorandum on Internal Control is drafted at year-end and may include significant issues raised with our interim phase Accounting Issues Memorandum as well as issues arising from our year-end work. We review a draft with you, so that you will have plenty of time to consider the facts and discuss our findings before the audit results are presented to the Board.

*Prompt Service and Delivery of Reports*

We have always focused on reducing financial statement turn-around time and we have never missed a deadline. We normally complete the review of the final draft of the financial statements on the last day of our field-work in our clients' offices or within two weeks thereafter.

Our audit strategy emphasizes detail planning and coordination of our staff and client staff to complete the audit as efficiently as possible. We have found that completing all our work and our reports as part of our field-work dramatically reduces the time required to issue final reports to our clients.

Our strategy allows our clients ample time to review all report drafts before issuance, while ensuring that all reports are issued timely. **Many clients have been able to advance the date on which their reports are presented to the Finance Committee and Board.**

*Internal Quality Assurance System*

Every one of our audit and assurance engagements has an Engagement Partner responsible for the successful completion of the work as well as ensuring we maintain quality levels that satisfy professional standards. Our very high Partner to staff ratio of one to six is double that of traditional firms. We specifically structure our work for on-site Engagement Partner participation while the audit is being conducted. This structure is by design to ensure we have active on the job oversight of staff and timely completion of the work.

We have always subjected our audit and assurance engagements to a second Quality Assurance Review. This is performed by a second partner that is not involved with the audit.

**AUDIT SCOPE AND PROVISIONS (Continued)**

**References**

**East Bay Municipal Utility District** – A client since 2005  
Engagement Partner – David Alvey  
Principal contact – Scott Klein, Controller (510) 287-0271  
Work Scope & Reports:

- Comprehensive Annual Financial Report
- Employees Retirement System Financial Statements
- Freeport Regional Basic Financial Statements
- Upper Mokelumne River Watershed Authority Basic Financial Statements
- Dublin San Ramon Services District Basic Financial Statements
- Bay Area Clean Water Agencies Basic Financial Statements

**Contra Costa Water District** –A client from 2000 – 2010 and returned in 2013  
Engagement Partner – David Alvey  
Principal Contact – Desiree DeCastello, Director of Finance (925) 688-8000  
Work Scope & Reports:

- Comprehensive Annual Financial Report
- Retirement Plan
- OPEB Plan
- Financing Authority

**Citrus Heights Water District** –A client since 2015  
Engagement Partner – David Alvey  
Principal Contact – Susan Sohal, Administrative Services Manager/Treasurer (916) 735-7716  
Work Scope & Reports:  
Comprehensive Annual Financial Report

Attachment B

**COST PROPOSAL**

*Certification*

David Alvey and Vikki Rodriguez are authorized to submit this proposal and negotiate and sign a contract with the Marin Municipal Water District. Our offer is firm and irrevocable for a period of 120 days from the date of this proposal.

*Total Cost of Audit*

Our Estimated All-Inclusive Maximum Prices for the services specified in the Request for Proposal for the fiscal years ending June 30, 2019 through June 30, 2023, are detailed at the end of this section. Our Total All-inclusive Maximum Prices for the services specified in the RFP are firm fixed fees.

*What Our Price Includes*

Our price includes all the basic audit work and reports, statements and other deliverables specified in your request for proposal. Our price also includes the items below at **no additional cost**:

- 1) Year-round support and telephone consultation on pertinent issues affecting your District,
- 2) Copies of our journal entries and our leadsheets used to support the amounts in your financial statements,
- 3) **Free full day of training** at our annual MazeLive event,
- 4) Active Partner involvement in your work **every year**,
- 5) Our typed Interim Audit Checklist,
- 6) Our typed Annual Closing Checklist,
- 7) Our typed interim Accounting Issues Memorandum,
- 8) Answers to most municipal payroll tax questions,
- 9) Overviews and summaries of upcoming pronouncements and regulation affecting the audited financial statements.
- 10) Direct dump of general ledger data into our ProSystems trial balance software which is fully linked to financial statement formats.

*Fees and Billings*

Our fees are firm fixed prices. In determining our fees, we understand that the District's records will be in condition to be audited; that is, transactions will be properly recorded in the general ledger and subsidiary records, these accounting records and the original source documents will be readily available to use, we will be furnished with copies of bank reconciliations and other reconciliations and analyses prepared by the District and District personnel will be reasonably available to explain procedures, prepare audit correspondence and obtain files and records.

**We do not post separate rate structures for municipal audit work. We view this work as being every bit as important and valuable as the work we perform for other clients and we put our best people on it.** Any consulting work you request will be performed at the same rates as our audit work.

MARIN MUNICIPAL WATER DISTRICT  
Attachment 2: Estimate of Cost  
FOR THE AUDIT OF FINANCIAL STATEMENTS

Service	Anticipated Hours Expended	Totals For The Year Ended June 30, (1)			
		FY 2018/19	FY2019/20	(Optional) FY 2020/21	(Optional) FY 2021/22
1. CAFR & Management Letter:	365	\$40,750	\$41,973	\$43,232	\$44,529
2. Single Audit (If Required) (One Major Program)	41	4,115	4,238	\$4,365	\$4,496
<b>Total</b>	406	\$44,865	\$46,211	\$47,597	\$49,025

**Billing Sequences**

We bill our fees on a monthly basis based on the completion of the work at the interim, final and wrap-up phases of the audit.

**Other Services Offered (Optional)**

We do not currently propose any additional services, but this can be changed during the course of the contract.

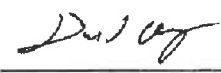
Additional services will be priced based on the hourly rates as follows:

Audit Partner	\$300
Manager	\$150
Supervisor	\$120
Associates	\$85
Administrative	\$75

**NOTES:**

- (1) Our policy is to attempt to keep our clients fees constant after inflation. Therefore, the fees for years subsequent to 2019 have been adjusted by 3% COLA.
- (2) Out-of-pocket expenses are included in our standard hourly rate.

It is understood that this proposal must be complete and received by Mikyung Pustelnik, Finance Manager, Marin Municipal Water District, 220 Nellen Avenue, Corte Madera, CA 94925, no later than 4:30pm, February 26, 2019.



February 26, 2019



# STAFF REPORT

**Meeting Type:** Board of Directors

**Title:** Adoption of the Final Initial Study/Mitigated Negative Declaration for Phoenix-Bon Tempe Connection Project and Approval of the Phoenix-Bon Tempe Connection Project

**From:** Alex Anaya, Director of Engineering

**Through:** Bret Uppendahl, Acting General Manager

**Meeting Date:** June 18, 2024

**TYPE OF ACTION:**      X      Action                              Information                              Review and Refer

**RECOMMENDATION:** Approve a resolution adopting the Final Initial Study/Mitigated Negative Declaration and Mitigation Monitoring Reporting Program for the Phoenix – Bon Tempe Connection Project, approving the Phoenix – Bon Tempe Connection Project, and directing staff to file a Notice of Determination with the Marin County Clerk and State Clearinghouse

**SUMMARY:** Staff is actively working on the Phoenix – Bon Tempe Connection Project and has completed preliminary design and environmental review. Staff has worked with Environmental Science Associates (ESA) on preparation of the Initial Study/Mitigated Negative Declaration (IS/MND), circulated a draft IS/MND for review and completed the 30-day public comment period. Staff will present an overview of the proposed project, IS/MND, and public comments received, as well as the District’s response to comments.

**DISCUSSION:** Staff has been actively working on the Phoenix – Bon Tempe Connection Project since Spring of 2023. To date, staff has completed a preliminary engineering study, including water quality analysis and implications, geotechnical work in relation to rapid drawdown capacity of the reservoir, and condition assessment of the Bon Tempe tunnel, which is the inlet to Bon Tempe Lake. The geotechnical work confirmed the maximum pumping capacity of 3 MGD, with a reduction to 1.9 MGD at lower lake levels. Staff also retained Hazen and Sawyer to perform the electrical engineering design component needed for the new pump station. As a result of this preliminary work, a pipeline alignment has been identified along Phoenix Lake Road and Fish Grade to connect Phoenix Lake to Bon Tempe Lake.

During the preliminary engineering analysis, staff was also in discussion with the County of Marin regarding a potential storm water component of this project. While both agencies are supportive of this concept, a determination was made by the County to not participate in the capital project, but to

explore a potential operating agreement once the project is completed. This supports the geotechnical analysis that limits the pumping capacity and also allows for a potential stormwater benefit that would allow for pumping of Phoenix Lake prior to the rainy season. As such, staff proposes proceeding with this important capital project without County involvement.

**ENVIRONMENTAL REVIEW:** The Final IS/MND has been prepared in accordance with the California Environmental Quality Act (CEQA) and CEQA Guidelines. The Final IS/MND incorporates the Draft IS/MND prepared for the Phoenix – Bon Tempe Connection Project as it was originally published by the District and filed with the State Clearinghouse No. 2024030454.

The District issued a Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration on March 13, 2024, which was filed with the Marin County Clerk’s Office for posting. The District also provided a web link on the Marin Water’s website to the NOI as well as the draft IS/MNDs and identified that hard copies were available for review at the District’s main office and the Sky Oaks Watershed Office.

Confirmation of receipt of the NOI and the Draft IS/MND from the State Clearinghouse was received by the District on March 13, 2024, which initiated the 30-day review period that ended on April 12, 2024.

**COMMENTS AND REVISIONS TO DRAFT IS/MND**

During the 30-day public comment period of the draft IS/MND, the District received a total of two comments via comment letter or email. The District has prepared a Final IS/MND that includes responses to comments and a Mitigation Monitoring and Reporting Program (MMRP) as Appendices D and E, included in the Final IS/MND, respectively. The Final IS/MND is provided as Attachment 2 to this staff report. Included in the response to comments is a revised hydrologic model that analyzes impact to flows in Ross Creek relative to pumping only during the period of October 1 through February 28 each year. The new modeling reviewed impacts from pumping the reservoir twice during this period based on data from past years showing inflow and spillage from the reservoir during the late fall and winter timeframe. This modeling indicates that conducting pumping within this timeframe would reduce or eliminate any truncation to spring flows in Ross Creek relative to the current conditions, which demonstrates less than significant impacts from the proposed project.

All modification of the document, including deletions or additions to the text are identified in the Final IS/MND as strikeout and underline text, respectively. The revisions made to the Final IS/MND based on the District’s response to comments did not require recirculation of the draft IS/MND since they did not raise a new issue or create additional impacts not already addressed and mitigated for in the draft IS/MND to a less than significant level in accordance with CEQA Guidelines Section 15073.5, and with the adoption of the Mitigation Monitoring and Reporting Program (MMRP), all potentially significant impacts are mitigated to less than significant.

**MITIGATION MONITORING AND REPORTING PROGRAM**

The Mitigation Monitoring and Reporting Program (MMRP) for the Phoenix – Bon Tempe Connection Project has been prepared in accordance with the Public Resources Code Section 21081.6 and State CEQA Guidelines Section 15091(d). The District will use this MMRP to track compliance with the Project’s mitigation measures and it incorporates all mitigation measures adopted for the proposed Project. The MMRP mitigation measures are identified in Table E-1 of the Final IS/MND and when implemented will mitigate any potentially significant environmental impacts to less than significant.



The District has published a notice of public hearing on the proposed adoption of the IS/MND and project approval on June 10, 2024 in the Marin IJ. During the public hearing the Board may receive public comments and further testimony from staff and District consultants on the environmental review and proposed project.

**CONCLUSION**

Staff recommend the Board to approve a resolution which adopts the Final Initial Study/Mitigated Negative Declaration and approve the Phoenix – Bon Tempe Connection Project conditioned on compliance with the Mitigation Monitoring and Reporting Program and find that the Project, which completed in compliance with the MMRP, will not result in any significant environmental impacts which have not been mitigated to less than significant.

Should the Board of Directors approve the Resolution, District staff will file a Notice of Determination for the Project with the Marin County Clerk and the State Clearinghouse within five (5) working days of adoption of this Resolution, which shall constitute Project approval as defined by 14 CCR 15352(a).

**FISCAL IMPACT:** None.

**ATTACHMENT(S):**

- 1. Proposed Resolution Adopting the Final Initial Study/Mitigated Negative Declaration for the Phoenix – Bon Tempe Connection Project
- 2. Final IS/MND

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Engineering	 Alex Anaya Engineering Director	 Bret Uppendahl Acting General Manager

**Attachment 1  
MARIN MUNICIPAL WATER DISTRICT**

**RESOLUTION NO.**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL WATER DISTRICT ADOPTING THE FINAL INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION AND MITIGATION MONITORING AND REPORTING PROGRAM FOR THE PHOENIX – BON TEMPE CONNECTION PROJECT AND APPROVING THE PHOENIX – BON TEMPE CONNECTION PROJECT AND MAKING FINDINGS IN CONNECTION THEREWITH**

**WHEREAS**, on February 28, 2023, the Marin Municipal Water District (Marin Water or District) Board of Directors (Board of Directors) received an update on the Strategic Water Supply Assessment, which includes an evaluation of current and future hydrological conditions, performance of the Marin Water system under these conditions, consideration of alternatives and strategies, and roadmap to a more resilient water supply future; and

**WHEREAS** the Strategic Water Supply Assessment (SWSA) identified the Phoenix – Bon Tempe Connection Project located southwest of the Town of Ross in unincorporated Marin County, California, within Marin Water’s Mt. Tamalpais watershed lands on land owned by Marin Water. The connection would convey water from the Phoenix Lake/Corte Madera Creek watershed to the Bon Tempe Reservoir/Lagunitas Creek watershed; and

**WHEREAS**, the Phoenix-Bon Tempe Connection Project is one of the near-term projects identified in the SWSA to improve the resilience of Marin Water’s system; and

**WHEREAS**, Marin Water wishes to take early action to increase the reliability and resiliency of its water supply throughout the District through a connection between Phoenix Lake and Bon Tempe Reservoir to improve operational efficiency and allow for more frequent use of Phoenix Lake water without the existing required intensive system modifications; and

**WHEREAS**, on January 12, 2024, District staff presented an update on the preliminary design for the installation of infrastructure to connect Phoenix Lake to Bon Tempe Lake at the Marin Water Operations Committee and informed the Committee that staff would be filing the Notice of Intent and Draft IS/MND with the Marin County Clerk and the State Clearinghouse in March or April 2024; and

**WHEREAS**, Marin Water, as the California Environmental Quality Act (CEQA) Lead Agency, has prepared an Initial Study (IS) for the Phoenix – Bon Tempe Connection Project (Project) in compliance with CEQA, the CEQA Guidelines (California Code of Regulations [CCR] Section 15000 et. seq.) and the regulations and policies of Marin Water; and

**WHEREAS**, a Notice of Intent to Adopt the IS/Mitigated Negative Declaration was issued on March 13, 2024, providing for a public comment period from March 13, 2024 to April 12, 2024. The IS concludes that no significant impacts would be caused by the proposed project with the incorporation of mitigation measures, therefore, a Mitigated Negative Declaration has been recommended for adoption; and

**WHEREAS**, the District filed the Notice of Intent and Draft IS/MND with the Marin County Clerk and State Clearinghouse on March 13, 2024, and posted the Draft IS/MND to the District’s website; and

**WHEREAS**, the State Clearinghouse provided confirmation of receipt of Notice of Intent and Draft IS/MND on March 13, 2024, and assigned the document State Clearinghouse No. 2024030454, which initiated the 30-day public comment period; and

**WHEREAS**, the public comment period ended on April 12, 2024, and District staff received a total of two comments via comment letter or email and the District has prepared the Final IS/MND that includes the response to the comments in Appendix B of the Final IS/MND; and

**WHEREAS**, the revisions made to the Final IS/MND based on the District’s response to comments does not require recirculation of the Draft IS/MND since they do not raise a new issue or create additional impacts not already addressed and mitigated for in the Draft IS/MND to a less than significant level in accordance with CEQA Guidelines Section 15073.5; and

**WHEREAS**, District staff has prepared a Mitigation Monitoring and Reporting Program that includes all the mitigation identified as part of the Draft IS/MND, which, if implemented will reduce any potentially significant environmental impacts identified in the Draft IS/MND to less than significant; and

**WHEREAS**, all other legal prerequisites to the adoption of this resolution have occurred.

**NOW, THEREFORE**, the Marin Municipal Water District Board of Directors **RESOLVES** as follows:

**Section 1.**     Recitals. The above recitals are true and accurate and are incorporated herein by reference.

**Section 2.**     CEQA Review. The Marin Municipal Water District Board of Directors has reviewed and considered the Final Initial Study/Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Program for the Phoenix – Bon Tempe Connection Project presented by staff to the District Board of Directors at a duly noticed public hearing held on June 18, 2024, the notice for which was published in the Marin Independent Journal on June 10, 2024.

The Board of Directors has reviewed the Final Initial Study/Mitigated Negative Declaration and the response to comments and the information and analysis included therein, reviewed the public comments received by the District and listened to any public comments and testimony offered during the public hearing held by the District’s Board of Directors on June 18, 2024.

**Section 3.**     Findings. The Marin Municipal Water District Board of Directors hereby makes the following findings:

- A. The Final Initial Study/Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Program contain a complete and accurate reporting of all the environmental impacts associated with the Project.
- B. The revisions made in response to comments and incorporated into the Final Initial Study/Mitigated Negative Declaration do not raise new issues or create additional impacts not already addressed and mitigated for in the Draft Initial Study/Mitigated Negative Declaration to a less than significant level in accordance with CEQA Guidelines Section 15073.5, and with the

adoption of the Mitigation Monitoring and Reporting Program, all potentially significant impacts are mitigated to less than significant.

- C. There is no substantial evidence that the Project will have significant environmental effects, except as identified and considered in the Final Initial Study/Mitigated Negative Declaration.
- D. The Final Initial Study/Mitigated Negative Declaration represents the independent judgment and analysis of the Board.

**Section 4.** Approvals. Based on the findings in Section 3, the Marin Municipal Water District Board of Directors hereby adopts the Final Initial Study/Mitigated Negative Declaration for the Phoenix – Bon Tempe Connection Project and approves the Mitigation Monitoring Reporting Program. Pursuant to 14 CCR Section 15075, the Board of Directors hereby directs staff to file a Notice of Determination for the Project with the Marin County Clerk and the State Clearinghouse within five (5) working days of adoption of this Resolution, which shall constitute Project approval as defined by 14 CCR Section 15352(a).

**Section 5.** Resolution Regarding Custodian of Record: The documents and materials that constitute the record of proceedings on which this Resolution has been based are located at the Marin Municipal Water District, Board Secretary, 220 Nellen Ave, Corte Madera, CA 94925. This information is provided in compliance with Public Resources Code section 21081.6.

**Section 6.** Certification. The Secretary of the Marin Municipal Water District Board of Directors shall certify to the adoption of this Resolution.

**Section 7.** Effective Date. This Resolution shall become effective immediately upon its adoption.

**Section 8.** Severability. If any provision of this Resolution or the application of any such provision to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of this Resolution that can be given effect without the invalid provision or application.

**PASSED AND ADOPTED** this 18th day of June, 2024, by the following vote of the Board of Directors.

**AYES:**

**NOES:**

**ABSENT:**

\_\_\_\_\_  
**Ranjiv Khush**  
**President, Board of Directors**

**ATTEST:**

\_\_\_\_\_  
**Terrie Gillen**  
**Board Secretary**  
Resolution

Final

# PHOENIX – BON TEMPE CONNECTION PROJECT

Initial Study/Mitigated Negative Declaration  
State Clearinghouse No. 2024030454

Prepared for  
Marin Municipal Water District

June 2024



Final

# PHOENIX – BON TEMPE CONNECTION PROJECT

Initial Study/Mitigated Negative Declaration  
State Clearinghouse No. 2024030454

Prepared for  
Marin Municipal Water District

June 2024

180 Grand Avenue  
Suite 1050  
Oakland, CA 94612  
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esassoc.com



- |             |                   |               |
|-------------|-------------------|---------------|
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| Bend        | Pasadena          | San Francisco |
| Irvine      | Pensacola         | San Jose      |
| Los Angeles | Petaluma          | Sarasota      |
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| Oakland     | Rancho Cucamonga  | Tampa         |
| Orlando     | Sacramento        | Thousand Oaks |

**OUR COMMITMENT TO SUSTAINABILITY** | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

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# Acronyms and Other Abbreviations

<b>Acronym or Abbreviation</b>	<b>Definition</b>
ADT	average daily traffic
AF	acre feet
BAAQMD	Bay Area Air Quality Management District
AFY	acre feet per year
BPMP	Bicycle and Pedestrian Master Plan
BMPs	best management practices
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CalGEM	California Geologic Energy Management Division
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CH <sub>4</sub>	methane
CMP	Congestion Management Program
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2e</sub>	carbon dioxide equivalent
CY	cubic yards
dB	decibels
dBA	A-weighted decibels
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
EFZ	Earthquake Fault Zone
EPA	U.S. Environmental Protection Agency

<b>Acronym or Abbreviation</b>	<b>Definition</b>
FTA	Federal Transit Administration
GHG	greenhouse gas
HMBP	Hazardous Materials Business Plan
HP	horsepower
IS/MND	Initial Study/Mitigated Negative Declaration
LUST	leaking underground storage tank
Marin Water	Marin Municipal Water District
MCSTOPPP	Marin County Stormwater Pollution Prevention Program
mgd	million gallons per day
MRZs	mineral resource zones
MT	metric tons
MTZ Plan	Mt. Tamalpais Mutual Threat Zone Plan
NAAQS	national ambient air quality standards
NO <sub>2</sub>	nitrogen dioxide
N <sub>2</sub> O	nitrous oxide
NO <sub>x</sub>	nitrogen oxides
NSO	northern spotted owl
NPDES	National Pollutant Discharge and Elimination System
NRCS	Natural Resources Conservation Service
OPR	Governor's Office of Planning and Research
PG&E	Pacific Gas and Electric
PM	particulate matter
PM <sub>2.5</sub>	particulate matter 2.5 microns or less in diameter
PM <sub>10</sub>	particulate matter 10 microns or less in diameter
PPV	peak particle velocity
ROG	reactive organic gases
RMS	root mean square (amplitude)
SFBAAB	San Francisco Bay Area Air Basin
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO <sub>2</sub>	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasures Plan
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	California State Water Resources Control Board
SWSA	Strategic Water Supply Assessment

<b>Acronym or Abbreviation</b>	<b>Definition</b>
TACs	toxic air contaminants
UCMP	University of California Museum of Paleontology
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	Decibel notation
VMT	vehicle miles traveled
WTP	water treatment plant

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# CHAPTER 1

---

## Introduction

### 1.1 Purpose of the Initial Study

The Marin Municipal Water District (Marin Water), as the California Environmental Quality Act (CEQA) Lead Agency, has prepared this Initial Study (IS) for the Phoenix – Bon Tempe Connection Project (Project) in compliance with CEQA, the CEQA Guidelines (California Code of Regulations [CCR] Section 15000 et. seq.) and the regulations and policies of Marin Water.

Marin Water proposes to create a connection between Phoenix Lake and Bon Tempe Reservoir to improve operational efficiency and allow for more frequent use of Phoenix Lake water without the existing required intensive system modifications. The proposed Project is described in Chapter 2, Project Description.

#### 1.1.1 Public Review Period

Publication of this IS marks the beginning of a 30-day public review and comment period. During this period, the IS will be available to local, state, and federal agencies and to interested organizations and individuals for review. Written comments concerning the environmental review contained in this IS during the 30-day public review period should be sent to:

Elysha Irish, Engineering Manager  
Marin Water  
220 Nellen Ave.  
Corte Madera, CA 94925  
415.945.1572  
eirish@marinwater.org

#### 1.1.2 Consideration of the Initial Study and Project

Following the conclusion of the public review period, the Marin Water Board of Directors (Board) will consider the adoption of the Initial Study/Mitigated Negative Declaration (IS/MND) for the Project at a regularly scheduled meeting. The Board shall consider the IS/MND together with any comments received during the public review process. Upon adoption of the MND, Marin Water may proceed with Project approval actions.

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# CHAPTER 2

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## Project Description

This chapter summarizes relevant background information and describes Marin Municipal Water District’s (Marin Water) Phoenix-Bon Tempe Connection Project (Project), including Project need and objectives, location, Project components, construction process, and operations and maintenance.

### 2.1 Project Background and Need

#### 2.1.1 Background

##### 2.1.1.1 Service Area

Marin Water supplies water to over 196,000 customers in southern and eastern Marin County through about 61,700 active service connections.

##### 2.1.1.2 Water Supply

Water supplies for Marin Water come from a mixture of local surface water (accounting for approximately 75 percent of supply), imported water from Sonoma Water, and recycled water. Supplies from Marin Water's local watersheds are generally sufficient in most years and of high quality. The local watersheds are expected to continue to be productive in the future, but year-to-year variability is likely to increase. Historically, Marin Water has successfully met demands during periods of extreme drought with a combination of rationing, conservation, and increased Sonoma Water supplies. However, recent drought conditions in 2021 severely threatened water supply reliability and prompted Marin Water to explore various water supply options to enhance resiliency for its customers. Marin Water recently completed a Strategic Water Supply Assessment (SWSA; Marin Water 2023a). The SWSA includes an assessment of current and future hydrological conditions, performance of the Marin Water system under these conditions, consideration of alternatives and strategies, and roadmap to a more resilient water supply future. The Phoenix-Bon Tempe Connection is one of the near-term projects identified in the SWSA to improve the resilience of Marin Water’s system.

##### 2.1.1.3 Overview of Existing Water System

###### *Reservoirs*

Rainfall on Mount Tamalpais is the source of most of the water supplied to Marin Water’s customers. Marin Water reservoirs are Alpine Lake, Bon Tempe Reservoir, Kent Lake, Lake Lagunitas, and Phoenix Lake on the north slope of Mount Tamalpais and the Nicasio and Soulajule reservoirs in West Marin. Alpine, Bon Tempe, Kent, and Lagunitas are in the



headwaters of the Lagunitas Creek watershed and Phoenix Lake is part of the Corte Madera Creek watershed. The annual runoff to Marin Water reservoirs averages approximately 83,000 acre feet (AF), although it can range from as low as 4,000 AF (occurring in 1977) to over 211,000 AF (occurring in 2017). The current surface water storage for the total system is estimated to be 79,566 AF.

### Phoenix Lake and Bon Tempe Reservoir

The proposed Project involves Phoenix Lake and Bon Tempe Reservoir. Constructed in 1905, Phoenix Lake is one of the smallest reservoirs in the Marin Water system and the only one that lies in Corte Madera Creek watershed, on the east side of the main watershed divide. Bon Tempe Reservoir was constructed in 1948. Water from the Bon Tempe Reservoir is treated at the Bon Tempe water treatment plant (WTP). **Table 2-1** presents capacity and average inflow information for the two reservoirs.

**TABLE 2-1  
CAPACITY AND AVERAGE INFLOW INFORMATION FOR PHOENIX LAKE AND BON TEMPE RESERVOIR**

Reservoir	Capacity (AF)	Average Inflow (AFY)	Storage Capacity as a Percent of Average Inflow
Phoenix Lake	411	3,665	11%
Bon Tempe Reservoir	4,017	2,305	174%

NOTES:

AF = acre feet

AFY = acre feet per year

SOURCE: Marin Water, *Strategic Water Supply Assessment*, May 2023.

### Water Treatment Plants

Marin Water treats water at the Bon Tempe WTP near Ross, the San Geronimo WTP in Woodacre, and the Ignacio Water Quality Improvement Station in Novato. The Bon Tempe and San Geronimo WTPs treat water from Marin Water's reservoirs; the Ignacio Water Quality Improvement Station polishes water purchased from Sonoma Water. In combination, these treatment facilities have a design capacity of 71 million gallons per day (mgd).

### Distribution

Marin Water's potable and raw water distribution system includes approximately 908 miles of water pipelines, 97 pump stations, and 130 treated water storage tanks (Marin Water, 2023b).

## 2.1.2 Need for the Project

Currently, on rare occasions Marin Water pumps some water from Phoenix Lake to the Bon Tempe WTP but only in dry conditions due to the complexities of operations. Use of water from Phoenix Lake requires conversion of existing potable water infrastructure to raw water infrastructure and back again once Phoenix Lake water has been conveyed. This conversion results in a loss of critical potable water infrastructure that is needed during the fire season; consequently, the conversion can only be performed outside of the fire season. Additionally,

extensive treatment is required at Bon Tempe WTP due to Phoenix Lake’s water quality characteristics.

## 2.2 Project Purpose and Objectives

The purpose of the proposed Project is to improve operational efficiency and flexibility and allow for more frequent use of Phoenix Lake water without the intensive system modifications that are required under current conditions. The improved connection between Phoenix Lake and Bon Tempe Reservoir would allow Marin Water to capture some of the excess inflows to Phoenix Lake.

The objectives of the proposed Project are:

- To convey water efficiently from Phoenix Lake to Bon Tempe Reservoir through dedicated raw water transmission and pumping facilities, which will:
  - Optimize and improve the efficiency of existing water storage for the Marin Water system; and
  - Improve the reliability of dry year supplies.

## 2.3 Project Location

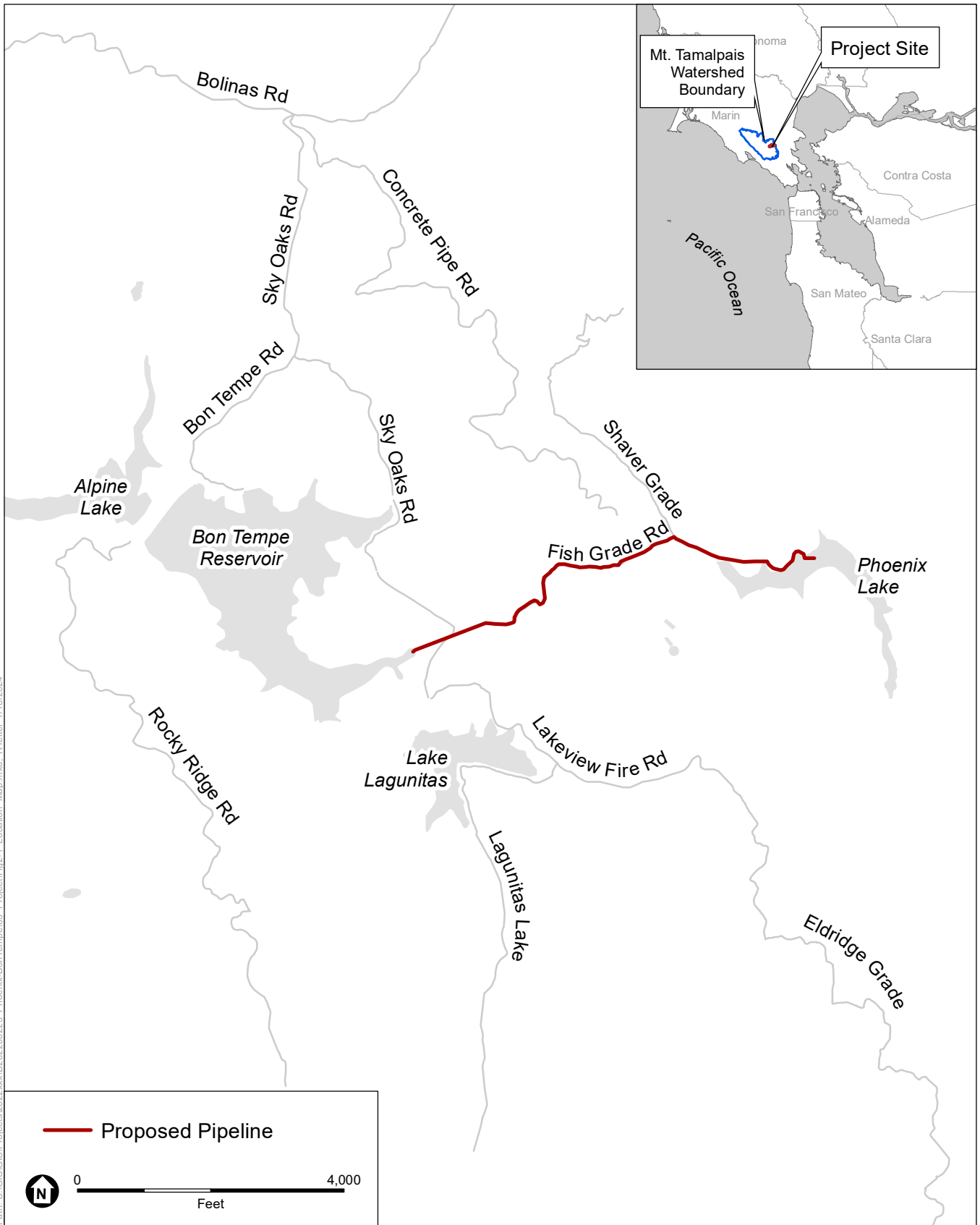
The Project site is located southwest of the Town of Ross in unincorporated Marin County, California, within Marin Water’s Mt. Tamalpais watershed lands on land owned by Marin Water (see **Figure 2-1**). The proposed Project connection would convey water from the Phoenix Lake/Corte Madera Creek watershed to the Bon Tempe Reservoir/Lagunitas Creek watershed (see **Figure 2-2**). For purposes of clarity in this document, the pipeline has been divided into six segments identified by letters A through F, shown on **Figure 2-2** and **Table 2-2**.

## 2.4 Project Components

This section describes the proposed facilities, processes, and other features associated with the Project.

### 2.4.1 Phoenix – Bon Tempe Pipeline

The Project would construct a dedicated 18-inch diameter raw water pipeline between the barge pump (Pump 1) in Phoenix Lake and the Bon Tempe Reservoir shoreline. As indicated in **Table 2-2**, for segment B Marin Water would rely on an existing pipeline. The pipeline alignment would mostly follow existing trails and fire roads. Where the pipeline would deviate from existing trails, the corridor would be reseeded after construction in conformance with Marin Water’s standard procedures for reseeding with native, local ecotype, site-appropriate, fire-resistant vegetation. At Bon Tempe Reservoir, the pipeline would be installed alongside existing pipes and water would enter the reservoir from the Bon Tempe shoreline. No new inlets or outlets would be required for Phoenix Lake.

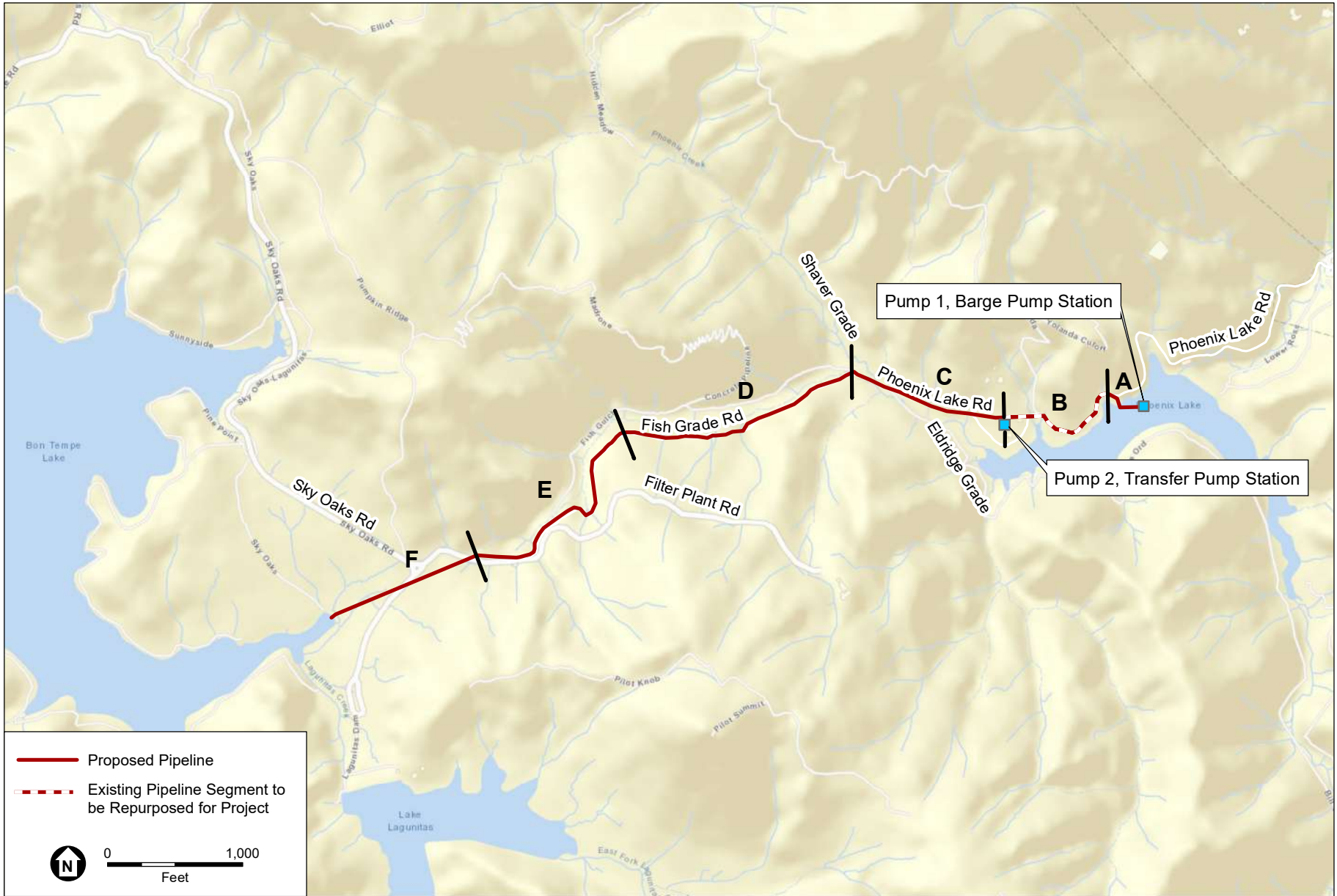


SOURCE: ESRI, 2023; ESA, 2023

MMWD Phoenix-Bon Tempe Project

**Figure 2-1**  
Regional Location

Path: U:\GIS\Projects\2022\20220225\_Phoenix-Bon Tempe\03\_ProjectComponents.mxd, RTitle1 1/19/2024



SOURCE: ESA, 2023; ESRI Imagery, 2023

MMWD Phoenix-Bon Tempe Project

**Figure 2-2**  
Project Components



**TABLE 2-2  
PIPELINE AND PUMP STATION CONSTRUCTION DETAILS**

Segment <sup>a</sup>	From	To	Construction Details	Approximate Length (linear feet)	Construction Phase <sup>b</sup>	Estimated Duration
<b>Pipeline</b>						
A	Pump 1, Barge Pump Station	Phoenix Lake Road	Replace existing pipeline in lake (reservoir would remain in operations) and along shoreline	290	2	3 weeks
B	Phoenix Lake Road Shoreline	Pump 2, Transfer Pump Station	Use of an existing pipeline; no new pipeline construction	990	1	0 weeks
C	Pump 2, Transfer Pump Station	Fish Grade Road/Shaver Grade intersection	Open trench for new pipeline	1,190	4 <del>2</del>	2 <del>3</del> weeks
D	Fish Grade Road/Shaver Grade intersection	Fish Grade Road	Open trench for new pipeline	1,850	2	3 <del>4</del> weeks
E	Fish Grade Road	Filter Plant Road	Open trench for new pipeline	1,790	2	4 <del>4</del> weeks
F	Filter Plant Road	Bon Tempe Reservoir shoreline	Replace existing pipeline in tunnel; terminate at shoreline with outflow over shoreline surface	1,190	1	8 <del>12</del> weeks
<b>Total Approximate Pipeline Length<sup>c</sup></b>				<b>7,300</b>		
<b>Total Approximate New Pipeline Construction<sup>c</sup></b>				<b>6,310</b>		
<b>Pump Stations</b>						
Pump 1, Phoenix Lake Pump Station			Upsize existing pump in Phoenix Lake	N/A	2	2 <del>4</del> weeks
Pump 2, Transfer Pump Station			New building pad, new pump station building, new pump	N/A	2	8 <del>16</del> weeks

## NOTES:

- See Figure 2-2 for depiction of segments by letter.
- As indicated in Table 2-4, Phase 1 is anticipated to occur from August 1, 2024 to January 31, 2025 and Phase 2 is anticipated to occur from August 1, 2025 to January 31, 2026.
- Numbers may not match total due to rounding

## 2.4.2 Pumps and Pump Stations

Two pumps would be required to convey the water over the 500-foot elevation change between the two lakes (see **Figure 2-2**). Pump 1, the Barge Pump station, is an existing pump within Phoenix Lake that would be upsized to accommodate the capacity needed for the Project (see **Figure 2-3**). Pump 2 would be installed in a new building adjacent to the existing Phoenix Transfer Pump station (see **Figure 2-4**). This pump station building would be approximately 20 feet long, 15 feet wide and 15 feet tall and would include a new 450 hp pump and associated electrical equipment. The new building would include noise attenuation measures such as louvers or venting that is oriented away from trail users and recreationists. **Table 2-3** outlines the existing pump capacity and future requirements.



SOURCE: ESA, 2023.

MMWD Phoenix-Bon Tempe Project

**Figure 2-3**  
Pump 1, Barge Pump Station



SOURCE: ESA, 2023.

MMWD Phoenix-Bon Tempe Project

**Figure 2-4**  
Pump 2, Existing Transfer Pump Station

**TABLE 2-3  
EXISTING AND FUTURE PUMP STATION POWER REQUIREMENTS**

Number/Name	Existing Power	Total Required Power for Project
1. Barge Pump Station	100 HP	125 HP
2. Transfer Pump Station	250 HP	450 HP

NOTE:  
HP = horsepower

## 2.5 Construction

### 2.5.1 Construction Schedule, Hours, and Work Force

#### 2.5.1.1 Construction Schedule

Construction is expected to occur between mid-2024 and early-2026.

**Table 2-4** shows the anticipated construction schedule including the approximate duration of activities for each construction phase. Construction could occur over two or three seasons to avoid impacts to the Northern spotted owl, which is documented in the Project vicinity. No construction activities would occur during the February 1 to July 31 nesting season. For purposes of this environmental analysis, construction is assumed to occur over two seasons to avoid understating impacts related to traffic, air quality and noise.

**TABLE 2-4  
ANTICIPATED CONSTRUCTION SCHEDULE**

Project Phase	Anticipated Start	Anticipated Finish
Phase 1	August 1, 2024	January 31, 2025
Phase 2	August 1, 2025	January 31, 2026

#### 2.5.1.2 Construction Hours

Standard daytime shifts for construction activities would be 7:00 a.m. to 4:30 p.m. Monday through Friday. No nighttime or weekend construction is anticipated. Although short segments of the publicly accessible trails at/near the Project sites would be closed for short durations during weekdays, construction crews would backfill or plate trenches at the end of each workday to allow public use of select trails after 5 p.m. on weekdays and throughout the weekends.

#### 2.5.1.3 Construction Workforce and Equipment

There would be approximately eight workers on any given day during Project construction. **Table 2-5** identifies the anticipated construction equipment for the Project.

**TABLE 2-5  
ANTICIPATED CONSTRUCTION EQUIPMENT**

Construction Equipment	Number
Flatbed Truck	3
Front-end loader	2
Backhoe loader	1
Bulldozer	1
Excavator	2
Dump truck	2
Water truck	1
Off-highway truck	1
Grader	2
Bore/drill rig	1
Cement/mortar mixer	12
Crane	1
Portable pump and generator if dewatering is needed	1, 1
Roller compactor	1
Skid Steer	1
SOURCE: Marin Water 2023c	

#### 2.5.1.4 Staging and Laydown Areas

Construction staging, laydown, and worker parking would take place at existing parking/staging areas at Phoenix Lake and Bon Tempe Reservoir, shown on **Figure 2-5** and **Figure 2-6**. Staging at Phoenix Lake would be on an existing parking/staging area adjacent to the ranger house, which is located near the spillway. Staging at Bon Tempe Reservoir would be in the existing parking/staging area adjacent to Filter Plant Road. Staging also would be located adjacent to the transfer pump station, which is currently used for parking, and near the tunnel entrance which is currently used for material storage. No clearing would be required for any staging area. Staging would occur on previously developed land and would not necessitate vegetation removal.



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# Phoenix - Bon Tempe Connection Project Phoenix Staging Location



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SOURCE: Marin Water, 2023

MMWD Phoenix-Bon Tempe Project

**Figure 2-5**  
Phoenix Lake Staging Area

# Phoenix-Bon Tempe Connection Project Bon Tempe Staging Location



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SOURCE: Marin Water, 2023

MMWD Phoenix-Bon Tempe Project

**Figure 2-6**  
Bon Tempe Reservoir Staging Area

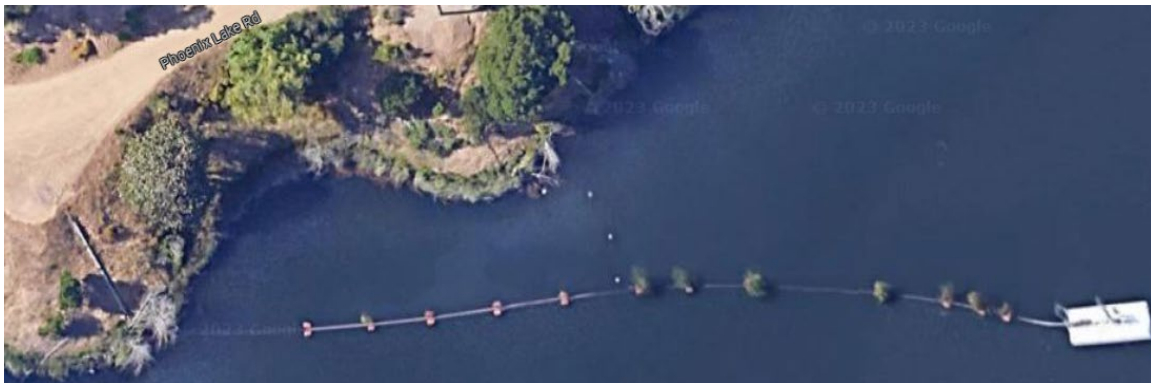


## 2.5.2 Construction Activities

Installation of the pipeline and new pump station would include the following construction techniques and activities (described from east to west):

- **Segment A: Pump 1 Barge Pump Station in Phoenix Lake to Shoreline.** The 18-inch diameter pipeline would replace approximately 290 linear feet of existing pipeline in this segment. Like the existing pipeline (shown in **Figure 2-7**), the proposed pipeline would be suspended with floats within the reservoir, placed upon the shoreline, and underground near the top of the reservoir shoreline. Pipeline installation within the reservoir would occur with the reservoir remaining in operation during installation.
- **Segment B:** Marin Water would repurpose an existing pipeline in this segment of the alignment, so construction would be limited to connecting to segments A and C; no other work would occur within this segment.
- **Segments C through E:** As indicated in **Table 2-2**, most of the pipeline would be installed using open-trench construction. For open-trench construction, the construction corridor (to accommodate the trench, materials, construction equipment and vehicles) would be approximately 12 feet wide in existing roadways; no roadways would be widened to accommodate project construction. The contractor would remove vegetation (described below), excavate a 2.5-foot wide by 4.5-foot-deep trench, install pipe bedding (sand), install the pipe, and backfill the trench with suitable excavated material or imported clean fill. The pipeline would be connected to Pump 2 at the location shown on **Figure 2-2**.
- **Segment F:** This segment of the alignment would be within an existing tunnel. The contractor would place a new pipeline next to the existing pipeline.

Construction at the Pump 2 site would include excavation, grading, paving, and construction of the pump station and appurtenant features. Some excavated materials may need to be hauled offsite.



SOURCE: ESA, 2023.

MMWD Phoenix-Bon Tempe Project

**Figure 2-7**  
Replacement of Existing Pipeline Segment in Phoenix Lake

### 2.5.2.1 Site Preparation

During site preparation, trucks would deliver construction equipment and miscellaneous materials to the Project area and field offices would be set up.

### 2.5.2.2 Excavation and Soils

The Project would include excavation to construct Pump 2 and to install the new pipeline. Approximately 2,508 cubic yards (CY) of material are anticipated to be excavated during Project construction. Excavated material that would be reused on-site as backfill would be stored at the staging areas adjacent to Phoenix Lake and Bon Tempe Reservoir (see **Figure 2-5** and **Figure 2-6**). Excavated material that is contaminated or in excess would be disposed of at Redwood Landfill in Novato.

The pipeline would require approximately 1,000 CY of imported material in the trench to provide about 3 inches of sand along the pipeline.

### 2.5.2.3 Vegetation Removal

Construction could require the removal of approximately one tree as well as other existing vegetation along the pipeline route, depending on conditions once construction commences. The construction contractor would remove the tree or trim back vegetation as needed, in accordance with Marin Water's vegetation removal policies. As indicated above, no vegetation removal is anticipated to prepare the construction staging areas.

### 2.5.2.4 Dewatering and Water Use

Excavation would be required for Pump 2 and to install the pipeline. Dewatering may be necessary depending on the depth and time of year in which the excavation is conducted. Dewatering would involve the use of a portable pump and generator. Water from the trench (or Pump 2 construction site) would be returned to Phoenix Lake through Marin Water's standard procedures.

Approximately 30,000 gallons of water are anticipated to be used in construction activities. However, this is a conservative estimate since the amount of water needed for dust control would depend on weather, site conditions, and the contractor's schedule, means, and methods. The water would be supplied from off-site raw water hydrants and transported to the site via water truck, if needed.

## 2.5.3 Construction Traffic Routing

The primary entrance and exit route for construction traffic to Phoenix Lake would be via Sir Francis Drake Boulevard to Lagunitas Road through Natalie Coffin Greene Park. The primary entrance and exit route for construction traffic to Bon Tempe Reservoir would be via Sir Francis Drake Boulevard to Bolinas Road to Sky Oaks Road.

## 2.5.4 Standard Environmental Protection Measures

Marin Water has adopted a list of standard environmental protection measures that contractors must follow during construction (see **Appendix A**). These measures would help to minimize impacts to biological and cultural resources, reduce wildfire risks, and reduce the likelihood of an uncontrolled release of hazardous materials into the watershed. The environmental analysis assumes these measures would be implemented.

## 2.6 Operations and Maintenance

Phoenix Lake water would be moved to Bon Tempe Reservoir during dry years and up to three times a year during normal years. Pumping would occur continuously to convey up to 3 mgd of raw water for a total of up to 260 AF. For purposes of the environmental analysis, pumping is assumed to occur for approximately 28 days and would occur twice in one year (for a total of about 56 days), given the uncertainties of future dry year conditions. ~~The water would only be conveyed during late fall to early winter and/or early to late spring but would not be conveyed during the summer or early fall when Phoenix Lake would not be able to refill before the dry season.~~ The water would only be conveyed during the period from October 1 to February 28 and would require Phoenix Lake to be at a 170-foot water surface elevation at the start of a diversion. If the lake falls below 147 feet during the diversion, the diversion will cease until the water level recovers to 147 feet or higher. Once a diversion has been completed, the lake level must recover to 170 feet before the next diversion would start. All diversions would cease by February 28. As such, water would not be conveyed during the spring or summer.

Maintenance would include bi-annual testing of the pumps, which would require one to two workers traveling to the sites in a small passenger truck. For information regarding anticipated changes in flows in Ross Creek under future with-project conditions, refer to Section 3.10, *Hydrology and Water Quality*.

## 2.7 Other Marin Water Projects

Under a separate project, Marin Water is maintaining and improving its internal roadway and trail network. To that end, Marin Water has been implementing a culvert maintenance program on Fish Grade Road since 2020, which physically overlaps with the proposed Phoenix-Bon Tempe Connection Project alignment. As of the writing of this document most of the culverts on Fish Grade Road have already been upgraded; however, several have yet to be improved. Although both projects would temporarily affect culverts on Fish Grade Road, the Phoenix-Bon Tempe Connection Project is independent of the roadway and trails management project.

## 2.8 Required Actions and Approvals

The Marin Water Board of Directors would be required to adopt the Mitigated Negative Declaration pursuant to CEQA prior to approving the Project. In addition, Marin Water would seek federal and state permits prior to construction as outlined in **Table 2-6**. After adopting the Mitigated Negative Declaration pursuant to CEQA, construction can occur on project components that do not require regulatory permits.

**TABLE 2-6  
REQUIRED PERMITS**

Permit	Permitting Authority
<b>Federal Permits</b>	
Clean Water Act Section 404	U.S. Army Corps of Engineers
Section 106 National Historic Preservation Act	State Historic Preservation Officer
Section 7 Federal Endangered Species Act Consultation	U.S. Fish & Wildlife Service
<b>State Permits</b>	
Clean Water Act Section 401 Water Quality Certification	San Francisco Bay Regional Water Quality Control Board
Section 1601 et seq. Streambed Alteration Agreement	California Department of Fish and Wildlife

## 2.9 References

Marin Water. 2023a. Strategic Water Supply Assessment. Final Draft Report. Available at: [https://www.marinwater.org/sites/default/files/2023-06/MMWD\\_SWSA\\_Final%20Draft%20Report.pdf](https://www.marinwater.org/sites/default/files/2023-06/MMWD_SWSA_Final%20Draft%20Report.pdf). Accessed on May 2023.

\_\_\_\_\_. 2023b. “About Our Water System: Our Distribution System.” Accessed online at: About Our Water System | Marin Water. Available at: <https://www.marinwater.org/OurSystem>. Accessed on October 9.

\_\_\_\_\_. 2023c. Personal communication between Marin Water and ESA re: estimated construction equipment. October 4.

# CHAPTER 3

## Initial Study

- 1. **Project Title:** Phoenix - Bon Tempe Connection
- 2. **Lead Agency Name and Address:** Marin Municipal Water District  
220 Nellen Ave, Corte Madera, CA 94925
- 3. **Contact Person and Phone Number:** Elysha Irish
- 4. **Project Location:** Unincorporated Marin County
- 5. **Project Sponsor’s Name and Address:** Marin Municipal Water District  
220 Nellen Ave, Corte Madera, CA 94925
- 6. **General Plan Designation(s):** Open Space, and Agricultural and Conservation
- 7. **Zoning:** Open Area (OA)

**8. Description of Project:**

Marin Water proposes to convey water from Phoenix Lake to Bon Tempe Reservoir through dedicated raw water transmission and pumping facilities on Marin Water’s watershed property. See Chapter 2.

**9. Surrounding Land Uses and Setting:**

The Project site is within the Mount Tamalpais Watershed owned by Marin Water and managed primarily for water collection and storage.

**10. Other public agencies whose approval is required:**

California Department of Fish and Wildlife; San Francisco Regional Water Quality Control Board; U.S. Army Corps of Engineers; State Historic Preservation Officer; U.S. Fish & Wildlife Service

**11. Have California Native American Tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**

*Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission’s Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.*



Marin Water contacted Graton Rancheria on October 12, 2023, to see if the Tribe wanted to consult on the Project. On October 30, 2023, the Tribe initiated consultation. Marin Water sent Project and site information on November 9, 2023. After multiple communications, Marin Water closed tribal consultation on January 29, 2024. However, Marin Water will coordinate with the Tribe if there are any inadvertent discoveries during construction.

## ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Aesthetics                         | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality                                   |
| <input checked="" type="checkbox"/> Biological Resources    | <input checked="" type="checkbox"/> Cultural Resources      | <input type="checkbox"/> Energy  |
| <input checked="" type="checkbox"/> Geology/Soils           | <input type="checkbox"/> Greenhouse Gas Emissions           | <input type="checkbox"/> Hazards & Hazardous Materials                 |
| <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning                  | <input type="checkbox"/> Mineral Resources                             |
| <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population/Housing                 | <input type="checkbox"/> Public Services                               |
| <input type="checkbox"/> Recreation                         | <input type="checkbox"/> Transportation                     | <input checked="" type="checkbox"/> Tribal Cultural Resources          |
| <input type="checkbox"/> Utilities/Service Systems          | <input type="checkbox"/> Wildfire                           | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

## DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

# Environmental Checklist

## 3.1 Aesthetics

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.1.1 Discussion

Following construction, the pipeline would largely be buried or would otherwise not be visible to the public. Permanent above-ground facilities are limited to Pump Station 2, which would be constructed adjacent to the existing Phoenix Transfer Pump Station (see **Figure 2-4** in Chapter 2). Public views of the Project area would not be affected since vegetation removal would be limited.

- a) **Less-than-Significant Impact.** The Marin Countywide Plan identifies Ridge and Greenbelt areas as sensitive and includes several design strategies within goal DES-4 to protect visually prominent ridgelines and identifies Ridge and Upland Green Areas (Marin County, 2007) but does not identify individual scenic vistas. The Project area is within view of a prominent ridgeline; however, due to the nature of the Project site and immediate area, it is not within a scenic vista. The Project site is visible near Phoenix Lake at Bill Williams Road to the east, Worn Spring Road to the north, and Eldridge Grade to the west, and visible near Bon Tempe Reservoir at Sky Oaks Road, Fish Grade Road to the east and Bon Tempe Dam Road to the north. All roads in the Project vicinity are publicly accessible. Due to the density of trees and the steep topography surrounding the site, the Project would not be seen within the context of a scenic vista. Further, while the Project includes the construction of a new pipeline, the alignment would mostly follow existing trails and fire roads. Thus, the Project would not substantially affect views from scenic vistas as designated by Marin County. This impact would be less than significant.

- b) **No Impact.** In Marin County, Caltrans-designated State Scenic and Eligible State Scenic Highways include portions of US Highway 101 and State Route 37 in the vicinity of the city of Novato. None of these highways are visible in the vicinity of the Project site. There would be no impact under this criterion.
- c) **Less-than-Significant Impact.** The Project is within a non-urbanized area (managed watershed land) and located adjacent to trails, reservoirs, ridges, and hillsides primarily along Fish Grade Road, which is available to the public for use as a non-motorized trail. Any views of the Project area from Bill Williams Road, Worn Spring Road, Eldridge Grade, Sky Oaks Road, and Bon Tempe Dam Road would be obstructed due to intervening vegetation and topography. The existing site is largely within an undeveloped forest, set within watershed lands crossed by trails and with water infrastructure in place. During the two 6-month construction phases, construction activities would be visible by trail users passing the site and would be seen as contrasting with the surrounding forested lands. However, once trail users move past the immediate site, the Project would recede from view. Although the Project area is in a natural setting, the relatively limited public viewing opportunities and view duration would not create substantial visual contrast with the surrounding areas. The visual character or quality of the site or its surroundings would not be substantially degraded with the presence of this Project. This impact would be less than significant.
- d) **No Impact.** There are minimal sources of existing light in the Project vicinity, due to the undeveloped nature of the area. The proposed Project would not include temporary or permanent lighting. Therefore, there would be no light or glare impacts.

### 3.1.1.1 References

Marin County. 2007. Marin Countywide Plan. Marin County Community Development Agency. November 6, 2007. Available at: [https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/county-wide-plan/cwp\\_2015\\_update.pdf](https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/county-wide-plan/cwp_2015_update.pdf). Accessed November 27, 2023.

### 3.2 Agriculture and Forestry Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.2.1 Discussion

- a) **No Impact.** The Project site is not zoned for agricultural use and does not include Prime Farmland, Unique Farmland, or Farmland of Statewide (or Local) Importance. The Project does not propose to convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. The Project site would be constructed just outside of the town of Ross in unincorporated Marin County and is designated as Other Land and Water Area by the California Department of Conservation (DOC, 2022). No Project components or staging areas would occur on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance and there would be no conversion to non-agriculture use. Therefore, there would be no impact.
- b) **No Impact.** The Project site is not located on any land used for agriculture or zoned for agricultural use. The site and surrounding areas are zoned as Open Area and no agricultural lands conserved under the Williamson Act are present (Marin County, 2022). Project construction and staging also would not be located in or near existing zoning for agricultural use; therefore, the Project would not conflict with existing zoning for agricultural use or an active Williamson Contract and there would be no impact.

- c) **No Impact.** The Project site is steep and is surrounded by existing woodland. The Project area is managed watershed land and is not used for timber production. The woodland is not zoned for forestland, timberland, or zoned Timberland Production, therefore; there would be no impact (Marin County, 2022).
- d) **No Impact.** Project construction would require limited vegetation removal on site. After the completion of the Project, vegetation would grow back and would restore the site largely to pre-construction conditions. As discussed in item c), the Project site is not zoned for forestland and would remain in the current land use of managed watershed lands; therefore, the Project would not convert forestland to non-forest use and there would be no impact.
- e) **No Impact.** As discussed above, the Project site and the surrounding areas would not be designated or zoned for any type of farmland or forestland. The Project would not involve any other changes in the existing environment that could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. For these reasons, the Project would have no impact.

### 3.2.1.1 References

California Department of Conservation (DOC). 2022. California Important Farmland Finder. Available at: <https://maps.conservation.ca.gov/DLRP/CIFF/>. Accessed October 30, 2023.

DOC. 1997. California Agricultural Land Evaluation and Site Assessment Model. Available at: <https://www.conservation.ca.gov/dlrp/Documents/lesamodl.pdf>. Accessed December 22, 2023.

Marin County. 2022. MarinMap Map Viewer. Available at: <https://www.marinmap.org/Html5Viewer/Index.html?viewer=smmdataviewer>. Accessed October 30, 2023.

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### 3.3 Air Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.3.1 Environmental Setting

The Project site is in Marin County and is within the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). Development projects can contribute to a region's adverse air quality impacts on a cumulative basis, so the BAAQMD considers the emission levels for which a project's individual emissions would be cumulatively considerable when developing thresholds of significance for air pollutants. The significance thresholds used for the Project's construction and operational impact analyses are based on thresholds set in the BAAQMD's CEQA Guidelines (BAAQMD, 2023).

##### **Criteria Air Pollutants**

Criteria air pollutants are a group of common air pollutants for which the U.S. Environmental Protection Agency (EPA) has set national ambient air quality standards (NAAQS). These pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM) that is 10 microns or less in diameter (PM<sub>10</sub>), PM that is 2.5 microns or less in diameter (PM<sub>2.5</sub>), and lead. Most of the criteria pollutants are emitted as primary pollutants. Ground level ozone, however, is a secondary pollutant that is formed in the atmosphere by chemical reactions between nitrogen oxides (NO<sub>x</sub>) and reactive organic gases (ROG) in sunlight. In addition to the criteria air pollutants identified by the EPA, California has added four state criteria air pollutants (visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride) to the California ambient air quality standards (CAAQS). The SFBAAB is designated as a non-attainment area with respect to the state and federal 8-hour ozone standards, the state 1-hour ozone standard, the state 24-hour PM<sub>10</sub> standard, the state annual PM<sub>10</sub> standard, the federal 24-hour PM<sub>2.5</sub> standard, and the state annual PM<sub>2.5</sub> standard. The SFBAAB is designated as an attainment area, or unclassified, relative to all the other criteria pollutant standards.

### **Toxic Air Contaminants**

Toxic air contaminants (TACs) are state-designated, airborne substances that cause short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations, as well as heavy-duty trucks and heavy equipment. The current California list of TACs includes nearly 200 compounds, including diesel particulate matter (DPM) exhaust emissions from diesel-fueled engines (California Air Resources Board [CARB], 2023).

### **Sensitive Receptors**

For the purposes of this air quality analysis, sensitive receptors are defined as facilities and land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these types of land uses include schools, hospitals, and daycare centers. Residential areas are also considered sensitive for poor air quality because these sensitive individuals could be present there, and people usually stay home for extended periods of time, so there is greater exposure to potentially harmful air quality. There is a ranger residence approximately 400 feet northeast of the Pump 2 location.

In the most recent CEQA Guidelines, BAAQMD recognizes offsite workers as receptors that need to be considered in the analysis of health risks (BAAQMD, 2023). There are no worker receptors within 1,000 feet of the Project site. The nearest offsite worker receptors are located approximately 0.65 mile northeast of the Project site.

#### **3.3.1.1 Discussion**

- a) **Less-than-Significant Impact.** The 2017 Clean Air Plan (BAAQMD, 2017) is the current air quality plan for the SFBAAB. The primary goal of the 2017 Clean Air Plan is to protect public health by achieving attainment of air quality standards. The plan includes a wide range of control measures, which consist of actions to reduce non-attainment pollutants and achieve state and federal ambient air quality standards for ozone and PM. BAAQMD guidance states that “if approval of a Project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation, the Project would be considered to be consistent with the Clean Air Plan” (BAAQMD, 2023).

Construction activity measures in the 2017 Clean Air Plan include measures TR 19 (Medium and Heavy Duty Trucks), and TR 22 (Construction, Freight, and Farming Equipment). TR 19 requires BAAQMD to provide and encourage other organizations to provide incentives for the purchase of new lower-emission trucks, while TR 22 requires BAAQMD to provide incentives for the deployment of Tier 3 and Tier 4 off-road engines used for construction. Implementation of these measures is the responsibility of the BAAQMD and, therefore, is not applicable to the Project.

Measures in the 2017 Clean Air Plan that would be applicable to local planning actions would only apply to Project operations; however, operation of the Project would only require bi-annual maintenance trips in a passenger truck and is anticipated to generate nominal criteria pollutant emissions.

As discussed in Impact b) below, the Project would result in a net increase in emissions of criteria pollutants that would not exceed the significance thresholds for ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. Thus, criteria air pollutants emissions that would be generated from construction and operation of the Project would not conflict with the 2017 Clean Air Plan. Additionally, as discussed under Impact c), the Project would not generate a significant impact with regard to health risk for sensitive receptors or workers.

The Project would not generate emissions that would exceed the BAAQMD thresholds of significance for criteria air pollutants and would support the goals of the 2017 Clean Air Plan. Furthermore, the measures included in the 2017 Clean Air Plan fall under the responsibility of BAAQMD for implementation, and are otherwise not applicable to the Project, nor would the Project conflict with or hinder these measures. Therefore, the Project would be consistent with the 2017 Clean Air Plan and the impact would be less than significant.

### **Construction**

- b) **Less-than-significant Impact.** Criteria air pollutants from the construction phase of the Project would be generated primarily from the operation of heavy-duty equipment such as excavators, cranes, and forklifts as well as construction vehicles used to transport workers, equipment, and materials. Criteria air pollutant emissions from equipment and on-road vehicle exhaust were estimated using the California Emissions Estimator Model (CalEEMod; version 2022.1.1.20); modeling output files are included in **Appendix B**. Construction would take place over two 6-month periods. Project-specific data for construction schedule and phasing, construction equipment types and numbers, and volume of imported and exported material were provided by Marin Water and were used in the model to estimate emissions from construction. Model defaults were used where Project-specific data was unavailable, and the defaults are listed below:

- Number of days off-road equipment will be used in each phase
- Hours per day of equipment use
- Horsepower and engine tier for all off-road equipment
- Number of daily worker trips, vendor trips, and haul truck trips

The total emissions that would be generated over the duration of construction were divided by the number of construction days for each partial construction year to determine average daily emissions for each construction year. Consistent with BAAQMD guidance, only exhaust emissions from equipment and construction vehicles are presented in **Table 3-1**. As shown in the table, emissions of ozone precursors ROG and NO<sub>x</sub> as well as PM<sub>10</sub> and PM<sub>2.5</sub> would all be below their respective significance



thresholds. Therefore, the Project's impact with respect to criteria pollutant emissions from construction would be less than significant.

**TABLE 3-1  
AVERAGE DAILY CONSTRUCTION-RELATED CRITERIA POLLUTANT EMISSIONS  
(POUNDS PER DAY)**

Project Average Daily Construction Emissions by Year	ROG	NO <sub>x</sub>	Exhaust PM <sub>10</sub>	Exhaust PM <sub>2.5</sub>
2024	6.2	52.1	2.2	2.0
2025	5.3	43.0	1.8	1.7
2026	5.5	40.0	1.8	1.8
<i>BAAQMD Threshold for Significant Construction Impacts</i>	54	54	82	54
Potential Significant Impact?	No	No	No	No

SOURCE: ESA (Appendix B)

### Operations

- c) **Less-than-significant Impact.** Once the pump station is operational, there would be associated recurring maintenance activities. Maintenance would include bi-annual testing of the pumps and would require one to two workers traveling to the sites in a small passenger truck. Vehicle trips would occur infrequently, and emissions generated would be negligible. Therefore, the Project's impact with respect to criteria pollutant emissions from operations would be less than significant.
- d) **Less-than-Significant Impact.** Construction equipment and associated heavy-duty truck traffic generate DPM, a component of diesel exhaust identified as a TAC by the CARB. DPM emissions from construction may pose health risks to sensitive receptors. Although there is a full-time ranger residence adjacent to Pump 2, there are no other sensitive receptors near the Project site, which is zoned for open space uses. The nearest substantial sensitive receptor population is a residential community located approximately 0.75 mile southeast of the Project area, and the nearest worker receptor is located approximately 0.65 mile northeast of the Project Area; these are both outside the 1,000-foot zone the BAAQMD considers as the "zone of influence" for the evaluation of TAC impacts from sources. Pipeline construction would progress in a linear way away from the ranger residence and would not expose the adult receptor to emissions from the entirety of construction activities. Construction of Pump 2 station would occur over 8 weeks, and would consist of typical building construction such as framing, siding and interior finishing. Given the low levels of maximum annual PM<sub>10</sub> exhaust emissions (2.2 pounds per day) and the general nature of construction, DPM concentrations and associated health risks to the nearest receptor from Project construction would be less than significant.

Given that there is only one sensitive receptor within 1,000 feet of the pump stations and transmission pipeline alignment and the low level of emissions associated with the intermittent nature of operational and maintenance activities, health risk impacts to sensitive receptors from Project operation would be less than significant.

- e) **Less-than-Significant Impact.** Odors are generally regarded as an annoyance rather than a health hazard, and an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. People can have different reactions to the same odor. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, headache). The occurrence and severity of odor impacts depends on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

During construction, the use of diesel-powered vehicles and equipment could temporarily generate localized odors from combustion exhaust; however, these odors would be temporary and would cease upon completion of construction activities. Because there are no sensitive receptors in the vicinity of the Project site, the Project's odor impact during construction would be less than significant.

The BAAQMD CEQA Guidelines identify land uses that have potential to generate continuous odorous impacts and odor complaints during operation. These land uses include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants (BAAQMD, 2023). The Project would consist of a pump station and water transmission pipelines, and the Project would not include any of the land uses identified by the BAAQMD as common odor sources. Therefore, the Project's operational impact with respect to odors would be less than significant.

### 3.3.1.2 References

Bay Area Air Quality Management District (BAAQMD). 2017. *Final 2017 Clean Air Plan*.

Available at: [https://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a\\_-\\_proposed-final-cap-vol-1-pdf.pdf?rev=8c588738a4fb455b9cabb27360409529&sc\\_lang=en](https://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-_proposed-final-cap-vol-1-pdf.pdf?rev=8c588738a4fb455b9cabb27360409529&sc_lang=en). Accessed November 2023.

BAAQMD. 2023. *BAAQMD CEQA Guidelines*. Available at:

[https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-5-Project-air-quality-impacts\\_final-pdf.pdf?rev=de582fe349e545989239cbbc0d62c37a&sc\\_lang=en](https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-5-Project-air-quality-impacts_final-pdf.pdf?rev=de582fe349e545989239cbbc0d62c37a&sc_lang=en). Accessed November 2023.

California Air Resources Board (CARB). 2023. *CARB Identified Toxic Air Contaminants*.

Available at: <https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants>. Accessed November 2023.

### 3.4 Biological Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.4.1 Discussion

- a) **Less-than-Significant Impact with Mitigation.** Database searches of the California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS), and U.S. Fish and Wildlife Service (USFWS) species lists were conducted within the San Rafael, Bolinas, San Geronimo and Novato USGS 7.5-minute quads surrounding the Project alignment to identify reported occurrences of special-status species (CDFW, 2023a; USFWS, 2023). ESA biologists conducted a reconnaissance-level site survey on October 25, 2023 and a follow-up survey on January 11, 2024, to characterize existing conditions and determine the potential for the occurrence of special-status species. **Table 3-2** summarizes the potential for special-status species to occur in the study area, which includes the pipeline alignment, the reservoirs, pump stations, and the downstream portion of Ross Creek influenced by Phoenix Lake overflow. No special-status species were observed during the site visits. Detailed below is a summary of findings and proposed mitigation measures to reduce potential significant impacts on special-status species to a less-than-significant level.

**TABLE 3-2  
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PHOENIX – BON TEMPE STUDY AREA**

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence on the Alignment
<b>Invertebrates</b>			
Western bumble bee ( <i>Bombus occidentalis</i> )	--/SCE	Found in any area with sufficient flowers for nutrition, and underground burrows for nest for the queen.	<b>Low.</b> Forested areas have limited suitable habitat for this species.
Monarch butterfly ( <i>Danaus plexippus plexippus</i> ) (overwintering sites)	FC/--	Monarch butterfly breeding and larval habitat is on milkweed plants in open fields and meadows. During winter it stays in colonies in eucalyptus, Monterey cypress and other trees in California and at high altitudes in Mexico.	<b>Low.</b> Lack of suitable habitat for wintering monarchs.
California freshwater shrimp ( <i>Syncaris pacifica</i> )	FE/SE	Shallow pools away from main streamflow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	<b>Absent.</b> Stream and pool habitat not found on-site.
<b>Fish</b>			
Coho salmon <i>Oncorhynchus kisutch</i> Central California Coast ESU	FE/SE/--	CCC ESU includes populations south of Punta Gorda, California to and including Aptos Creek, as well as San Francisco Bay. Larger rivers serve as migration pathways for adults; juveniles rear in smaller tributaries. Require beds of loose, coarse gravel for spawning plus cover, cool water with sufficient dissolved oxygen.	<b>Not Present.</b> Extant spawning run in Lagunitas Creek below dam. Not present in Ross Creek or in any Marin Water reservoir.
Steelhead <i>Oncorhynchus (=Salmo) mykiss irideus</i> Central California Coast DPS	FT/--	Spawns and rears in coastal streams between the Russian River in Sonoma County and Soquel Creek in Santa Cruz County, as well as in drainages tributary to San Francisco Bay where gravelly substrate and shaded riparian habitat occurs.	<b>Low.</b> Extant spawning run in Lagunitas Creek and occasionally found in Ross Creek (CDFW 2023).
<b>Amphibians</b>			
California giant salamander ( <i>Dicamptodon ensatus</i> )	--/SSC	Vernal or temporary pools in annual grasslands, or open stages of woodlands. Typically, adults use mammal burrows.	<b>Moderate.</b> Nearby records in watershed, and suitable woodland habitat along creeks.
California red-legged frog ( <i>Rana draytonii</i> )	FT/SSC	Streams, freshwater pools, and ponds with overhanging vegetation. Also found in woods adjacent to streams. Requires permanent or ephemeral water sources such as reservoirs and slow-moving streams and pools of >0.5 m depth for breeding.	<b>Low.</b> Nearest records in Lagunitas Creek watershed approximately 5 miles from alignment.
Foothill yellow-legged frog ( <i>Rana boylei</i> )	--/SSC	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats; requires at least some cobble-sized substrate for egg-laying.	<b>Moderate.</b> Recent occurrence in San Anselmo Creek headwaters. Potential to be found in perennial aquatic habitats on alignment, though areas subject to disturbance.

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence on the Alignment
<b>Reptiles</b>			
Northwestern pond turtle ( <i>Actinemys marmorata marmorata</i> )	FPT/SSC	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation <6,000' in elevation. Require basking area and upland habitat for egg laying (sandy banks and open, grassy fields).	<b>High.</b> Present in Phoenix and Bon Tempe reservoirs, with potential to disperse into nearby streams.
<b>Birds</b>			
Northern spotted owl ( <i>Strix occidentalis caurina</i> )	FT/ST	In Marin County, northern spotted owls nest in secondary-growth redwood and fir forests, featuring dense canopy closure of mature trees, abundant logs, standing snags, and live trees with broken tops.	<b>Present.</b> Northern spotted owl activity centers throughout watershed, including along Concrete Pipe Rd. and Eldridge Grade Rd. near alignment.
Burrowing owl ( <i>Athene cunicularia</i> )	--/SSC	Nests and forages in low-growing grasslands with burrowing mammals.	<b>Low.</b> Project route is too forested and steep to provide suitable habitat for this species.
Northern harrier ( <i>Circus cyaneus</i> )	--/SSC	Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	<b>Low.</b> Marsh vegetation not found on-site.
White-tailed kite ( <i>Elanus leucurus</i> )	--/CFP	Nests in shrubs and trees adjacent to grasslands, forages over grasslands and agricultural lands	<b>Low.</b> Project site is forested, but species may nest or forage in vicinity.
American peregrine falcon ( <i>Falco peregrinus anatum</i> )	BCC/CFP	Nest consists of a scrape or a depression on rock, cliff or building ledge over an open site.	<b>Low.</b> Suitable foraging habitat on-site, but nesting habitat is not present.
Black swift ( <i>Cypseloides niger</i> )	BCC/SSC	Occur in wide range of habitats, but nest in specialized sites, in forested areas near rivers, often behind waterfalls or on damp cliffs.	<b>Low.</b> Species may fly over site but no nesting habitat is present.
California black rail ( <i>Laterallus jamaicensis</i> )	BCC/ST/CFP	Found in salt, brackish and freshwater marsh with dense vegetation for nesting habitat.	<b>Absent.</b> Marsh vegetation not found on-site.
California Ridgway's rail ( <i>Rallus obsoletus obsoletus</i> )	FE/SE/CFP	Found in salt and brackish marsh with well-defined tidal channels and dense growth of pickleweed; feeds on invertebrates in mud-bottomed sloughs.	<b>Absent.</b> Marsh vegetation not found on-site.
Western snowy plover ( <i>Charadrius alexandrinus nivosus</i> )	FT/SSC	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	<b>Absent.</b> Sandy, gravelly soil habitat not found on-site.
Salt-marsh common yellowthroat ( <i>Geothlypis trichas sinuosa</i> )	--/SSC	In brackish and saline tidal marsh habitat around San Francisco Bay, associated with a high percent cover of rushes ( <i>Scirpus</i> spp.), Peppergrass ( <i>Leipidium latifolium</i> ), and <i>Juncus</i> spp.	<b>Absent.</b> Marsh vegetation not found on-site.
Bank swallow ( <i>Riparia riparia</i> )	--/ST	Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	<b>Absent.</b> Suitable bank habitat not found on-site.
San Pablo song sparrow ( <i>Melospiza melodia samuelis</i> )	BCC/SSC	Inhabits tidal sloughs in the <i>Salicornia</i> marshes; nests in <i>Grindelia</i> bordering slough channels.	<b>Absent.</b> Marsh vegetation not found on-site.
California least tern ( <i>Sternula antillarum browni</i> )	FE/SE	Nest on beaches, mudflats, and sand dunes, usually near shallow estuaries and lagoons with access to open ocean.	<b>Absent.</b> Suitable beach and dune habitat is not present on-site.

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence on the Alignment
<b>Mammals</b>			
Pallid bat ( <i>Antrozous pallidus</i> )	--/SSC/ WBWG High	Grasslands, shrublands, woodlands, and forests. Common in arid regions with rocky outcroppings, particularly near water. Roosts in rock crevices, buildings, and under bridges; may also roost in trees. Very sensitive to disturbance.	<b>Moderate.</b> May forage over site, but suitable roost habitat is limited. Nearby occurrences in watershed.
Hoary bat ( <i>Lasiurus cinereus</i> )	--/--/ WBWG Medium	Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths.	<b>Moderate.</b> Suitable tree roosting habitat present on-site and in the vicinity. Nearby occurrences in watershed.
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	--/SSC/ WBWG High	Montane forests, herbaceous, shrub, and open stages of most habitats with dry, friable soils. Roosts in caves and cave-like settings; sensitive to disturbance.	<b>Moderate (foraging only).</b> May forage over site but suitable roost habitat not present.
Salt marsh harvest mouse ( <i>Reithrodontomys raviventris</i> )	FE/SE/CFP	Pickleweed is primary habitat but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	<b>Absent.</b> No marsh vegetation on-site.
American badger ( <i>Taxidea taxus</i> )	--/SSC	Herbaceous, shrub, and open stages of most habitats with dry, friable soils.	<b>Low.</b> Grassland has suitable habitat for badger burrows but is close to busy trails. No suitable burrows seen during surveys.
Point Reyes mountain beaver ( <i>Aplodontia rufa phaea</i> )	--/SSC	Burrows in cool, moist, north-facing slopes in moderately dense coastal scrub in Point Reyes.	<b>Absent.</b> Project site outside of subspecies' known range.
<b>Plants</b>			
Napa false indigo ( <i>Amorpha californica</i> var. <i>napensis</i> )	--/--/1B.2	Broad-leaved upland forest, chaparral, or cismontane woodland. Blooms April - July. Elevation up to 2000 meters.	<b>High.</b> Nearby occurrences in evergreen forest habitat.
Bent-flowered fiddleneck ( <i>Amsinckia lunaris</i> )	--/--/1B.2	Cismontane woodland, valley and foothill grassland, and coastal bluff scrub. Blooms March – June. Elevation up to 500 meters.	<b>Moderate.</b> Nearby occurrences in watershed; Project site contains suitable montane woodland habitat.
Mt. Tamalpais manzanita ( <i>Arctostaphylos montana</i> subsp. <i>montana</i> )	--/--/1B.3	Serpentine chaparral. Blooms February - April. Elevation ranges from 250 – 800 meters.	<b>Low.</b> Nearby occurrences in watershed, but serpentine habitat not present.
Marin manzanita ( <i>Arctostaphylos virgata</i> )	--/--/1B.2	Sandstone, granite outcrops in chaparral, and conifer forests. Blooms December - March. Elevation up to 500 meters.	<b>Low.</b> Site lacks suitable chaparral habitat.
Coastal marsh milk-vetch ( <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i> )	--/--/1B.2	Coastal marshes, seeps, and adjacent sand. Blooms June – September. Elevation up to 150 meters.	<b>Absent.</b> Site lacks marsh habitat and is outside species' known distribution.
Thurber's reed grass ( <i>Calamagrostis crassiglumis</i> )	--/--/2B.1	Mesic coastal scrub, freshwater marshes and swamps. Blooms May - August. Elevation ranges from 10 – 60 meters.	<b>Absent.</b> No marsh habitat on-site.

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence on the Alignment
Seaside bittercress <i>Cardamine angulate</i>	--/--/2B.1	Wetland-riparian areas in mixed evergreen forest	<b>Low.</b> No wetland or riparian habitat on-site.
Lyngbye's sedge <i>Carex lyngbye</i>	--/--/1B.1	Found in coastal salt marsh habitat. Blooms April – August.	<b>Absent.</b> No marsh habitat on-site.
Tiburon paintbrush <i>(Castilleja affinis var. neglecta)</i>	FE/ST/1B.2	Open serpentine grassland slopes. Blooms April – June. Elevation ranges from 60 – 400 meters.	<b>Low.</b> Site lacks serpentine grassland habitat.
Nicasio ceanothus <i>(Ceanothus decornutus)</i>	--/--/1B.2	Open, rocky serpentine slopes and ridges Blooms March – May. Elevation ranges from 235 - 290 meters.	<b>Low.</b> Site lacks serpentine slopes and ridges.
Mason's ceanothus <i>Ceanothus masonii</i>	--/--/1B.2	Chaparral (openings, rocky, serpentinite). Elevation 230-500 meters. Blooms March – April.	<b>Low.</b> Site lacks serpentine chaparral.
Point Reyes bird's-beak <i>(Chloropyron maritimum subsp. palustre)</i>	--/--/1B.2	Coastal salt marsh. Blooms May – October. Elevation up to 10 meters.	<b>Absent.</b> No marsh habitat on-site.
San Francisco Bay spineflower <i>(Chorizanthe cuspidata var. cuspidata)</i>	--/--/1B.2	Sand. Blooms April – July. Elevation up to 300 meters.	<b>Absent.</b> No sand habitat on-site.
Mt. Tamalpais thistle <i>(Cirsium hydrophilum var. vaseyi)</i>	--/--/1B.2	Serpentine seeps. Blooms June – September. Elevation ranges from 300 – 450 meters.	<b>Low.</b> Site is dry and lacks serpentine.
Round-headed Chinese houses <i>(Collinsia corymbosa)</i>	--/--/1B.2	Coastal sand dunes. Blooms April – June. Elevation up to 20 meters.	<b>Absent.</b> No sand dunes present on-site.
Western leatherwood <i>(Dirca occidentalis)</i>	--/--/1B.2	North or northeastern facing slopes, mixed-evergreen forest to chaparral, generally in fog belt. Blooms November to March. Elevation ranges from 50 – 400 meters.	<b>Moderate.</b> Suitable forest edge habitat present. Nearby occurrences in watershed.
Tiburon buckwheat <i>(Eriogonum luteolum var. caninum)</i>	--/--/1B.2	Serpentine. Blooms May - September. Elevation up to 700 meters.	<b>Low.</b> Nearby occurrence from 1975; no serpentine habitat on-site.
Minute pocket moss <i>(Fissidens pauperculus)</i>	--/--/1B.2	Damp coastal soil within conifer forests. Elevation ranges from 10 - 1024 meters.	<b>Low.</b> No suitable soil present on-site
Fragrant fritillary <i>(Fritillaria liliacea)</i>	--/--/1B.2	Heavy soils on open hills and fields near the coast. Blooms from February - April. Elevation up to 400 meters.	<b>Low.</b> No suitable open coastal habitat present on-site.
Marin checker lily <i>(Fritillaria lanceolata var. tristulis)</i>	--/--/1B.1	Coastal scrub, prairie and woodland. Blooms February – May. Elevation ranges from 15-150 meters.	<b>Low.</b> Forest and non-native grassland on-site provide marginally suitable habitat.
Diablo helianthella <i>(Helianthella castanea)</i>	--/--/1B.2	Open, grassy areas. Blooms April – June. Elevation ranges from 60 – 1,300 meters.	<b>Low.</b> No suitable open habitat present on-site.

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence on the Alignment
Congested-headed hayfield tarplant ( <i>Hemizonia congesta</i> subsp. <i>congesta</i> )	--/1B.2	Grassy sites and marsh edges. Blooms April – November. Elevation up to 560 meters.	<b>Moderate.</b> Suitable grassy habitat along alignment.
Marin western flax ( <i>Hesperolinon congestum</i> )	FT/ST/1B.1	Serpentine grassland. Blooms April – August. Elevation up to 200 meters.	<b>Low.</b> Site lacks serpentine soil habitat.
Santa Cruz tarplant ( <i>Holocarpha macradenia</i> )	FT/SE/1B.1	Clay soils in grassy areas. Blooms June – November. Elevation up to 200 meters.	<b>Low.</b> Site lacks clay soil habitat.
Thin-lobed horkelia ( <i>Horkelia tenuiloba</i> )	--/1B.2	Sandy soils within open chaparral. Blooms April – July. Elevation ranges from 50 – 500 meters.	<b>Low.</b> Site lacks sandy soil habitat.
Blue coast gilia ( <i>Gilia capitata</i> subsp. <i>chamissonis</i> )	--/1B.1	Coastal sand hills. Blooms April – June. Elevation up to 185 meters.	<b>Absent.</b> No sand dune habitat on-site.
Woolly-headed gilia <i>Gilia capitata</i> ssp. <i>tomentosa</i>	--/1B.1	Coastal bluff scrub, valley and foothill grassland, rocky outcrops, serpentinite. Elevation 10 - 220 meters. Blooms May – July.	<b>Low.</b> Site lack scrub or grassland habitat.
Dark-eyed gilia ( <i>Gilia millefoliata</i> )	--/1B.2	Stabilized coastal dunes. Blooms March – July. Elevation up to 10 meters.	<b>Absent.</b> No sand dune habitat on-site.
Small groundcone ( <i>Kopsiopsis hookeri</i> )	--/2B.3	Open woodland or mixed conifers, generally on <i>Gaultheria shallon</i> , and occasionally on either <i>Arbutus menziesii</i> or <i>Arctostaphylos uva-ursi</i> . Blooms April – August. Elevation ranges from 120 – 1,435 meters.	<b>Low.</b> Host plant species not present on-site.
Tamalpais lessingia ( <i>Lessingia micradenia</i> var. <i>micradenia</i> )	--/1B.2	Thin, gravelly soils of serpentine outcrops and roadcuts. Blooms July – October. Elevation from 60 – 305 meters.	<b>Moderate.</b> Roadcut habitat present on alignment. Nearby occurrences in watershed.
Marsh microseris ( <i>Microseris paludosa</i> )	--/1B.2	Moist grassland and open woodland. Blooms April – June. Elevation up to 300 meters.	<b>Low.</b> Moist grassland habitat not present on-site.
Marin County navarretia ( <i>Navarretia rosulata</i> )	--/1B.2	Rocky serpentine areas. Blooms May – July. Elevation from 200 – 600 meters.	<b>Low.</b> Serpentine habitat not present on-site.
White-rayed pentachaeta ( <i>Pentachaeta bellidiflora</i> )	FE/SE/1B.1	Valley grasslands. Blooms March – May. Elevation up to 620 meters.	<b>Low.</b> Site lacks suitable grassland habitat.
Hairless popcornflower ( <i>Plagiobothrys glaber</i> )	--/1A	Wet, saline to alkaline soils in valleys and coastal marshes. Blooms March – May. Elevation up to 100 meters.	<b>Absent.</b> Presumed extinct in California.
North Coast semaphore grass ( <i>Pleuropogon hooverianus</i> )	--/ST/1B.1	Wet grassy areas. Blooms March – June. Elevation up to 1,300 meters.	<b>Moderate.</b> Suitable wet grassy habitat along reservoirs. Nearby occurrences in watershed.
Marin knotweed ( <i>Polygonum marinense</i> )	--/3.1	Coastal salt and brackish marshes, swamps. Blooms April – August. Elevation up to 10 meters.	<b>Absent.</b> No marsh habitat on-site.



Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence on the Alignment
Tamalpais oak ( <i>Quercus parvula</i> var. <i>tamalpaisensis</i> )	--/--/1B.3	Understory of conifer woodlands. Blooms March – April. Elevation from 100 – 750 meters.	<b>Moderate.</b> Nearby occurrences in watershed.
Point Reyes checkerbloom ( <i>Sidalcea calycosa</i> subsp. <i>rhizomata</i> )	--/--/1B.2	Freshwater marshes. Blooms May – July. Elevation up to 30 meters.	<b>Low.</b> No marsh habitat on-site. Nearby occurrence from “San Anselmo Canyon” dated 1922.
Marin checkerbloom ( <i>Sidalcea hickmanii</i> subsp. <i>viridis</i> )	--/--/1B.1	Dry ridges near coast in serpentine areas. Blooms May – June. Elevation ranges from 50 – 430 meters.	<b>Low.</b> No serpentine habitat present on-site
Santa Cruz microseris ( <i>Stebbinsoseris decipiens</i> )	--/--/1B.2	Open, sandy, shale, or serpentine areas. Blooms April – May. Elevation ranges from 10 – 500 meters.	<b>Low.</b> No serpentine habitat present on-site.
Mt. Tamalpais jewelflower ( <i>Streptanthus batrachopus</i> )	--/--/1B.3	Serpentine barrens and chaparral. Blooms April – July. Elevation ranges from 335 – 670 meters.	<b>Low.</b> No serpentine habitat present on-site.
Mt. Tamalpais bristly jewelflower ( <i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i> )	--/--/1B.2	Dry, open grassland, chaparral, open conifer/oak woodland; occasionally serpentine. Blooms May – August. Elevation ranges from 125 – 670 meters.	<b>Low.</b> Recent nearby occurrence, but no serpentine grassland habitat on-site.
Two-fork clover ( <i>Trifolium amoenum</i> )	FE/--/1B.1	Moist, heavy soils in disturbed areas, coastal bluff scrub, and grassland. Blooms April – June. Elevation ranges from 5 – 415 meters.	<b>Moderate.</b> Recorded in Phoenix Lake area.

NOTES:

Status Codes:

USFWS (U.S. Fish and Wildlife Service)

- FE = Listed as Endangered by the Federal Government
- FT = Listed as Threatened by the Federal Government.
- FC = Listed as Candidate
- FPT = Federal Proposed Threatened

California Native Plant Society:

- List 1A=Plants presumed extinct in California
- List 1B=Plants rare, Threatened, or Endangered in California and elsewhere
- List 2= Plants rare, Threatened, or Endangered in California but more common elsewhere
- List 3= Plants about which more information is needed
- List 4= Plants of limited distribution

CDFW (California Department of Fish and Wildlife)

- SE = State Listed as Endangered in California
- ST = State Listed as Threatened in California
- SCE = State Candidate Endangered in California
- CFP = California Fully Protected species
- SSC = Species of Special Concern
- WBWG = Western Bat Working Group High/Medium Priority Species

An extension reflecting the level of threat to each species is appended to each rarity category as follows:

- .1 – Seriously endangered in California
- .2 – Fairly endangered in California
- .3 – Not very endangered in California

Potential to Occur Categories:

- Absent = The Project and/or immediate vicinity does not support suitable habitat for a particular species. Project site may be outside of the species' known range.
- Low Potential = The Project and/or immediate vicinity only provides limited habitat. In addition, the species' known range may be outside of the Project site.
- Moderate Potential = The Project and/or immediate vicinity provides suitable habitat.
- High Potential = The Project and/or immediate vicinity provides ideal habitat conditions or the species has been observed.
- Present = Species has been recorded within the Project Site or immediate vicinity.

SOURCES: California Department of Fish and Wildlife (CDFW), California Natural Diversity Data Base, 2023, San Rafael, Bolinas, San Geronimo and Novato USGS 7.5 minute quads. Available online at <http://dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>; California Native Plant Society, Inventory of Rare, Threatened and Endangered Plants of California, 2023. Available online at <http://www.rareplants.cnps.org/>; U.S. Fish and Wildlife Service (USFWS), iPac Information for Planning and Conservation. Online database powered by ECOS Environmental Conservation Online System, 2023. Available online at <https://ecos.fws.gov/ipac/>.

### **Impacts on Special-Status Plant Species**

Numerous special-status plant species have been documented within 3 miles of the study area (**Figure 3-1**). Eight special-status plant species described in **Table 3-1** have a moderate or higher potential to occur in the study area: Napa false indigo (*Amorpha californica* var. *napensis*), bent-flowered fiddleneck (*Amsinckia lunaris*), western leatherwood (*Dirca occidentalis*), congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), Tamalpais lessingia (*Lessingia micradenia* var. *micradenia*), North Coast semaphore grass (*Pleuropogon hooverianus*), Tamalpais oak (*Quercus parvula* var. *tamalpaisensis*) and two-fork clover (*Trifolium amoenum*). Of these, two-fork clover is listed as federally endangered, North Coast semaphore grass is listed as state threatened, and the remaining six plants are California Rare Plant Rank 1B species (rare, threatened, or endangered in California and elsewhere). These species occur within habitats including conifer or mixed evergreen forest, wet grassland, and disturbed road cuts, all of which are found along the proposed pipeline alignment, and all have nearby occurrences in the CNDDDB (CDFW, 2023a).

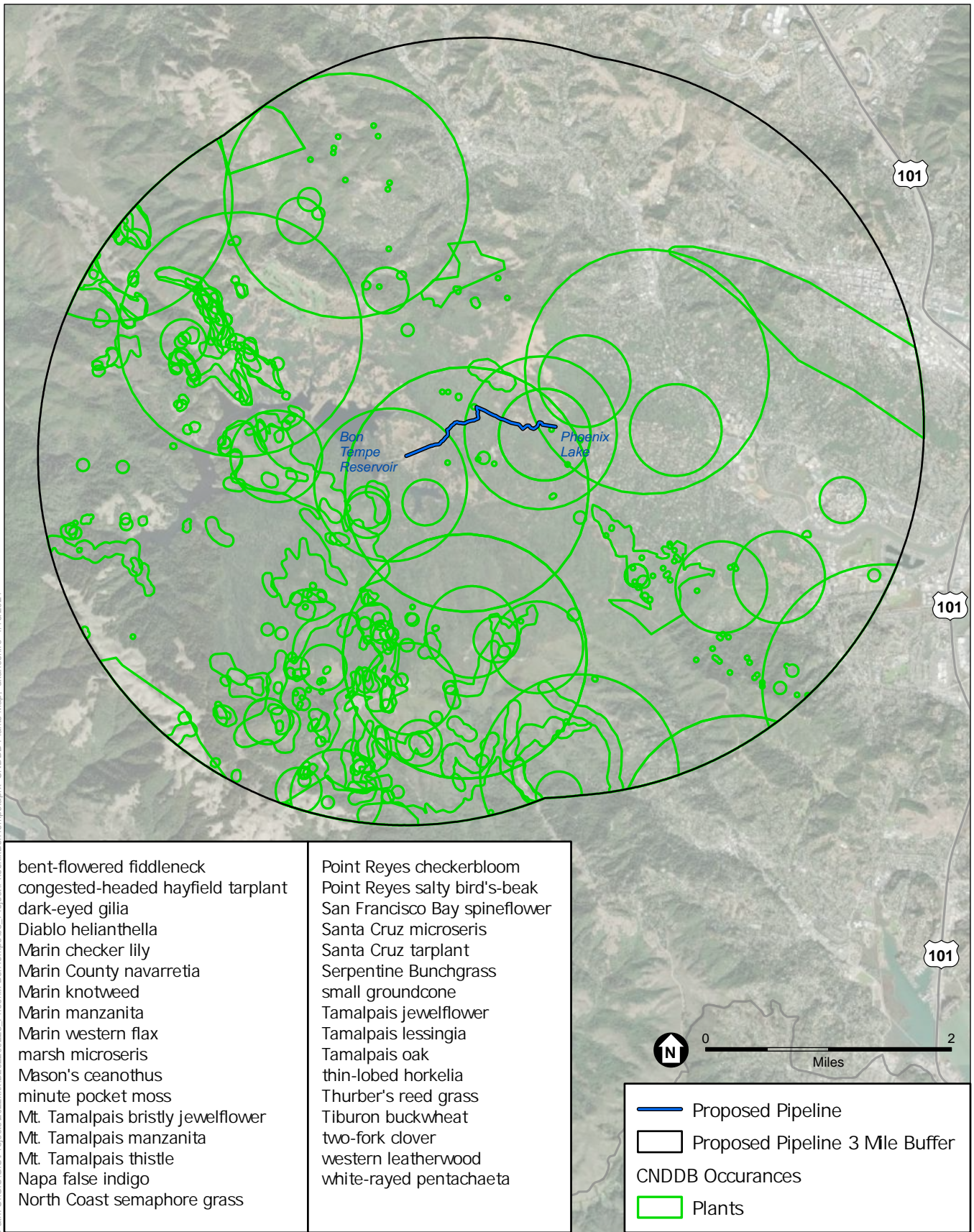
While there are no currently known or reported rare plant populations within the study area, ground disturbance during Project construction could result in the loss of, damage to, or removal of these special-status plants, if present. Due to high levels of existing use and disturbance, the staging areas do not have potential to host special-status plants.

Damage or removal of two-fork clover, Napa false indigo, or other special-status plants due to construction would represent a potentially significant impact. The implementation of **Mitigation Measure BIO-1, Protection of Rare Plants** would ensure that potential impacts on special-status plants would be reduced to a less-than-significant level.

#### **Mitigation Measure BIO-1: Protection of Rare Plants.**

Prior to ground disturbance, a qualified botanist shall conduct a focused survey where ground disturbance in suitable habitat for the rare plant species with potential to be present during their blooming period. The blooming period for rare plants with a moderate or higher potential to occur is as follows:

- Napa false indigo (*Amorpha californica* var. *napensis*): April – July
- Bent-flowered fiddleneck (*Amsinckia lunaris*): March – June
- western leatherwood (*Dirca occidentalis*): November – March
- congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*): April – November
- Tamalpais lessingia (*Lessingia micradenia* var. *micradenia*): July – October
- North Coast semaphore grass (*Pleuropogon hooverianus*): March – June
- Tamalpais oak (*Quercus parvula* var. *tamalpaisensis*): March – April
- two-fork clover (*Trifolium amoenum*): April – June



SOURCE: Maxar 2022, CDFW, 2023, ESA, 2022

MMWD Phoenix-Bon Tempe

**Figure 3-1**  
CNDDDB-Mapped Records of Special Status Plants

If no special-status plants are observed, no further action shall be required. If any special-status plant species, including two-fork clover, Napa false indigo or North Coast semaphore grass, are observed, the plants will be avoided with a non-disturbance buffer of 25 feet or other suitable buffer distance determined in coordination with the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service as appropriate by species. The buffer zone shall be clearly demarcated onsite using exclusion fencing. If establishing an avoidance buffer is not feasible, individual plants shall be transplanted to an area with suitable physical and biological conditions outside of the work area, according to a Rare Plant Relocation Plan to be prepared by Marin Water or its contractor and reviewed and approved by the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service, as applicable. The relocation plan shall include regular monitoring for a period of 5 years, as well as adaptive management actions, such as additional monitoring, weed control, irrigation, or replanting, if success criteria of 75 percent survival are not met after the 5-year monitoring period.

### ***Special-Status Wildlife Species***

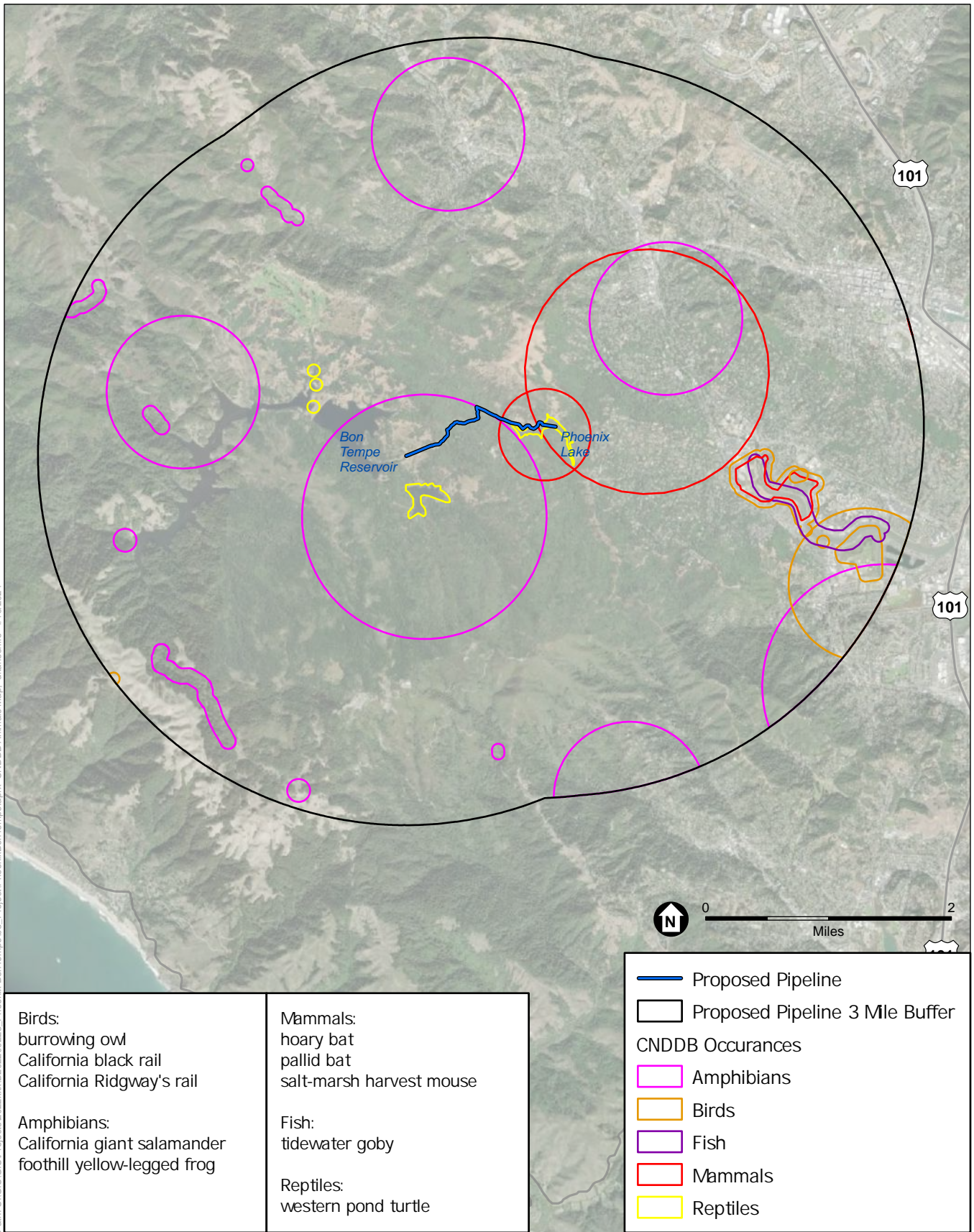
Special-status wildlife species recorded within 3 miles of the study area are shown in **Figure 3-2**.

### **Impacts on Fish**

There are no special-status fish species in Phoenix Lake or Bon Tempe Reservoirs, due to the presence of the dams. The Project's changes to the frequency, duration, or magnitude of water overflow from Phoenix Lake into Ross Creek could have a significant impact on fish, including the federally threatened central California coast (CCC) steelhead (*Onchorhynchus mykiss irideus*). Depending on the season, impacts to steelhead could include impairments to late-fall and winter upstream passage conditions for adults, reductions in the quality and availability of winter spawning habitat, impairments to winter and spring juvenile rearing and outmigration conditions, and reductions in the quality and availability of summer rearing habitat. These impacts could extend downstream to Corte Madera Creek if reductions in overflow were of substantial volume.

At present, Ross Creek supports a small steelhead run in years where sufficient precipitation can maintain a wetted channel during the winter and spring (Rich, 2000; Leidy et al., 2005). As is the case with many tributaries to San Francisco Bay, Ross Creek becomes intermittent in late spring or early summer, drying into small, disconnected pools. The Project's alterations in the overflow regime from Phoenix Lake could result in reductions in baseflow during the spring months, and lead to a more rapid increase in water temperatures as instream pools become disconnected.

However, as shown in **Appendix C (Figures 2-6 and 3)**, Project implementation is not expected to result in substantial changes in overflow from Phoenix Lake into Ross Creek. Since Phoenix Lake is a small reservoir, minor amounts of precipitation can cause the reservoir to fill and spill into Ross Creek (see **Appendix C**). Modeled overflow under existing and future with-Project conditions indicates that there would continue to be a similar pattern in timing, duration, and magnitude of events. Thus, impacts to steelhead within Ross Creek from any changes in overflow from Phoenix Lake would be less than significant, with no mitigation required.



SOURCE: Maxar 2022, CDFW, 2023, ESA, 2022

MMWD Phoenix-Bon Tempe

**Figure 3-2**  
 CNDDB-Mapped Special Status Wildlife

### Impacts on Reptiles and Amphibians

The pipeline alignment crosses two intermittent streams, Fish Creek and Phoenix Creek, and as many as ten ephemeral streams. The perennial streams have moderate potential to host special-status amphibians or reptiles, including foothill yellow-legged frog (*Rana boylei*), California giant salamander (*Dicamptodon ensatus*), and western pond turtle (*Emys marmorata*). The turtle is a federal candidate species and has been recorded in both reservoirs. The Project would replace pipe within Phoenix Lake, pump water and deliver it to Bon Tempe Reservoir. The pipe replacement would be in the same location as the current pipe, and would not affect turtle habitat along the banks.

Phoenix Creek is presently culverted beneath Shaver Grade, where the alignment would pass. If the pipeline can be placed without disturbing the culvert, impacts would also be avoided at this location. However, if Project construction disturbs forest or riparian habitat in wetted areas near the ephemeral channels or along Phoenix Lake (where western pond turtle is known to occur), these reptile and amphibian species could be harmed, which would be a potentially significant impact. The implementation of **Mitigation Measure BIO-2, Protection of Reptiles and Amphibians** would ensure that potential impacts on special-status reptiles and amphibians would be reduced to a less-than-significant level.

#### **Mitigation Measure BIO-2: Protection of Reptiles and Amphibians.**

Marin Water and/or its construction contractor shall install temporary exclusion fencing around work areas within 200 feet of suitable aquatic habitat for western pond turtle or amphibian species. The fence shall be to a minimum aboveground height of 30 inches, and the bottom shall be buried to a depth of at least 6 inches. The fence shall be installed prior to ground disturbing activities and monitored by a qualified biologist, who will check the fence alignment before vegetation clearing and fence installation to ensure no special-status species are present.

Where riparian habitat cannot be avoided and Marin Water proposes vegetation removal, the construction contractor shall use hand tools or another method approved by the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to remove vegetation from the ground disturbance work area plus a 10-foot buffer around the riparian area. No vegetation in this area shall be removed using heavy equipment, such as an excavator. Vegetation height within the buffer zone shall be maintained at or below 5 inches above ground. Vegetation removal in riparian habitat shall be conducted under the supervision of a qualified biologist(s).

### Impacts on Northern Spotted Owl and Other Migratory Birds

Federally threatened Northern spotted owl (*Strix occidentalis caurina*) is present throughout the watershed surrounding the Project alignment. One active pair of spotted owls is nesting near Concrete Pipe Road near the Project alignment, and another pair is nesting south of the alignment near Eldridge Grade Road. Spotted owls will nest in different trees from year to year within their territories, known as activity centers. Construction activities performed during nesting season (February 1 to July 31), especially those that involve the use of mechanized equipment (e.g., grading and excavation), could disturb spotted owl nesting within 0.25-mile (1,320 feet). The loss or

failure of any active nest by direct actions (e.g., removing vegetation containing a nest) or indirect actions (e.g., nest abandonment caused by construction disturbance) would be a significant impact. As stated in Section 2.5.1, *Construction Schedule, Hours, and Work Force*, construction season would occur from August through January to avoid Northern spotted owl nesting season. Thus, impacts to this species would be less than significant.

Numerous other migratory birds also have potential to nest on or near the Project alignment in trees, shrubs, and grassland. The federal Migratory Bird Treaty Act protects nesting birds from direct take, and California Fish and Game Code Sections 3503 and 3503.5 protect migratory birds and their eggs and nests from both direct and incidental take. These protections apply to special-status birds identified in **Table 3-1**, as well as other birds that may occur at the Project site.

Migratory birds are likely to nest in trees, shrubs, or tall grasses along the Project alignment. Because construction would occur outside of the nesting bird season, impacts would be less than significant.

### Impacts on Bat Species

Three special-status bat species have moderate potential to occur on or near the Project site (**Table 3-1**): pallid bat (*Antrozous pallidus*), hoary bat (*Lasiurus cinereus*), and Townsend's big-eared bat (*Corynorhinus townsendii*). Pallid bat and hoary bat have been recorded within 2 miles of the alignment. These bats inhabit woodlands and forests and may roost in nearby buildings, mines, caves, crevices, tunnels, or beneath tree bark. Townsend's big-eared bats are known in Marin County and may forage along the Project alignment; however, cave-like roosting habitat is not present.

Bats are nocturnal feeders on insects in flight, generally in the vicinity of water. Large oak trees or redwood trees near the Project site may provide roosting habitat for these special-status and other, more common bat species. Tree-roosting bat species may be present in tree foliage, under exfoliating bark, or in tree cavities. The Project alignment is unlikely to host hibernation or maternity roosting sites but may contain night roosts for special-status bats and other bat species.

Removal of large trees needed to complete the Project could result in injury or disturbance to protected roosting bats, or destroy occupied roosting habitat, which would be a significant impact. Implementation of **Mitigation Measure BIO-3, Bat-Safe Tree Removal** would reduce these impacts to a less-than-significant level.

#### Mitigation Measure BIO-3: Bat-Safe Tree Removal.

A qualified biologist shall conduct a pre-construction survey for special-status bats in advance of tree trimming or removal to characterize potential bat habitat and identify active roost sites. Should potential roosting habitat or active bat roosts be found in trees to be disturbed, the following measures shall be implemented:

- Trimming or removal of trees with potential to house maternity or winter roosting colonies shall occur outside of the bat maternity roosting season

(approximately April 15 to August 15) and outside of months of winter torpor (approximately October 15 to February 28).

- Trimming or removal of trees containing night roost sites or potential bat roosting habitat shall be removed using the following two-day phased removal method under supervision of a qualified biologist. Branches and limbs not containing cavities or fissures in which bats could roost shall be cut on the first day, only using chainsaws. Branches or limbs containing roost sites shall be trimmed on the following day, under the supervision of the qualified biologist, also using chainsaws.

- b) **Less-than-Significant Impact with Mitigation.** Vegetation communities and habitat types in the Project site are discussed below. Of these, the coastal redwood forest and riparian woodland are the only California Department of Fish and Wildlife–regulated sensitive natural communities.

Annual grassland is located on the hill that the alignment crosses between Phoenix Lake Road and Shaver Grade and on the bank of Phoenix Lake where the pipeline would be laid. The annual grasslands are dominated by non-native grasses and forbs. Common grass species in this community may include soft chess brome (*Bromus hordeaceus*), and rigput brome (*Bromus diandrus*). Common non-native forbs may include summer mustard (*Hirschfeldia incana*) and Italian thistle (*Carduus pycnocephalus*). A small group of coast live oak trees (*Quercus agrifolia*) is present in the grassland off Phoenix Lake Road but would be avoided by the pipeline trench. Annual grassland is not considered a sensitive community.

Douglas-fir forest mixed with coast redwood forest occurs on the hillside along Fish Grade Road. This community is dominated by Douglas-fir (*Pseudotsuga menziesii*). Other species in the canopy include oaks (*Quercus* spp.), California bay laurel (*Umbellularia californica*), and madrone (*Arbutus menziesii*). The understory of the Douglas-fir forest includes species such as California blackberry (*Rubus ursinus*), sword fern (*Polystichum munitum*), and wood fern (*Dryopteris arguta*). Douglas-fir forest is not considered a sensitive community.

Coast redwood forest occurs along Fish Grade Road and in the canyon surrounding Fish Creek. This community is dominated by coast redwood (*Sequoia sempervirens*). Associated tree species include California bay laurel and Douglas-fir. The understory is sparse but includes native shrubs and forbs such as toyon (*Heteromeles arbutifolia*), redwood sorrel (*Oxalis oregana*), sword fern, and Pacific starflower (*Lysimachia latifolia*). The redwood forest and woodland community is considered a sensitive natural community by the California Department of Fish and Wildlife (2023b).

Developed/disturbed areas include roads, paths, and previously disturbed areas used for pump stations and staging areas. These areas generally lack vegetation, but may have some ruderal roadside weeds, or landscape shrubs and trees. The developed/disturbed areas provide very little habitat for wildlife, but wildlife from surrounding natural communities may pass through such areas.



**Riparian Habitat.** Riparian woodland, a sensitive community located along the alignment is limited to the area surrounding Phoenix Creek, which is densely vegetated with ferns, bigleaf maples (*Acer macrophyllum*), and other vegetation. Coast redwood and Douglas-fir communities may also be classified as riparian by the California Department of Fish and Wildlife if they shade ephemeral creek channels. Temporary or permanent removal of riparian trees or other sensitive woodland habitat would be a significant impact. Potential impacts to sensitive woodland habitats would be mitigated by implementation of **Mitigation Measure BIO-4, Habitat Restoration and Monitoring.**

**Mitigation Measure BIO-4: Habitat Restoration and Monitoring.**

Marin Water or its contractor shall avoid or minimize impacts on sensitive natural communities and potentially jurisdictional aquatic habitat; Project design shall minimize the extent of temporary and permanent loss of such areas. Prior to construction, Marin Water or its contractor shall prepare a Habitat Restoration and Monitoring Plan to restore temporary or mitigate for permanent impacts to sensitive habitats or aquatic resources within the Project site. The plan shall describe how impacts on riparian or other sensitive natural communities, and of jurisdictional waters, would be offset through the replacement, restoration or enhancement of a comparable amount of stream habitat area (i.e., a minimum 1:1 ratio based) at an inter-agency-approved location. Ephemeral channels or sensitive habitats temporarily impacted by construction-related activity shall be restored, under guidance from a qualified biologist.

The Habitat Restoration and Monitoring Plan shall include protocols for replanting or re-seeding of native vegetation removed prior to or during construction, and management and monitoring of the plants for a 5-year period to ensure replanting success. The plan shall specify monitoring and performance criteria for the species planted, monitoring frequency, reporting requirements, as well as the best time of year for seeding or planting to occur, pursuant to requirements of permits granted for the Project. Appropriate performance standards may include but are not limited to: a 75 percent survival rate of restoration plantings after five years; and a viable, self-sustaining creek or wetland system at the end of the 5-year monitoring period. The plan shall include adaptive management strategies if success criteria are not being met. The Habitat Restoration and Monitoring Plan would include interim thresholds for replanting success and alternative management approaches, and may include weed control, supplementary watering, or additional replanting to undertake if performance thresholds are not met.

- d) **Less-than-Significant Impact with Mitigation.** Two reservoirs, Phoenix and Bon Tempe hold water year-round from Phoenix and Lagunitas Creeks, respectively. Project construction would involve placing new pipe in Phoenix Lake but would largely avoid impacts to the water. Project operation would involve transferring water from Phoenix Lake to Bon Tempe Reservoir, as shown in **Figure 2** in **Appendix C**, but is not expected to result in substantial changes in overflow from Phoenix Lake into Ross Creek.

Phoenix Creek is an intermittent stream that flows northwest along Shaver Grade fire road and is presently culverted under Shaver Grade. Fish Creek is also an intermittent stream running in the ravine off Fish Grade Road. The Project plans to avoid impacts to

waters by trenching beneath Fish Grade Road, and by placing the pipeline over an existing culvert through which Phoenix Creek passes under Shaver Grade.

Additional intermittent and ephemeral streams are present along the Project alignment. Numerous small ephemeral streams, which only carry water during and after rainstorms but which do not have a regular flow of water, flow down the hillside beneath Fish Grade Road and are often culverted beneath the road.

Although these ephemeral channels would not be considered waters of the United States, they may be considered jurisdictional by the state and, as such, would be subject to permitting from the Regional Water Quality Control Board, and by the California Department of Fish and Wildlife as a streambed. For any of these channels which would be temporarily or permanently impacted by installation of the pipeline, all required permits would be obtained by Marin Water. This impact to potential waters of the state would be significant. The implementation of **Mitigation Measure BIO-4, Habitat Restoration and Monitoring**, would ensure that potential impacts on jurisdictional waters would be reduced to a less-than-significant level.

- d) **Less-than-Significant Level.** The Project alignment crosses natural areas between Phoenix Lake and Bon Tempe Reservoir across a mostly undeveloped landscape. When the Project is complete, the pipeline would be buried; however, during construction, active work areas would be temporarily unavailable to wildlife during the daytime due to the presence of heavy equipment, noise, and human disturbance. There would be no barriers to movement of terrestrial wildlife such as black-tailed deer (*Odocoileus hemionus columbianus*), bobcat (*Lynx rufus*), mountain lion (*Puma concolor*), and other species, which would continue to cross the Project area during construction. This impact would be less-than-significant because it is transitory; following construction, the Project would not affect the movement of these and other wildlife overland. The Project may cross ephemeral streams and an intermittent stream (Phoenix Creek); however, no terrestrial or aquatic wildlife nursery sites are present along the alignment. Impacts to wildlife corridors and wildlife nursery sites would be less than significant.
- e) **Less-than-Significant Impact with Mitigation.** Marin County Code (Section 22.62.040, the Native Tree Protection and Preservation ordinance) defines protected trees as native trees larger than 6- or 10-inches in diameter at breast height (dbh) depending on the species, and heritage trees as trees greater than 18- or 30-inches dbh, also depending on the species. Species covered by the Native Tree Protection and Preservation ordinance include black oak (*Quercus kelloggii*), coast live oak (*Quercus agrifolia*), madrone, coast redwood, California bay laurel, and other native species (Marin County, undated).

The Project site contains mature black oak, coast live oak, redwood, and bay trees. If any mature trees that meet Marin County's definition of protected trees need to be removed, this would be a significant impact.

Although the Project is exempt from the Native Tree Protection and Preservation ordinance pursuant to California Water Code Section 53091, Marin Water strives to be consistent with the performance standards embodied in the ordinance wherever feasible.

Pursuant to Marin Water's Standard Environmental Protection Measures (see **Appendix A**), contractors would be prohibited from harming trees outside the work area limits and would be required to protect trees that area near the limits of the construction work area (e.g., no ropes, cables or guys can be attached to any protected trees).

In addition, the Marin Countywide Plan includes protections for native habitats and biodiversity, including protection of wetlands and riparian zones, sensitive natural communities, wildlife corridors and nursery areas, woodlands and forests. It also promotes control of invasive exotic plants, protection of ecotones (natural transitions between habitat types), stream channels, bird nesting habitat, and coordination with federal and state agencies. Policy 3.1 Protects wetland areas and establishes Wetland Conservation Area setbacks; the Project would not impact any identified wetland area. Countywide Plan Policy 4.1 requires a development setback on each side of the top of each streambank in Stream Conservation Areas, which cover land within 100 feet of streams (Marin County 2007). The Project would not place development near a protected stream; thus, there would be no impact to Stream Conservation Areas.

Under the Project design one tree is proposed for removal. If any trees proposed for removal qualify as protected or heritage trees pursuant to the County tree ordinance, Marin Water would make a good-faith effort to meet County standards, including tree replacement, sheltering existing trees within the watershed to meet the tree protection guidance, payment of an in-lieu fee to the County, or a combination of these strategies, according to **Mitigation Measure BIO-5, Minimize Impacts on Protected Trees** below.

In addition, tree trimming may be required and numerous tree roots may be exposed during trenching operations for the Project. Trimming of branches or roots may weaken trees and make them more prone to death from toppling or disease, particularly if more than 30 percent of roots are impacted. Project best management practices (BMPs) (see **Appendix A**) require limiting root cutting during excavation and trenching, wrapping the roots in burlap for protection when exposed, and using tree seal to limit harm to the roots. With implementation of these measures, impacts to retained trees would be less than significant.

Adherence to County code tree removal/replacement performance standards wherever feasible as provided in **Mitigation Measure BIO-5** would reduce the impact of tree removal to a less-than-significant level.

#### **Mitigation Measure BIO-5: Minimize Impacts on Protected Trees.**

Prior to construction, Marin Water shall determine whether any heritage or protected trees are to be removed and will minimize impacts on retained heritage or protected trees. For removed heritage or protected trees within the Project area, tree

replacement shall be provided through one or more of the following options, consistent with the Marin County Native Tree Protection and Preservation ordinance:

- Heritage trees shall be replaced at an alternative site within the watershed on a 3:1 basis using 15-gallon trees (i.e., three 15-gallon trees will be planted for every tree removed). Heritage trees shall be replaced with a tree of the same species wherever possible. Alternative species to the tree removed may be planted if more appropriate to the environmental conditions at the identified mitigation site.
- Plantings shall receive forage protection using a rigid tree tube, receive regular (i.e., bi-annual) weeding, be given a weed mat/and or appropriate mulching, and may be subject to supplemental watering during an initial 2-year establishment period. Regular (e.g., biannual) monitoring shall be performed to review the vigor of plantings and provide maintenance as needed.
- As an alternative to planting trees, Marin Water may “shelter” native volunteer tree seedlings within the watershed on a 3:1 basis, with preference given to species and areas where the recruitment of young trees is problematic (e.g., some oak species) due to grazing or other factors. Plantings shall receive protection, maintenance, and watering as described above for heritage tree replacement plantings.
- Alternatively, to compensate for some or all removed heritage or protected trees, Marin Water may contribute to an in-lieu payment program in the amount of \$500.00 per replacement tree to the Tree Preservation Fund managed by the Marin County Parks and Open Space Department for planting, maintenance, and management of trees and other vegetation.
- If replacement trees do not thrive 5 years following planting or sheltering, Marin Water may either replace unsuccessful trees using the methods described above, or contribute funds to the Tree Preservation Fund to meet the initial tree protection standard (i.e., 3:1).

Retained heritage or protected trees on the Project site shall be identified as preserved on site plans and shall be clearly delineated by construction netting, which will remain in place for the duration of all work. To the extent possible, if site work must encroach upon the dripline of a preserved tree, excavation will be performed in a manner that causes only minimal root damage. The following will not occur within the dripline of any protected retained tree: parking; storage of vehicles, equipment, machinery, stockpiles of excavated soils, or construction materials; or dumping of oils or chemicals.

- f) **No Impact.** There are no adopted Habitat Conservation Plans, Natural Conservation Community Plans, or other approved local, regional, or state habitat conservation plans that apply to the Project site. Therefore, no impact would occur.

### 3.4.1.1 References

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Marin County, undated. Tree Removal Permit Fact Sheet. Available at: [https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/factsheets/treeremoval\\_facts.pdf](https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/factsheets/treeremoval_facts.pdf). Accessed on November 1, 2023.

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## 3.5 Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 3.5.1 Discussion

To determine the cultural resources sensitivity of the proposed Project site, ESA cultural resources staff conducted a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) on August 31, 2023 (File No. 23-0287). The records search included a review of previously recorded cultural resources in the Project site and within a 0.5-mile radius, as well as a review of architectural resources within and immediately adjacent to the Project site.

The results of the background research indicate that no archaeological resources or historic-age architectural resources have been previously recorded in the Project site.

The Project site and general vicinity has been subject to several previous cultural resource studies. These studies did not identify any archaeological resources in the Project site or immediate vicinity. The nearest known Native American cultural resource is over 2 miles to the south of the Project site. The geology and environment indicate that archaeological sites in this area would be identifiable on the surface and would not be buried by natural alluvial processes.

The nearest known historic-age cultural resource to the Project site is the log cabin for the Hippolyte Ranch Complex, next to Pump 2 (Marin Water, 2020). This resource consists of a group of buildings and structures including a two-story log building constructed in the early 1890s that is considered the only remaining log structure of its type in Marin County. The log building would not be directly affected by the Project. Vibratory impacts are also not anticipated (see Section 3.13, *Noise and Vibration*).

#### **Archaeological Resources**

An ESA archaeologist completed surface surveys of the Project site on October 25 and December 4, 2023. All areas of proposed ground disturbance (including access and staging areas) were either walked in narrow (less than 10 meter) transects to provide an overall assessment of existing conditions and/or viewed from accessible nearby vantage points if the area was steep or otherwise difficult to access. Ground visibility was generally good along the entire alignment. The surface

was examined for cultural materials such as obsidian or chert flakes, midden soil, or other indications of pre-contact use or occupation. The surface was also examined for any historic-era artifact concentrations or features such as foundations or footings. No cultural materials or features were identified during the survey effort.

### **Architectural Resources**

An ESA architectural historian completed a pedestrian survey of the Project site on December 4, 2023. The purpose of this survey was to document all accessible historic-age (pre-1978) built resources within the Project site. Three resources—including Phoenix Lake, Bon Tempe Reservoir, and the pipeline and ancillary infrastructure connecting the two—were surveyed and documented as part of the evaluation.

#### **Phoenix Lake**

Phoenix Lake and Dam were built by Marin Water & Power Company in 1905. Phoenix Lake is a 25-acre reservoir located on Ross Creek on the west side of the Town of Ross in southern Marin County. Per California Department of Dam Safety records, Phoenix Lake Dam is an earth-fill dam constructed in 1907 (other records indicate 1905), measuring approximately 90 feet high and 320 feet long (DSOD, 2023). The crest width measures approximately 22 feet wide, with 1.5:1 to 3:1 slopes. The dam was modified in the late 1960s to improve seismic safety, and the spillway was retrofitted in 1985 (Daily Independent Journal, 4/27/1964; Miller Pacific Engineering Group, 2010). Marin Water has both widened the spillway by 5 to 6 feet and has lowered the spillway by 6 feet (Town of San Anselmo, 2015).

Archival review does not indicate that there are any significant associations between Phoenix Lake and important events or patterns in history (Criterion 1/A). While Phoenix Lake is associated with Marin Water's history of water storage infrastructure, it functions as a backup water supply for the region, and it does not appear to rise above typical associations with this organization or associated events. Phoenix Lake was one of multiple reservoirs constructed by water companies in the region in the early twentieth century in response to the region's growing water needs. The earliest regional reservoir was Lagunitas Reservoir, which was constructed in 1872, and the region has a long history of the development of water infrastructure. Phoenix Lake does not appear to reflect significant associations with twentieth century regional water infrastructure. For these reasons, Phoenix Lake does not appear eligible for either the California Register of Historical Resources or the National Register of Historic Places under Criterion 1/A.

Archival review also does not indicate that there are any significant associations between Phoenix Lake and significant persons (Criterion 2/B). Research does not indicate that Phoenix Lake is significantly associated with the productive life of any significant person, and it therefore does not appear to meet Criterion 2/B for the California or National registers.

Phoenix Lake is not significant for its design or engineering (Criterion 3). The reservoir and associated structures were designed by Marin Water & Power Company in 1905. Its dam is a utilitarian earthen structure without architectural or engineering distinction. Archival research did not reveal any information about a specific engineer or architect associated with Phoenix Lake. Additionally, as noted above, it is one of many typical earthen water storage structures that were

built at the time. Therefore, it does not appear to meet Criterion 3/C for the California or National registers.

Lastly, Phoenix Lake does not appear to have the potential to yield more information and therefore does not appear eligible for the California or National registers under Criterion 4/D.

As Phoenix Lake does not meet any of the National Register or California Register criteria and it is ineligible for listing under national or state criteria, Phoenix Lake is not considered a historical resource for the purposes of CEQA.

### **Bon Tempe Reservoir**

Bon Tempe Reservoir was built by Marin Water in 1948. The name is an Americanization of the family name Bautunpi. Three Bautunpi brothers ran a ranch and dairy that was removed to make way for Bon Tempe and Alpine reservoirs (Marin Independent Journal, 04/24/2012). Per California Department of Dam Safety records, Bon Tempe Reservoir is a 140-acre reservoir on Lagunitas Creek located 3 miles west of Fairfax in southern Marin County. Bon Tempe Dam is an earth-fill dam constructed in 1949 (other records indicate 1948), measuring approximately 96 feet high and 1,150 feet long with a crest width approximately 23 feet wide (DSOD, 2023).

Archival review does not indicate that there are any significant associations between the Bon Tempe Reservoir and important events or patterns in history (Criterion 1/A). While Bon Tempe Reservoir is associated with Marin Water's water infrastructure, and it functions as a primary water supply for the region, it does not appear to rise above typical associations with this organization or associated events. Bon Tempe was one of multiple reservoirs constructed by Marin Water in the mid-twentieth century in response to the region's growing water needs. The earliest regional reservoir was Lagunitas Reservoir in 1872, and Marin Water and the region have a long history of the development of water infrastructure. The Bon Tempe Reservoir does not appear to reflect significant associations with twentieth century regional water infrastructure. For these reasons, the Bon Tempe Reservoir does not appear eligible for listing under the California or National registers under Criterion 1/A.

Archival review also does not indicate that there are any significant associations between the Bon Tempe Reservoir and significant persons (Criterion 2/B). Research does not indicate that the Bon Tempe Reservoir is significantly associated with the productive life of any significant person, and it therefore does not appear to meet Criterion 2/B for the California or National registers.

The Bon Tempe Reservoir is not significant for its design or engineering (Criterion 3). The reservoir and associated structures were designed by Marin Water in 1948. The dam is a utilitarian structure without architectural or engineering distinction. Archival research did not reveal any information about a specific engineer or architect associated with Bon Tempe Reservoir and Marin Water. Additionally, as noted above it is one of many typical earthen water storage structures that was built by Marin Water at the time. Therefore, it does not appear to meet Criterion 3/C for the California or National registers.

Lastly, the Bon Tempe Reservoir does not appear to have the potential to yield more information and therefore does not appear eligible for the California or National registers under Criterion 4/D.



As the Bon Tempe Reservoir does not meet any of the National Register or California Register criteria and it is ineligible for listing under national or state criteria. Bon Tempe Reservoir is not considered a historical resource for the purposes of CEQA.

### **Pipeline and Ancillary Infrastructure**

Subsurface and surficial welded steel pipelines are located throughout the Project area; these connect various sources of water (both treated and raw), through a collection of pump houses and existing potable water infrastructure. The 1,200-foot Bon Tempe Headworks tunnel also serves as a portion of the alignment near Bon Tempe Reservoir. Historic Marin Water design drawings show area pipelines in plans dating as early as 1928 through 1976. The pipes near the Bon Tempe Headworks tunnel are imprinted with a stamp dating to 1957. The current alignment was established with the construction of Bon Tempe Reservoir in 1948. Pipe sizes vary on historic drawings between 12-24 inches in diameter.

Archival review does not indicate that there are any significant associations between the pipelines and ancillary infrastructure connecting Bon Tempe Reservoir and Phoenix Lake, and important events or patterns in history (Criterion 1/A). While the pipelines and tunnel are associated with Marin Water's history of water storage infrastructure, they do not appear to rise above typical associations with this organization or associated events. Marin Water and its predecessors constructed numerous miles of pipeline infrastructure connecting reservoirs to each other and to the surrounding communities. This construction throughout the twentieth century was in response to the region's growing water needs. The pipelines and tunnel do not appear to reflect significant associations with twentieth century regional water infrastructure. For these reasons, the pipelines and tunnel connecting Bon Tempe Reservoir and Phoenix Lake do not appear eligible for the California or National registers under Criterion 1/A.

Archival review also does not indicate that there are any significant associations between the pipelines and tunnel and significant persons (Criterion 2/B). Research does not indicate that pipelines and tunnel are significantly associated with the productive life of any significant person, and therefore do not appear to meet Criterion 2/B for the California or National registers.

The pipelines and tunnel are not significant for their design or engineering (Criterion 3). The pipeline and tunnel appear on design drawings by Marin Water in 1949, and visible date stamps on the surficial pipes by the Bon Tempe Headworks tunnel say 1957. Both the pipelines and tunnel are utilitarian infrastructure without architectural or engineering distinction. Archival research did not reveal any information about a specific engineer or architect associated with their construction. Therefore, they do not appear to meet Criterion 3/C for the California or National registers.

Lastly, the pipelines and tunnel do not appear to have the potential to yield more information and therefore do not appear eligible for the California or National registers under Criterion 4/D.

As the pipelines and tunnel do not meet any of the National Register or California Register criteria and are ineligible for listing under national or state criteria, the pipelines and tunnel are not considered historical resources for the purposes of CEQA.

- a) **No Impact.** CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. A historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register, or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California. Archaeological resources, including those that are potentially historical resources according to CEQA Guidelines Section 15064.5, are addressed below under issue b).

As a result of the records search, background research, survey effort, and evaluations, it was determined that no historical resources are present within the Project site. As such, there are no architectural or structural resources on the Project site that qualify as historical resources, as defined in CEQA Guidelines Section 15064.5, and there would be no impact on historical resources.

- b) **Less-than-Significant Impact with Mitigation.** CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on archaeological resources. A significant impact would occur if a project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

As a result of the records search, background research, and survey effort, it was determined that no known archaeological resources are present within the Project site. Based on the survey results and environmental context, there is a low potential that unknown archaeological resources could be discovered during Project implementation.

In the unlikely event that a previously unrecorded archaeological resource is identified during Project ground-disturbing activities and found to qualify as a historical resource or a unique archaeological resource, any impacts on the resource resulting from the Project could be potentially significant.

Implementation of **Mitigation Measure CUL-1: Cultural Resources Awareness Training and Inadvertent Discovery of Archaeological Resources or Tribal Cultural Resources** would reduce potentially significant impacts to less than significant. In the event of an inadvertent discovery of an archaeological or tribal cultural resource, this mitigation would ensure that work is halted in the vicinity until a qualified archaeologist can make an assessment and provide additional recommendations if necessary, including contacting Native American Tribes.

**Mitigation Measure CUL-1: Cultural Resources Awareness Training and Inadvertent Discovery of Archaeological Resources or Tribal Cultural Resources.**

Prior to authorization to proceed, a qualified archaeologist, defined as an archaeologist meeting the U.S. Secretary of the Interior's Professional Qualification Standards for Archeology, will conduct a training program for all construction and field workers involved in site disturbance. On-site personnel shall attend a

mandatory pre-Project training that will outline the general archaeological sensitivity of the area and the procedures to follow in the event an archaeological resource and/or human remains are inadvertently discovered.

If pre-contact or historic-era archaeological resources are encountered during Project implementation, all construction activities within 100 feet shall halt, and a qualified archaeologist shall inspect the find within 24 hours of discovery and notify Marin Water of the initial assessment. Pre-contact archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse.

If Marin Water determines, based on recommendations from a qualified archaeologist and a Native American representative (if the resource is pre-contact indigenous related), that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines Section 15064.5) or a tribal cultural resource (as defined in Public Resources Code [PRC] Section 21080.3), the resource shall be avoided if feasible. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource, or incorporating the resource within open space, capping and covering the resource.

If avoidance is not feasible, Marin Water shall consult with appropriate Native American Tribes (if the resource is pre-contact indigenous related), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4. This shall include documentation of the resource and may include data recovery (according to PRC Section 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC Section 21084.3).

- c) **Less-than-Significant Impact with Mitigation.** The records search and background research determined that no human remains are known to exist within the Project site. Therefore, the Project is not anticipated to impact human remains, including those interred outside of formal cemeteries.

While unlikely, if any previously unknown human remains were encountered during ground-disturbing activities, impacts on the human remains resulting from the Project could be potentially significant.

Implementation of **Mitigation Measure CUL-2: Inadvertent Discovery of Human Remains** would reduce potentially significant impacts to less than significant. This measure shall comply with applicable state laws, including Section 7050.5 of the Health and Safety Code. This would require work to halt in the vicinity of a find and the immediate notification of the County coroner. If the coroner determines that the human remains are Native American, they will notify the California Native American Heritage

Commission (NAHC), who shall appoint a Most Likely Descendant (PRC Section 5097.98).

### **Mitigation Measure CUL-2: Inadvertent Discovery of Human Remains.**

If potential human remains are encountered, all work will halt within 100 feet of the find and Marin Water will be contacted by on-site construction crews. Marin Water will contact the Marin County coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. As provided in PRC Section 5097.98, the Native American Heritage Commission will identify the person or persons believed to be the Most Likely Descendant. The Most Likely Descendant will make recommendations for the means of treating, with appropriate dignity, the human remains and any associated grave goods, as provided in PRC Section 5097.98.

### **3.5.1.1 References**

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### 3.6 Energy

<u>Issues (and Supporting Information Sources):</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.6.1 Discussion

- a) **Less-than-Significant Impact.** Project construction would involve both direct and indirect use of energy, primarily in the form of fossil fuels (diesel and gasoline) and electricity.

Diesel fuel would be used in the construction equipment and the heavy-duty trucks used to transport materials and equipment, while gasoline would primarily be used in the vehicles of construction workers travelling to and from the construction site. The use of electricity in construction equipment, if any, would be very minimal in comparison to the quantities of diesel and gasoline used.

The volume of diesel and gasoline fuels that would be consumed during construction was calculated based on the estimated carbon dioxide (CO<sub>2</sub>) emissions for Project construction and the gasoline and diesel CO<sub>2</sub> emission factors from The Climate Registry (TCR, 2023). Project construction is estimated to consume a total of approximately 1,120 gallons of gasoline and 136,502 gallons of diesel fuel over the construction period. Fuel use during construction would represent approximately 0.001 percent of gasoline and less than 3 percent of diesel sold in Marin County in 2022 (CEC, 2023a). Overall, the fuel use during construction would be minimal in comparison to the overall fuel use within Marin County.

Project construction would comply with state and local regulations such as 13 CCR Sections 2485 and 2449, which require equipment and commercial vehicle operators to limit idling to no more than 5 minutes; this would ensure that fuel energy consumed in the construction phase would not be wasted through unnecessary idling. In addition, all vehicles used during construction and operation would be required to comply with Corporate Average Fuel Economy (CAFE) standards. Therefore, energy use would not be wasteful, inefficient, or unnecessary during the construction or operation of the Project and the impact would be less than significant.

Project operation and maintenance would require the use of gasoline fuel for vehicle trips to conduct intermittent maintenance of the pumps. Vehicles used by operation and

maintenance workers would be required to comply with the CAFE standards, which would increase fuel consumption efficiency. In addition, energy in the form of electricity would be used to power pumps at the pump stations, which are anticipated to operate for two cycles of approximately 28 days a year (for a total of about 56 days). There would be no generators or permanent on-site lighting required as part of the Project. Electricity to the pump stations would be supplied by PG&E.

Electricity use associated with the extraction and conveyance efforts of the pumps (pump operations) was conservatively quantified using local water energy intensity factors and the maximum water capacity of Phoenix Lake. The water energy intensity factor in the San Francisco Bay hydrologic region is 233 kilowatt hours (kWh) per AF for extraction and conveyance (CAPCOA, 2021); this factor was used to quantify maximum annual energy consumption that would be required for Project operation. Phoenix Lake has a capacity of 411 AF of water, which would take a maximum of 95,763 kWh of electricity per year to pump to Bon Tempe Reservoir.<sup>1</sup> This would be approximately 0.01 percent of the total kWh of electricity consumed in Marin County in 2022 (CEC, 2023b). Local distribution of water improves energy efficiency as the water does not require conveyance and distribution over long distances of potentially steep and difficult topography (CAPCOA, 2021). Therefore, the Project would not result in inefficient consumption of energy and would have a less-than-significant impact.

- b) **Less-than-Significant Impact.** As discussed above, Project construction would require the use of off-road construction equipment and on-road trucks. Construction activities would comply with state and local requirements designed to minimize idling and associated emissions, which would also minimize the use of fuel. Specifically, pursuant to 13 CCR Sections 2485 and 2449, idling of commercial vehicles over 10,000 pounds and off-road equipment over 25 horsepower would be limited to a maximum of 5 minutes. Fuel use for Project construction would be consistent with typical construction and manufacturing practices as well as with energy standards such as the Energy Policy Acts of 1975 and 2005, which promote strategic planning and building standards that reduce consumption of fossil fuels, increase use of renewable resources, and enhance energy efficiency.

Once operational, the Project's primary energy use would be the operation of the pump station for two cycles of approximately 28 days a year (for a total of 56 days). Energy used for operational vehicle trips would be negligible. Electricity needs of the Project would be provided by PG&E, which would be subject to SB 100 and the California's Renewable Portfolio Standard Program. Signed into law by Governor Jerry Brown, SB 100 increased California's Renewable Portfolio Standard target to 60 percent of total electric retail sales by 2030 and requires 100 percent of electric retail sales to come from eligible renewable or carbon-free resources by 2045. PG&E, as the utility provider, is subject to these requirements. In addition, Marin Water participates in the Deep Green energy program to supply up to 100 percent of its electricity from clean, renewable

<sup>1</sup> This is a conservative estimate because the Project would never draw down the entire capacity of Phoenix Lake.

sources (MCE 2024). There are no aspects of the Project that would conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and the impact would be less than significant.

### 3.6.1.1 References

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## 3.7 Geology and Soils

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil <sup>2</sup> creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 3.7.1 Discussion

- a.i) **No Impact.** The state Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) prohibits the development of structures for human occupancy across active fault traces. Under this act, the California Geological Survey (CGS) has established “Zones of Required Investigation” on either side of an active fault that delimits areas susceptible to surface fault rupture. The zones are referred to as Earthquake Fault Zones (EFZs) and are shown on official maps published by the CGS (CGS 2022). Surface rupture occurs when the ground surface is broken due to a fault movement during an earthquake; typically, these types of hazards occur within 50 feet of an active fault.

<sup>2</sup> The CBC, based on the International Building Code and the now defunct Uniform Building Code, no longer includes a Table 18-1-B. Instead, Section 1803.5.3 of the CBC describes the criteria for analyzing expansive soils.



The Project site does not lie within any mapped EFZs according to the available data (CGS 2022). Although the area could be affected by earthquakes or seismic ground shaking, there is no current data available indicating the presence of active faults within the Project site. The nearest EFZ is the San Andreas fault zone, approximately 5.2 miles to the southwest of the Project site. The Project does not include any habitable structures and would not expose people or structures to potential substantial adverse effects associated with rupture of a known earthquake fault. There would be no impact related to fault rupture.

- a.ii) **Less-than-Significant Impact.** The Project site is in a historically seismically active region of California. The 2014 Working Group on California Earthquake Probabilities<sup>3</sup> (WGCEP) concluded that there is a 72 percent probability that a magnitude (MW) 6.7 earthquake or higher will strike the San Francisco Bay Area before the year 2045 (Field et al. 2015). As discussed above, there are no known faults that intersect the Project site (CGS 2022); however, there are three significant fault systems in the region: the San Andreas, Hayward, and Rogers Creek fault zones (CGS 2022). The closest of these fault systems is the San Andreas fault zone, approximately 5.2 miles southwest of the Project site. According to the WGCEP, there is a 7 percent probability that an earthquake of magnitude 6.7 or greater could occur over the next 30 years in the northern section of the San Andreas fault zone nearest the Project site; as modeled by the United States Geological Survey (USGS) ShakeMap (USGS 2016), during such an event violent to severe ground shaking would be expected at the Project site.

The Project site may be subject to potentially violent to severe seismic ground shaking due to the Project site's proximity to the San Andreas fault zone. Strong seismic ground shaking could result in potential damage to the proposed Project and potential adverse effects to the surrounding residences.

However, the Project would be subject to the seismic design criteria of the California Building Code (CBC), which requires that all buildings and structures be constructed to withstand anticipated ground shaking from regional fault sources. Implementing the regulatory requirements in the CBC and applicable local ordinances and ensuring that all buildings and structures are constructed in compliance with the law is the responsibility of the Project engineers and building officials. Marin Water would be required to retain a licensed geotechnical engineer to design the Project components to withstand probable seismically induced ground shaking. All construction on-site would adhere to the specifications and procedures contained in the final design-level geotechnical report, which is required to be fully compliant with the seismic recommendations of a California-registered, professional geotechnical engineer in accordance with the CBC. Adherence to the applicable CBC requirements would reduce potential impacts of the Project associated with directly or indirectly causing substantial adverse effects, including the

<sup>3</sup> Also referred to as WGCEP 2014, this is a working group comprised of seismologists from the U.S. Geological Survey (USGS), California Geological Survey (CGS), Southern California Earthquake Center (SCEC), and California Earthquake Authority (CEA).

risk of loss, injury, or death involving strong seismic ground shaking. Therefore, the impacts would be less than significant.

- a.iii) **Less-than-Significant Impact.** Liquefaction is a phenomenon in which unconsolidated, water-saturated sediments become unstable because of strong seismic shaking. During an earthquake, these sediments can behave like a liquid, potentially causing severe damage to overlying structures. Lateral spreading is a variety of minor landslide that occurs when unconsolidated liquefiable material breaks and spreads because of gravity, usually down gentle slopes. Liquefaction-induced lateral spreading is defined as the finite, lateral displacement of gently sloping ground because of pore-pressure buildup or liquefaction in a shallow underlying deposit during an earthquake. The occurrence of this phenomenon depends on many complex factors, including the intensity and duration of ground shaking, particle-size distribution, and density of the soil.

Geologic mapping by Blake Jr. et al. indicates that the deposits underlying the Project site are composed entirely of *mélange*<sup>4</sup> from the Franciscan Complex (Blake Jr. et al. 2000a). The *mélange* described by Blake Jr. et al. consists of a mixture of shale and sandstone containing inclusions of greenstone, chert, graywacke (a variety of sandstone), serpentinite, and other metamorphic rocks (Blake Jr. et al. 2000b). As liquefaction-prone soils are typically loose and sandy soils, the deposits underlying the Project site are not likely to be subject to earthquake-induced liquefaction. Additionally, the liquefaction susceptibility map compiled by Witter et al., although small in scale (showing less detail), indicates that the Project site is within an area of low liquefaction susceptibility (Witter et al. 2006).

As noted above, Marin Water is required to design the Project in accordance with applicable CBC seismic design standards as recommended by a California-registered professional geotechnical engineer in the site-specific geotechnical review. As part of the final design-level geotechnical report identified in Impact a.ii, consistent with CBC seismic design standards, the licensed geotechnical engineer would be required to consider potential liquefaction in the final design plans. While liquefaction hazards have not been mapped at the site, if identified by the geotechnical engineer, liquefaction hazards can generally be addressed through site preparation measures or foundation design measures, such as removal and replacement of liquefiable soils, densification of these soils, or specific foundation design recommendations. Implementation of these measures in accordance with CBC requirements can effectively reduce the hazard to minimize any potential for substantive damage.

Compliance with CBC requirements, including implementation of recommendations provided in the final design-level geotechnical report, and local agency enforcement would reduce or avoid impacts related to ground failure, including liquefaction. Project

<sup>4</sup> A *mélange* is a mappable body of rock characterized both by the lack of internal continuity of contacts or strata and by the inclusion of fragments and blocks of all sizes, both exotic and native, embedded in a fragmented matrix of finer-grained material (Raymond, 2019).

construction would not directly or indirectly result in adverse effects related to ground failure, including liquefaction, and the impact would be less than significant.

- a.iv) **Less-than-Significant Impact.** Landslides are one of the various types of downslope movements in which rock, soil, and other debris are displaced because of gravity. The potential for material to detach and move downslope depends on multiple factors, including the type of material, water content, and steepness of terrain.

The deposits underlying the Project site are mapped as mélange from the Franciscan Complex, which is generally considered to be an unstable soil type and prone to slope failure (Wakabayashi 2008). Geologic mapping supports this conclusion, as there are several historical landslides mapped in the region within similar mélange deposits (Blake Jr. et al. 2000a). Project construction would include grading and excavation activities, and would require vegetation removal within the Project site. It is well documented that vegetation removal exacerbates the landslide potential of a given area (Runyan & D’Ordrico 2014; Cimini et al. 2016). Therefore, the Project is in an area with elevated landslide risk.

The Project would mostly follow existing roads and trails, and where the pipeline alignment deviates from these areas, areas of ground disturbance would be reseeded with local ecotype, site appropriate, native vegetation. As stated in Impact a.ii, the final design-level geotechnical report would include design requirements that would inform the structural and geotechnical engineering of the Project, as required by the CBC. Implementation of these measures in accordance with CBC requirements would reduce any potential hazard associated with earthquake-induced landslides.

Compliance with CBC requirements, including implementation of recommendations provided in the final design-level geotechnical report would reduce or avoid impacts related to landslides. Project construction would not directly or indirectly result in adverse effects related to landslides, and the impact would be less than significant.

- b) **Less-than-Significant Impact with Mitigation Incorporated.** During Project construction ground-disturbing activities could increase the risk of erosion or sediment transport, if not managed appropriately. As described in Section 2.5, *Project Construction*, construction activities would only occur from August through January to avoid conflicts with the Northern spotted owl nesting season. This scheduling means that construction activities would coincide with the Bay Area rainy season, which could potentially exacerbate soil erosion and sedimentation at the site.

Because the Project would disturb more than 1 acre of land, a Storm Water Pollution Prevention Plan (SWPPP) would be required for the Project in accordance with the National Pollutant Discharge and Elimination System (NPDES) General Permit for Stormwater Discharge Associated with Construction and Land Disturbance Activities (Construction General Permit). This SWPPP must include site-specific BMPs designed to control and reduce soil erosion. The BMPs may include dewatering procedures, storm

water runoff quality control measures, watering for dust control, and the construction of silt fences, as needed.

As described in Chapter 2, *Project Description*, Marin Water would require the implementation of standard construction practices and BMPs by the contractor selected to construct the Project. As noted in Marin Water Standards for Environmental Protection (see **Appendix A**), an environmental protection plan would also be required. Additional measures would be implemented consistent with Marin Water Standards for Erosion and Sediment Transport and Control.

To further ensure that erosion and sedimentation is controlled at the Project site during construction in the rainy season, **Mitigation Measure HYD-1: Water Control, Drainage, and Discharge Plan** would be implemented. As discussed in Section 3.10, *Hydrology and Water Quality*, Mitigation Measure HYD-1 would include measures to prevent erosion, scouring of bank, nuisance, contamination, and otherwise limit excess sedimentation (see Section 3.10, *Hydrology and Water Quality* for detailed description).

Compliance with Mitigation Measure HYD-1, the SWPPP, and implementation of the soil and erosion control measures would reduce or avoid erosion and soil loss, and related impacts would be less than significant.

- c) **Less-than-Significant Impact.** As discussed in Impact a.iii, the Project site is in an area of low liquefaction susceptibility; this conclusion is supported by an understanding of the underlying geology and the liquefaction susceptibility map for the Bay Area. However, as discussed in Impact a.iv, the Project site is in an area that is susceptible to landslides; this conclusion is supported by research that indicates mélangé from the Franciscan Complex is susceptible to landslides, coupled with the activities associated with Project construction, including vegetation removal from the Project site.

Impacts a.iii and a.iv conclude that compliance with the engineering designs included in the final design-level geotechnical report and the requirements of the CBC would reduce any potential hazards associated with liquefaction, landslides, and other hazards associated with unstable soils; therefore, this impact would be less than significant.

- d) **Less-than-Significant Impact.** Expansive soils are soils that possess a “shrink-swell” characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying; the volume change is reported as a percent change for the whole soil. This property is measured using the coefficient of linear extensibility (COLE) (NRCS 2017). The Natural Resources Conservation Service (NRCS) relies on linear extensibility measurements to determine the shrink-swell potential of soils. If the linear extensibility percent is more than 3 percent (COLE = 0.03), shrinking and swelling may cause damage to buildings, roads, and other structures (NRCS 2017). NRCS Web Soil Survey data indicates the soil underlying the Project site has a 1.5 percent linear extensibility rating, which is considered a low linear extensibility rating (NRCS 2020).

Based on the available data from the Web Soil Survey, the risk of encountering expansive soils at the Project site is low and would likely not affect Project construction. Although Web Soil Survey data suggests that expansive soils at the Project site would not be an issue, CBC would still require the preparation of a final, design-level geotechnical report, which would include soil testing. If these investigations find expansive soil at the Project site, the report would include recommendations to ensure that any structural impacts resulting from expansive soil on-site would be avoided, removed, or engineered to be suitable. Adherence to the requirements of the CBC and geotechnical investigation would avoid impacts resulting from potentially expansive soils on the Project site. The Project would not create substantial direct or indirect risks to life or property related to expansive soils, and impacts would be less than significant.

- e) **No Impact.** The Project would not include the use of septic tanks or alternative wastewater disposal system, and therefore would not require the use of soils that are adequate for supporting such systems. There would be no impact associated with the Project having adequate soil for septic tanks or alternative wastewater disposal systems.
- f) **Less-than-Significant Impact.** Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones; mammals, birds, fish, etc.), invertebrates (animals without backbones; starfish, clams, coral, etc.), and microscopic plants and animals (microfossils), and can include mineralized body parts, body impressions, or footprints and burrows. They are valuable, non-renewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived. A significant impact would occur if a project destroyed a unique paleontological resource or site, or a unique geologic feature.

In its “Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources,” the Society of Vertebrate Paleontology (SVP) defines four categories of paleontological potential for rock units: high, low, undetermined, and no potential: **High Potential**, rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources; **Low Potential**, rock units that are poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule; **Undetermined Potential**, rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment; and **No Potential**, rock units like high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites) that will not preserve fossil resources (SVP 2010).

The Project site is mapped entirely within late Jurassic to early Cretaceous-age mélange of the Franciscan Complex (Blake Jr. et al. 2000a). Fossils in the Franciscan Complex are rare, but key microfossils, trace fossils, and occasional macrofossils (late Jurassic-age marine reptiles) have been discovered and found to be scientifically significant (Sub Terra Consulting 2017).

The University of California Museum of Paleontology (UCMP) online fossil locality database contains records of three invertebrate fossil localities in Marin County (UCMP 2023). One such fossil locality is recorded from the town of Corte Madera,<sup>5</sup> approximately 5 miles southeast of the Project site (UCMP 2023). While microfossils and trace fossils have contributed to scientific study, these types of fossils are relatively common and have been studied extensively and would not be considered significant in this context. Furthermore, although vertebrate fossils are considered to be significant paleontological resources, their presence in the Franciscan Complex is exceedingly rare. Taking this into consideration, the deposits underlying the Project site are considered to have a low potential to contain significant paleontological resources and impacts on significant paleontological resources and/or unique geological formations would be less than significant.

### 3.7.1.1 References

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<sup>5</sup> Exact locations of the fossil localities contained in the UCMP database are not available online, as this is considered confidential information.

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### 3.8 Greenhouse Gas Emissions

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.8.1 Discussion

- a) **Less-than-Significant Impact.** The combustion of diesel and gasoline fuel to provide power for the operation of construction equipment and vehicles results in the generation of greenhouse gas (GHG) emissions. Construction GHG emissions associated with the Project were estimated using Project-specific information provided by Marin Water, such as construction phasing schedule, construction equipment types and amounts, and volume of imported and exported material. **Appendix B** contains the data and assumptions used to estimate the construction-phase GHG emissions that would be associated with the Project.

Projected carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O) emissions from off-road construction equipment and construction vehicle trips were also derived from the CalEEMod run to estimate criteria air pollutant emissions. N<sub>2</sub>O and CH<sub>4</sub> emissions were multiplied by their respective Global Warming Potentials (GWPs) (25 and 298) and added to the CO<sub>2</sub> emissions to obtain carbon dioxide equivalent (CO<sub>2</sub>e) emissions.

Project construction would generate an estimated annual maximum of 661 metric tons (MT) of CO<sub>2</sub>e during the construction period. BAAQMD has not adopted quantitative significance thresholds for construction-related GHG emissions in its 2022 CEQA Guidelines (BAAQMD, 2023). However, it recommends that the Lead Agency quantify and disclose construction GHG emissions and incorporate best management practices to reduce GHG emissions during construction, as applicable. In the absence of applicable BAAQMD significance thresholds, this analysis applies the nearby Sacramento Metropolitan Air Quality Management District (SMAQMD) GHG significance thresholds included in the *SMAQMD Guide to Air Quality Assessment in Sacramento County* (SMAQMD, 2021). These thresholds of significance were updated in April 2020 in consideration of Senate Bill 32, including the statewide GHG reductions target of 40 percent below 1990 levels by the year 2030 and includes an annual maximum of 1,100 MTCO<sub>2</sub>e per year as the threshold for evaluation of construction GHG emissions.

Maximum annual GHG emissions associated with Project construction were estimated to be 661 MTCO<sub>2</sub>e in 2025. These emissions are well below the SMAQMD threshold,



therefore the Project's impact with respect to construction GHG emissions would be less than significant and no mitigation would be required.

Following construction, operation would generate GHG emissions from the bi-annual employee vehicle trips. The GHG emissions associated with these trips would be negligible and would be expected to be less than 1 MTCO<sub>2</sub>e per year. Maximum indirect GHG emissions from the increase in electricity use at the pump stations were calculated using intensity factors from PG&E and would be approximately 8.9 MTCO<sub>2</sub>e per year.

The BAAQMD's 2022 CEQA Guidelines include significance thresholds for the evaluation of operational GHG emissions. The thresholds are in the form of construction design standards for projects targeting reduction of operational GHG emissions from building energy use and transportation. These thresholds are therefore more applicable for the evaluation of land use development projects and not infrastructure development projects such as the proposed Project, which would consist of construction of pipelines and a pump station, and due to the nature of the Project, the SMAQMD operational GHG thresholds of significance are not directly applicable. For these reasons, operational GHG emissions associated with the Project would be less than significant.

- b) **Less-than-Significant Impact.** In response to AB 32 GHG reduction goals, CARB adopted the Climate Change Scoping Plan, which outlined a framework for achieving the emission reduction goals set in the California Global Warming Solutions Act. The Scoping Plan was most recently updated in 2022 (2022 Scoping Plan; CARB, 2022) to address California's 2030 GHG target and identifies how the State can reach the 2030 climate target established by SB 32 while making substantial advancements to achieve carbon neutrality by 2045 toward the 2050 climate goal established by Executive Order S-3-05 (2005).

Marin County developed and adopted a climate action plan in 2020 to meet a county-wide 2030 GHG emissions target consistent with SB 32 and achieve reductions in line with the longer-term statewide goal to reduce emissions 80 percent below 1990 levels by 2050, as established by Executive Order B-30-15 (Marin County, 2020).

Strategies in the climate action plan that are applicable to the Project include:

**WR-CR3 Construction & Demolition Debris and Self-Haul Waste.** Require all loads of construction & demolition debris and self-haul waste to be processed for recovery of materials as feasible.

The Marin Countywide Plan (Marin County, 2007) also includes goals and recommended programs and policies to reduce GHG emissions generated within the County. Relevant policies and programs in the Countywide Plan include:

- **AIR-4.1 Reduce Greenhouse Gas Emissions.** Adopt practices that promote improved efficiency and energy management technologies; shift to low-carbon and renewable fuels and zero emission technologies.

- **AIR-4.h Evaluate the Carbon Emissions Impacts of Proposed Developments.** Incorporate a carbon emissions assessment into land use plans and the environment impact report for projects.
- **AIR-4.o Implement Proposed State Programs to Reduce Greenhouse Gas Emissions.** Implement proposed State programs to reduce greenhouse gas emissions, including the Renewable Portfolio Standards, California Fuel Efficiency (CAFE) standards, and carbon cap and trade program.
- **EN-3.1 Initiate Green Building Initiatives.** Encourage and over time increasingly require sustainable resource use and construction with nontoxic materials.
- **EN-3.c Divert Construction Waste.** Continue to implement and improve the Construction and Demolition Waste Recovery Ordinance, requiring building projects to recycle or reuse a minimum of 50% of unused or leftover building materials.

GHG emissions would primarily be generated from construction activities. The 2022 Scoping Plan Update contains a measure that requires that 25 percent of energy demand from construction equipment will be electrified by 2030 and 75 percent will be electrified by 2045, which the Project would be consistent with as construction would be completed before 2030. The Project would be consistent with the policies and programs in the Marin Countywide Plan to reduce GHG emissions. Material excavated on site would mostly be reused as backfill on site, and all vehicles would be required to comply with CAFE standards as well as the Advanced Clean Cars Program and Mobile Source Strategy. Electricity would be supplied by PG&E, which is required to comply with SB 100 and the Renewable Portfolio Standard. SB 100 requires that the proportion of electricity from renewable sources be 60 percent by 2030 and 100 percent renewable power by 2045. Therefore, the Project would be consistent with all applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions. This impact would be less than significant.

### 3.8.1.1 References

- Bay Area Air Quality Management District (BAAQMD). 2023. BAAQMD CEQA Guidelines. Available at: [https://www.baaqmd.gov/~/\\_media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-6-Project-climate-impacts\\_final-pdf.pdf?rev=ce3ba3fe9d39448f9c15bbabd8c36c7f&sc\\_lang=en](https://www.baaqmd.gov/~/_media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-6-Project-climate-impacts_final-pdf.pdf?rev=ce3ba3fe9d39448f9c15bbabd8c36c7f&sc_lang=en). Accessed November 2023.
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Sacramento Metropolitan Air Quality Management District (SMAQMD). 2020. Revised February 2021. SMAQMD Guide to Air Quality Assessment. Available at: <https://www.airquality.org/LandUseTransportation/Documents/Ch6GHG2-26-2021.pdf>. Accessed November 2023.

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### 3.9 Hazards and Hazardous Materials

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.9.1 Discussion

- a, b) **Less-than-Significant.** During Project construction, equipment and materials would include fuel, oils, lubricants, hydraulic fluid, paints and thinners and cleaning solvents to maintain vehicles and motorized equipment, which are commonly used in the construction industry. Routine use of any of these substances could pose a hazard to people or the environment and would be considered potentially significant.

As discussed in greater detail in Section 3.7, *Geology and Soils*, item (b), Project construction would be subject to the Construction General Permit and its required SWPPP, which must include BMPs to control potential water quality pollutants, including hazardous materials, used for construction. Implementation of BMPs developed for the SWPPP would reduce the potential for release of hazardous materials during construction activities.

Project operation and maintenance would result in the transportation, storage, use or disposal of fewer hazardous materials compared to construction. During operation,

relatively limited quantities of the hazardous materials listed above would be stored onsite. In accordance with requirements contained in the Health and Safety Code and the California Code of Regulations, Marin Water would prepare a Hazardous Materials Business Plan/Spill Prevention, Control, and Countermeasures Plan (HMBP/SPCC). The HMBP would include BMPs for the transport, storage, use, and disposal of hazardous materials and waste. The HMBP would also include information regarding construction activities, worker training procedures, and hazardous materials inventory procedures. Prior to operation, Marin Water would update the HMBP (including the BMPs) with information about the types of hazardous materials that would be used during operation.

The Project would be maintained and operated according to all local, state, and federal regulations during construction and operation, and hazardous material storage would be detailed in the SPCC Plan. Refueling and general maintenance for equipment, such as changing fluids and lubricating parts, would also be subject to sufficient containment capabilities and according to measures outlined in the SPCC Plan.

Compliance with applicable federal, state, and local regulations and the applicable BMPs and HMBP would ensure that any potential impact would be less than significant during Project operation and maintenance.

Compliance with applicable federal, state, and local requirements, and related BMPs and plans would reduce the risk that the Project would create a significant hazard to the public through the routine transport, use, or disposal of hazardous materials or potential upset and accident conditions involving the release of hazardous materials into the environment. Therefore, this impact would be less than significant.

- c) **No Impact.** The Project site is not located within 0.25 mile of a school. The nearest school is The Branson School, approximately 1.9 miles northeast of Pump Station 1. The Project would not emit hazardous emissions or handle hazardous materials within 0.25 mile of a school; consequently, there would be no impact.
- d) **No Impact.** The search for hazardous materials sites compiled pursuant to Government Code Section 65962.5 (referred to as the “Cortese List”) is based on the results of regulatory agency database searches using the California State Water Resources Control Board (SWRCB) GeoTracker database and the California Department of Toxic Substances Control (DTSC) EnviroStor database, and other sources identified by the California Environmental Protection Agency. The GeoTracker database includes the following hazardous materials site lists: leaking underground storage tank (LUST) cleanup sites; spills, leaks, investigation, and cleanup (SLIC) sites; permitted underground storage tank (UST) facilities; land disposal sites; military cleanup sites; and other cleanup sites. The EnviroStor database includes federal Superfund, state response, voluntary cleanup, school cleanup, and hazardous waste corrective action. Nearby landfill facilities were identified by the database searches. The DTSC and SWRCB are also agencies that are responsible for updating the Hazardous Waste and Substances Site List (Cortese List). The list is a planning document used by state and local agencies and

developers to comply with CEQA requirements by providing location information for hazardous material release sites.

An independent review of the EnviroStor and GeoTracker hazardous materials databases confirms there are no active or closed hazardous materials sites within the Project site boundary (DTSC 2023; SWRCB 2023a). The closest hazardous materials site is a LUST Cleanup Site located at 153 Lagunitas Drive (Peacock Property), approximately 0.92 mile northeast of the Project site. The site was closed as of May 24, 1993 (SWRCB 2023b); any contamination associated with this site has been remediated and would not affect the Project. Therefore, the Project would not create a significant hazard to the public or the environment based on proximity to a known hazardous materials site and there would be **no impact** under this criterion.

- e) **No Impact.** The Project site is not located within 2 miles of a public or public use airport. The nearest airport is the San Rafael Airport, approximately 5.1 miles northeast of the Project site. The Project would not result in a safety hazard or excessive noise for people residing or working in the area; there would be no impact.
- f) **Less-than-Significant Impact.** The Marin County Fire Service created the Mt. Tamalpais Mutual Threat Zone Plan (MTZ Plan) for urban-wildland interface fires on and around Mt. Tamalpais. Included in the MTZ Plan are maps for areas that include Structural Protection Zones and evacuation routes. The Project site is included on the Ross Valley – South Area map, on which Bolinas Road and Dibblee Road, which turns into Lagunitas Road, are delineated as primary evacuation routes (Marin County 2022).

Section 2.5.3, *Construction Traffic Routing*, states that Sir Francis Drake Boulevard to Lagunitas Road through Natalie Coffin Greene Park would be used as the primary entrance and exit location for construction traffic to Phoenix Lake and Sir Francis Drake Boulevard to Bolinas Road to Sky Oaks Road would be used as the primary entrance and exit location for construction traffic to the Bon Tempe Reservoir.

While Sir Francis Drake Boulevard, Lagunitas Road, Bolinas Road, and Sky Oaks Road would be utilized by construction vehicles, the Project would not require any road closures, and traffic generated by the Project is not expected to cause congestion such that the Project would impair or physically interfere with the MTZ Plan. Impacts related to impairment or physical interference of an emergency response or evacuation plan would be less than significant.

- g) **Less-than-Significant Impact.** Based on mapping by the California Department of Forestry and Fire Protection (CAL FIRE) Forest Resource Assessment Program, the Project site is mapped within a moderate Fire Hazard Severity Zone (CAL FIRE, 2007). The use of construction equipment and the possible temporary on-site storage of fuels and/or other flammable construction chemicals could pose an increased fire risk resulting in injury to workers or the public during construction. However, contractors would be required to comply with hazardous materials storage and fire protection regulations, as well as Marin Water's standard fire reduction measures (see **Appendix A**) which would

minimize potential for fire creation and ensure that the risk of wildland fires during construction would be less than significant.

### 3.9.1.1 References

California Department of Forestry and Fire Protection (CAL FIRE). 2007. Marin County Fire Hazard Severity Zones in State Responsibility Areas (SRA). Adopted by CAL FIRE on November 7, 2007. Forest Resource Assessment Program. Map. Scale 1:100,000.

Department of Toxic Substances Control (DTSC). 2023. EnviroStor database. Hazardous materials sites in Marin County.

Marin County. 2022. Wildfire Evacuation Zones. Available at: [https://www.marincounty.org/-/media/files/departments/fr/wildfire-evacuation-zones/mtz\\_kentfield.pdf](https://www.marincounty.org/-/media/files/departments/fr/wildfire-evacuation-zones/mtz_kentfield.pdf). Accessed on November 9, 2023.

State Water Resources Control Board (SWRCB). 2023a. GeoTracker database. Hazardous materials sites in Marin County.

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## 3.10 Hydrology and Water Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 3.10.1 Discussion

#### a) **Less-than-Significant Impact with Mitigation.**

##### **Construction**

The Project site would drain to Bon Tempe Reservoir or Phoenix Lake, which are waters under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB), an agency tasked with implementing water quality requirements of the State of California. To prepare the site to install the new pipeline, approximately 2,508 CY of material would be excavated from the site. As described in Section 2.5.2, *Construction Activities*, excavated material that would be reused on-site as backfill would be stored at the staging areas adjacent to Phoenix Lake and Bon Tempe Reservoir. Excavated material that is contaminated or in excess would be disposed of at Redwood Landfill in Novato. Construction activities could result in pollutants being mobilized into the surrounding area through stormwater runoff (nonpoint-source pollution), potentially degrading the quality of receiving waters. Soil-disturbing activities, such as tree removal,



excavation, and site clearing, could result in soil erosion and the mobilization of debris and soil in the form of stormwater runoff to downstream water bodies and storm drains. If not properly managed, stockpiled spoils could migrate offsite during storm events and increase sedimentation in downstream receiving waters. Fuels, lubricants, and other hazardous materials associated with the Project's use of construction equipment could also adversely affect water quality if spilled or stored improperly.

Additionally, because the Project would disturb more than 1 acre of land, a SWPPP would be required for the Project in accordance with the NPDES Construction General Permit. This SWPPP must be prepared by a qualified SWPPP developer and include site-specific BMPs designed to control stormwater and reduce soil erosion. The BMPs would be determined by the qualified SWPPP developer and may include dewatering procedures, storm water runoff quality control measures, watering for dust control, and the installation of silt fences, as needed.

In addition, as described in Chapter 2, *Project Description*, Marin Water would require its contractor to implement standard construction practices and BMPs (refer to **Appendix A**). As noted in the Marin Water Standards for Environmental Protection, an environmental protection plan would be required to be prepared by the contractor selected to construct the Project. General Protection of Natural Resources (part 3.1), for example, stipulates that “natural resources within the project boundaries and outside the limits of permanent work ... be preserved in their existing conditions or be restored to an equivalent or improved condition upon completion of work.” Additional erosion control measures (guidance noted in **Appendix A**, Standard S18000, part 3.5) would be implemented to control construction runoff, consistent with Marin Water Standards for Erosion and Sediment Transport and Control (Marin Water, 2021).

The proposed construction schedule includes work within the wet season. As described in Section 3.4, *Biological Resources*, the Project alignment crosses two intermittent streams, Fish Creek and Phoenix Creek, and as many as ten ephemeral streams. If construction requires work within ephemeral streams during the wet season, the project could release excess sediment into the streams, a potentially significant water quality impact.

To reduce impacts and provide for the careful planning for water control, site drainage, and discharge during construction, implementation of **Mitigation Measure HYD-1, Water Control, Drainage, and Discharge Plan** would be required.

#### **Mitigation Measure HYD-1: Water Control, Drainage, and Discharge Plan.**

Prior to (or at the time of) final design, the contractor selected to construct the Project shall prepare and submit to Marin Water, Marin County, and the RWQCB (as applicable) a Water Control, Drainage, and Discharge Plan. The plan shall apply to all areas of ground disturbance and contain provisions for energy dissipation and describe measures to prevent erosion, scouring of banks, nuisance, and contamination, and otherwise limit the project's contribution of silt and sediment into receiving waters. An assessment of the downstream/down gradient drainage (“hydrological conditions assessment”) shall be conducted to allow for appropriate

planning for rerouting existing site drainage to accommodate the proposed Project such that erosion is not allowed to occur in the vicinity of the Project on- or off-site.

A detailed plan for drainage control shall be prepared based on the results of the design-level geotechnical report and Project hydrological conditions assessment. Proposed measures shall conform with the requirements of all applicable discharge permits. Measures shall include, but not be limited to, the following:

- To the extent feasible, construction during moderate to heavy rain events shall cease;
- The use of heavy equipment at the site during all phases of the Project shall be limited during rain events, and the site shall be allowed to dry out prior to heavy equipment use upon sloping terrain or in ephemeral stream channels;
- Water used for dust control or other purposes during construction shall not be applied in a manner that results in ponding or runoff (on- or off-site);
- Straw wattles, sand bags, and other erosion control devices shall be installed, periodically checked, and maintained in a manner that allows for optimal functionality to prevent contamination of stormwater;
- Good housekeeping measures shall include covering spoils piles and removing trash from the site daily;
- Adaptive management shall be incorporated into drainage planning to ensure the adequacy or functionality of installed erosion control measures. In the event of redundant or overlapping erosion control measures or BMPs, the more effectual measures shall be utilized;
- Design for grading, drainage, and stormwater control to support proposed site structures shall conform to all applicable requirements of the California Building Code and Regional Water Quality Control Board stormwater and/or waste discharge requirements (as applicable);
- Site hydrology shall be considered with energy dissipation structures (or other measures) installed at strategic locations where stormwater is discharged into the natural drainages such that runoff and erosion are controlled on- and off-site;
- Concrete residues shall not be allowed to enter waterways or stormwater infrastructure. Measures to limit migration of residues may include the use of silt fencing or on-site containment, subject to review and approval by Marin Water;
- Bio-retention and/or measures for source control of silt, sediment, and other pollutants shall be incorporated into the drainage design, as appropriate;
- Revegetation of disturbed areas and downstream drainages, as appropriate, shall utilize plantings or reseeding with ecologically appropriate, local ecotype native plant materials;

- In the event that dewatering is required during construction, such activities shall be conducted in a manner that conforms to applicable Marin Water standards, waste discharge requirements, or general permit for dewatering provisions.

The Project's conformance with applicable water quality requirements, adherence to Marin Water standards, and implementation of **Mitigation Measure HYD-1, Water Control Drainage and Discharge Plan**, would reduce construction-related impacts to less-than-significant levels.

### **Operation and Maintenance**

Currently, during dry conditions and when required, Marin Water can convey Phoenix Lake water directly to the Bon Tempe WTP after manually changing the existing pipes from treated to raw water. Phoenix Lake water has different water quality characteristics, which require additional treatment. The project would route Phoenix Lake water into Bon Tempe Reservoir over two cycles, each for approximately 28 days (for a total of about 56 days), instead of directly to Bon Tempe WTP. Water would be pumped from Phoenix Lake and discharged into Bon Tempe Lake at the upper shoreline edge.

Beneficial uses of Bon Tempe Reservoir are municipal supply, sport fishing, fish spawning, warm freshwater habitat, wildlife habitat, and recreation (RWQCB, San Francisco Bay Basin Water Quality Control Plan, 2023). Beneficial uses of Phoenix Lake are municipal supply, commercial and sport fishing, fish spawning, cold freshwater habitat, warm freshwater habitat, preservation of rare and endangered species (northwestern pond turtle), wildlife habitat, and recreation (RWQCB, San Francisco Bay Basin Water Quality Control Plan, 2023).

The water quality in Phoenix Lake and Bon Tempe Reservoir differs. Relative to Bon Tempe Reservoir, Phoenix Lake water is generally cooler, has lower dissolved oxygen levels, and has higher nutrient and metals concentrations. Bon Tempe Reservoir water is generally warmer, with relatively higher dissolved oxygen levels and lower nutrient and metals concentrations (Stillwater Sciences, 2023). Depending on the season, water quality in each lake can also differ depending on the depth in the water column. During warmer months, water in lakes can become stratified into warmer water near the surface and cooler water near the bottom (cooler water near the bottom is called the *hypolimnion*). Water at the bottom of the lake (in the hypolimnion) is not in contact with the atmosphere and becomes relatively depleted of oxygen, which can encourage the release of nutrients into the water.

Due to the differences in water quality between the two lakes, the transfer of water from Phoenix Lake directly into Bon Tempe Reservoir could alter the water quality in both lakes. The quality of water pumped from Phoenix Lake could differ depending on the season of water transfer. Transfers during summer or fall are likely to add water with higher concentrations of nutrients and low dissolved oxygen to Bon Tempe Reservoir, because the pump could draw water from the hypolimnion. However, water transfers are proposed to occur only in the late fall/early winter or late spring, with no transfers in the

summer or early fall when the reservoirs are at their lowest. Winter transfers are less likely to affect water quality in Bon Tempe Reservoir because the water column in Phoenix Lake is mixed.

The quality of water in Phoenix Lake would also change as water is pumped to Bon Tempe Reservoir. To minimize the occurrence of algal blooms, benthic algae mats would be placed in Bon Tempe Reservoir as is Marin Water's standard practice. However, water transfers during most of the year (winter/spring/summer) are likely to increase the water temperatures in Phoenix Lake, which could also increase the potential for algal blooms in Phoenix Lake and could impair use of the water for designated beneficial uses (such as warm freshwater habitat, wildlife habitat, and fish spawning). This would be a potentially significant water quality impact, which would be avoided with implementation of **Mitigation Measure HYD-2, Adaptive Water Quality Management Plan**. Mitigation Measure HYD-2 would avoid this impact by testing water in Phoenix Lake prior to transfers, and, if water quality criteria are not met, delay transfers.

Depending on the diameter of the pipeline opening, and the substrate underlying the area where the water is released, project operation could also cause new erosion and release additional sediment into Bon Tempe Reservoir. However, the Project's conformance with applicable water quality requirements, adherence to Marin Water standards, and implementation of **Mitigation Measure HYD-1, Water Control Drainage and Discharge Plan**, would reduce operation-related impacts to Bon Tempe Reservoir to less-than-significant levels.

#### **Mitigation Measure HYD-2: Adaptive Water Quality Management Plan.**

Marin Water shall develop and implement an adaptive water quality management plan applicable to water transfers between Phoenix Lake and Bon Tempe Reservoir. The purpose of the adaptive water quality management plan is to prevent the accumulation of biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses, and to maintain dissolved oxygen levels in Phoenix Lake above 5.0 mg/l. The plan shall include measurable water quality criteria applicable to Phoenix Lake that will establish whether a water transfer could promote aquatic growths such that beneficial uses are adversely affected or dissolved oxygen is reduced below minimum levels in Phoenix Lake. Marin Water shall measure water quality prior to transfers to ascertain whether Phoenix Lake exceeds the water quality criteria. If measured water quality indicates that the transfer could promote aquatic growths such that beneficial uses are adversely affected or could reduce dissolved oxygen below minimum levels in Phoenix Lake, then Marin Water will delay transfer. For up to five years after the first water transfer, Marin Water will monitor the dissolved oxygen concentrations in Phoenix Lake monthly. If monitoring establishes that, after 5 years, the median dissolved oxygen concentration for any three consecutive months was not less than 80 percent of the dissolved oxygen content at saturation, or not less than the baseline (2023–2024) seasonal minimum dissolved oxygen concentrations in Phoenix Lake, then monitoring can cease.

b) **Less-than-Significant Impact.** Water resources would likely be used for dust control and other purposes during construction, some of which may be sourced from groundwater. Marin Water proposes to increase the storage of water resources; however, the use of groundwater resources is not expected to increase following construction. In addition, the Project is not within a groundwater basin subject to conditions of critical overdraft, nor would the Project be constructed in a medium or high-priority groundwater basin defined by the California Department of Water Resources for purposes of the Sustainable Groundwater Management Act. The Project would not substantially increase impervious area. Moreover, the Project would not increase the demand for groundwater resources or otherwise deplete resources in the basin. Impacts on groundwater during the construction and operation of the Project are less than significant.

c.i) **Less-than-Significant Impact with Mitigation.**

### **Construction**

The Project would use heavy equipment to prepare the site to support the pipeline and associated infrastructure and would therefore temporarily alter the terrain and drainage patterns of the existing slope. Grading and excavation would be required to prepare the Project site and install the pipeline, as described in Section 2.5.2, *Construction Activities*. Because the Project would include soil-disturbing activities, compliance with the Construction General Permit and SWPPP terms would be needed, as discussed in item a). The contractor selected to construct the Project would be responsible for preparing the SWPPP, which would outline procedures to ensure effective stormwater/non-stormwater management at the Project site.

As noted in Section 3.7, *Geology and Soils*, the Project would be subject to CBC design criteria, and all construction would be required to adhere to specifications and procedures within the final geotechnical report. However, due to the necessity of crossing up to ten ephemeral drainages during the rainy season, even with the implementation of design specifications and a SWPPP, construction of the Project could still result in substantial erosion and/or siltation of ephemeral waterways proximal to the site. **Mitigation Measure HYD-1 (Water Control, Drainage, and Discharge Plan)** would be implemented to reduce potential impacts and implement appropriate water control, drainage, and discharge measures within and from the site. Refer to question a) for the text of the mitigation measure.

### **Operation and Maintenance**

The Project would release water into Bon Tempe Reservoir at a rate of 3 mgd (equivalent to about 4.6 cubic feet per second of flow) twice a year for approximately 28 days (for a total of about 56 days). The water would be released along the high water line of the reservoir and flow over land into the reservoir. The pipeline diameter was selected in part to avoid creating shear stress during discharge, which would reduce the potential for erosion. Implementation of **Mitigation Measure HYD-1** would require Marin Water to develop and implement a plan for energy dissipation and the prevention of erosion, scouring of banks and contamination, and otherwise limit the project's contribution of silt

and sediment into receiving waters. Additionally, **Mitigation Measure HYD-2** would require Marin Water to develop and implement an adaptive water quality management plan applicable to water transfers between Phoenix Lake and Bon Tempe Reservoir. This plan would include measures to prevent substantial erosion and/or siltation. Therefore, Project operation would not result in substantial erosion or siltation, a less-than-significant impact with mitigation.

- c.ii-iv) **Less-than-Significant Impact with Mitigation.** Additional stormwater infrastructure must be incorporated into the Project's design to accommodate Project construction, as described in Chapter 2, *Project Description*. Because the Project's preliminary design is currently in development and has not yet been completed, a general description is provided in Chapter 2. Site design would be subject to modification per the pending results of the geotechnical evaluation, hydrology assessment, and hydraulics calculations required for overall site engineering. The final design of the Project stormwater infrastructure would be sized to accommodate the capacity needed to drain the site without generating erosion, would conform to Marin County requirements for stormwater pollution prevention (MCSTOPP), and would be constructed and maintained consistent with Marin County erosion control planning requirements (see Section 3.7, *Geology and Soils*).

As described in Section 3.4, *Biological Resources*, the Project alignment would cross two intermittent streams, Fish Creek and Phoenix Creek, and as many as ten ephemeral streams. Those ephemeral channels could be temporarily impacted by pipeline installation if they are flowing during construction, particularly in November or December. During construction, they could be culverted across the alignment or have rock riffles installed to slow flow downstream. However, as noted under question a), various measures, including a SWPPP and an Environmental Protection Plan (per Marin Water standards), would be implemented to reduce or otherwise control runoff (see **Appendix A**). Even with the implementation of these measures, given the alternation of the existing contours, the Project could exceed stormwater conveyance capacity, which has the potential to overrun the current system and generate secondary effects. This would be a significant impact.

To reduce these potential effects and ensure that ongoing stormwater capacity exceedances do not occur, **Mitigation Measures HYD-1, Water Control, Drainage, and Discharge Plan** (described above, under question a) and **BIO-5, Habitat Restoration and Monitoring** (see Section 3.4, *Biological Resources*) would be required.

With the implementation of Mitigation Measures HYD-1 and BIO-5, Project impacts would be less than significant.

- d) **Less-than-Significant Impact.** The Project site is not located in an area subject to tsunami or seiche hazards, nor is the site in a special flood hazard area or other areas of flood hazard, as defined by the Federal Emergency Management Agency (FEMA, 2009,

2014). Therefore, Project construction would have no impact associated with these hazards.

Constructed in 1905, Phoenix Lake is one of the smallest reservoirs in the Marin Water system and the only one that lies in Corte Madera Creek watershed, on the east side of the main watershed divide. The capacity of Phoenix Lake is 411 acre-feet, which is about 11 percent of the average inflow into Phoenix Lake. Once the capacity of Phoenix Lake is reached, water overflows into Ross Creek. Downstream areas of Ross Creek, located in the Town of Ross near the confluence of Ross and San Anselmo creeks, are mapped within the FEMA special flood hazard area and floodway. The Project would remove water from Phoenix Lake during the wet season, potentially increasing available capacity in the lake for water storage. As presented in **Appendix C**, with the Project, overflow amounts from Phoenix Lake into Ross Creek are expected to be similar or reduced. Consequently, the Project would not exacerbate downstream flooding by impeding or redirecting flood flows.

The Project design features, in conjunction with the required erosion and sedimentation control measures, would reduce any potential impact related to runoff and drainage changes. Therefore, operation-related alteration of local drainage patterns would not result in flooding, and the impact would be less than significant.

e) **Less-than-Significant Impact with Mitigation.**

**Construction**

Activities involving soil disturbance during construction could result in soil erosion and siltation of waterways during excavation and grading. If precautions are not taken to contain contaminants, construction could contribute to water quality degradation, including through the generation of stormwater run-off, a form of nonpoint source pollution. In addition, because construction equipment would require the use of fuels, lubricants, and other hazardous materials, soil contamination and water quality violations could occur if these materials are stored improperly during Project construction. These effects would conflict with the Water Quality Control Plan (Basin Plan) requirements.

However, because the Project would disturb more than 1 acre, coverage under the General Construction Permit and development of a SWPPP would be required, as previously discussed. The requirements of the General Construction Permit are enhanced and made more specific by **Mitigation Measure HYD-1**, which would provide a site-specific drainage plan and control discharge. Such measures would be implemented to reduce impacts and protect the surface and groundwater quality; refer to question a) for the text of the mitigation measure. With the implementation of **Mitigation Measure HYD-1**, the Project would not conflict with or obstruct the implementation of a water quality control plan.

### **Operation**

As discussed in Impact a), water transfers between Phoenix Lake and Bon Tempe Reservoir could degrade water quality, which would conflict with the San Francisco Bay Basin Plan. However, as discussed in Impact a), with implementation of **Mitigation Measure HYD-2, Adaptive Water Quality Management Plan**, water quality would not be degraded.

The Project site is not located in a defined groundwater basin. The Project would not create any new impervious surfaces or require the use of groundwater. There is no groundwater sustainability plan in the Project vicinity. Therefore, the Project would not conflict with or obstruct implementation of sustainable groundwater basin management.

Operational impacts would be less than significant with mitigation.

#### **3.10.1.1 References**

Federal Emergency Management Agency (FEMA), 2009. Flood Insurance Rate Map (FIRM) Number

06041C0453D, Effective Date May 4, 2009. Marin County 060173.

FEMA, 2014. FIRM Number 06041C0454E, Map Revised March 17, 2014. Marin County 060173, Town of Ross 060179, Town of San Anselmo 060180.

Marin Water, 2021. Construction Specifications and Standards Section 02200, Earthwork and Section 1800 Environmental Protection Measures.

San Francisco Bay Basin Regional Water Quality Control Board, Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), as amended through March 7, 2023.

Stillwater Sciences, 2023. Phoenix and Bon Tempe Lakes Limnology Review, Presented to Marin Municipal Water District, October 27, 2023.



## 3.11 Land Use and Planning

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.11.1 Discussion

- a) **No Impact.** The nearest established community is the Town of Ross, located east of Phoenix Lake. The Project includes the construction of a new pump station adjacent to an existing one and a pipeline within Marin Water's Mount Tamalpais watershed lands; none of the Project components are proposed within the Town of Ross. Project construction, staging, and operation would not physically divide this established community. Therefore, there would be no impact.
- b) **No Impact.** The Project site is classified as Open Area in the Marin Countywide Plan, and the Project as proposed would not substantially conflict with the Open Space land use designation because there would be no change in land use after Project construction (Marin County Code, 2007). Project consistency with specific County policies adopted for the purpose of avoiding or mitigating environmental effects are addressed in other sections of this Initial Study (e.g., Section 3.12, *Noise*, addresses Project consistency with Noise Ordinance policies). For these reasons, there would be no impact.

#### 3.11.1.1 References

Marin County Code. 2023. Marin County Code – Title 22 Development Code. Available at: [https://www.marincounty.org/-/media/files/departments/cd/planning/devcode2024/2023marin-county-development-code\\_title-22\\_final.pdf](https://www.marincounty.org/-/media/files/departments/cd/planning/devcode2024/2023marin-county-development-code_title-22_final.pdf). Accessed October 30, 2023.

Marin County. 2007. Marin Countywide Plan. Marin County Community Development Agency. November 6, 2007. Available at: [https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/county-wide-plan/cwp\\_2015\\_update.pdf](https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/county-wide-plan/cwp_2015_update.pdf). Accessed November 27, 2023.

### 3.12 Mineral Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.12.1 Discussion

a,b) **No Impact.** Multiple sources of information were consulted to determine the potential presence of mineral resources at the Project site, and whether Project activities would result in the loss of availability of any mineral resources.

The Mineral Resources Data System, administered by the USGS, provides data describing mineral resources, including deposit name, location, commodity, deposit description, production status, and references, and can be used to confirm the presence/absence of existing surface mines, closed mines, occurrences/prospects, and unknown/undefined mineral resources. According to the available Mineral Resources Data System data, there are no significant mineral resources at the Project site or in the area (USGS, 2023).

The CGS maps and regulates the locations of potential mineral resources in California consistent with the Surface Mining and Reclamation Act. To protect these potential mineral resources, the CGS has classified the regional significance of mineral resources into mineral resource zones (MRZs) and mapped them. The Project site is mapped in an area that is classified as MRZ-3, which indicates the area contains mineral occurrences of undetermined significance (Miller & Busch, 2013).

The California Geologic Energy Management Division (CalGEM) provides oversight of the oil, natural gas, and geothermal industries, and regulates the drilling, operation, and permanent closure of energy resource wells. CalGEM’s online mapping application, Well Finder, was reviewed to determine the presence of any oil, gas, or geothermal resources in and around the Project site. Well Finder data indicates there are no significant resources at the Project site or vicinity (CalGEM, 2023).

Additionally, the Built Environment Element of the Marin Countywide Plan, which provides information about locally important, significant mineral resources within Marin County, does not indicate the presence of any significant mineral resources at or near the Project site (Marin County, 2007).

According to the review of available data from the USGS, CGS, CalGEM, and Marin County, there are no significant mineral resources at the Project site or in the area. Additionally, Project activities would not result in the loss of availability of any known mineral resources or locally important mineral resources. Therefore, there would be no impact on mineral resources.

### 3.12.1.1 References

- California Geologic Energy Management Division (CalGEM). 2023. Well Finder online tool. Available at: <https://www.conservation.ca.gov/calgem/Pages/WellFinder.aspx>. Accessed on: November 27, 2023.
- Marin County. 2007. Marin Countywide Plan. Built Environment Element. Marin County Community Development Agency. November 6, 2007.
- Miller, Russell V. and Lawrence L. Busch, (Miller & Busch). 2013. Updated Mineral Land Classification Map for Class II Base-Grade Aggregate in the North San Francisco Bay Production-Consumption Region, Marin, Napa, Sonoma, and Southwestern Solano Counties, California. Special Report 205 – Place 1C. California Geological Survey. Map. Scale 1:150,000.
- United States Geological Survey (USGS). 2023. Mineral Resources Data System (MRDS) database. Available at: <https://mrdata.usgs.gov/mrds/map-graded.html>. Accessed on November 27, 2023.
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## 3.13 Noise

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.13.1 Noise Definitions and Concepts

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. Therefore, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead focusing on the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). All sound pressure levels and sound power levels reported below are A-weighted.

#### 3.13.1.1 Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is typically expressed in units of inches per second (in/sec). The PPV is most frequently used to describe vibration impacts on buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to

compress the range of numbers required to describe vibration (Federal Transit Administration [FTA] 2018). Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

### 3.13.1.2 Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered the most sensitive to noise. Places such as churches, libraries, and cemeteries, where people tend to pray, study, or contemplate are also sensitive to noise. Commercial and industrial uses are considered the least noise sensitive.

The Project site is undeveloped and surrounded by woodland. Sensitive receptors in the vicinity include single-family residences located on Goodhill Road approximately 0.75 mile to the east of the Project site. The ranger residence adjacent to Pump 2, which houses a Marin Water employee, is not considered a sensitive receptor for purposes of this analysis.

### 3.13.1.3 Discussion

- a) **Less-than-Significant Impact.** The Project would generate noise primarily during construction as discussed below. Once operational, the Project's pump station operation would largely remain the same as current operations and would include up to two workers traveling in a small passenger truck for bi-annual testing of the pumps.

As described in Section 2.5.1, *Construction Schedule, Hours, and Work Force*, Project construction would occur within two 6-month phases between mid-2024 and early 2026.

Construction would involve the use of equipment that would generate substantial noise at and adjacent to construction areas. Noise impacts from construction would depend on the type of activity being undertaken and the distance to the receptor location. Construction noise impacts are most severe if construction activities take place during noise-sensitive hours (i.e., early morning, evening, or nighttime hours), in areas immediately adjoining noise-sensitive land uses, and/or when construction duration lasts over extended periods.

**Table 3-3** shows typical noise levels produced by the types of construction equipment that are expected to be used for Project construction and their corresponding acoustical usage factor.

The operation of each piece of off-road equipment would not be constant throughout the day, as equipment would be turned off when not in use. This is accounted for in the acoustical usage factor for each equipment type, also shown in **Table 3-3**. Over a typical workday, equipment would operate at different locations on the Project site and would not always be operating concurrently. Though the County's municipal code allows for exceptions from construction hour restrictions for construction projects conducted by a public utility, such as the proposed Project, the Project's construction activities would

generally be restricted to the less noise-sensitive daytime hours between 7 a.m. and 4:30 p.m., Monday through Friday. No work on weekends and holidays is anticipated.

**TABLE 3-3  
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT**

Type of Equipment	L <sub>max</sub> at 50 feet, dBA	Acoustical Usage Factor (%)
Auger Drill Rig	84	20
Backhoe	78	40
Bulldozer	82	40
Concrete Mixer Truck	79	40
Crane	81	16
Dump Truck	76	40
Excavator	81	40
Flatbed Truck	74	40
Front End Loader	79	40
Grader	85	40
Roller compactor	80	20
Skid Steer Loader	79	40

NOTES:

L<sub>max</sub> = The instantaneous maximum noise level measured during the period of interest.  
Acoustical Usage factor is the percent of time during a construction noise operation that a piece of construction equipment is operating at maximum level.

SOURCE: FHWA 2017.

To estimate daytime construction noise levels that the closest sensitive receptors would be exposed to, consistent with the methodology recommended by the FTA in its *Transit Noise and Vibration Assessment Manual*, the two noisiest pieces of equipment used for Project construction are assumed to be operating simultaneously at the center of the Project construction area, approximately 0.75 mile from the nearest residential receptors. Taking into account the acoustical usage factors, simultaneous operation of a bulldozer and a grader at the same location would generate a combined daytime noise level of approximately 45 dBA L<sub>eq</sub> at the nearest sensitive receptors. These estimated noise levels do not account for the additional attenuation that would result due to woodland screening that would occur. There are no quantitative standards for construction noise specified by either the Marin Countywide Plan or the municipal code and construction projects of public agencies and utilities are exempt from construction hour restrictions specified by the code. The FTA's Transit Noise and Vibration Impact Assessment has identified a daytime 1-hour L<sub>eq</sub> level of 90 dBA as a noise level where adverse community reaction could occur at residential land uses (FTA 2018). Construction noise generated by the Project would be well below this level. In addition, construction contractors would be required to comply with Marin Water's Environmental Standards for noise control during construction, which specifies maximum allowed noise levels for equipment used as well as BMPs to manage noise impacts to neighboring receptors (see **Appendix A**). Therefore, noise impacts from Project construction would be less than significant.

In addition to construction equipment, noise would also be generated from construction vehicles transporting workers and materials to and from the Project site. Construction traffic trips to and from the Project site would occur during the less noise-sensitive, daytime hours of 7 a.m. to 4:30 p.m. on weekdays. Trucks would travel on U.S. Highway 101 to Sir Francis Drake Boulevard to Lagunitas Road through Natalie Coffin Greene Park to access the Project site at Phoenix Lake, and Sir Francis Drake Boulevard to Bolinas Road to Sky Oaks Road to access the Project site at Bon Tempe Reservoir. These roadways are well traveled routes in the area and the increase in noise from the addition of Project traffic would not be perceptible. The scattered residential receptors in the Project vicinity would experience a temporary increase in roadside noise level due to the addition of Project construction traffic. But this increase would not be substantial since Project construction would average eight trips per day. Given the absence of quantitative construction noise standards and the exemption allowed for public agencies and utilities, this impact would be less than significant.

Upon completion of Project construction, and after the pumps are commissioned and operational, Pump 1 would be upsized but operation would largely remain the same as current operation. Pump 2 would be enclosed in a new pump station building (see Section 2.4.2, *Pumps and Pump Stations*, and would include a new 400 horsepower (hp) pump. Pumps at these hp ratings can generate noise levels of 96 dBA at 3 feet (Hoover and Keith, 2000), which corresponds to a noise level of 78 dBA at 25 feet. However, Pump 2 would be located farther than approximately 0.4 mile from the nearest sensitive receptor population and would be enclosed within a structure with noise attenuation measures, and therefore would not be expected to have a perceptible noise impact. The Project would require minimal maintenance, which is expected to include bi-annual testing of the pumps and would require one to two workers traveling to the sites in a small passenger truck. The associated increase in vehicle noise would not be perceptible. Noise generated by Project operation and maintenance would therefore result in a less-than-significant impact.

The Project would not generate a substantial temporary or permanent increase in ambient noise levels in the Project vicinity exceeding standards established in the local general plan or noise ordinance. This impact would be less than significant.

- b) **Less-than-Significant Impact.** Construction activity can result in varying degrees of groundborne vibration, depending on the type of soil, equipment, and methods employed. Operation of construction equipment can cause ground vibrations that spread through the ground and diminish in strength with distance. Buildings on the soil near the construction site respond to these vibrations with varying results, ranging from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels. While ground vibrations from construction activities do not often reach the levels that can damage structures, fragile buildings must receive special consideration.

Equipment expected to be used for Project construction is shown in **Table 3-3**. Construction vibration may generate perceptible vibration when impact equipment or

heavy earth moving equipment are used. There are structures of historical significance in the Project vicinity (refer to Section 3.5, *Cultural Resources* for additional details about historic resources). The nearest structure on Phoenix Lake Road is Pump House #2 (approximately 100 feet northeast of the Phoenix Lake Log Cabin) located 30 feet from the pipeline alignment, and the nearest historical structure is located 130 feet from the pipeline alignment (Phoenix Lake Log Cabin).

The FTA and Caltrans have adopted vibration standards that are used to evaluate potential impacts related to sensitive receiving land uses from vibration. The FTA identifies 0.2 in/sec PPV as the level at which potential damage could result to buildings of conventional construction. Caltrans identifies 0.24 in/sec PPV as the level at which vibration is distinctly perceivable to humans.

Of the equipment shown in **Table 3-3**, the roller compactor would be the highest vibration-generating equipment used for Project construction. Using groundborne vibration levels for standard types of construction equipment provided by the FTA, vibration levels from the operation of a roller compactor would attenuate to 0.160 in/sec PPV at the nearest structure 30 feet from construction activities, and 0.018 in/sec PPV at the nearest historical structure from construction activities (FTA 2018). The attenuated vibration level at the nearest receptor would be well below the building damage and human annoyance vibration thresholds of 0.2 in/sec and 0.24 in/sec, respectively. Vibration impacts from other equipment used would be lower. Therefore, operation of construction equipment would result in less-than-significant vibration impacts at nearby structures and receptors.

Once operational, the Project would not include any new sources of substantial vibration. While pumps may generate some level of vibration, this would be monitored by the operators to ensure optimal longevity. Therefore, the Project would have no operational impacts resulting from groundborne noise and vibration.

- c) **No Impact.** The Project site is not within 2 miles of a private airstrip or a public use airport. Therefore, the Project would not expose people working in the Project area to excessive noise levels from aircraft operations.

### 3.13.1.4 References

- California Department of Transportation (Caltrans). 2009. *Technical Noise Supplement*, November 2009. Available at: [https://www.gsweventcenter.com/Draft\\_SEIR\\_References/2013\\_0709\\_DOT\\_Technical\\_Noise\\_2009.pdf](https://www.gsweventcenter.com/Draft_SEIR_References/2013_0709_DOT_Technical_Noise_2009.pdf). Accessed December 2023. Accessed December 1, 2023.
- . 2013. *Transportation and Construction Vibration Guidance Manual*, September 2013.
- Federal Highway Administration (FHWA). 2017. *Default Noise Emission Reference Levels and Usage Factors*, last updated August 24, 2017. Available at: [https://www.fhwa.dot.gov/environment/noise/construction\\_noise/handbook/handbook09.cfm](https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm). Accessed December 1, 2023.



Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual*, September 2018. Available at: [https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123\\_0.pdf](https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf). Accessed December 26, 2023.

Marin County. 2007. *Marin Countywide Plan: Chapter 3 – The Built Environment Element*, adopted November 6, 2007, reprinted October 2014. Available at: [https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/county-wide-plan/cwp\\_2015\\_update\\_r.pdf?la=en](https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/county-wide-plan/cwp_2015_update_r.pdf?la=en). Accessed December 2023.

Hoover and Keith, 2000. *Noise Control for Buildings and Manufacturing Plants*, Thirteenth Printing, 2000. Available: <https://www.co.monterey.ca.us/Home/ShowDocument?id=51070>. Accessed December 26, 2023.

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## 3.14 Population and Housing

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.14.1 Discussion

- a) **No Impact.** Project construction and operation would not include any element that would directly result in new population growth like residences or businesses, or indirectly by the extension of roads and other growth-inducing infrastructure. There would be no impact.
- b) **No Impact.** The Project location is on undeveloped land outside of the Town of Ross in unincorporated Marin County. While there are residences approximately 0.75 mile to the east of the Project site, the Project does not propose to displace any existing people or housing. For this reason, there would be no impact.

### 3.15 Public Services

<u>Issues (and Supporting Information Sources):</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Emergency fire protection and paramedic services in unincorporated Marin County are administered by the Marin County Fire Department in Woodacre, CA (Marin County LAFCo, 2023). The fire department consists of 220 firefighters (full time, seasonal, and volunteer), four-to-fourteen person Tamalpais Fire Crews, and a one-to-fourteen person Fuels Crew (MCFD, 2023). The department serves Woodacre, Nicasio, Lucas Valley, Forest Knolls, Lagunitas, and San Geronimo Valley, and provides mutual aid to the community of Fairfax (Marin County, 2022).

The Marin County Sheriff’s Office provides law enforcement services to unincorporated communities in Marin County (MCSO, 2023). The office is divided into three bureaus: Administrative and Support Services, Detention Services, and Field Services, in addition to operating the countywide Major Crime Task Force. Overall, the sheriff’s office supports 202 sworn deputies and 112 other law enforcement professionals.

The County of Marin has 17 school districts serving more than 30,000 pre K-12 students (MCOE, 2023a). The Marin County Office of Education collaborates with Marin County’s 17 school districts to safeguard public funds by providing financial oversight and centralized services at economies of scale in the areas of business, technology, professional development, emergency services, maintenance, and operations (MCOE, 2023b).

Marin County Parks is responsible for managing 17,900 acres of parks and open space in the county. The county has 43 parks and facilities and 34 preserves (MCP, 2021a). Park property is governed by the Marin Municipal code, and open space preserves are regulated by Marin County Open Space District Code (MCP, 2021b).

### 3.15.1 Discussion

- a.i) **No Impact.** Project construction would be temporary and intermittent, occurring within two 6-month phases over the course of one-and-a-half calendar years. Because of the presence of the Northern spotted owl, construction would only occur for six months per year, between August 1 and January 31 of the following year. There would be approximately eight workers on any given day during Project construction. Workers would be sourced from the local workforce and would not relocate to communities near the Project site for Project construction. Operations and maintenance would be conducted by existing staff. Because Project construction and operation would not increase the local population, the Project would not result in a need for altered or new governmental fire protection facilities. The Project is not anticipated to impact the County of Marin's ability to maintain acceptable service ratios, response times, and other fire-fighting performance objectives. Therefore, the Project would have no impact on fire services.
- a.ii) **No Impact.** The Project would consist of eight construction workers on any given day during Project construction, and no new employees would be required for operations and maintenance. The Project is not anticipated to impact the Marin County Sheriff's Office's ability to maintain acceptable service ratios, response times, or other performance objectives. For this reason, the Project would not result in a need for new or altered governmental police protection facilities and the Project would have no impact on police services.
- a.iii) **No impact.** The Project would not require any new school facilities or the altering of any existing school facilities. There would only be eight construction workers, who would be sourced locally, as stated in a.i, and no new operations and maintenance employees would be required. Therefore, the proposed Project would not result in a permanent increase in employees. For these reasons, the Project would have no impact on schools.
- a.iv) **No impact.** The Project would not result in an increased population or the use of existing recreation facilities such that there would be demand for new or expanded park facilities. Project operations would be consistent with existing conditions. For this reason, the Project would have no impact on parks.
- a.v) **No Impact.** The Project would not require the need for additional permanent employees and would not increase the use of other public facilities. For this reason, the Project would have no impact on other public facilities.

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### 3.16 Recreation

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

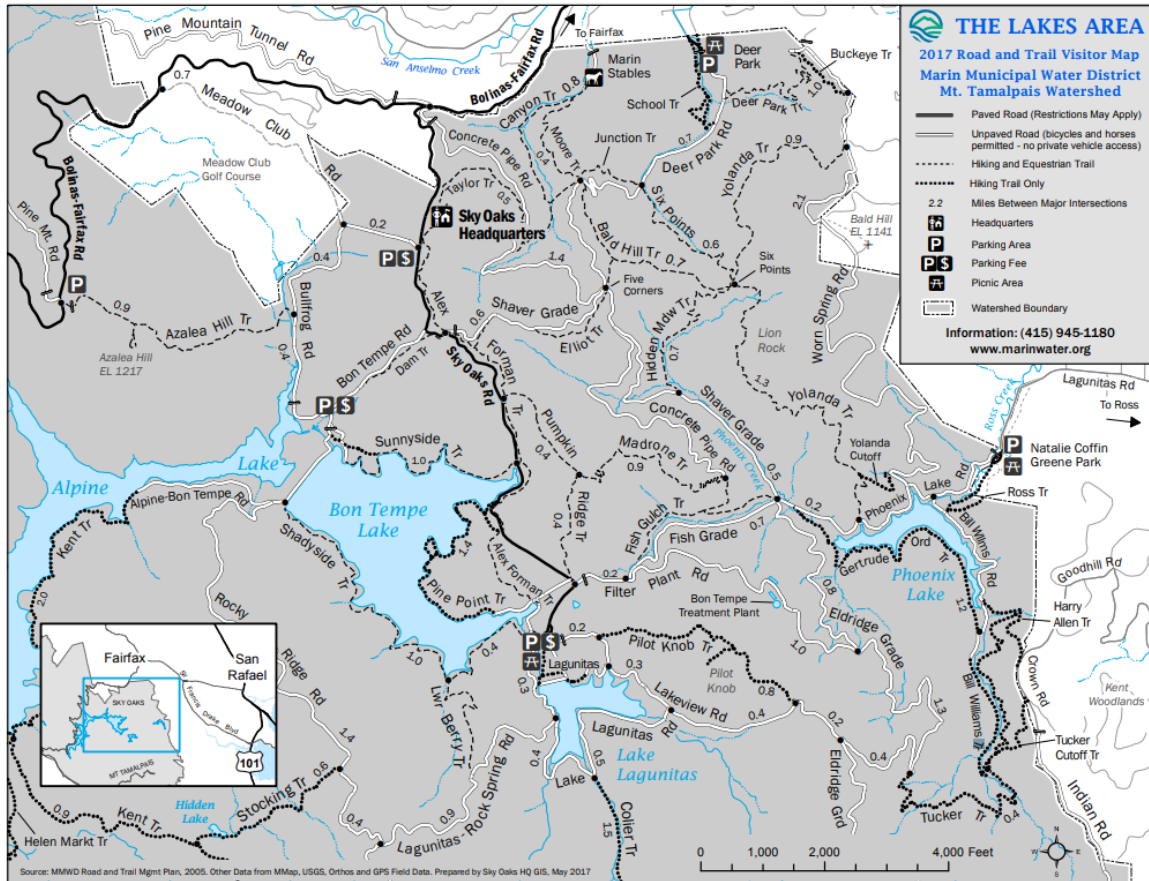
#### 3.16.1 Discussion

- a) **Less-than-Significant Impact.** The Project site is within the Mt. Tamalpais Watershed, which has over 150 miles of trails and unpaved roads for hiking and 90 miles of fire roads for cycling. Marin Water also allows horses on unpaved roads and designated trails in the watershed (Marin Water, 2023). Marin Water lands are open to the public for recreational use during daylight hours only, beginning 30 minutes before sunrise and ending 30 minutes after sunset.

**Figure 3-3** depicts trails in the Project area. Publicly accessible roads used by recreationists that would be directly affected by the Project include Phoenix Lake Road, Fish Grade Road, Shaver Grade Road, Eldridge Grade, Filter Plant Road, Bon Tempe Channel Road North, Bon Tempe Channel Road South, and Sky Oaks Road. The Alex Forman Trail begins approximately 25 feet north of the Project site at Bon Tempe Channel Road South. The Phoenix Lake Trail begins at Dibblee Road and then becomes Phoenix Lake Road, approximately 0.6 mile east of the Project site. Segment B of the pipeline (shown in **Figure 2-2**), which is within the Phoenix Road portion of the Phoenix Lake trail, would involve reuse of an existing pipeline; consequently, no new pipeline construction would occur in Segment B (other than where the existing pipe would be connected to new pipe). The building for Pump 2 would be constructed adjacent to the Phoenix Lake Trail. The Yolanda Trail connects to the Phoenix Lake Trail at Phoenix Lake Road.

As described in Section 2.5.1, *Construction Schedule, Hours, and Work Force*, segments of publicly accessible trails would be temporarily closed during construction hours during the weekdays. Marin Water would limit recreational access to Phoenix Lake Road during construction hours. Construction crews would backfill trenches at the end of each workday to allow public use of select trails after 5 p.m. on weekdays and throughout the weekends. Consequently, recreationists may choose to use other trails, resulting in increased use of other trails. As shown on Figure 3-3, many other trails and roads are available to recreationists in the area. Given the number of trails as well as parks in the area and the duration of construction activities, this temporary shift of trail users would

not be sufficient to cause substantial physical deterioration of these trails to occur or be accelerated. Thus, this impact would be less than significant.



SOURCE: Marin Water, 2017

MMWD Phoenix-Bon Tempe Project

**Figure 3-3**  
Trails in the Project Area

- b) **No Impact.** The Project would not include recreational facilities or require the construction or expansion of recreational facilities, resulting in no impact on the environment.

**3.16.1.1 References**

Marin Water. 2023. Mt. Tam Watershed - Visitor Information. Available at: <https://www.marinwater.org/visiting-mt-tam>. Accessed October 31, 2023.

### 3.17 Transportation

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.17.1 Discussion

The Project site is located west of the Town of Ross in unincorporated Marin County. The nearest highways to the Project site are US Highway 101, approximately 3.5 miles east of Phoenix Lake, and Highway 1, approximately 4 miles west of Bon Tempe Reservoir. Construction traffic travelling to and from Phoenix Lake would use Sir Francis Drake Boulevard (a major north-south arterial through San Anselmo and Ross), Lagunitas Road, and Diblee Road to Natalie Coffin Greene Park. Construction traffic travelling to and from Bon Tempe Reservoir would use Sir Francis Drake Boulevard, Bolinas Road to Sky Oaks Road. Additionally, internal watershed property roads would be used to move materials and equipment to and within the Project site.

Approximately 2,508 CY of material is anticipated to be excavated during construction. Some of the excavated material is anticipated to be re-used on site as backfill. Excavated material that is contaminated or in excess would be disposed of at Redwood Landfill in Novato. For purposes of this analysis, it was assumed that no more than 500 CY would be transported to Novato over the two construction phases (approximately 250 CY per year). With an average capacity of 16 CY per truck, this would equate to approximately 62 one-way truck trips, or 31 per construction phase, over each construction period. As each construction phase would have approximately 122 workdays, this would equate to approximately one truck trip every four workdays. In addition, approximately 1,000 CY of sand would be imported to place beneath the pipeline. This would equate to 124 one-way truck trips, or 62 per construction phase. Import of sand would require approximately one truck trip every two workdays.

- a) **No Impact.**

#### **Congestion Management Program**

Congestion management programs (CMPs) established by congestion management agencies are intended to monitor and address long-term traffic conditions related to future development that generate permanent (on-going) traffic increases, and do not apply to



temporary impacts associated with construction projects. The 2021 CMP, prepared by the Transportation Authority of Marin, monitors and evaluates (among other considerations) changes to the designated CMP roadway system, system performance, and transportation demand management. The nearest CMP network roadway is Sir Francis Drake Boulevard from College Avenue to Toussin Avenue, approximately 1 mile east of Phoenix Lake.

The proposed Project does not involve new or modified land uses that would generate a substantial number of long-term vehicle trips or other features that may affect the local or regional circulation system. The number of vehicle trips associated with Project operations (up to two twice a year for facility maintenance) would not be a noticeable increase in vehicle trips. Consequently, the Project would not conflict with the CMP.

### ***Public Transit, Bicycle, and Pedestrian Facilities***

Adopted in 2018, the Marin County Unincorporated Area Bicycle and Pedestrian Master Plan (BPMP) and Mt. Tamalpais Road and Trail Management Plan, adopted in 2005, primarily serve as coordinating and resource documents for Marin County, with a focus on developing a primary network of bikeways, pedestrian enhancement, and programs. There are no bikeways identified in the BPMP in the Project vicinity. The nearest recognized bikeway in the BPMP is Sir Francis Drake Boulevard, a Class III route (i.e., shared use with on-street motor vehicle traffic), approximately 1 mile east of Phoenix Lake. The Project would not directly or indirectly eliminate existing or planned alternative transportation corridors or facilities and would not conflict with policies or programs set forth in the BPMP. Furthermore, the Project would not conflict with policies set forth in the Marin Countywide Plan (Marin County, 2007) that supports active transportation.

The Marin Transit 2020–2029 Short Range Transit Plan outlines priorities and performances measurements to maintain and improve the rural bus transit system. There are no transit services in the Project vicinity. The nearest transit line is an east-west bus route, 228 Downtown San Rafael – Fairfax Manor, and a north-south bus route, 22 Downtown San Rafael – Marin City, both of which travel along Sir Francis Drake Boulevard, approximately 1 mile east of Phoenix Lake.

For reasons stated above, the Project would not conflict with a program, ordinance, or policy, including transit, roadway, bicycle, and pedestrian facilities, that would apply to the Project area's circulation system and there would be no impact.

- b) **Less-than-Significant Impact.** In accordance with Senate Bill 743, CEQA Guidelines Section 15064.3(b) indicates that vehicle miles traveled (VMT) is the most appropriate measure for identifying transportation impacts. VMT is a measure of the total number of miles driven to or from a development. In December 2018, the Governor's Office of Planning and Research (OPR) updated the technical advisory, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, to provide guidance on evaluating transportation impacts under CEQA. The thresholds set forth in the updated technical advisory may be used if a lead agency has not yet adopted VMT screening criteria. In

particular, the technical advisory screening threshold for projects generating or attracting fewer than 110 one-way automobile trips per day may generally be assumed to cause a less-than-significant transportation impact (OPR, 2018). Marin Water has not yet adopted VMT screening criteria, therefore, statewide guidance would apply to the Project.

It is anticipated that there would be approximately eight workers on any given day during Project construction. In addition, excavated material that would be disposed of at Redwood Landfill in Novato would result in approximately one truck trip every four workdays. Also, imported sand would require approximately one truck trip every two workdays. As such, Project construction is anticipated to have approximately up to 22 one-way trips per day. The Project would not require the closure of any roadways and would not generate significant or noticeable delays.

As discussed above, Project operations, assumed to require up to two workers, would only require an additional eight one-way trips annually. In addition, the Project's land uses would essentially operate in the same manner that it operated prior to Project construction and the number of peak trips occurring on any one day would be significantly less than the number identified in the technical advisory's guidance.

Therefore, considering the information presented above, the Project would not conflict with or be inconsistent with CEQA Guidelines 15064.3 (b). VMT generated by the Project would be less than significant, and no mitigation would be required.

- c) **No Impact.** During Project construction, temporary staging, laydown, and worker parking would be at existing parking/staging areas within Marin Water's watershed lands and would not be in public roadways, as described in Section 2.5.1 *Construction Schedule, Hours, and Work Force*. Project construction and operations would not introduce any new intersections or adjust roadway geometry that would have the potential to introduce hazardous driving conditions. Therefore, the Project would have no impacts, and no mitigation would be required.
- d) **Less-than-Significant Impact.** Project construction and operations would not require lane closures and would not change the configuration of the Project area's road network. While slow-moving construction-related vehicles could temporarily interfere with emergency response to the Project site (for example, emergency service vehicles traveling behind a slow-moving truck), all vehicles are required by law to yield to responding emergency vehicles. Therefore, it is anticipated that the Project would have a less-than-significant impact related to adequate emergency access.

### 3.17.1.1 References

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### 3.18 Tribal Cultural Resources

<u>Issues (and Supporting Information Sources):</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The cultural, archaeological, and historical resources of the Project area are discussed above in Section 3.5, *Cultural Resources*.

#### 3.18.1 Discussion

a.i) **Less-than-Significant Impact with Mitigation.** Tribal cultural resources are: (1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are listed, or determined to be eligible for listing, in the California Register of Historical Resources (California Register), or local register of historical resources, as defined in PRC Section 5020.1(k); or (2) a resource determined by the CEQA lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). For a cultural landscape to be considered a tribal cultural resource, it must be geographically defined in terms of the size and scope of the landscape (PRC Section 21074[b]). A historical resource, as defined in PRC Section 21084.1, a unique archaeological resource, as defined in PRC Section 21083.2(g), or a non-unique archaeological resource, as defined in PRC Section 21083.2(h), may also be a tribal cultural resource.

Through background research at the Northwest Information Center of the California Historical Resources Information System, no known archaeological resources that could be considered tribal cultural resources, that are listed or determined eligible for listing in the California Register, or that are included in a local register of historical resources as defined in PRC Section 5020.1(k), pursuant to PRC Section 21074(a)(1), would be impacted by the Project.

According to the requirements of PRC Section 21080.3.1(b), one Tribe, the Federated Indians of Graton Rancheria, has previously requested consultation regarding projects in the vicinity of lands under the jurisdiction of Marin Water. On October 12, 2023, Marin Water sent a letter to the Federated Indians of Graton Rancheria. Via an email dated October 30, 2023, the Federated Indians of Graton Rancheria notified Marin Water of their formal request for tribal consultation. On October 30, 2023, the Tribe initiated consultation. Marin Water sent Project and site information on November 9, 2023. After multiple communications, Marin Water closed tribal consultation on January 29, 2024. However, Marin Water will coordinate with the Tribe if there are any inadvertent discoveries during construction.

Based on the above discussion, Marin Water did not identify any tribal cultural resources listed or eligible for listing in the California Register, nor did they determine any resources to be significant pursuant to criteria set forth in Subdivision (c) of PRC Section 5024.1. In the event that cultural materials are identified during Project implementation that are determined to be tribal cultural resources, implementation of **Mitigation Measure CUL-1: Cultural Resources Awareness Training and Inadvertent Discovery of Archaeological Resources or Tribal Cultural Resources**, outlined above in Section 3.5, *Cultural Resources*, would reduce potentially significant impacts to less than significant. This mitigation would ensure that work is halted in the vicinity of a find until a qualified archaeologist and a Native American tribal representative can make an assessment and provide additional recommendations.

- a.ii) **Less-than-Significant Impact with Mitigation.** For the same reasons stated in the analysis of potential impacts on tribal cultural resources above for issue a.i, impacts would be potentially significant, but implementation of **Mitigation Measure CUL-1** would reduce impacts to less than significant.
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### 3.19 Utilities and Service Systems

Issues (and Supporting Information Sources):	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.19.1 Discussion

- a) **Less than Significant.** The purpose of the Project is to construct facilities to improve water services to Marin Water’s customers. The Project would convey water from one reservoir to another in Marin Water’s system. The impacts of constructing and operating the Project are evaluated throughout this Initial Study.

Wastewater treatment at the Project site is provided by the Ross Valley Sanitary District (RVSD) (RVSD, 2023). Solid waste services are regulated by the Waste Management Division of the Marin County Department of Public Works (Marin County, 2023) and are provided by Marin Sanitary Service (Marin Sanitary Service 2021). Construction activities would be staffed by the existing regional workforce. The Project would not require additional staff to operate. Therefore, new or expanded wastewater or solid waste facilities would not be needed during construction or operation, and there would be no impact.

As discussed in Section 3.10, *Hydrology and Water Quality*, additional new or expanded stormwater collection facilities would not be required during construction and operation; there would be no impact.

Telecommunication services at the Project site are regulated by the California Public Utilities Commission (Marin County, 1998) and provided by various private companies.

Electricity at the site is provided by PG&E. The new 450 hp pump would include associated electrical equipment. No PG&E gas transmission pipelines are mapped in the Project vicinity (PG&E, 2023). The Project would not require additional staff or otherwise increase demand for utilities once operational. Therefore, Project operations would not require or result in the construction of new or expanded utilities; there would be no impact.

PG&E is still determining whether a new electrical power service would be needed; however, electricity for Pump 2 would tie into the existing infrastructure. Pursuant to communications with PG&E, several options are being considered such as upgrading the existing service with a single meter or adding a new meter; upgrading the existing transformer; and/or modifying the existing distribution system. At the time of this analysis, PG&E has not determined how it would service the Project and electricity upgrades would be part of Phase 2 (starting in August 2025). It is unlikely the installation and improvements of utility infrastructure would require the relocation or construction of additional utility infrastructure such that it would have significant environmental impacts. This impact would be less than significant.

If it determined that PG&E requires additional poles or other structures for this Project, subsequent environmental analysis may be required at that time.

- b) **No Impact.** The Project is a water conveyance project and would not in and of itself generate demand for water. Potable water for sanitary and drinking needs would be required for the onsite construction workers, but this demand would be temporary and limited, and there are sufficient water supplies to serve their needs. Because the Project would not result in a change in water use or consumption, the Project would not affect water supplies or the availability of Marin Water to serve reasonably foreseeable future development during normal, dry, and multiple dry years. For this reason, the Project would have no impact on water supplies.
- c) **No Impact.** The Project would not generate wastewater or disrupt wastewater services during construction or operation. Temporary wastewater facilities would be provided for the on-site construction workers during construction, and there would be no new source of wastewater discharge. The Project would not generate wastewater or affect the RVSD's ability to provide wastewater treatment capacity to their existing customers. For these reasons, the Project would have no impact on wastewater capacity.
- d) **Less-than-Significant Impact.** The California Integrated Waste Management Act of 1989 established the goal of diverting at least 75 percent of generated waste (based on per capita disposal rates) in California by 2020. In addition, the 2019 California Green Building Code (adopted by reference by Marin County) requires all construction and demolition projects to reuse or recycle at least 65 percent of materials generated, and Zero Waste Marin<sup>6</sup> ensures Marin County's compliance with state recycling mandates and provides

<sup>6</sup> Zero Waste Marin is the informal name for the Marin Hazardous and Solid Waste Joint Powers Authority, which provides education and information to residents and businesses about recycling, reducing solid waste, and safely

residents and businesses with information on household hazardous waste collection, recycling, composting, and waste disposal.

Solid waste would be recycled or disposed of in a landfill and would comply with local management and reduction statutes related to solid waste. The Redwood Landfill in the city of Novato is permitted to accept 2,310 CY of materials daily and is permitted for all types of waste that would be generated by Project construction. Redwood Landfill accepts and recycles concrete and asphalt, clean soil, construction and demolition debris, and other materials (Redwood Landfill, 2023a and 2023b).

Approximately 2,508 CY of material is anticipated to be excavated during construction. Some of the excavated material is anticipated to be re-used on site as backfill. Excavated material that is contaminated or in excess would be disposed at Redwood Landfill. Given the volume and type of solid waste that could be generated during construction, the Project would not generate solid waste more than State or local standards, or exceeding the capacity of local infrastructure, or otherwise impair attainment of solid waste reduction goals. For these reasons, the Project impact would be less than significant.

- e) **Less-than-Significant Impact.** As stated above, approximately 2,508 CY of material is anticipated to be excavated during construction. Some of the excavated material is anticipated to be re-used on site as backfill. Excavated material that is contaminated or in excess would be disposed at Redwood Landfill. The Project would not generate solid waste during operations. The types of solid waste generated from Project construction would be consistent with Redwood Landfill permit requirements and may be recyclable; the remaining volume of solid waste would be negligible and would not reduce Redwood Landfill's capacity. For these reasons, Project construction and operation would comply with goals set by Zero Waste Marin, federal, and state reduction statutes and regulations related to solid waste and the Project's impact would be less than significant.

### 3.19.1.1 References

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disposing of hazardous materials (Zero Waste Marin, 2023). The Authority also ensures compliance with California Integrated Waste Management Act and its waste reduction mandates.



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### 3.20 Wildfire

Issues (and Supporting Information Sources):	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.20.1 Discussion

- a) **Less-than-Significant Impact.** As described under Hazards and Hazardous Materials, item (f), impacts related to impairment of or physical interference with an emergency response or evacuation plan would be less than significant.
- b) **Less-than-Significant Impact.** The Project does not include the addition or modification of any structures intended for occupation and, therefore, would not expose occupants to increased risks associated with wildfire.

The Project site is in a very high Fire Hazard Severity Zone (CAL FIRE, 2007), and the Project site is adjacent to an Urban Wildland Interface area (Marin County, 2022b). Additionally, the Project site is along a steep slope and is subject to high winds (Marin County Fire Department, 2020), which can exacerbate wildfire risks. Further, construction would occur between August and January. Fall months are prone to Northern California Diablo wind conditions, which affect Marin County and exacerbate wildfire risks (Marin County Fire Department, 2020).

The use of construction equipment and the possible temporary on-site storage of fuels and/or other flammable construction chemicals could pose an increased fire risk, resulting in potential injury to workers or the public during construction.

As stated in Section 2.5.4, *Standard Environmental Protection Measures*, Marin Water would comply with its standard specifications for Environmental Protection (Section 18000) and High Fire Danger Alerts and Closures (Section 01000) (see **Appendix A**).

Fire prevention standards include requiring spark arrestors on all internal combustion engines, requiring that the storage and handling of flammable liquids would be in accordance with the Flammable and Combustible Liquids Code, and requiring that fire extinguishers would be provided at hazardous locations or operations. The High Fire Danger Alerts and Closures standards require the suspension of work in the watershed upon notification from the County Fire Department that a “Red Flag Warning - High Fire Danger Alert” exists for Marin County and provides guidance for the safe operation of vehicles, equipment, and tools as well as for grass and brush mowing and welding. Additionally, Chapter 7A of the CBC explicitly addresses the wildland fire threat to structures by requiring the use of fire-resistant materials and construction techniques, new buildings, additions, and exterior remodels to buildings located in any Fire Hazard Severity Zones or any Urban-Wildland Interface fire area designated by the enforcing are subject to CBC regulations.

Contractors would be required to comply with hazardous materials storage and fire protection regulations, which would minimize the potential for fire creation, and ensure that the risk of wildland fires during construction would be less than significant.

- c) **Less-than-Significant Impact.** As stated in Section 2.2, *Project Purpose and Objectives*, the purpose of the Project is to improve operational efficiency and flexibility and allow for more frequent use of Phoenix Lake water. The Project would not exacerbate fire risk or result in temporary or ongoing environmental impacts. Project maintenance would include bi-annual testing of the pumps and would not exacerbate fire risk or result in temporary or ongoing environmental impacts. As stated under b) above, the Project would be required to implement fire prevention measures, including Marin Water’s standard specifications. Compliance with applicable fire prevention requirements would reduce the fire risk, and this impact would be less than significant.
- d) **Less-than-Significant Impact.** As discussed in Section 3.7, *Geology and Soils*, the Project site is along a steep slope and in an area that could be susceptible to landslides. However, Section 3.7, *Geology and Soils* and Section 3.10, *Hydrology and Water Quality* identify several erosion and sediment control measures, compliance of which would be required during construction (i.e., a SWPPP, and Marin Water’s standard construction practices, see **Appendix A**).

The Project design features, in conjunction with the required erosion and sediment control measures, would reduce any potential impact related to runoff and drainage changes. Therefore, the Project would not result in changes to runoff or drainage patterns which could exacerbate downslope or downstream flooding and thereby expose people or structures to associated risks, and the impact would be less than significant.

### 3.20.1.1 References

California Department of Forestry and Fire Protection (CAL FIRE). 2007. Marin County Fire Hazard Severity Zones in State Responsibility Areas (SRA). Adopted by CAL FIRE on November 7, 2007. Forest Resource Assessment Program. Map. Scale 1:100,000.

Marin County. 2022a. Wildfire Evacuation Zones. Available at: [https://www.marincounty.org/-/media/files/departments/fr/wildfire-evacuation-zones/mtz\\_kentfield.pdf](https://www.marincounty.org/-/media/files/departments/fr/wildfire-evacuation-zones/mtz_kentfield.pdf). Accessed on November 9, 2023.

———. 2022b. Interactive Wildland Urban Interface Zone Map. Available at: <https://www.marincounty.org/depts/fr/divisions/fire-prevention-investigation/prevention-documents>. Accessed on November 13, 2023.

Marin County Fire Department (MCFD). 2020. Marin Community Wildfire Protection Plan. December 2020. Available at: [https://j0i68d.p3cdn1.secureserver.net/wp-content/uploads/CWPP\\_2020\\_Final.pdf](https://j0i68d.p3cdn1.secureserver.net/wp-content/uploads/CWPP_2020_Final.pdf). Accessed on November 28, 2023.

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## 3.21 Mandatory Findings of Significance

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>XXI. MANDATORY FINDINGS OF SIGNIFICANCE —</b>				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 3.21.1 Discussion

- a) **Less Than Significant Impact with Mitigation.** The Project has the potential to degrade the quality of the environment. As described above in Sections 3.1 through 3.20, the Project has the potential to cause significant impacts related to biological resources, cultural resources, geology and soils, hydrology and water quality, and tribal cultural resources. Mitigation measures have been identified to reduce these potential impacts to less than significant levels. No further mitigation would be required, and the Project would not degrade the quality of the environment (see Sections 3.1 through 3.20 above, for detailed analysis).

The Project has the potential to impact biological resources. As discussed above in Section 3.4, *Biological Resources*, the Project could result in impacts during construction on rare plants, special status bats, and existing heritage and protected trees. However, implementation of the following mitigation measures would ensure that impacts on biological resources would be less than significant:

- BIO-1: Protection of Rare Plants
- BIO-2: Protection of Reptiles and Amphibians
- BIO-3: Bat-Safe Tree Removal
- BIO-4: Habitat Restoration and Monitoring
- BIO-5: Minimize Impacts on Protected Trees

No other biological resources would be substantially affected, and the Project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

The Project has the potential to impact cultural and tribal cultural resources. As discussed in Section 3.5, *Cultural Resources*, and Section 3.18, *Tribal Cultural Resources*, there are no documented historical resources, archaeological or tribal cultural resources in the Project area. However, implementation of the following mitigation measures would ensure that inadvertent impacts on cultural and tribal cultural resources would be less-than-significant, and the Project would not eliminate important examples of the major periods of California history or prehistory.

- CUL-1: Cultural Resources Awareness Training and Inadvertent Discovery of Archaeological Resources or Tribal Cultural
- CUL-2: Inadvertent Discovery of Human Remains

The Project has the potential to result in soil erosion during excavation and grading on steep slopes, and from soil stockpiling. As discussed in Section 3.7, *Geology and Soils*, the Project has the potential to increase erosion, scouring of banks, contamination of water courses, and otherwise increase sedimentation. However, implementation of Mitigation Measure HYD-1, Water Control, Drainage, and Discharge Plan, would ensure that all erosion impacts would be less than significant.

The Project has the potential to violate water quality standards, degrade surface water quality, result in erosion or siltation on- or off-site, increase the rate or amount of surface runoff, or contribute to runoff that would exceed storm drain system capacities. Implementation of Mitigation Measure HYD-1, Water Control, Drainage and Discharge Plan and Mitigation Measure HYD-2, Adaptive Water Quality Management Plan, would ensure that surface water impacts would be less than significant.

- b) **Less Than Significant Impact with Mitigation.** As described in Sections 3.1 through 3.20, the Project has the potential to cause significant impacts related to biological resources, cultural resources, geology and soils, hydrology and water quality, and tribal cultural resources. Mitigation measures have been identified to reduce these potential impacts to less than significant levels.

Cumulative environmental effects are multiple individual effects that, when considered together are considerable, or compound or increase other environmental impacts. The individual effects may result from a single project or several separate projects and may occur at the same place and point in time or at different locations and over extended periods of time.

As discussed in Sections 3.1 through 3.20, individual project-related potentially significant impacts have been identified for the Project, all of which would be mitigated

to less-than-significant levels through implementation of the identified mitigation measures. The Project would have limited impacts on the physical environment and the impacts associated with implementation of the Project would occur during construction, and thus would be short-term.

The potential for Project-generated impacts to contribute to a significant cumulative impact would arise if the impacts occurred within the same geographic area as other projects. In addition to the geographic scope, cumulative impacts can be determined by the timing of other projects relative to the Project. Schedule is particularly important for construction-related impacts. For a group of projects to generate cumulative construction impacts, they must be temporally as well as spatially proximate.

Under a separate project, Marin Water is maintaining and improving its internal roadway and trail network. Marin Water has been implementing a culvert maintenance program on Fish Grade Road since 2020, which physically overlaps the pipeline alignment. Both projects would temporarily affect culverts on Fish Grade Road. Marin Water has obtained and is currently implementing conditions contained in the following approvals:

- U.S. Army Corps of Engineers 404 Permit
- San Francisco Bay Regional Water Quality Control Board Clean Water Act 401 Permit
- California Department of Fish and Wildlife Lake or Streambed Alteration Agreement

Marin Water is implementing the conditions and measures identified in these approvals to avoid or lessen impacts to biological resources. The cumulative impacts to biological resources from this project and the proposed Project would be significant. Marin Water will continue to comply with the above approvals for the protection of Waters of the U.S. and State, sensitive species and other regulated resources, and Marin Water would implement adopted environmental protection measures (see **Appendix A**) and the mitigation measures identified in Sections 3.1 through 3.20 for the proposed Project. These actions would ensure that the Project's contribution to cumulative impacts on biological resources would be less-than-cumulatively considerable.

- c) **Less Than Significant Impact with Mitigation.** As described in a) above, the Project has the potential to cause potentially significant /impacts related to biological resources, cultural resources, geology and soils, hydrology and water quality, and tribal cultural resources. Mitigation measures have been identified to reduce these potential impacts to less than significant levels. Impacts on air quality (i.e., fugitive dust during construction), water quality (i.e., release of pollutants due to Project construction), and hazardous materials (i.e., exposure to hazardous materials) resulting from the Project could directly affect human beings, and all CEQA impacts discussed above could indirectly affect human beings. Mitigation measures discussed in Sections 3.1 through 3.20 would ensure that impacts would be reduced to less than significant and would not cause substantial adverse effects on human beings, either directly or indirectly. No further mitigation would be required.

# Appendix A

## **Marin Water Standard Environmental Protection Measures**



**Attachment SPEC: Marin Water Standard  
Construction Specifications**

**SECTION 18000**

**ENVIRONMENTAL PROTECTION**

**PART 1 - GENERAL**

**1.1 SCOPE**

- A. The requirements of Division 1 form a part of this section.
- B. During the progress of the work, keep the premises occupied in a neat and clean condition and protect the environment both on site and off site, throughout and upon completion of the construction project.

**1.2 SUBMITTALS**

Contractor shall develop an Environmental Protection Plan in detail and submit to the Engineer within seven (7) days from the date of the Notice to Proceed. Distribute the plan to all employees and to all subcontractors and their employees.

The Environmental Protection Plan shall include, but not be limited to, the following items:

- A. Copies of required permits.
- B. Proposed sanitary landfill site.
- C. Other proposed disposal sites.
- D. Copies of any agreements with public or private landowners regarding equipment, materials storage, borrow sites, fill sites, or disposal sites. Any such agreement made by the Contractor shall be invalid if its execution causes violation of local or regional grading or land use regulations.
- E. Proposed project site winterization plan.

**1.3 ENVIRONMENTAL REQUIREMENTS**

All operations shall comply with all federal, state and local regulations pertaining to water, air, solid waste and noise pollution.

**1.4 DEFINITIONS**

- Sediment - Soil and other debris that have been eroded and transported by runoff water.
- Solid Waste - Rubbish, debris, garbage and other discarded solid materials resulting from construction activities, including a variety of

combustible and non-combustible wastes, such as ashes, waste materials that result from construction or maintenance and repair work, leaves and tree trimmings.

Chemical Waste - Includes petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, disinfectants, organic chemicals and inorganic wastes. Some of the above may be classified as "hazardous."

Sanitary Wastes-

Sewage - That which is considered as domestic sanitary sewage.

Garbage - Refuse and scraps resulting from preparation, cooking, dispensing and consumption of food.

Hazardous Mat'ls - As defined by applicable laws and regulations. Undisclosed hazardous material contamination, if encountered will constitute a changed site condition. The District may retain a separate contractor to dispose of undisclosed hazardous material encountered.

PART 2 - PRODUCTS

(None)

PART 3 - EXECUTION

3.1 PROTECTION OF NATURAL RESOURCES

A. GENERAL

It is intended that the natural resources within the project boundaries and outside the limits of permanent work performed under this Contract be preserved in their existing condition or be restored to an equivalent or improved condition upon completion of the work. Confine construction activities to areas defined by the public roads, easements, and work area limits shown on the Drawings. Return construction areas to their pre-construction elevations except where surface elevations are otherwise noted to be changed. Maintain natural drainage patterns. Conduct construction activities such that ponding of stagnant water conducive to mosquito breeding habitat will not occur at any time.

B. LAND RESOURCES

1. Contractor Responsibility

Do not remove, cut, deface, injure or destroy trees, grapevines or shrubs outside the work area limits. Do not remove, deface, injure or destroy trees within the work area without permission from the Engineer. Such improvements shall be removed and replaced, if required, by the Contractor at his own expense.

2. Protection

Protect trees that are located near the limits of the Contractor's work areas which may possibly be defaced, bruised or injured or otherwise damaged by the Contractor's operations. No ropes, cables or guys shall be fastened to or attached to any existing nearby trees, grapevines or shrubs for anchorages unless specifically authorized. Where such special emergency use is permitted, the Contractor shall be responsible for any damage resulting from such use.

3. Trimming

Trim tree limbs overhanging the line of the work and in danger of being damaged by the Contractor's operations in accordance with recognized standards for such work. Remove other tree limbs under the direction of the Engineer, so that the tree will present a balanced appearance.

4. Treatment of Roots

Do not cut roots unnecessarily during excavating or trenching operations. Expose major roots encountered in the course of excavation and do not sever. Wrap them in burlap as a protective measure while exposed. Neatly trim all other roots (one inch in diameter and larger) that are severed in the course of excavation at the edge of the excavation or trench and paint them with a heavy coat of an approved tree seal as directed by the Engineer.

5. Repair or Restoration

Repair or replace any trees or other landscape features scarred or damaged by equipment or construction operations as specified below. The repair and/or restoration plan shall be favorably reviewed prior to its initiation.

6. Temporary Construction

Obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction as directed by the Engineer. Level all temporary roads, parking areas and any other areas that have become compacted or shaped. Any unpaved areas where

vehicles are operated shall receive a suitable surface treatment or shall be periodically wetted down to prevent construction operations from producing dust damage and nuisance to persons and property, at no additional cost to the Owner. Keep haul roads clear at all times of any object which creates an unsafe condition. Promptly remove any contaminants or construction material dropped from construction vehicles. Do not drop mud and debris from construction equipment on public streets. Sweep clean turning areas and pavement entrances as necessary.

C. WATER RESOURCES

Investigate and comply with all applicable federal, state and local regulations concerning the discharge (directly or indirectly) of pollutants to the underground and natural waters. Perform all work under this Contract in such a manner that any adverse environmental impacts are reduced to a level that is acceptable to the Engineer and regulatory agencies. Refer to Section 02200, EARTHWORK, paragraph on control of water for "dewatering" water disposal requirements.

1. Oily Substances

At all times, special measures shall be taken to prevent oily or other hazardous substances from entering the ground, drainage areas or local bodies of water in such quantities as to affect normal use, aesthetics or produce a measurable impact upon the area. Any soil or water which is contaminated with oily substances due to the Contractor's operations shall be disposed of in accordance with applicable regulations.

2. Chlorinated Water

Take special measures to prevent chlorinated water from entering the ground or surface waters. Dechlorinate chlorinated water prior to discharge.

D. FISH AND WILDLIFE RESOURCES

Perform all work and take such steps required to prevent any interference or disturbance to fish and wildlife. The Contractor will not be permitted to alter water flows or otherwise significantly disturb native habitat adjacent to the project area which are critical to fish and wildlife except as may be indicated or specified.

E. CULTURAL RESOURCES

The project does not pass through any known archaeological sites. However, it is conceivable that unrecorded archaeological sites could be discovered during the construction. In the event that artifacts, human remains, or other cultural

resources are discovered during subsurface excavations at locations of the work, the Contractor shall protect the discovered items, notify the Engineer, and comply with applicable law.

3.2 NUISANCE ABATEMENT

A. NOISE CONTROL

1. Location – except as modified in Section 09870 – Coating Systems

Maximum Noise Levels within 1,000 Feet of any Residence, Business, or Other Populated Area: Noise levels for trenchers, pavers, graders and trucks shall not exceed 90 dB at 50 feet as measured under the noisiest operating conditions. For all other equipment, noise levels shall not exceed 85 dB at 50 feet.

2. Equipment

Electrically powered equipment instead of pneumatic or internal combustion powered equipment shall be used, where feasible.

Jack hammers shall be equipped with exhaust mufflers and steel muffling sleeves. Air compressors should be of a quiet type such as a "whisperized" compressor.

All noise-producing project equipment and vehicles using internal combustion engines (including haul trucks) shall be fitted with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features. These devices shall be maintained in good operating condition so as to meet or exceed original factory specifications. Mobile or fixed "package" equipment (e.g., air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.

All mobile or fixed noise-producing equipment used on the project, which is regulated for noise output by a local, state, or federal agency, shall comply with such regulations while in the course of project activities.

3. Operations

Keep noisy equipment as far as possible from noise-sensitive site boundaries. Machines should not be left idling. Use electric power in lieu of internal combustion engine power wherever possible. Maintain equipment properly to reduce noise from excessive vibration, faulty mufflers, or other sources. All engines shall have mufflers.

The use of noise-producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.

4. Scheduling

Schedule noisy operations so as to minimize their duration at any given location.

5. Monitoring

To determine whether the above noise limits are being met and whether noise barriers are needed, the Contractor shall use a portable sound level meter meeting the requirements of American National Standards Institute Specification S1.4 for Type 2 sound level meters. If non-complying noise levels are found, the Contractor shall be responsible for monitoring and correction of excessive noise levels.

B. DUST CONTROL, AIR POLLUTION, AND ODOR CONTROL

1. Unpaved areas where vehicles are operated shall be periodically wetted down or given an equivalent form of treatment, to eliminate dust formation.
2. Store all volatile liquids, including fuels or solvents in closed containers.
3. No open burning of debris, lumber or other scrap will be permitted.
4. Properly maintain equipment to reduce gaseous pollutant emissions.

3.3 CONSTRUCTION STORAGE AREAS

- A. Store and service equipment at the designated Contractor's storage area where oil wastes shall be collected in containers. Oil wastes shall not be allowed to flow onto the ground or into surface waters. Containers shall be required at the construction site for the disposal of materials such as paint, paint thinner, solvents, motor oil, fuels, resins and other environmentally deleterious substances. No dumping of surplus concrete or grout on the site will be permitted.

3.4 FIRE PREVENTION

- A. Provide spark arresters on all internal combustion engines.
- B. Store and handle flammable liquids in accordance with the Flammable and Combustible Liquids Code, NFPA 30.
- C. Provide fire extinguishers at hazardous locations or operations, such as welding.

### 3.5 EROSION AND SEDIMENT TRANSPORT CONTROL

- A. Discharge construction runoff into small drainages at frequent intervals to avoid buildup of large potentially erosive flows.
- B. Prevent runoff from flowing over unprotected slopes.
- C. Keep disturbed areas to the minimum necessary for construction.
- D. Keep runoff away from disturbed areas during construction.
- E. Direct flows over vegetated areas prior to discharge into public storm drainage systems.
- F. Trap sediment before it leaves the site, using such techniques as check dams, sediment ponds, or siltation fences.
- G. Remove and dispose of all project construction-generated siltation that occurs in offsite retention ponds.
- H. Confine construction to the dry season, whenever possible. If construction needs to be scheduled for the wet season, ensure that erosion and sediment transport control measures are ready for implementation prior to the onset of the first major storm of the season.
- I. Stabilize disturbed areas as quickly as possible.

### 3.6 DISPOSAL OPERATIONS

#### A. SOLID WASTE MANAGEMENT

Supply solid waste transfer containers. Daily remove all debris such as spent air filters, oil cartridges, cans, bottles, combustibles and litter. Take care to prevent trash and papers from blowing onto adjacent property. Encourage personnel to use refuse containers. Convey contents to a sanitary landfill.

Washing of concrete containers where waste water may reach adjacent property or natural water courses will not be permitted. Remove any excess concrete to the sanitary landfill.

#### B. CHEMICAL WASTE AND HAZARDOUS MATERIALS MANAGEMENT

Furnish containers for storage of spent chemicals used during construction operations. Dispose of chemicals and hazardous materials in accordance with applicable regulations.



C. GARBAGE

Store garbage in covered containers, pick up daily and dispose of in a sanitary landfill.

D. CLEARING AND GRUBBING

Dispose of vegetation, weeds, rubble, and other materials removed by the clearing, stripping and grubbing operations off site at a suitable disposal site in accordance with applicable regulations.

E. EXCAVATED MATERIALS

1. Native soil complying with the requirements of Section 02200, EARTHWORK, may be used for backfill, fill and embankments as allowed by that section.

2. Spoil Material: Remove all material which is excavated from the site and dispose of offsite in accordance with applicable regulations disposal site indicated in the Environmental Protection Plan. No additional compensation will be paid to the Contractor for such disposal. Include all such costs in the lump sum prices bid for the project. Remove rubbish and materials immediately following excavation.

Rubbish shall consist of all materials not classified as suitable materials or rubble and shall include shrubbery, trees, timber, trash and garbage.

3. Excavated material may be stockpiled offsite for reuse in accordance with the requirements of Section 02200, EARTHWORK. Offsite stockpile locations shall be legally obtained by the Contractor and shall meet all of the applicable regulations and requirements of this Section. No additional compensation will be paid to the Contractor for such stockpiling and reuse of native soil.

**END OF SECTION**

## SECTION 01000

### ENVIRONMENTAL PROTECTION HIGH FIRE DANGER ALERTS AND CLOSURES

Marin County open space is very susceptible to wild land fires during the warm seasons of the year. This includes all "Open Space" lands such as MMWD lands, Marin County Open Space District (MCOSD) lands and any other private open space lands. Contractor must be aware of the possibility of fires at other times also and must use their own good judgment to work in a safe manner to prevent wild land fires. Contractors are encouraged to bring to any fire safety problems they observe or suggestions they may have to the attention of the Engineer. **Smoking is prohibited. This includes no smoking inside vehicles while on open space land.**

Red Flag Warning - Interagency Fire Closure Upon notification from the County Fire Department that a "Red Flag Warning - High Fire Danger Alert" exists for Marin County, Contractor shall suspend work at all affected open space lands. Contractors should monitor fire conditions with the Marin County Fire Department to know when closures are in effect. Contractor shall call the Marin County Fire Department contact the day before at 5 pm (415-499-7191) or otherwise as set by the County, each day to determine the fire conditions projected for the following day and plan their schedule accordingly.

If after 5 pm a high fire condition causes closure for the following day, then that Periods of high fire danger which result in the contractor being required to suspend work shall be considered Unavoidable Delays as described in Article 86 of the Standard Conditions. Additionally, during these periods the contractor may be prohibited from entering the open space lands.

#### RADIO COMMUNICATIONS

Whenever any work is being performed that may pose a potential fire danger, cell phones or 2-way radios must be on site to permit a rapid emergency response if necessary.

#### VEHICLES, EQUIPMENT, TOOLS

Trucks, Tractors Heat from exhaust systems can ignite a fire. Do not drive off road or in any area with tall grass whenever possible. Be sure all trucks and tractors are equipped with a fire extinguisher. Inspect trucks and tractors before use to be sure the spark arrestor exhaust system is in good condition and that there are no fires related defects. The Contractor shall not drive off road or park near or drive through tall grasses or other flammable vegetation types without approval from the District Inspector. Based upon authorization by District staff, the Contractor shall remove all grasses and other types of flammable vegetation from the off road work area approved for vehicle access.

Equipment, Tools Heat from power equipment exhaust systems, or sparks from equipment or tools can ignite a fire. Clear a space with a radius at least five feet from the exhaust in which to place equipment such as generators, chainsaws and power weed cutters. Be careful when using tools that produce sparks and be sure spark arrestors are

in good condition. Do not allow heated tools to contact ignitable fuels. If power equipment or tools that produce sparks are in use, a fire extinguisher must be kept onsite. Larger equipment should have a fire extinguisher mounted on it.

Fueling Equipment Before fueling power equipment or tools in the field, clear a space in which to perform the task. Fuel should be stored in a cleared space and, where possible, in the shade. If power equipment stays in one location during the task, store fuel and equipment and perform fueling operation in the same clearing. Be sure equipment is turned off while fueling. Take extra care when fueling heated equipment. Be sure gas spout/funnel is used to avoid spills and that gas caps are kept in place. Remove or dry any fuel spillage prior to starting equipment. During fueling operations, a fire extinguisher should be onsite ready for use.

### GRASS AND BRUSH MOWING

Equipment and tools used to perform this fire hazard reduction task could instead ignite a fire. Suspend this task during “High Fire Danger Alert” periods. Use extreme caution in dry areas. Follow all procedures for equipment and tools. Use only non-metallic heads on weed cutters. Do not lay heated tools down in ignitable fuels. Carry a portable fire extinguisher at all times when working or fueling the brush cutter. When a tractor mower is used, a truck with a fire pumper must accompany the tractor. When the truck cannot follow due to terrain or tall grass conditions, then the truck driver must walk, carrying an additional fire extinguisher.

### WELDING

Suspend this task during “High Fire Danger Alert” periods, on other hot dry days and when winds exceed five miles per hour. Perform this task in the morning prior to 10 am. Remove grass within a twelve-foot radius of the welding site. Wet the ground and surrounding vegetation prior to welding and every fifteen minutes thereafter. Maintain a portable welding screen around the welder. A truck-mounted pumper must be at the welding site, with the pump engaged during welding. An extra person must be present with no other duty except to watch for fire and operate the pumper.

### FIRE SAFETY EQUIPMENT OPERATION

Where a truck with water pump is required, a person fully trained in truck and water pump operation must be present. All operators must be fully trained in use of the fire extinguishers.

Contractors shall have fire extinguishers onsite and follow fire safe procedures.

**SECTION 02200**

**EARTHWORK**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

This section includes specifications for furnishing, placing and performing earthwork for excavations, shoring, dewatering, backfilling, compaction and grading, at the required lines and grades, as shown on the drawings. The excavation shall include, without classification, the removal and disposal of all materials of whatever nature encountered, except hazardous waste. Water and all other obstructions, that would interfere with the proper construction and completion of the required work shall be removed and disposed of in accordance with the requirements of Section 18000 - ENVIRONMENTAL PROTECTION.

**1.2 RELATED SECTIONS**

- A. Section 02713 - DISTRIBUTION PIPING SYSTEM
- B. Section 03400 - CONTROL DENSITY FILL

**1.3 REFERENCES**

- A. ASTM D1557 - Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb rammer and 18 inch drop.
- B. ASTM D2216 - Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures
- C. ASTM D2419 – Sand Equivalent Value of Soils and Fine Aggregates
- D. ASTM D2487 - Classification of Soils for Engineering Purposes
- E. ASTM D2844 - Resistance R Value and Expansion Pressure of Compacted Soils
- F. ASTM D2922 - Density of Soil and Soil-Aggregate in place by Nuclear Methods (Shallow Depth)
- G. ASTM D3017 - Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

**1.4 SUBMITTALS**

- A. Sheeting and Shoring Plan: Refer to General Specifications, Article 11.
- B. Samples and Test Results: Furnish, without additional cost to the District, such quantities of import materials as may be required by the Engineer for test

purposes. The Contractor shall cooperate with the Engineer and furnish necessary facilities for sampling and testing of all materials and workmanship. Submit test results for import materials. All material furnished and all work performed shall be subject to rigid inspection, and no material shall be delivered to the site until it has been favorably reviewed by the Engineer, or used in the construction work until it has been inspected in the field by the Engineer.

1.5 DUST CONTROL

Refer to Section 18000, Paragraph 3.2B.

1.6 SITE ACCESS

Access to the site will be over public and private roads. The Contractor shall exercise care in the use of such roads and shall repair at his own expense any damage thereto caused by his operations. Such repair shall be to the satisfaction of the owner or agency having jurisdiction over the road. The Contractor shall take whatever means are necessary to prevent tracking of mud onto existing roads.

1.7 SOILS TESTING

Listed below are the standard test methods to be employed by the District or by the Contractor's soils testing firm. The intent of these tests is to insure the quality of backfill material and the workmanship, methods and final product of the Contractor.

- A. In determining the in-place Density of Soil and Soil-Aggregate by nuclear methods, testing shall conform to ASTM D2922 or California Test Method No. 216.
- B. In determining laboratory moisture-density relationships of soils, testing shall conform to by ASTM D1557 or California test method No. 216.
- C. In determining the in-place moisture content of soils, testing shall follow ASTM D3017, ASTM D2216, California Test Method No. 226.
- D. In determining the Sand Equivalent, ASTM D2419 or California Test method No. 217 shall be used.
- E. In determining the resistance value, testing shall conform to ASTM D2844 or California Test Method No. 301.
- F. Classification of soils for Engineering Purposes shall be in accordance with ASTM D2487.

PART 2 - MATERIALS

2.1 EARTHWORK BACKFILL

The types of backfill material indicated below may be used for backfilling trenches as indicated in the specifications, shown on the Drawings or directed by the Engineer.

A. CLASS 2 AGGREGATE BASE

This material shall conform to the requirements set forth in Section 26 of the most recent CALTRANS Standard Specifications for the ¾" maximum size aggregate. Aggregate grading and quality requirements shall conform to the moving average criteria unless otherwise specified by the Engineer, and shall apply to material both before and after compaction.

Aggregate may include material processed from reclaimed asphalt concrete, portland cement concrete, lean concrete base, cement treated base or a combination of any of these materials. The amount of reclaimed material may account for up to 100% of the total volume of the aggregate used. Reclaimed material shall conform to the grading and quality requirements set forth in Section 26 of the most recent CALTRANS Standard Specifications for the ¾" maximum size aggregate." The Contractor shall be required to demonstrate that the recycled Class 2 aggregate base material meets CALTRANS standards. See the following link to the CALTRANS web site:

<https://dot.ca.gov/programs/design/standard-plans-and-standard-specifications>

B. SELECT SAND

This material shall be a clean material free of organic or other deleterious substances and of such gradation that a minimum of 90% will pass a No. 4 sieve and not more than 5% will pass a No. 200 sieve. If low chloride sand is required, the chloride content shall not exceed 30 parts per million by weight.

C. PEA GRAVEL

This material shall be a clean material free of organic or other deleterious substances and shall consist of smooth rock with no facets or sharp edges. Stones shall have a maximum size of 3/8 inch, and not more than 5% will pass a No. 16 sieve.

D. CONTROL DENSITY FILL

If CDF is used, see Section 03400 - Control Density Fill.

E. NATIVE BACKFILL

Where use of native soil is directed, prepare native soil as necessary to be free from clods or rocks larger than 3 inches in greatest dimension, and free from organic material and as approved by the Engineer.

F. DRAIN ROCK OR GRAVEL

If drain rock or gravel is required, river run or crushed rock with a maximum dimension of ¾ inch, with no more than 10 percent passing the No. 200 sieve, and with a durability index of 40 or higher shall be used.

2.2 UNACCEPTABLE MATERIAL

Unless otherwise specified, backfill material shall not contain quarry waste, quarry fines, pea gravel, recycled materials and like material. In addition, any material not conforming to the specifications of Section 2.1 or failing performance testing shall also be unacceptable.

2.3 TRENCHLESS TOOLS

The following is a list of manufacturers that supply equipment relevant to the trenchless techniques described elsewhere in this section.

1. "Ditch Witch" by Charles Machine Works, Inc. (Perry OK) 800-654-6481.
2. "Pow-R Mole" by Petersen Underground Equipment, Inc. (Murray UT) 800-325-6419.
3. "Hole-Hog" or "Red Hog Express" by Allied Construction Products (Cleveland, OH), 216-431-2600.
4. "Ferret" by Footage Tools (Weston, Ontario Canada), 416- 746-2911.
5. "GRUNDOMAT" and "GRUNDORAM" by TT Technologies, available from Plank, (Petaluma CA), 707-763-7070.
6. LTA Corporation (Columbia Heights, MN) 612-781-4292.
7. Hacker Industries (Henderson TX) 908-657-3546.
8. ACCU-PUNCH by Vibra King, Inc. (Mankato, MN), 507-387-6574.
9. "Mighty Mole" by McLaughlin Boring Systems (Greenville, SC) 800-435-9360.
10. Grice Industries, 541-341-4644

PART 3 - EXECUTION

3.1 USA NOTIFICATION AND UTILITY FIELD MEETING

The Contractor shall contact Underground Service Alert (USA) (1-800-642-2444) seven (7) calendar days prior to start of each section and shall be responsible for maintaining a valid USA location tag through renewal during the construction. The Contractor shall schedule a utility field meeting prior to any excavation. This shall be so stated in the USA Notification. The Contractor shall be responsible to coordinate the utility field meeting at which time he shall explain the limits and impacts to USA member utilities.

See CA Government Code 4215

3.2 EXISTING UTILITIES

The Contractor shall expose all existing utilities along the trench alignment and at connections prior to commencement of the work on the project for the pipeline installation. This is to be done in order to determine the line and grade of existing utilities, possible conflicts and mismarks. At connections, the Contractor shall expose the existing pipeline to determine the depth at which the connection is to be made and verify existing pipe material and sizes.

If the contractor damages any existing utilities, the contractor shall immediately notify that utility and make repairs satisfactory to that utility.

3.3 PROTECTION OF EXISTING SURVEY MONUMENTS

The Contractor shall not disturb, remove, alter or destroy any existing land survey monument. In the event that the contractor believes that a monument will be thus impacted, the Contractor shall notify the Engineer. The Contractor shall allow 10 working days for the Engineer to establish sufficient data to reset the monument after the completion of the construction.

3.4 SITE GRADING

- A. Rough Grading: After completion of stripping, the Contractor shall rough grade cut areas to the lines, grades and contours shown on the Drawings.
- B. Proof-Rolling: After rough grading, the Contractor shall proof-roll the areas where on-grade structures are to be constructed in order to detect soft zones. Proof-roll shall consist of passing over all required areas with a loaded scraper, front-end loader with loaded bucket, or other heavy rubber tired vehicle with high tire pressure, in the presence of the Engineer. The Engineer will determine which areas tested by proof-rolling are soft zones that require the Contractor to complete following corrective work.



1. Soft Zone Corrective Work: Remove all soft material as indicated by the Engineer from all soft zones exposed by proof-rolling. Properly dispose of unsuitable material off site.
  2. Fill the resulting voids with moisture-conditioned Native Backfill, in level 8-inch uniform layers measured before compaction. Compact with appropriate equipment to at least 95 percent relative compaction.
  3. Soft zone corrective work will be considered a change in the scope of project work and will be paid for in accordance with Article 47 "Changed Conditions" of the General Conditions.
- C. Scarifying: The Contractor shall scarify, to a minimum 6-inch depth, all areas where fills are required. Moisture condition the scarified surface to within two percent of optimum water content, and compact to minimum 95 percent relative compaction.
- D. Fills:
1. Do not place any fill until the Engineer has inspected, tested to his satisfaction, and favorably reviewed the prepared subgrade.
  2. Construct fills as shown on the Drawings, true to line, grade and cross-section. Construct fills of Native Backfill unless otherwise indicated. Place material in approximately 8-inch thick horizontal layers measured before compaction, and carried across the entire width to the required slopes. Compact all fills to a relative compaction of at least 90% unless otherwise specified. Properly moisture condition before compaction.
  3. The Contractor may be required to overbuild slopes and trim back to the compacted core to achieve adequate compaction of slope faces.
- E. Compaction requirements shall be 90% relative compaction. Material shall be moistened as required to aid compaction.
- F. Ditches: Cut ditches accurately to the cross sections and grades shown. Take care not to overexcavate ditches, and backfill excessive excavation to grade. Trim all roots, stumps, rock and other foreign matter from the sides and bottom of the ditches. Compact the surfaces of ditch slopes and bottom.

### 3.5 PAVEMENT REMOVAL

#### A. GENERAL

Excavation for the pipe installation shall be open cut and shall include the removal of all paving, concrete, soils, abandoned utilities, water, or other objects of any nature that would interfere with the performance of the work.

B. SAWCUTTING

In locations where the pipe is to be installed by open cut method under asphaltic concrete or concrete pavement sections, the outline of all pavement areas to be removed shall be cut prior to removal as required by the local jurisdiction in which the work is being performed. Any cutting that requires water shall be done with a vacuum system that collects all the water and does not allow any water or cutting products to flow into the storm drain. Cuts shall be neat and true, shall be cut completely through the existing pavement section to subgrade and shall be done without damaging adjacent pavement that is not to be removed. No jack-hammer, "drop hammer," or similar equipment will be allowed to cut the pavement. Grinding that results in cuts wider than 0.5 inch shall not be considered as sawcuts. The Contractor shall anticipate that variations in the thickness of paving exist.

C. DISPOSAL

Pavement removed from the pipeline trench shall be hauled from the job and disposed at a County approved disposal site.

3.6 TRENCH EXCAVATION

A. GENERAL

Trench excavation for pipelines shall be open cut, except that service piping may be installed using either open cut or trenchless methods defined later in this section.

The trench shall be excavated to the lines and grades shown on the drawings and in accordance with trench details. If the trench is excavated below the required grade, the Contractor shall refill the trench excavated below the grade with compacted Class II Aggregate Base at no additional cost to the District.

The Contractor shall perform all excavation regardless of the type, nature, or condition of the material encountered to accomplish the construction. No blasting shall be permitted.

B. TRANSPORT OF SPOILS

Backfill stockpiles and excavation spoils which are not immediately loaded and hauled away shall have local approval from local jurisdiction. This material shall be placed on the site away from trenches, street corners, and active work areas and shall be placed in such a manner as to minimize obstruction to traffic. Gutters and ditches shall be kept clear, or other provisions shall be made for the handling of drainage.

C. EXCAVATION FOR VALVE PLACEMENT

Mains shall be lowered below required minimum depths in the vicinity of gate valves 10-inches and larger in size. To accommodate the valve stem, the main shall be lowered as necessary to achieve the following minimum covers:

- For 10" valves, minimum cover of 36 inches
- For 12" valves, minimum cover of 38 inches

D. ALIGNMENT

The Contractor shall conform, as nearly as possible, to the pipeline alignment indicated on the plans unless modified by the Engineer. Whenever vertical or horizontal deflection of the pipe is required to avoid obstructions or where long radius curves are permitted, the degree of deflection at joints shall be approved by the Engineer.

E. EXCAVATION AT BELL HOLES

When bell holes are required they shall be excavated at each point where pipe ends are to be joined. Bell holes shall be adequately sized to permit ease in making the joint. When necessary, bell holes shall be shored and protected in conformance with CAL/OSHA requirements.

F. SHORING

The Contractor shall at all times comply with Safety Regulations set forth in the State of California, Construction Safety Orders and Trench Construction Safety Orders, issued by CAL/OSHA's Division of Industrial Safety. No excavation shall start until the Engineer has received 1) a copy of the Contractor's permit for the project from the State Division of Industrial Safety and 2) a copy of all project notification forms and/or letters that he has forwarded to the CAL/OSHA District office.

Shoring shall follow a District approved shoring plan submitted by the Contractor. In order to prevent cave-ins and protect adjacent areas, excavation in unstable material shall be adequately shored and braced. Shoring shall remain in place until the pipeline has been installed, inspected and the earth compacted around and over the top of the pipe. Upon completion of the work the Contractor shall remove all shoring unless otherwise specified by the Engineer.

G. ROCK EXCAVATION

Wherever the word "Rock" appears in these Specifications, it shall be interpreted to mean any of the following: (1) material in ledges, bedding deposits of unstratified masses which cannot be removed without the use of hydraulic or pneumatic hammers or continuous drilling and blasting, (2) boulders larger than

one cubic yard which, when first exposed, cannot be broken down from their original state with a modern ¾ cubic yard backhoe power excavator or a Caterpillar D8 with a single tooth ripper, in good condition, and cannot be safely transported in a vehicle for disposal, (3) concrete, asphalt or masonry structures which have been abandoned and cannot be broken down from their original state with a modern ¾ cubic yard backhoe power excavator and (4) conglomerate deposits which are so firmly cemented that they possess the characteristics of solid rock and cannot be removed without systematic drilling.

H. TRENCHLESS INSTALLATION OF PIPELINES

Trenchless installation of pipelines shall be defined as installation of pipe using a technique that does not require open cut excavation along the length of the pipe installed. Examples of typical equipment include a pneumatic “mole” or directional bore. Specific techniques may be required in certain areas as indicated on the Drawings.

3.7 DEWATERING AND DRAINAGE

The Contractor shall provide all equipment and labor adequate to keep all trenches and excavations free of water. The Contractor shall keep excavated areas free of standing or flowing water during pipe installation, concrete placement, and backfilling operations by draining or pumping from a point that is outside the structural limits of work and below that of the excavation. The Contractor shall also provide a positive means to assure that no water will enter previously installed pipe. The Contractor is responsible for obtaining and complying with any discharge permits required by any appropriate regulatory authority and shall not direct drainage effluent in such a manner that damage to adjacent property or natural watercourses occurs.

3.8 REFILLING TRENCHES

A. GENERAL

The Contractor shall place backfill material around structures and in other areas, including overexcavation areas, as shown on the plans and as specified by the Engineer. Backfill shall be placed immediately subsequent to installation of the pipeline and appurtenances, and shall be installed in loose lifts not exceeding eight inches in depth. Compaction requirements shall be 95% relative compaction for Class II Aggregate Base Rock and 90% for native backfill to a depth of 18 inches below the bottom of the required paving and 90% relative compaction below that level. Material shall be moistened as required to aid compaction. No foreign materials (blocking) shall be left in the trench.

B. GEOTECHNICAL TESTING

1. TESTING BY ENGINEER

- a. The District shall conduct all soils testing. Soils compaction tests will be taken on a random basis, approximately one test per 100 feet (location determined by the Engineer). Where testing is done, one test shall be taken on the lower lift and one on the upper lift of the base rock.
- b. Testing shall be accomplished in accordance with ASTM D2922 or California Test Method No. 216.
- c. The District will bear all costs of testing except that of a failed retest. The cost of \$100 per each retest shall be deducted from any payment due to the Contractor.

C. STEEL PLATES

Steel traffic plates shall not be used without the expressed written approval of the Engineer and the local jurisdiction in control of street openings and encroachments. It is the Contractor's responsibility to contact and secure permission for steel plate use prior to construction within each specific jurisdiction. Steel traffic plates, where approved, shall have a non-skid surface. The determination for use shall be made by the Engineer and shall be final.

D. COMPACTION EQUIPMENT, METHODS, AND REQUIREMENTS

1. GENERAL

Care shall be exercised in any method of backfilling to avoid damage to the protective coating or mortar lining of the pipe. It is important that proper precautions be taken to prevent floating of the pipe. The Contractor shall be wholly responsible for any damage resulting from failure to take necessary precautions when placing and compacting backfill. Compaction equipment or methods that produce horizontal or vertical earth pressures, which may cause excessive displacement or which may damage nearby structures, shall not be used. Use of a hydraulic hammer for compaction will not be allowed.

Backfilling shall conform to the requirements of the applicable local jurisdiction or those included in these specifications, whichever is more stringent. In the case of conflict between the requirements, the Engineer shall determine which shall prevail.

The Contractor should note that he shall be required to install impermeable dikes in areas where existing grades are 10% or greater. The Contractor shall be responsible to determine grades. Impermeable dikes shall be made of Type II concrete, or native clay soils compacted to 95%. Each impermeable dike shall be as wide as the trench, a minimum of six inches in thickness and extend from the bottom of the trench to a point 12

inches above the pipe. Dikes shall be located every 50 feet where required.

2. PAVED AREAS

Backfill materials shall be moistened to near optimum moisture content and shall be placed in the trench on both sides of the pipe for the full width of the trench. Sand shall be brought up evenly on both sides of the pipe. Said materials shall be placed into the trench by hand or by approved mechanical methods, and be compacted to provide solid backing against the external surface of the pipe. The Contractor shall not place or compact backfill above springline until the Engineer has inspected and approved the lower portion of backfill. Flooding of this lower portion of backfill will not be permitted.

The remaining backfill shall be placed in uniform horizontal layers not to exceed eight inches in loose thickness before compaction. Each layer shall be dampened sufficiently and uniformly tamped, rolled with a vibratory compactor or otherwise compacted throughout until the relative compaction is satisfactory. Non-uniform compacted surfaces may be rejected. Inundation of this upper portion of backfill will not be permitted. The material between the bottom of pavement and a plane 18 inches below that, shall be worked until a minimum relative compaction of 95% throughout is reached. Material below that plane shall be compacted to a minimum of 90% relative compaction throughout.

Backfill within 10 feet of any mainline valve shall be placed and compacted in 6-inch lift thicknesses. Backfill shall be compacted to within one inch of finished grade prior to placement of temporary pavement. The Contractor shall compact temporary pavement as required in Section 02500 daily on all surfaces where paving has been removed.

Impact compaction machines, such as a "Hydra Hammer", and backhoe mounted compaction machines, such as a HedShaker, shall not be used. The Contractor shall compact all backfill to the specified relative compaction as it is being installed. Wheel-rolling will not be allowed.

All excavations shall be restored to the elevation of surrounding pavement prior to completion of each day's work. If any sections of restored trench settles below the surrounding pavement, the Contractor shall re-work the trench to the same elevation as the surrounding pavement each day.

Any backfill material which cannot be compacted to the specified degree will be rejected. Any backfill material which pumps or is not firm will be rejected even if compaction requirements are satisfied. The Contractor, at his expense, shall remove the rejected material and replace it with suitable material.

Particular care shall be taken in the backfilling and compaction of the area around the taps to the main. Hand tamping will be required rather than equipment tamping or rolling.

3.9 FINISH GRADING

Except where shown otherwise in the Drawings, restore the finish grade to the original contours and to the original drainage patterns. Grade surfaces to drain away from structures. The finished surfaces of the tank pad and access road shall be smooth and compacted. The graded surfaces to receive slope protection shall be furrowed to better match the surface of the undisturbed natural areas adjacent to the project site.

3.10 DISPOSAL OF MATERIAL

Any excess backfill material or material rejected by the Engineer shall be removed from the job site by the Contractor. He shall make all necessary arrangements for the proper and legal disposal of excess material, at his cost, and upon request shall provide written evidence indicating approval to use the disposal site.

**END OF SECTION**

# Appendix B

## **CalEEMod Results**



# Phoenix-Bon Tempe v3 Detailed Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	Phoenix-Bon Tempe v3
Construction Start Date	8/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	24.0
Location	37.95445426256828, -122.59118536594676
County	Marin
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	907
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

## 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Linear	1.46	Mile	25.0	0.00	0.00	—	—	—

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.46	6.26	51.9	55.0	0.12	2.21	3.07	5.27	2.03	1.38	3.41	—	12,745	12,745	0.52	0.11	0.49	12,793
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.46	6.25	51.9	55.0	0.12	2.21	3.07	5.27	2.03	1.38	3.41	—	12,747	12,747	0.52	0.11	0.01	12,794
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.27	1.91	15.5	17.2	0.04	0.66	1.10	1.74	0.61	0.50	1.08	—	3,978	3,978	0.16	0.04	0.07	3,993
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.41	0.35	2.84	3.14	0.01	0.12	0.20	0.32	0.11	0.09	0.20	—	659	659	0.03	0.01	0.01	661

### 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	7.46	6.26	51.9	55.0	0.12	2.21	3.07	5.27	2.03	1.38	3.41	—	12,745	12,745	0.52	0.11	0.49	12,793
2025	6.16	5.16	42.4	46.5	0.10	1.73	3.07	4.80	1.59	1.38	2.98	—	10,710	10,710	0.44	0.10	0.46	10,750
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	7.46	6.25	51.9	55.0	0.12	2.21	3.07	5.27	2.03	1.38	3.41	—	12,739	12,739	0.52	0.11	0.01	12,786
2025	7.07	5.93	47.1	53.8	0.12	1.95	3.07	5.02	1.79	1.38	3.17	—	12,747	12,747	0.52	0.11	0.01	12,794
2026	5.96	4.99	39.8	45.9	0.10	1.59	3.07	4.66	1.46	1.38	2.84	—	10,707	10,707	0.44	0.10	0.01	10,747
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.23	1.87	15.5	16.5	0.04	0.66	0.92	1.58	0.61	0.41	1.02	—	3,814	3,814	0.16	0.03	0.06	3,829
2025	2.27	1.91	15.5	17.2	0.04	0.64	1.10	1.74	0.59	0.50	1.08	—	3,978	3,978	0.16	0.04	0.07	3,993
2026	0.36	0.30	2.41	2.79	0.01	0.10	0.19	0.28	0.09	0.08	0.17	—	650	650	0.03	0.01	0.01	652
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.41	0.34	2.84	3.00	0.01	0.12	0.17	0.29	0.11	0.08	0.19	—	632	632	0.03	0.01	0.01	634
2025	0.41	0.35	2.84	3.14	0.01	0.12	0.20	0.32	0.11	0.09	0.20	—	659	659	0.03	0.01	0.01	661
2026	0.07	0.06	0.44	0.51	< 0.005	0.02	0.03	0.05	0.02	0.02	0.03	—	108	108	< 0.005	< 0.005	< 0.005	108

### 3. Construction Emissions Details

#### 3.1. Linear, Grading & Excavation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.41	6.22	51.8	54.6	0.12	2.21	—	2.21	2.03	—	2.03	—	12,603	12,603	0.51	0.10	—	12,646

Section 9. Item #a.

Dust From Material Movement:	—	—	—	—	—	—	2.97	2.97	—	1.36	1.36	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.41	6.22	51.8	54.6	0.12	2.21	—	2.21	2.03	—	2.03	—	12,603	12,603	0.51	0.10	—	12,646
Dust From Material Movement:	—	—	—	—	—	—	2.97	2.97	—	1.36	1.36	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.22	1.86	15.5	16.3	0.04	0.66	—	0.66	0.61	—	0.61	—	3,774	3,774	0.15	0.03	—	3,786
Dust From Material Movement:	—	—	—	—	—	—	0.89	0.89	—	0.41	0.41	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.34	2.83	2.98	0.01	0.12	—	0.12	0.11	—	0.11	—	625	625	0.03	0.01	—	627
Dust From Material Movement:	—	—	—	—	—	—	0.16	0.16	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	264



Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.42	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	87.9	87.9	< 0.005	< 0.005	0.38	89.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.08	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.9	53.9	0.01	0.01	0.11	56.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.0	82.0	< 0.005	< 0.005	0.01	83.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.09	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.9	53.9	0.01	0.01	< 0.005	56.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.7	24.7	< 0.005	< 0.005	0.05	25.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.1	16.1	< 0.005	< 0.005	0.01	17.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.08	4.08	< 0.005	< 0.005	0.01	4.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.67	2.67	< 0.005	< 0.005	< 0.005	2.81

### 3.3. Linear, Grading & Excavation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e	
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	265

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Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.03	5.89	46.9	53.4	0.12	1.95	—	1.95	1.79	—	1.79	—	12,614	12,614	0.51	0.10	—	12,657
Dust From Material Movement:	—	—	—	—	—	—	2.97	2.97	—	1.36	1.36	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.36	2.85	3.24	0.01	0.12	—	0.12	0.11	—	0.11	—	765	765	0.03	0.01	—	768
Dust From Material Movement:	—	—	—	—	—	—	0.18	0.18	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.52	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	127	127	0.01	< 0.005	—	127
Dust From Material Movement:	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.35	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.4	80.4	< 0.005	< 0.005	0.01	81.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.08	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.8	52.8	0.01	0.01	< 0.005	55.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.90	4.90	< 0.005	< 0.005	0.01	4.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	< 0.005	3.37
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.56

### 3.5. Linear, Drainage, Utilities, & Sub-Grade (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.12	5.13	42.3	46.1	0.10	1.73	—	1.73	1.59	—	1.59	—	10,570	10,570	0.43	0.09	—	10,607
Dust From Material Movement	—	—	—	—	—	—	2.97	2.97	—	1.36	1.36	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	267

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.12	5.13	42.3	46.1	0.10	1.73	—	1.73	1.59	—	1.59	—	10,570	10,570	0.43	0.09	—	10,607
Dust From Material Movement:	—	—	—	—	—	—	2.97	2.97	—	1.36	1.36	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.83	1.53	12.7	13.8	0.03	0.52	—	0.52	0.48	—	0.48	—	3,165	3,165	0.13	0.03	—	3,176
Dust From Material Movement:	—	—	—	—	—	—	0.89	0.89	—	0.41	0.41	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.28	2.31	2.52	0.01	0.09	—	0.09	0.09	—	0.09	—	524	524	0.02	< 0.005	—	526
Dust From Material Movement:	—	—	—	—	—	—	0.16	0.16	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.39	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	86.2	86.2	< 0.005	< 0.005	0.35	268

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.08	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.2	53.2	0.01	0.01	0.11	56.0	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.35	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.4	80.4	< 0.005	< 0.005	0.01	81.5	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.08	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.2	53.2	0.01	0.01	< 0.005	55.9	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.2	24.2	< 0.005	< 0.005	0.05	24.5	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.9	15.9	< 0.005	< 0.005	0.01	16.8	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.00	4.00	< 0.005	< 0.005	0.01	4.06	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.64	2.64	< 0.005	< 0.005	< 0.005	2.77	

### 3.7. Linear, Drainage, Utilities, & Sub-Grade (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.91	4.96	39.7	45.6	0.10	1.59	—	1.59	1.46	—	1.46	—	10,576	10,576	0.43	0.09	—	10,612

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Dust From Material Movement:	—	—	—	—	—	—	2.97	2.97	—	1.36	1.36	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.30	2.41	2.76	0.01	0.10	—	0.10	0.09	—	0.09	—	642	642	0.03	0.01	—	644
Dust From Material Movement:	—	—	—	—	—	—	0.18	0.18	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.05	0.44	0.50	< 0.005	0.02	—	0.02	0.02	—	0.02	—	106	106	< 0.005	< 0.005	—	107
Dust From Material Movement:	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	78.9	78.9	< 0.005	< 0.005	0.01	80.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.1	52.1	0.01	0.01	< 0.005	270

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.81	4.81	< 0.005	< 0.005	0.01	4.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.16	3.16	< 0.005	< 0.005	< 0.005	3.33
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.81
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.52	0.52	< 0.005	< 0.005	< 0.005	0.55

## 4. Operations Emissions Details

### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

## 5. Activity Data

### 5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Linear, Grading & Excavation	Linear, Grading & Excavation	8/1/2024	1/31/2025	5.00	132	—

Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	8/1/2025	1/31/2026	5.00	131	—
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## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grading & Excavation	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Linear, Grading & Excavation	Rubber Tired Loaders	Diesel	Average	2.00	8.00	150	0.36
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Linear, Grading & Excavation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Linear, Grading & Excavation	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Grading & Excavation	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Linear, Grading & Excavation	Other Material Handling Equipment	Diesel	Average	1.00	8.00	93.0	0.40
Linear, Grading & Excavation	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Linear, Grading & Excavation	Graders	Diesel	Average	2.00	8.00	148	0.41
Linear, Grading & Excavation	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Linear, Grading & Excavation	Cement and Mortar Mixers	Diesel	Average	12.0	8.00	10.0	0.56
Linear, Grading & Excavation	Cranes	Diesel	Average	1.00	8.00	367	0.29

Linear, Grading & Excavation	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Grading & Excavation	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Linear, Drainage, Utilities, & Sub-Grade	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Drainage, Utilities, & Sub-Grade	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Linear, Drainage, Utilities, & Sub-Grade	Other Material Handling Equipment	Diesel	Average	1.00	8.00	93.0	0.40
Linear, Drainage, Utilities, & Sub-Grade	Graders	Diesel	Average	2.00	8.00	148	0.41
Linear, Drainage, Utilities, & Sub-Grade	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Linear, Drainage, Utilities, & Sub-Grade	Cement and Mortar Mixers	Diesel	Average	12.0	8.00	10.0	0.56
Linear, Drainage, Utilities, & Sub-Grade	Cranes	Diesel	Average	1.00	8.00	367	0.29
Linear, Drainage, Utilities, & Sub-Grade	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Drainage, Utilities, & Sub-Grade	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37

### 5.3. Construction Vehicles

### 5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	10.0	11.7	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	0.00	8.40	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.71	20.0	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	10.0	11.7	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	8.40	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	0.72	20.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%

## 5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
------------	--	--	--	--	-----------------------------

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Linear, Grading & Excavation	500	250	25.0	0.00	—
Linear, Drainage, Utilities, & Sub-Grade	500	250	25.0	0.00	—

### 5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

### 5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Linear	25.0	100%

### 5.8. Construction Electricity Consumption and Emissions Factors

#### kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

### 5.18. Vegetation

#### 5.18.1. Land Use Change

##### 5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.66	annual days of extreme heat
Extreme Precipitation	18.8	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	7.65	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about  $\frac{3}{4}$  an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	5	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	5	1	1	4
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.91
AQ-PM	13.5
AQ-DPM	4.83
Drinking Water	36.5
Lead Risk Housing	29.9
Pesticides	0.00
Toxic Releases	41.9
Traffic	75.4
Effect Indicators	—
CleanUp Sites	86.7
Groundwater	35.0
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	93.4
Solid Waste	22.1
Sensitive Population	—
Asthma	9.90
Cardio-vascular	5.16



Low Birth Weights	99.5
Socioeconomic Factor Indicators	—
Education	0.84
Housing	—
Linguistic	17.3
Poverty	25.7
Unemployment	9.72

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—

Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0
Asthma ER Admissions	83.6
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	84.2
Physically Disabled	80.2
Heart Attack ER Admissions	96.8
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0

Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	13.9
SLR Inundation Area	45.1
Children	95.4
Elderly	12.0
English Speaking	0.0
Foreign-born	0.0
Outdoor Workers	49.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	96.9
Traffic Density	0.0
Traffic Access	46.6
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	17.0

Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	Project specific information
Construction: Construction Phases	Project specific information
Construction: Off-Road Equipment	Project specific information
Construction: Trips and VMT	Project specific assumptions for number of workers.

**Results Summary**

**Average Daily Construction-related Criteria Pollutant Emissions**

Project Construction Year	Average Daily Emissions (pounds per day)			
	ROG	NOX	Exhaust PM10	Exhaust PM2.5
2024	6.2	52.1	2.2	2.0
2025	5.3	43.0	1.8	1.7
2026	5.5	40.0	1.8	1.8
<b>BAAQMD Thresholds of Signif. Threshold Exceeded?</b>				
	54	54	82	54
	No	No	No	No

Construction Phase	Start Date	End Date	Year	Start	End	Workdays
Linear, Grading & Excavation	8/1/2024	1/31/2025	2024	8/1/2024	12/31/2024	109
Linear, Drainage, Utilities, & Sub-Grade	8/1/2025	1/31/2026	2025	1/1/2025	1/31/2025	23
			2025	8/1/2025	12/31/2025	109
			2026	1/1/2026	1/31/2026	22

lbs/ton 2000

Phase Name	Phase Type	Start Date	End Date	Days Per V	Work Days per Phase
Linear, Grading & Excavation	Linear, Grai	8/1/2024	1/31/2025	5	132
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drai	8/1/2025	1/31/2026	5	131

**CalEEMod Outputs**

**2.2. Construction Emissions by Year, Unmitigated**

Year	TOG	ROG	NOx	CO	SO <sub>2</sub>	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO <sub>2</sub>	NBCO <sub>2</sub>	CO <sub>2</sub> T	CH <sub>4</sub>	N <sub>2</sub> O	R	CO <sub>2</sub> e	
<b>Daily - Summer (Max)</b>																			
2024	7.46	6.26	51.9	55	0.12	2.21		3.07	5.27	2.03	1.38	3.41	12745	12745	0.52	0.11	0.49	12793	
2025	6.16	5.16	42.4	46.5	0.1	1.73		3.07	4.8	1.59	1.38	2.98	10710	10710	0.44	0.1	0.46	10750	
<b>Daily - Winter (Max)</b>																			
2024	7.46	6.25	51.9	55	0.12	2.21		3.07	5.27	2.03	1.38	3.41	12739	12739	0.52	0.11	0.01	12786	
2025	7.07	5.93	47.1	53.8	0.12	1.95		3.07	5.02	1.79	1.38	3.17	12747	12747	0.52	0.11	0.01	12794	
2026	5.96	4.99	39.8	45.9	0.1	1.59		3.07	4.66	1.46	1.38	2.84	10707	10707	0.44	0.1	0.01	10747	
<b>Average Daily</b>																			
2024	2.23	1.87	15.5	16.5	0.04	0.66		0.92	1.58	0.61	0.41	1.02	3814	3814	0.16	0.03	0.06	3829	
2025	2.27	1.91	15.5	17.2	0.04	0.64		1.1	1.74	0.59	0.5	1.08	3978	3978	0.16	0.04	0.07	3993	
2026	0.36	0.3	2.41	2.79	0.01	0.1		0.19	0.28	0.09	0.08	0.17	650	650	0.03	0.01	0.01	652	
<b>Annual</b>																			
2024	0.41	0.34	2.84	3	0.01	0.12		0.17	0.29	0.11	0.08	0.19	632	632	0.03	0.01	0.01	634	
2025	0.41	0.35	2.84	3.14	0.01	0.12		0.2	0.32	0.11	0.09	0.2	659	659	0.03	0.01	0.01	661	
2026	0.07	0.06	0.44	0.51	< 0.005	0.02		0.03	0.05	0.02	0.02	0.03	108	108	< 0.005	< 0.005	< 0.005	108	

Energy Calculations - Construction

Source	MT of CO2
Total GHG from Diesel use	1,353.7
Total GHG from Gasoline Use	9.83
Onsite GHG from diesel use	1,387.0
Onroad GHG from diesel use	6.7
Percent onsite diesel	99.5%
Percent onroad diesel	0.5%

CO2 from diesel fuel combustion (a) = 10.2 kg of CO2/gallon of diesel

CO2 from gasoline fuel combustion (a) = 8.78 kg of CO2/gallon of gasoline

(a) Emissions factors per The Climate Registry 2019 Default Emission Factors (Table 2.1 - US Default Factors for Calculating CO2 Emissions from Combustion of Transport Fuels)

Source	Fuel Use (gallons)
Onsite Diesel	135,847.2
Offsite Diesel	655.2
Total Diesel	136,502.4
Offsite Gasoline	1,119.6

Conversion 1 MT = 1000 kg  
1 lb

Total Fuel sales in Marin County 2022

Fuel Type	Volume (gal)	% of County fuel
Diesel	5,000,000	2.73%
Gasoline	860,000	0.001%

<https://www.energy.ca.gov/media/2874>

2021 PG&E CO2e ghg emissions intensity (lbs CO2e/MWh)

Category	Value
CO2	206
CH4	1
N2O	25
<b>GWP from AR4</b>	<b>298</b>

Operational MT CO2e associated with pumps (worst case scenario)

GHG	Intensity (lb/MWh)	Value
CO2	8.9	203.983
CH4	0.033	0.033
N2O	0.004	0.004

**Construction**  
Electricity

Pacific Gas & Electric Company

2024-2026

Construction Year	CO2 Intensity Factor (lb/MWh)	CH4 Intensity Factor (lb/MWh)	N2O Intensity Factor (lb/MWh)	Electricity (kWh/yr)
2024	203.983	0.033	0.00400000189989805	0
2025	203.983	0.033	0.00400000189989805	0
2026	203.983	0.033	0.00400000189989805	0

# Appendix C

## **Ross Creek Hydrology for Phoenix-Bon Tempe Connection**



# memorandum

date May 20, 2024  
to Elysha Irish, Marin Water  
from Darcy Kremin, AICP; Andrew Collison, PhD, ESA  
subject Ross Creek Hydrology for Phoenix-Bon Tempe Connection

## Introduction

The purpose of this revised memorandum is to present new results of the Phoenix Lake - Ross Creek hydrology modeling. A water balance model has been created in Excel to explore whether the proposed Project would change the timing or volume of the Ross Creek hydrograph significantly enough to impact its hydrological or biological function. The model allows the user to incorporate environmental and operational constraints on diversions and provides estimates of the diversion yield and the timing and rate of overflow of the reservoir into Ross Creek. A hypothetical example of the type of hydrograph change the model was created to assess is whether the proposed diversions would significantly delay or reduce flows from Phoenix Lake into Ross Creek at times when steelhead may be using Ross Creek to spawn and rear. In response to feedback on the initial model results, several additional diversion scenarios were tested, resulting in this revised version of the memorandum. The new scenarios that were tested refined the diversion conditions to reduce lengthy drawdowns of Phoenix Lake during the summer and to concentrate diversions during the earliest part of the winter runoff season before steelhead typically migrate upstream. Creating conditions that trigger earlier diversions allows the lake water level to recover by March and April and support overflows into Ross Creek at the times when steelhead are most likely to be present. These constraints do not change the overall Project description in the Initial Study, but serve to further refine Project operations.

## Methodology

ESA developed a water budget model for Phoenix Lake using hydrologic data collected by Marin Water between January 2017 and September 2022. This time series includes two very wet winters (2017 and 2019) and one of the most extreme droughts in Marin Water's history (2020-2021). The data include daily measurements or calculations of watershed inflows to Phoenix Lake, water level in Phoenix Lake and pan evaporation loss. Marin Water also provided a rating curve that relates Phoenix Lake elevation with the lake's volume and surface area. ESA used these data to develop a daily water balance model of Phoenix Lake in Microsoft Excel. The model takes the previous day's lake level and adds the current day's watershed inflow to calculate an initial volume for the day. It then uses the rating curve to estimate water level for comparison with the dam spillway elevation: if



the water level exceeds this value the excess volume spills to Ross Creek as outflow. The remaining water volume in the lake is used to calculate the lake area. This is combined with the daily pan evaporation rate (modified by a monthly adjustment factor) to estimate the lake's evaporation volume, which is deducted from the day's total to provide a final value for the day. That value is then used the following day to repeat the process. The model outputs are lake level, evaporation losses and spills to Ross Creek. The model assumes that the lake capacity is 411 acre-feet with an associated water surface elevation of 174 feet NAVD<sup>1</sup>: flows that exceed 411 acre-feet are assumed to cause water to overflow into Ross Creek. ESA ran a hypothetical scenario which assumed that no diversions occur under existing conditions, to compare with the proposed Project. This comparison is highly conservative (it makes the proposed Project effect appear larger than it really is, since in reality water is diverted under existing conditions), but it helps illustrate the Project effects.

## Project Simulation

Several diversion scenarios were simulated and reviewed with Marin Water and ESA fisheries biologists to refine an alternative that minimized ecological impacts. Based on feedback from the initial scenarios the following proposed Project scenario was developed.

In the proposed Project simulation, a diversion window opens on October 1 and closes on February 28 of each water year<sup>2</sup>. The modeling tests two diversions within the diversion window under the following conditions. An initial diversion of up to 260 acre-feet at a daily rate of 9.2 acre-feet per day can be made on or after October 1 provided that the water level in Phoenix Lake is higher than 170 feet (4 feet below the spillway) at the start of the diversion. This condition limits lowering of the reservoir during dry periods and reduces the amount of time needed for watershed runoff to refill the reservoir and cause flows to spill into Ross Creek following diversions. If the lake falls below 147 feet during the diversion, the diversion will cease until the water level recovers to 147 feet or higher. Diversions below 147 feet are constrained because of geotechnical issues related to allowable drawdown of the lake. Once the first diversion has been completed the lake level must recover to 170 feet or higher before the second diversion can start. Once inflows raise the water level in Phoenix Lake to 170 feet or higher and provided the date is before February 28, the second diversion of 260 acre-feet can occur at a rate of 9.2 acre-feet per day. As with the first diversion, the second diversion must cease if the lake level falls below 147 feet. All diversions must cease by February 28. Note that in some years where watershed inflow was abundant the second diversions would occur immediately after the first diversion because the lake level would remain above 170 feet at the end of the first diversion. **Figure 1** (No Diversion assumed) and **Figure 2** (Proposed Project with two diversions assumed) show the watershed inflow (upper panel), lake level and diversion volume middle panel), and overflow to Ross Creek (lower panel) for the period of simulation (January 1, 2017 to September 30, 2022). **Figure 3** shows the outflows to Ross Creek under the No Diversion and Proposed Project superimposed for comparison, along with the proposed diversions.

## Results

Under the hypothetical No Diversion scenario, the lake inflow and Ross Creek outflow almost matched, and the lake level remained within 2 feet of the spillway height at all times (minimum level of 172 feet). The small

<sup>1</sup> North American Vertical Datum

<sup>2</sup> A water year runs from October 1<sup>st</sup> to September 30<sup>th</sup> reflecting the timing of most rainfall in California with the onset in October-November running till around May, and a dry season that runs from around June to the end of September.

drawdown of the lake level was due to evaporation, which accounted for 282 acre-feet over the almost 6-year simulation. In total 21,275 acre-feet of water flowed into Ross Creek over the simulation period.

Under the Proposed Project the watershed inflow was the same as the No Diversion scenario, but two 260-acre-foot diversions were simulated within the October 1 to February 28 diversion window. The diversions and associated lowering of the lake level can be seen in the middle panel of Figure 2. On average the first diversion of the water year lowered the lake level by around 16 feet until the next watershed runoff event occurred, whereupon the lake refilled to around the spillway elevation. The average duration of the first drawdown period (from the end of drawdown to the time the water level recovered to at least 170 feet) was 49 days. For five of the six years simulated there was negligible drawdown during the second diversion of the period; in those years the second diversion coincided with watershed runoff that maintained the lake level above 170 feet despite the diversion occurring. In one of the six years (2021) the lake level dropped 18 feet during the second diversion and remained low (between 161-162 feet) between February and October when the next runoff event occurred. This is because in winter and spring of 2021 there was almost no watershed runoff to replenish the reservoir after the first simulated diversion.

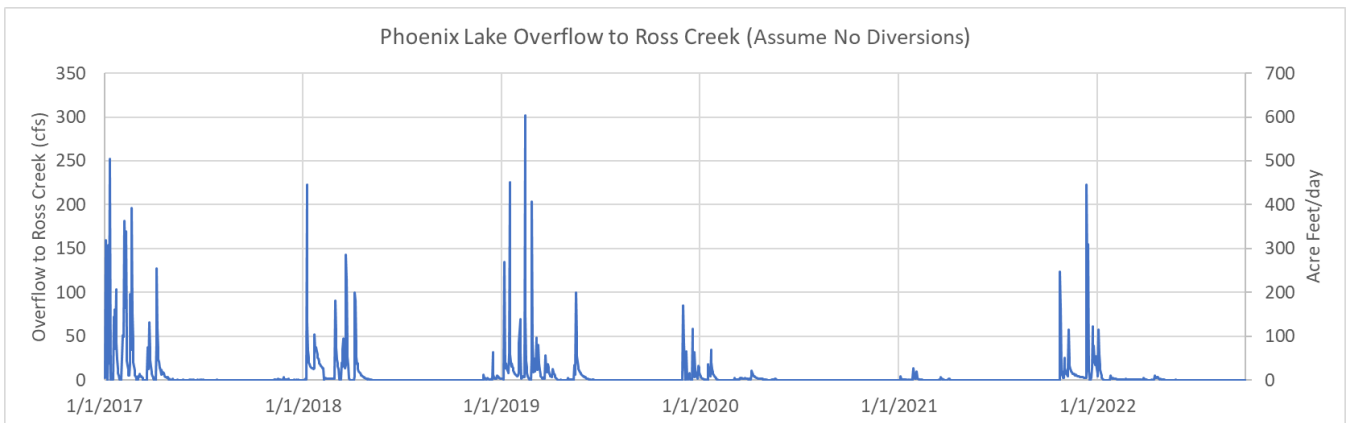
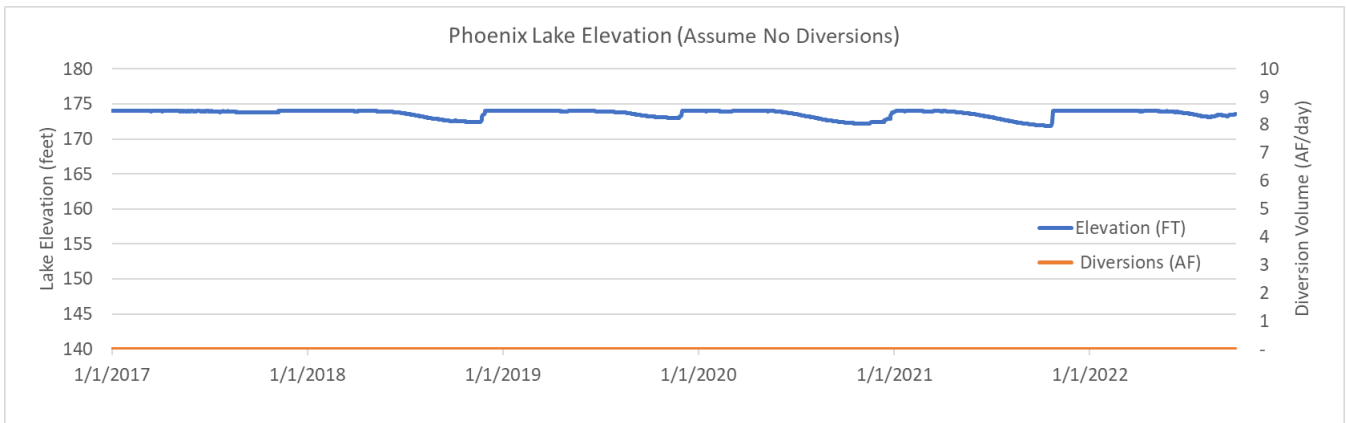
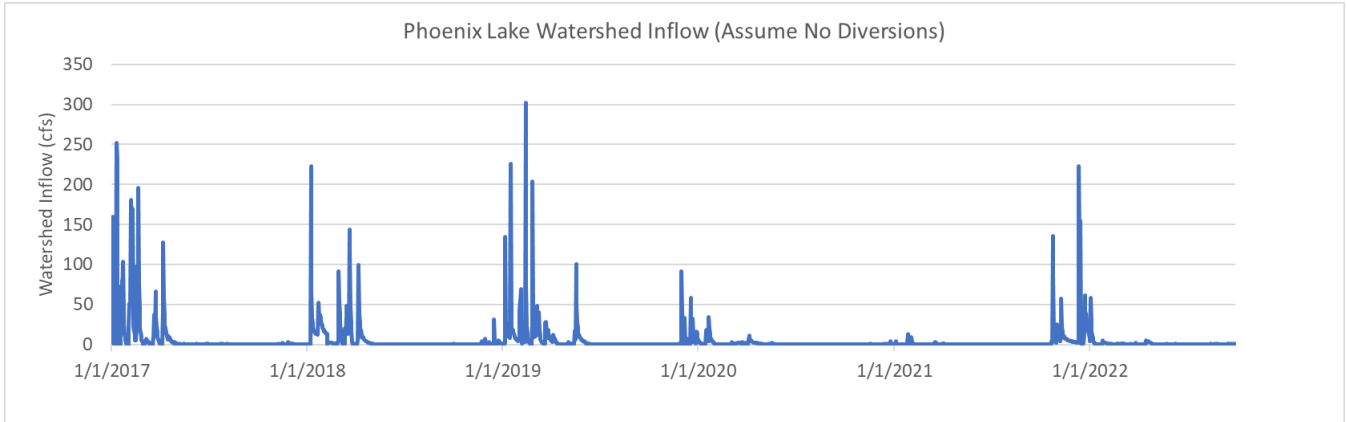
Despite the diversions, the hydrograph showing the outflow to Ross Creek under the proposed Project was very similar to the No Diversion scenario (Figure 3), and the cumulative outflow was 19,165 acre-feet, 2,110 acre-feet less than under the No Diversion scenario (a 9.9 percent reduction in outflow).

As can be seen in the hydrographs, 35 of 36 peak flows over 25 cubic feet per second (cfs) in the modeled 7-year period occurred on the same day under the proposed Project as they would under No Diversion scenario. The exception is the first flow over 25 cfs in water year 2018-19, which would have been delayed by 21 days under Project conditions. The results indicate that most pulse flows that may attract native salmonids to migrate up into Ross Creek would occur on the same day and with a similar flow rates as under a No Diversion scenario, but that around one year in five or six a pulse flow may be delayed by a few weeks.

The only situation where peak flows were eliminated under proposed Project conditions was in the winter of 2021 where dry conditions resulted in only a single event of 13 cfs overtopping Phoenix Lake under the No Diversion scenario. Under the proposed Project that event would have been captured and diverted. The lack of a significant difference between flows into Ross Creek under the No Diversion and proposed Project scenarios is due to the small size of Phoenix Lake relative to its watershed inflow: during the 6 years and 9 months simulated the average annual inflow was 3,192 acre-feet compared with a lake capacity of 411 acre-feet and proposed diversions totaling 520 acre-feet. Even when drawn down by diversions in early October, Phoenix Lake can be refilled rapidly by the first typical winter runoff event.

Based on this modeling the hydrologic regime of Ross Creek is not expected to be substantially changed by the proposed Project.

**Figure 1 Phoenix Lake Inputs, Water Level, Diversions and Outflow to Ross Creek: Assuming No Diversions**



**Figure 2 Phoenix Lake Inputs, Water Level, Diversions and Outflow to Ross Creek: Proposed Project**

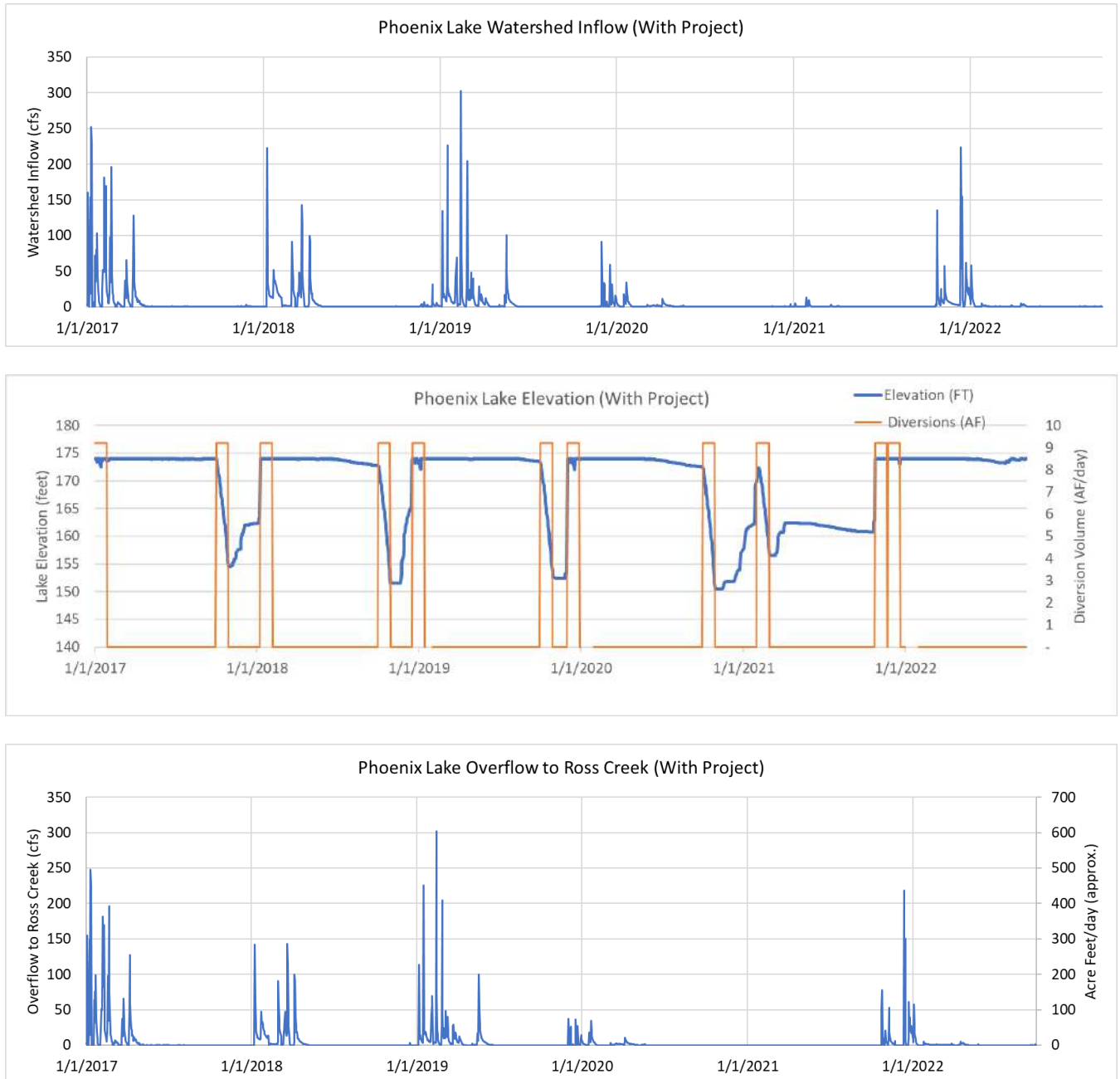
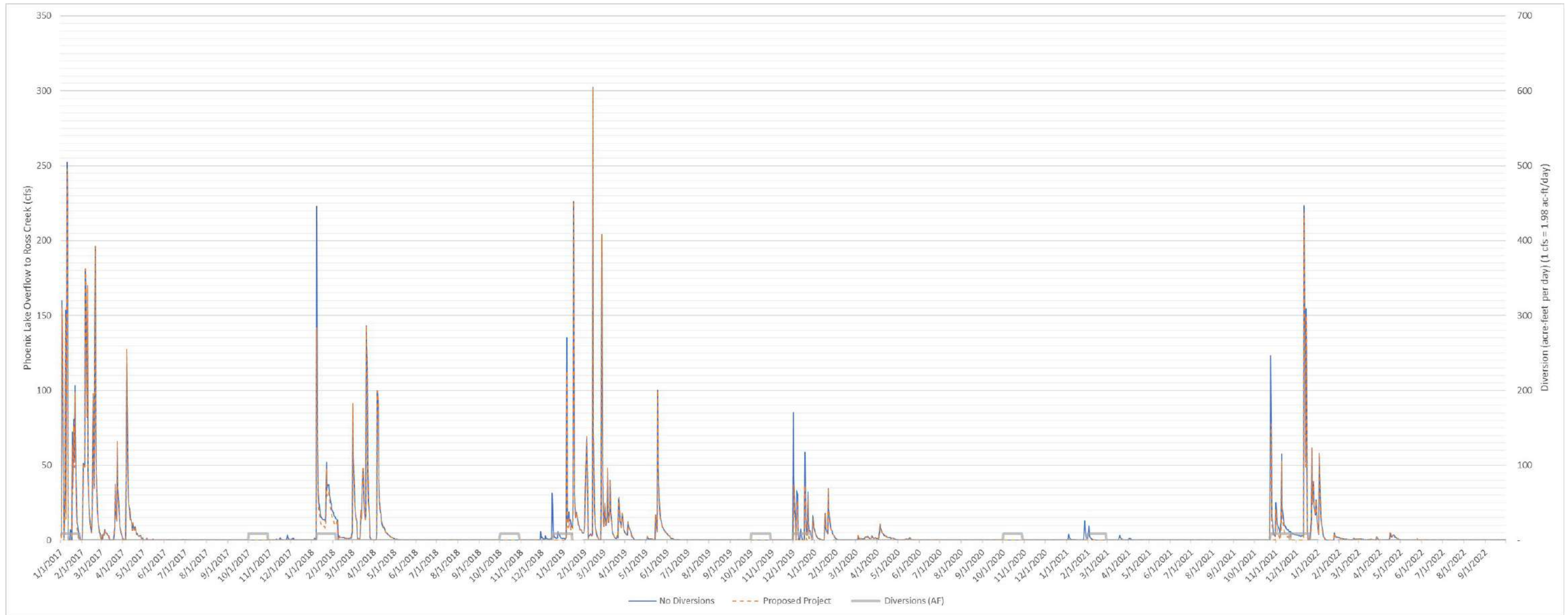


Figure 3 Phoenix Lake Outflow to Ross Creek: Comparison of No Diversions and Proposed Project Scenarios



# Appendix D

## **Response to Comments**



June 18, 2024

**Subject:** Response to Comments for the Phoenix-Bon Tempe Connection Project

**Comment 1 from Morgan Cantrell:**

Given that federally listed Steelhead (*Oncorhynchus mykiss irideus*) are present in the Ross Creek and Corte Madera Creek and the proposed Project would pump water from the Corte Madera Creek Watershed to another, it seems the potential impact on those fish is understated in the Mitigated Negative Declaration document...this will have a potentially significant impact on fish habitat below the dam.

As was done to maintain and improve salmonid habitat at Kent Lake and Lagunitas Creek, we should be providing a minimum in-stream flow from Phoenix Lake to Ross Creek and should extend Marin Water's team of aquatic ecologists to study the salmon populations in the Corte Madera Creek Watershed so that we are expanding our water storage capacity in a way that is harmonious with the fish that live alongside us.

The Corte Madera Creek Watershed encompasses more densely populated towns than Lagunitas Creek Watershed, making salmonid conservation more challenging but also providing a greater opportunity to educate more people about the importance of maintaining healthy water in creeks. Plans are underway for fish ladder improvements in Ross Creek and removal of part of the concrete channel at College of Marin so this project would be well-timed to complement those efforts. This could turn into a major PR win for Marin Water if salmon are prioritized and celebrated in this process.

**Response:**

The commenter asserts that the Initial Study understates a significant impact on fish habitat in the Corte Madera Creek watershed below the Phoenix Lake Dam. This watershed is presently undergoing long-anticipated restoration to benefit steelhead migration and potential spawning. However, as stated in the Initial Study (page 3-21), the Ross Creek run only functions in wet years where sufficient precipitation can maintain the channel flow through the winter and spring (Rich, 2000; Leidy et al., 2005). Hydrological modeling presented in Appendix C analyzed whether the Project's alterations in the overflow regime from Phoenix Lake could result in reductions in baseflow during the spring months, and lead to a more rapid increase in water temperatures that could harm juvenile steelhead. As shown in Appendix C (Figures 2 and 3), Project implementation would not be expected to result in substantial changes in Ross Creek hydrological conditions. Moreover, with diversions limited to the late-fall, winter period (October 1 to February 28) impacts to streamflow during the spring would be minimized (see revised Appendix C). Additionally, the maintenance of a 170-foot water surface elevation in Phoenix Lake would reduce the potential for impaired water quality conditions (e.g., elevated water temperature, low dissolved oxygen) to adversely affect Ross Creek during spill events or through seepage under the dam. Overall, modeled overflow from Phoenix Lake into Ross Creek under existing and future with-Project conditions indicates that there would continue to be a similar pattern in timing, duration, and magnitude of events providing water to Ross Creek. This result is due to the small size of Phoenix Lake which tends to overflow after rain events. The analysis

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indicates that impacts to steelhead within Ross Creek from changes in overflow from Phoenix Lake would be less than significant; consequently, designating a minimum instream flow is not warranted.

The District will continue to support ongoing and planned fish habitat improvements to maximize positive outcomes for fish populations as well as work to educate the community regarding the importance of species recovery.

**Comment 1 from Friends of Corte Madera Creek Watershed:**

Concern about the rushed construction schedule not adequately considering the potential impact of interbasin water transfer on the Ross Creek’s steelhead/rainbow trout.

Ross Creek is a habitat for *O. mykiss* (rainbow trout/steelhead), with potential for increased anadromy following the removal of downstream barriers. The USACE concrete flood control channel in Ross, a significant barrier to fish migration, will be modified in 2025 to facilitate easier access for spawning steelhead. Despite improvements, emigration will remain a challenge due to Ross Creek drying up seasonally downstream of Natalie Coffin Greene Park. Corte Madera Creek and its tributaries, including Ross Creek, are critical habitats for *O. mykiss* and *O. kisutch* (coho salmon). Although *O. kisutch* has been extirpated from the Corte Madera Creek watershed, any measures taken to benefit *O. mykiss* have the potential to benefit both species.

**Response:**

The commenter expresses concern for the potential impact of interbasin water transfer on Ross Creek’s steelhead and rainbow trout, especially in light of upcoming modifications to the USACE concrete flood control channel in Ross to remove steelhead migration barriers.

In the CEQA context, substantial evidence to support a determination about the potential impact of interbasin water transfer on Ross Creek’s steelhead and rainbow trout must be based on facts, reasonable assumptions predicated upon facts, or expert opinion supported by facts. (*Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359 [“unsubstantiated opinions of neighbors and other lay witnesses” do not amount to substantial evidence].) Substantial evidence must include relevant information and reasonable inferences that a fair argument can be made to support a conclusion. (*Citizens for Responsible Equitable Environmental Development (CREED) v. City of San Diego* (2011) 196 Cal.App.4th 515.) Substantial evidence requires factual data, expert analysis, or other concrete information. (*Leonoff v. Monterey County Board of Supervisors* (1990) 222 Cal.App.3d 1337 [holding generalized complaints and lay opinions about environmental impacts were insufficient to constitute substantial evidence].)

Here, there is no substantial evidence to support the conclusion that there is a potentially significant impact from interbasin water transfer on Ross Creek’s steelhead and rainbow trout. Marin Water notes that Ross Creek and its tributaries are critical habitats for *O. mykiss* and historically also hosted *O. kisutch*, as indicated in the Initial Study on page 3-21. The Project would include up to three transfers of water from Phoenix Lake to Bon Tempe per season, reducing spillage into Ross Creek at these times. However, as stated in the Initial Study (page 3-60), the proposed water transfers are scheduled to occur only in the late fall/early winter, with no transfers in the spring, summer or early fall when the reservoirs are at their lowest.



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Hydrological modeling presented in Appendix C analyzed whether the Project’s alterations in the overflow regime from Phoenix Lake could result in reductions in baseflow during the spring months, and lead to a more rapid increase in water temperatures that could harm juvenile steelhead. As shown in Appendix C (Figures 2 and 3), Project implementation would not be expected to result in substantial changes in Ross Creek hydrological conditions. On the basis of that analysis, impacts to steelhead in Ross Creek were found to be less than significant (Initial Study page 3-21).

Nonetheless, in response to concerns expressed in this and other comments, Marin Water has considered more constrained operations in that water would only be diverted during a short window (October 1 to February 28) and would require Phoenix Lake to return to the 170-foot water surface elevation before a withdrawal would occur. Several additional diversion scenarios were tested, resulting in a revised version of Appendix C. The new scenarios that were tested refined the diversion conditions to reduce lengthy drawdowns of Phoenix Lake during the summer and to concentrate diversions during the earliest part of the winter runoff season before steelhead typically migrate upstream. Creating conditions that trigger earlier diversions allows the lake water level to recover by March and April and support overflows into Ross Creek at the times when steelhead are most likely to be present. These constraints do not change the overall Project description, but serve to further refine Project operations.

The analysis in revised Appendix C shows that for five of the six years simulated there was negligible drawdown during the second diversion of the period; in those years the second diversion coincided with watershed runoff that maintained the lake level above 170 feet despite the diversion occurring. In one of the six years (2021) the lake level would decrease 18 feet during the second diversion and remain low (between 161-162 feet) between February and October when the next runoff event occurred. This is because in winter and spring of 2021 there was almost no watershed runoff to replenish the reservoir after the first simulated diversion. During the drought in 2021, the District did draw down the reservoir for water supply and diverted the water directly to treatment and distribution and could do so in the future. The connection project will help to facilitate ease of diversion to storage as an alternative to direct diversion for use. Despite the diversions, the hydrograph showing the outflow to Ross Creek under the proposed Project was very similar to the No Diversion scenario (Figure 3), and the cumulative outflow was 19,165 acre-feet, 2,110 acre-feet less than under the No Diversion scenario (a 9.9 percent reduction in outflow).

Additionally, it is important to note that under the "No Project" alternative, Marin Water retains the right to draw water from Phoenix Lake. (IS/MND, p. 2-2, Section 2.1.2). This existing right ensures that water management practices can continue without the proposed project's infrastructure improvements. The Project aims to enhance operational efficiency and environmental benefits compared to current practices.

As shown in revised Appendix C (Figures 2 and 3), Project implementation is not expected to result in substantial changes in overflow amounts from Phoenix Lake into Ross Creek. Since Phoenix Lake is a small reservoir, minor amounts of precipitation can cause the reservoir to fill and spill into Ross Creek. Modeled overflow under existing and future Project conditions indicates a similar pattern in timing, duration, and magnitude of events would be maintained under Project conditions, as discussed in the Initial Study (page 3-21). Thus, impacts to steelhead within Ross Creek from any changes in overflow from Phoenix Lake would be less than significant, and no mitigation measures would be required.

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**Comment 2 from Friends of Corte Madera Creek Watershed:**

Table 2-6 neglects to include consultation with the SWRCB, which regulates interbasin water transfers, and consultation with NOAA Fisheries, with authority over the Federally listed *O. mykiss*.

**Response:**

Table 2-6 presents a list of discretionary permits required to implement the Project. Pursuant to MMWD’s existing water rights, Marin Water may convey water between the two watersheds and store, on a temporary basis, water from Phoenix Lake in Bon Tempe Reservoir and release that water down Lagunitas Creek or serve it to its water customers; consequently, the State Water Resources Control Board is not listed in Table 2-6. While formal consultation with NMFS is not anticipated, that is a determination that will be made by the U.S. Army Corps of Engineers once Marin Water files an application for a permit under the Clean Water Act.

**Comment 3 from Friends of Corte Madera Creek Watershed:**

The Project’s potential impact on the overflow regime from Phoenix Lake, which could affect baseflow and water temperatures, is dismissed as “less than significant with mitigation incorporated.” However, the analysis provided is not sufficient to support this claim, particularly regarding the potential impact on smolts in Ross Creek during the spring pumping.

**Response:**

Potential impact on smolts in Ross Creek during the spring pumping must be based on facts, reasonable assumptions predicated upon facts, or expert opinion supported by facts. (*Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359 [“unsubstantiated opinions of neighbors and other lay witnesses” do not amount to substantial evidence].) Substantial evidence must include relevant information and reasonable inferences that a fair argument can be made to support a conclusion. (*Citizens for Responsible Equitable Environmental Development (CREED) v. City of San Diego* (2011) 196 Cal.App.4th 515.) Substantial evidence requires factual data, expert analysis, or other concrete information. (*Leonoff v. Monterey County Board of Supervisors* (1990) 222 Cal.App.3d 1337 [holding generalized complaints and lay opinions about environmental impacts were insufficient to constitute substantial evidence].)

Here, there is substantial evidence to conclude there is a less than significant impact because the Project timing has been designed for the timing of water transfers to occur only in the late fall/early winter, avoiding the spring, summer or early fall – when the reservoirs are at their lowest. This strategic timing reduces the likelihood of adding water with higher concentrations of nutrients and low dissolved oxygen to Bon Tempe Reservoir, which could have a detrimental effect on the aquatic ecosystem. In addition, the Project would implement Mitigation Measure HYD-2, the Adaptive Water Quality Management Plan. This measure involves testing the water in Phoenix Lake prior to transfers. If the water quality criteria are not met, the transfers would be delayed, thereby avoiding significant water quality impacts. Furthermore, the Project’s analysis, as shown in Appendix C (Figures 2 and 3), indicates that the Project implementation is not expected to result in substantial changes in overflow from Phoenix Lake into Ross Creek. The modeled overflow under both existing and future with-Project conditions shows a similar pattern in timing, duration, and magnitude of events. To control erosion, the Project would adhere to Marin Water standards and would conform with applicable water quality requirements. It would

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also implement Mitigation Measure HYD-1, the Water Control Drainage and Discharge Plan. These measures collectively would reduce operation-related impacts to Bon Tempe Reservoir to less-than-significant levels. To minimize the occurrence of algal blooms, benthic algae mats are placed in Bon Tempe Reservoir as per Marin Water’s standard practice. This measure helps maintain the water quality in the reservoir. Substantial evidence supports the District’s findings that these measures would collectively ensure that any potential impacts on the overflow regime and, consequently, on smolts in Ross Creek during the spring pumping, would be mitigated and kept to a minimum (discussed in more detail on pages 3-21 and 3-60 of the Initial Study). . In addition, continuous monitoring and adaptive management strategies will ensure the effectiveness of these measures.

**Comment 4 from Friends of Corte Madera Creek Watershed:**

The Hydrology and Water Quality discussion focuses on water quality in two lakes but does not mention the direct connection of Phoenix Lake water levels to water quality in Ross Creek.

Data collected since 2008 shows that when Phoenix Lake is discharging over the spillway in the spring, the water entering Ross Creek is well oxygenated, but too warm for *O. mykiss*. When the water level drops and discharge over the spillway stops, the water in Ross Creek comes mostly from leakage from the low-level release valve and groundwater. Its characteristics abruptly change, becoming much cooler and having virtually no dissolved oxygen.

Poor water quality in the hypolimnion of Phoenix Lake impacts Ross Creek, with harmful levels of iron (Fe) and manganese (Mn) leaking into Ross Creek through the low-level release valve. The impact of the excess iron over the years is visible in the form of black deposits on rocks, likely deposits of oxidized manganese.

Appendix C fails to account for the hydrologic impact on rearing and emigration. The Project’s impact on all life stages of *O. mykiss* should be evaluated. The recession limb of the hydrograph appears to be truncated because of the project, which could potentially trap young fish if they are attracted to Ross Creek for spawning but cannot out-migrate.

**Response:**

As described under the response to Comment 1 from Friends of Corte Madera Creek Watershed, Appendix C of the Initial Study includes an analysis on how Project operations may affect the hydrologic interactions between Phoenix Lake and Ross Creek. Under the refined Project operations, diversions would be limited to the late-fall, winter period (October 1 to February 28) when inflow into the reservoir and flow in Ross Creek is at its highest. Based on the modeling presented in revised Appendix C, during most winter periods there would be minimal or no change to the patterns of spill from Phoenix Lake and the resulting effect on the Ross Creek and Corte Madera Creek hydrographs would be negligible. Therefore, no adverse effects on migration of *O. mykiss* are anticipated.

By limiting diversions to this period, impacts on streamflow during the spring juvenile rearing season would be minimized. Furthermore, the maintenance of a 170-foot water surface elevation in Phoenix Lake during diversions would reduce the potential for impaired water quality conditions (e.g., elevated water temperature and depressed dissolved oxygen) in the reservoir, which could adversely affect Ross Creek water quality through spill events or seepage.

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Ross Creek water quality would be maintained under Project conditions because the Project would not alter conditions that affect the current temperature, oxygen levels, and metal levels in Ross Creek under existing conditions. Please refer to revised Appendix C for more information.

**Comment 5 from Friends of Corte Madera Creek Watershed:**

Marin Water Board Policy No.7 was adopted September 10, 2010. PART-2 Biological Diversity, applicable policies include A. Species and Habitats, B. Rare-Species, C. Adverse Impacts, and J. Streams. The Phoenix – Bon Tempe Connection Project to date indicates that these policies were not considered or were overlooked both in its design and in the IS/MND.

**Response:**

Marin Water is committed to adhering to its policies, including Board Policy No.7, which guides its operations and decision-making processes. Board Policy No. 7 says protection of water quality is the overriding goal for the management of the Mt. Tamalpais watershed, and that Marin Water is committed to restoring and sustaining biological diversity on District lands. The Phoenix – Bon Tempe Connection Project, part of Marin Water’s Strategic Water Supply roadmap, aims to increase operational efficiency and improve drought resiliency. The analyses presented in the Initial Study indicate that the Project would not be inconsistent with Board Policy 7, and would help implement Board Policy 1, to provide a long-term reliable water supply for customers.

---

**From:** Morgan Cantrell <morgancantrell@gmail.com>  
**Sent:** Sunday, April 7, 2024 2:50 PM  
**To:** Elysha Irish  
**Subject:** Phoenix-Bon Tempe Connection Project comments

Hi Elysha,

Given that federally listed Steelhead (*Oncorhynchus mykiss irideus*) are present in the Ross Creek and Corte Madera Creek and the proposed project would pump water from the Corte Madera Creek Watershed to another, it seems the potential impact on those fish is understated in the Mitigated Negative Declaration document...this will have a potentially significant impact on fish habitat below the dam.

As was done to maintain and improve salmonid habitat at Kent Lake and Lagunitas Creek, we should be providing a minimum in-stream flow from Phoenix Lake to Ross Creek and should extend Marin Water's team of aquatic ecologists to study the salmon populations in the Corte Madera Creek Watershed so that we are expanding our water storage capacity in a way that is harmonious with the fish that live alongside us.

The Corte Madera Creek Watershed encompasses more densely populated towns than Lagunitas Creek Watershed, making salmonid conservation more challenging but also providing a greater opportunity to educate more people about the importance of maintaining healthy water in creeks. Plans are underway for fish ladder improvements in Ross Creek and removal of part of the concrete channel at College of Marin so this project would be well-timed to complement those efforts. This could turn into a major PR win for Marin Water if salmon are prioritized and celebrated in this process.

Thank you,  
Morgan Cantrell



April 11, 2024

Elysha Irish  
Marin Water  
220 Nellen Avenue  
Corte Madera CA 94925  
[eirish@marinwater.org](mailto:eirish@marinwater.org)

RE: Phoenix-Bon Tempe Connection Project  
Initial Study/Mitigated Negative Declaration

Dear Ms. Irish,  
Friends of Corte Madera Creek Watershed has been following the Phoenix-Bon Tempe Connection Project since its inception and has a number of comments about the Initial Study/Mitigated Negative Declaration recently released for public review. Our comments follow.

## Background

### Section 2.5 Construction Schedule

The construction schedule seems rushed when taking into account the need for a more thorough analysis of the interbasin transfer of water that would almost certainly impact steelhead/rainbow trout (*Oncorhynchus mykiss*), a listed species in Ross Creek.

### Table 2-6 Required Permits

This table neglects to include consultation with the SWRCB, which regulates interbasin water transfers, and consultation with NOAA Fisheries, with authority over the Federally-listed *O. mykiss*.

## Initial Study

### 3.4 Biological Resource

Line a), in reference to Federally listed species, checks the box “Less Than Significant with Mitigation Incorporated.” The discussion later in this section states: “The Project’s alterations in the overflow regime from Phoenix Lake could result in reductions in baseflow during the spring months, and lead to a more rapid increase in water temperatures as instream pools become disconnected.” Then it dismisses that concern in the next paragraph by citing a study of two scenarios for operation of the project, which are deemed “less than significant.” The analysis is not adequate to support that contention. For example, it should describe how the proposed pumping in the spring could impact smolts in Ross Creek, including their emigration.

### Presence of Fish in Ross Creek

There is ample evidence that Ross Creek supports *O. mykiss*. A survey by Eric Ettliger (2005) is attached. Other observations are listed in the following table, including a few non-salmonids. Although many of the *O. mykiss* may not practice anadromy, that could easily change when fish barriers downstream of Phoenix Lake are removed.

**Fish observed in Ross Creek**

Date	Size	Number of fish	Species	Location	Approximate Miles from Mouth	Observer
12/16/05	~24"	1	<i>Oncorhynchus tshawytscha</i>		1.70	AK
10/28/09	1 yr, 2 yrs old	4	<i>O. mykiss</i>	Various	0.27	CDFG
10/28/09	?	1	<i>O. mykiss</i>		1.49	CDFG
10/28/09	?	1	<i>O. mykiss</i>		1.64	CDFG
10/28/09	YOY, 2 yrs old	3	<i>O. mykiss</i>		2.39	CDFG
7/2/10	8 "	2	<i>O. mykiss</i>	Spillway pool	2.45	PP
8/30/10	8" DEAD	4	<i>O. mykiss</i>	Spillway pool	2.45	PP
5/11/11	YOY	2	<i>O. mykiss</i>	Btwn spillway pool and vault	2.40	PP
5/24/12	YOY	10	<i>O. mykiss</i>	RC3	0.93	PP
5/24/12	YOY	10	<i>O. mykiss</i>	RC4	0.01	PP
7/12/12	YOY	many	<i>O. mykiss</i>	RC2	1.60	PP
7/12/12	2"	2	<i>O. mykiss</i>	RC1.5	1.80	PP
10/3/12	6"	2	<i>O. mykiss</i>	RC2	1.60	PP
4/25/15	6"	3	<i>O. mykiss</i>	Spillway pool	2.45	PP
7/14/15	6" DEAD	2	<i>O. mykiss</i>	Spillway pool	2.45	PP
5/5/17	?	2	<i>O. mykiss</i>	Spillway pool	2.45	PP
9/13/17	3"-5"	15	<i>O. mykiss</i>	Pool upstream of RC2	1.62	PP
5/3/18	10"	2	<i>O. mykiss</i>	Spillway pool	2.45	PP
	4"-6"	4 - 8	<i>O. mykiss</i>	Spillway pool	2.45	PP
	8"-10"	2	<i>Micropterus salmoides</i>	Spillway pool	2.45	PP

continued

Date	Size	Number of fish	Species	Location	Approximate Miles from Mouth	Observer
6/29/18	6"	1	<i>O. mykiss</i>	Spillway pool	2.45	PP
	10"	1	<i>M. salmoides</i>	Spillway pool	2.45	PP
	8"	4	<i>M. salmoides</i>	Spillway pool	2.45	PP
	6"	3	<i>M. salmoides</i>	Spillway pool	2.45	PP
8/23/18	2"-3"	~10	<i>Hesperoleucus symmetricus</i>	Pool upstream of RC2	1.62	PP
3/24/21	~24"	2	<i>Oncorhynchus</i> sp.	Downstream of Dibblee Bridge	1.82	GL
5/5/21	~24"	1	<i>O. mykiss</i>	Downstream of picnic area	2.00	SG
11/12/21	24" - 36"	2	<i>O. tshawytscha</i>	Upstream of picnic area	2.10	PP
7/16/23	6"	1	<i>O. mykiss</i>	Pool downstream of RC1.5	1.78	PP
11/1/23	10	10	<i>M. salmoides</i>	Spillway pool	2.45	PP
11/1/23	?	1	Centrarchidae (?)	Spillway pool	2.45	PP

## Observers:

AK Andrew Koutsoukos

CDFG Now CDFW, electrofishing results

GL Gary Leo

PP Parker Pringle, most observations made during maintenance of temperature loggers

SG Sandra Guldman

Warm-water fish, especially large-mouth bass, are washed into Ross Creek from Phoenix Lake during high winter flows. That issue is addressed in Eric Ettlinger's report referenced earlier and attached.



The USACE concrete flood control channel in Ross is a major barrier to fish migration. However, a project to replace (1) the defunct fish ladder at its upstream end with a transition structure and (2) redesign and enlarge the resting pools in the upstream half of the concrete channel will be implemented in 2025 by the Marin County Water Conservation and Flood Control District. After that project is complete, Ross Creek will be significantly easier for spawning steelhead to access. Absent any releases from Phoenix Lake to support smolt passage, emigration will remain a challenge as long as Ross Creek continues to dry up, typically in May, downstream of Natalie Coffin Greene Park.

### **Critical Habitat**

Corte Madera Creek and its tributaries (including Ross Creek) have been designated critical habitat for *O. mykiss* and *O. kisutch* (coho salmon). Although *O. kisutch* has been extirpated from the Corte Madera Creek watershed, any measures taken to benefit *O. mykiss* has the potential to benefit both species.

### **3.10 Hydrology and Water Quality**

Line a), in reference to water quality, checks the box “Less Than Significant with Mitigation Incorporated.” The discussion focuses on water quality in the two lakes, with no mention of the direct connection of Phoenix Lake water levels to water quality in Ross Creek.

### **Temperature and Dissolved Oxygen**

Temperature and dissolved oxygen (DO) data collected in Ross Creek since 2008 show that when Phoenix Lake is discharging over the spillway in the spring, after the lake has stratified, the water entering Ross Creek is well oxygenated, but too warm for *O. mykiss*. When the water level drops and discharge over the spillway stops, water in the upper portions of Ross Creek comes mostly from leakage from the low-level release valve, entering the creek through a concrete vault and groundwater, and its characteristics abruptly change: it is much cooler and has virtually no DO. These two graphs illustrate the abrupt change. Friends can provide more detailed information on the temperature and DO monitoring upon request.

### **Iron and Manganese Levels**

Another water quality impact on Ross Creek is a direct result of the poor water quality in the hypolimnion of Phoenix Lake. A summary table from a report prepared by Friends in 2011 shows harmful levels of iron (Fe) and manganese (Mn) in the water leaking through the low-level release valve into Ross Creek. RC 0.5 is about 60 feet downstream of the Vault.

The impact of the excess Fe through the years shows up clearly in the photos below. The black deposits on the rocks from the 4/15/22 photo are likely deposits of oxidized manganese.

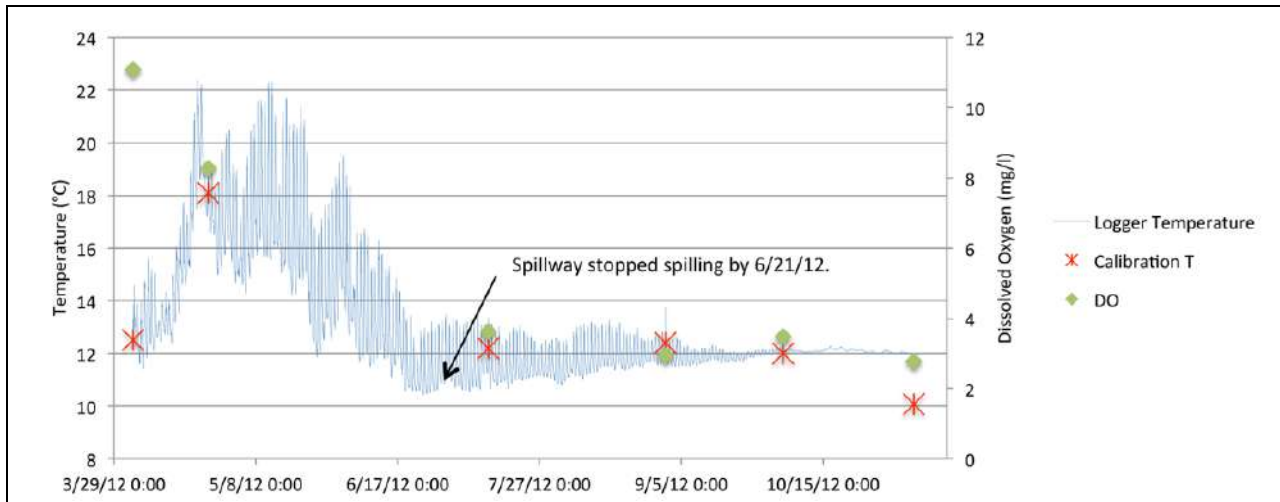
### **Hydrology**

Appendix C to the IS/MND, the memorandum about Ross creek hydrology, states it was done to assess whether the proposed diversions would “significantly delay or reduce flows at times when steelhead may be using fall pulse flows in Ross Creek as a cue to trigger up-stream migration and spawning activity.” However, the study fails to account for the

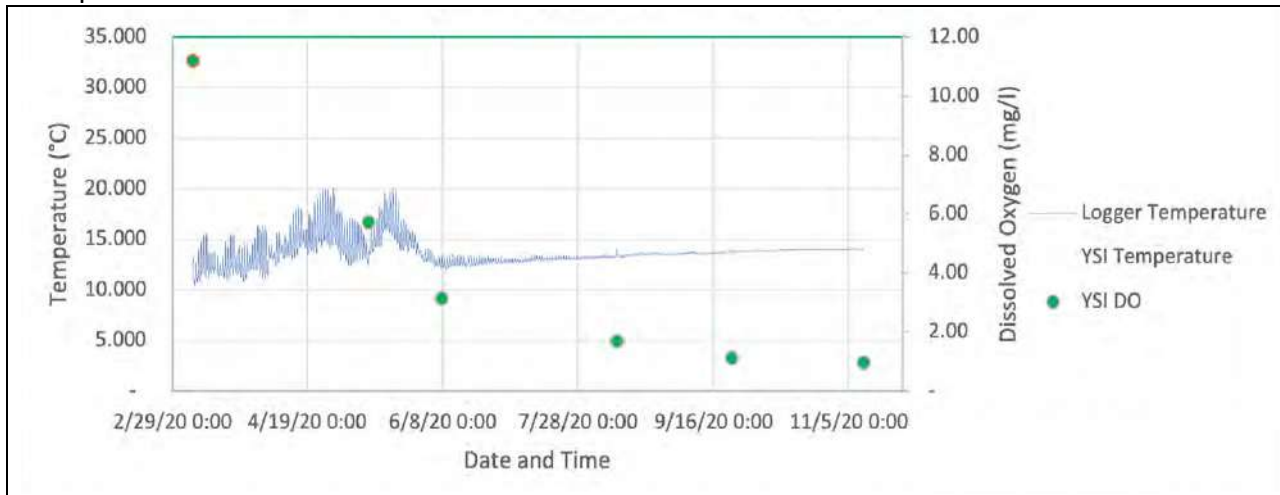
hydrologic impact on rearing and emigration. The project's impacts on all life stages of *O. mykiss* should be evaluated.

Despite the scale of the hydrographs presented, it appears that the recession limb of the hydrograph is truncated as a result of the project. If *O. mykiss* are attracted to Ross Creek for spawning, but the recession limb doesn't allow juvenile fish to out-migrate then young fish could be trapped.

Temperature and DO in Ross Creek near Vault in 2012



Temperature and DO in Ross Creek near Vault in 2020



Results of 2011 Fe and Mn Testing

			Water over spillway?	Vault	RC1	RC1.25	RC1.5	SA Creek at Creek Park
Latitude				37.955862	37.955746	37.955742	37.959020	
Longitude				-122.574989	-122.574541	-122.573616	-122.572293	
Dist from Vault (ft)				-	45	525	1,600	N/A
Fe (µg/l)	6/30/11	Yes		9,700	1,500	780	670	560
Fe (µg/l)	7/23/11	No		9,300	160,000	1,400	990	
Fe (µg/l)	8/29/11	No		18,000	150,000	9,900	1,500	
Mn (µg/l)	6/30/11	Yes		2,300	290	210	Not Detected	37
Mn (µg/l)	7/23/11	No		2,200	5,400	350	140	
Mn (µg/l)	8/29/11	No		7,200	5,700	5,800	200	

Note:  
 6/27/11 spillway flowing briskly  
 7/8/11 moderate flow over spillway  
 7/17/11 spillway at a trickle

Exceeds EPA standards for Fe causing chronic harm (1000 µg/l)  
 Exceeds Canadian standards for Fe (300 µg/l)  
 Exceeds British Columbia standards for Mn causing chronic harm at H = 50 mg/l CaCO<sub>3</sub> (800 µg/l)

Vault on 10/25/09



Vault on 11/09/12



RC 05 on 5/5/21



RC 05 on 4/15/22



## Compliance with Marin Water Policies

Board Policy No. 7, adopted September 10, 2010, PART 2-Biological Diversity, begins with this goal:

Protecting the integrity of the watershed is best achieved through maintaining natural conditions on watershed lands consistent with District policies and federal and state laws. The District is committed to restoring and sustaining native biological diversity on District lands, in particular the variety of living organisms, the genetic differences among them, and the natural communities and ecosystems providing their habitat.

Applicable policies in PART 2 include:

- A. Species and Habitats – The District will protect and restore species richness and complexity of habitats on District lands, and seek to preserve or restore natural habitats to the fullest extent possible.
- B. Rare-Species – The District will identify and promote conservation of all special status plant and animal species especially those listed under federal and state Endangered Species Acts.
- C. Adverse Impacts – The District will minimize adverse impacts to spatial and temporal patterns of native species for reproduction, feeding, migration, and dispersal..., and
- J. Streams - The District will take actions to protect native fishery resources, in streams within the District's sphere of influence, consistent with California public trust doctrine and Fish and Game Code. The District will be an active partner in stream protection and enhancement efforts that other agencies and groups are pursuing in streams within the Districts sphere of influence. The District's sphere of influence includes those streams that are directly affected by the District's land or water management activities. ...

The Phoenix-Bon Tempe Connection Project to date indicates that these policies were not considered or were overlooked both in its design and in this IS/MND.

## Conclusion

Friends requests that the Initial Study and Mitigated Negative Declaration be revised to more accurately reflect the presence of fishery resources in Ross Creek and the impacts of this project and Phoenix Lake Dam have and would continue to have on those resources, and acknowledge the regulatory requirements. The District has an opportunity to improve conditions for aquatic life in the creek fed by Phoenix Lake, consistent with its policies, and should not side-step this opportunity and responsibility.

Sincerely,



Sandra Guldman, President

c: Marin Water Board of Directors  
NOAA Fisheries (*Sara Azat, Dan Logan, Darren Howe, Bob Coey, and Dan Wilson*)  
SFRWQB (*Xavier Fernandez, Holly Garber*)

SWRCB (*Matthew McCarthy*)  
CDFW (*Alex Single*)  
Marin RCD (*Sarah Phillips*)

REMOVAL OF NON-NATIVE FISH FROM ROSS CREEK  
AUGUST, 2005  
By: Eric Ettlenger, MMWD

On August 3rd and 4th Sean Quinlan, Jenica Cimino and I electrofished five pools in Ross Creek between Phoenix Dam and the Natalie Coffin Greene parking lot. The five pools were selected for their depth and habitat complexity, in order to maximize the likelihood of capturing largemouth bass. We captured a total of 298 fish, including steelhead, California roach, largemouth bass, bluegill and redear sunfish. Two young-of-the-year steelhead and one California roach were accidentally killed during the survey.

The catch by species is shown below:

Species	Number	%
Steelhead	185	62%
CA Roach	53	18%
Largemouth bass	22	7%
Redear sunfish	20	7%
Bluegill sunfish	18	6%

Native species comprised 80% of the catch while the three non-native species comprised 20%. Of the 22 largemouth bass captured, 16 were fry (<2" long) and only six were large enough to be piscivorous. Non-natives were dominant only in the plunge pool below Phoenix Dam, where only three of 27 fish captured were native. Largemouth bass fry were the most abundant fish in that pool and only a portion of the fry population could be caught due to the pool's great depth.

In summary, only six of the 298 fish captured were non-natives capable of eating steelhead or other native fish. The sunfish and largemouth fry do not pose a threat to native fish and likely would not survive in Ross Creek or Corte Madera Creek through the winter. These fish likely spill into Ross Creek from Phoenix Lake in most years and yet the steelhead population has remained dominant in that creek. It is my opinion that removing a handful of non-native bass from Ross Creek is not worth the effort involved or the risk of incidental death or injury to steelhead. I recommend discontinuing the practice of removing non-native fish from Ross Creek in future years.

~~~~~  
Eric Ettlenger, Aquatic Ecologist  
Marin Municipal Water District  
P.O. Box 865, Fairfax, CA 94978  
(415) 945-1193 ><))))>

# Appendix E

## **Mitigation Monitoring and Reporting Program**

## MITIGATION MONITORING AND REPORTING PROGRAM FOR THE PHOENIX – BON TEMPE CONNECTION PROJECT

| Resource Area                                                                                                                                                                 | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Implementing Actions/<br>Responsible Party                                                                                                                                                                                                       | Timing                                                                                                                                                                                                  |
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| <b>Biological Resources</b>                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                         |
| <p>Damage or removal of Napa false indigo, bent-flowered fiddleneck, or other special-status plants due to construction would represent a potentially significant impact.</p> | <p><b>BIO-1: Protection of Rare Plants.</b> Prior to ground disturbance, a qualified botanist shall conduct a focused survey where ground disturbance in suitable habitat for the rare plant species with potential to be present during their blooming period. The blooming period for rare plants with a moderate or higher potential to occur is as follows:</p> <ul style="list-style-type: none"> <li>• Napa false indigo (<i>Amorpha californica</i> var. <i>napensis</i>): April – July</li> <li>• Bent-flowered fiddleneck (<i>Amsinckia lunaris</i>): March – June</li> <li>• western leatherwood (<i>Dirca occidentalis</i>): November – March</li> <li>• congested-headed hayfield tarplant (<i>Hemizonia congesta</i> ssp. <i>congesta</i>): April – November</li> <li>• Tamalpais lessingia (<i>Lessingia micradenia</i> var. <i>micradenia</i>): July – October</li> <li>• North Coast semaphore grass (<i>Pleuropogon hooverianus</i>): March – June</li> <li>• Tamalpais oak (<i>Quercus parvula</i> var. <i>tamalpaisensis</i>): March – April</li> <li>• two-fork clover (<i>Trifolium amoenum</i>): April – June</li> </ul> <p>If no special-status plants are observed, no further action shall be required. If any special-status plant species, including two-fork clover, Napa false indigo or North Coast semaphore grass, are observed, the plants will be avoided with a non-disturbance buffer of 25 feet or other suitable buffer distance determined in coordination with the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service as appropriate by species. The buffer zone shall be clearly demarcated onsite using exclusion fencing. If establishing an avoidance buffer is not feasible, individual plants shall be transplanted to an area with suitable physical and biological conditions outside of the work area, according to a Rare Plant Relocation Plan to be prepared by Marin Water or its contractor and reviewed and approved by the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service, as applicable. The relocation plan shall include regular monitoring for a period of 5 years, as well as adaptive management actions, such as additional monitoring, weed control, irrigation, or replanting, if success criteria of 75 percent survival are not met after the 5-year monitoring period.</p> | <ul style="list-style-type: none"> <li>• Conduct pre-construction survey/Marin Water</li> <li>• Establish buffer zone or re-location plan/Marin Water</li> <li>• Retain copies of all surveys and reports in project file/Marin Water</li> </ul> | <ul style="list-style-type: none"> <li>• 14-days prior to ground disturbing activities</li> <li>• Before and during construction</li> <li>• Before/after construction (retain documentation)</li> </ul> |

| Resource Area                                                                                                                                                                                              | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Implementing Actions/<br>Responsible Party                                                                                                                                                                      | Timing                                                                                                                                                                                                |
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| <p>Construction activities or removal of vegetation would represent a potentially significant impact on reptiles and amphibians.</p>                                                                       | <p><b>BIO-2: Protection of Reptiles and Amphibians.</b> Marin Water and/or its construction contractor shall install temporary exclusion fencing around work areas within 200 feet of suitable aquatic habitat for western pond turtle or amphibian species. The fence shall be to a minimum aboveground height of 30 inches, and the bottom shall be buried to a depth of at least 6 inches. The fence shall be installed prior to ground disturbing activities and monitored by a qualified biologist, who will check the fence alignment before vegetation clearing and fence installation to ensure no special-status species are present.</p> <p>Where riparian habitat cannot be avoided and Marin Water proposes vegetation removal, the construction contractor shall use hand tools or another method approved by the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to remove vegetation from the ground disturbance work area plus a 10-foot buffer around the riparian area. No vegetation in this area shall be removed using heavy equipment, such as an excavator. Vegetation height within the buffer zone shall be maintained at or below 5 inches above ground. Vegetation removal in riparian habitat shall be conducted under the supervision of a qualified biologist(s).</p> | <ul style="list-style-type: none"> <li>• Install temporary exclusion fencing around work areas/Marin Water or Contractor</li> <li>• Restrict methods of vegetation removal/Marin Water or Contractor</li> </ul> | <ul style="list-style-type: none"> <li>• 14-days prior to ground disturbing activities</li> <li>• During construction.</li> </ul>                                                                     |
| <p>Removal of large trees during construction could result in injury or disturbance to roosting bats or destruction of occupied roosting habitat and would represent a potentially significant impact.</p> | <p><b>BIO-3: Bat-Safe Tree Removal.</b> A qualified biologist shall conduct a pre-construction survey for special-status bats in advance of tree trimming or removal to characterize potential bat habitat and identify active roost sites. Should potential roosting habitat or active bat roosts be found in trees to be disturbed, the following measures shall be implemented:</p> <ul style="list-style-type: none"> <li>• Trimming or removal of trees with potential to house maternity or winter roosting colonies shall occur outside of the bat maternity roosting season (approximately April 15 to August 15) and outside of months of winter torpor (approximately October 15 to February 28).</li> <li>• Trimming or removal of trees containing night roost sites or potential bat roosting habitat shall be removed using the following two-day phased removal method under supervision of a qualified biologist. Branches and limbs not containing cavities or fissures in which bats could roost shall be cut on the first day, only using chainsaws. Branches or limbs containing roost sites shall be trimmed on the following day, under the supervision of the qualified biologist, also using chainsaws.</li> </ul>                                                                                            | <ul style="list-style-type: none"> <li>• Conduct pre-construction survey/Marin Water</li> <li>• Restrict timing and methods of tree trimming or removal/Marin Water</li> </ul>                                  | <ul style="list-style-type: none"> <li>• Prior to tree trimming activities</li> <li>• Outside of bat maternity roosting and winter torpor seasons, following a 2-day phased removal method</li> </ul> |



| Resource Area                                                                                                                                                              | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Implementing Actions/<br>Responsible Party                                                                                                                                                                                                                                                                         | Timing                                                                                                                                                                                                                                                       |
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| <p>Impacts on the ephemeral channels and any associate sensitive natural community would represent a potentially significant impact.</p>                                   | <p><b>BIO-4: Habitat Restoration and Monitoring.</b> Marin Water or its contractor shall avoid or minimize impacts on sensitive natural communities and potentially jurisdictional aquatic habitat; Project design shall minimize the extent of temporary and permanent loss of such areas. Prior to construction, Marin Water or its contractor shall prepare a Habitat Restoration and Monitoring Plan to restore temporary or mitigate for permanent impacts to sensitive habitats or aquatic resources within the Project site. The plan shall describe how impacts on riparian or other sensitive natural communities, and of jurisdictional waters, would be offset through the replacement, restoration or enhancement of a comparable amount of stream habitat area (i.e., a minimum 1:1 ratio based) at an inter-agency-approved location. Ephemeral channels or sensitive habitats temporarily impacted by construction-related activity shall be restored, under guidance from a qualified biologist.</p> <p>The Habitat Restoration and Monitoring Plan shall include protocols for replanting or re-seeding of native vegetation removed prior to or during construction, and management and monitoring of the plants for a 5-year period to ensure replanting success. The plan shall specify monitoring and performance criteria for the species planted, monitoring frequency, reporting requirements, as well as the best time of year for seeding or planting to occur, pursuant to requirements of permits granted for the Project. Appropriate performance standards may include but are not limited to: a 75 percent survival rate of restoration plantings after five years; and a viable, self-sustaining creek or wetland system at the end of the 5-year monitoring period. The plan shall include adaptive management strategies if success criteria are not being met. The Habitat Restoration and Monitoring Plan would include interim thresholds for replanting success and alternative management approaches, and may include weed control, supplementary watering, or additional replanting to undertake if performance thresholds are not met.</p> | <ul style="list-style-type: none"> <li>• Prepare a Habitat Restoration and Monitoring Plan/Marin Water or Contractor</li> <li>• Implement Restoration Plan/Marin Water</li> <li>• Implement Monitoring Plan/Marin Water</li> <li>• Retain copies of all surveys and reports in project file/Marin Water</li> </ul> | <ul style="list-style-type: none"> <li>• Prior to start of construction (prepare Plan)</li> <li>• During construction (implement Plan)</li> <li>• For 5 years (monitor) during and after construction</li> <li>• Before/after construction</li> </ul>        |
| <p>The removal of trees that qualify as protected or heritage native species, pursuant to the County tree ordinance, would represent a potentially significant impact.</p> | <p><b>BIO-5: Minimize Impacts on Protected Trees.</b> Prior to construction, Marin Water shall determine whether any heritage or protected trees are to be removed and will minimize impacts on retained heritage or protected trees. For removed heritage or protected trees within the Project area, tree replacement shall be provided through one or more of the following options, consistent with the Marin County Native Tree Protection and Preservation ordinance:</p> <ul style="list-style-type: none"> <li>• Heritage trees shall be replaced at an alternative site within the watershed on a 3:1 basis using 15-gallon trees (i.e., three 15-gallon trees will be planted for every tree removed). Heritage trees shall be replaced with a tree of the same species wherever possible. Alternative species to the tree removed may</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• Identify trees to be removed/Marin Water</li> <li>• Identify and protect trees to be retained/Marin Water</li> <li>• Replace removed trees/Marin Water</li> <li>• Monitor success and replace trees as necessary/Marin Water</li> </ul>                                   | <ul style="list-style-type: none"> <li>• Prior to construction activities (ID)</li> <li>• Prior to construction activities (ID)</li> <li>• During construction (replace)</li> <li>• Bi-annually (monitor) and replace after 5 years, if necessary</li> </ul> |

| Resource Area | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Implementing Actions/<br>Responsible Party | Timing |
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|               | <p>be planted if more appropriate to the environmental conditions at the identified mitigation site.</p> <ul style="list-style-type: none"> <li>• Plantings shall receive forage protection using a rigid tree tube, receive regular (i.e., bi-annual) weeding, be given a weed mat/and or appropriate mulching, and may be subject to supplemental watering during an initial 2-year establishment period. Regular (e.g., biannual) monitoring shall be performed to review the vigor of plantings and provide maintenance as needed.</li> <li>• As an alternative to planting trees, Marin Water may “shelter” native volunteer tree seedlings within the watershed on a 3:1 basis, with preference given to species and areas where the recruitment of young trees is problematic (e.g., some oak species) due to grazing or other factors. Plantings shall receive protection, maintenance, and watering as described above for heritage tree replacement plantings.</li> <li>• Alternatively, to compensate for some or all removed heritage or protected trees, Marin Water may contribute to an in-lieu payment program in the amount of \$500.00 per replacement tree to the Tree Preservation Fund managed by the Marin County Parks and Open Space Department for planting, maintenance, and management of trees and other vegetation.</li> <li>• If replacement trees do not thrive 5 years following planting or sheltering, Marin Water may either replace unsuccessful trees using the methods described above, or contribute funds to the Tree Preservation Fund to meet the initial tree protection standard (i.e., 3:1).</li> </ul> <p>Retained heritage or protected trees on the Project site shall be identified as preserved on site plans and shall be clearly delineated by construction netting, which will remain in place for the duration of all work. To the extent possible, if site work must encroach upon the dripline of a preserved tree, excavation will be performed in a manner that causes only minimal root damage. The following will not occur within the dripline of any protected retained tree: parking; storage of vehicles, equipment, machinery, stockpiles of excavated soils, or construction materials; or dumping of oils or chemicals.</p> |                                            |        |

| Resource Area                                                                                                                                                                                          | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Implementing Actions/<br>Responsible Party                                                                                                                                                                                                                                                                           | Timing                                                                                                                                                                                                                                    |
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| <b>Cultural Resources</b>                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                           |
| <p>Substantial adverse changes to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource would represent a potentially significant impact.</p> | <p><b>CUL-1: Cultural Resources Awareness Training and Inadvertent Discovery of Archaeological Resources or Tribal Cultural Resources.</b> Prior to authorization to proceed, a qualified archaeologist, defined as an archaeologist meeting the U.S. Secretary of the Interior’s Professional Qualification Standards for Archeology, will conduct a training program for all construction and field workers involved in site disturbance. On-site personnel shall attend a mandatory pre-Project training that will outline the general archaeological sensitivity of the area and the procedures to follow in the event an archaeological resource and/or human remains are inadvertently discovered.</p> <p>If pre-contact or historic-era archaeological resources are encountered during Project implementation, all construction activities within 100 feet shall halt, and a qualified archaeologist shall inspect the find within 24 hours of discovery and notify Marin Water of the initial assessment. Pre-contact archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse.</p> <p>If Marin Water determines, based on recommendations from a qualified archaeologist and a Native American representative (if the resource is pre-contact indigenous related), that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines Section 15064.5) or a tribal cultural resource (as defined in Public Resources Code [PRC] Section 21080.3), the resource shall be avoided if feasible. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource, or incorporating the resource within open space, capping and covering the resource.</p> <p>If avoidance is not feasible, Marin Water shall consult with appropriate Native American Tribes (if the resource is pre-contact indigenous related), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4. This shall include documentation of the resource and may include data recovery (according to PRC Section 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC Section 21084.3).</p> | <ul style="list-style-type: none"> <li>• Include mitigation measure in construction specifications/Marin Water</li> <li>• Retain an archaeological monitor to conduct monitoring of all ground disturbance activities/Marin Water</li> <li>• Prepare daily logs and a final monitoring report/Marin Water</li> </ul> | <ul style="list-style-type: none"> <li>• During preparation of construction specs</li> <li>• Prior to ground-disturbing activities (retain monitor)</li> <li>• During (daily logs), and after construction (monitoring report)</li> </ul> |

| Resource Area                                                                                                                                                                          | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Implementing Actions/<br>Responsible Party                                                                                                                                                                                                                                                                           | Timing                                                                                                                                                                                                                                   |
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| <p>Disturbance of previously unknown human remains encountered during construction activities would represent a potentially significant impact.</p>                                    | <p><b>CUL-2: Inadvertent Discovery of Human Remains.</b> If potential human remains are encountered, all work will halt within 100 feet of the find and Marin Water will be contacted by on-site construction crews. Marin Water will contact the Marin County coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. As provided in PRC Section 5097.98, the Native American Heritage Commission will identify the person or persons believed to be the Most Likely Descendant. The Most Likely Descendent will make recommendations for the means of treating, with appropriate dignity, the human remains and any associated grave goods, as provided in PRC Section 5097.98.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Include mitigation measure in construction specifications/Marin Water</li> <li>• Retain an archaeological monitor to conduct monitoring of all ground disturbance activities/Marin Water</li> <li>• Prepare daily logs and a final monitoring report/Marin Water</li> </ul> | <ul style="list-style-type: none"> <li>• During preparation of construction specs</li> <li>• Prior to ground-disturbing activities (retain monitor)</li> <li>• During (daily logs) and after construction (monitoring report)</li> </ul> |
| <p><b>Hydrology and Water Quality</b></p>                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                          |
| <p>Soil-disturbing activities could result in soil erosion and the mobilization of debris and soil, and would represent a potentially significant impact on surface water quality.</p> | <p><b>HYD-1: Water Control, Drainage, and Discharge Plan.</b> Prior to (or at the time of) final design, the contractor selected to construct the Project shall prepare and submit to Marin Water, Marin County, and the RWQCB (as applicable) a Water Control, Drainage, and Discharge Plan. The plan shall apply to all areas of ground disturbance and contain provisions for energy dissipation and describe measures to prevent erosion, scouring of banks, nuisance, and contamination, and otherwise limit the project's contribution of silt and sediment into receiving waters. An assessment of the downstream/down gradient drainage ("hydrological conditions assessment") shall be conducted to allow for appropriate planning for rerouting existing site drainage to accommodate the proposed Project such that erosion is not allowed to occur in the vicinity of the Project on- or off-site.</p> <p>A detailed plan for drainage control shall be prepared based on the results of the design-level geotechnical report and Project hydrological conditions assessment. Proposed measures shall conform with the requirements of all applicable discharge permits. Measures shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> <li>• To the extent feasible, construction during moderate to heavy rain events shall cease;</li> <li>• The use of heavy equipment at the site during all phases of the Project shall be limited during rain events, and the site shall be allowed to dry out prior to heavy equipment use upon sloping terrain or in ephemeral stream channels;</li> <li>• Water used for dust control or other purposes during construction shall not be applied in a manner that results in ponding or runoff (on- or off-site);</li> <li>• Straw wattles, sand bags, and other erosion control devices shall be installed, periodically checked, and maintained in a</li> </ul> | <ul style="list-style-type: none"> <li>• Include mitigation measure in construction specifications/Marin Water</li> <li>• Prepare Plan/Marin Water or Contractor</li> <li>• Implement and Monitor Plan/Contractor</li> </ul>                                                                                         | <ul style="list-style-type: none"> <li>• During preparation of construction specs</li> <li>• Prior to construction activities</li> <li>• During construction activities</li> </ul>                                                       |

| Resource Area                                                                                                                  | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Implementing Actions/<br>Responsible Party                                                                                     | Timing                                                                                                  |
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|                                                                                                                                | <p>manner that allows for optimal functionality to prevent contamination of stormwater;</p> <ul style="list-style-type: none"> <li>• Good housekeeping measures shall include covering spoils piles and removing trash from the site daily;</li> <li>• Adaptive management shall be incorporated into drainage planning to ensure the adequacy or functionality of installed erosion control measures. In the event of redundant or overlapping erosion control measures or BMPs, the more effectual measures shall be utilized;</li> <li>• Design for grading, drainage, and stormwater control to support proposed site structures shall conform to all applicable requirements of the California Building Code and Regional Water Quality Control Board stormwater and/or waste discharge requirements (as applicable);</li> <li>• Site hydrology shall be considered with energy dissipation structures (or other measures) installed at strategic locations where stormwater is discharged into the natural drainages such that runoff and erosion are controlled on- and off-site;</li> <li>• Concrete residues shall not be allowed to enter waterways or stormwater infrastructure. Measures to limit migration of residues may include the use of silt fencing or on-site containment, subject to review and approval by Marin Water;</li> <li>• Bio-retention and/or measures for source control of silt, sediment, and other pollutants shall be incorporated into the drainage design, as appropriate;</li> <li>• Revegetation of disturbed areas and downstream drainages, as appropriate, shall utilize plantings or reseeding with ecologically appropriate, local ecotype native plant materials;</li> <li>• In the event that dewatering is required during construction, such activities shall be conducted in a manner that conforms to applicable Marin Water standards, waste discharge requirements, or general permit for dewatering provisions.</li> </ul> |                                                                                                                                |                                                                                                         |
| <p>Operation activities could increase the potential for algal blooms and impair water use for designated beneficial uses.</p> | <p><b>HYD-2: Adaptive Water Quality Management Plan.</b> Marin Water shall develop and implement an adaptive water quality management plan applicable to water transfers between Phoenix Lake and Bon Tempe Reservoir. The purpose of the adaptive water quality management plan is to prevent the accumulation of biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses, and to maintain dissolved oxygen levels in Phoenix Lake above 5.0 mg/l. The plan shall include measurable water quality criteria applicable to Phoenix Lake that will establish whether a water transfer could promote aquatic growths such that beneficial uses are adversely affected or dissolved oxygen is reduced below minimum levels in</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Prepare Plan/Marin Water</li> <li>• Implement and Monitor Plan/Marin Water</li> </ul> | <ul style="list-style-type: none"> <li>• For 5 years (monitor) during and after construction</li> </ul> |

| Resource Area | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Implementing Actions/<br>Responsible Party | Timing |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------|
|               | <p>Phoenix Lake. Marin Water shall measure water quality prior to transfers to ascertain whether Phoenix Lake exceeds the water quality criteria. If measured water quality indicates that the transfer could promote aquatic growths such that beneficial uses are adversely affected or could reduce dissolved oxygen below minimum levels in Phoenix Lake, then Marin Water will delay transfer. For up to five years after the first water transfer, Marin Water will monitor the dissolved oxygen concentrations in Phoenix Lake monthly. If monitoring establishes that, after 5 years, the median dissolved oxygen concentration for any three consecutive months was not less than 80 percent of the dissolved oxygen content at saturation, or not less than the baseline (2023-2024) seasonal minimum dissolved oxygen concentrations in Phoenix Lake, then monitoring can cease.</p> |                                            |        |



# STAFF REPORT

**Meeting Type:** Board of Directors  
**Title:** 2024 Annual Strategic Work Plan Quarterly Progress  
**From:** Bret Uppendahl, Acting General Manager  
**Meeting Date:** June 18, 2024 BU

**TYPE OF ACTION:**                      Action              X              Information                      Review and Refer

**RECOMMENDATION:** Receive staff quarterly progress update on the 2024 Annual Strategic Work Plan

**SUMMARY:** The General Manager will review with the Board the 2024 annual work plan progress made over the last two quarters, which supports the goals and objectives identified in the District’s Five-Year Strategic Plan (2024-2028).

**DISCUSSION:** In February 2024, the Board adopted the District’s Five-Year Strategic Plan, which covers the 2024-2028 time period. To operationalize the strategic plan, a work plan will be developed in each of the five years outlining the specific actions to be taken on an annual basis to help advance the goals and objectives in the Five-Year Strategic Plan. Each action item in the work plan, which augments the day-to-day work of the District, includes key milestones and associated timelines to help the District stay on target with its five-year goals and objectives. Updates on the progress of the annual work plans will be provided to the Board on a quarterly basis.

The 2024 Annual Strategic Work Plan was reviewed with the Board of Directors at the Annual Board Retreat on March 14, 2024. Because the annual strategic plan and corresponding year one work plan were adopted toward the end of the first quarter, the General Manager will review the progress made on the annual work plan over the first two quarters of the year, indicating the status of each element of the work plan, including completed items and area of significant progress, as well as noting any delays or other changes to the timeline.

**ENVIRONMENTAL REVIEW:** Not applicable.

**FISCAL IMPACT:** None.

**ATTACHMENT(S):**

1. 2024 Annual Strategic Work Plan - Quarter 2 Progress Update

## GOAL 1: Reliable Water Supply

Timing Key: Q1 = Jan-Mar, Q2= Apr-Jun, Q3= Jul-Sept, Q4= Oct-Dec

| Objective 1 – Reduce Potable Water Use                                                    |                                                                                                                                                                                              |                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTION ITEMS FOR 5 YR OBJECTIVES                                                          | WORK PLANNED IN YEAR 1                                                                                                                                                                       | MILESTONE                                                     | Q2 PROGRESS UPDATE                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>a. Water Efficiency Concepts and Strategies Toward Short and Long-Term Goals</b>       | Complete Water Efficiency Master Plan and begin implementation.                                                                                                                              | Publish by Q2                                                 | Prepared draft of Master Plan for the May 1 Water Efficiency Mater Plan Workshop.                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>b. Water Efficiency Incentives, Education and Outreach</b>                             | Evaluate incentive offerings and revise to align with WEMP.                                                                                                                                  | By Q2                                                         | High efficiency toilet and clothes washer rebate programs changes effective 6/30/2024 to align with Water Efficiency Master Plan.                                                                                                                                                                                                                                                                                                                                  |
|                                                                                           | Implement seasonal water efficiency campaign strategies targeted to higher water users using creative collateral, customer success stories, point-of-service displays, and events.           | Q1-Q4                                                         | Launched new customer success stories series, publishing 4 in first 6 months, and repackaged for maximized use in various campaign strategies.<br><br>Completed implementation of winter/spring (indoor) campaigns, including the indoor efficiency estimator educational campaign.<br><br>Initiated launch of outdoor irrigation season campaigns, using targeted digital ads, an advertorial, and a rain barrel giveaway in collaboration with a local business. |
| <b>c. Implementation of Water Loss Control and Leak Detection Program Recommendations</b> | Complete water loss study and begin implementation of selected actions.                                                                                                                      | By Q4                                                         | Project is ongoing; board briefing planned for Q3.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>d. Industry Association Participation</b>                                              | Participate in the Water Research Foundation’s Residential End Use Study.                                                                                                                    | By Q4                                                         | Held kick-off call for the study on 5/20/2024; the study will use 2024 data and will publish Q4 2025.                                                                                                                                                                                                                                                                                                                                                              |
| <b>e. Partnerships to Test Technologies/Theories</b>                                      | Prepare for AMI deployment: <ul style="list-style-type: none"> <li>• AMI Program Manager.</li> <li>• Establish timeline.</li> <li>• Pilot testing.</li> </ul>                                | Program Manager by Q2;<br>Timeline by Q3<br>Begin pilot Q3/Q4 | AMI Program Manager has been selected, Board update planned for Q3 to present high-level schedule for moving toward AMI deployment.                                                                                                                                                                                                                                                                                                                                |
| <b>f. Policy Review</b>                                                                   | Review the effectiveness of the District’s Graywater Ordinance, water efficient fixture standards, and water efficient landscape ordinance and provide alternatives for Board consideration. | Q2                                                            | Evaluated Graywater Ordinance and the fixture standards and presented alternatives to the Board for discussion at the Comms/WE Committee on 5/15/24.                                                                                                                                                                                                                                                                                                               |
|                                                                                           | Align Water Efficient Landscape Ordinance with the State rulemaking currently underway.                                                                                                      | Q3                                                            | Nothing to report (District’s Landscape Ordinance will be updated when the state rulemaking process is finalized. Public comment ended on 1/16/24).                                                                                                                                                                                                                                                                                                                |

### Objective 2 – Augment Existing Water Supply



| ACTION ITEMS FOR 5 YR OBJECTIVES                                   | WORK PLANNED IN YEAR 1                                                                                                                                                                                                                                                                                                                                                                                     | MILESTONE                                                                                                                 | Q2 PROGRESS UPDATE                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a. Roadmap Short-Term Actions</b>                               | <ol style="list-style-type: none"> <li>Water Efficiency actions outlined in Objective 1.</li> <li>Begin design and CEQA for Soulajule to Nicasio pipeline.</li> <li>Design for Soulajule electrification.</li> <li>Design/bid Phoenix to Bon Tempe Treatment Plant.</li> <li>Complete stream release project.</li> <li>Develop emergency supply augmentation plan for times of water shortages.</li> </ol> | <ol style="list-style-type: none"> <li>Q1-Q4</li> <li>Q4</li> <li>Q4</li> <li>Q3</li> <li>Q4</li> <li>Begin Q4</li> </ol> | <ol style="list-style-type: none"> <li>See previous section</li> <li>Pipeline work has started and so far on track.</li> <li>Electrification project paused to assess the adequacy of capacity and impact of water supply projects.</li> <li>Nothing to report.</li> <li>Nothing to report.</li> <li>Nothing to report.</li> </ol> |
| <b>b. Roadmap Medium Term Projects and Longer-Term Goal Update</b> | Select preferred alternative for Conveyance and begin 30% design.                                                                                                                                                                                                                                                                                                                                          | Preferred alternative selection by Q3; Award of contract for 30% design by Q4                                             | Shortlist evaluation underway and on track for Q3 selection of preferred alternative.                                                                                                                                                                                                                                              |
|                                                                    | Select preferred alternative for Local Storage and begin 30% design.                                                                                                                                                                                                                                                                                                                                       | Preferred Alternative Selection by Q3; Award of contract for 30% design by Q4                                             | Shortlist evaluation is underway and on track for selection of preferred alternative in late Q3.<br><br>Moved Nicasio Spillway Modifications Project out of planning and into design and implementation.                                                                                                                           |
|                                                                    | Complete feasibility analysis for Petaluma River Desal.                                                                                                                                                                                                                                                                                                                                                    | By Q3                                                                                                                     | Planning report out to board in Q3 on findings.                                                                                                                                                                                                                                                                                    |

### Objective 3 – Preserve and Enhance Existing Partnerships

| ACTION ITEMS FOR 5 YR OBJECTIVES                                    | WORK PLANNED IN YEAR 1                                                                                   | MILESTONE                               | Q2 PROGRESS UPDATE                                                                                                                |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>a. Recycled Water Project Partnerships</b>                       | Continued relationship building work with North Bay Water reuse authority and local sanitation agencies. | Ongoing                                 | Active member with NBWRA.                                                                                                         |
| <b>b. Sonoma Water Agreement Renewal</b>                            | Key terms agreed to and signed.                                                                          | Key terms agreed to by Q2; Signed by Q4 | Staff level progress on key terms delayed as SW is occupied with other initiatives; staff meeting scheduled for June 6.           |
| <b>c. Relationship Building for Regional Water Supply Projects</b>  | Strategic meetings with Sonoma Water and contractors for regional water supply planning.                 | Ongoing                                 | Meetings taking place with contractors.                                                                                           |
| <b>d. State And Federal Support for Regional Supply Development</b> | Receive first tranche of WRDA funding for Soulajule water supply project.                                | TBD                                     | WRDA funding was not prioritized by ACOE and other avenue is being explored to get this item into the Corps budget for this year. |

### Objective 4 – Provide High-Quality Water to Customers

| ACTION ITEMS FOR 5 YR OBJECTIVES              | WORK PLANNED IN YEAR 1                                                                                          | MILESTONE | Q2 PROGRESS UPDATE                                                                                                |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| <b>a. Reservoir Management Plans</b>          | Review industry best practices for reservoir management plans.                                                  | By Q4     | Nothing to report.                                                                                                |
| <b>b. Water Treatment Option Improvements</b> | Pilot study to replace ammonia with liquid ammonium sulfate to improve safety protocols and cost-effectiveness. | By Q4     | Nothing to report.                                                                                                |
| <b>c. Water Quality Lab TNI Accreditation</b> | Achieve new TNI accreditation for lab.                                                                          | By Q4     | Third party audit conducted in March with minimal findings. Accreditation is anticipated on or ahead of schedule. |

## GOAL 2: Resilient Water System

Timing Key: Q1 = Jan-Mar, Q2= Apr-Jun, Q3= Jul-Sept, Q4= Oct-Dec

| Objective 1 – Infrastructure Condition Assessment                            |                                                                                                                                                                                                   |                                            |                                                                                                                                                     |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTION ITEMS FOR 5 YR OBJECTIVES                                             | WORK PLANNED IN YEAR 1                                                                                                                                                                            | MILESTONE                                  | Q2 PROGRESS UPDATE                                                                                                                                  |
| <b>a. Above Ground Facility Assessment</b>                                   | Initiate condition assessment process for remaining tanks and pump stations.                                                                                                                      | Begin by Q4                                | Nothing to report.                                                                                                                                  |
| <b>b. PRP Prioritization Process Review</b>                                  | Refine and bring to Board an updated process for prioritization.                                                                                                                                  | Begin by Q3;<br>to Board Q4                | Nothing to report.                                                                                                                                  |
| <b>d. Workplace Facilities Plan</b>                                          | Complete facilities plan.                                                                                                                                                                         | By-Q3 Complete by Q4                       | Assessments of all workplace buildings currently in progress.                                                                                       |
| <b>e. Above-ground Infrastructure Hardening</b>                              | Identify needs to be included into the capital planning effort.                                                                                                                                   | Complete by Q3                             | On track to complete in Q3. Inspected 47 of 97 Pump Stations and completed Pump Station Defensible Space analysis for each of the 47 pump stations. |
| <b>f. Water System Single Points of Failure Assessment/CIP Incorporation</b> | Begin assessment to integrate into CIP effort.                                                                                                                                                    | Begin by Q4                                | Nothing to report.                                                                                                                                  |
| <b>g. Water System Security Measures</b>                                     | Develop facility security standards that will used to evaluate the Above Ground Condition Assessment infrastructure and identify security needs to be prioritized in the capital planning effort. | Begin by Q4                                | Nothing to report.                                                                                                                                  |
| <b>h. Water System Master Plan</b>                                           | Complete and use information from the WSMP to identify and prioritize infrastructure capital replacement projects.                                                                                | Complete by Q3                             | Nothing to report.                                                                                                                                  |
| Objective 2 – Capital Planning                                               |                                                                                                                                                                                                   |                                            |                                                                                                                                                     |
| ACTION ITEMS FOR 5 YR OBJECTIVES                                             | WORK PLANNED IN YEAR 1                                                                                                                                                                            | MILESTONE                                  | Q2 PROGRESS UPDATE                                                                                                                                  |
| <b>b. Project Grant Opportunities</b>                                        | Staff will continue to identify grant funding opportunities that are a fit for the Districts capital projects.                                                                                    | Ongoing                                    | Captured in Goal 4, Objective 4c.                                                                                                                   |
| <b>c. Bond Funding Opportunities for Generational Projects</b>               | Captured in Goal 4, Objective 4b.                                                                                                                                                                 | ---                                        | Nothing to report.                                                                                                                                  |
| Objective 3 – Capital Project Delivery                                       |                                                                                                                                                                                                   |                                            |                                                                                                                                                     |
| ACTION ITEMS FOR 5 YR OBJECTIVES                                             | WORK PLANNED IN YEAR 1                                                                                                                                                                            | MILESTONE                                  | Q2 PROGRESS UPDATE                                                                                                                                  |
| <b>a. Resource Needs Assessment</b>                                          | Develop resourcing plan for enhanced CIP, including reallocation of existing positions leveraged with external support.                                                                           | Complete by Q2                             | Staffing resource analysis ongoing, position conversions underway.                                                                                  |
| <b>c. On-Call Engineering Firm Consulting Contracts</b>                      | Execute on-call engineering contracts for specialty support.                                                                                                                                      | Complete by Q3                             | Nothing to report.                                                                                                                                  |
| <b>f. Paving Restoration Requirements</b>                                    | Complete pavement assessment criteria with paving expert and begin discussions with neighboring jurisdictions.                                                                                    | Complete assessment & begin meetings by Q4 | Nothing to report.                                                                                                                                  |

| Objective 4 – Operations & Maintenance                                   |                                                                                                                                                                                                            |                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTION ITEMS FOR 5 YR OBJECTIVES                                         | WORK PLANNED IN YEAR 1                                                                                                                                                                                     | MILESTONE                                                         | Q2 PROGRESS UPDATE                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>a. Standard Operating Procedure Development</b>                       | Review/update or develop SOPs. Select 10 of the highest priority SOPs to update this year.                                                                                                                 | Complete by Q4, 2024                                              | Reviewed 121 SOPs utilized within the Operations Division and identified the need for and created five additional new SOPs.                                                                                                                                                                                                                                                                                 |
| <b>b. Learning Through Industry Associations Involvement</b>             | Reinstate the “Pipe Tapping Team” to compete at state and regional conferences. Offer opportunities for staff to engage and learn through industry associations.                                           | Compete at regional AWWA conference. Staff attending conferences. | Pipe Tapping Team competed at AWWA Operator Symposium in Burlingame.<br><br>Staff participated in supply chain resilience regional tabletop exercise in San Mateo.<br><br>Actively pursuing opportunities for staff to visit other water utility companies to learn and engage in industry advancements – most recently visited East Bay Municipal Utility District, Contra Costa Water and San Jose Water. |
| <b>e. Efficiency Improvements via Equipment and Process Advancements</b> | Establish a process to engage staff and develop a list of equipment/practices to improve efficiency, safety, effectiveness, and staff’s work (e.g. leak detection, thermal gauge, etc.)                    | Ongoing                                                           | Coordinated with various tool and equipment vendor representatives to create an opportunity for staff to attend demonstrations with different tools used throughout the industry to improve efficiency and safety. Tools and equipment demonstrated include pneumatic chain saw, diamond wire rope hydraulic pipe cutter, vehicle emergency lighting and a water service installation tool.                 |
| Objective 5 – Energy Planning                                            |                                                                                                                                                                                                            |                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             |
| ACTION ITEMS FOR 5 YR OBJECTIVES                                         | WORK PLANNED IN YEAR 1                                                                                                                                                                                     | MILESTONE                                                         | Q2 PROGRESS UPDATE                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>c. Carbon Neutrality</b>                                              | Initiate carbon neutrality policy discussion with the Board.                                                                                                                                               | Begin by Q4                                                       | Nothing to report.                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>d. Micro-Turbine Technology</b>                                       | Take another look at possible locations in transmission and distribution system for next-gen micro turbine.                                                                                                | Begin by Q4                                                       | Nothing to report.                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>e. Renewable Power Opportunities</b>                                  | Work with Board on renewable energy goals/policy.                                                                                                                                                          | Begin by Q3                                                       | Nothing to report.                                                                                                                                                                                                                                                                                                                                                                                          |
| Objective 6 – Emergency Response Readiness                               |                                                                                                                                                                                                            |                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             |
| ACTION ITEMS FOR 5 YR OBJECTIVES                                         | WORK PLANNED IN YEAR 1                                                                                                                                                                                     | MILESTONE                                                         | Q2 PROGRESS UPDATE                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>a. Emergency Response Plan Update</b>                                 | Review current emergency response plan, including the role of the board during a disaster/emergency, and develop timeline and process for its update.                                                      | By Q4                                                             | Nothing to report.                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>b. Annual EOC tabletop Exercises</b>                                  | Coordinate 2 tabletop exercises to help prepare/ train staff for an organized response to specific emergency/natural disaster scenarios most common to California and the water industry. (also in Goal 5) | Q2 and Q4                                                         | Updating Emergency Operations Plan and EOC staffing to inform upcoming desk/tabletop exercises.                                                                                                                                                                                                                                                                                                             |

|                                                                |                                                                                            |                              |                                                                                                                |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>c. Dam EAP Review and Tabletop Exercises</b>                | Review EAP contact information.                                                            | <del>Q1</del> Complete in Q3 | Dam EAPs currently under Cal OES review for approval (3 of 4)<br>Tabletop exercise to follow approval of EAPs. |
| <b>d. Emergency preparedness training w/ Marin County OEM</b>  | Participate in County Office of Emergency Mgmt monthly meetings.                           | Ongoing                      | Continued staff participation at OEM monthly meetings.                                                         |
| <b>e. FEMA-compliant Contracts for Disaster Recovery Needs</b> | Develop FEMA compliant contract templates that will be ready to use following emergencies. | Complete Q3                  | Nothing to report                                                                                              |
| <b>f. Risk Reduction Assessments</b>                           | Water system single points of failure assessment (outlined in obj. 1).                     | Begin Q4                     | Nothing to report                                                                                              |

### GOAL 3: Watershed Stewardship

Timing Key: Q1 = Jan-Mar, Q2= Apr-Jun, Q3= Jul-Sept, Q4= Oct-Dec

| Objective 1 – Creek Restoration                                      |                                                                                                                                                                                                                                            |                          |                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5-YR ACTION ITEMS                                                    | WORK PLANNED IN YEAR 1                                                                                                                                                                                                                     | MILESTONE                | Q2 PROGRESS UPDATE                                                                                                                                                                                                                                |
| <b>a. Lagunitas Creek Restoration</b>                                | Secure resource agency permits to begin implementation of Phase 1 restoration (1-6 & 12- 13).                                                                                                                                              | Initiate construction Q3 | Secured permits for construction activities. Currently working on a minor amendment to CDFW Permit for environmental compliance conditions.                                                                                                       |
|                                                                      | Complete restoration construction of 3-5 sites of the 8 sites in Phase I.                                                                                                                                                                  | Complete construction Q4 | Phase 1A Construction Bid award approved at May 21 Board Meeting. ESA Contract amendment for Phase II Design. Construction to begin in July/August.                                                                                               |
| <b>b. Lagunitas Creek Stewardship Plan</b>                           | Update Lagunitas Creek Stewardship Plan.                                                                                                                                                                                                   | Complete Q4              | Nothing to report.                                                                                                                                                                                                                                |
| <b>c. PIT Program</b>                                                | Install two new Passive Integrated Transponders Antennas to improve fisheries monitoring data collection. One of which will be installed within Phase I restoration reach.                                                                 | Complete Q3              | Nothing to report.                                                                                                                                                                                                                                |
| <b>d. Apply technical expertise to regional restoration projects</b> | In a support role, participate in discussions regarding Redwood Creek, and add value where we can.                                                                                                                                         | Ongoing                  | Nothing to report.                                                                                                                                                                                                                                |
| Objective 2 – Watershed Resiliency to Wildfire                       |                                                                                                                                                                                                                                            |                          |                                                                                                                                                                                                                                                   |
| 5-YR ACTION ITEMS                                                    | WORK PLANNED IN YEAR 1                                                                                                                                                                                                                     | MILESTONE                | Q2 PROGRESS UPDATE                                                                                                                                                                                                                                |
| <b>a. Public Safety Partnerships</b>                                 | Coordinate 2-3 inter agency trainings for search and rescue and wildfire training.                                                                                                                                                         | Complete by Q4           | Watershed rangers participated in overnight watershed training in May conducted by Marin County Search and Rescue.                                                                                                                                |
| <b>b. Biodiversity, Fires, and Fuels Integrated Plan</b>             | Complete BFFIP Year 5 priorities to achieve 1,500 acres of vegetation management and forest restoration priorities. Complete needed environmental compliance and associated program planning, contracting, monitoring and grant reporting. | Complete by Q4           | On track to complete 1,500 acres of BFFIP work by June 30 with grant funding from CAL FIRE. Hired an additional Forestry Contractor in April. Additional contract to be bid in June and awarded in July to support scaling up of vegetation work. |
| <b>c. Strategic Partnership for Regional Resiliency</b>              | Implement One Tam Forest Health Strategy and one prescribed burn project in coordination with Marin County Fire and One Tam agencies.                                                                                                      | Complete by Q4           | One Tam Partners completed Forest Health Strategy and used it to support two awarded grants through CAL FIRE and Wildlife Conservation Board. New contract established with County Fire to support prescribed burning implementation.             |
| <b>d. Workforce Development</b>                                      | Secure grant funding for CCNB crews to carryout BFFIP work and support forest ecology crew training                                                                                                                                        | Complete by Q4           | Secured \$500K in CCNB crew time for FY 2024 and 2025.                                                                                                                                                                                            |
|                                                                      | Secure grant funding for CCC crews to carryout trail work.                                                                                                                                                                                 | Complete by Q4           | Nothing to report.                                                                                                                                                                                                                                |
|                                                                      | Contract with Marin County Fire Foundry Program to support early career development.                                                                                                                                                       | Complete by Q2           | Completed.                                                                                                                                                                                                                                        |
|                                                                      | Apply as a site sponsor to secure AmeriCorps Grizzly Fellow and Watershed Stewardship Program participants for 2025.                                                                                                                       | Complete by Q4           | Approved for FY 24/25 Grizzly Corps fellow.                                                                                                                                                                                                       |

|                                                                 |                                                                                                                                                                                                                                                                                 |                                                                                |                                                                                                                                                                                                               |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>e. Wildland Firefighting and Vegetation Equipment</b>        | Add one additional Ranger Vehicle to fleet to support increased staff.                                                                                                                                                                                                          | Complete by Q3                                                                 | Nothing to report.                                                                                                                                                                                            |
|                                                                 | Add 1-2 additional UTV's to support Ranger Trainee field work.                                                                                                                                                                                                                  | Complete by Q3                                                                 | Nothing to report.                                                                                                                                                                                            |
| <b>Objective 3 – Stewardship</b>                                |                                                                                                                                                                                                                                                                                 |                                                                                |                                                                                                                                                                                                               |
| 5-YR ACTION ITEMS                                               | WORK PLANNED IN YEAR 1                                                                                                                                                                                                                                                          | MILESTONE                                                                      | Q2 PROGRESS UPDATE                                                                                                                                                                                            |
| <b>a. Annual Biological Monitoring</b>                          | Contribute biological monitoring data and staff expertise to update of One Tam Peak Health Report.                                                                                                                                                                              | Complete by Q4                                                                 | One Tam Peak Health Report finalized in April. Public webinar in June                                                                                                                                         |
| <b>b. Regional Partnerships</b>                                 | Update One Tam Strategic Plan, Annual Work Plan and MOU.                                                                                                                                                                                                                        | Complete by Q2                                                                 | Board approved One Tam MOA at the April 2 Board of Directors meeting.                                                                                                                                         |
| <b>c. Regional Restoration Opportunities</b>                    | Contribute staff expertise to complete Golden Gate Biosphere Network Climate Vulnerability Study.                                                                                                                                                                               | Complete by Q4                                                                 | Nothing to report.                                                                                                                                                                                            |
| <b>d. Stewardship Programs</b>                                  | Host trail maintenance training for seasonal staff and Ranger trainees to build capacity for volunteer trail stewardship work.                                                                                                                                                  | Complete by Q4                                                                 | Completed trainings in April and May 2024.                                                                                                                                                                    |
|                                                                 | Launch a monthly trail maintenance and stewardship program to engage community members, non-profits and youth teams in watershed stewardship.                                                                                                                                   | Complete by Q4                                                                 | Coordinated trail events in March, April, May and June.                                                                                                                                                       |
| <b>e. Natural Resources Interpretation</b>                      | Reimagine trail kiosk signage (6 total) to broaden customer awareness of the service value of District's watershed stewardship work, including its work to preserve the watershed's biodiversity, and to provide education on the source of the community's local water supply. | Complete by Q4                                                                 | Initiated planning and development of signage concepts.                                                                                                                                                       |
|                                                                 | Host quarterly watershed hikes and/or community events.                                                                                                                                                                                                                         | Complete by Q3                                                                 | Nothing to report.                                                                                                                                                                                            |
| <b>Objective 4 – Recreation</b>                                 |                                                                                                                                                                                                                                                                                 |                                                                                |                                                                                                                                                                                                               |
| 5-YR ACTION ITEMS                                               | WORK PLANNED IN YEAR 1                                                                                                                                                                                                                                                          | MILESTONE                                                                      | Q2 PROGRESS UPDATE                                                                                                                                                                                            |
| <b>a. Watershed Rec Mgmt Planning Feasibility Study</b>         | Complete study and advance priority outcomes in alignment with study timeframes.                                                                                                                                                                                                | Complete by Q2;<br>Develop timeline for implementation of priority outcomes Q3 | Presented Pilot Program Framework at June Watershed Committee Meeting.                                                                                                                                        |
| <b>b. Azalea Hill Trail Restoration Project</b>                 | Complete 1.9 miles of improvements along multi-use trail; close 2 miles of the 4.4 miles of social trails in the project area; complete 1 additional bridge.                                                                                                                    | Complete by Q4                                                                 | Bridge construction underway near Bolinas Fairfax Road. Two volunteer trail days complete and three rock crossing. CCNB completed installation of trail closure signs and began social trail decommissioning. |
| <b>d. Nature-based Self-guided Tours and Outreach Materials</b> | Complete a self-guide tour of prescribed burn project sites on the watershed.                                                                                                                                                                                                   | Complete by Q4                                                                 | Developed a self-guided tour of the Ridge Crest Prescribed burn site in collaboration with One Tam.                                                                                                           |

| Objective 5 – Facilities                                              |                                                                                                                                                                                                                                |           |                                                                                                     |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------|
| 5-YR ACTION ITEMS                                                     | WORK PLANNED IN YEAR 1                                                                                                                                                                                                         | MILESTONE | Q2 PROGRESS UPDATE                                                                                  |
| <b>a. Roads and Trails Management Plan</b>                            | Evaluate priority projects and updates to best management practices and inclusion of recreation management and stewardship. RFP for a consultant to complete an updated plan and associated environmental compliance document. | By Q4     | Nothing to report.                                                                                  |
|                                                                       | Develop priority list of visitor amenity improvements.                                                                                                                                                                         | By Q4     | Purchased bear-proof trash receptacles, three water fountains, and one bike fix-it station.         |
| <b>b. Integrate Watershed Facilities into Master Planning Process</b> | Explore opportunities for outdoor education and engagement facility.                                                                                                                                                           | By Q4     | Nothing to report.                                                                                  |
| <b>c. Watershed Housing</b>                                           | Identify priority facilities updates at Sky Oaks Ranger Station.                                                                                                                                                               | By Q4     | Nothing to report.                                                                                  |
|                                                                       | Evaluate improvements to existing watershed housing assets.                                                                                                                                                                    | By Q4     | Executed contract in May to complete floor repair and maintenance work at Sky Oaks Ranger Residence |

## GOAL 4: Fiscal Responsibility

Timing Key: Q1 = Jan-Mar, Q2= Apr-Jun, Q3= Jul-Sept, Q4= Oct-Dec

| <b>Objective 1 – Financial Stability</b>                                                 |                                                                                                                                       |                                |                                                                                                         |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------|
| 5 YR ACTION ITEMS                                                                        | WORK PLANNED IN YEAR 1                                                                                                                | MILESTONE                      | Q2 PROGRESS UPDATE                                                                                      |
| <b>a. Stabilization Reserves</b>                                                         | Per Board Policy updates in 2023, configure reserves to meet minimum balances and consider additions or revisions to target balances. | Q3 (following year end)        | Nothing to report.                                                                                      |
| <b>b. Long-Term Capital Improvement Program with Stable Investments</b>                  | Provide financial support for development of CIP.                                                                                     | Q4 – budget preparation        | Nothing to report.                                                                                      |
| <b>c. Non-Rate Revenue Updates</b>                                                       | Evaluate non-rate revenues (e.g. parking fees, cell tower leases) and update for FY 26.                                               | Q4 – budget preparation        | Nothing to report.                                                                                      |
| <b>Objective 2 – Fair, Equitable and Proportional Rates</b>                              |                                                                                                                                       |                                |                                                                                                         |
| 5 YR ACTION ITEMS                                                                        | WORK PLANNED IN YEAR 1                                                                                                                | MILESTONE                      | Q2 PROGRESS UPDATE                                                                                      |
| <b>a. Connection Fee Study</b>                                                           | Complete Connection Fee Study, including a review of how population growth may impact demand, and make recommendations to the Board.  | Recommendations to Board by Q3 | Consultant selected, in data collection phase.                                                          |
| <b>b. Low-Income Program Evaluation</b>                                                  | Evaluate current program, compare to other local agencies and review with the Board identified opportunities to enhance the program.  | By Q4                          | Nothing to report.                                                                                      |
| <b>Objective 3 – Cost-Effective Business Processes</b>                                   |                                                                                                                                       |                                |                                                                                                         |
| 5 YR ACTION ITEMS                                                                        | WORK PLANNED IN YEAR 1                                                                                                                | MILESTONE                      | Q2 PROGRESS UPDATE                                                                                      |
| <b>a. SAP Update to Streamline Processes and Improve Analytics</b>                       | Develop business case and complete vendor selection process.                                                                          | By Q4                          | Nothing to report (vendor selection process scheduled to begin Q3).                                     |
| <b>b. Leverage External Resources for Efficiency</b>                                     | Evaluate resources, including the right balance of internal and external, to support CIP.                                             | Q4                             | Captured in update for Goal 2, Obj. 3a.                                                                 |
| <b>c. AA or Better Credit Quality Rating</b>                                             | Review with credit agencies the state of the District as part of credit rating process.                                               | Q1                             | Complete – credit rating upgraded to “AA” in Q1 (this rating is considered ‘very high credit quality’). |
| <b>e. Streamline the Application Process for Discount Programs and Leak Adjustments.</b> | Evaluate current program and compare to other local agencies and present findings and recommendations to Board.                       | By Q4                          | Nothing to report.                                                                                      |
| <b>Objective 4 – Outside Funding to Reduce Financial Impacts on Ratepayers</b>           |                                                                                                                                       |                                |                                                                                                         |
| 5 YR ACTION ITEMS                                                                        | WORK PLANNED IN YEAR 1                                                                                                                | MILESTONE                      | Q2 PROGRESS UPDATE                                                                                      |
| <b>a. WRDA Funding for Water Supply Projects</b>                                         | Captured in Goal 1, Obj. 3d.                                                                                                          | ---                            | Captured in Goal 1, Obj. 3d.                                                                            |



|                                                                                          |                                                                                                                                                                                                                                |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>b. Bond Funding</b>                                                                   | Begin work of bond funding for near-term selection of projects.                                                                                                                                                                | Q4                                  | Nothing to report.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>c. State and Federal Grants</b>                                                       | Identify priority projects and programs that are competitive for state and Federal funding opportunities and submit grant applications.                                                                                        | Q4                                  | Secured \$10,067,222 in grant award funds for: DWR Pipeline Replacement Project (\$6,500,000), USBR Applied Sciences (\$152,190), MCSTOPP Rain Water Harvesting (\$15,032), WCB One Tam Forest Health (\$2,800,000), CDFW Lagunitas Creek Restoration (\$600,000).<br><br>Submitted grant applications, which are pending, totaling \$23,400,000 for: Cal OES/FEMA SGTP Clarifiers, USBR AMI Expansion, USBR Planning and Design Grant. |
| <b>e. Leverage Regional Partnerships</b>                                                 | Support ACWA, and TOGETHER Bay Areas legislative work in support of state funding for grant programs that support District projects and programs. Support One Tam efforts to develop funding opportunities as a collaborative. | Q4                                  | Nothing to report.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Objective 5 – Financial Transparency</b>                                              |                                                                                                                                                                                                                                |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>5 YR ACTION ITEMS</b>                                                                 | <b>WORK PLANNED IN YEAR 1</b>                                                                                                                                                                                                  | <b>MILESTONE</b>                    | <b>Q2 PROGRESS UPDATE</b>                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>a. Online Customer Tool Improvements</b>                                              | Develop more interactive and informative bill estimator.                                                                                                                                                                       | Launch tool by Q2                   | Developed and published a new digital rate calculator and indoor efficiency estimator tool to website in February.                                                                                                                                                                                                                                                                                                                      |
| <b>b. Bi-annual fiscal policies review</b>                                               | Conduct internal review and update to financial and purchasing policies.                                                                                                                                                       | Present to board by Q4              | Purchasing policy review is underway, will begin initial discussions in late Q2                                                                                                                                                                                                                                                                                                                                                         |
| <b>c. Quarterly Financial Summary Publication</b>                                        | Develop quarterly financial statement and post to public website.                                                                                                                                                              | Publish quarterly statement by Q4   | Completed.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>d. Regular Internal and External Financial Audits</b>                                 | Conduct external financial audit and identify internal audit focus areas.                                                                                                                                                      | Identify internal audit areas by Q4 | On track, interim audit complete.                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>e. Proactive Customer Communications for Grants and Investments in Key Priorities</b> | Disseminate news releases and other outreach messaging channels to announce receipt of grant awards and to share updates of how funds are used for project implementations.                                                    | Q1-Q4                               | Disseminated public information and/or secured earned media coverage for the following grant awards: Federal grant for weather forecasting, State grant for Lagunitas Creek Enhancement Project, County grant for rainwater catchment rebates.                                                                                                                                                                                          |

## GOAL 5: Organizational Excellence

Timing Key: Q1 = Jan-Mar, Q2= Apr-Jun, Q3= Jul-Sept, Q4= Oct-Dec

| Objective 1 – Organizational Culture and Values                                       |                                                                                                                                                                                                                                                        |                                                    |                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTION ITEMS FOR 5 YR OBJECTIVES                                                      | STRATEGIC ELEMENTS PLANNED IN YEAR 1                                                                                                                                                                                                                   | MILESTONE                                          | Q2 PROGRESS UPDATE                                                                                                                                                                                                                                                                                                               |
| <b>a. Recruitment Collateral</b>                                                      | Redesign the District employment website landing page to add features that improve navigation, showcase District accomplishments and provide a sense of workplace culture.                                                                             | Complete by Q3                                     | Nothing to report.                                                                                                                                                                                                                                                                                                               |
|                                                                                       | Refine recruitment collateral to maximize potential reach across various recruitment platforms to attract diverse applicant pools.                                                                                                                     | Launch by Q1                                       | Launched LinkedIn as a recruitment engagement tool and developed long-term planning strategy for its ongoing management.<br><br>Designed suite of new recruitment brochure templates and recruitment graphics to use for job advertisements across various platforms.                                                            |
| <b>b. Recruitment Partnerships with local Community Orgs, Colleges, Trade Schools</b> | Identify annual list of local recruitment events, career fairs and other networking opportunities that strengthen relationships and expand contacts within underserved communities that support the growth of diverse, nontraditional applicant pools. | List by Q1;<br>attend events Q2-4                  | Attended career fairs hosted by Multicultural Center of Marin, Contra Costa Community College's, Marin City.<br><br>Beginning preparation to host Baywork for their Northbay "Workshop on Wheels in the Fall."<br><br>Updated and expanded the local community contact list used for sharing weekly digest of job announcements. |
| <b>c. AND e. Welcoming On-boarding Process / Employee Training Program</b>            | Bring on a new HR Training Program position and develop the approach for a District-wide training program with an initial focus on the employee onboarding experience.                                                                                 | Hiring by Q2;<br>Onboarding program in place by Q4 | Hired HR Training Program position.                                                                                                                                                                                                                                                                                              |
| <b>d. Diversity, Equity and Inclusion Training</b>                                    | Complete District-wide DEI training, including an element for new hires, and follow up with a plan for initiatives that will build and reinforce DEI skillsets.                                                                                        | Training Q1, develop plan Q3                       | 99% of employees hired before 3/18/24 completed 3.5 hours of interactive DEI training.<br><br>A plan has been established for training new hires (and those staff members who were on leave and missed the training) with the next training session for this group set for this fall.                                            |
| <b>f. Employee Recognition and Appreciation Programs</b>                              | Evaluate current practices, gather broad staff input, and seek out other employer best practices to develop a plan for implementing enhanced, modernized recognition & appreciation programs.                                                          | By Q4                                              | Nothing to report.                                                                                                                                                                                                                                                                                                               |
| <b>g. Strengthened Internal Communication Strategies</b>                              | In an effort to strengthen alignment, coordination and awareness in the organization on timely and key initiatives and/or issues, launch internal newsletter.                                                                                          | Launch first issue by Q4                           | Met with new internal staff committee to get input on employee newsletter and currently utilizing feedback to develop publication, with first issue scheduled to publish later this summer.                                                                                                                                      |

|                                                              |                                                                                                                                                                                                       |                                                      |                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>h. Employee Engagement and Organizational Improvement</b> | Launch employee engagement survey and develop subsequent action plans based on common themes derived from survey responses.                                                                           | Survey complete by Q1, action plans developed by Q3. | Completed district-wide employee engagement survey<br><br>A multi-departmental staff team has been assembled to focus on enhancing the Marin Water employee experience and increasing staff engagement through the development of broad and sustainable initiatives. |
| <b>i. Workplace Safety</b>                                   | Assess and evaluate the District’s Safety Program and identify key initiatives to strengthen and enhance the program’s reach.                                                                         | Q4                                                   | Completed an RFP in April and hired safety consultant (Harris and Lee Environmental) to work with safety manager to complete gap analysis.                                                                                                                           |
|                                                              | Coordinate 2 tabletop exercises to help prepare and train District staff for an organized response to specific emergency/natural disaster scenarios most common to California and the water industry. | Q2 and Q4                                            | Updating Emergency Operations Plan and EOC staffing to inform upcoming desk/tabletop exercises.                                                                                                                                                                      |
| <b>j. Work Facilities Assessment and Evaluation</b>          | Captured in Goal 2, Obj. 1d                                                                                                                                                                           | ---                                                  | Captured in Goal 2, Obj. 1d.                                                                                                                                                                                                                                         |
| <b>k. Staffing Assessment</b>                                | Develop Districtwide list of internal resource gaps and opportunities.                                                                                                                                | Q4                                                   | Nothing to report.                                                                                                                                                                                                                                                   |

**Objective 2 – Customer Experience**

| ACTION ITEMS FOR 5 YR OBJECTIVES                                                        | STRATEGIC ELEMENTS PLANNED IN YEAR 1                                                                                                                                                                                 | MILESTONE                              | Q2 PROGRESS UPDATE                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a. Facilities, Programs, Outreach Accessibility Audit</b>                            | Incorporate accessibility, via an update to the ADA Assessment and Transition Plan, into worksite facilities planning process.                                                                                       | By Q4                                  | Nothing to report.                                                                                                                                                                            |
|                                                                                         | Review webs for accessibility improvements and develop schedule for completing improvements.                                                                                                                         | Develop plan by Q3                     | Identified web forms in need of transition from PDF documents to online accessible formatting and developed schedule for their completion by Q4.                                              |
| <b>b. Key Messaging and Visual Brand Identity</b>                                       | Standardize highly visible District materials, including CIP signage for infrastructure projects, to expand service value awareness.                                                                                 | Template sign design complete by Q2    | Template completed; signs will be in production and use beginning in Q3.                                                                                                                      |
| <b>d. Data-Driven Targeted Water Efficiency Outreach Campaigns</b>                      | Implement seasonal water efficiency campaigns that target higher water users and support pilot AMI deployment effort.                                                                                                | Ongoing                                | Published efficiency estimator calculator and launched corresponding campaign targeting high water users and “opportunity” zone users who have potential for further household water savings. |
| <b>e. Creative Storytelling Campaigns and Techniques for Priorities and Initiatives</b> | Develop creative collateral to broaden customer awareness of District’s work on key priorities and initiatives using public relations campaigns, interpretive signage, video, point-of-service displays, and events. | Q1-Q4                                  | Nothing to report.                                                                                                                                                                            |
| <b>g. Engagement with Local Municipalities</b>                                          | Develop schedule of engagement opportunities at town/city council meetings; coordinate / provide District updates at a different council meeting once per quarter.                                                   | Begin Q2 Begin Q3, then 1x per quarter | Nothing to report.                                                                                                                                                                            |

**Objective 3 – Industry Engagement, Growth and Leadership**

| ACTION ITEMS FOR 5 YR OBJECTIVES | STRATEGIC ELEMENTS PLANNED IN YEAR 1 | MILESTONE | Q2 PROGRESS UPDATE |
|----------------------------------|--------------------------------------|-----------|--------------------|
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| <b>a. Industry Associations</b>                                       | Captured in Goal 2, Obj. 4                                                                                                                                                                                                                                                                                     | ---                              | Captured in Goal 2, Obj. 4b                                                                                                                                                                                                                                                                                           |
| <b>b. Professional Development Opportunities</b>                      | Encourage staff at all levels to engage in relevant professional associations through submittal of abstracts, joining committees, and other similar types of engagement.                                                                                                                                       | ongoing                          | District staff provided session presentations at two conferences in the last six months and an abstract on Marin Water dams was submitted to the Association of State Dam Safety Officials and has been selected for presentation at their September conference in Denver; abstract to be developed into white paper. |
| <b>c. Stakeholder Collaboration and Communication</b>                 | Develop stakeholder list and identify key contacts to connect with for ongoing relationship building and communications.                                                                                                                                                                                       | List by Q2-By Q4                 | Nothing to report.                                                                                                                                                                                                                                                                                                    |
| <b>Objective 4 – Technology, Innovation and Process Improvements</b>  |                                                                                                                                                                                                                                                                                                                |                                  |                                                                                                                                                                                                                                                                                                                       |
| <b>ACTION ITEMS FOR 5 YR OBJECTIVES</b>                               | <b>STRATEGIC ELEMENTS PLANNED IN YEAR 1</b>                                                                                                                                                                                                                                                                    | <b>MILESTONE</b>                 | <b>Q2 PROGRESS UPDATE</b>                                                                                                                                                                                                                                                                                             |
| <b>a. Intranet</b>                                                    | Implement Microsoft M365 services throughout District and utilize included SharePoint Online application to build intranet site, including migration of files from legacy solution to cloud-based document store.                                                                                              | In use district-wide by Q4       | Microsoft Enterprise Agreement approved, beginning M365 rollout in Q3                                                                                                                                                                                                                                                 |
| <b>d. Academia Partnerships</b>                                       | Develop a plan and schedule to engage with regional institutions such as UC Berkeley, Stanford, and/or others.                                                                                                                                                                                                 | Q3                               | Nothing to report.                                                                                                                                                                                                                                                                                                    |
| <b>f. AMI Conversion and Associated Customer Portal</b>               | Captured in Goal 1, Obj. 1                                                                                                                                                                                                                                                                                     | ---                              | Captured in Goal 1, Obj. 1                                                                                                                                                                                                                                                                                            |
| <b>g. SAP Selection, Implementation &amp; Operational Integration</b> | Perform business capability modeling across all applicable departments to develop recommendation regarding upgrade vs. replacement of system.<br><br>Perform needs assessment and develop Vendor Selection RFP (for ERP platform if recommendation to replace, and for Systems Integrator for implementation). | Begin Q1, Vendor Selection by Q4 | Business capability modeling complete; recommendation to upgrade SAP approved.<br><br>Vendor selection process for systems integrator will begin in Q3.<br><br>Demos for Payroll and HR modules began in May.                                                                                                         |





# STAFF REPORT

**Meeting Type:** Board of Directors  
**Title:** Review of Desalination and Recycled Water Costs  
**From:** Paul Sellier, Water Resources Director  
**Through:** Bret Uppendahl, Acting General Manager  
**Meeting Date:** June 18, 2024

**TYPE OF ACTION:**                      Action                      X                      Information                      Review and Refer

**RECOMMENDATION:** Review of Desalination and Recycled Water Costs

**SUMMARY:** On February 28, 2023, the Board selected the Integrated Roadmap for improved water supply resiliency (Roadmap); and since that time, staff has been implementing the early action projects, while in parallel working to advance the longer term, more complex projects. As the options narrow and costs come into focus for Local Storage and Conveyance of winter water, it is important to revisit the costs associated with other water supply alternatives included in the Roadmap.

**DISCUSSION:** The Roadmap consists of 5 broad strategies for developing a resilient water supply including Water Efficiency, In-District Improvements, Sonoma-Marin Partnership, Local Storage Enlargement and New Supply Development which includes desalination and recycled water. Water Efficiency program costs were discussed at the May Finance and Administration Committee meeting. At this meeting, staff will review the desalination and recycled water alternatives with a focus on updated costs of supply during drought.

To compare water supply alternatives it is useful to develop a unit cost of water, or cost per acre-foot. The components of this metric typically include all costs expressed as an annualized figure divided by an average annual yield. This is considered a traditional approach, and it works well when the water supply project is fully utilized and the water produced fills an existing and ongoing demand.

To compare alternatives that provide supplemental water during a drought, the costs are relatively simple to calculate, however, determining the beneficial yield of drought water supply projects is more complex. While there are various approaches to estimating yield by predicting the timing, severity and duration of a drought, all approaches are ultimately only estimates.

For the purposes of comparing different drought water supply projects a simple estimate of yield generally provides an adequate basis for comparison. For this analysis we are proposing a yield

estimate for a single four-year drought and the associated cost for each option will be expressed as a present value that includes all costs going out to the end of the project's respective planning horizon. All costs include the annual cost to finance the capital to design, permit and construct the project, replacement costs (for assets that have a shorter useful life than the planning horizon) and any annual Operational and Maintenance (O&M) costs. O&M costs tend to vary based on volume of water produced, however some O&M costs, such as staffing, are fixed. Additionally, avoided costs are appropriate for the water efficiency program that reduces overall demand, however avoided costs are not credited to new drought water supply projects as these projects are considered in addition to other water production facilities. During the meeting staff will present information on the cost of Desalination and Recycled Water as drought water supply projects.

### Desalination

As part of the Strategic Water Supply Assessment, the Jacobs team developed detailed cost estimates for different capacities of (open intake) desalination plant. The Jacobs team were involved in the District's 2005/2006 desalination pilot program and as such are very familiar with site constraints and the level of detail in their cost estimates indicates the degree of effort that was made to provide the most accurate and complete capital costs possible. Annual operating costs for a desalination plant operating at or near capacity are estimated by Jacobs to be between \$13 million and \$30 million depending on capacity; and though a portion of these costs are fixed, the remainder are scalable based on the utilization rate.

Desalination has the highest reliability of the drought supply options yet the unit cost are relatively high compared to other alternatives due to the unavoidable and ongoing O&M cost burden associated with the need to operate the facility even when the water is not needed. Additionally, desalination would require a vote of the public to authorize financing and construction of a desalination plant. During non-drought years the plant will continue to be operated, even though water will not be needed, at reduced capacity to ensure operational readiness. Staff will present the costs for desalination over a range of yield considerations.

### Recycled Water

The Strategic Water Supply Assessment contemplated different ways to expand recycled water in the District's service area:

- **Traditional purple pipe** projects that deliver tertiary treated recycled water to customers for irrigation and toilet flushing.
- **Indirect Potable Reuse (IPR)** projects that utilize a reservoir with a sufficiently long detention time to store and blend highly treated wastewater before treating the water again through a drinking water treatment plant (*Surface Water Augmentation - SWA*).
- **Direct Potable Reuse (DPR)** projects that involve sending highly treated wastewater directly into the potable distribution system for consumption (*Treated Water Augmentation - TWA*) or placing the highly treated wastewater in a reservoir with a short detention time (*Raw Water Augmentation - RWA*).

In general, costs for irrigation and toilet flushing projects are driven by the length of pipelines needed to connect customers. In the District's service area the lack of anchor tenants that use large volumes of water results in high unit costs for purple pipe projects. Cost drivers for DPR and IPR include new treatment facilities similar in complexity to desalination treatment plants and in the case of IPR, large

pump stations and several miles of dedicated pipeline are needed to move the untreated water to the centralized treatment facility and to convey the treated water to the reservoirs.

Of the recycled water alternatives DPR (treated water augmentation) has the lowest cost, yet there are considerations for this project that need to be weighed including public acceptance, the lack of operating experience for this type of facility within the United States, how the regulatory landscape could change in the future and, similar to desalination facilities, the plant will need to be operated continuously even in non-drought years. Staff will present costs for recycled water for example projects including traditional purple pipe projects and DPR (treated water augmentation).

**ENVIRONMENTAL REVIEW:** Not Applicable.

**FISCAL IMPACT:** None.

**ATTACHMENT(S):** None.





**UPCOMING MEETINGS**

This schedule lists upcoming board and committee meetings as well as upcoming agenda items for the next month, which may include Board interest in adding future meeting items. The schedule is tentative and subject to change pending final publication and posting of each meeting agenda.

| <b>Internal Meetings</b>             |                                                                                      |                                                                                                     |
|--------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Meeting Date</b>                  | <b>Meeting Type</b>                                                                  | <b>Key Item(s)</b>                                                                                  |
| Thursday, June 20, 2024<br>9:30 a.m. | Watershed Committee Meeting/Special Meeting of the Board of Directors                | Watershed Recreation Management Planning Feasibility Study Update and Development of Pilot Programs |
| Friday, June 21, 2024<br>9:30 a.m.   | Operations Committee Meeting/Special Meeting of the Board of Directors               | Spillway Modification Contract                                                                      |
| Thursday, June 27, 2024<br>9:30 a.m. | Finance & Administration Committee Meeting/Special Meeting of the Board of Directors | Mid-Cycle Budget Review                                                                             |

| <b>External Meetings</b>           |                                               |
|------------------------------------|-----------------------------------------------|
| <b>Meeting Date</b>                | <b>Meeting Type</b>                           |
| Friday, July 12, 2024<br>9:30 a.m. | North Bay Watershed Association Board Meeting |