

**Humboldt Bay Municipal Water
District 828 7th Street, Eureka**
Agenda for Regular Meeting of the Board of Directors



February 13, 2025
Meeting Start Time: 9:00 AM

District Mission

Reliably deliver high-quality drinking water to the communities and customers we serve in the greater Humboldt Bay Area at a reasonable cost; reliably deliver untreated water to our wholesale industrial customer(s) at a reasonable cost; and protect the environment of the Mad River watershed to preserve water rights, water supply and water quality interests of the District.

Members of the public may join the meeting online at:
<https://us02web.zoom.us/j/86710296323?pwd=MjZldGxRa08wZ0FWOHJrUINhZnFLQT09>
Or participate by phone: 1-669-900-9128 Enter meeting ID: 867 1029 6323 Enter password: 484138
 If you are participating via phone and would like to comment, please press *9 to raise your hand.

How to Submit Public Comment: Members of the public may provide public comments via email until 5 p.m. the day before the Board Meeting by sending comments to office@hbmwd.com. Email comments must identify the agenda item in the email's subject line. Written comments may also be mailed to 828 7th Street, Eureka, CA 95501. Written comments should identify the agenda item number. Comments may also be made in person at the meeting.

Announcement recording of meeting: This meeting may be recorded to assist in the preparation of minutes. Recordings will only be kept 30 days following the meeting, as mandated by the California Brown Act.

Time Set Items:

8.3 Continuing Business	McNamara & Peepe	9:15 AM
9.a New Business	Employee Presentation	9:30 AM
9.d New Business	District Safety Program	9:35 AM
10.1 Engineering	Engineering	11:00 AM
8.e Continuing Business	Current litigation Van Duzen Closed Session	1:30 PM
The Board will take a scheduled lunch break from 12:00 pm to 1:30 pm.		

1. ROLL CALL

2. FLAG SALUTE

3. ACCEPT AGENDA

4. PUBLIC COMMENT

Members of the public are invited to address the Board on items not listed on the agenda that are within the scope and jurisdiction of the District. At the discretion of the President, comments may be limited to three minutes per person. The public will be allowed to address items on the agenda when the Board takes up that item. Under the Brown Act, the Board may not take action on any item that does not appear on the agenda.

5. MINUTES

- a. January 9, 2025, Regular Board Meeting*-discuss and possibly approve

6. CONSENT AGENDA *-These matters are routine in nature and are usually approved by a combined single vote unless an item is pulled for discussion

Media articles of local/water interest (Articles a-h)*- discuss and possibly approve

7. CORRESPONDENCE

- a. CDFW annual LTSAA report*-discuss

**Humboldt Bay Municipal Water
District 828 7th Street, Eureka**



Agenda for Regular Meeting of the Board of Directors
February 13, 2025
Meeting Start Time: 9:00 AM

-
-
- b. Notice of court order*-discuss

8. CONTINUING BUSINESS

- a. LAFCo MSR update*-discuss
- b. Timber Management*-discuss
- c. RLCSD policy 6000.27 revision*-discuss and possibly approve
- d. Capstone Project Update*-discuss
- e. Current litigation Van Duzen Paragraph (1) of subdivision (d) of Section 54956.9 – CLOSED SESSION
(Time Set 1:30 pm)

8.2 Water Resource Planning*- discuss

8.3 McNamara & Peepe (Time Set 9:15 AM)

- a. Status update
 - i. January Monthly Summary and Meeting Report*-discuss
- b. Site maps & historical sampling results (stormwater and well water)*-reference

9. NEW BUSINESS

- a. Employee Presentations-discuss **(Time set 9:30 AM)**
- b. RCAA Proposed garbage bin and bicycle rack in Samoa pipeline permanent right-of-way & easement*-discuss
- c. First reading of Ordinance 25*-discuss
- d. District Safety Program*-discuss **(Time set 9:35 AM)**

10. REPORTS (from STAFF)

10.1 Engineering – (Time set 11:00 AM)

- a. TRF Generator-status report
- b. Samoa Peninsula Waterline Right-of-Way Maintenance Project EIR-status report
- c. Reservoirs Seismic Retrofit Project-status report
 - i. Change Order 1 Supplement*-discuss and possibly approve
- d. Essex Onsite Sodium Hypochlorite Generation Project-status report
- e. Collector Mainline Redundancy*-status report
- f. Matthews Dam Advance Assistance Seismic Stability Project- status report
- g. Status report re: Other engineering work in progress

10.2 Financial

- a. January 2025 Financial Statement & Vendor Detail Report*-discuss and possibly approve
- b. Fieldbrook-Glendale contract revenue and Expense Summary*-discuss
- c. Employee job descriptions to be modified*-discuss and possibly approve

10.3 Operations

- a. January Operations Report*-discuss

10.4 Management

- a. General Manager Evaluation - **Closed Session - this item will be the last item on the agenda**

11. DIRECTOR REPORTS & DISCUSSION

- 11.1 General – comments or reports from Directors

**Humboldt Bay Municipal Water
District 828 7th Street, Eureka**



February 13, 2025
Meeting Start Time: 9:00 AM

-
-
- a. 2025 CSDA Leadership Academy-discuss and possibly approve

11.2 ACWA (Association of CA Water Agencies)

Director Report*, if any

- a. ACWA Board of Directors update*-discuss
- b. ACWA Board Names Acting Executive Director*-discuss
- c. ACWA Wildfires and Water* -discuss

11.3 ACWA – JPIA (Association of CA Water Agencies/Joint Powers Insurance Authority)

Director Report*, if any

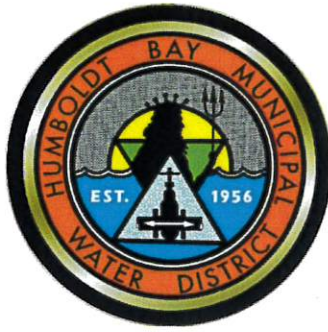
- a. 2025 ACWA/JPIA Spring Conference*-discuss and possibly approve
- b. Resolution NO. 2025-1 – Concurring in Nomination to the Executive Committee*-discuss and possibly approve
- c. Resolution NO. 2025-2 – Concurring in Nomination to the Executive Committee*-discuss and possibly approve

11.4 Organizations on which HBMWD Serves

- a. RCEA (Redwood Coast Energy Authority)*– report out
- b. RREDC (Redwood Region Economic Development Commission)*– report out

ADJOURNMENT

ADA compliance statement: In compliance with the Americans with Disability Act, if you need special assistance to participate in this meeting, please contact the District office at (707) 443-5018. Notification 48 hours prior to the meeting will enable the District to make reasonable arrangements to ensure accessibility to this meeting. (Posted and mailed February 7, 2025.)



HUMBOLDT BAY MUNICIPAL WATER DISTRICT

Board of Directors Meeting

February 13, 2025

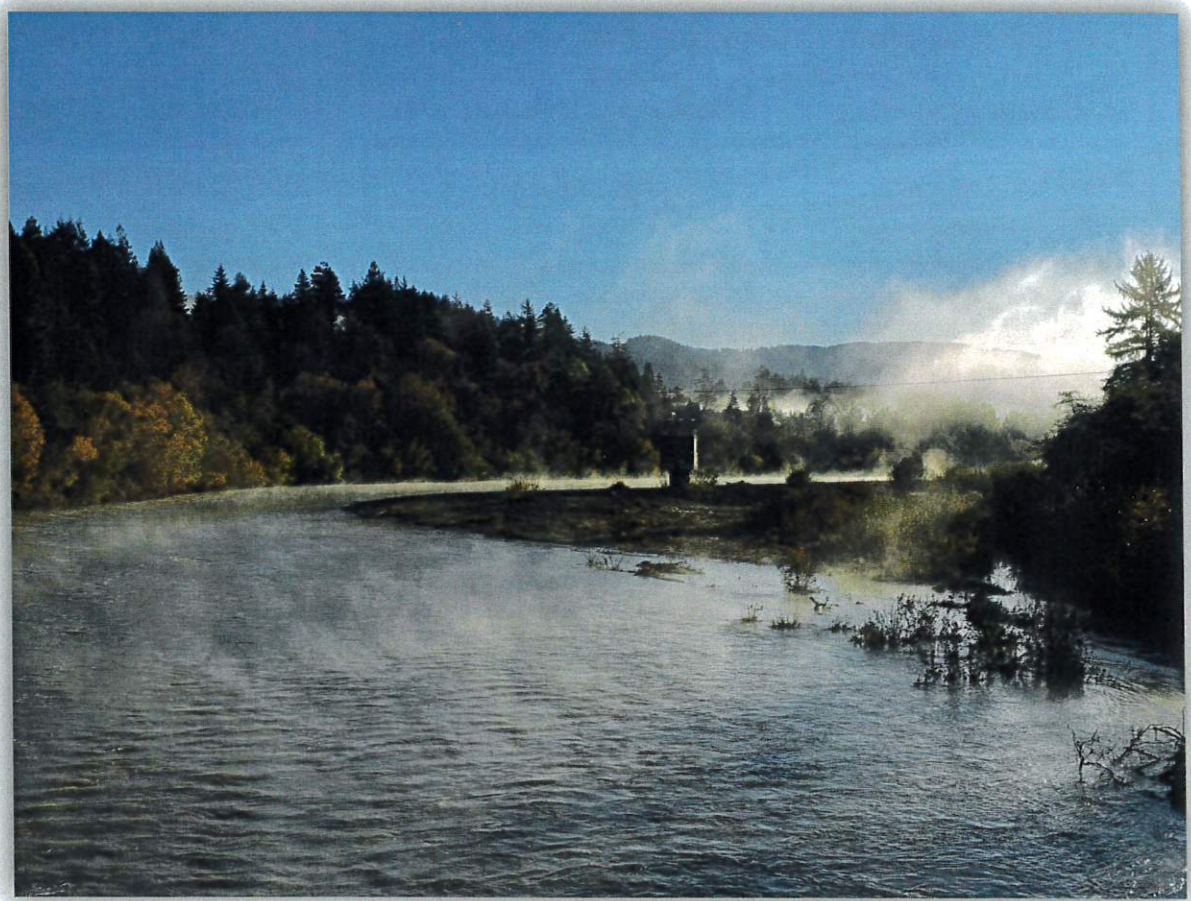


Photo at Matt Davis

MINUTES

Humboldt Bay Municipal Water
District 828 7th Street, Eureka



Minutes for Regular Meeting of the Board of Directors

January 9, 2025

9:00 am

1. ROLL CALL

President Fuller called the meeting to order at 9:00 am. Director Rupp conducted the roll call. Directors Fuller, Lindberg, Rupp, Wheeler, and Woo were present. General Manager John Friedenbach, Assistant General Manager Michiko Mares, Superintendent Dale Davidsen, Business Manager Chris Harris, and Board Secretary Contessa Dickson were present. District Engineer Nate Stevens was present for a portion of the meeting.

2. FLAG SALUTE

President Fuller led the flag salute.

3. ACCEPT AGENDA

ACTION: Motion to accept Agenda

Maker: Director Rupp **Second:** Director Lindberg **Vote:** 5-0 to approve

Item 10.2.d was added to this Board meeting after the agenda was published due to the information not being received in time. The Board unanimously agreed to accept the addition of this item.

4. PUBLIC COMMENT

No public comment was received.

5. MINUTES

a. December 12, 2024, Regular Board Meeting Minutes

ACTION: Motion to approve December 12, 2024, Regular Board meeting minutes

Maker: Director Rupp **Second:** Director Lindberg **Vote:** 5-0 to approve

Director Lindberg noted on item 11.4.d that the proposed fish market was being put on by North Coast Growers Association and is supported by RRDEC.

6. CONSENT AGENDA

ACTION: Motion to approve Consent Agenda

Maker: Director Lindberg **Second:** Director Rupp **Vote:** 5-0 to approve

7. CORRESPONDENCE

a. Email from Dan Edrich

Non Action item

Mr. Friedenbach reported Dan Edrich requested the email he sent to the District be shared with the Board.

8. CONTINUING BUSINESS

a. EV Fleet Master Conversion Report

Non Action item

Ruth and Katherine with Matrix Consulting Group attended via Zoom for this agenda item. Together they presented the proposed fleet electrification master plan for the District. The Board asked several questions.

**Humboldt Bay Municipal Water
District 828 7th Street, Eureka**



Minutes for Regular Meeting of the Board of Directors

January 9, 2025

9:00 am

8.1 Water Resource Planning (WRP)

Non Action item

Director Woo received an email from two motivated Trinidad water customers, including a representative from the Trinidad Water Advisory Committee. The Board directed Mr. Friedenbach to contact the Trinidad Water Advisory Committee for clarification of intent regarding the correspondence.

a. Letter to State Water Resources Control Board

Non Action item

Staff was notified that the request for an extension to respond to the inquiry from the State Water Board has been formally granted.

8.2 McNamara & Peepe

Director Woo recused herself due to a conflict of interest.

a. Status update

i. December monthly summary and quarterly report

Non Action item

Mr. Friedenbach noted that there is limited information to report at this time. He shared that the Soil and Groundwater Management Plan for Royal Gold, the current lessee operating their soil business on the property, was released yesterday. Ms. Mares conveyed that the report included responses to some comments made by the District in 2022; however, several concerns remain unaddressed. A short discussion followed. The next quarterly meeting with DTSC will be on January 29th.

b. Site maps & historical sampling results

Non Action item

These were included for informational purposes.

8.3 LAFCo Municipal Service Review

Non Action item

During the December Board meeting, staff provided an update concerning the Local Agency Formation Commission's (LAFCo) Municipal Service Review (MSR) for HBMWD. Following the initial release of this Board meeting agenda on January 3rd, staff received a preliminary draft of the proposed MSR for the District, which was included in the revised agenda posted on Monday January 6th before 9:00 am and included as a supplemental document for review. LAFCo's Board meeting is scheduled for January 15th and they have requested District staff to attend to provide comments on the draft MSR. A short discussion followed.

9. NEW BUSINESS

a. Pickett's Peak Lease

ACTION: Approve Pickett's Peak Lease Agreement

Maker: Director Lindberg **Second:** Director Woo **Vote:** 5-0 to approve

The County of Trinity formally proposed a ten-year extension of the existing lease agreement for the Pickett's Peak Communication site which is set to take effect on July 1, 2025. Staff recommended

**Humboldt Bay Municipal Water
District 828 7th Street, Eureka**



Minutes for Regular Meeting of the Board of Directors

January 9, 2025

9:00 am

approving the lease extension agreement and the Board authorized and directed the General Manager to sign the lease amendment.

b. Officer and Committee Assignments

ACTION: Approve all appointments of the Officer and Committee Assignments

Maker: Director Rupp Second: Director Lindberg Vote: 5-0 to approve

i. Appointment of Officers

Per California Water Code Section 71273, at the first meeting in January of each odd-numbered year, the Board shall elect one of its members President. The Board unanimously appointed Director Fuller as the President. Director Wheeler was appointed as Assistant Secretary/Treasurer.

ii. Appointments to committees

In January of every year, the Board reviews the committee assignments and makes any necessary changes. Director Wheeler will be the alternate for RCEA. Director Wheeler joined Director Rupp on the Committee to support and advance local water sales and advance consideration of "Transport" options. Director Wheeler joined the AD Hoc Committee for negotiating wholesale contracts.

c. Cal Poly Engineering Capstone Project

ACTION: Approve Participation with Cal Poly Engineering Capstone Project

Maker: Director Woo Second: Director Rupp Vote: 5-0 to approve

In 2022, the District partnered with Cal Poly Humboldt's Environmental Resources Engineering Class senior capstone projects. Dr. Archibald inquired if the District would participate in their capstone project again for the Spring 2025 semester. Mr. Friedenbach gave a detailed description of the proposed Collector 4 project. The Board asked several clarifying questions.

d. 2025 Trades Day

ACTION: Approve participating in the 2025 Trades Day and donating \$500

Maker: Director Lindberg Second: Director Wheeler Vote: 5-0 to approve

In the past, the District participated in the Humboldt County Trades Day. Along with attending as a vendor, the District may donate funds to the event. Staff recommended District participation and suggested a donation of \$500..

10. REPORTS (from STAFF)

10.1 Engineering –

**a. Samoa Peninsula Waterline Right-of-Way Maintenance Project
Environmental Impact Review (EIR)**

Non Action item

Staff continue to work through the permitting process and mitigation efforts for this project. The sections of the EIR Mr. Friedenbach has reviewed have been sent to the CEQA attorney Downey Brand for their review.

SECTION 5.a PAGE NO. 4
**Humboldt Bay Municipal Water
District 828 7th Street, Eureka**



Minutes for Regular Meeting of the Board of Directors
January 9, 2025
9:00 am

b. Reservoirs Seismic Retrofit Project

Non Action item

Mr. Stevens reported progress has continued to move forward at the Korplex project location.

i. Match Commitment Letter

ACTION: Approve submittal of Match Commitment Letter

Maker: Director Rupp **Second:** Director Lindberg **Vote:** 5-0 to approve

There has been no change in the grant or product budget for this project. This match commitment letter is to reassure CalOES and FEMA that the District commits the funds necessary to complete the project.

c. Essex Onsite Sodium Hypochlorite Generation Project

Non Action item

Mr. Friedenbach submitted the Notice to Proceed to Sequoia Construction. Construction is scheduled to commence mid-February.

d. Collector Mainline Redundancy

Non Action item

The Change in Scope of Work for Phase 1 of this project remains under review by FEMA. In the meantime, the California Office of Emergency Services (Cal OES) representative has requested updated funding amounts. There is a funding waitlist for this disaster, with efforts underway to incorporate additional projects into the list. Mr. Friedenbach responded to Cal OES's request and provided the budget numbers.

e. TRF Generator

Non Action item

Staff anticipate the next round of specs from PACE to be received next week. The plan is to have the project go out to bid by the end of this month with bids due by the end of February.

f. Matthews Dam Advance Assistance Seismic Stability Project

Non Action item

Request for Qualification's (RFQs) for this project were published at the end of December 2024. The deadline for submittal of Statements of Qualifications (SOQ's) is February 5th.

g. Status Report RE: Other Engineering Work

No report was received.

10.2 Financial

a. December 2024 Financial Statement & Vendor Detail Report

ACTION: Motion to approve Financial Statement & Vendor Detail Report in the amount of \$356,001.56

Maker: Director Rupp **Second:** Director Woo **Vote:** 5-0 to approve

Ms. Harris presented the December financial statement & vendor detail report. The General Account balance is \$1.7 million The various investments balance is \$13.2 million. The advanced charges are \$5.5 million with a general reserve of \$4.5 million.

SECTION 5.a PAGE NO. 5

**Humboldt Bay Municipal Water
District 828 7th Street, Eureka**



Minutes for Regular Meeting of the Board of Directors
January 9, 2025
9:00 am

b. Fieldbrook-Glendale Contract Revenue and Expense Summary

Non Action item

This section is presented for transparency.

c. Regional Government Services (RGS) Final Salary Survey Report

No Action taken

In December 2023 the District entered contract with RGS to complete a District wide salary survey. RGS provided the District with a staffing Assessment Report and a Compensation Report including updated job descriptions. After review of their findings, staff discussed and inserted suggested changes provided both by impacted staff and the Superintendent. The Board asked several questions. After discussion, staff were directed to provide a final version of the job descriptions at the February Board meeting for discussion and possible approval.

d. O'Connor & Company Engagement Letter

ACTION: Approve engagement letter

Maker: Director Lindberg **Second:** Director Rupp **Vote:** 5-0 to approve

This item was added to the agenda under the Brown Act's "requires immediate action that cannot wait" provisions. Ms. Harris reported that Michael O'Connor, principal with O'Connor & Company—the audit firm that the District engaged over the past two years cannot begin our audit for FY24 without an approved engagement letter. Mr. O'Connor will be designated as the principal auditor for the District. Staff recommended the Board approve hiring O'Connor & Company as the District's auditor and direct the general manager to sign the proposed audit engagement letter for the fiscal year ended June 30, 2024.

10.3 Operations

a. December Operations Report

Non Action item

Mr. Davidsen presented the December Operations Report. In response to the 7.0 magnitude earthquake on December 5th, staff conducted multiple inspections with no damage reported. Additionally, staff are excited to announce the onboarding of a new Operations and Maintenance employee who started January 6th.

b. Surplus Request

ACTION: Approve Equipment Surplus Request

Maker: Director Lindberg **Second:** Director Rupp **Vote:** 5-0 to approve

The District is replacing the motor on the Ruth Lake work boat with a larger motor to better meet operational needs. Staff proposed to declare the 2022 Suzuki 90 Hp boat motor as surplus.

10.4 Management

a. New General Manager Open House

Non Action item

Staff are planning an open house for incoming General Manager, Ms. Mares January 27th 4-6pm.

**Humboldt Bay Municipal Water
District 828 7th Street, Eureka**



Minutes for Regular Meeting of the Board of Directors

January 9, 2025

9:00 am

11 DIRECTOR REPORTS & DISCUSSION

11.1 a. General – comments or reports from Directors

Non Action item

Mr. Friedenbach and Director Woo reported on their attendance of the Baduwa't documentary December 19th.

11.2 Association of California Water Agencies (ACWA)

No report was received.

11.3 Association of California Water Agencies Joint Powers Insurance Authority (ACWA JPIA)

Director Rupp announced he will be attending a finance committee meeting at the end of the month.

a. President's Special Recognition Award

Non Action item

Each year at the ACWA/JPIA fall conference, the JPIA recognizes members that have a loss ratio of 20% or less in either liability, property or workers compensation programs. The District was a recipient of this award in December 2024 under the liability program.

11.4 Organizations on which HBMWD Serves

a. Redwood Coast Energy Authority (RCEA):

Non Action item

Director Woo reported on the Board meeting she attended December 17th, highlighting the new Executive Director for RCEA to preside over the next meeting.

b. Redwood Region Economic Development Commission (RREDC):

Non Action item

No report was shared due to the December meeting being canceled.

ADJOURNMENT

The meeting adjourned at 2:42 pm.

Attest:

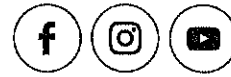
Michelle Fuller, President

Bruce Rupp, Secretary Treasurer

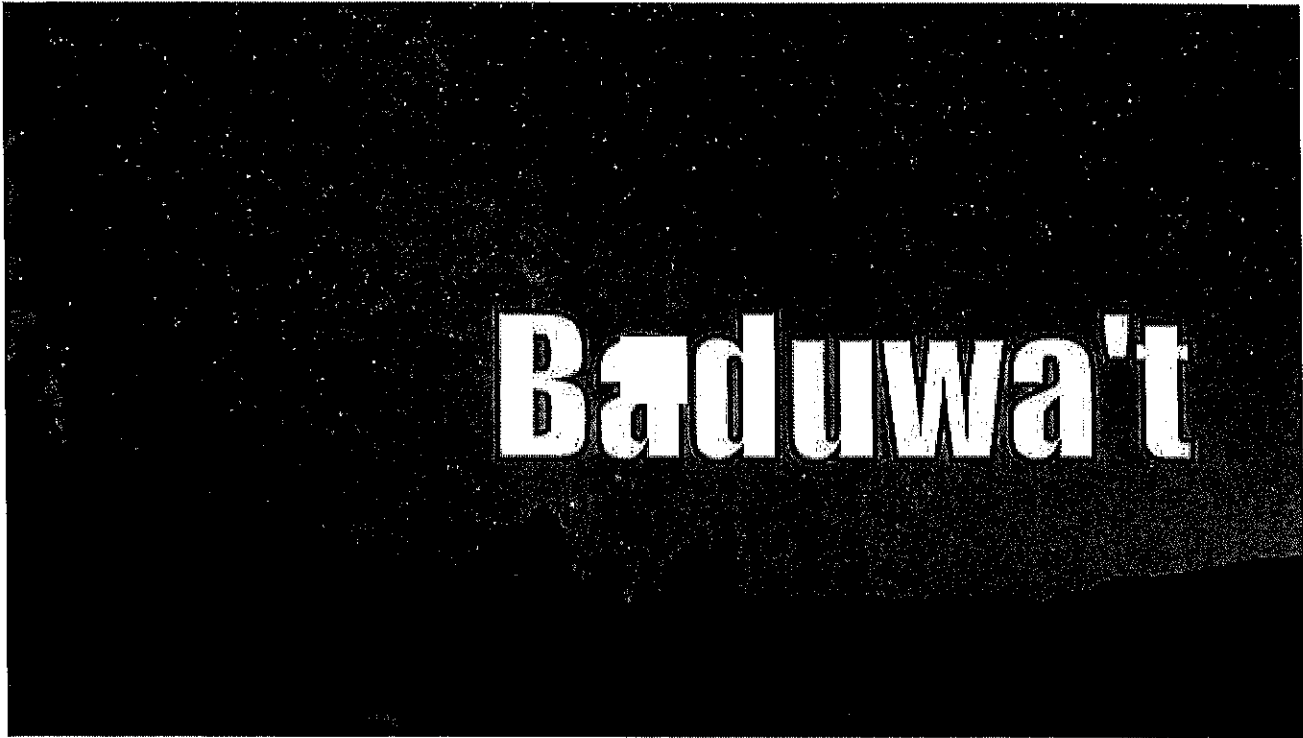
CONSENT



Home About BWC Projects
 Documentary Donate Contact



DONATE



Baduwa't Trailer

BADUWA'T DOCUMENTARY

The Baduwa't Watershed Council is proud to present an upcoming documentary, launching in December, 2024. This film tells the powerful story of the Baduwa't River—its deep importance to our community, its uncertain future, and the urgent need to **Restore, Reclaim, and Protect** it for generations to come.

By donating, you can help us spread the word. You can also host a screening to help increase awareness. Your support is key to ensuring that more people learn about the river's significance and how we can all make a difference. **Donate today and help share the story of Baduwa't.**

ARTICLE ABOUT FILM

BADUWA'T PREMIERE FEB 28, 2025

EUREKA THEATER 6-00-8-30 P.M.

BUY TICKETS HERE BEFORE IT'S SOLD OUT!

DONATE



[Dezmond Remington](#) / [Today](#) @ 10:56 a.m. / [Activism](#), [Film](#)

(PREVIEW) The Makers of the New “Baduwa’t” Documentary Want People to Get Mad About the River



The Mad River/Baduwa’t at sunset. By Dave Feral.

It’s December 1849, and explorer and naturalist Josiah Gregg is alone. He is furious. He is hungry. His buddies absconded to get a meal at a nearby Wiyot village, leaving him stranded at a river they were resting at while he drew up a map of the area they explored. He crossed the river and found his crew.

“His cup of wrath was now filled to the brim,” a later recount of the expedition would put it, “but he remained silent until the opposite shore was gained, when he opened upon us a perfect batter of the most withering and violent abuse.”

After a minute everyone relaxed, but the incident remained fresh in Gregg’s mind. He christened the river he crossed in pursuit of bread and revenge the “Mad River” on his map. The U.S. government bought the map, and over the following decade, settlers colonized the area Gregg charted. 175 years after Josiah Gregg had a fit on the banks of a river nameless to him and his party, people still call it the Mad.

But there were people living near that river thousands of years before Gregg’s tantrum, and they called it a different name: Baduwa’t, “free-flowing river.” Almost two centuries after the river was given the Mad moniker, people are trying to change it back.

Dave Feral talks slowly, but he makes up for it by way of persistence. Every answer to every question ricochets around the point for a while before hitting a glancing blow.

Feral is the founder and executive director of the Baduwa’t Watershed Council (BWC), an organization dedicated to preserving the health of the river. He’s also a driving force behind the recently released *Baduwa’t*, a documentary about the river’s health, its turbulent history with outsiders and the Wiyot effort to both formally and colloquially change the name.

“I’m way too verbose, so you gotta cut me down,” Feral said in an interview with the *Outpost*. “There’s piles of my stuff on the floor.”

Mostly composed of gorgeous river b-roll and interviews with everyone from Wiyot tribal members and scientists to county supervisor Steve Madrone to Feral himself, the work on the film started in 2021 and wrapped last year. It had a private premiere at the Arcata Theatre Lounge last month. Feral and the film’s co-director, Michelle Hernandez, a member of the Wiyot Tribe, hope to secure a public release in February at the Eureka Theater.



The river at night. By Dave Feral.

It's a trim film that touches on a lot in its 41-minute runtime. Feral and Hernandez both summed it up as a story about the river as a whole and the people that use it.

"It's about hope and changing a name," Hernandez said. "It's also about how we got to where we are currently with the river's health. Basically, 'What can a community do before it's too late, before it gets sick?'"

The BWC hopes they can convince their audience of the importance of changing the name of the river back to Baduwa't. Hernandez and Feral argue that beginning a public discussion about changing the name will draw more eyes to the ecological health of the river.

"I thought for many years about the Baduwa't before this transpired into the story it is now," Feral said. "At a certain point, I went 'You know what? If we begin to share the story of Baduwa't, more people will become aware of the river...' I think that's the impetus, to say 'What would it be like if we just started the process of getting people to recognize the name Baduwa't instead of Mad?'"

This renaming effort is part of a larger narrative, in Humboldt and around the U.S. and worldwide, of indigenous-led efforts to rename places in the original native tongue. In Humboldt, Patrick's Point State Park became Sue-Meg in 2021. There's [even a program](#) the Wiyot tribe runs to find Soulatluk place names for agencies that want one.

Feral says there has been a backlash about the proposed shift to Baduwa't, a kind of entrenched nostalgia from people whose ancestors lived in Humboldt for a while and always called it the Mad and see no reason to change it back.

"There have been a couple people on projects I've worked on ... they're complaining on public forums on Facebook," Feral said. "I'm like, 'Hey, you know what? To be accurate, this name existed way before anyone you're related to got here and pushed some other people off of their land.'"



A salmon in the river. By Dave Feral.

Feral knows firsthand that the process of changing names isn't simple. Several years ago, he changed the name of the BWC from its previous name, the Mad River Alliance. Board members questioned the move. State grant checks made out to Mad River Alliance had to be fixed. People still complain about the adjustment.

Hernandez and Feral also believe that the original renaming of the river was symbolic of greater injustices, both to the Wiyot people and the ecosystem as a whole. Reclaiming Baduwa't would be beneficial for both the community at large and the river itself.

"The renaming of Baduwa't to 'Mad River' marked the beginning of a series of destructive events, including the gold, timber, and green rushes, that have severely impacted the watershed," the BWC website reads.

"The Wiyot never changed the name," Feral said. "They never gave up sovereignty of their land, their tribe, or any of the names they used before colonization occurred. I think that opening up the dialog and helping us understand how we see things from a colonial perspective versus [how] the Wiyot tribes or indigenous people see things is very important, because it begins the healing process that's not just looking at the landscape and the damage that was occurred when the gold rush, the timber rush, and the fish rush occurred, and all the other atrocities that occurred with the capitalist colonization 175 years ago, but also recognizing how things had been managed before."

Feral thinks *Baduwa't* is an essentially hopeful film, and he claims many people that have seen it agree with him — but it can be hard to be optimistic during this film, when much of it focuses on how poorly the river is doing. The steelhead salmon population of the river is the smallest it's ever been. Illegal water diversions for illicit cannabis grows are making it hotter. Clearcuts and logging roads dump tons of debris into the river. But Feral and Hernandez believe that a re-branding of the river back to Baduwa't could help ameliorate those conditions by drawing more public attention to its problems.

"I'm hoping when I go home [to Humboldt] I hear more people referring to it as Baduwa't and not the Mad River," Hernandez said. "I hope [the film] helps cause a movement not just here, but throughout the United States. We're seeing what happened, and we're hoping that other people decide to reclaim other names that have been changed throughout the U.S. I hope this causes a movement so that we have more say in how we take care of this land, so we can prevent climate change from causing more damage than it's already causing."

ASCE/Civil Engineering SOURCE

DISASTER RESPONSE

LA wildfires magnify need to rethink infrastructure

1/28/2025



Wildfires are no longer a seasonal problem in the Los Angeles metro region; they can cause trouble at just about any time. (Image courtesy of Los Angeles County Fire Department)

As wildfires continue to wreak havoc on Greater Los Angeles, infrastructure experts are already considering how they can build back better, specifically by creating water management systems that will show improved performance in the face of future fires.

In the past, wildfire season in California, which typically affected the region's wildlands and development at the wildland-urban interface, ran from June through October, facilitated by dry conditions. Yet, as a result of climate change, [that season is growing longer](#). With fires increasing in frequency and moving closer to urban areas, it's a good time to reassess infrastructure needs.

The confluence of multiple fires, drought like conditions, and 100 mph Santa Ana winds created a perfect storm of conditions to allow the flames to quickly move across the area and cause [tens of billions of dollars in damage](#).

Many have suggested that a lack of water played a key role in the resulting destruction, but Jay R. Lund, Ph.D., vice director at the University of California, Davis' [Center for Watershed Sciences](#), said that is not the case.

"Southern California has more than a million acre-feet of water in surface water storage," Lund said. "That's enough water to take all of the areas on fire and drown them under 20-25 feet of water. But when you have an area that is as thermodynamically unstable as Los Angeles County – that's been very, very dry because it hasn't rained – and you add lots of fuel and 100 mph winds, it's just not something you can fight with water."

That said, thanks to reservoir construction and [power outages affecting pumping stations](#), firefighters reported dry hydrants in some areas. Such scenarios have those in the know considering ways to improve the situation.

“We’re seeing a significant increase in the number of large disaster events in Los Angeles County,” said Erik Porse, Ph.D., director of the [California Institute of Water Resources](#). “While it’s becoming more and more clear that the conditions surrounding these fires made fighting them nearly impossible, it’s important that we start to rethink some of our systems from an engineering perspective, as well as the codes and standards we have, so we can understand the level of protection they can provide against fire events.”

Improving water distribution

Newsha Ajami, Ph.D., chief development officer for research in the [Earth and Environmental Sciences Area](#) at [Lawrence Berkeley National Laboratory](#), said, historically, wildfires tended to stick close to wilderness areas.

“We fought them with water bags and retardants dropped on them from helicopters and aircraft. Firefighters on the ground would work to make space so the fire could slow down and not move toward more developed areas,” she said. “Now, wildfires are encroaching on development. Our emergency water systems simply were designed to fight a small kitchen fire or a building fire – not a fire of this intensity and magnitude.”

Still, she said, there could be improvements in the water distribution system to help get water to where it is most needed in the event of a fire. Porse agreed, saying that waterlines could be upgraded to better address small- and medium-sized fire events.

“Some of the actions we could take is to make sure that fire hydrants have compatibility to hook up with lines from other fire departments and groups (that) come out to assist,” he said. “We could potentially provide backup power systems that would help ensure continuity of pump operations in areas that have a higher fire risk. And there could also be value in making sure there is some additional water supply in those areas.”

He cautioned, however, that any improvements need to be considered with a thorough cost-benefit analysis. Bigger pipes or battery systems would not have been sufficient to combat the Palisades fire – one of the four big ones affecting Southern California – but they may help in other situations. There’s plenty of analysis that will need to be done before future investments are made.

“We need to always think about infrastructure that aligns with our ability to finance it – and the true mitigation of risks those changes can offer us,” he said. “We’re going to have to do the math and understand the set of economic benefits and outcomes that any system changes will give us.”

Gregory Pierce, Ph.D., director of the UCLA Water Resources Group, adds that there are limits to what engineers can do to move water quickly, but he believes we can do better. He is hopeful that future “cutting-edge, breakthrough innovations” from engineers can help.

“Engineers can step up to this challenge and find the new things that we can – and the things we should – do,” Pierce said. “We welcome all folks who can work in this space and come up with the fairly simple new things or intermediately more complex things that are affordable and implementable to improve our distribution capabilities.”

Collaborating for resilience

Beyond water management systems, Ajami said, engineers must also consider urban design, land use design, land use planning, and landscape management to help make wildfire-prone areas more resilient to future events. But that requires more communication and collaboration between those different infrastructure stakeholders.

“We need to take more time to understand how much space we need to leave for water to flow to help contain fires and how we can best use nature to help block or mitigate damage,” she said. “We’ve put too many people in silos, and they only know how to do one thing. But if we can get more multidimensional, interdisciplinary thinkers together to bridge these gaps, we can bring the right pieces together.”

Lund concurred. He said targeted changes to building codes is how the state has become more resilient in the face of earthquakes. Similar work could also help decrease fire’s ability to spread and consume. While some changes have been put in place as a result of the [1991 Oakland Hills tunnel fire](#) – and research suggests that they are protective – they have not been implemented in older homes in most areas.

“Unfortunately, it often takes disasters for us to make big improvements,” Lund said. “But we can work together so we can get better (at managing) the disasters we will face in the future. Because wildfire events, as well as earthquakes, droughts, and floods, are going to keep happening.”

Fighting misinformation

Another challenging byproduct of the Los Angeles fires has been the sheer amount of misinformation about the city’s water resource management at the state and national levels. And that, these experts agree, will require education as much as new innovations and improvements. Porse said that water utilities have active education programs, but they mainly focus on promoting efficiency.

“They talk about how not to overirrigate; they don’t tell consumers how the water system works to get your water up this hill,” he said. “We should probably do more to acclimatize residents about how the water system works so they can understand what could happen when disaster strikes.”

Pierce added that the volume of misinformation about the city’s water resources may be unique to the gravity of this particular situation. Still, he maintained it’s important that engineers understand how misinformation spreads and find ways to provide better education to local home and business owners.

“Just having the materials prepared to talk about how things work can be helpful,” he said.

Lund said that while civil engineers, as a whole, tend to be more interested in “making sure things work,” providing that kind of on-the-ground education will help increase not only understanding but also trust. And that is crucial when infrastructure partners are looking for investments to implement new technologies or system designs.

He recommends that engineers work on ways to better communicate at the local level – with the communities they directly serve – before it’s time to ask for funding.

“People may not be interested in how things work until they fail,” Lund said. “But we can do more to ensure that we are believable. We need to make sure that there is high-quality information available about how things work now and how we can improve them in the future. Because, without trust and understanding, it ultimately doesn’t matter how good our designs are. They won’t be implemented.”

CAL MATTERS**Trump orders more Central Valley water deliveries — claiming it would help LA fires**by [Alastair Bland](#) January 26, 2025

The Friant-Kern canal is part of the Central Valley Project, a federal water system that delivers water to farms. Trump ordered federal agencies to deliver more water. Photo by David McNew, Getty Images

In summary

Citing the LA fires, Trump directed federal agencies to “immediately take actions to override” water operations and environmental rules. But the water mostly serves Central Valley farms.

Welcome to CalMatters, the only nonprofit newsroom devoted solely to covering issues that affect all Californians. Sign up for [WhatMatters](#) to receive the latest news and commentary on the most important issues in the Golden State.

President Donald Trump signed [a sweeping executive order](#) Sunday that told federal agencies to “immediately take action” to deliver more Central Valley water and eliminate rules that stand in the way, including endangered species protections.

In the new order, Trump cited the Los Angeles fires, even though the actions he is ordering — delivering more water from the federal [Central Valley Project](#) — would primarily serve farms. About 75% of Central Valley Project water [is used for agriculture](#), while much of the rest goes to cities and towns in the San Joaquin Valley, including Sacramento and Fresno.

“In particular, the Secretary of the Interior and the Secretary of Commerce shall immediately take actions to override existing activities that unduly burden efforts to maximize water deliveries,” Trump’s order reads.

“Do not be fooled by Trump’s lies: none of the policies in this executive order will move even a single drop of extra water to communities devastated by these wildfires. This administration is presenting us with a false choice.”

U.S. Representative Jared Huffman

At stake are the rules that guide two massive Delta water systems, the federal Central Valley Project and a state-operated system, the State Water Project. These networks of reservoirs, pumps and canals deliver water to millions of acres of farmland and 30 million people. They draw water from rivers that flow into the Sacramento-San Joaquin Delta and San Francisco Bay, which imperils Chinook salmon, smelt and sturgeon that are protected by the federal Endangered Species Act.

Trump ordered federal agencies to “expedite action related to any exemption under the Endangered Species Act...for the long-term operation” of the water delivery systems. In addition, he directed the

federal Bureau of Reclamation to “take all available measures to ensure that State agencies — including the California Department of Water Resources — do not interfere.” He entitled a section “Overriding Disastrous California Policies.”

Environmental groups are likely to sue if federal agencies override the Endangered Species Act when setting rules that control how much water is delivered via the Central Valley Project or State Water Project.

“Do not be fooled by Trump’s lies: none of the policies in this executive order will move even a single drop of extra water to communities devastated by these wildfires. This administration is presenting us with a false choice,” U.S. Rep. Jared Huffman, a California Democrat who is the ranking member of the House Natural Resources Committee, said in a statement Sunday. “Fishers, farmers, treasured species, and every water user all depend on our water resources – we do not have to pick winners or losers.”

Several community watchdog and environmental groups, including Restore the Delta and San Francisco Baykeeper, warned that Trump’s actions “will have devastating consequences for California’s water future, public health, and environmental protections, threatening a federal takeover of California’s right to manage its land and waters.”

Noting that the actions would benefit farmers, San Francisco Baykeeper Science Director Jon Rosenfield called the administration “a lawless regime that uses extortion to enrich their political supporters.”

The powerful [Westlands Water District](#), representing farmers in parts of Kings and Fresno counties, said Sunday that they welcome Trump’s order. “The challenges that he highlights are real, and his leadership in addressing the barriers to water delivery are welcomed,” the district said in a statement. “It’s clear that what we’ve been doing for the past few decades has not been working; not for the people, for agriculture, or for the fish.”

Trump’s order said “it is in the Nation’s interest to ensure that California has what it needs to prevent and fight these fires and others in the future. Therefore, it is the policy of the United States to provide Southern California with necessary water resources, notwithstanding actively harmful State or local policies.”

The environmental groups said Trump’s directives “conflate fire prevention needs with water operations in California all based on the myth that water operations for environmental protections had any impact on water infrastructure used in the Los Angeles fires.”

Some Los Angeles fire hydrants ran out of water fighting the fires, but city fire and utility officials say [it was caused by a sudden surge in demand and limited capacity of city pipelines](#), not lack of water supply. In addition, the city’s water comes mostly from the Owens Valley, the Colorado River and groundwater, not the Delta or the Central Valley, and Southern California cities say they have ample supply after two wet winters.

“The premise of this executive order is false,” said Newsom spokesperson Tara Gallegos. “Attempts to connect water management in Northern California to local wildfire fighting in Los Angeles have zero factual basis. California continues to pump as much water as it did under the Trump administration’s policies, and water operations to move water south through the Delta have absolutely nothing to do with the local fire response in Los Angeles.”

State [reservoirs in Southern California](#) are at above-average levels. “There is [no shortage of water in Southern California](#), which is why the Governor has [called for an investigation into the local](#) response,” Gallegos said.

Rosenfield said the State Water Project ensures, even in the worst of droughts, that communities have a minimum share of water designated for purposes of “human health and safety,” which includes firefighting needs. “They always deliver that human health and safety water, always — it’s never interrupted,” Rosenfield said.



Farmworkers work on a field in Fresno County. Farmers in that area receive water from the Delta. Photo by Larry Valenzuela, CalMatters/CatchLight Local

The Central Valley Project provides about 5 million acres feet of water to farms, enough to irrigate about a third of the agricultural land in California, according to the Bureau of Reclamation. It also delivers about 600,000 acre-feet for municipal and industrial use in the San Joaquin Valley and some Bay Area cities, enough to supply about 1 million households with water each year.

Trump called on the Bureau of Reclamation to operate the Central Valley Project with rules that his first administration implemented in 2020. Reverting to those rules could override rules signed into law in December by Biden administration officials and endorsed by Gov. Gavin Newsom administration officials. The Biden rules would reduce Central Valley Project farm deliveries, but the State Water Project — which serves Southern California cities as well as San Joaquin Valley farms — would receive [more water](#) compared to Trump’s 2020 rules.

Directors of the state’s water and resources agencies could not be reached for comment.

Ryan Endean, a public information officer with the California Department of Water Resources, said in a statement last week that his agency stands by its new Delta water management rules. Under those rules, Endean said, “farms and cities have the potential to gain additional water supply, while endangered species are protected. To abandon these new frameworks would harm California water users and protection of native fish species.”

Experts say the Bay-Delta ecosystem is collapsing, and salmon populations have declined so severely that commercial and recreational salmon fishing have been banned in California for two straight years — [with a third year expected, too.](#)

The order follows a series of remarks in recent weeks by the President that reflect a profound misunderstanding of California's water supply, weaving between inaccurate and fantastical.

In Pacific Palisades on Friday, while visiting with local leaders in the aftermath of the region's wildfires, Trump said, "We have to have that water ... You're talking about unlimited water coming down from the Pacific Northwest, even coming up from parts of Canada, and it pours down naturally ... you'll never run out, you'll never have shortages and you won't have things like this, and when you do you'll have a lot of water to put it out." Water does not flow into California from Canada, and the Pacific Northwest does not feed into Central Valley rivers. Instead, the water comes largely from Sierra Nevada snowmelt.



Fall-run Chinook salmon migrate and spawn in the Feather River near a hatchery in Oroville, on Nov. 15, 2024. Their populations have been in severe decline largely because river waters have been diverted to farms and cities. Photo by Xavier Mascareñas, California Department of Water Resources

The order also includes provisions to expedite aid to victims of the Southern California wildfires and Hurricane Helene in North Carolina.

He ordered federal agencies to provide a plan that "expedites options for housing relief to survivors displaced by wildfires in California." Also, "within 5 days from the date of this order," he ordered federal agencies, including the Environmental Protection Agency, to "expedite the bulk removal of contaminated and general debris" in order "to accelerate the rebuilding of areas devastated" by the wildfires.

County officials and the Army Corps of Engineers officials have warned homeowners in the fire zones that [sifting through debris and removing it could be harmful](#) without guidelines and precautions from the EPA for handling hazardous waste.



California's Mismanagement of Fire and Water



Edward Ring

Director, Water and Energy Policy

January 31, 2025

The more we learn about the Los Angeles-area wildfires, the more caution is called for when assigning blame. When the Santa Ana winds periodically sweep down from California's eastern deserts and rip through the mountains surrounding the Los Angeles Basin at up to 100 MPH, sparks don't go up, they go sideways, and turn entire canyons into blast furnaces.

Any criticism of the response to these fires, or of the inadequate preparation for these fires, has to recognize that sometimes even if authorities do everything they possibly can, it will not be enough. In the face of low-probability/high-consequence forces of nature, humans can only do so much.

On the other hand, the biggest ideas California's politicians have come up with so far in response to worsening fires are symbolic. For example, after California's devastating fires in the summer of 2020, Governor Gavin Newsom issued an executive order to ban the sale of gasoline-powered cars starting in 2035. After another round of fires in 2023, Attorney General Rob Bonta filed a lawsuit against five major oil companies, accusing them of knowingly misleading the public regarding the harm that fossil fuels would inflict on the climate.

These are distractions. If we are truly facing a climate crisis, then authorities ought to be doing *more* to prepare for whatever nature may throw our way. And if the moral basis for diversity is to erase group discrimination, then the path toward achieving that is to hire and promote based on individual qualifications. That would eliminate any speculation that the executive leadership at, for example, the Los Angeles Department of Water and Power and the LA Fire Department, were hired based on the diversity boxes they check, instead of based on their competence.

The massive response has undoubtedly saved thousands of homes and hundreds of lives, but much more could have been done. For the last several years, why wasn't top management at the LADWP and the LAFD demanding the state, county, and cities immediately send crews into the canyons and finally engage in fuel-reduction projects? More recently, once it was known that the Santa Ana winds were forecast, why wasn't the LAFD more aggressively prepositioning tankers and engines? If more resources could have been there in advance, why wasn't the chief of the LAFD urgently requesting that help in advance from other jurisdictions?

And why, in a city as big as Los Angeles, in a state as innovative and wealthy as California, hasn't LAFD been exploring and deploying new technologies, such as nontoxic fire retardants or robots to clear overgrown grass, brush, and fallen limbs? Why didn't LAFD chief Kristin Crowley demand the LADWP

more thoroughly trim the trees around power lines, or better yet, move them underground in fire-prone neighborhoods, and demand the state find the funds to help pay for it?

There are systemic failures going back many years, which have combined to undermine California's ability to prepare for and respond to fires. For example, the Santa Ynez reservoir, which could have supplied 300 acre-feet of water to the hydrants that ran dry in Pacific Palisades, has been empty since February 2024 while its cover has been under repair. This failure not only points to the larger problem of bureaucratic incompetence, but to the question of overall water availability.

The idea that there isn't enough water is a myth. In 1985, California's total urban water consumption was 7.5 million acre-feet. That total rose each year to peak at nearly 10 million acre-feet in 2007. But since then, conservation measures have reduced that total back to 7.5 million acre-feet in 2023. Meanwhile, the population of Californians has increased from 26 million in 1985 to nearly 40 million today. A nation-leading 94 percent of Californians live in urban areas, and they are getting by with the same amount of water today as they did 40 years ago, despite the population growing by 65 percent.

This degree of conservation is an impressive achievement, but it comes at a price that is only paid when a huge amount of water is needed and the water isn't there. Everything necessary to deliver water throughout Los Angeles is stretched to its limit. When more pumps and more pipes are needed to rapidly recharge hilltop tanks and reservoirs that are being emptied onto flames, the extra capacity is not there.

Largely misunderstood by the environmentalist zealots and conveniently ignored by the municipal bureaucracies that perpetually agitate for more budget allocations to feed their pension plans and homeless housing boondoggles is that having abundant water in an arid, densely populated megacity like Los Angeles is not an extravagance. It is necessary for resilience, not only to fight fires, but to compensate for any possible disruption to water supplies. Stripping all surplus out of the state's capacity to store, treat, and distribute water can have devastating consequences.

But rationing is the mantra in Sacramento, and as a result, the only major reservoir built in the state in the last half-century is the 800,000 acre-foot Diamond Valley Lake, completed in 2000 by the Metropolitan Water District of Southern California. The state's only remaining serious proposal for more water storage is the beleaguered Sites Reservoir, an off-stream behemoth that would have a storage capacity of 1.5 million acre-feet. Mired in litigation, bureaucratic paralysis, endless redesigns, and renegotiations with myriad "stakeholders," the Sites Reservoir may never begin construction.

In 2014, by a supermajority of 67 percent, California's voters approved Proposition 1. It authorized \$7.12 billion in general obligation bonds for two reservoir expansion projects and two new reservoirs. Of those, only the Sites Project is even still being considered. Both expansion projects were cancelled along with the other proposed new reservoir. They were all victims of endless litigation and escalating cost estimates.

The people want more water, but the authorities don't want them to get it. California's state legislators are now in the process of implementing SB 1157 and related legislation that enforces permanent water rationing on California's households and businesses. This will require two meters to be installed on the property of every urban water consumer, one for indoor watering and one for outdoor watering. The indoor allotment shall be 42 gallons per person per day, and the outdoor allotment shall be negotiated

with an official from the local water agency. This intrusive law will squander an estimated \$7 billion to save a scant 440,000 acre-feet of water per year.

It's not just city dwellers who are unwillingly subjected to water rationing. California's farmers are, too. The State Water Project commenced operation in 1967, following a golden age of rapid construction of dams and aqueducts. In the 34 years from 1967 through 2000, farmers received 100 percent of their contracted water deliveries all but seven times. The reduced deliveries occurred only during two multi-year periods of severe drought, the first in the late 1970s and the second in the early 1990s. During the more recent 24 years from 2001 through 2024, farmers received 100 percent of the water they'd contracted for (and paid for) only once, in 2005. And contrary to popular rhetoric, there has not been less rain. Annual statewide precipitation data in California since 1895 (when measuring began) does not show a downward trend. In fact, the driest year ever recorded in California was over a century ago in 1923.

So if it isn't worsening droughts that's costing farmers their fields and Angelenos their hillside homes, why isn't the California State Water Resources Board sending more water south through the California Aqueduct to irrigate fields and hydrate the Los Angeles Basin? It turns out, it's for the fish.

For the last 20 years, and with increasing severity, water allocations have been reduced in adherence to the theory that the more water is allowed to flow through the Sacramento-San Joaquin Delta and out to the ocean, the better the chances will be for endangered species of salmon and smelt to rebound and thrive. But there is no evidence this strategy is working. Sources familiar with the machinations of Sacramento's water bureaucrats have a more cynical explanation for the cuts: It's easy. When the director of the SWRCB instructs engineers to throttle down the pumps at the south end of the delta that supply water to the California Aqueduct, it requires nothing more than an email.

Actually helping the farmers and the fish requires hard work and hard choices. Efforts to replace habitat and develop more innovative hatchery programs cost money and take time. Often, even these projects invite litigation from environmentalist groups, and they are always burdened with layers of multi-agency bureaucracy which results in glacial rates of progress. And then there are the bass.

One of the biggest causes of salmon and smelt decline is the presence of alien predator fish. In 2013, the consulting firm FishBio, one of the most reputable sources of expert studies on the health of the delta, published an article called "The Delta: California's big bass lake." Bass were introduced to the delta in the 1870s and their population has exploded. Far hardier and more aggressive than salmon, these predators actually congregate around California's salmon hatcheries and wait for the fingerlings to be released. Salmon that survive this initial feeding frenzy must then navigate their way downstream through a gauntlet of non-native predators, with only an estimated 3 percent making it to the ocean. But the Sacramento-San Joaquin Delta is one of the best sport fishery destinations for bass in the world. It is not at all clear that both of these species can thrive in the same place, and today, the bass are winning. Until something is done about this, all the water in the world isn't going to help California's endangered salmon.

If there isn't enough water, there are too many trees. But the reason for these extremes is the same: a powerful environmentalist movement that wants to turn back the clock. Break the dams; release the river. Shut down the mills; save the trees. Less water for farmers; less board-feet from logging. At its peak in the 1950s, California's timber industry harvested 6 billion board-feet per year. Today that total is down

to 1.5 billion board-feet. At the same time, California's firefighters got very good at stamping out forest fires. Today, trees and undergrowth are so crowded that everything is stressed. Light, soil nutrients, and water are now being shared by anywhere between two and six times as many trees and plants as these ecosystems were naturally evolved to support. Observations of excessive tree density are corroborated by numerous studies, testimony, and investigations by journalists.

The fires in Los Angeles are tragic reminders of how the prevailing political consensus in California remains oriented to scarcity even though the policies pursuant to that are not helping anyone. Less water for farmers has not helped the salmon rebound. Fewer trees for the mills has harmed our forests. And this scarcity mentality has not spared housing, despite rhetoric acknowledging the shortage. Bureaucratic obstruction and a bewildering avalanche of regulations have attacked California's housing industry as thoroughly as they have attacked its farming and logging industries. But it's all to save the planet. In the case of housing, the danger is "sprawl."

The idea that there isn't enough space for California to expand its urban footprint is also a myth. California has the most concentrated urban centers in the United States. The average urban density is nearly 5,000 people per square mile, and only 5 percent of California's land is urbanized. As for "sprawl," if California's population was increased by 10 million people, and all of them lived, four per home, on quarter-acre lots, and an equal amount of space was reserved for roads, parks, schools, shopping centers, industrial parks, and the like, it would only consume 1,953 square miles. Which is to say that if California's population increased from 40 million to 50 million people, and the entire additional 10 million people lived in so-called sprawling suburbs, it would only increase California's urban footprint from 5 percent to 6.2 percent of the state's land area.

This fact does not impress California's ruling elite. Constructing the infrastructure to accommodate such growth is anathema to them, despite the fact that during the 1950s and 1960s these accomplishments were performed with ease. Instead, to save the planet, Californians must use existing infrastructure, consume the same amount of water, energy, and land as they did when the population was half the size it is today, and continue to live on this fixed allotment of amenities no matter how much more the population grows. Already a predictable procession of "urbanist" experts are coming forward to recommend higher-density zoning in the fire-ravaged areas, so that the developers who rebuild in these devastated neighborhoods – inevitably subsidized by taxpayers – can construct multi-family affordable housing.

Perhaps the choice Californians face will be clarified in the aftermath of these fires. They can continue down the path of rationing and scarcity, propping up special interests while raising the cost of living. Or they can embrace the politics of abundance in all of its shocking iterations: practical infrastructure investments instead of subsidized social experiments; responsible extraction of timber to restore healthy forests and bring down the cost of rebuilding material; tough and tedious habitat restoration and innovative hatchery projects to restore salmon and smelt populations while also sending more water to farms and cities; a California Department of Fish and Game that is willing to raise the limits on bass fishing; an explosion of homebuilding permits including on open land to allow private and unsubsidized developers to again be able to build homes people can afford while still making a profit.

Thanks to absurd building codes baked into state law, new homes have to have solar panels, interior fire sprinklers, and an EV charger circuit. The water heater, HVAC, and lighting all have to comply with ridiculously detailed requirements as set forth in California's "Single Family Residential Compliance

Manual,” courtesy of the California Energy Commission. Victims of this fire may expect construction costs to rebuild—not including permits and fees—to top \$500 per square foot.

No attempt to describe what’s happened to Angelenos displaced by these firestorms can ignore the insurance nightmare. California’s FAIR plan, set up after insurance companies started pulling out of California in response to regulators preventing them from charging rates sufficient to pay claims without going bankrupt, is itself on the brink of bankruptcy. According to a January 10 report in the *San Francisco Chronicle*, FAIR’s reserves are reportedly around \$385 million. Estimated damages now exceed \$250 billion.

When it comes to the hills surrounding Los Angeles, residents face another choice. They can retreat, pretending the lost neighborhoods are a casualty of climate change and giving them back to their rightful owners – mountain lions and mesquite and all the other accoutrements of chaparral ecology. Or they can embrace resilience and rebuild.

Imagine a renaissance of new construction, bringing new neighborhoods and culture to the famed canyons, from the Hollywood Hills and Bel Aire all the way to the Palisades. Imagine new homes in the hills required to have swimming pools with a minimum capacity of 20,000 gallons, hooked to roof sprinklers and a suction line in the deep end connected to a standpipe at the street to allow firefighters a guaranteed source of water. Imagine homes with non-combustible exteriors, windows with tempered glass, fire-resistant shingles and roof underlayment, and attics with ember-resistant vents and sprayed with fire-retardant coating. Homes like this, along with more aggressive brush management on adjacent open land, turn battles with the Santa Anas into a fair fight.

Los Angeles can not only adapt to resist the inevitable fires and minimize the damage in the future. It can improve the climate by encouraging lawns. What heresy! But lawns percolate runoff, transpire valuable moisture into the atmosphere, and reduce the urban heat island effect. Lawns can be the cornerstone of an abundant water policy that creates a well-hydrated urban landscape, increasing humidity and reducing the chances of fires. And when the fires come, all that lawn watering overcapacity is in place and ready.

The final piece in this puzzle is reimagining firefighting. Los Angeles and the surrounding cities should procure and test not only systems to remotely detect small fires before they become big fires, but also next-generation technologies such as firefighting drones and autonomous robots designed to march into canyons to cut and remove brush.

Ultimately, how this tragedy happened and who is to blame is far less important than what to do about it from now on. The hazards were known, as are the solutions. Political mismanagement is at the heart of the problem, and perhaps at last, California’s voters will hold their politicians accountable.

This article was originally published by National Review.



Governor Newsom issues executive order to help California capture and store more water from upcoming severe storms; Conservation groups respond

January 31, 2025 12648

From the Office of the Governor:



In anticipation of a multi-day, significant atmospheric river in Northern California, Governor Gavin Newsom today issued an executive order that would make it easier to divert and store excess water from incoming winter storms. The Governor signed the order after he received a briefing on the latest forecast for the storm.

The executive order also directs the Department of Water Resources and other state agencies to take action to maximize diversion of those excess flows to boost the state's water storage in Northern California, including storage in San Luis Reservoir south of the Sacramento-San Joaquin Delta. These actions will help California replenish above-ground and groundwater storage that remains depleted in many parts of the state following multi-year droughts.

"It is more important than ever that we maximize every opportunity to recharge our groundwater supplies. As we anticipate rain and snow in Northern California, we are also preparing to use every last drop to boost our water supply for communities and farms throughout the state. By storing these stormwaters, we are creating a literal rainy day fund to help us recover from a multi-year drought and prepare for our hotter, drier future," said Governor Newsom.

The National Weather Service is forecasting a moderate to strong atmospheric river to begin Friday and continue into next week. Prolonged periods of rain and mountain snow are expected, with the potential for flash flooding and rising creeks, rivers, and streams.

Recent above-average water years in 2023 and 2024 helped replenish the state's reservoirs, but multi-year drought conditions continue to have significant impacts on communities with vulnerable water supplies, agriculture, and the environment. The latest science indicates that hotter and drier weather conditions could reduce California's water supply by up to 10% by the year 2040. The frequency of extreme weather, including wildfires, in California demonstrates the need to continually adapt to promote resiliency in a changing climate. And today, the Department of Water Resources conducted the second snow survey of the season, which showed a snowpack well below average.

Governor Newsom is taking action now to ready the state and maximize the use of anticipated stormwater flows to help continue to boost the state water supply. Today's executive order:

Makes it easier for local and regional agencies to use existing state laws to maximize groundwater recharge. This builds on the Governor's 2023 executive orders to support groundwater-recharge efforts in the context of that year's unusually strong winter storms, as well as subsequent legislation codifying those efforts in state law.

Ensures the Department of Water Resources and other state agencies are taking full advantage of upcoming winter storms. Although reservoirs in Southern regions remain at historic capacity levels, this action allows for more water to be stored in other reservoirs statewide and helps replenish aquifers for water use.

More groundwater, more water storage

California has invested more than \$9 billion to boost California's water supplies over the past three years, taking aggressive action to prepare for the impacts of climate-driven extremes in weather on the state's water supplies. In 2024, for the first time since 2019, California's groundwater storage increased – a direct result of state and local actions to capture and store more water underground during last year's historic wet season.

Today's announcement continues the effective work of prior years. Since 2019, the Governor has allocated \$1.6 billion for flood preparedness and response, part of the historic \$7.3 billion investment package and to strengthen California's water resilience. During previous wet seasons, Governor Gavin Newsom and the state have taken strong action to help local communities, expanding groundwater recharge by 1.6 million acre-feet through:

Executive orders and legislation to capture more water. Governor Newsom signed executive orders to expand groundwater recharge by 400,000 acre-feet, as well as signing legislation to build more infrastructure.

Fast-tracking groundwater recharge projects. The state streamlined groundwater recharge permits to allow for 1.2 million acre-feet of groundwater recharge, as well as investing in groundwater recharge projects.

Maximizing stormwater capture. Investing millions for 67 stormwater projects to take advantage of major storm events.

Ambitious goals. Setting the statewide goal to expand average annual groundwater recharge by at least 500,000 acre-feet as outlined in the Water Supply Strategy.

Modernizing infrastructure. The state is advancing new projects to protect communities in the face of extreme droughts and floods. This includes the Sites Reservoir project, which will capture water during wet seasons and store it for use during drier seasons – holding up to 1.5 million acre-feet of water, as much as 3 million households' yearly usage, and the Delta Conveyance Project, which will help protect water access, improve the capture and movement of water, and provide access to clean drinking water for 27 million Californians. Find more critical water infrastructure projects at build.ca.gov.

Launching new data and innovative tools for tracking recharge action. The state has conducted 16,000 miles of geophysical surveys and developed new models and dashboards to deliver up-to-date data on California's groundwater basins. These resources help local communities better understand their aquifer

systems, identify fast paths for recharge, and support both local and statewide groundwater management efforts.

Preparing the state for storms

Governor Newsom is deploying resources and thousands of personnel to communities throughout Northern California in anticipation of the storm system.

Newly deployed resources include swift water rescue crews and fire engines in El Dorado County and Nevada County, as well as fire engines in Glenn County, added overnight. More resources will be deployed to further help protect communities.

Yesterday, Governor Newsom directed the Governor's Office of Emergency Services (Cal OES) to coordinate state and local partners to deploy emergency resources to support impacted communities. State officials are urging people to take precautions now before the storm arrives, and to stay informed.

Go to ready.ca.gov for tips to prepare for the incoming storm.

ACWA issues statement in support ...

The Association of California Water Agencies (ACWA) issued the following statement from ACWA President Cathy Green regarding Executive Order N-16-25 issued today by Gov. Gavin Newsom:

"ACWA applauds the governor for his swift action to empower California water managers to blunt the destructive impact of flooding while quickly diverting excess water to recharge groundwater supplies. This Executive Order highlights the critical need for modernizing our water infrastructure along with our permitting process to better reflect the state's ability to remain flexible in the face of climate change."

DWR: Snowpack dips well below average in second snow survey of the season

mavensnotebook.com/2025/01/31/dwr-snowpack-dips-well-below-average-in-second-snow-survey-of-the-season/

Department of Water Resources (DWR) Agency News January 31, 2025 376

January 31, 2025



Extremely dry conditions in January put dent in early season start, big regional differences remaining

From the Department of Water Resources:

The Department of Water Resources (DWR) today conducted the second snow survey of the season at Phillips Station. The manual survey recorded 22.5 inches of snow depth and a snow water equivalent of 8 inches, which is 46 percent of average for this location. The snow water equivalent measures the amount of water contained in the snowpack and is a key component of DWR's water supply forecast. Statewide, the snowpack is 65 percent of average for this date.

On January 1, the statewide snowpack was 108 percent of average after a series of large storms in November and December boosted snow totals in the Northern Sierra, but significant regional differences kept the Central Sierra just below average and the Southern Sierra well below average. An excessively dry January has pushed the Northern Sierra back to near average, the Central Sierra to 58 percent of average, and has led the Southern Sierra Nevada to fall to under 50 percent of average.

Measuring California's snowpack is a key component that guides how California's water supplies are managed. The data and measurements collected help inform water supply and snowmelt runoff forecasts, known as Bulletin 120, that help water managers plan for how much water will eventually reach state reservoirs in the spring and summer. This information is also a key piece in calculating State Water Project allocation forecasts each month.

Despite some recent rain, Southern California is still well below average for yearly precipitation. To prepare for any weather the region may see the rest of the season, DWR has deployed over 30 Watershed Protection Specialists to assist with the Watershed and Debris Flow Task Force organized by the California Office of Emergency Services (CalOES). Members of this task force, including DWR, CalOES, CAL FIRE and over 400 members of the California Conservation Corps, have been working around the clock to protect watersheds around burn scars, place materials to mitigate the risk of debris flows and ensure regional infrastructure including debris flow basins are prepared for incoming storm activity.

On average, California's snowpack supplies about 30 percent of California's water needs. Its natural ability to store water is why California's snowpack is often referred to as California's "frozen reservoir." Data from these snow surveys and forecasts produced by DWR's Snow Surveys and Water Supply Forecasting Unit are important factors in determining how DWR manages the state's water resources.

DWR conducts four or five media-oriented snow surveys at Phillips Station each winter near the first of each month, January through April and, if necessary, May. The next survey is tentatively scheduled for February 28.

For California's current hydrological conditions, visit <https://cww.water.ca.gov>

SIGN UP
for daily email service



The latest water news by around 9am
Breaking news alerts too!

© 2013-2024 Maven's Notebook, et al. All Rights Reserved.

SJV WATER: Trump's emergency water order responsible for water dump from Tulare County lakes



mavensnotebook.com/2025/02/01/sjv-water-trumps-emergency-water-order-responsible-for-water-dump-from-tulare-county-lakes/

SJV Water News February 1, 2025 3343February 1, 2025



By Lois Henry, SJV Water



The sudden announcement Thursday by the U.S. Army Corps of Engineers that Kaweah and Success lakes would immediately begin dumping water was in response to President Trump's Jan. 24 executive order mandating that federal officials exert all efforts to get more water to fight southern California wildfires, the Army Corps confirmed Friday.

"Consistent with the direction in the [Executive Order](#) on Emergency Measures to Provide Water Resources in California, the U.S. Army Corps of Engineers is releasing water from Terminus Dam at Lake Kaweah and Schafer Dam at Success Lake to ensure California has water available to respond to the wildfires," wrote Gene Pawlik, a supervising public affairs specialist in the Army Corps' Washington, D.C. office.

Indeed, President Trump boasted about the releases on his X page Friday posting a photo of a river and writing: "Photo of beautiful water flow that I just opened in California. Today, 1.6 billion gallons and, in 3 days, it will be 5.2 billion gallons. Everybody should be happy about this long fought Victory! I only wish they listened to me six years ago – There would have been no fire!"



Donald J. Trump 
@realDonaldTrump

...

Photo of beautiful water flow that I just opened in California. Today, 1.6 billion gallons and, in 3 days, it will be 5.2 billion gallons. Everybody should be happy about this long fought Victory! I only wish they listened to me six years ago – There would have been no fire!



Tulare County water managers were perplexed and frustrated, noting both physical and legal barriers that make it virtually impossible for Tulare County river water to be used for southern California fires.

First, it would have to be pumped at great expense across the San Joaquin Valley to get to the California Aqueduct and then travel hundreds of miles south.

Second, this isn't "loose" water free for the taking.

"Every drop belongs to someone," said Kaweah River Watermaster Victor Hernandez. "The reservoir may belong to the federal government, but the water is ours. If someone's playing political games with this water, it's wrong."

It was [no game on Thursday](#) when area water managers were given about an hour's notice that the Army Corps planned to release water up to "channel capacity," the top amount rivers can handle, immediately.

The Army Corps later agreed to more measured releases, alleviating a mad scramble to alert first responders and have crews on standby in case river banks were breached and levees overtopped, as happened during the 2023 floods.

"This decision was clearly made by someone with no understanding of the system or the impacts that come from knee-jerk political actions."

Dan Vink, longtime Tulare County water manager

[Flows in the Tule River](#) went from 55 cubic feet per second Thursday to a high of 987 cfs and dropped to 798 cfs by Friday afternoon. [Kaweah flows](#) went from 5 cfs to 1,545 cfs.

That's where flows are expected to stay, according to Tulare Irrigation District Aaron Fukuda.

How long those flows will last is another question left unanswered by the Army Corps.

The releases are from excess water that downstream districts are allowed to hold in reservoirs to hedge against dry years.

The Army Corps requires its reservoirs to be drawn down in fall to keep "flood control capacity," or space, available in anticipation of winter storms and spring snow melt.

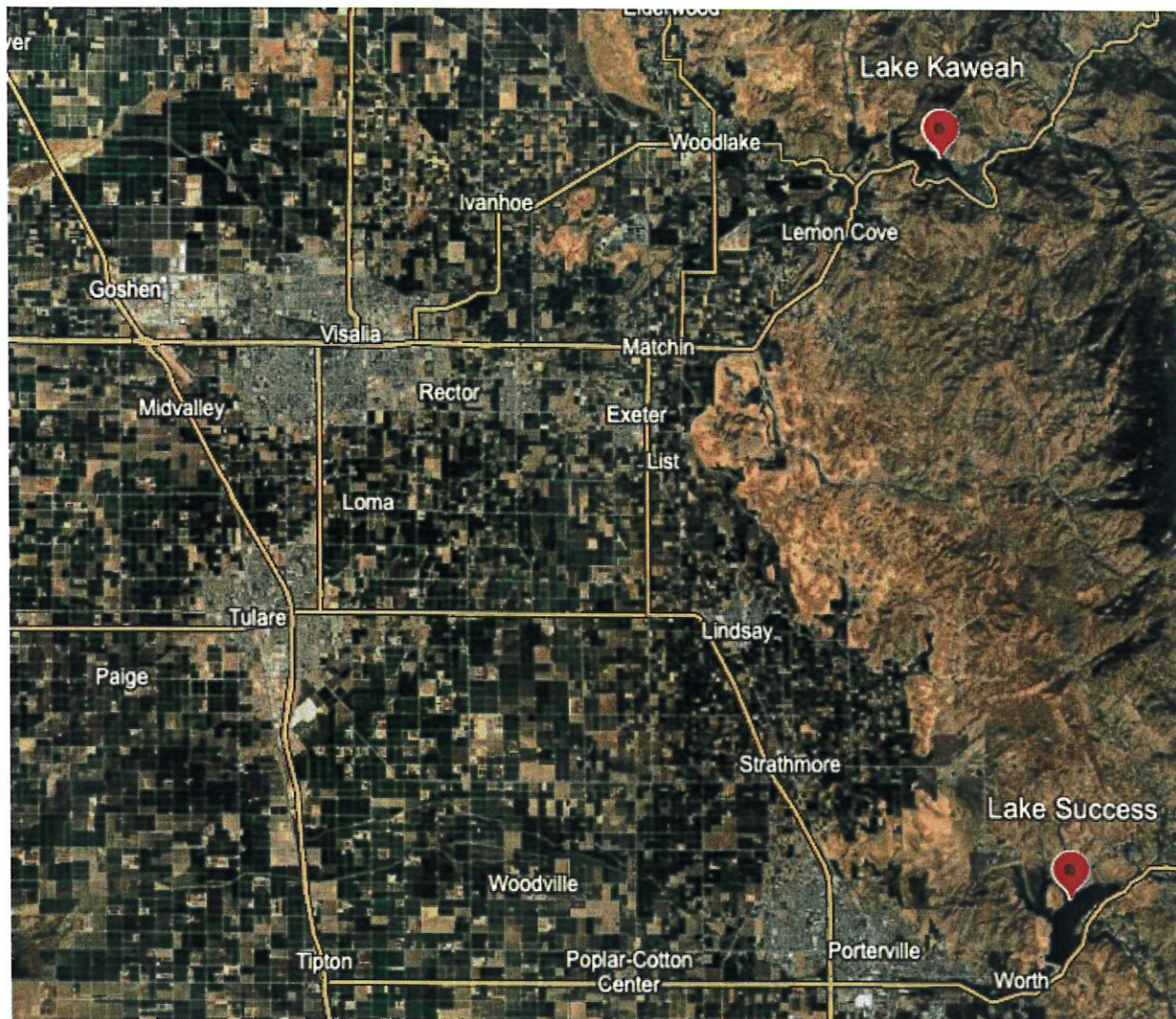
Typically, however, ag users can negotiate to hold a little extra water in the lakes, or "encroach" on that flood control capacity, depending on weather forecasts, climate models and snow surveys.

The winter flood control capacity limit for Lake Kaweah is 12,000 acre feet and it was holding about 39,000 acre feet Thursday morning, according to Hernandez.

He said that under the sort of dry conditions now being experienced in the region, Army Corps guidelines allow the lake to go up to 72,000 acre feet.

"We just had a snow survey 10 days ago that showed very little snow coverage, about 45,000 acre feet, and were talking almost daily with the Corps watching forecasts for these new storms that are expected to get us about an inch," Hernandez said. "There was no risk of flood at this point."

He was still stunned by the call he got Thursday ordering Kaweah to evacuate 27,000 acre feet immediately. Success was ordered to dump 4,923 acre feet to bring it down to 12,295 acre feet.



The Army Corps did not respond to questions about whether it will keep all its California reservoirs at flood control capacity going into the future. If so, that could have a major impact on how much is available for irrigation.

“A decision to take summer water from local farmers and dump it out of these reservoirs shows a complete lack of understanding of how the system works and sets a very dangerous precedent,” said Dan Vink, a longtime Tulare County water manager and principal partner at Six-33 Solutions, a water and natural resource firm in Visalia.

“This decision was clearly made by someone with no understanding of the system or the impacts that come from knee-jerk political actions.”

CORRESPONDENCE



HUMBOLDT BAY MUNICIPAL WATER DISTRICT

828 Seventh Street • Eureka, California 95501-1114
PO Box 95 • Eureka, California 95502-0095
Office 707-443-5018 Essex 707-822-2918
Fax 707-443-5731 707-822-8245
EMAIL OFFICE@HBMWD.COM
Website: www.hbmwd.com

BOARD OF DIRECTORS

MICHELLE FULLER, PRESIDENT
DAVID LINDBERG, VICE PRESIDENT
J. BRUCE RUPP, SECRETARY-TREASURER
SHERI WOO, DIRECTOR
TOM WHEELER, DIRECTOR

GENERAL MANAGER

JOHN FRIEDENBACH

January 3, 2025

Tina Bartlett
California Department of Fish and Wildlife
Northern Region
601 Locust Street
Redding, CA 96001

Long-Term Lake and Streambed Alteration Agreement (LTSAA) No. R1-2010-0093 Annual Report for 2024

Dear Ms. Bartlett:

In accordance with *Section 7.1 Yearly Reporting* of our LTSAA, we are providing our thirteenth annual report. Section 7.1 states that the District shall provide a copy of the District's HCP annual report for the preceding calendar year by February 28th. The report summary shall include maintenance activities and diversion records under the LTSAA for the previous year. The District shall report the amount and species of fish that were killed, entrained, rescued, stranded, and/or impinged by operations. The District respectfully submits our annual report under our LTSAA for your consideration and review.

Attached is a copy of our 2024 calendar year annual report under our HCP. The District has not done any activities in the river beyond October 1, 2024.

The District's maintenance activities are summarized and described on pages one through four of the HCP report. During 2024, there was no take of any listed species while performing the activities outlined in the HCP report.

The District's diversion records for water year 2024 are included with the 2024 HCP annual report and are hereby incorporated into this LTSAA report.

If you have any questions or need any additional information, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink that reads "John Friedenbach".
John Friedenbach
General Manager

Enclosure

cc: Monty Larson, DFW w/ encls
Dale Davidsen and Ryan Chalrez, HBMWD w/o encls.

NOTICE OF COURT ORDER

You are hereby advised that a temporary restraining order has been entered in the case of *New York et al. v. Trump*, No. 25-cv-39-JJM-PAS (D.R.I.), ECF No. 50 (Jan. 31, 2025). You are receiving this Notice pursuant to the Court's directive that notice of the order be provided "to all Defendants and agencies and their employees, contractors, and grantees by Monday, February 3, 2025, at 9 a.m." A copy of the Court's Order is attached for reference.

This case challenges an alleged "pause" of certain Federal financial assistance, related to OMB Memorandum M-25-13, *Temporary Pause of Agency Grant, Loan, and Other Financial Assistance Programs* (Jan. 27, 2025) ("OMB Memo"). Although that OMB Memo was rescinded on January 29, 2025, the plaintiffs in the above-referenced case allege that the funding pause directed by the OMB Memo is still in effect, including because of recently issued Executive Orders by the President.

In response, the Court has entered a temporary restraining order prohibiting certain actions by the Defendants in the case, which is effective immediately. All Defendants—including their employees, contractors, and grantees—must immediately comply with the Court's Order. For complete details and terms of the Court's Order, please refer to pages 11 and 12 of the enclosed Order.

To assist in your compliance, here is a summary of the key terms:

1. **Federal agencies cannot pause, freeze, impede, block, cancel, or terminate any awards or obligations on the basis of the OMB Memo, or on the basis of the President's recently issued Executive Orders.**
2. **This prohibition applies to all awards or obligations—not just those involving the Plaintiff States in the above-referenced case—and also applies to future assistance (not just current or existing awards or obligations).**
3. **Agencies may exercise their own authority to pause awards or obligations, provided agencies do so purely based on their own discretion—not as a result of the OMB Memo or the President's Executive Orders—and provided the pause complies with all notice and procedural requirements in the award, agreement, or other instrument relating to such a pause.**
 - a. On pages 11 and 12 of the Order, the Court prohibits agencies from pausing funding "except on the basis of the applicable authorizing statutes, regulations, and terms." Thus, agencies remain free to exercise their own discretion under their "authorizing statutes, regulations, and terms," including any exercise of discretion to pause certain funding. Additionally, agencies remain free to take action pursuant to the terms of the relevant award or obligation, such as in cases of grantee noncompliance.
 - b. Any exercise of agency discretion, however, cannot be based on the OMB Memo or the President's Executive Orders, given that the Court has prohibited agencies from "implementing or giving effect to the OMB [Memo] under any other name

or title[.]” (Order, pg.12). Additionally, any decision to pause, stop, delay, or otherwise withhold federal financial assistance programs must comply with all notice and procedural requirements in the award, agreement, or other instrument setting forth the terms of the award or obligation.

- 4. Out of an abundance of caution, all federal agencies (even those not named as defendants in the case) should comply with the above-referenced terms.**

As the Court’s Order reflects, the above terms are temporary as litigation in the case is ongoing. At present, however, the Court’s Order is in effect and must be complied with.

If you have any questions about the scope or effect of the Court’s Order, please contact your agency’s Office of General Counsel or your grant officer, as appropriate. Thank you for your attention to this matter.

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF RHODE ISLAND**

STATE OF NEW YORK; STATE OF
CALIFORNIA; STATE OF ILLINOIS;
STATE OF RHODE ISLAND; STATE OF
NEW JERSEY; COMMONWEALTH OF
MASSACHUSETTS; STATE OF
ARIZONA; STATE OF COLORADO;
STATE OF CONNECTICUT; STATE OF
DELAWARE; THE DISTRICT OF
COLUMBIA; STATE OF HAWAII;
STATE OF MAINE; STATE OF
MARYLAND; STATE OF MICHIGAN;
STATE OF MINNESOTA; STATE OF
NEVADA; STATE OF NORTH
CAROLINA; STATE OF NEW MEXICO;
STATE OF OREGON; STATE OF
VERMONT; STATE OF WASHINGTON;
and STATE OF WISCONSIN,

Plaintiffs,

v.

C.A. No. 25-cv-39-JJM-PAS

DONALD TRUMP, *in his Official
Capacity as President of the United
States*; U.S. OFFICE OF
MANAGEMENT AND BUDGET;
MATTHEW J. VAETH, *in his Official
Capacity as Acting Director of the U.S.
Office of Management and Budget*; U.S.
DEPARTMENT OF THE TREASURY;
SCOTT BESSENT, *in his Official
Capacity as Secretary of the Treasury*;
PATRICIA COLLINS, *in her Official
Capacity as Treasurer of the U.S.*; U.S.
DEPARTMENT OF HEALTH AND
HUMAN SERVICES; DOROTHY A.
FINK, M.D., *in her Official Capacity As
Acting Secretary Of Health And Human
Services*; U.S. DEPARTMENT OF
EDUCATION; DENISE CARTER, *in her
Official Capacity as Acting Secretary of
Education*; U.S. FEDERAL
EMERGENCY MANAGEMENT
AGENCY; CAMERON HAMILTON, *in*

his Official Capacity as Acting)
Administrator of the U.S. Federal)
Emergency Management Agency; U.S.)
 DEPARTMENT OF)
 TRANSPORTATION;)
 JUDITH KALETA, *in her Official*)
Capacity as Acting Secretary of)
Transportation; U.S. DEPARTMENT OF)
 LABOR; VINCE MICONE, *in his Official*)
Capacity as Acting Secretary of Labor;)
 U.S. DEPARTMENT OF ENERGY;)
 INGRID KOLB, *in her Official Capacity*)
as Acting Secretary of the U.S.)
Department of Energy; U.S.)
 ENVIRONMENTAL PROTECTION)
 AGENCY; JAMES PAYNE, *in his Official*)
Capacity as Acting Administrator of the)
U.S. Environmental Protection Agency;)
 U.S. DEPARTMENT OF HOMELAND)
 SECURITY; KRISTI NOEM, *in her*)
Capacity as Secretary of the U.S.)
Department of Homeland Security; U.S.)
 DEPARTMENT OF JUSTICE; JAMES R.)
 McHENRY III, *in his Official Capacity as*)
Acting Attorney General of the U.S.)
Department of Justice; THE NATIONAL)
 SCIENCE FOUNDATION; and DR.)
 SETHURAMAN PANCHANATHAN, *in*)
his Capacity as Director of the National)
Science Foundation,)

 Defendants.)

TEMPORARY RESTRAINING ORDER

The legal standard for a Temporary Restraining Order (“TRO”) mirrors that of a preliminary injunction. The Plaintiff States must show that weighing these four factors favors granting a TRO:

1. likelihood of success on the merits;
2. potential for irreparable injury;
3. balance of the relevant equities; and

4. effect on the public interest if the Court grants or denies the TRO.

Planned Parenthood League v. Bellotti, 641 F.2d 1006, 1009 (1st Cir. 1981). The traditional equity doctrine that preliminary injunctive relief is an extraordinary and drastic remedy that is never awarded as of right guides the Court. *Id.* The Court is also fully aware of the judiciary's role as one of the three independent branches of government, and that the doctrine of separation of powers restricts its reach into the Executive Branch. The Court now turns to the four factors.

Likelihood of Success on the Merits

We begin with what courts have called a key factor—a consideration of the movant's likelihood of success on the merits.

In **Count I**, the States allege that the Executive's actions by the Office of Management and Budget ("OMB")¹ violate the Administrative Procedure Act ("APA")² because Congress has not delegated any unilateral authority to the Executive to indefinitely pause all federal financial assistance without considering the statutory and contractual terms governing these billions of dollars of grants.

In **Count II**, the States allege that the Executive's actions violate the APA because the failure to spend funds appropriated by Congress is arbitrary and capricious in multiple respects.

¹ See *supra* for discussion of mootness.

² 5 U.S.C. § 551 et seq.

In Count III, the States allege that the failure to spend funds appropriated by Congress violates the separation of powers because the Executive has overridden Congress' judgments by refusing to disburse already-allocated funding for many federal grant programs.

In Count IV, the States allege a violation of the Spending Clause of the U.S. Constitution. U.S. Const. art. I, § 8, cl. law 1.

And in Count V, the States allege a violation of the presentment (U.S. Const. art. I, § 7, cl. 2), appropriations (U.S. Const. art. I, § 7), and take care clauses (U.S. Const. art. II, § 3, cl. 3) (the Executive must "take care that the laws be faithfully executed . . .").

Because of the breadth and ambiguity of the "pause," the Court must consider the States' TRO motion today based on the effect it will have on many—but perhaps not all—grants and programs it is intended to cover. Are there some aspects of the pause that might be legal and appropriate constitutionally for the Executive to take? The Court imagines there are, but it is equally sure that there are many instances in the Executive Orders' wide-ranging, all-encompassing, and ambiguous "pause" of critical funding that are not. The Court must act in these early stages of the litigation under the "worst case scenario" because the breadth and ambiguity of the Executive's action makes it impossible to do otherwise.

The Court finds that, based on the evidence before it now, some of which is set forth below, the States are likely to succeed on the merits of some, if not all, their claims. The reasons are as follows:

- The Executive's action unilaterally suspends the payment of federal funds to the States and others simply by choosing to do so, no matter the authorizing or appropriating statute, the regulatory regime, or the terms of the grant itself. The Executive cites no legal authority allowing it to do so; indeed, no federal law would authorize the Executive's unilateral action here.
- Congress has instructed the Executive to provide funding to States based on stated statutory factors—for example, population or the expenditure of qualifying State funds. By trying to impose certain conditions on this funding, the Executive has acted contrary to law and in violation of the APA.
- The Executive Orders threaten the States' ability to conduct essential activities and gave the States and others less than 24 hours' notice of this arbitrary pause, preventing them from making other plans or strategizing how they would continue to function without these promised funds.
- Congress appropriated many of these funds, and the Executive's refusal to disburse them is contrary to congressional intent and directive and thus arbitrary and capricious.
- Congress has not given the Executive limitless power to broadly and indefinitely pause all funds that it has expressly directed to specific recipients and purposes and therefore the Executive's actions violate the separation of powers.

Judge Bruce M. Selya of the First Circuit succinctly set out the black letter law about appropriated funds and Executive powers:

When an executive agency administers a federal statute, the agency's power to act is "authoritatively prescribed by Congress." *City of Arlington v. FCC*, 569 U.S. 290, 297, 133 S. Ct. 1863, 185 L. Ed. 2d 941 (2013). It is no exaggeration to say that "an agency literally has no power to act ... unless and until Congress confers power upon it." *La. Pub. Serv. Comm'n v. FCC*, 476 U.S. 355, 374, 106 S. Ct. 1890, 90 L. Ed. 2d 369 (1986). Any action that an agency takes outside the bounds of its statutory authority is ultra vires, see *City of Arlington*, 569 U.S. at 297, 133 S. Ct. 1863, and violates the Administrative Procedure Act, see 5 U.S.C. § 706(2)(C).

City of Providence v. Barr, 954 F.3d 23, 31 (1st Cir. 2020).

The Executive's statement that the Executive Branch has a duty "to align Federal spending and action with the will of the American people *as expressed through Presidential priorities*," (ECF No. 48-1 at 11) (emphasis added) is a constitutionally flawed statement. The Executive Branch has a duty to align federal spending and action with the will of the people as *expressed through congressional appropriations*, not through "Presidential priorities." U.S. Const. art. II, § 3, cl. 3 (establishing that the Executive must "take care that the laws be faithfully executed . . ."). Federal law specifies how the Executive should act if it believes that appropriations are inconsistent with the President's priorities—it must ask Congress, not act unilaterally. The Impoundment Control Act of 1974 specifies that the President may ask that Congress rescind appropriated funds.³ Here, there is no evidence that the Executive has followed the law by notifying Congress and thereby effectuating a potentially legally permitted so-called "pause."

³ If both the Senate and the House of Representatives have not approved a rescission proposal (by passing legislation) within forty-five days of continuous session, any funds the Executive is withholding must be made available for obligation.

Justice Brett Kavanaugh wrote when he was on the D.C. Circuit:

Like the Commission here, a President sometimes has policy reasons (as distinct from constitutional reasons, *cf. infra* note 3) for wanting to spend less than the full amount appropriated by Congress for a particular project or program. But in those circumstances, even the President does not have unilateral authority to refuse to spend the funds. Instead, the President must propose the rescission of funds, and Congress then may decide whether to approve a rescission bill. *See* 2 U.S.C. § 683; *see also Train v. City of New York*, 420 U.S. 35, 95 S. Ct. 839, 43 L. Ed. 2d 1 (1975); Memorandum from William H. Rehnquist, Assistant Attorney General, Office of Legal Counsel, to Edward L. Morgan, Deputy Counsel to the President (Dec. 1, 1969), *reprinted in Executive Impoundment of Appropriated Funds: Hearings Before the Subcomm. on Separation of Powers of the S. Comm. on the Judiciary*, 92d Cong. 279, 282 (1971) (“With respect to the suggestion that the President has a constitutional power to decline to spend appropriated funds, we must conclude that existence of such a broad power is supported by neither reason nor precedent.”)

In re Aiken Cnty., 725 F.3d 255, 261, n.1 (D.C. Cir. 2013).

The Court finds that the record now before it substantiates the likelihood of a successful claim that the Executive’s actions violate the Constitution and statutes of the United States.

The Court now moves on to the remaining three injunction considerations.

Irreparable Harm

The States have put forth sufficient evidence at this stage that they will likely suffer severe and irreparable harm if the Court denies their request to enjoin enforcement of the funding pause.

- All the States rely on federal funds to provide and maintain vital programs and services and have introduced evidence that the withholding of federal funds

will cause severe disruption in their ability to administer such vital services—even if it is for a brief time.

- The States detail many examples of where the Executive’s overarching pause on funding that Congress has allocated will harm them and their citizens. These programs range from highway planning and construction, childcare, veteran nursing care funding, special education grants, and state health departments, who receive billions of dollars to run programs that maintain functional health systems. *See, e.g.*, ECF No. 3-1 at 56 (highway construction programs in Delaware), at 73 (childcare programs in Michigan), at 113 (veterans nursing care funding in Washington state), at 77 (special education programs in Minnesota), and at 100–01 (health care programs in New Mexico).
- The pause in federal funding will also hurt current disaster relief efforts. The States assert that the pause applies to federal actions directing federal financial assistance to North Carolina to address the damage inflicted by Hurricane Helene and to any Federal Emergency Management Agency grant money not yet disbursed, including key support for California’s ongoing response to the fires. ECF No. 1 ¶¶ 80–81.
- A January 28, 2025, email from Shannon Kelly, the Director of the National High Intensity Drug Case Trafficking Areas (HIDTA) program, who aids law enforcement in high drug-trafficking areas, shows that payments to state-based HIDTA programs have been paused, putting the public’s safety at risk. *Id.* ¶ 83.

The States have set forth facts showing that the Executive's abrupt "pause" in potentially trillions of dollars of federal funding will cause a ripple effect that would directly impact the States and other's ability to provide and administer vital services and relief to their citizens. Thus, the federal grants to States and others that are impounded through the Executive's pause in disbursement will cause irreparable harm.

And it is more than monetary harm that is at stake here. As Justice Anthony Kennedy reminds us, "Liberty is always at stake when one or more of the branches seek to transgress the separation of powers." *Clinton v. City of New York*, 524 U.S. 417, 449–50 (1998) (Kennedy, J. concurring)

Balance of the Equities and Public Interest

As the Court considers the final two factors, the record shows that the balance of equities weighs heavily in favor of granting the States' TRO.

- If the Defendants are prevented from enforcing the directive contained in the OMB Directive, they merely would have to disburse funds that Congress has appropriated to the States and others.
- On the other hand, if the Court denies the TRO, the funding that the States and others are presumably due under law is in an indefinite limbo—a hardship worsened by the fact that the States had less than 24 hours' notice to act in anticipation of the funding shortfall.
- The fact that the States have shown a likelihood of success on the merits strongly suggests that a TRO would serve the public interest. Moreover, the

public interest further favors a TRO because absent such an order, there is a substantial risk that the States and its citizens will face a significant disruption in health, education, and other public services that are integral to their daily lives due to this pause in federal funding.

The evidence in the record at this point shows that, despite the rescission of the OMB Directive, the Executive's decision to pause appropriated federal funds "remains in full force and effect." ECF No. 44.

Mootness

The Defendants now claim that this matter is moot because it rescinded the OMB Directive. But the evidence shows that the alleged rescission of the OMB Directive was in name-only and may have been issued simply to defeat the jurisdiction of the courts. The substantive effect of the directive carries on.

Messaging from the White House and agencies proves the point. At 2:04 EST, less than an hour before the Court's hearing on the States' motion on Wednesday, the Defendants filed a Notice saying, "OMB elected to rescind that challenged Memorandum. *See* OMB Mem. M-25-14, *Rescission of M-25-13* (Jan. 28, 2025) ('OMB Memorandum M-25-13 is rescinded.')." ECF No. 43. Yet about twenty minutes before the Defendants filed the Notice, the President's Press Secretary sent a statement via the X platform that said: "The President's [Executive Orders] EO's on federal funding remain in full force and effect and will be rigorously implemented." ECF No. 44. And then the following day (January 30, 2025 at 7:50 MST and again at 5:27 p.m. EST) after the so-called rescission, the Environmental Protection Agency, in an email to

federal grant recipients, said that the awarded money could not be disbursed while it worked “diligently to implement the [OMB] Memorandum, Temporary Pause of Agency Grant, Loan, and Other Financial Assistance Programs, to align Federal spending and action with the will of the American people as expressed through President Trump’s priorities. The agency is temporarily pausing all activities related to the obligation or disbursement of EPA Federal financial assistance at this time. EPA is continuing to work with OMB as they review processes, policies, and programs, as required by the memorandum.” ECF No. 48-1 at 6, 11.

Based on the Press Secretary’s unequivocal statement and the continued actions of Executive agencies, the Court finds that the policies in the OMB Directive that the States challenge here are still in full force and effect and thus the issues presented in the States’ TRO motion are not moot.

Conclusion

Consistent with the findings above, and to keep the status quo, the Court hereby ORDERS that a TEMPORARY RESTRAINING ORDER is entered in this case until this Court rules on the States’ forthcoming motion for a preliminary injunction, which the States shall file expeditiously.

During the pendency of the Temporary Restraining Order, Defendants shall not pause, freeze, impede, block, cancel, or terminate Defendants’ compliance with awards and obligations to provide federal financial assistance to the States, and Defendants shall not impede the States’ access to such awards and obligations, except on the basis of the applicable authorizing statutes, regulations, and terms.

If Defendants engage in the “identif[ication] and review” of federal financial assistance programs, as identified in the OMB Directive, such exercise shall not affect a pause, freeze, impediment, block, cancellation, or termination of Defendants’ compliance with such awards and obligations, except on the basis of the applicable authorizing statutes, regulations, and terms.

Defendants shall also be restrained and prohibited from reissuing, adopting, implementing, or otherwise giving effect to the OMB Directive under any other name or title or through any other Defendants (or agency supervised, administered, or controlled by any Defendant), such as the continued implementation identified by the White House Press Secretary’s statement of January 29, 2025. ECF No. 44.

Defendants’ attorneys shall provide written notice of this Order to all Defendants and agencies and their employees, contractors, and grantees by Monday, February 3, 2025, at 9 a.m. Defendants shall file a copy of the notice on the docket at the same time.

Defendants shall comply with all notice and procedural requirements in the award, agreement, or other instrument relating to decisions to stop, delay, or otherwise withhold federal financial assistance programs.

The TRO shall be in effect until further Order of this Court. A preliminary hearing, at which time the States will have to produce specific evidence in support of a preliminary injunction, will be set shortly at a day and time that is convenient to the parties and the Court.

IT IS SO ORDERED.

s/John J. McConnell, Jr.

John J. McConnell, Jr.
Chief Judge
United States District Court for the District of Rhode Island

January 31, 2025

CONTINUING BUSINESS

Humboldt Bay Municipal Water District Municipal Services Review and Sphere of Influence Update



Administrative Draft

January 2025



www.humboldtlafo.org

HUMBOLDT LOCAL AGENCY FORMATION COMMISSION

Commissioners:

Michelle Bushnell, District 2 Supervisor

Steve Madrone, District 5 Supervisor

Meredith Matthews, City of Arcata

Cheryl Kelly, City of Trinidad

Troy Nicolini, Peninsula Community Services District

Heidi Benzonelli, Humboldt Community Services District

Elaine Weinreb, Public Member

Alternate Members:

Mike Wilson, District 3 Supervisor

Debra Garnes, City of Rio Dell

David Couch, McKinleyville Community Services District

Gordon Johnson, Public Member

Staff:

Colette Santsche, AICP, Executive Officer

Krystle Heaney, AICP, LAFCo Analyst/Clerk

Sarah Wickman, Associate Planner

Amber Chung, Assistant Planner

Louis Choy, GIS Analyst

Acknowledgements:

LAFCo would like to thank the staff and board members of the Humboldt Bay Municipal Water District for their assistance during the preparation of this Municipal Services Review.

TABLE OF CONTENTS

1.0	MSR/SOI Background	1
1.1	Role and Responsibility of LAFCo.....	1
1.2	Purpose of Municipal Service Reviews	1
1.3	Purpose of Spheres of Influence	2
1.4	Disadvantaged Unincorporated Communities	3
2.0	Humboldt Bay Municipal Water District Background	4
2.1	Agency Overview	4
2.2	Formation and Development.....	5
2.3	Boundary and Sphere of Influence	7
2.4	Tribal Lands.....	9
2.5	Growth and Population.....	10
2.6	Disadvantaged Unincorporated Communities	10
2.7	Hazards	13
2.8	Climate Change	16
3.0	Municipal Services	1918
3.1	Water Services	1918
3.2	Electric Power Services	3028
3.3	Other Service Providers	3128
3.4	Shared Services	3229
4.0	Governance & Finance	3431
4.1	Governance.....	3431
4.2	Financial Overview.....	3633
5.0	MSR Determinations	3935
6.0	SOI Determinations	4237

List of Figures

Figure 1: Humboldt Bay Municipal Water District Boundary and SOI.....	8
Figure 2: Historic Legacy Communities and Communities with Annual Household Income <80% of Statewide Median.....	12
Figure 3: Ruth Lake Reservoir Seasonal Elevation and Capacity 2022-2024	<u>2019</u>
Figure 6: Water Diversion at John R. Winzler Operations and Control Center 2022-2024	<u>2120</u>

List of Tables

Table 1: HBMWD Contact Information.....	5
Table 2: HBMWD Wholesale Population – Current and Projected	10
Table 3: HBMWD Retail Water Rates July 2023.....	<u>2423</u>
Table 3: Wholesale Demands (2020 & 2023)	<u>2524</u>
Table 4: HBMWD Board of Directors	<u>3431</u>
Table 5: SB929 Website Posting Requirements.....	<u>3532</u>
Table 6: Annual Budget Summary	<u>3633</u>
Table 7: Audit Summary.....	<u>3734</u>
Table 8: Total Net Position Summary	<u>3734</u>

1.0 MSR/SOI BACKGROUND

1.1 Role and Responsibility of LAFCo

Local Agency Formation Commissions (LAFCos) are independent regulatory commissions that were established by the State legislature in 1963 to encourage the orderly growth and development of local governmental agencies including cities and special districts. Today, there is a LAFCo in each of California's 58 counties. Humboldt LAFCo is a seven-member commission comprised of two members of the Humboldt County Board of Supervisors, two City Council members, two Special District representatives, and one Public Member-At-Large. The Commission also includes one alternate member for each represented category.

LAFCo is responsible for implementing the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 ("CKH Act") (California Government Code Section 56000 et seq.) for purposes of facilitating changes in local governmental structure and boundaries that fosters orderly growth and development, promotes the efficient delivery of services, and encourages the preservation of open space and agricultural lands. Some of LAFCo's duties include regulating jurisdictional boundary changes and the extension of municipal services. This includes city and special district annexations, incorporations/formations, consolidations, and other changes of organization. LAFCo seeks to be proactive in raising awareness and building partnerships to accomplish this through its special studies, programs, and actions.

The CKH Act outlines requirements for preparing Municipal Service Reviews (MSRs) for periodic Sphere of Influence (SOI) updates. MSRs and SOIs are tools created to empower LAFCo to satisfy its legislative charge of "discouraging urban sprawl, preserving open space and prime agricultural lands, efficiently providing government services, and encouraging the orderly formation and development of local agencies based upon local conditions and circumstances" (§56301). CKH Act Section 56301 further establishes that "one of the objects of the commission is to make studies and to obtain and furnish information which will contribute to the logical and reasonable development of local agencies in each county and to shape the development of local agencies so as to advantageously provide for the present and future needs of each county and its communities." SOIs therefore guide both the near-term and long-term physical and economic growth and development of local agencies, and MSRs provide the relevant data to inform LAFCo's SOI determinations.

1.2 Purpose of Municipal Service Reviews

As described above, MSRs are designed to equip LAFCo with relevant information and data necessary for the Commission to make informed decisions on SOIs. The CKH Act, however, gives LAFCo broad discretion in deciding how to conduct MSRs, including geographic focus, scope of study, and the identification of alternatives for improving the efficiency, cost-effectiveness, accountability, and reliability of public services. The purpose of a MSR in general is to provide a comprehensive inventory and analysis of the services provided by local municipalities, service areas, and special districts. A MSR evaluates the structure and operation of the local municipalities, service areas, and special districts and discusses possible areas for improvement and coordination. While LAFCos have no direct regulatory authority over cities and special districts, MSRs provide information concerning the governance structures and efficiencies of service providers – and may also serve as the basis for subsequent LAFCo decisions. The MSR is intended to provide information and analysis to support a sphere of influence update. A written statement of the study's determinations must be made in the following areas:

- (1) Growth and population projections for the affected area
- (2) Location and characteristics of any disadvantaged unincorporated communities within or continuous to the sphere of influence
- (3) Present and planned capacity of public facilities, adequacy of public services, and infrastructure needs or deficiencies
- (4) Financial ability of the agency to provide services
- (5) Status of and opportunities for shared facilities
- (6) Accountability for community service needs, including governmental structure and operational efficiencies
- (7) Any other matter related to effective or efficient service delivery, as required by Commission policy

This MSR is organized according to these determinations listed above. Information regarding each of the above issue areas is provided in this document.

1.3 Purpose of Spheres of Influence

In 1972, LAFCos were given the power to establish SOIs for all local agencies under their jurisdiction. As defined by the CKH Act, "sphere of influence" means a plan for the probable physical boundaries and service area of a local agency, as determined by the commission" (§56076). All boundary changes, such as annexations, must be consistent with an agency's sphere of influence with limited exceptions.

Pursuant to Humboldt LAFCo policy, a MSR is conducted prior to or in conjunction with its mandate to review and update each local agency's sphere of influence every five years or as necessary. The municipal service review process is intended to inform the Commission as to the availability, capacity, and efficiency of local governmental services prior to making sphere of influence determinations.

LAFCo is required to make five written determinations when establishing, amending, or updating an SOI for any local agency that address the following (§56425(c)):

- (1) The present and planned land uses in the area, including agricultural and open space lands.
- (2) The present and probable need for public facilities and services in the area.
- (3) The present capacity of public facilities and adequacy of public services that the agency provides or is authorized to provide.
- (4) The existence of any social or economic communities of interest in the area if the Commission determines that they are relevant to the agency.
- (5) For an update of an SOI of a city or special district that provides public facilities or services related to sewers, municipal and industrial water, or structural fire protection, the present and probable need for those public facilities and services of any disadvantaged unincorporated communities within the existing sphere of influence.

Service reviews may also contain recommendations for sphere of influence or government structure changes needed to implement positive service changes. Where more detailed analysis of service options is necessary,

service reviews may contain recommendations for special studies where there is the potential to reduce service gaps and improve service levels.

1.4 Disadvantaged Unincorporated Communities

Senate Bill (SB) 244 (Chapter 513, Statutes of 2011) made changes to the CKH Act related to “disadvantaged unincorporated communities,” (DUCs) including the addition of SOI determination number (5) listed above. Humboldt LAFCo has adopted DUC policy, which identifies 31 inhabited unincorporated “legacy” communities, including several within HBMWD, for purposes of implementing SB 244.¹ These legacy communities were defined as part of the Humboldt County 2014 Housing Element for areas not located within the sphere of influence of a city. DUCs are recognized as social and economic communities of interest for purposes of recommending SOI determinations pursuant to Section 56425(c).

DUCs are evaluated for the present and probable need for three primary services: water, wastewater, and fire/emergency response. HBMWD currently provides wholesale services to local agency water service providers within the District and retail water services to limited areas within the District. The existing HBMWD SOI is coterminous with the District boundary, meaning that any DUCs within the SOI are also within the District and to the extent that such areas have a need for municipal water services, primary consideration should be given to the nearest local agency water service provider for service delivery. Should any nearby areas outside the HBMWD boundary be proposed for annexation, careful consideration should be given to the boundary location and nearby local agency water service providers in order to ensure potentially disadvantaged areas are receiving vital services.

¹ <https://www.arcgis.com/apps/View/index.html?appid=4319a8066745442cbe7de6af1d13f98a>

2.0 HUMBOLDT BAY MUNICIPAL WATER DISTRICT BACKGROUND

2.1 Agency Overview

The Humboldt Bay Municipal Water District (HBMWD or District) is an independent special district primarily located along the central coastline of Humboldt County, California. It lies along Highway 101 and 299 and includes ~~to~~ the county's most populous communities, including Eureka, Arcata and McKinleyville. Humboldt Bay lies within the traditional lands of the Wiyot people, with Yurok also having a presence in the surrounding area. The Wiyot refer to the bay as Wigi (pronounced "wee-ghee"), and the Mad River as Baduwa't, a term that holds significant cultural importance.

HBMWD is authorized to provide wholesale and retail water services. The mission of HBMWD is to "Reliably deliver high quality drinking water to the communities and customers we serve in the greater Humboldt Bay Area at a reasonable cost; reliably deliver untreated water to our wholesale industrial customer(s) at a reasonable cost; and protect the environment of the Mad River watershed to preserve water rights, water supply and water quality interests of the District".

District Goals include (list order is not indicative of relative importance):

- Safety and Public Health
 - Ensure worker and public safety by consistently employing safe work practices, striving for zero on-the-job reportable injuries each year.
 - Operate the regional water system in full compliance with state and federal safe drinking water laws and regulations to safeguard public health.
- Financial Responsibility
 - Conduct all operations cost-effectively to maintain the lowest possible rates for customers while meeting public health, service, and reliability objectives.
 - Strategically plan and budget for annual activities and projects, managing them in alignment with the approved budget.
- System Operation and Maintenance
 - Maintain and upgrade the regional water system to ensure it reliably meets the needs of all customers.
 - Utilize preventive maintenance practices to maximize infrastructure longevity while investing in upgrades and improvements when financially and operationally prudent.
- Customer Service
 - Understand and address the community's water supply needs effectively.
 - Foster collaborative relationships with wholesale customers to address commercial and operational matters critical to water supply and the regional system.
- Future Positioning
 - Develop a comprehensive long-term infrastructure plan, encompassing both capital projects and maintenance, to ensure the system can reliably serve the community for the next 60 years.
 - Protect the quality and quantity of the District's water resources by maintaining local control of water rights and safeguarding the watershed.

- o Attract, retain, and support qualified employees, emphasizing training, professional development, and empowerment to fulfill the District's objectives.
- o Collaborate with regulatory agencies to secure timely and cost-effective permits for operations and maintenance while promoting long-term regulatory stability and predictability.
- o Address climate change impacts by supporting initiatives that align with California's greenhouse gas reduction goals (AB 32), focusing on projects that reduce the District's emissions in line with its mission and core functions.

Table 1: HBMWD Contact Information

Contacts	Contessa Dickson, Executive Assistant/Board Secretary
E-mail	office@hbmwd.com
Address	828 Seventh Street Eureka, CA 95501
Phone	707-443-5018
Website	www.hbmwd.com

2.2 Formation and Development

HBMWD was formed on March 19, 1956, pursuant to the California Municipal Water District Act of 1911 (California Water Code §§ 71000–73001). HBMWD was established through a public initiative to create a reliable regional water supply to meet the growing demands of the Humboldt Bay area. At the time, the region's expanding communities and industrial sectors required a dependable water source for domestic, municipal, and industrial purposes. Recognizing this need, a public vote was held to form HBMWD as an independent special district, enabling it to secure funding for critical water infrastructure.

The development of the regional water system included three initial parts with construction lasting from 1960 to 1962. One of HBMWD's first major undertakings was the construction of the R.W. Matthews Dam on the Mad River, which created Ruth Lake in Trinity County, a vital reservoir for ~~the region's~~ HBMWD's water supply. HBMWD also built a diversion, pumping and control works on the Mad River at Essex (now known as the John R. Winzler Operations and Control Center) and a pipeline delivery system, establishing itself as a wholesale water supplier for nearby cities and community service districts. The pipeline system initially supplied water to the City of Arcata, the City of Eureka, and two pulp mills on the Samoa Peninsula. The original system infrastructure cost a total of \$13.8 million, which was financed through 40-year General Obligation bonds authorized by voters in 1956. These efforts establishing the District's water infrastructure created a sustainable water system that has been vital in fostering Humboldt County's growth, economic development, and long-term stability.

After the construction of Ruth Lake, HBMWD chose not to assume secondary recreational responsibilities and instead, on December 31, 1964, entered into a Master Lease Agreement with Trinity County to address these responsibilities. Upon formation of the Ruth Lake CSD in 1966, Trinity County transferred and assigned the Master Lease to Ruth Lake CSD. This Assignment of Lease agreement assigns and transfers to the Ruth Lake CSD "all of its right, title and interest in and to that certain lease" provided, however, that this assignment "shall not in any way operate to release [the County] from any of the terms, conditions or obligations of said lease". While the Master Lease was assigned to Ruth Lake CSD by Trinity County, the County remains responsible for compliance with the terms of the Master Lease. The original 39-year Master Lease agreement commenced on the first day

of June, 1964, and provides for six ten-year extensions for a total of 99 years. The Master Lease was extended in May 2023 for another ten years. The lease allows the [District Ruth Lake CSD](#) to maintain and operate boat launching facilities (the marina) and other recreational facilities including the camping and day-use areas. The Master Lease also allows the [District Ruth Lake CSD](#) to sublease parcels of land for recreational purposes to private individuals. Use of sublease parcels for permanent residential purposes is prohibited by the Master Lease agreement and District policy. While Ruth Lake CSD's primary focus is managing all the recreational aspects at Ruth Lake including sublease sites, the Marina and campgrounds, they also oversee small water systems, coordinate garbage pickup, and maintain onsite septic systems and outhouses at the marina and campground locations.

Over time, HBMWD expanded its infrastructure, welcoming additional wholesale customers and making numerous upgrades to improve efficiency and reliability.² These additions include:

- South Bay Water Extension (1970)
 - Extended the domestic water pipeline from Fairhaven along the Samoa Peninsula and installed an under_bay pipeline to serve the Humboldt Community Services District (CSD) [and the City of Eureka](#).
 - Cost: \$1.95 million (50% funded by an ~~EDA~~ [\(U.S. Economic Development Administration\) \(EDA\)](#) grant).
- Water Line Extensions to Blue Lake and Fieldbrook (1974)
 - Expanded the pipeline to serve the Fieldbrook [Glendale](#) Community Services District and the City of Blue Lake.
 - Cost: \$291,400.
- Industrial Direct Diversion – Pump Station 6 (1976)
 - Built to address insufficient water delivery capacity for pulp mills and ensure contractual obligations for industrial use.
 - Facility supplies 60 MGD and was completed in 1977.
 - Cost: \$5.7 million (50% funded by an EDA grant).
- Hydroelectric Plant (1983)
 - Constructed a hydroelectric facility below [R.W. Matthews](#) Dam at Ruth Lake to generate revenue from energy production.
 - Cost: \$3 million.
- Samoa Booster Pump Station (1996)
 - Installed on the Samoa Peninsula to stabilize delivery pressure and increase system capacity by 0.5 MGD.
 - Cost: \$391,000.
- Drinking Water Treatment Additions (1997–2003)
 - Addressed safe drinking water regulations and improved water quality.
- Contact Time (CT) Tank (1997): A 2 MG reservoir to meet enhanced disinfection requirements.
 - Cost: \$1.2 million.

² Further in-depth details on the development and evolution of the HBMWD regional water system can be found in the writings by the previous District Engineer, John Winzler, including his historical accounts "A History of Water Development and Service Within the Humboldt Bay Area (1955–1979)" (written in 1979) and "Water Rate Evaluation—Historical Evolution of District Facilities and Capital Expenditures" (written in 1984).

- Turbidity Reduction Facility (2003): Built to address high turbidity levels and ensure compliance with regulatory standards.
 - Cost: \$10.5 million (funded by a [State Revolving Fund \(SRF\)](#) zero-interest loan).
- Emergency Power Generator at Essex (2003)
 - Installed a 2-MW generator to ensure water supply reliability during power outages and reduce operational costs through energy programs.
 - Cost: \$787,000.

These additions have expanded the District's capacity, improved water quality, and enhanced system reliability, supporting the region's growing needs. Since its inception, HBMWD's regional water system has consistently met the municipal and industrial water needs of the Humboldt Bay region, playing a crucial role in its long-term sustainability and progress.

2.3 Boundary and Sphere of Influence

HBMWD's jurisdictional boundary covers the greater Humboldt Bay area and extends into Trinity County, encompassing a total service area of approximately 225,000 acres (350 square miles). Within Humboldt County, the District's boundaries extend from McKinleyville to the north, College of the Redwoods to the south, and the City of Blue Lake to the east as shown in Figure 1. It is important to note that Patrick Creek CSD, located north of McKinleyville CSD, receives HBMWD water through a service contract with MCSD. Within Trinity County, the HBMWD is the primary owner of more than 3,000 acres within Tax Rate Area (TRA) 066-00 that surrounds Ruth Lake (also shown in Figure 1). HBMWD's SOI encompasses all existing service areas and is coterminous to its jurisdictional boundary.

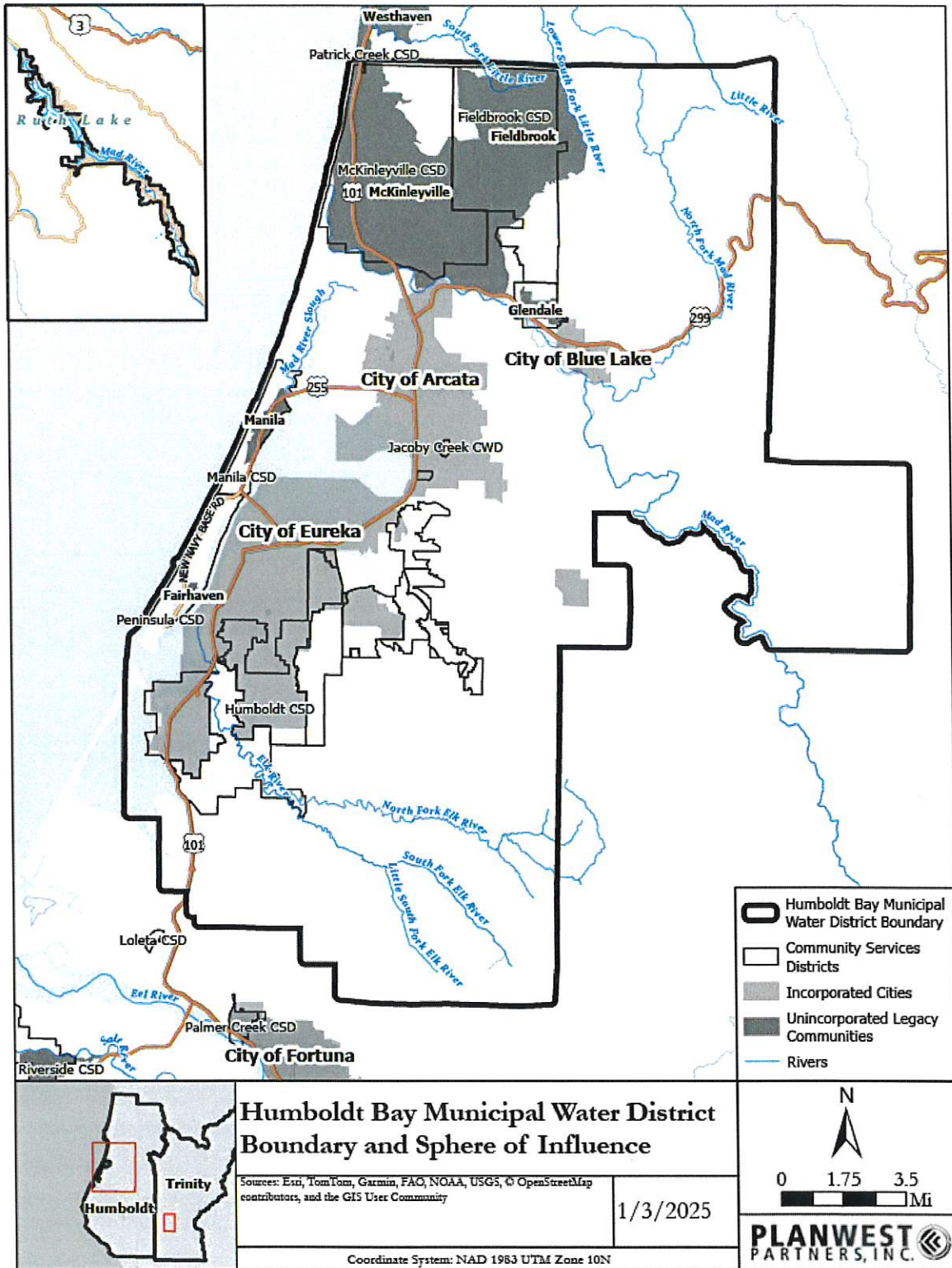


Figure 1: Humboldt Bay Municipal Water District Boundary and SOI. JOHN: isn't the Mad River connecting Ruth to the lower Mad also within our District boundary?

2.4 Tribal Lands

Humboldt Bay and the surrounding area serviced by HBMWD is located within the ancestral tribal lands of several Indigenous tribes in Northern California. The primary tribes whose traditional lands intersect with HBMWD's service area include:

- The Wiyot Tribe is a sovereign and federally recognized tribe with around 600 members.³ The Wiyot people are the original inhabitants of the Humboldt Bay region, referring to the bay as "Wigi- and the Mad River as Baduwa't". Their ancestral territory encompasses the area around Humboldt Bay, including present-day Eureka and Arcata. The Wiyot have a deep cultural and spiritual connection to this land, particularly to sites like Tuluwat Island within the bay and to Baduwa't.
- The Yurok Tribe is one of the largest sovereign and federally recognized tribes in California with over 5,000 enrolled members.⁴ The Yurok's traditional lands extend along the California coast, including areas north of Humboldt Bay. While their primary territory lies along the Klamath River, their influence and historical presence reach into parts of the HBMWD's operational area.
- The Blue Lake Rancheria is a sovereign federally recognized tribe consisting of members of several indigenous groups, including Wiyot, Yurok, and Hupa tribes as well as members linked to the Tolowa and Cherokee people. The Blue Lake Rancheria actively engages with HBMWD regarding water supply and have partnered on projects like the Mad River Temperature Monitoring Study, aiming to assess and enhance water quality in the Mad River watershed.
- The Trinidad Rancheria, is a sovereign federally recognized tribe consisting of members of several indigenous groups, including the Yurok, Wiyot, Tolowa, Chetco, Karuk, and Hupa peoples. The Cher-Ae Heights Indian Community of the Trinidad Rancheria is located north of Humboldt Bay. The Trinidad Rancheria lands are in proximity to the eDistrict's service region. The Trinidad Rancheria has ~~also~~ engaged in discussions with HBMWD regarding water supply to support their community and development projects.
- The Bear River Band of the Rohnerville Rancheria is a sovereign federally recognized tribe consisting of members of several indigenous groups, including Mattole, Bear River and Wiyot tribes. Although the Rancheria is located outside HBMWD's district boundary, they are consulted on HBMWD's construction projects located within the eDistrict's boundary and Wiyot ancestral lands.

Ruth Lake and the surrounding area, located in Trinity County, California, is situated within the ancestral territories of several Indigenous tribes which include:⁵

- Wailaki people, part of the Eel River Athapaskan linguistic group, traditionally inhabited areas along the Eel River and its tributaries, including regions encompassing Ruth Lake. Their territory extends into parts of present-day Trinity County, where Ruth Lake is located. Today, registered members of the Wailaki people can be found on the Grindstone Indian Rancheria of Wintun-Wailaki Indians in Elk Creek, California, as well as the Round Valley Reservation in Covelo, California.

³ <https://www.wiyot.us/>

⁴ <https://www.yuroktribe.org/>

⁵ <https://native-land.ca/maps/>

- Lassik people, also from the Eel River Athapascan linguistic group, are traditionally situated in the mountainous regions of Northern California, overlapping with areas around Ruth Lake.⁶
- Nongatl people, part of the Eel River Athapascan linguistic group as well, traditionally lived in regions that include parts of present-day Trinity County, with territories that would encompass the area around Ruth Lake.

2.5 Growth and Population

HBMWD utilized population data from the California Department of Finance (DOF) to estimate the population served within its service area. The DOF developed a database titled "Race/Ethnic Population with Age and Sex Detail, 2020-2070", containing population data for each California county, including projections from 2020 to 2070. From this database, Humboldt County's population projections through 2050 were used to estimate growth trends. The data showed an average annual growth rate of approximately 0.19% for Humboldt County from 2020 to 2050, alongside a notable population decline of 5% between 2019 and 2020.

To determine the District's service area population, census block population data and current boundaries for the District and applicable cities for 2020 were analyzed using Geographic Information System (GIS). This total population served was compared to Humboldt County's reported population according to the 2020 US Census. This analysis indicated that in 2020 the District's service area accounted for approximately 63.65% of Humboldt County's population. This percentage was then used to project the District's population through 2050 in 5-year increments, based on the DOF's countywide projections. These projections allow HBMWD to plan for long-term service needs aligned with regional demographic trends.

Table 2: HBMWD Wholesale Population – Current and Projected

Population Served	2020	2025	2030	2035	2040	2045	2050
	85,755*	84,735	85,228	85,855	86,477	87,587	88,855

Notes: *For 2020, Census block population data was used for cities and districts that are wholesale customers to HBMWD and an additional 478 customers were added to include the District's 200 retail water service connections with an average of 2.39 persons per household in Humboldt from 2019-2023.⁷ The District provides water to approximately 63.65% of the population of Humboldt County.

According to the California Department of Finance's 2024 projections, Humboldt County's population is expected to experience a gradual increase over the coming decades. The county's population is projected to increase from approximately 136,000 in 2020 to about 141,000 by 2050.⁸ According to the Census, the population was 134,623 in 2010, increased to 136,463 by 2020, and then declined to an estimated 133,985 by July 1, 2023.⁹ These figures indicate a slight overall decrease of approximately 0.5% from 2010 to 2023.

2.6 Disadvantaged Unincorporated Communities

As previously noted, Disadvantaged Unincorporated Communities (DUCs) are areas within California that are inhabited and have an annual median household income (MHI) less than 80% of the statewide MHI and have 12 or more registered voters. These communities often face challenges related to infrastructure and public services.

⁶ <https://native-land.ca/maps/>

⁷ <https://www.hbmwd.com/retail-water-services>

⁸ <https://dof.ca.gov/Forecasting/Demographics/projections/>

⁹ <https://www.census.gov/quickfacts/fact/table/humboldtcountycalifornia/PST045223>

Similarly, Humboldt County has identified "Unincorporated Legacy Communities"~~"ULCs"~~ (ULCs). In 2011, Senate Bill 244 (Wolk) amended the Government Code to require counties to identify the infrastructure and service needs of unincorporated legacy communities as part of their general plans during the next Housing Element update. Under SB 244, an unincorporated legacy community is defined as a community that meets the following criteria:

- Contains 10 or more dwelling units located in close proximity to one another;
- Is geographically isolated and has existed for more than 50 years; and
- Has a median household income that is 80% or less of the statewide median household income.

Within the HBMWD SOI/district boundary, several Legacy Communities have been identified. These communities include Fieldbrook, Manila, Samoa, Fairhaven, and McKinleyville as shown in Figure 1. However, as ~~these~~ most of the area of these communities are within the service areas of community services districts that receive wholesale water service from HBMWD, and ~~these~~ ~~these~~ agencies assume the responsibility for planning and operations relating to the unique needs and challenges of these ULCs to ensure equitable access to water services, HBMWD is not directly responsible for water distribution nor water rate setting within these jurisdictions. Manila receives water and sewer service from the Manila Community Services District; Fieldbrook ~~receives water service~~, and the Glendale ~~are~~ ~~receives~~ water and sewer service, from the Fieldbrook-Glendale Community Services District; and McKinleyville receives water and sewer services from the McKinleyville Community Services District, and each of these service providers receives wholesale water from HBMWD. HBMWD provides retail water service to Samoa, Fairhaven and Finntown within the Peninsula CSD. In 2017 Peninsula CSD received approval from LAFCo for its formation. Peninsula CSD's authorized services include: water; wastewater; fire protection; parks; recreation; trails; open space; landscape maintenance within public areas; streets and street maintenance; and storm drainage. In the 2017 Peninsula CSD formation resolution approved by LAFCo, HBMWD expressed its willingness to negotiate the transfer of its ownership of domestic water infrastructure within the boundaries of the Peninsula CSD. To date, Peninsula CSD has not formally approached HBMWD to accomplish this transfer of domestic water infrastructure including water rate setting responsibility.

HBMWD infrastructure currently extends to McKinleyville in the north and College of the Redwoods south. However, DUC's adjacent to HBMWD's SOI/jurisdictional boundary that are disadvantaged or with inadequate access to water have the potential of requesting connection to HBMWD for water ~~connection~~ or supplemental water service. It should be noted that there are local agencies who provide water service near these areas, such as the Loleta and Westhaven Community Services Districts which should be considered ~~which~~ ~~when~~ new water service is needed in DUC areas. Figure 2 shows communities and areas where the annual household income is less than 80% of the statewide median income north of HBMWD's jurisdiction to Big Lagoon and south to King Salmon.

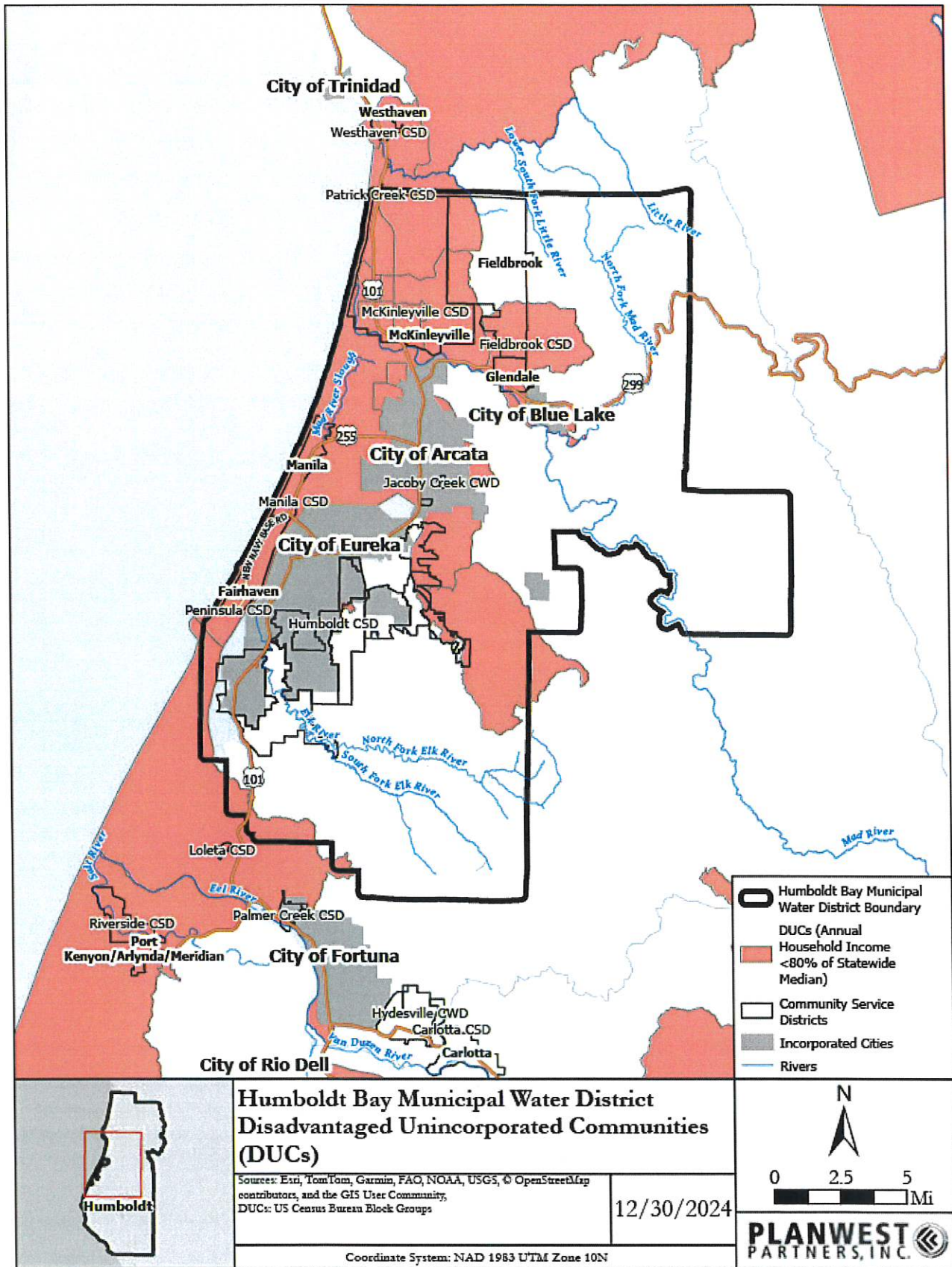


Figure 2: Historic Legacy Communities and Communities with Annual Household Income <80% of Statewide Median

2.7 Hazards

HBMWD participated in and met the participation requirements to be covered by the Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) for the Humboldt Operational Area, 2020.¹⁰ The Humboldt LHMP is a plan to identify and profile hazard conditions, analyze risk to people and facilities, and develop mitigation actions to reduce or eliminate hazard risks in Humboldt County and in incorporated jurisdictions within the County. Jurisdictions with FEMA-approved and formally adopted mitigation plans are eligible to apply for funding under FEMA's hazard mitigation assistance programs, including Hazard Mitigation Grant Program, Pre-Disaster Mitigation and Flood Mitigation Assistance grant programs. The LHMP incorporates a process where hazards are identified and profiled, the people and facilities at risk are analyzed, and mitigation actions are developed to reduce or eliminate hazard risk. The implementation of these mitigation actions, which include both short and long-term strategies, involves planning, policy changes, programs, projects, and other activities. References to specific actions by HBMWD to reduce hazards, which primarily relate to flooding [and earthquakes](#), are contained in the LHMP, Volume 2: Planning Partner Annexes.

Similarly, the Humboldt County Dam Failure Contingency Plan outlines a comprehensive strategy to mitigate, respond to, and recover from potential dam failure flooding events, ~~including those~~ originating from the R.W. Matthews Dam on the Mad River. The plan integrates coordinated response efforts across agencies, early warning systems, evacuation procedures, and public education to minimize the loss of life and property. HBMWD was involved in providing detailed inundation maps and flood response scenarios in collaboration with Humboldt County's Office of Emergency Services (OES).

HBMWD also participated in and met the participation requirements to be covered by the Trinity County Local Hazard Mitigation Plan (HMP), adopted on December 3, 2024 by the Trinity County Board of Supervisors¹¹. The Trinity County HMP is a comprehensive framework designed to reduce or eliminate long-term risks to people, property, and infrastructure from natural and man-made hazards. The plan considers the potential impacts of dam failure, water resource management, and environmental protection tied to HBMWD facilities. The HMP is updated every five years to reflect changing conditions and ensure that mitigation strategies remain relevant and effective. References to specific actions by the HBMWD to reduce hazards, which primarily relate to seismic vulnerability, are contained in the HMP in Appendix A. HBMWD Annex [11](#).

Earthquakes

HBMWD's infrastructure, including pipelines, the R.W. Matthews Dam, and control facilities, lies in a seismically active region near the Cascadia Subduction Zone. This zone poses a significant risk of high-magnitude earthquakes, potentially causing ground shaking, liquefaction, and landslides. Structural damage to the R.W. Matthews Dam could compromise water storage at Ruth Lake. [HBMWD received a FEMA Hazard Mitigation Advance Assistance Grant in 2024 to perform a seismic assessment of the R.W. Matthews dam. Pending the results of that assessment, retrofits to the dam will be evaluated.](#) Pipelines and the John R. Winzler Operations and Control Center could sustain operational disruptions or severe damage. The [district District](#) has identified

¹⁰ Humboldt County Operational Area Hazard Mitigation Plan, 2020. <https://humboldt.gov/3011/County-Emergency-Plans>

¹¹ At the time the draft Trinity County Hazard Mitigation Plan (HMP) was reviewed by the Trinity County Board of Supervisors, the draft Humboldt Bay Municipal Water District (HBMWD) HMP Annex remains under review and revision by HBMWD. Per guidance from CAL OES to the Trinity County HMP planning team, HBMWD's annex will be incorporated into the Trinity County HMP once revisions are complete and the document has been approved by the HBMWD Board of Directors.

seismic retrofitting and/or- redundancy as ~~a priority~~ priorities for critical infrastructure to reduce vulnerability during earthquakes.

HBMWD has secured Hazard Mitigation Grants (HMGs) to replace vulnerable infrastructure. For instance, in 2014 the District obtained \$2.85 million to replace approximately 10,000 feet of an 18-inch Techite pipeline from the Terminal Reservoir at Samoa to the Humboldt Bay Crossing.¹² This pipeline, crucial for delivering domestic water to thousands of residents, was susceptible to failure, particularly during seismic events that could trigger tsunamis. The replacement with more resilient materials enhances the system's durability against such hazards.

Over time, HBMWD has consistently maintained their infrastructure by implementing specific measures to mitigate earthquake risks and enhance the resilience of its infrastructure. Most recently, HBMWD initiated a project to retrofit two tanks at the Korblex Reservoirs to improve their earthquake resilience.¹³ The project involved soliciting bids for construction management services, with specifications and bid documents made available in May 2024. A similar seismic retrofit project was undertaken for the Samoa Reservoir 1 Tank in May of 2024¹⁴.

Tsunamis

A Cascadia Subduction Zone earthquake could generate a tsunami that affects the Humboldt Bay area. Tsunamis inundation could potentially inundate impact HBMWD's ~~diversion and pumping facilities near Essex, as well as its~~ pipelines and control systems near the coastline. HBMWD is actively engaged in regional tsunami hazard mitigation efforts. The Humboldt LHMP includes planning that ensures that these facilities can withstand potential inundation or are supported by contingency measures.

In addition to HMGs, HBMWD has secured ~~Hazard Mitigation State Grants~~ to replace vulnerable infrastructure. HBMWD has focused on retrofitting emergency water supply interties (Calif. Prop. 50 grant) for communities like McKinleyville, Blue Lake, Fieldbrook-Glendale, Arcata, and Eureka. These interties provide alternative water supply routes if primary systems are compromised by tsunami or earthquake events, ensuring continuous water service during emergencies. include list of grants and purpose here.

Flooding

Intense rainfall events could result in the overflow of the Mad River and/or Ruth Lake during storms which could lead to flooding of HBMWD facilities and pipelines, especially in low-lying areas. The flood of record post dam construction occurred in 1964. The R. W. Matthews dam spillway had 2 feet of free board during this event and the embankment dam had an additional 10 feet of freeboard. There are no gates to control lake discharge flow through the spillway. Therefore, the reservoir discharge flow is considered "run of the river". In Ruth Lake, excessive inflows during major storm events can place significant stress on the dam, potentially compromising its structural integrity if not managed properly. Large storm events may overtop the dam or necessitate emergency water releases from Ruth Lake, potentially causing downstream flooding in the Mad River watershed.

In the Mad River area, flood damage to diversion and treatment facilities near Essex could occur. Both the Mad River and Ruth Lake could also be subject to water quality risks due to sediment and debris influx. Erosion from flooding also poses a risk to both areas. At Ruth Lake, erosion along the reservoir's banks and surrounding lands

¹² <https://humboldt.gov/DocumentCenter/View/1029/Hazard-Mitigation-Plan-Progress-Report-PDF?>

¹³ <https://www.hbmwd.com/korblex-reservoirs-2-tanks-seismic-retrofit-project?>

¹⁴ <https://www.hbmwd.com/samoa-reservoir-1-tank-seismic-retrofit-project-and-korblex-reservoirs-2-tanks-seismic-retrofit-project-plans-and-specs?>

could potentially destabilize adjacent infrastructure and increase sediment loads. Bridges, culverts, and other supporting infrastructure near Ruth Lake could be damaged or rendered impassable during flood events. For the Mad River watershed, erosion along the riverbank can expose underground pipelines, making them vulnerable to physical damage, displacement, or ruptures during high-flow events. Facilities located near the river, such as diversion works and pumping stations, may experience foundation instability due to eroding soil, leading to structural damage or failure. Similar to Ruth Lake, erosion near access roads or pathways leading to HBMWD facilities can hinder maintenance crews' ability to reach and repair critical infrastructure.

HBMWD mitigates these risks in several ways. There are regular inspections and HBMWD ensures the maintenance of the dam and surrounding infrastructure. Hydrological monitoring systems are also employed to predict and manage inflows. There are sediment management strategies to limit erosion and to maintain reservoir capacity and water quality. In addition, HBMWD actively works with regional agencies to maintain access roads and coordinate flood response plans. These efforts help ensure that the infrastructure in the Mad River watershed and Ruth Lake area can withstand flood events while maintaining its critical role in HBMWD's water supply system.

Wildfire

HBMWD has experienced significant impacts from wildfires, particularly in the area surrounding Ruth Lake. The August Complex Wildfire of 2020, which burned more than 1 million acres across five counties, devastated over 1,600 acres of vegetation on HBMWD-owned land, including large areas of forested lands on the northern eastern and southern edges of Ruth Lake.¹⁵ In addition to loss of forested lands, many structures around the lake were also lost and there was damage to the Ruth Lake CSD's campground and dock facilities. In total, there were 78 lease lots affected by the fire.¹⁶ This destruction not only increased wildfire risks due to dead and charred vegetation but also disrupted the local ecosystem, and damaged access roads and other infrastructure. Wildfire devastation around Ruth Lake posed significant challenges for HBMWD, as all post-disaster rebuilding on HBMWD-owned lands, including all lease lot holder requests for rebuilding after the fire disaster, must be approved by Trinity County, Ruth Lake CSD and HBMWD. These impacts have highlighted the eDistrict's vulnerability to wildfires and the need for proactive fire management measures.

To address these challenges, HBMWD has actively engaged in wildfire preparedness and mitigation efforts. The eDistrict has launched the Ruth Area Fire Fuel Reduction and Defensible Space Project, which involves clearing excess vegetation, removing fire-prone trees, and creating defensible space around structures and key infrastructure. These efforts align with CAL FIRE standards and aim to reduce the likelihood of wildfires spreading to or from the area surrounding Ruth Lake. In addition, HBMWD collaborates with public agencies and contractors to implement best practices for wildfire resilience, including vegetation management and improving access for firefighting crews. These initiatives not only safeguard HBMWD's infrastructure but also protect the broader community and environment in Southern Trinity County.

[Post 2020 August Complex wildfire, HBMWD received a CalFire Healthy Forest reforestation grant to begin the process of forest recovery. Grant partners include the US Forest Service and two private property owners. Approximately 1,750 acres are planned for re-forestation under this grant.](#)

¹⁵ HBMWD, Ruth Area Fire Fuel Reduction & Defensible Space Project Part III – Request for Proposal (RFP) #3. Accessed from www.hbmwd.com/files/03d3ccc43/RFP+%233+-+CalFire+Fuels+Reduction+11.2023%2C+FINAL+11.20.23.pdf on November 20, 2024.

¹⁶ Ruth Lake CSD MSR/SOI Update. April 19, 2022.

Dam Failure

Dam failure represents a critical hazard for HBMWD due to its ownership and operation of the R.W. Matthews Dam. A dam failure at R.W. Matthews Dam could result in the uncontrolled release of water, leading to catastrophic flooding along the Mad River. The impacts would not only jeopardize downstream communities but also disrupt HBMWD's ability to supply water to its municipal and industrial customers, compromising critical infrastructure and public health. Erosion from this flooding would introduce sediment, debris, and nutrients into the Mad River, and have has the potential to carry agricultural or urban contaminants into the river.

Recognizing these risks, HBMWD has implemented rigorous safety, maintenance, and emergency management protocols. These efforts include regular inspections, hydrological monitoring, and the development of Emergency Action Plans (EAPs) that align with local and state hazard mitigation strategies. HBMWD developed enhanced inundation maps to model potential flooding scenarios in the event of a catastrophic failure of the R.W. Matthews Dam. These maps assist in emergency preparedness by identifying areas at risk and informing evacuation plans of local emergency responders downstream of the dam.

2.8 Climate Change

The effects of climate change can vary significantly by region. Two key climate change signals in the hydroclimate of California have been identified: progressively less frequent precipitation, particularly in the fall and spring, and greater precipitation extremes during the winter.¹⁷ More atmospheric rivers are predicted, with shorter more intense wet seasons, and longer dry seasons. Total annual rainfall amounts are expected to be more variable from year to year.¹⁸ In southern California, the most notable impacts include longer, drier summer months, leading to reduced precipitation and heightened wildfire risk. Along the California coastline, climate change is expected to exacerbate challenges such as decreased water availability, reduced groundwater recharge, and rising sea levels, posing risks to both natural ecosystems and human infrastructure. It should be noted that during the 60 plus years of operation of the R. W. Matthews Dam, there has been only one year on record when the reservoir did not fill to capacity. This occurred during the 1976-77 drought.

The effects of climate change in the Humboldt Bay region are particularly pronounced and varied. Longer, drier summers have led to decreased precipitation and heightened wildfire risks, impacting the surrounding forests and communities. In addition, reduced groundwater recharge threatens the availability of freshwater resources for municipal, agricultural, and industrial use. HBMWD¹⁵ has demonstrated a proactive stance on climate resilience and disaster readiness for the following hazards: 1) power outages: installation of back up backup power generators at key pumping and treatment facilities; and 2) seismic event: redundancy of transmission pipelines and interties.

Severe Weather

Climate change is expected to impact wind patterns, increase rainfall, and worsen winter storms that are common in the region, potentially disrupting HBMWD operations. These weather changes could damage infrastructure from fallen trees, debris, or erosion. Power outages resulting from extreme weather could affect pumping and treatment facilities. The While some amount of increased rainfall can potentially benefit the HBMWD reservoir

¹⁷ Scripps Institute of Oceanography <https://scripps.ucsd.edu/research/climate-change-resources/faq-climate-change-california>

¹⁸ Northern California Climate Adaptation Project https://ecoadapt.org/data/documents/EcoAdapt_NorCalClimateImpactsOverview_FINAL_Sept2021.pdf

operations by ensuring adequate capturing excess water, capture there are also risks and challenges anticipated from during more intense rainfall events anticipated with climate change.

The District uses climate models and projections to anticipate long-term impacts, ensuring proactive management of its water rights and infrastructure. HBMWD has taken measures to protect its infrastructure from storms and high winds, including reinforcing pipelines and treatment facilities. The District's contingency planning includes protocols for power outages and system disruptions caused by severe weather events, such as storms and flooding. Given its reliance on the Mad River, HBMWD incorporates flood risk management into its operational strategies, ensuring the integrity of diversion works and the safety of water supplies during extreme weather.

HBMWD incorporates climate change into its risk assessments, considering its effects on water availability and system vulnerabilities. For example, the District plans to address potential shifts in precipitation patterns, reduced snowpack, and longer dry seasons that could affect Ruth Lake's reservoir capacity and the Mad River's flow. HBMWD mitigates disruptions to power from extreme weather with backup power generators, such as the 2-MW emergency power generator at Essex, which ensures operational continuity during outages.

Drought

While Ruth Lake and the Mad River watershed typically provide ample water, drought conditions can still impact the region. For instance, in 2021, Humboldt County declared a local drought emergency due to low river flows and other drought-related challenges.¹⁹ However, HBMWD's operations are generally less affected by drought compared to other areas. During 2021, the Ruth Reservoir filled to capacity ensuring adequate water supply to HBMWD's customers despite the drought declaration. The District's water usage represents a small fraction of the Mad River's total flow. Specifically, Ruth Lake's capacity is less than 5% of the river's average annual runoff, and HBMWD's diversions at Essex account for only about 3% of the total annual runoff. Additionally, HBMWD's management practices, such as releasing water from Ruth Lake to maintain downstream flows during the summer and early fall months, help mitigate drought impacts on water supply and aquatic ecosystems. These releases support river habitat during dry periods, benefiting aquatic species.

Under California's "use it or lose it" doctrine, water rights can be lost if the water use supported by those rights is less than what is allocated. Since the time when two industrial customers greatly reduced their water use, the District has not been using putting to beneficial use the large volumes of water allocated in its water rights. The District is currently working with the State Water Resources Control Board to revise its water rights but the allocation would not be decreased in ways that would decrease the District's flexibility to respond to drought conditions. unused portions of water rights may be forfeited. HBMWD's unused industrial water rights, due to the closure of pulp mills, could be reallocated, reducing its flexibility during drought periods. HBMWD's resilience to drought could be significantly impacted by changes to its water right allocations, particularly if those changes reduce the dDistrict's ability to store or divert water from the Mad River watershed. While HBMWD already

¹⁹ Humboldt County Board of Supervisors, Resolution No. 21-77: Resolution of the Humboldt County Board of Supervisors Proclaiming the Existence of a Local Emergency Due to Drought. Accessed from humboldt.gov/DocumentCenter/View/97922/Humboldt-County-Drought-Proclamation-July-20-2021?bidId= on November 20, 2024.

~~releases water to support the Mad River ecosystem, stricter flow requirements could further strain the dDistrict's ability to meet customer demand during droughts.~~

Sea Level Rise

Along the Humboldt Bay coastline, rising sea levels pose a significant challenge. This region is experiencing one of the highest rates of relative sea level rise on the U.S. West Coast, exacerbated by tectonic subsidence. The combination of sea level rise and storm surges increases the risk of flooding and erosion, jeopardizing infrastructure and facilities critical to HBMWD in and around Humboldt Bay. Flooding of low-lying infrastructure, including pipelines and operational facilities near the coast, could greatly impact water service delivery. ~~Increased salinity intrusion into the Mad River could affect water quality, especially in the long term.~~

~~The District's infrastructure located within the Samoa peninsula may be susceptible to Ssea Llevel Rrise. An assessment of this vulnerability risk has not been undertaken.~~

~~The District uses climate models and projections to anticipate long term impacts, ensuring proactive management of its water rights and infrastructure. HBMWD has taken measures to protect its infrastructure from storms and high winds, including reinforcing pipelines and treatment facilities. The District's contingency planning includes protocols for power outages and system disruptions caused by severe weather events, such as storms and flooding. Given its reliance on the Mad River, HBMWD incorporates flood risk management into its operational strategies, ensuring the integrity of diversion works and the safety of water supplies during extreme weather.~~

3.0 MUNICIPAL SERVICES

3.1 Water Services

HBMWD provides water services through a comprehensive regional system that supports both municipal and industrial needs in Humboldt County. The District operates diversion facilities on the Mad River, capable of supplying up to 75 million gallons per day (MGD), the Lloyd L. and Barbara Hecathorn Turbidity Reduction Facility, over 35 miles of pipeline infrastructure, and advanced communication and control systems at the John R. Winzler Operations and Control Center.

Source

HBMWD obtains water from the Mad River watershed originating in Trinity County. The District owns 3,000 acres that surrounds Ruth Lake and operates R. W. Matthews Dam that creates the Ruth Lake reservoir on the Mad River and the Gosselin Hydro-Electric Power House associated with the dam. Located off of Highway 36 in Trinity County, The Ruth Lake reservoir is located off of Highway 36 in Trinity County which stores water captured from the watershed in accordance with the District's permitted water rights as noted below:

- Water Rights Permit 11714 (Application 16454) allows for appropriation of up to 48,030 acre-feet per year as storage that is to be collected from October 1 to April 30 of the following year. The total annual diversion and use allowed under this permit is limited to 132,030 acre-feet per year²⁰.
- Water Rights Permit 11715 (Application 17291) allows for appropriation of 116 cfs (74.97 MGD) by direct diversion year round and 20,000 acre-feet annually by storage to be collected from October 1 to April 30 of the following year. The maximum diversion is not to exceed 84,000 acre-feet per year and The maximum combined storage, for both Permit 11714 and 11715, is not to cannot exceed 48,030 acre-feet per year. The total annual diversion and use allowed under Permits Permit 11714 and 11715 is not to exceed 132,030 acre-feet per year²¹. Permit 11715 also requires that a minimum of 5 cfs be released into the natural streambed of the Mad River below Ruth-R.W. Matthews Dam at all times. Additionally, there are also-specific bypass flows that must be released are measured below Essex, the point of diversion/re-diversion, at different times of the year as detailed in the permit.
- Water Rights Permit 18347 (Application 26657) allows for diversion of 1,000 cfs year-round and 120,000 acre-feet per year for storage to be collected from October 1 to April 30 of the following year²². The point of diversion is Ruth Reservoir and the intended purpose is for power. The 2024 annual progress report for the permit states 2,682 MW of power was generated that year.

Water released from R.W. Matthews Dam flows either directly downriver via the spillway or through the power generation station before being released downriver. The Mad River generally flows northwest towards Blue Lake and then enters the Pacific Ocean near McKinleyville. At Essex, just west of Blue Lake, water is pumped from several wells below pump water from the riverbed to the District's treatment facilities facility.

²⁰ SWRCB, Division of Water Rights, Permit for Diversion and Use of Water (Permit 11714). Filed on July 7, 1955.

²¹ SWRCB, Division of Water Rights, Permit for Diversion and Use of Water (Permit 11715), Filed on September 21, 1956.

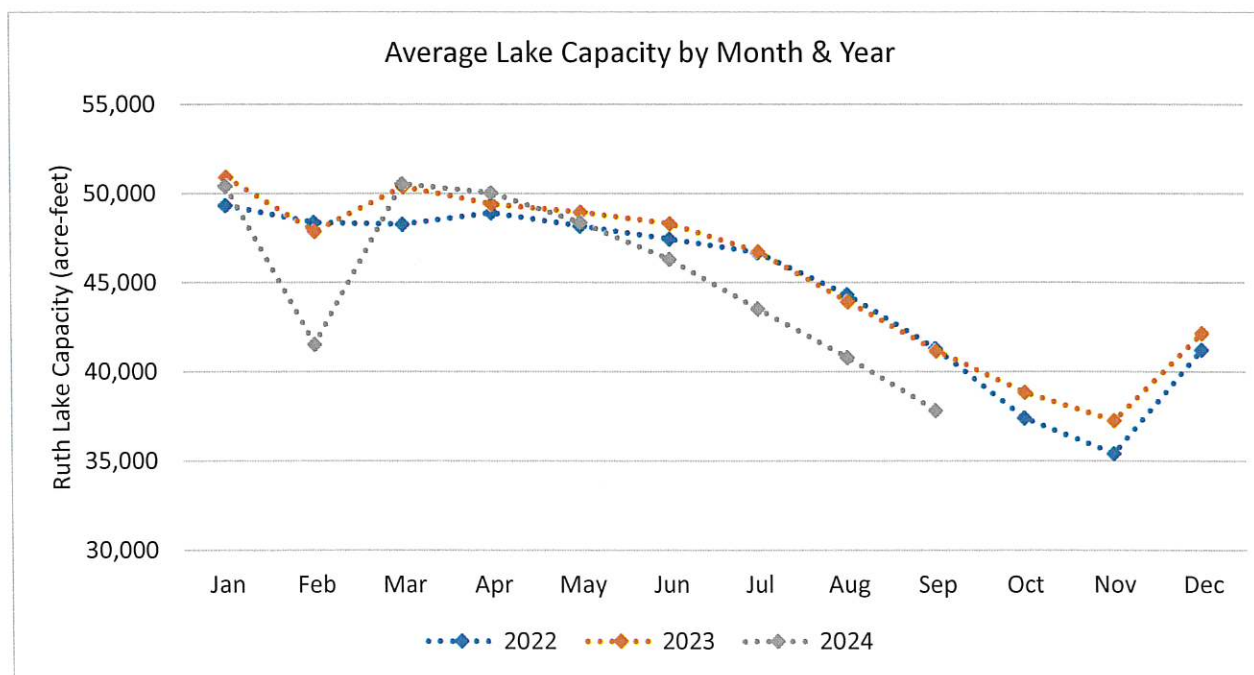
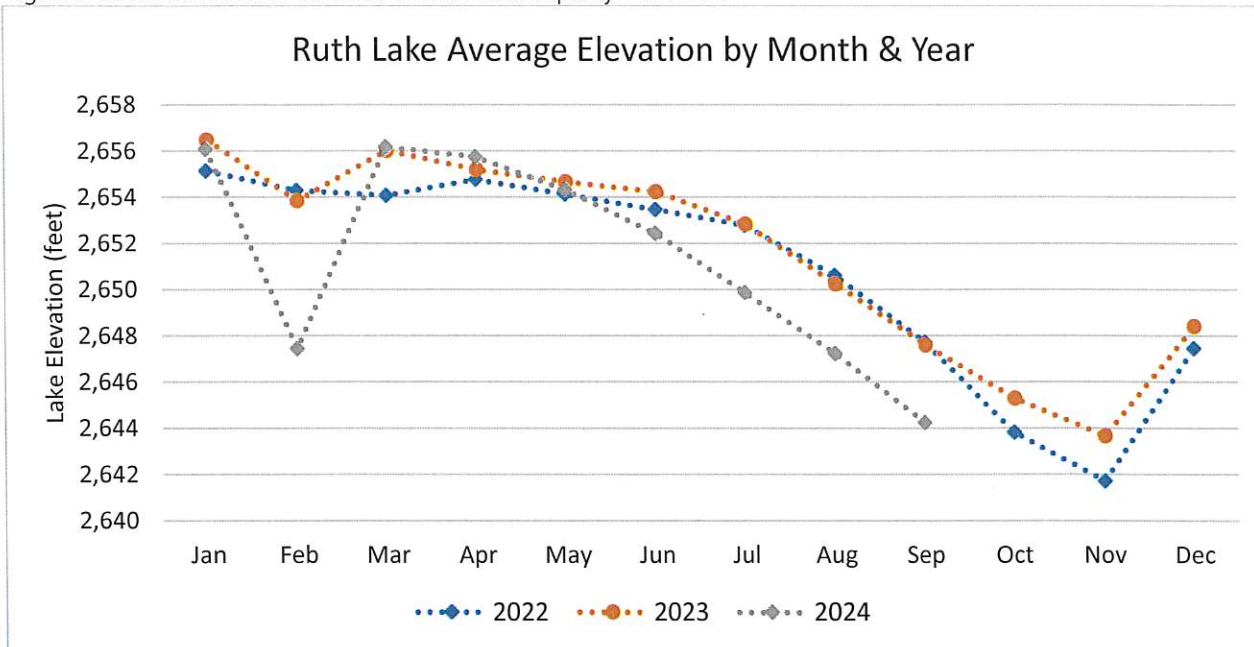
²² State Water Resources Control Board (SWRCB), Division of Water Rights, Permit for the Diversion and Use of Water (Permit 18347). Filed on December 9, 1980.

HBMWD monitors and collects telemetry data from its water diversion and storage systems, specifically focusing on critical metrics such as lake elevation, capacity, Mad River flow rates, turbine flow, and water diversions at Essex. Telemetry data from 2022-2024 was analyzed to determine trends and observations as discussed below.²³

1. Ruth Lake Levels and Capacity:

The lake's elevation and capacity fluctuate over time, reflecting seasonal water storage and release patterns. Lake capacity adjustments are made through [water](#) releases timed during the summer and fall to maintain supply and ecosystem needs.

Figure 3: Ruth Lake Reservoir Seasonal Elevation and Capacity 2022-2024



²³ HBMWD, Water Diversions, Telemetry Data for 2021 to 2023. Accessed from www.hbmwd.com/water-diversions on November 15, 2024.

2. Mad River Flows:

Flows below the dam in the Mad River show variability based on tributary contributions and water releases for municipal and retail use District diversions and, as well as environmental needs. During the high rain/flow seasons, While HBMWD manages water storage at Ruth Lake and diverts water at Essex such that, the operations have minimal impact on the natural flow regime of the Mad River. During the dry/low flow seasons, HBMWD releases water to meet municipal demand, and environmental low flow requirements, and for aquatic ecosystem enhancement; flows in the river are generally higher than they would have been historically, before the District began its operations. which aligns with HBMWD's commitment to maintaining ecological health.²⁴

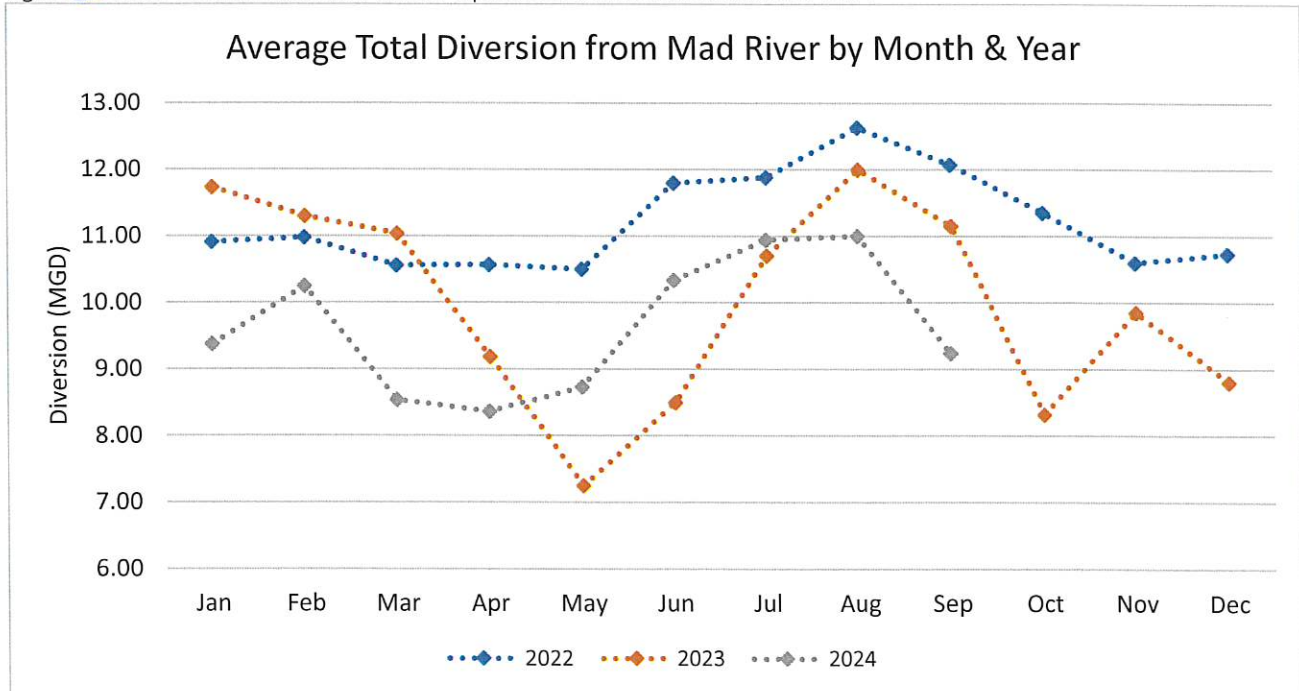
3. Turbine Operations:

Turbine flow data indicates regular use of the hydroelectric facility, with variations based on power generation water storage levels, time of year, and water needs for municipal and industrial District customers, and access to the electrical grid to offload the electricity. The hydroelectric plant operates secondary to the water supply function, producing electricity as water is released.

4. Water Diversion at Essex:

Diversion data at Essex demonstrates consistent delivery to municipal customers. Flow rates through the diversion facilities highlight HBMWD's ability to meet customer demands, minimal impact on the total river flow while capacity to manage water efficiently, meeting municipal and retail industrial customer demands.

Figure 46: Water Diversion at John R. Winzler Operations and Control Center 2022-2024



5. Seasonal Variations:

²⁴ HBMWD, Humboldt Bay Municipal Water District Urban Water Management Plan. 2020

~~Water Telemetry Telemetry Telemetry T data as shown in exhibits 3-5 exhibit reveal seasonal trends, with higher flows typically observed during wetter months to manage excess runoff and sometimes during the dryer months to ensure adequate downstream supply.~~

Infrastructure

Ruth Lake Dam and Power House

The R.W. Matthews Dam, ~~impounds runoff from the upper quarter of the approximately 121--square--miles Mad River basin, located in Trinity County, formingsformingsformsformings~~ Ruth Lake reservoir in Trinity County, which impounds runoff from the upper quarter of the Mad River basin, covering an area of approximately 121 square miles. Ruth Lake has a storage capacity of 48,030 acre-feet, providing essential water resources for HBMWD's operations downstream.²⁵ The spillway at the dam is ungated, consequently, once the reservoir fills, the excess water flows uncontrolled through the spillway and downstream. This is typically referred to as a "fill and spill" reservoir. Each summer and fall, When water is not flowing through the spillway, water is released from Ruth Lake through the hydroplant to meet downstream diversion requirements municipal and industrial demand, and to maintain minimum bypass flows in the Mad River below Essex, and to enhance aquatic ecosystem health downstream of the dam.

During the high flow months, HBMWD's HBMWD states that the reservoir and water management activities have a minimal impact on the natural-flow regime of the Mad River due to several factors. Firstly, the total volume of water impounded and diverted by HBMWD represents a small fraction of the Mad River's total flow natural yield, as described in Section 2.8 above, under Drought. For example, Ruth Lake's total capacity is less than 5% of the average annual runoff of over 1,000,000 acre-feet into the Pacific Ocean. Also, current water diversions at Essex are approximately 25 to 30 million gallons per day (MGD), equivalent to 3% of the annual runoff, and even the full diversion capacity of 75 MGD would only account for 8%. Also, dDownstream tributaries significantly contribute to the Mad River's flow, buffering ~~any~~ potential effects of ~~reduced releases from Ruth Lake during specific periods~~ District-District operations. The hydrograph for the river system maintains its seasonal variation natural flow regime features. Furthermore, there are no out-of-basin water transfers in the Mad River watershed. During low flow months, wWater released from Ruth Lake flows directly down the Mad River channel, augmenting natural-low flows during the summer and fall when tributary flow is also low. This augmentation benefits aquatic species by expanding river habitats, as acknowledged in HBMWD's Habitat Conservation Plan (HCP) for its Mad River activities²⁶.

The Gosselin Hydroelectric Power House, is located below ~~the~~ R.W. Matthews Dam. The power house was built in 1981 to generate renewable hydroelectric power by harnessing the flow of water released from Ruth Lake²⁷. The hydroelectric plant has a capacity of 2 megawatts (MW), utilizing two 1-MW turbine generators. It plays a dual role in generating electricity and augmenting summerseasonal low flows in the river. supporting energy production while contributing to the efficient management of the Mad River's water resources.

²⁵ BMWD, Humboldt Bay Municipal Water District Urban Water Management Plan. 2020

²⁶ HBMWD, Beautiful Ruth Lake. Accessed from www.hbmwd.com/beautiful-ruth-lake on November 15, 2024.

²⁷ HBMWD, Habitat Conservation Plan for its Mad River Operations. Final Approved HCP – April 2004. Accessed from www.waterboards.ca.gov/water_issues/programs/tmdl/records/region_1/2010/ref3683.pdf on November 15, 2024.

Essex Pumping Facilities

HBMWD operates diversion and pumping facilities near Essex, located northeast of Arcata along the Mad River. Water is ~~pumped~~~~diverted~~ from the Mad River ~~using through~~ four (4) ~~advanced~~ Ranney Collector wells, which draw from the river's ~~natural subsurface gravel aquifer flow~~ approximately 60 to 90 feet below the ~~bedriverbedriver~~~~riverbed~~ surface. The pumping facilities at Essex, ~~including the Hilfiker Pump Station~~, ensure reliable water flow through the ~~d~~District's pipeline systems.

~~Diversions through the Ranney well~~~~the Essex~~ pumping facilities ~~provide an~~ average ~~of~~ about 10 MGD (11,000 acre-feet per year) and support this District's municipal water operations. Industrial water is provided through a separate system that ~~conveys~~~~obtains~~ water through a surface diversion facility. The industrial system is capable of supplying 60 MGD of untreated water²⁸.

Turbidity Reduction Facility

In response to ~~severe~~ winter storm events that ~~raised~~~~raise~~~~increase~~ turbidity in the Mad River to levels that could ~~potentially~~~~potential~~ interfere with the ~~treatment~~~~disinfection~~ process, the California State Water Resources Control Board Division of Drinking Water (DDW) directed HBMWD (and other public water systems in the region) to address the wintertime turbidity issue. As a result, the District constructed the regional ~~Barbara and Lloyd~~~~Lloyd and Barbara~~ Hecathorn Turbidity Reduction Facility (TRF) which was completed in April 2003²⁹. The TRF addresses turbidity issues in the water supply, by employing an in-line gravity filter process to reduce turbidity, ensuring compliance with state water quality standards.³⁰ Constructed at a cost of approximately \$10 million, it was financed through a zero-interest Safe Drinking Water State Revolving Fund Loan. The facility is designed to process 14 MGD during the wintertime and 21 MGD during the summertime when raw water turbidity is generally lower.

Treatment Facility

~~Need information on treatment facilities including how many, design capacity, and type of treatment.~~

~~The District operates a single water treatment facility with a design capacity of 21 MGD (million gallons per day). The District's treatment plant is a direct mono-media, deep bed filtration plant designed for maximum turbidity reduction.~~

HBMWD has storage ~~and treatment~~ facilities at various locations to service their domestic and industrial water systems.³¹

Demand

In 2023, the District diverted a total of 3,895.5 acre-feet of water for municipal purposes that was then treated and distributed to the District's ~~various~~ customers. This is a decrease from the 2020 demand of 8,269 acre-feet reported in the District's most recent Urban Water Management Plan (UWMP) ³². ~~Based on t~~The District's permitted direct diversion water rights ~~of is~~ 84,000 acre-feet per year. ~~The District's Rainey Collectors have a~~

²⁸ HBMWD, Urban Water Management Plan 2020. Adopted on June 10, 2021.

²⁹ HBMWD, Urban Water Management Plan 2020 – Section 7.1.1: Water Quality. Adopted on June 10, 2021.

³⁰ HBMWD, Barbara and Lloyd L. Hecathorn Turbidity Reduction Facility , Accessed from <https://www.hbmwd.com/barbara-and-lloyd-l-hecathorn-turbidity-reduction-facility-on-december-15>, 2024.

³¹ ~~Industrial reservoir – 1 million gallons. Domestic reservoir – 1 million gallons; Domestic Contact reservoir – 2 million gallons.~~

³² HBMWD, Urban Water Management Plan 2020. Table 6-8: Wholesale: Water Supplies – Actual. Adopted on June 10, 2021.

current production capacity ranging from approximately 41 MGD to 66.5 MGD depending upon river flows and a direct diversion capacity of up to 65 MGD. Therefore, it can be reasonably estimated that the District is using approximately ~~4-65.0%~~ to 8.5% of its Rainey Collector source capacity. This is largely due to the loss of industrial ~~users~~ in 1993 and 2009.

Industrial Contracts

HBMWD's industrial water system can supply up to 60 MGD of untreated surface water. This water was historically provided to two large pulp mills on the Samoa Peninsula. These mills ceased operations in 1993 and 2009, respectively. From 2000 to 2008, when one pulp mill was operating, deliveries of industrial water averaged 14 MGD (15,700 acre-feet per year)³³. ~~As such, it can be reasonably assumed that both pulp mills would have used roughly 28 MGD (31,400 acre-feet per year).~~ Recent interest in raw water for aquaculture and other industrial uses on the Samoa Peninsula ~~is revitalizing~~ could revitalize the District's industrial water system, albeit at reduced volumes compared to the former mills.

At this time, the District does not have any ~~existing~~ industrial customers that use water in volumes approaching those of the former pulp mills. ~~and is not utilizing the industrial water system.~~ However, there is a possibility for future industrial customers which is discussed under "Potential Future Water Contracts".

Retail Contracts

HBMWD provides retail water service to approximately 200 service connections.³⁴ The number of retail connections remains fairly consistent with annual disconnections ranging from 0 to 9 from 2020 to December 2024.³⁵ The properties served are primarily located in unincorporated areas outside the City of Arcata, including the West End Road and Warren Creek Road areas. Additional service areas include parts of the Arcata Bottoms and portions of the Samoa Peninsula south of the Manila Community Services District, encompassing the communities of Fairhaven and Samoa. In 2020, Retail Customer deliveries totaled 274 acre-feet. In 2023, total demand for retail customers was ~~XXX~~ 152.25 acre-feet.

Table 3: HBMWD Retail Water Rates July 2023

Category 1 – Domestic and Small Businesses Located Within the Fairhaven Distribution Grid				Category 2 – Domestic and Small Businesses Located Outside the Fairhaven Distribution Grid			
Meter Size	New Base Rate	Capital Replacement Charge	Monthly Base Charge	Meter Size	New Base Rate	Capital Replacement Charge	Monthly Base Charge
5/8 x 34"	\$42.22	\$27.65	\$69.85	5/8 x 34"	\$43.31	\$2.90	\$46.21
1"	\$68.49	\$55.91	\$124.40	1"	\$55.83	\$7.72	\$63.55
1.5"	\$145.34	\$58.70	\$204.04	1.5"	\$86.02	\$15.95	\$101.97
2"	\$180.13	\$61.22	\$241.35	2"	\$121.81	\$23.36	\$145.17
3"	\$338.09	\$67.12	\$405.21	3"	\$283.45	\$46.73	\$330.18

³³ HBMWD, Urban Water Management Plan 2010. Section 3.2 – Water Demands. Prepared June 2011.

³⁴ HBMWD, Retail Water Services, Accessed from <https://www.hbmwd.com/retail-water-services> on December 13, 2024.

³⁵ HBMWD, Number of Discontinuation of Water Services by Month, Accessed from <https://hbmwd.specialdistrict.org/number-of-discontinuations-of-water-service-by-month> on December 20, 2024.

4"	\$551.49	\$111.37	\$662.86	4"	\$466.25	\$63.49	\$529.74
6"	\$1,037.95	\$124.24	\$1,162.19	6"	\$955.44	\$91.28	\$1,046.72
8"	\$1,720.77	\$128.28	1,849.05	8"	\$1,639.83	\$103.19	\$1,743.02
6" FS Only	\$1,029.11	\$93.25	\$1,122.36	6" FS Only	\$950.84	\$9.79	\$960.63
8" FS Only	\$1,710.77	\$93.25	\$1,804.02	8" FS Only	\$1,632.50	\$9.79	\$1,642.29

Rates were updated 7/18/2023³⁶ and are reflective of a retail rate study set by a March 2021 Resolution.

Municipal Water Contracts

On a wholesale basis, HBMWD provides treated domestic water to seven municipal agencies, including the cities of Arcata, Blue Lake, and Eureka, and the Community Services Districts of Fieldbrook/Glendale, Humboldt, Manila, and McKinleyville, serving an estimated population of 94,000—approximately 65% of Humboldt County's residents. A summary of water demand for each agency is provided in [Table 4: Wholesale Demands \(2020 & 2023\)](#)³⁷.

The City of Eureka (City) maintains water rights on the Mad River equivalent to 5.16 MGD. Under an agreement between the District and the City, the deliveries from the District to the City ([up to this quantity](#)) are considered to be deliveries of the City's water, emanating from its own water rights, not those of the District [as the City's water rights are senior to the District's water rights on the Mad River](#). Deliveries to the City in excess of the City's water rights are considered deliveries of the District's water³⁸.

HBMWD has long-term contracts with its wholesale municipal customers, effective through June 30, 2037, with the potential for a ten-year extension. These contracts detail the allocation of operating, maintenance, and capital costs among customers, ensuring sustainable management of the regional water system. Additional revenue sources, such as property taxes, [a portion of](#) hydroelectric power sales, and retail water income, are credited back to the wholesale customers, offsetting their costs.

Through collaborative initiatives like the Samoa Peninsula Infrastructure Workgroup, HBMWD [is working works](#) with public agencies to improve infrastructure, foster economic development, and enhance community well-being. This proactive approach ensures that HBMWD continues to support the water needs of Humboldt County while addressing future challenges and opportunities.

Table [43](#): Wholesale Demands (2020 & 2023)

Wholesale Agency	Contract Allocation	2020 Demand (AF)	2023 Demand (AF)
City of Arcata	3,360	1,679	1,782
City of Blue Lake	448	178	184
City of Eureka	7,841	3,554	3,785
Fieldbrook-Glendale CSD	482	186	178
Humboldt CSD	3,248	809	719
McKinleyville CSD	2,912	1,481	1,484

³⁶ <https://hbmwd.specialdistrict.org/files/43c3af601/HBMWD+rates+July+2023.pdf>

³⁷ HBMWD, Urban Water Management Plan 2020. Table 4-1: Wholesale – Demands for Potable and Non-Potable Water – Actual. Adopted on June 10, 2021.

³⁸ HBMWD, Urban Water Management Plan 2020 – Section 6.9: Summary of Existing and Planned Sources of Water. Adopted on June 10, 2021.

Manila CSD	<u>168</u>	103	<u>123</u>
------------	------------	-----	------------

Potential Future Water Contracts

Industrial Water Users

HBMWD is exploring opportunities to provide water for ~~a potentially~~ two significant economic development projects on the Samoa Peninsula: ~~Nordic Aquafarms and~~ the Humboldt Bay Harbor, Recreation, and Conservation District's Offshore Wind Terminal. ~~This~~ Both projects ~~represents an opportunity~~ ~~represent opportunities~~ for HBMWD to utilize its industrial water infrastructure, which has been underutilized since the closure of the Samoa pulp mills.

- ~~Nordic Aquafarms~~

~~Nordic Aquafarms is developing a large scale land based aquaculture facility on the Samoa Peninsula, aimed at producing sustainably farmed fish to meet growing consumer demand. The project requires a significant and reliable supply of untreated water for its aquaculture operations. HBMWD's industrial water system, capable of delivering large volumes of raw water, is well suited to meet this demand. Water sales to Nordic Aquafarms could provide a stable revenue source for HBMWD, helping to offset the loss of industrial water demand after the pulp mills closed. This partnership also aligns with regional goals to support sustainable industries and create local jobs.~~

- Offshore Wind Terminal

The Harbor District is developing an Humboldt Bay Offshore Wind Heavy Lift Marine Terminal ~~Wind Terminal~~ on the Samoa Peninsula to support the assembly and deployment of wind turbines for offshore wind energy production. This initiative is part of California's effort to expand renewable energy infrastructure. The terminal is expected to require industrial-grade water for various construction, operational, and maintenance activities, including dust control, turbine assembly, and other site needs. Water sales to the Offshore Wind Terminal would provide another beneficial use of water for HBMWD, contributing to the region's transition to renewable energy and bolstering economic growth on the Peninsula.

Mainline Extensions

The process for HBMWD to extend service to new areas is primarily led by parties interested in receiving ~~the a~~ service connection. Project proposal, engineering, design, and construction is typically ~~the responsibility of~~ ~~taken on by~~ the interested party in consultation with HBMWD staff. Once the project is completed, HBMWD ~~will~~ takes ownership of the facilities and infrastructure and assumes maintenance for the extent of the line from its connection point to the HBMWD pipeline. As of 2024, ~~two~~ several proposed extensions are in the planning stages ~~works including the following:~~

- Trinidad Rancheria

In June 2020, ~~the~~ Trinidad Rancheria ~~has proposed requested~~ extending ~~the water service from~~ HBMWD ~~water pipeline from McKinleyville~~ to their tribal lands south of Trinidad. This initiative aims to secure a reliable water source to support Trinidad Rancheria's long-term development plans, which include constructing a hotel, RV park, gas station, convenience store, and tribal housing. ~~In June 2020,~~ The Trinidad Rancheria formally requested government to government consultation with HBMWD to

explore this extension. Subsequently, in February 2022, HBMWD and the Trinidad Rancheria approved ~~an agreement for the pipeline extension~~ a mainline extension agreement. The agreement stipulates that Trinidad Rancheria will develop detailed plans for the pipeline, including its size, path, regulatory approvals, and construction designs, all subject to HBMWD's approval. Once constructed, the pipeline would deliver water from HBMWD's system through McKinleyville CSD to a master meter on Trinidad Rancheria's tribal trust lands, enabling Trinidad Rancheria to distribute water to its ~~customers~~ facilities on ~~their~~ these lands.

As of 2024, Trinidad Rancheria has contracted engineers to evaluate pipeline routes and design options. ~~The debate over Preliminary~~ water delivery capacity has focused on estimates for 2-inch and 4-inch diameter pipelines under nominal pressure conditions³⁹. HBMWD staff has estimated that a 2-inch pipe could deliver approximately 271,000 gpd, while a 4-inch pipe could deliver approximately 383,000 gpd. However, minimum fire flow requirements mandate the installation of a 6-inch diameter pipeline. The pipeline's final design and capacity will ultimately depend on the Rancheria's engineering studies and HBMWD's approval of the proposed plans. HBMWD has sufficient capacity for all 3 pipe sizes under evaluation.

On December 4, 2020, HBMWD sent an official letter to the Westhaven CSD requesting whether they would be interested in participating in the mainline extension project by having a connection into the pipeline to the Trinidad Rancheria. This topic was discussed at Westhaven CSD's subsequent meetings. Their board ultimately decided that they did not want to participate in the mainline extension project.

On December 4, 2020, HBMWD sent an official letter to the Trinidad City Council requesting whether they would be interest in participating in the mainline extension project by having a connection into the pipeline to the Trinidad Rancheria. This topic was discussed by the Trinidad City Council during multiple subsequent Council meetings. The Trinidad City Council voted at three separate meetings not to participate in the mainline extension project.

- Blue Lake Rancheria

~~In recent years, The~~ Blue Lake Rancheria has ~~engaged in discussions~~ requested a water mainline extension with HBMWD ~~regarding a potential mainline extension to~~ directly connect the Blue Lake Rancheria to HBMWD's water system. Currently, the Rancheria receives water and wastewater services from the ~~e~~City of Blue Lake via several out of agency service connections. This proposed mainline extension aims to provide a reliable and high-quality water source to support Blue Lake Rancheria's community needs and future development plans.

~~As of March 2024~~ In July 2023, the HBMWD Board of Directors ~~included~~ approved a Memorandum of Understanding (MOU) with the Blue Lake Rancheria for a water Mainline Extension, ~~as a discussion item in their regular meeting agenda, indicating ongoing deliberations about~~ The Project has been progressing with the project's feasibility and implementation studies. ~~As of July 2024, the Board considered a Memorandum of Understanding (MOU) concerning the extension, suggesting progress in formalizing the collaboration between HBMWD and the Blue Lake Rancheria.~~ The proposed extension reflects Blue Lake Rancheria's commitment to securing sustainable water resources for its community

³⁹ July 2, 2021 Letter from HBMWD to Water Advisory Committee (WAC)

and underscores HBMWD's role in supporting regional water infrastructure development. While specific details about the project's timeline and scope are still under discussion, the ongoing engagement between the two entities highlights a proactive approach to addressing water supply [reliability and resiliency](#) challenges in the area.

Planned Capital Improvements

~~The Humboldt Bay Municipal Water District~~ (HBMWD) outlined a comprehensive Capital Improvement Plan (CIP) in 2017 to ensure the reliability and efficiency of its regional water system [and is currently scheduled for update during 2025](#). This plan addresses the challenges of aging infrastructure and the need for system enhancements. Key planned improvements include:

- Ranney Collector Rehabilitation: Upgrading the Ranney Collectors, which are essential for drawing water from the Mad River, to maintain optimal performance and water quality.
- Pipeline Replacements: Replacing aging pipelines, such as the Techite Pipeline, to prevent leaks and ensure consistent water delivery to customers, [and the pipeline intertie between HBMWD, Arcata, Eureka, and McKinleyville to ensure reliable delivery of water.](#)
- Treatment Facility Enhancements: Modernizing water treatment facilities to meet current regulatory standards and improve the overall quality of the water supply, [including a redundant pipeline to the Treatment Reduction Facility \(TRF\).](#)
- Hydroelectric Plant Upgrades: Implementing improvements at the Gosselin Hydroelectric Power Plant to enhance energy efficiency and reliability. [And the seismic stability assessment to ensure structural integrity during earthquake events.](#)
- Communication and Control Systems: Updating the John R. Winzler Operations and Control Center to incorporate advanced technologies for better monitoring and management of the water system, [including an upgrade to the 12kV switchgear and relocating it outside the flood plain.](#)

These initiatives are part of HBMWD's ongoing efforts to provide high-quality [and reliable](#) water services to the Humboldt Bay region. The CIP is a dynamic document, subject to updates based on evolving needs and circumstances. It serves as a strategic guide for prioritizing projects, allocating resources, and tracking progress to ensure the ~~ed~~District's infrastructure continues to meet the community's water supply requirements effectively.

Funding Sources

The District secures funding through multiple channels to support its operations and infrastructure. The primary revenue source is the sale of water to municipal and industrial customers, which includes both treated and untreated water supplies. [It should be noted that HBMWD wants to get out of retail in Fairhaven and Glendale by transferring these customers to the Samoa Peninsula Water District. It should be noted that with the formation of the Peninsula Community Service District \(PCSD\), the responsibility for servicing the current HBMWD retail/domestic customers located within PCSD's boundaries will likely be transferred to PCSD at some future date.](#) HBMWD also generates income by selling hydroelectric power produced at the Gosselin Hydro-Electric Power House to Pacific Gas and Electric Company (PG&E) on an "as available" basis.

~~Property tax revenues contribute to the district's financial resources.~~ HBMWD receives a share of Humboldt County's 1% property tax revenue, [providing additional consistent support for administrative, operational, and](#)

~~capital needs~~ Under HBMWD's Ordinance 16, which governs the cost allocations to the industrial and wholesale municipal customers, the property tax revenue is a revenue credit to the wholesale municipal customers.

Additionally, the ~~e~~District actively pursues grants and low-interest loans to finance capital improvement projects aimed at maintaining and upgrading its water infrastructure while minimizing the financial burden to its ratepayers. HBMWD actively pursues grants for projects such as instream flow studies, wildfire mitigation, and infrastructure upgrades. State Revolving Fund (SRF) Loans often provide funding for capital improvement projects. These opportunities have variable availability and amounts, but contribute to a diversified funding strategy that enables HBMWD to effectively manage its water resources and infrastructure, ensuring reliable service to its customers. More information on the District's financial status is provided under Governance and Finance.

Water Resource Planning

HBMWD holds three separate water rights permits for direct diversion, storage, and hydroelectric generation. For nearly five decades, the District supplied 40 to 50 MGD to two large industrial customers—the pulp mills located on the Samoa Peninsula. However, the closure of the Simpson Pulp Mill in 1993 and the Evergreen Pulp Mill (~~now previously~~ known as the Samoa-LP Pulp Mill) in 2009, with no prospects for reopening, significantly affected the District's financial operations. These closures also resulted in a significant underutilization of water which poses a risk to the District's water rights which are due for permit renewal/licenses/licensing in 2029.

To address these challenges, HBMWD has proactively sought new users to maximize the available-beneficial users of its water supply, aiming to safeguard its water rights and stabilize revenue streams. In 2005, the HBMWD Board of Directors initiated strategic planning efforts to address long-term issues of strategic importance to the District. Ultimately, the Board of Directors agreed to focus on two main planning initiatives regarding Water Resource Planning (~~WRP~~) and Infrastructure Planning.

HBMWD initiated the Water/Water WRP/Water Resource Planning initiative in 2009 by forming an Advisory Committee comprising of a diverse array of stakeholders, including representatives from: ~~municipal representatives/customers, environmentalists/customers, environmentalist advocacys,~~ fisheries ~~experts,~~ economic ~~developmenters/developmenters/developers/developmenters,~~ tribal members/government, and labor groups, to guide the planning process. Over 15 months, the committee engaged the community through educational initiatives and public input sessions, resulting in a comprehensive report of recommendations in 2010. These recommendations prioritized protecting local control of the District's water rights, achieving fiscal sustainability by generating new revenue streams, and ensuring environmental sustainability by preserving and potentially enhancing the Mad River ecosystem. The Board segmented-organized these recommendations into actionable tiers/segments, focusing on (1) local water sales, (2) water transfers to other agencies, and (3) exploring in-stream environmental water use options. The effort culminated in a detailed implementation plan adopted in 2011, which continues to guide HBMWD's strategic efforts to secure and optimize its water resources for the benefit of the community and environment.

Local Water Sales

HBMWD has proactively pursued local municipal, commercial, and industrial water sales to utilize its available water resources effectively. As discussed previously, several projects and proposed extensions are currently in the works. One notable project within the District includes Nordic Aquafarms, a company planning to establish a

~~land-based fish farm on the Samoa Peninsula. Additionally, HBMWD is involved collaborating in the development of the Humboldt Bay Offshore Wind Heavy Lift Marine Terminal at the Redwood Marine Terminal site on the Samoa Peninsula. This terminal is designed to support offshore wind energy projects along the West Coast, potentially increasing local industrial and domestic water demand. This project also transforms an old pulp mill (Louisiana Pacific Pulp Mill) into a facility supporting offshore wind energy operations;~~

Water Transfer to Other Agencies

HBMWD has actively explored the potential transfer of available water to other public agencies for authorized beneficial uses, ~~such as municipal, industrial, or environmental purposes.~~ This effort included engaging with stakeholders and conducting public outreach to identify community priorities and ensure the District's local water rights interests are fully protected. Any transfer would be carried out under a strictly defined contract that safeguards the ~~d~~District's water rights and aligns with public input received during the planning process. To date, neighboring municipalities such as Mendocino or Sonoma County have not expressed interest in water transfer.

In-Stream Stream Stream Stream Stream Environmental Use

HBMWD has ~~considered taken steps to pursue~~ dedicating a portion of its water rights ~~the available water, which for much of the year would otherwise have remained in storage at Ruth Reservoir,~~ to in-stream flows to support defined for environmental benefits. ~~Pursuing this potential water use was~~ The dedication was contingent on clearly demonstrated environmental advantages and securing financial support to conduct the required scientific studies and obtain regulatory approvals. In 2018, HBMWD was awarded a \$693,408 grant from the Wildlife Conservation Board to ~~explore conduct the work needed to support dedicating~~ a portion of its water rights to instream flows for environmental benefit enhancement⁴⁰. This initiative focuses on improving habitats for fish and wildlife, particularly salmonids and other special-status species in the Mad River, ~~and providing resilience to climate change.~~ Supported by local organizations and environmental experts, the ~~grant provided~~ funding for scientific studies and permits necessary to file a "Petition for Change" with the State Water Resources Control Board. If approved, the petition would allocate up to 205 million gallons per day ~~from Ruth Reservoir for~~ to instream flows, promoting aquatic ecosystem health while preserving HBMWD's water rights under California's "use it or lose it" doctrine. In fall of 2024, HBMWD ~~submitted a Draft~~ sent in the Petition for Change to the State Water Resources Control Board and awaits their response.

3.2 Electric Power Services

HBMWD owns the Gosselin Hydro-electric Power House which ~~is intended to generate~~ generate renewable hydroelectric power by utilizing water released from Ruth Lake, contributing to both energy production and water resource management. With a capacity of 2 megawatts (MW), the plant is equipped with two 1-MW turbine generators ~~designed to harness the natural flow of the Mad River.~~

HBMWD maintains a contract with PG&E to sell ~~electricity energy energy and capacity~~ on an "as available" basis. Unlike traditional hydroelectric plants operated as "peaking" facilities, the Gosselin Power House does not engage in "ramping," or rapid adjustments to water flow based on energy demand. Instead, power generation is an incidental function tied to the District's primary mission of meeting water supply needs. Releases from Ruth Lake

⁴⁰ HBMWD, Water Resources Planning, WCB Press Release 2018. Accessed from www.hbmwd.com/files/2359b5358/WCB+Press+Release+2018.pdf on November 20, 2024.

are managed primarily to ensure water delivery and environmental flow requirements, with electricity generation occurring as a secondary benefit.

3.3 Other Service Providers

In addition to HBMWD, other local governmental agencies that provide services within the boundaries of HBMWD include:

- City Retail Providers within HBMWD:
 - City of Arcata (local service provider for water services, wastewater services, solid waste and recycling, public works, parks and recreation, police services, and planning/development)
 - City of Blue Lake (local service provider for water services, wastewater services, solid waste, parks and recreation, and police services contracted through the Humboldt County Sheriff's Office)
 - City of Eureka (local service provider for water services, wastewater services, solid waste and recycling, public works, parks and recreation, police services, fire protection, and planning/development)
- District Retail Providers within HBMWD:
 - Fieldbrook-Glendale Community Services District (local service provider for water distribution, fire protection, and street lighting)
 - Humboldt Community Services District (local service provider for water distribution, wastewater collection and treatment, solid waste and recycling, and park and recreation)
 - Manila Community Services District (local service provider for water distribution, wastewater services, stormwater management, and parks and recreation)
 - McKinleyville Community Services District (local service provider for water distribution, wastewater management, street lighting, parks and recreation, and library services)
 - Peninsula Community Services District (local service provider for wastewater services, stormwater management, fire protection, street lighting, and parks and recreation and future plans to take on water distribution for retail customers currently serviced by HBMWD)
- Other Agencies:
 - Humboldt Bay Harbor Conservation and Recreation District (countywide service provider of harbor management and Humboldt Bay resource conservation)
 - Humboldt County Resource Conservation District (countywide service provider of soil conservation, agricultural services support, habitat conservation)
 - Trinity County Resource Conservation District (countywide service provider of soil conservation, agricultural services support, habitat conservation, wildfire and forest management, and community engagement and education)
 - Humboldt County (countywide provider of general government, roads, drainage, law enforcement)
 - [Trinity County \(countywide provider of general government, roads, drainage, law enforcement\)](#)
 - Wiyot Tribe (a sovereign, federally recognized Tribal government that provides critical services to Tribal members living within the Wiyot Ancestral Territory, including within the HBMWD).

- o The Blue Lake Rancheria is-(a sovereign federally recognized Tribal government that provides critical services to Tribal members within their ancestral territory, including within HBMWD boundaries) -
- o NOAA Fisheries (U.S. Department of Commerce's National Oceanic and Atmospheric Administration that is responsible for the stewardship of U.S. national marine resources)-
- o California Department of Fish and Wildlife (a state agency that manages and protects the state's wildlife, wildflowers, trees, and native habitats)-
- o U.S. Forest Service-is (an agency within the U.S. Department of Agriculture that administers the national forest)-
- o Ruth Lake Community Services District (a special district that implements and oversees the recreational activities on Ruth Lake)-

3.4 Shared Services

North Coast Resource Partnership

HBMWD is an active participant in the North Coast Resource Partnership, a collaborative framework that brings together local governments, tribes, and resource agencies across the North Coast region to address water resources, watershed restoration, and climate adaptation. Through this partnership, HBMWD leverages state and federal funding opportunities for infrastructure improvements, water supply resilience projects, and ecological restoration in the Mad River watershed, including Ruth Lake. The NCRP fosters regional coordination and prioritizes projects that align with water security and environmental sustainability goals.

Samoa Peninsula Infrastructure Workgroup

HBMWD is a member of the Samoa Peninsula Infrastructure Workgroup, which focuses on infrastructure planning and economic revitalization for the Samoa Peninsula. The workgroup collaborates with public agencies, including HBMWD, to assess and develop necessary upgrades to water, wastewater, and other essential services on the Peninsula. Given HBMWD's historical role in supplying raw and treated water to industrial customers, including the former pulp mills, the workgroup aims to explore opportunities for utilizing HBMWD's water resources to support new economic development initiatives, such as aquaculture and renewable energy projects.

Ruth Lake Community Services District

Ruth Lake CSD oversees recreation facilities, water systems, and waste management around Ruth Lake, while HBMWD provides technical support and regulatory oversight for water use permits. Together, the two agencies ensure sustainable water management and recreational use of Ruth Lake.

As discussed previously, the Ruth Lake CSD leases the land surrounding Ruth Lake from the HBMWD based on a Master Lease Agreement between HBMWD and Trinity County. The lease allows the Ruth Lake CSD to maintain and operate boat launching facilities (the marina) and other recreational facilities including the camping and day-use areas. The Master Lease also allows the Ruth Lake CSD to sublease parcels of land for recreational purposes to private individuals. Use of sublease parcels for permanent residential purposes is prohibited by the Master Lease agreement and Ruth Lake CSD policy.

There are a total of 172 subleases including 36 boat leases and 136 road access leases around the lake which are managed according to [Ruth Lake CSD](#) policy. Most lots are accessible by vehicle, but some are only accessible by boat. Subleases must adhere to rules regulating the use of private docks, onsite wastewater treatment systems (septic systems), utilities, insurance requirements, and other regulations as set forth by the Ruth Lake CSD. Any proposed development or change to sublease properties must first be approved by the Ruth Lake CSD to ensure conformance with set policies [and then by HBMWD](#). Subleases may also be transferred from one party to another with Ruth Lake CSD approval.

The Ruth Lake Leaseholder's Association is an organization for all leaseholders of Ruth Lake. The Association serves as a liaison to coordinate affairs between the leaseholder members and the Ruth Lake CSD. The Association keeps members informed through an Association newsletter, email blasts, and through its Facebook group.

4.0 GOVERNANCE & FINANCE

4.1 Governance

HBMWD is an independent special district served by a five-member Board of Directors that are elected to four-year staggered terms of office. Board meetings are held every second Thursday of each month at 9:00 a.m. Meetings are usually held at the HBMWD Board Room at 828 7th Street, Eureka but ~~Members~~ members of the public may join the meeting online. One annual meeting occurs jointly with Ruth Lake CSD at Ruth Lake.

Table 54: HBMWD Board of Directors

Board Member	Division	Term
Tom Wheeler	Division 1	November 2028
Sheri Woo	Division 2	November 2028
David Lindberg	Division 3	November 2028
J. Bruce Rupp	Division 4	November 2026
Michelle Fuller	Division 5	November 2026

In accordance with Senate Bill 415⁴¹, which became effective on January 1, 2018, the election of its Board Members ~~coincides~~ coincide with the statewide general election which is held in even numbered years. Three positions were up for election in 2024.

Staffing

HBMWD's core team of twenty eight professionals oversee its operations and ensure efficient service delivery. There is a General Manager who provides overall leadership and strategic direction for the ~~d~~ District. The current long-standing General Manager is set to retire in mid-2025 which will result in transition in management. There is also a Superintendent who manages operational and technical functions, ensuring the water system operates reliably, supported by water system operations staff, maintenance and electrical staff and dam operations staff. There is a Business Manager who oversees financial and administrative functions, supported by an Accounting Specialist II and two Accounting Technicians administrative team who handle financial transactions and regulatory reporting. The Executive Assistant and Board Secretary manages administrative tasks and board coordination ~~while the Regulatory Analyst II, ensures compliance with state and federal regulations~~.

In total, the District employees ~~XX-28~~ 28 full-time employees, ~~XX-2~~ 2 part-time employees, and ~~XX-2-4~~ 2-4 seasonal employees. HBMWD offers employees a full benefit package including a retirement plan through CalPERS, health insurance (medical, dental, vision, and an Employee Assistance Plan), life insurance, long term disability, medical flight coverage, longevity pay, paid holidays, vacation time, and more⁴².

⁴¹ SB 415 prohibits a local government from holding an election on any date other than a statewide election date if doing so in the past has resulted in a significant decrease in voter turnout. The public policy behind SB 415 was to address waning civic engagement in politics as illustrated by declining voter turnout in federal, state, and municipal elections. The legislative analysis asserts that one major contributing factor to low voter turnout - the timing of elections - could be addressed by synchronizing municipal elections with statewide elections.

⁴² HBMWD, Summary of Benefits, 2024 Summary of Benefits. Accessed from www.hbmwd.com/summary-of-benefits#body_file-6f7d5fd6-b3f5-41d9-86da-975085191f8a on December 20, 2024.

Accountability and Transparency

The District maintains a website in accordance with SB929 regulations⁴³ (www.hbmwd.com). District audits since 2011 and state controller reports since 2014 are available on the website⁴⁴ along with Consumer Confidence Reports (CCR) from 2016 to today⁴⁵. The CCR is an annual report that must be distributed to consumers by July 1st every year and discusses the overall quality of water provided by [the](#) District.

Table 65: SB929 Website Posting Requirements

Type of Requirement	Description of Requirement	Is the District in compliance?
District Contact Information	The bill does not state the specific contact information required. We recommend posting, at a minimum: <ul style="list-style-type: none"> o Physical address o Mailing address o Phone number o E-mail address 	Yes
Most Recent Agenda	The most recent agenda must be: <ul style="list-style-type: none"> o Posted at least 72 hours in advance of the meeting o Linked on the homepage of the website, navigating directly to the current agenda o Searchable, indexable, and platform-independent (simply put, post the agenda as a PDF) 	Yes
Financial Transaction Report	The State Controller's report for the District's Financial Transaction report must be posted or linked to the corresponding State Controller website.	Yes
Staff Compensation Report	The State Controller's report for the District's Staff Compensation report must be posted or linked to the corresponding State Controller website.	Yes
Enterprise System Catalog	As required by SB272, the Enterprise System Catalog must be posted. This includes: <ul style="list-style-type: none"> o Current system vendor o Current System product o System's purpose o A description of categories or types of data o Department that is the prime data custodian o Frequency in which system data is collected and updated 	Yes

Board agendas and notices are posted at the District office at least 72 hours in advance of scheduled Board meetings and on the District's website. Meetings of the Board of Directors are subject to the Ralph M. Brown Act which requires agendas to be posted at least 72 hours in advance of scheduled Board meetings in a location that is freely accessible to members of the public.

⁴³ SB 929 was signed into law on September 14, 2018, requiring all independent special districts to have and maintain a website meeting all the special district transparency requirements of State law including the availability of agendas, policies, and financial information by January 1, 2020.

⁴⁴ <https://www.hbmwd.com/financial-reports>

⁴⁵ <https://www.hbmwd.com/water-related-resources>

4.2 Financial Overview

HBMWD adopts an annual budget for the fiscal year (July 1 – June 30). The budgeting process allows the District to review annual expenses, assess the need for capital improvement projects, and plan for major infrastructure upgrades. Based on the District's most recent budget, adopted on July 11, 2024, the largest revenue source for the District is Wholesale Contracts, followed by Grant Funding. The largest expense category for the District is Projects, which accounts for ~~accounts for~~ 64% of the District's overall expenses.

Table 76: Annual Budget Summary

Category	FY 22-23	FY 23-24	FY 24-25
Revenues			
Wholesale Contract Funding	7,774,141	8,039,196	8,315,604
Grant Funding	6,482,793	7,225,758	7,105,518
Other Revenue Funding	1,750,000	1,525,000	1,540,000
Adv. Charges Collected, Reserves, Debt Service	4,868,757	4,833,407	5,011,658
Total Revenues	\$20,875,691	\$21,623,361	\$21,972,780
Expenditures			
Salaries & Wages	2,889,433	2,843,013	2,974,680
Employee Benefits	1,826,621	1,776,146	1,819,707
Service & Supply	933,700	983,700	1,028,600
Power	907,000	1,019,000	1,131,300
Projects	13,421,600	14,180,265	14,121,157
Debt Service/ Capital Financing Funding	547,337	547,337	547,337
Charges for Reserves	350,000	350,000	350,000
Total Expenditures	\$20,875,691	\$21,623,361	\$21,972,781

HBMWD utilizes a third party to conduct an annual audit. The most recent audit for FY2022-23 was prepared by O'Connor & Company CPA's and provides details about the District's revenues and expenses for the fiscal year. Over the last six years reviewed, the District has seen an average net gain of \$2.61 million. Over that same time period, the District increased their overall net position by \$15.82 million from \$20.51 million in FY2017-18 to \$36.33 million in FY2022-23. This indicates that the District has sufficient revenues to cover year to year expenses and is able to save up over time to complete major capital improvement projects. Additionally, the District was able to increase its unrestricted fund balance from (-\$2.80 million) to \$1.38 million. This allows the District to have more flexibility and resiliency when responding to sudden financial needs such as a drop in sales, infrastructure failure, or other unforeseen circumstances.

Why is there such a large difference between the budget and the audit?

The District's Ordinance 16 delineates the methodology for the District's annual charges to its wholesale water customers. HBMWD's budget is an estimation of future expenses. The District uses the cash basis of accounting to report its financial transactions on a monthly basis. The audit utilizes the accrual accounting basis in accordance with the American Institute of Certified Public Accountants (AICPA) and Generally Accepted Accounting Principles (GAAP). There are inherent differences between cash basis and accrual basis accounting and reporting.

Table 87: Audit Summary

Category	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23
Revenues						
Operating						
Municipal Water Sales	\$5,187,851	\$ 6,558,913	\$6,536,355	\$6,662,289	\$7,608,421	\$7,253,439
Retail Water Sales	\$304,080	\$434,443	\$330,744	\$337,430	\$359,543	\$372,492
Power Sales	\$424,774	\$497,664	\$349,052	\$260,924	\$423,988	\$370,233
SRF Debt Service Receipt	\$547,337	\$552,061	\$501,726	\$546,063	\$9,361	\$546,528
Other Operating	\$19,255	\$575,600	\$411,713	\$573,721	\$1,171,201	\$-
Nonoperating						
Taxes	\$854,051	\$972,985	\$996,833	\$1,055,543	\$1,133,337	\$975,000
Interest Income	\$49,325	\$37,647	\$78,556	\$31,051	\$9,936	\$230,024
Grant Revenues	\$526,404	\$1,358,201	\$1,339,444	3,374,358	\$-	\$-
<i>Total Revenue</i>	<i>\$7,913,077</i>	<i>\$10,713,846</i>	<i>\$10,544,423</i>	<i>\$12,841,379</i>	<i>\$10,785,787</i>	<i>\$9,747,716</i>
Expenses						
Operating Expense	\$6,348,732	\$7,653,714	\$6,985,703	\$6,433,252	\$6,604,486	\$6,611,234
Non-operating Expense	\$11,047	\$23,077	\$9,257	\$5,292	\$12,888	\$30,425
Depreciation	\$1,261,601	\$1,341,741	\$1,400,033	\$1,426,647	\$1,410,651	\$1,429,352
Less Reimbursements	\$(235,878)	\$(359,858)	\$(406,540)	\$(360,214)	\$(341,621)	\$(331,626)
<i>Total Expense</i>	<i>\$7,385,502</i>	<i>8,658,674</i>	<i>\$7,988,453</i>	<i>\$7,504,977</i>	<i>\$7,686,404</i>	<i>\$7,739,385</i>
Net Gain/(Loss)	\$527,575	\$2,071,105	\$2,608,866	\$5,336,402	\$3,099,383	\$2,008,331

Table 98: Total Net Position Summary

Category	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23
Total Current Assets	5,333,346	5,835,277	9,314,591	14,178,055	15,097,916	15,436,398
Total Noncurrent Assets	25,191,635	26,448,947	28,316,486	26,193,527	27,800,720	27,972,022
<i>Total Assets</i>	<i>\$30,524,981</i>	<i>\$32,284,224</i>	<i>\$37,631,077</i>	<i>\$40,371,582</i>	<i>\$42,898,636</i>	<i>\$43,408,420</i>
Total Current Liabilities	551,177	813,600	3,081,584	998,678	1,259,765	880,568
Total Noncurrent Liabilities	10,617,901	9,958,803	9,660,143	7,869,965	5,223,500	6,671,385
<i>Total Liabilities</i>	<i>\$11,169,078</i>	<i>\$10,772,403</i>	<i>\$12,741,727</i>	<i>\$8,868,643</i>	<i>\$6,483,265</i>	<i>\$7,551,953</i>
Deferred Outflows	1,281,831	1,190,306	1,126,728	1,037,378	973,874	2,127,303
Deferred Inflows	124,366	117,654	125,500	1,313,337	3,062,882	1,649,076
Total Net Position	\$20,513,368	\$22,584,473	\$25,890,578	\$31,226,980	\$34,326,363	\$36,334,694
<i>Unrestricted</i>	<i>(-2,796,573)</i>	<i>3,143,413</i>	<i>(-3,290,151)</i>	<i>488,184</i>	<i>1,095,823</i>	<i>1,378,434</i>

Long Term Liabilities

HBMWD has several long-term liabilities including a State Revolving Fund Note, compensated absences (vacation and sick time), net pension liability, and other post-employment benefits. According to the District's

most recent audit, \$547,337 in payments were made on the SRF note, and other long-term liabilities decreased by \$738,924. However, net pension liabilities increased by \$2,317,210. The SRF note was used to finance construction of the Turbidity Reduction Facility that was built in April 2003. The note was set for a 20-year term and is set to be paid off in FY2024-25. To date, the District does not have any other long-term loans.

5.0 MSR DETERMINATIONS

As set forth in Section 56430(a) of the CKH Act- In order to prepare and to update the SOI in accordance with Section 56425, the commission shall conduct a service review of the municipal services provided in the county or other appropriate area designated by the commission. The commission shall include in the area designated for a service review the county, the region, the sub-region, or any other geographic area as is appropriate for an analysis of the service or services to be reviewed, and shall prepare a written statement of its determinations with respect to each of the following:

- (1) Growth and population projections for the affected area
 - a) HBMWD encompasses a large portion of Humboldt County's most populated areas and as such, the District's service area accounts for approximately 63.65% of the County's total population.
 - b) The estimated 2020 population for the District is was 85,477. Based on a projected decline going into the next decade, it is estimated that the population within the District will be approximately 85,228 by 2030.
- (2) The location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence
 - a) Numerous DUCs exist in and around the HBMWD boundary. These include the coastline from the Eel River Valley to Westhaven, areas around McKinleyville, Fieldbrook, Blue Lake, Manila, Jacoby Creek, and Loleta along with others. However, since HBMWD is primarily a wholesale provider, when looking at the provision of water service to the these areas, other local water service providers should be considered first.
 - b) Within and around the HBMWD boundary there are several identified legacy communities. These are populated areas that area generally geographically isolated, have existed for more than 50 years, and have a MHI that is less than 80% of the statewide MHI. These communities include: Fairhaven, Fieldbrook, Manila, McKinleyville, and Samoa.
- (3) Present and planned capacity of public facilities and adequacy of public services, including infrastructure needs or deficiencies
 - a) HBMWD holds three different water rights to the Mad River including one for storage at Ruth Lake, one for hydroelectric generation, and one for direct diversion from the Essex pumps. Direct diversion is not to exceed 116 cfs (74.97 MGD) and 84,000 acre-feet per year.
 - b) The hydroelectric plant near Ruth Lake has the capacity to produce 2 MW of power utilizing two 1-MW GMG turbines generators. This power generation is used to support eDistrict operations and help offset the cost of water distribution. However, it is not a main source of income for the District.
 - c) HBMWD maintains four advanced Ranney Collector wells in-at Essex that pump an average of 10 MGD (11,000 acre-feet per year). These support the District's municipal water supply system and the industrial water supply system which is currently not in use.
 - e)d) HBMWD maintains a surface water diversion facility that is capable of pumping an average of 65 MGD for industrial water consumption. This facility is currently only operated on an occasional basis.

~~e)~~ The District's Turbidity Reduction Facility was constructed to meet state requirements for turbidity disinfection and help improve overall water quality through turbidity reduction. The facility can process 14 MGD during the winter and 21 MGD during the summer when raw water turbidity is generally lower.

~~f)~~ In 2023, the District diverted a total of 3,895.5 acre-feet of water from the Mad River for municipal services. This is approximately 4.65.0% to 8.5% of the District's Rainey Collector total source capacity. This highlights the District's ability to provide additional services to the area, such as the proposed Nordic Aquafarm and Redwood Marine Terminal projects.

~~g)~~ HBMWD regularly plans for and implements capital improvement projects such as well rehabilitation, pipeline replacements, treatment facility enhancements, and more. These projects are included in the District's Capital Improvement Plan and budgeted for on an annual basis.

(4) Financing ability of agencies to provide services

- a) HBMWD adopts an annual budget for the fiscal year (July 1 – June 30). Budget review and preparation typically takes place in the spring of each year with final adoption occurring in June or July.
- b) The District ~~regularly~~ conducts annual audits in accordance with generally accepted accounting principles. Based in the District's FY2022-23 audit, revenues totaled \$9.7 million and expenses totaled \$7.7 million for a net gain of approximately \$2.0 million.
- c) Over the last six fiscal years reviewed, the District has increased their overall net position by \$15.82 million and improved their unrestricted fund balance. This shows sound financial planning and management that allows the District to build up reserves and be more resilient to sudden financial needs.

(5) Status of, and, opportunities for, shared facilities

- a) HBMWD works in coordination with Ruth Lake Community Services District to manage the lands around Ruth Lake for recreational purposes.
- b) The District regularly coordinates with its wholesale municipal water service contract agencies including the cities of: Arcata, Blue Lake, and Eureka along with other agencies including and community service districts of: Fieldbrook-Glendale CSD, McKinleyville CSD, Manila CSD, and Humboldt CSD.
- c) There may be an opportunity to work with agencies near north of the current HBMWD boundaries including Westhaven CSD, City of Trinidad, Blue Lake Rancheria, and the Trinidad Rancheria. Additional feasibility analysis and environmental documents will be required to assess the potential for extending water mains to these is areas.

(6) Accountability for community service needs, including governmental structure and operational efficiencies

- a) HBMWD is an independent special district served by a five-member Board of Directors. The Board meets monthly on the second Thursday of every month and meetings are open to the public for in person and online attendance. Meeting agendas are posted at least 72 hours in advance of the meeting both online and at the District's Eureka office.
- b) The District currently maintains a website in compliance with SB929 requirements. Financial reports including annual audits and State Controller reports can be accessed from the website. To increase transparency, the District may want to consider posting its adopted budget with the other available financial reports.

(7) Any other matter related to effective or efficient service delivery

- a) No other matters are to be considered at this time. The District is encouraged to continue its water use planning efforts so that the region can be sufficiently supplied with reliable potable water.

6.0 SOI DETERMINATIONS

In order to carry out its purposes and responsibilities for planning and shaping the logical and orderly development of local governmental agencies to advantageously provide for the present and future needs of the county and its communities, the commission shall develop and determine the sphere of influence of each local agency, as defined by G.C. Section 56036, and enact policies designed to promote the logical and orderly development of areas within the sphere. In determining the sphere of influence of each local agency, the commission shall consider and prepare a written statement of its determinations with respect to the following:

- (1) Present and planned land uses in the area, including agricultural and open-space lands.
 - a) The District serves a wide area that includes both urban and rural land uses. It also encompasses three distinct City service areas that are subject to their own individual land use and zoning ordinances.
 - b) HBMWD encompasses ~~a large amount~~ areas of Timber designated lands ~~surrounding within~~ the Mad River ~~and Eel River~~ watersheds ~~around Ruth Lake~~.
- (2) Present and probable need for public facilities and services in the area.
 - a) The greater Humboldt Bay region continues to be the most densely populated region of the county. As such, there is a present and continued need for reliable water service in the area.
 - b) Areas north of the HBMWD boundary continue to experience water reliability issues including diminishing surface water supply, aging water systems, lack of sufficient personnel to manage systems, and limited system redundancy.
- (3) Present capacity of public facilities and adequacy of public services that the agency provides or is authorized to provide.
 - a) HBMWD is currently utilizing approximately ~~4.65.0%~~ to 8.5% of its Rainey Collector source capacity due to the loss of its industrial water contracts in 1993 and 2009. However, this also means that the District has ample water supply to provide service to new wholesale or industrial contracts as is beneficial for the area.
- (4) Existence of any social or economic communities of interest in the area if the commission determines that they are relevant to the agency.
 - a) Several established communities exist within the District boundaries including several cities and census designated places around Humboldt Bay. Many of these communities have local public service providers that receive water through contracts with HBMWD.
- (5) For an update of a sphere of influence of a city or special district that provides public facilities or services related to sewers, municipal and industrial water, or structural fire protection, the present and probable need for those public facilities and services of any disadvantaged unincorporated communities within the existing sphere.
 - a) No changes to the existing HBMWD SOI are proposed at this time. Should future extension of services be considered, additional feasibility studies and environmental documentation will likely be required to support the extension of services and an amendment to the SOI.

Humboldt Bay Municipal Water District

To: Board of Directors
 From: John Friedenbach
 Date: February 13, 2025
 Subject: Timber Management/Timber Harvest Plan

History

The District owns approximately 3,000 acres of property around Ruth Lake. Much of this land is producing timber and is not actively managed by the District.

The District has passively managed timber removal via three timber harvest exemptions from CalFire:

1. Drought Mortality
2. Dead, Dying and Diseased Tree Removal
3. Public Agency, Public and Private Utility Right of Way

The last active management was through a timber harvest plan during the late 1990's. In 2018, staff requested direction from the Board as to whether to continue to passively manage timber removal when there is little or no value at the point when trees are dead and dying or to pursue a more active timber management program which would benefit the District and headwaters ecosystem.

During 2020, the August Complex Wildfire occurred which impacted much of the headwaters of the Mad River including approximately 1,000 acres of District owned property around Ruth Lake.

Why should the District consider a Timber Management or Timber Harvest and replanting plan and what are the objectives? A management plan serves as a living document that will establish the goals and intent of the District in order to ensure that current management goals are in-sync with the actual practices on the ground. While a management plan is not a regulatory document, it is instead a means of communicating land goals to District staff now and into the future. These goals and objectives can be adaptive and can be revisited over time to deal with changing physical conditions, weather, regulatory climate, etc.

The four broad goals are:

- Improve timberland productivity overall by increasing Maximum Sustained Production (MSP)
- Improve the headwaters ecosystem for water sustainability
- Reduce fuel hazards and fire risk throughout the property
- Maintain existing pastures and grasslands
- Enhance recreation potential and overall aesthetics

Specific objectives include:

- Maintain and enhance timber resources of the property in a way that does not diminish other qualities inherent to the property
- Timberland and woodland management goals meet many wildlife goals simultaneously
- Where potential fire risks are identified, implement fuel breaks near structures, along property boundaries, roads, and other areas where fire risk is elevated
- Monitor and evaluate road drainage structures and facilities periodically to assess their effectiveness at accommodating for hill slope processes and surface drainage to minimize erosion

Discussion

In 2018, staff asked for direction from the Board to pursue the creation of a Timber Management Plan/Timber Harvest Plan. Additionally, the District could partner with the US Forest Service, especially since they own much of the area adjacent to Ruth Lake and further upstream in the Mad River headwaters drainage, to better enhance the sustainability of the headwaters ecosystem and maintain our high water quality.

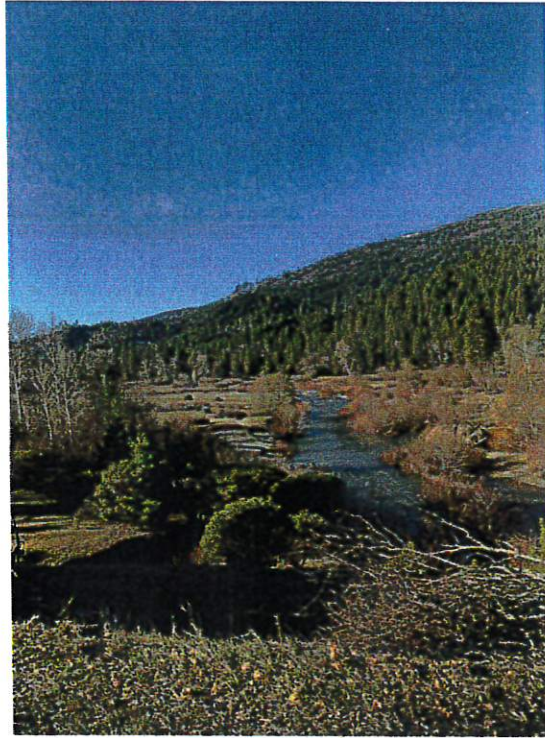
The Board authorized staff to move forward with the process, and to apply for grant funding to develop the Timber Management Plan. The District was successful in obtaining a North Coast Resource Partnership grant to fund the preparation of a Timber Management Plan.

Via the grant funding, the North Coast Resource Partnership hired BBW & Associates to prepare a Timber Management Plan for the District. Attached for your reference is the Ruth Lake Forest Management Plan – March 2024 prepared by BBW & Associates.

Next Steps

Use the Forest Management Plan to guide the District in its forestry management practices for the District's timber assets around Ruth Lake. Periodic review and updates to the Forest Management Plan should occur with status reports to the Board.

Ruth Lake Forest Management Plan -March 2024



Prepared by:



BBW and Associates, Inc.
PO Box 702
Arcata, CA
95518
707-825-0475
www.bbwassociates.com

Prepared for:



Humboldt Bay Municipal Water District
828 Seventh Street Eureka, CA, 95502-0095.



NORTH COAST RESOURCE PARTNERSHIP

Funded by the Northcoast Resources Partnership
PO Box 262, Healdsburg, CA 95448.

Executive Summary

This Forest Management Plan (FMP) is intended to be a concise, revisable, technical document describing the Humboldt Bay Municipal Water District's (HBMWD) long-term goals and objectives for managing their Ruth Lake forestlands. The Plan describes the baseline conditions, provides management recommendations, and addresses how silviculture, fire risk reduction, recreational use, wildlife habitat restoration, carbon sequestration and monitoring can be implemented. The FMP also addresses how forest management goals and objectives will be integrated with the existing and likely future conditions of the property and how the HBMWD intends to strive for compatibility with the adjacent private, public land and lease lots. A focus of this management plan consist of providing recommendations for the approach to protect the headwaters and forest areas around Ruth Lake that were impacted by the August Complex wildfire of 2020.

BBWA and the Humboldt Bay Municipal Water District both express appreciation to the North Coast Resource Partnership, which provided technical assistance funding support for this project. The North Coast Resource Partnership (NCRP) is a coalition of Tribes and counties working together on integrated regional planning and project implementation to enhance working and natural lands, built infrastructure, local economies and community health in the north coast of California. North Coast Resource Partnership projects include integrated local and regional solutions to water and wastewater infrastructure, stream and watershed enhancement, greenhouse gas emissions reduction, energy independence, forest health and local economic development.

TABLE OF CONTENTS

Property Ownership.....	5
Property Facts.....	5
Property History.....	10
Current Property Conditions.....	12
Property Infrastructure.....	13
Structures.....	13
Roads.....	14 & 63
Forest Resource.....	16
Access and Security.....	26
Recreation and Aesthetics.....	26
Soils.....	28
Streams, Wetland, Ponds.....	31
Air Resources.....	34
Wildlife.....	35
Fish and Aquatic Species.....	36
Threatened or Endangered Species.....	36
Invasive Species and Pests.....	69
Constraints and Proposed Alternatives.....	48
Economic Sustainability.....	62
Climate Considerations and Carbon Sequestration.....	83
Required Permits and Monitoring.....	93
CEQA/NEPA information.....	95
Additional Professional Assistance.....	95
Recommended Best Management Practices for Forest Future Forest Management.....	114
Maps.....	89-115
References.....	112
Glossary.....	116
Appendix 1 – Selected Conservation Standards and Specifications.....	124
Appendix 2 -Tax and Business Management.....	127
Appendix 3 – Past Plans, Amendments and Updates.....	128
Appendix 4 – Supporting Data (CNDDDB, inventory model outputs, references, etc.).....	129
Appendix 5 –Archeology.....	130
Figure 1 Nongatl and Lassik territorial boundaries.....	11
Figure 2 Uneven-age management.....	25
Figure 3 Illustration multi-age stand structure.....	25
Figure 4 Graphic, Ditch drainage, hydrologic disconnection of roads from watercourses.....	64
Figure 5 Graphic, hydrologic disconnection and rolling dips on roads.....	65
Figure 6 Defensible Space Graphic.....	82
Figure 7. Permitting Matrix for Timber Operations.....	93
Table 1 Principles of Fire Resistant Forests adapted from Agee 2002 by Graham et al 2004.....	14
Table 2 CA Wildlife Habitat Relationships Habitat Types.....	16
Table 3 Known constraints on forested operable acres.....	19
Table 4 Timber volumes.....	20
Table 5 Stock table trees over 8" DBH.....	21

The intent of the FMP (or Plan) is to support a comprehensive, integrated management approach that considers how potential actions affect the multiple environmental aspects and management goals of the property. The FMP contains a description of the current conditions within the property and describes how the landowner intends to manage the property including specific goals and objectives. The Plan is not a regulatory permit and is a non-legally binding instrument, but the proposed management activities described in the Plan serve as the basis for the development of regulatory permits for forest management implementation.

The primary regulatory permits and plans that would best govern and implement forest management activities on the property are Timber Harvest Plans (THP), or a Non-Industrial Timber Management Plan (NTMP). These are legal documents that satisfy the requirement to adhere to the California Environmental Quality Act (CEQA) for projects conducted in the state of California. The NTMP and THP are the functional equivalent of an Environmental Impact Report or EIR and CAL FIRE is the lead agency with the responsibility for approving the Plans. The Plans are permits administered by CAL FIRE that defines the minimum standards that must be met in order to legally conduct timber operations. Additionally, CAL FIRE Exemptions are another option for timber harvesting where commercialization of timber products is part of the project. Some vegetation treatments may be appropriate as maintenance activities or fall under an appropriate CEQA Exemption. A permitting matrix is included in this FMP and can be found at :

<https://forests.berkeley.edu/news/2022/07/guidance-document-for-permitting-and-planning-fuel-reduction-on-private-lands>.

The following is a list of permits or agencies with project approval responsibilities. Not all agencies listed below offer permitting options, but may provide guidance and consultation in the development of permits in the future. This list includes permits which are most anticipated and may serve the greatest function on property.

- Timber CAL FIRE Harvest Plan (THP or NTMP)
- CAL FIRE 14 CCR § 1038.3 Forest Fire Prevention Exemption . This exemption is the equivalent of a CEQA categorical exemption with explicit constraints to ensure that no significant environmental effects occur.
- CAL FIRE 14 CCR § 1038(e) Oak Woodland Restoration Exemption
- CAL FIRE 14 CCR § 1038(d) harvesting dead, dying or diseased trees, fuelwood, or split products in response to drought related stress or dead trees which are unmerchantable as sawlog-size timber located upon substantially damaged timberland exemption.
- CAL FIRE 14 CCR § 1038.1(c)(13). 10% dead, dying, or diseased trees fuelwood or split products or removal of slash & woody debris not located within a WLPZ exemption.
- CAL FIRE Vegetation Treatment Program (VTP) and Programmatic CalVTP EIR
- Trinity County Grading Permit
- CDFW 1600 Lake or Streambed Alteration Agreement
- North Coast Regional Water Quality Control Board Waste Discharge Permits or Timber Waivers
- North Coast Unified Air Quality Management District Burn Permits
- CFIP Program Environmental Checklist

This plan or FMP ordinarily will be revised or amended periodically if forest conditions or the goals of the landowner change significantly. All management activities conducted on the property under the guidance of the FMP are subject to further CEQA analysis at the project level. Site-specific CEQA analysis, including imposition of mitigation measures to ensure a less than significant effect, will occur prior to on-the-ground implementation of specific management actions outlined in the FMP.

Abbreviations and Acronyms

BMP	Best Management Practices
CCR	California Code of Regulations
CAL FIRE	California Department of Forestry and Fire Protection
CDFW	California Department of Fish and Wildlife
CE	Conservation Easement
CNDDDB	California Natural Diversity Database
CWPP	Community Wildfire Protection Plan
CEQA	California Environmental Quality Act
DBH	Diameter at Breast Height
FMP	Forest Management Plan
GIS	Geographic Information Systems
HBMWD	Humboldt Bay Municipal Water District
MBF	Thousand Board Feet
MMBF	Million Board Feet
NCUAQMD	North Coast Unified Air Quality Management District
NTMP	Non-Industrial Timber Management Plan
PG&E	Pacific Gas and Electric Company
PRC	Public Resources Code
RWQCB	Regional Water Quality Control Board
RPF	Registered Professional Forester
SMP	Smoke Management Plan
TEK	Traditional Ecological Knowledge
TPZ	Timber Production Zone
CWHR	CA Wildlife Habitat Relationships
WLPZ	Watercourse and Lake Protection Zone
USFS	United States Forest Service

Landowner Information:

Landowner(s): Humboldt Bay Municipal Water District

Mailing: POB 95 Eureka, CA 95502-0095

Phone: 707-443-5018

E-Mail: friedenbach@hbmwd.com

Forest Management Plan History

Does a Management Plan exist for this property?: Yes No

PROPERTY FACTS

Legal Property Description: Sections 19, 29, 30, 31, 32, 33 of T1S, R7E, HB&M
Sections 2, 3, 4, 5, 9, 11, 12, 13, 14, 24, 25 of T2S, R7E, HB&M
Sections 19& 30 of T2S, R8E, HB&M

Nearest city or Town: Ruth & Mad River CA

County: Trinity

Assessor's Parcel Number: 0331602700, 0350206100, 0350201400, 0350201500, 0350201600, 0350201700.

GPS Coordinates: 123°23'17.636"W 39°42'13.409"N

Total ownership acreage: 2,996 Total forested acreage: 1,253 * Including hardwood and riparian forest.

HBMWD ownership boundary - 2996 acres

Ruth Lake surface - 931.4 acres

100' buffer of shore edge from ruth lake within - 208.7 acres

HBMWD land ownership after the lake and perimeter buffer removed -2,065

Does Landowner reside on the property?: Yes * On site staff No

Note: HBMWD maintains an office and residence on-site

The property ranges from 2,600' to 3,335'.

The general aspect is northeast with a portion that is southwest. A slope map is attached that displays the property slope classes. Estimated percent of total acreage that is:

Simple topography (few ravines and changes of aspect) 50%

Percent of Land: Flat (<5% grade) 5 Gentle (< 20% grade) 35 Steep (> 35% grade) 60

Transportation System:

Vehicle Access (check): Excellent (80% accessible) Good (at least 50%)

Fair (at least 25%)

Poor (less than 10%)

Estimated improved road length (rock surface): Non-county paved roads include unsurfaced roads used by other private lands and interior roads supporting the HBMWD recreational access areas.

Estimated road length: 28 miles within or that border the HBMWD property

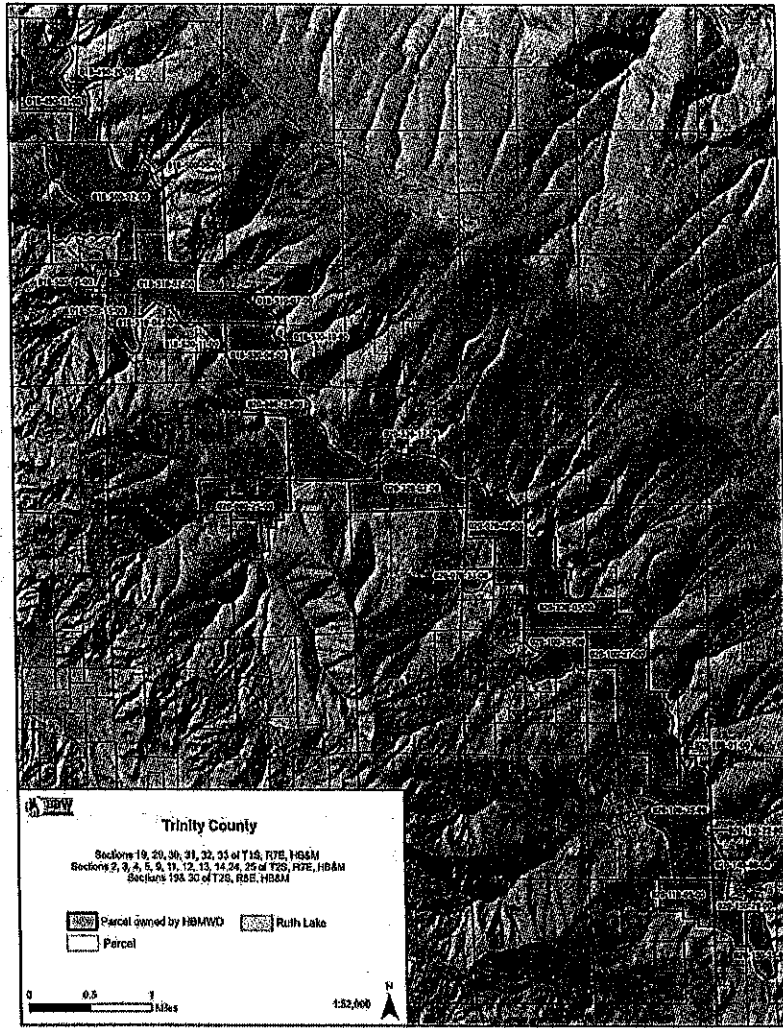
The ownership has an 11.23 mile property line interface with other public land (USFS).

Watershed Information: CALWATER 2.2 planning watershed: Hetten Creek 1109.400302, Olsen Creek 1109.400301 and Tompkins Creek 1109.40201.

Is there a 303d listing on watershed?: yes , the Mad River is listed for impacts from sediment, turbidity and water temperature.

Fire Severity Hazard Rating (CAL FIRE FRAP): Very High

From the CAL FIRE State Responsibility Map Viewer it appears that the HBMWD lands are mapped as State Responsibility Area or SRA. SRA boundaries are those adopted by the Board of Forestry and Fire Protection in January, 2011, updated to reflect changes as of July 1, 2015. This corresponds to SRA Fee notices being mailed in annually. They are the official boundaries recognized by the Board of Forestry and Fire Protection to define the areas where CAL FIRE has financial responsibility for fire suppression and prevention. Much of the adjacent Ruth Lake watershed area is mapped as FRA or Federal Responsibility area.



Introduction

This Forest Management Plan (FMP) was developed for the Humboldt Bay Municipal Water District (HBMWD. Community Services District Law (Government Code §61000- 61850) was created to provide an alternate method of providing services in unincorporated areas. The law allows residents of an unincorporated area to initiate the formation of a community services district (also referred to as “CSD”). A CSD is authorized to provide a wide variety of services, including water, garbage collection, wastewater management, security, fire protection, public recreation, street lighting, mosquito abatement, conversion of overhead utilities to underground, storm water management, library services, ambulance services, and graffiti abatement.



Mission and Goals

District Mission

Reliably deliver high quality drinking water to the communities and customers we serve in the greater Humboldt Bay Area at a reasonable cost; reliably deliver untreated water to our wholesale industrial customer(s) at a reasonable cost; and protect the environment of the Mad River watershed to preserve water rights, water supply and water quality interests of the District.

District Goals

The following goals will directly support achievement of the District’s mission. The goals are all important in supporting the District’s mission and are not necessarily in order of priority.

1. Safety and Public Health

- Employ safe work practices to ensure worker and public safety at all times. Strive for no on-the-job reportable injuries each year.
- Operate the regional water system in accordance with state and federal safe drinking water laws and regulations at all times to protect public health.

2. Financial

- Perform work in a cost conscience manner at all times to ensure the lowest possible rates to our customers, consistent with the public health, service and reliability goals of the District.
- Plan activities and projects for the subsequent year during the annual budget process. Manage activities and projects consistent with the approved budget.

3. System Operation and Maintenance

- Maintain and upgrade the regional water system to ensure it reliably supplies and delivers water in accordance with the needs of our customers.
- Employ preventative maintenance practices to preserve the infrastructure in good working order for as long as possible, but also invest in infrastructure upgrades/improvements when it makes financial and operational sense to do so.

4. Customer Service

- Understand, and then meet, the communities’ water supply needs.
- Work collaboratively with our wholesale customers on commercial and operational matters of importance relating to our water supply and/or the regional water system.

5. Future Positioning

- The regional water system has reliably served the water supply needs of the Humboldt Bay area for over 60 years. Develop a long-term infrastructure plan (both capital and maintenance) to ensure the regional water system can reliably serve our community for the next 60 years.
- Work diligently to protect the District’s water supply resource – both quality and quantity - by ensuring local control of our water rights and protection of the watershed.
- Attract and retain qualified employees to carry out all aspects of the District’s business. Promote training and professional development of our employees, and support them in carrying out their duties for the District.
- Work with regulatory agencies to: 1) ensure the necessary permits for District operations and maintenance activities are issued in a timely, cost effective manner, and 2) promote longer-term regulatory stability and certainty for the District.
- In light of climate changes which are occurring, as well as California's commitment to reduce greenhouse gas emissions (pursuant to Assembly Bill 32), evaluate and support initiatives or projects that reduce the District's greenhouse gas emissions, consistent with the District's mission and core business.

Humboldt Bay Municipal Water District Board

Bruce Rupp-Director
David Lindberg-Director
Sheri Woo-Director
Michelle Fuller-Director
Neal Latt-Director
John Friedenbach, General Manager

Environmental Setting

The plan area is located at 2,600’-3,000’ elevation within the North Coast range or mountains of northwestern California and within the upper Mad River watershed. The Cal Watershed ID’s are Hettten Creek 1109.400302 and Olsen Creek 1109.400301. The property is within the Forest Glen and Ruth Lake 7.5’ USGS quadrangles.

Legal Description

Sections 19, 29, 30, 31, 32, 33 of T1S, R7E, HB&M
 Sections 2, 3, 4, 5, 9, 11, 12, 13, 14, 24, 25 of T2S, R7E, HB&M
 Sections 19& 30 of T2S, R8E, HB&M

Ruth Lake

Drainage basin into reservoir	120 square miles
Area	1,180 acres
Capacity	48,030 acre-feet
Maximum length and width	7 miles long by ½ mile wide
Shoreline length	18 miles

Ruth Lake is a seven-mile long reservoir located in the southern portion of Trinity County. The reservoir was

formed by the damming of the Mad River in 1962, and has served both as a functional supplier of water to Humboldt County and a recreational area for fisherman, boaters, water skiers and swimmers alike. The reservoir sits at an elevation of 2,654 feet, which affords cool winters, warm summers.. It is located approximately 70 miles from Eureka. All facilities are located on Mad River Road off of Highway 36.

The town of Ruth is located approximately two miles to the southeast and Dinsmore is located 17 miles to the northwest. The HBMWD property has a shares 11.23 miles of common property boundary with other public lands.

Precipitation is mostly in the form of rain with snow a frequent occurrence mainly above 3,000 feet. Rainfall amounts average between 60-70 inches. Rain on snow events are common in the watershed area resulting in attenuated peak flows. The plan is located with seed zone 340. This is important to note for any future ordering of planting stock.

Surrounding Land Uses and Setting

Surrounding land uses include USFS lands, large private ranchlands and private smaller timberlands in some cases hosting residential structures. Much of the landscape is steep and bisected by watercourses.

Sawyer, Keeler-Wolf and Evans (2009) describe the mixed coniferous forest community as the *Pseudotsuga menziesii* Forest Alliance, which exhibits greater than 50% relative cover of Douglas-fir in the tree canopy. Other commonly encountered species consistent to the mixed coniferous forest community type are tanoak, canyon live oak, and Pacific madrone.

Riparian areas can be found along the margins of Hetton Creek, Mad River, Hobart Creek, and upper Mad River on the USFS lands within the proposed action project area. Conifer tree species in riparian forest include Douglas-fir, ponderosa pine and incense cedar and Pacific yew (*Taxus brevifolia*). Hardwood species include black oak, white oak, red alder, Oregon ash, big leaf maple and *Salix spp.* Understory species indicative of more mesic conditions are thimbleberry (*Rubus parviflorus*), coltsfoot (*Petasites frigidus*), coastal brookfoam (*Boykinia occidentalis*), giant chainfern (*Woodwardia fimbriata*), Whipplevine (*Whipplea modesta*) and horsetail fern (*Equisetum spp.*)

PROPERTY HISTORY

The upper Mad River watershed was home to three different groups whose languages are related to the Athabaskan family, the Whilkut, Nongatl and Lassik (Baumhoff 1958).

“The Lassik inhabited the drainage of the main Eel River between the mouths of Dobbyn and Kekawaka Creeks along with lands to the east including the headwaters of the North Fork Eel River and on the site that the former Ruth Store occupied in the 1920’s (Baumhoff 1958;179). Kroeber (1925:143) places the Lassik as far

north as Lassik Peak. It is possible, however, that a Nongatl group may have claimed this area; the southern Athapaskan groups are among the least known in California, and accounts of their territorial holdings are approximations”.

According to Kroeber (1925:144), the Lassik were terribly persecuted by white settlers in their lands. They may have been exploited by Mexican slave traders from Sonoma County prior to the American white invasion. Members of all southern Athapaskan tribes and many of their neighbors were forcibly removed to reservations”.

Traditionally, the Lassik occupied a territory consisting of the drainages of Dobbyn Creek and a stretch of the Eel River from the mouth of the South Fork Eel River to the Kekawaka confluence (Kroeber 1976:143; Baumhoff 1958:180). The Lassik-Nongatl boundary line begins just south of Ruth Lake on the Mad River and continues west to the Sinkyone border – which lie along the north-south trending crest of the Coast Range, roughly corresponding to the Redwood Highway (Nomland 1935:149; Baumhoff 1958:178

Expected Prehistoric Land-use: The expected prehistoric land use of this area has been determined from pre-field literature, according to Baumhoff and Essene. There was a large permanent village (Tah-kah-Ēa-čpo-be) located near Ruth. The Lassik used this area for wintering. During the winter they hunted bear, deer and rodents. During the summer they would fish from the Mad River for Trout and Sucker with a long handled net or place a weir across the river and use a dip net. South Fork mountain and the upper Mad River drainage was utilized for hunting and gathering activities by the Lassik according to Kroeber and Murphey (6G4-6G5). A site in this area would probably be a small temporary hunting or gathering camp with scattered lithic material.

The types of historic resources that have been located on or adjacent to the property are lithic scatters with associated features such as manos, projectile points, scrapers, metates, fire-cracked rock and a midden deposits.

The structure of this forest prior to European settlement was likely one of an open Douglas-fir canopy over a more continuous lower stratum of white oak and pacific madrone. Fire (natural or native introduced) probably occurred on a frequent basis on these properties. These fires most likely burned through the prairies and along the forest floor rarely burning into the forest canopy. stand improvements have taken place since

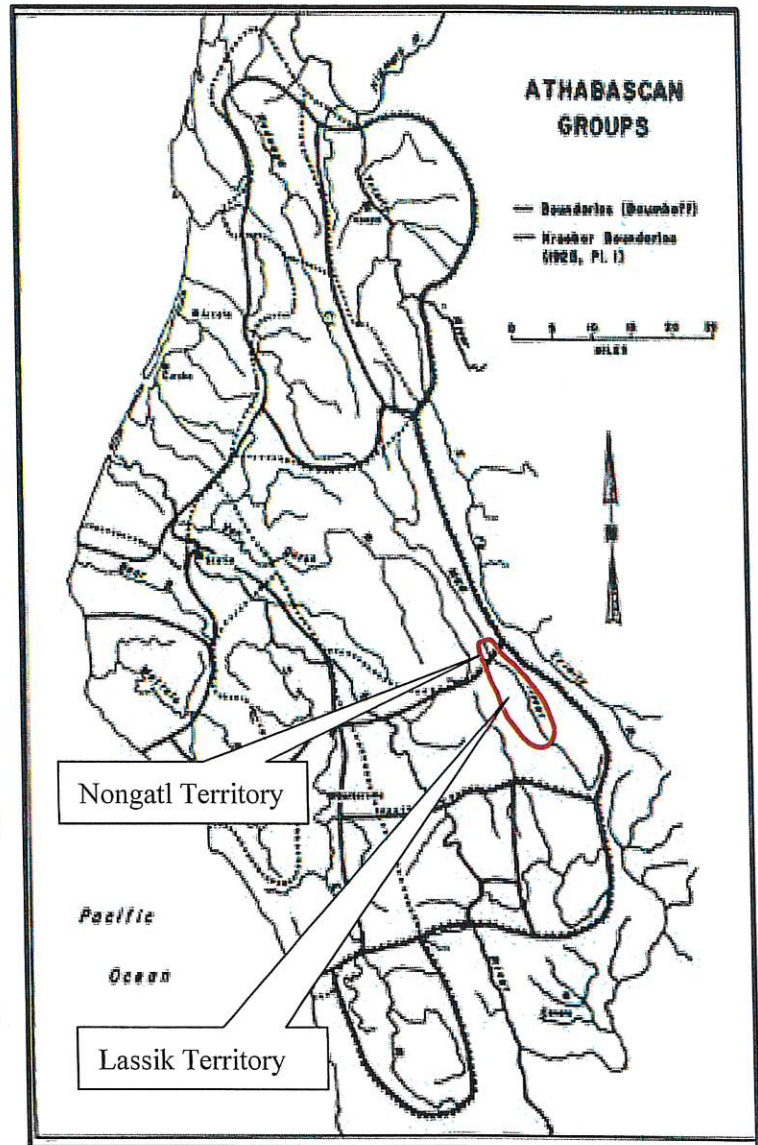


Fig. 1. The Nongatl and Lassik territorial boundaries as delineated by Kroeber and Baumhoff (1958). The red circle denotes the approximate Project location.

that time except for recent post-wildfire reforestation efforts.

Background: Post Native American Land Use History

The initial settlement of the majority of Trinity County was a direct result of the California Gold Rush (Cox 1940). During the 1850s hordes of gold seekers poured into the region, and by the end of 1851, the majority of gold bearing sections of the county had been explored and prospected. Most of the early mining activity was concentrated at gravel bars along the creeks and rivers. Trails would continue to be the main means of connecting southern Trinity to places beyond, including Weaverville to the north, Hyampon to the south, and the coast to the west.

Although the Hayfork-Mad River Trail provided a strong link to the eastern part of the county, Ruth Valley and western Trinity County had a more in common with eastern Humboldt County, due to the better trails and roads established towards Bridgeville, Dinsmore, and Fortuna (Keeter 2013) and also due to the agricultural connection of the Ruth Valley. Fed by the Mad River and numerous springs, the Ruth Valley was lush enough that sheep herders drove their flocks there for summer pasture from as far away as Alderpoint on what became known as the Ben Arthur Trail (TCHS 1981:344). And while sheep were the preferred stock for decades, post WWII preferences leaned towards cattle ranching. The construction of the Ruth Reservoir only served to decrease the prime grasslands of the valley, encouraging more ranchers to switch to mountain cattle.

Although settlement of the region was founded on ranching and gold mining, the lumber and recreation industries played a large part in maintaining the economic health of the region after the mining boom finished. The Trinity Forest Reserve was established in 1905 and the Trinity-Shasta National Forest was consolidated in 1954 (Jones 1981:57-80).” Since the completion of the reservoir, the surrounding landscape has enjoyed a firm association with recreational activities and rural mountain residences, while continuing the rich agricultural tradition of cattle ranching.

Significant Milestones pertaining to Ruth Lake:

- March 13, 1956 Voters approved the formation of a proposed water district for the Humboldt Bay area (88.9% of the voters favored its formation).
- April 25, 1956 The Humboldt Bay Municipal Water District was formed under the California Municipal Water District Act of 1911.
- June 25, 1966 The formation of the Ruth Lake Community Services District approved by County Supervisors.
- September 29, 1960 Groundbreaking Ceremony for construction of Ruth Dam and Ruth Lake at Ruth, Trinity County.

CURRENT PROPERTY CONDITIONS

A total of 1,032,648 acres burned in the August Complex, with approximately 118,053 acres on private lands, 612,634 acres on the Mendocino National Forest (MNF), 162,201 acres on the Six Rivers National Forest (SRF), and 139,760 acres on the Shasta-Trinity National Forest (SHF).

Areas burned on HBMWD lands include the entire range of burn severity with most affected acres within the moderate severity category. Recent wildfire has affected more than 50% of the HBMWD ownership. AL FIRE is concurrently conducting a Ruth Lake Fire Reduction Project (SCH # 2022060469) that involves approximately 1,400 acres of HBMWD property. This project is primarily in the unburned areas of the

ownership, but there is overlap in some areas.

This project is described by CAL FIRE:

“The project will create a fire safe community reducing fire hazard through removal of excess vegetation in the Wildland Urban Interface around Ruth Lake, California. With the recent drought years in California, communities like Ruth Lake, have numerous dead hazard trees throughout their area. There are summer cabins and roadways with hazard trees that pose a fire and safety threat to the summer cabins on property owned by the Humboldt Bay Municipal Water District. The dead trees identified as a hazard tree around structures and roadways will be felled by a professional tree falling contractor to assure no damage will be done to the cabins and infrastructure. None of the material from the treated trees or brush species will be used for commercial purposes. The larger trees will be limbed and bucked with the material chipped or left on site. The cut brush will be chipped on-site and spread over the ground to help prevent erosion in the future. Vegetation along roads will be treated using a masticator head affixed to an excavator. This equipment will only operate on existing road prisms to assure no ground disturbance will occur. These fuel management activities will reduce the volume of flammable vegetation in the area surrounding Ruth Lake thereby reducing the chance for wildfire spread into communities around the lake or for a fire within the communities to spread to adjacent wildlands while also providing safer ingress/egress for fire crews and control features to aid in firefighting efforts”.

Priority Landscapes

The CAL FIRE and Resource Assessment Program (FRAP) mapped Priority Landscape (PL) prioritizes watersheds for potential treatment to reduce wildfire risk based on threats and assets to forested lands.

Ranking:

The ranking varies from 1 (least risk) to 5 (greatest risk). Lands such as conifer woodlands (e.g. juniper and pinyon-juniper), oak woodlands (blue oak woodland, valley oak woodland, coastal oak woodland, etc.), shrublands, grasslands, were not included. In addition, only forested lands with a fire return interval departure (FRID) of class 2 or greater were included. This ensures that areas most in need of treatment to restore natural fire regimes and improve ecological functions are prioritized. The HBMWD Ruth property is classified as Rank 4 on a scale of 1-5 so is a high priority for fuel treatment to reduce risk of wildfire..

Property Infrastructure

There are structures on the property including lease lots, a 1,000 acres lake surface area, dam and hydroelectric facility, recreational use facilities and both seasonal and year round use improved roads. There are 28 miles of road within or that border the HBMWD property. The roads are in fair condition, some drainage features and stream crossings could be improved. There is an opportunity to hydrologically disconnect the road system from watercourses and eliminate some inboard ditches. The HBMWD headquarters buildings have domestic water from local springs and electricity is supplied by PG&E via overhead power lines.

CAL FIRE Forest Health Grant Project- Ruth Lake /Mad River Reforestation Project (1,096 acres)

The overall project objectives is to reforest burned timberlands and return forests and wildland habitat to a more natural, fire resilient condition and to ensure that the exposure of human assets and communities to wildfire risk has been reduced. The proposed Project will provide follow up treatments to continue efforts to modify forest conditions to maintain a forest/ shrub freshwater wetland and reduce fuel loads and prepare forests for long-term stewardship through practices such as mechanical and hand treatments and prescribed fire.

Of the 2,996 acres owned by the District, 1,647 acres were affected by the 2020 August Complex wildfire. The district conducted post- wildfire salvage logging on a portion of the burned area.

1-21EM-00146-TRI
 1-21EM 00050-TRI
 1-21-EM-00055-TRI
 1-21-EM-00112-TRI

In the spring of 2022, 200 acres of District property were reforested and 50 acres of adjacent private lands were reforested under a CAL FIRE Forest Health grant #8GG20634. In 2023 83 acres of burned District lands was reforested and 146 acres of adjacent private lands re replanted. The reforestation effort will continue in 2024 and 2025.

Forest Fuel Reduction Needs

The primary objective of fuel management projects should be to reduce the potential for destructive crown fires. To do this, projects must reduce the volume of surface, ladder and crown fuel and create horizontal and vertical separation between them. Fuel beds can be classified into strata depending on their location: 1) surface fuel 2) ladder fuel 3) crown and/ or aerial fuel. Surface fuel includes all dead and down woody material, grasses and short shrubs which are often the most hazardous fuel in many forests. Deep layers of continuous surface fuel are often found in forests that have not experienced fire for several decades, with large accumulations near the bases of large trees. Moss, lichens, and litter have high surface area and when very dry can facilitate the spread of surface fire. Woody fuel (sound and rotten logs, stumps and wood piles) can easily ignite under dry windy conditions leading to under story and crown fires. Surface fuel is most often removed by burning or by mastication.

Ladder fuel includes small trees or tall shrubs that provide a path for a surface fire to climb up into the crowns of shrubs or trees. These include live trees with branches reaching to the ground, saplings growing under taller trees, and standing dead trees. Removing ladder fuel should be the first priority of fuel treatment projects. Thinning and pruning are good ways to remove ladder fuel.

Crown fuel includes fuel that is not in contact with the ground such as limbs, foliage, and branches of the living tree canopy and any dead needles caught up in the branches of other plants. Aerial fuel can be reduced by thinning the tree canopy so that the live branches of individual trees do not touch or overlap each other.

Table 1. Principles of Fire Resistant Forests adapted from Agee 2002 by Graham et al 2004

Recommendation	Physical Effects	Fire Advantage	Concerns
Reduce surface and ladder fuel	Reduces potential flame length	Fire control easier, less torching	Surface disturbance less with fire than other techniques
Increase canopy base height	Requires longer flame length to ignite tree crowns	Less torching	Opens under story, may allow surface wind to increase
Decrease crown density	Makes independent crown fire less probable	Reduces crown fire propagation	Surface wind may increase, surface fuel may be drier
Retain larger trees	Thicker bark and taller crowns	Increases survivability of trees	Removing only smaller trees is economically less feasible
Retain fire resistant tree species	Promotes trees most likely to survive fires	Reduces mortality from future fires	Repeated treatments may be necessary to promote desired trees

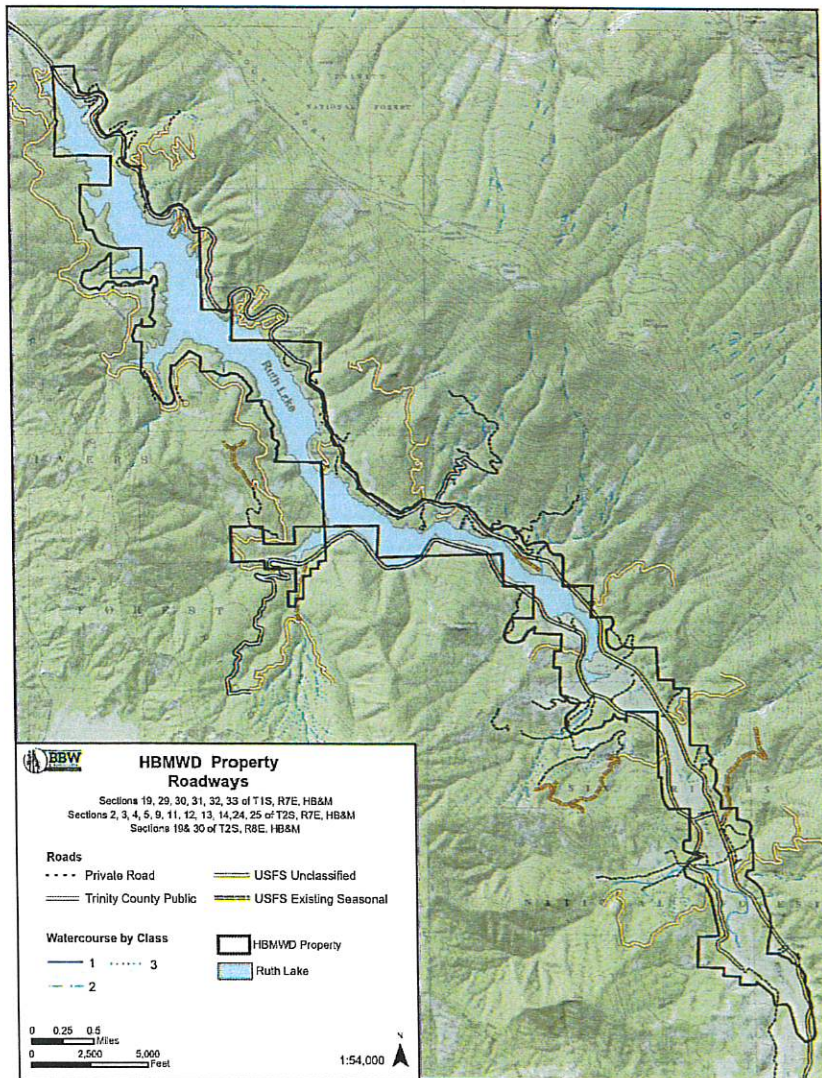
Roads

There are a total of 28 miles of road within or that border the Ruth Lake property including the Ruth Zenia Road and the Mad River Road which are public roads not owned or controlled by the District.

Some drainage features could be improved where culverts have been plugged to the extent that water is beginning to drain down the road surface and causing small rills; or where working drainage features end up draining water directly onto a road down-slope. Additional rolling dips are recommended for the entire road system to hydrologically disconnect the road network from watercourses.

Recommendation 1: *The area of manageable timberland needs further assessment to determine where access is a limiting factor. Ingress/egress may be required over some private lands and federal lands in order to consider long-range forest planning.*

Recommendation 2: *For forest planning in general and especially for mapping all roads, landings, pre-existing skid roads and unstable features, acquiring lidar coverage of the property would be highly desirable and be useful for legacy roads and skid roads.*



Forest Resource

Sawyer, Keeler-Wolf and Evans (2009) describe the mixed coniferous forest community as the *Pseudotsuga menziesii* Forest Alliance, which exhibits greater than 50% relative cover of Douglas-fir in the tree canopy. Other commonly encountered species consistent to the mixed coniferous forest community type are tanoak, canyon live oak, and Pacific madrone.

The property includes non-forest areas such as river channel and gravel bars, grassy open areas, oak woodlands, reservoir surface area, compacted areas previously used for commercial purposes, District offices and housing, residential lease lots and recreational facilities. Forest areas adjacent to the natural grasslands have a higher true oak component although oaks can be found scattered in the denser conifer stands as well. The table below lists the vegetation types on the property. There is approximately 400-500 acres that could be considered suitable for sustainable commercial timber management although half of this area was impacted by wildfire.

Table 2. CA Wildlife Habitat Relationships Habitat Types

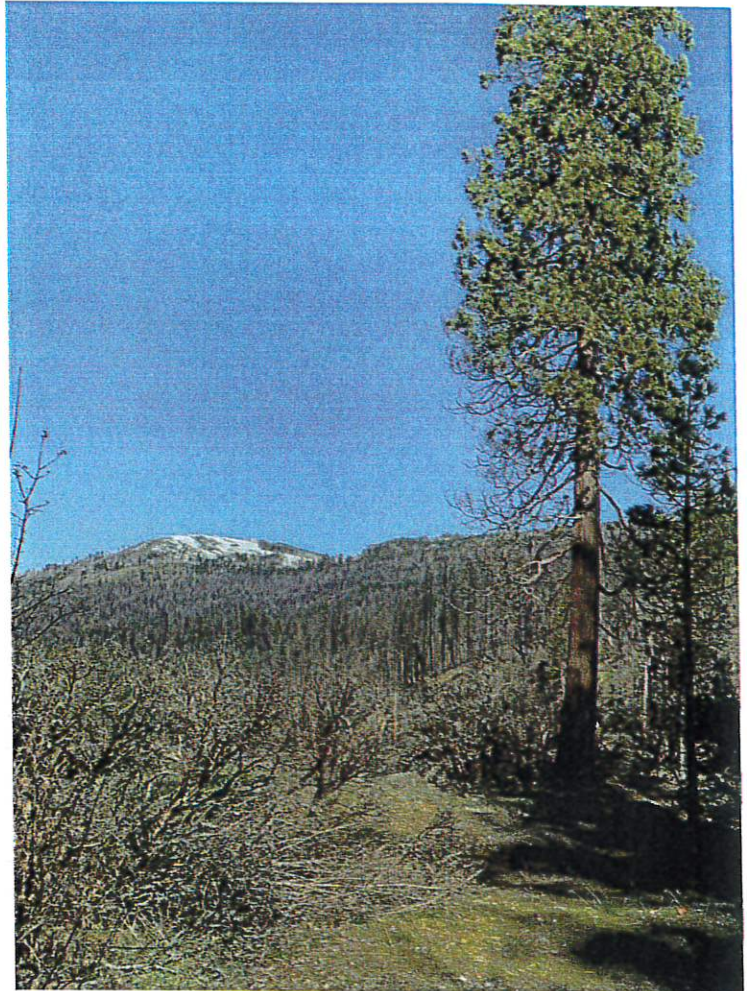
HBMWD BOUNDARY		
Sum of ACRES		Total AC
CWHR_TYPE		
AGS	Annual grassland	293.94008
BAR	Barren non-vegetated	49.32898
BOP	Blue oak/foothill pine	4.109224
DFR	Douglas fir	351.28
LAC	Lacustrine (lake surface)	903.70838
MCH	Montane conifer hardwood	43.587034
MCP	Mixed chaparral	5.7061244
MHC	Montane conifer hardwood	418.30565
MHW	Montane hardwood	372.09419
MRI	Montane riparian	172.11201
PGS	Perennial grassland	36.120631
PPN	Ponderosa pine	49.023738
RIV	Riverine	33.614101
SMC	Sierran mixed conifer	220.9184
URB	Urban (developed)	25.540221
WTM	Wet meadow	16.8741
Grand Total		2,996.2729

Sawyer, Keeler-Wolf and Evans (2009) describe the mixed coniferous forest community as the *Pseudotsuga menziesii* Forest Alliance, which exhibits greater than 50% relative cover of Douglas-fir in the tree canopy. Other commonly encountered species consistent to the mixed coniferous forest community type are tanoak, canyon live oak, and Pacific madrone.

Most of the property is vegetated with Douglas-fir (*Pseudotsuga menziesii*) and Ponderosa pine (*Pinus ponderosa*), Incense cedar (*Calocedrus decurrens*) trees approximately 65-85 years old in the unburned areas. Other trees in the canopy include madrone (*Arbutus menziesii*), red alder (*alnus rubra*), willow (*salix*), Oregon ash (*Fraxinus latifolia*), Oregon white oak (*Quercus garryana*), California black oak (*Quercus kelloggii*),

canyon live oak (*Quercus chrysolepis*) and big leaf maple (*Acer macrophyllum*). A small amount of burned over Grey pine (*Pinus sabiniana*) was observed on a south facing rocky slope (GPS 40°17'18.96"N 123°19'56.81"W). In general, the forests could be characterized as cismontane woodland, North Coast coniferous forest, or lower montane coniferous forest, depending on location within property boundaries. The understory on the property is generally sparse and open, with the highest diversity of vascular plants occurring along the creeks and along the Mad River.

A century of fire suppression, grazing and other management regimes has diminished the resilience of many of California's ecosystems by disrupting natural disturbance processes. Deciduous oak woodlands, primarily those dominated by Oregon white oak (*Quercus garryana*) and California black oak (*Quercus kelloggii*), provide an example where removal of fire can result in the conversion from oaks to less fire-tolerant tree species, primarily native conifers. In un-burned stands of oaks on the HBMWD property, Douglas fir encroachment into mature pure oak stands and associated grasslands. In mature timber stands conifer overtopping of larger black oak is common on the property in unmanaged stands where fire has been excluded.



A limited number of inventory plots were installed for the purposes of this Framework Plan. But based upon the field assessment, inventory plots and air phot analysis there is approximately 500 acres of productive timberland that could be managed sustainably to produce marketable timber products while provides co benefits such t as water quality, habitat and recreational amenities.

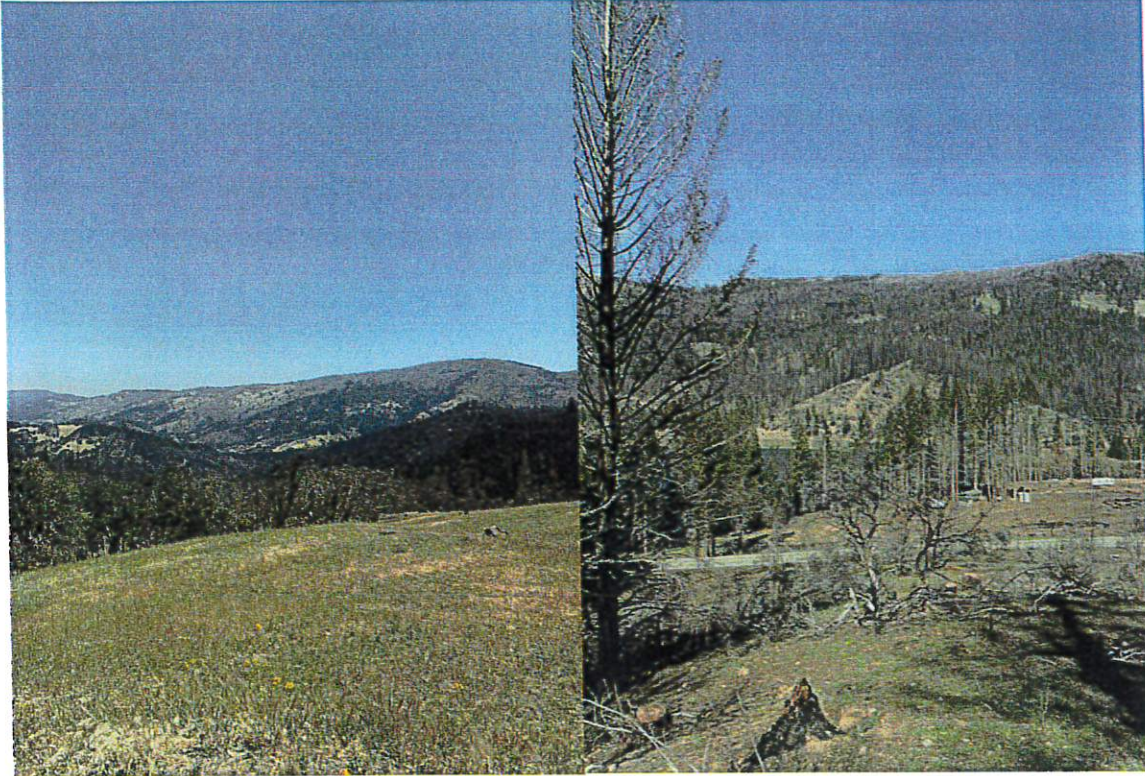
The present forest stands contain the following components:

1. Conifer seedlings < 5 years old planted on burned areas.
2. Pre-commercial size pole timber 10-25 years
3. Merchantable conifer timber (10" to 40" DBH)
4. Widely scattered mature or residual timber 80+ years old.
5. Hardwood stands with occasional large trees and open understory.

The oldest trees on this property are damaged from fire, weather and pest conditions and make excellent current and future bird nesting structure.

STAND AND LAND CLASSIFICATION

The DFR (DF4D) and (DF3S) type is essentially an even-aged 2nd growth stand of 65-80 year old Douglas-fir that has grown up since the initial logging. It also contains black oak, white oak, big leaf maple and a minor amount of salix and Oregon ash. The understory of the stand is composed of Douglas-fir seedlings/ saplings, hardwoods, forbs and huckleberry. Residual, larger Douglas-fir are scattered in this vegetation type. The Douglas-fir trees are typically intermediate and co-dominant mature trees, which are growing fairly well.



Open grassy meadow looking towards South Fork Mountain

Typical mosaic burn pattern looking east.

Operable Area

The following tables contain the amount of the property known to be non-operable, such as no-harvest watercourse and Lake Protection Zones (WLPZ), and those area having limits to operations, such as the potentially unstable area mapped by CGS. The degree to which things like unstable areas or inner zone WLPZ buffers actually limit the harvest intensity depends on the type of harvest permit used and the results of further on-the-ground assessment by the RPF and resource agencies. If the landowner's choice of silviculture is a light selection, the stocking required in the limited harvested area will likely be met and the impact of no-harvest areas will be negligible. Harvest area limitations will most likely come into play if the landowner choses to do a regeneration harvest (clearcut).

Table 3. Known constraints on forested operable acres

Type	Constraints	Acres
Lease Lots	Non-forest	30
WLPZ Lake perimeter	No-harvest	209
WLPZ, inner zone	Limited harvest	25
WLPZ, core	No-Harvest	25
Utility Easements	No- operations	60
<u>Slopes 65% +</u>	<u>Limited tractor operations</u>	<u>15</u>
total		364



Utility easements constrain a significant Acreage on the HBMWD ownership

Pile burning in 2023 on HBMWD lands. Not an option near overhead utility lines.

Growing Stock

A limited number of randomly selected plots were measured in the conifer timber types to obtain a general assessment of timber volumes and species composition on unburned stands on the property. A more robust inventory with additional plots would be necessary to reduce the standard error percent to a more desirable 5% level.

DF4D

The quadratic mean diameter (QMD) is 17.1 inches. Average trees per acre (TPA) is 241 in trees > 6" dba, average board ft per acre is 45 MBF and average basal area per acre (BA) is 284 square feet. 95% of the volume is in conifers and 5% is hardwood mostly black oak. Growth was measured at 7 % per year.

DF4S

The quadratic mean diameter (QMD) is 17.1 inches. Average conifer trees per acre (TPA) is 241 in trees > 6" dba, average hardwood TPA is 5 per acre Total board ft per acre is 16 MBF and average basal area per acre (BA) is 93 square feet. 30% of the volume is in Ponderosa pine, 59% of the volume is in Douglas fir conifers and 11% is hardwood. Growth was measured at 1% per year.

Unburned HBMWD Stand



Site Index

This is a measure of the soil's productive potential for growing commercial quality timber. The index is based upon only two factors: tree height and age.

Growth projections are based on yield tables contained in USDA Technical Bulletin No. 201 and Technical Bulletin No. 491 (Schumacher), as well as movement ratio tables developed from site trees sampled on the property. The following tables growth rates are based upon 2022 timber inventory data modeled with the Forest Vegetation System (FVS) model. The figures for the subject parcels were adjusted to represent the current stocking level of conifers as a percentage of basal area. The estimated annual growth rate on the parcel for conifers is between 1-7 %. According to published yield tables (Schumacher) for site III land, the volume per acre should be approximately 30,000 board feet per acre for 40-50 year old Douglas fir timber. The amount of hidden defect is likely low in the smaller diameter (<7%) Douglas fir but likely higher (10-18%)

in the larger older trees

Growth rates for hardwoods were not measured but is estimated at less than 3% for the larger Madrone, red alder, black oak and white oak. Mortality is expected to cancel approximately 1% of growth. Areas with an extensive manzanita understory are typically lower site class (IV).

Table 4 DF4D stand (best stands)

	2022			
species	tpa	BA	CubicFt/Ac	BdFt/Ac
Douglas fir	206	247	6928	41320
p. pine	13	15	357	1881
Incense cedar	2.3	2.5	41	164
Black oak	15.6	17.5	464	2059
other hardwoods	4.5	2.51	49	192.5
totals	241	284.5	7,839	45,616.5

DF4S stands	2022			
species	tpa	BA	CubicFt/Ac	BdFt/Ac
Douglas-fir	14.4	53	1603	10048
P. pine	19	28.6	778	4724
Black oak	1	6.5	180	964
other hardwoods	3.7	6.6	194	920
totals	38	93	2756	16,656

For reference, the stand growth percentage method, a simple method that is used to set the allowable cut of a fully stocked all-aged forest yield the following:

Cutting Cycle Average Annual Stand Growth Percent

(Years) (Simple Interest)

2 3 4 5 6 7 8

=====

5.....	9	13	17	20	23	26	37
10.....	17	23	29	33	37	43	47
15.....	23	31	37	43	47	51	55
20.....	29	37	44	50	55	58	64

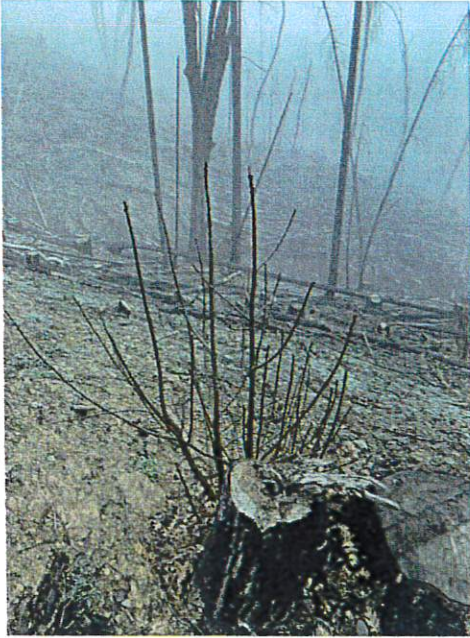
On a fully stocked stand growing at 3%, the allowable cut on a ten-year cutting cycle would be 23 percent of the stand. A 1-2% growth rate could be expected from the HBMWD property accounting for mortality and some areas of Site IV timberlands.

Table 5. Stock table trees over 8" DBH

Species	TPA	BA/ac	QMD	Volume (MBF/ac)	% Volume
Douglas fir	19	17		24.1	72%
Tan oak	49	121		2.8	8%
Other hwds	36	41		6.6	20%
Totals	104	179	17.7	33.5	

- Other hardwoods include big leaf maple, black oak, white oak, cottonwood and Oregon ash.

Note: *Timber inventory plot data, stand and stock tables, tree lists and FVS modelling information is available at BBW & Associates POB 702 Arcata, CA. 95518 (707) 825 0730 <http://bbwassociates.com>



Fire killed oaks re-sprouting

Recommendation 3: Conduct a forest inventory on the manageable higher site Douglas Fir areas.

Silviculture is the art and science of controlling the establishment, growth, composition, health and quality of the forest to meet the landowner's goals for sustainability, habitat, restoration and recreational values. For this location it is recommended to use uneven-aged silvicultural systems, which mimic a natural forest by perpetuating stands with various age classes. Thinning and/or selection prescriptions will need to balance tree growth targets, regeneration recruitment, structural complexity, concerns of bear damage, and economic viability. Typically, these criteria can be achieved by removing 20 to 40% of stand volume at each entry. A re-entry cycle may be spaced 10 to 25+ years apart depending on many factors. The longer the return interval between harvests, the more time for the stand to recover and present a more appealing visual appearance.

The maximum age that a tree is generally allowed to reach within a

managed forest is known as the "rotation age." Trees that reach this age (or sometimes size) would be harvested, or "rotated" out of the forest

Longer rotation ages result in larger and fewer trees harvested per acre. There is less un-merchantable slash debris created by logging operations in older stands as compared to younger harvested stands with more un-merchantable sized tops. The need for site preparation is lessened by the lower volumes of slash material. Also, larger and fewer logs are handled (skidded, loaded and scaled) during harvest, resulting in lower overall operating costs.

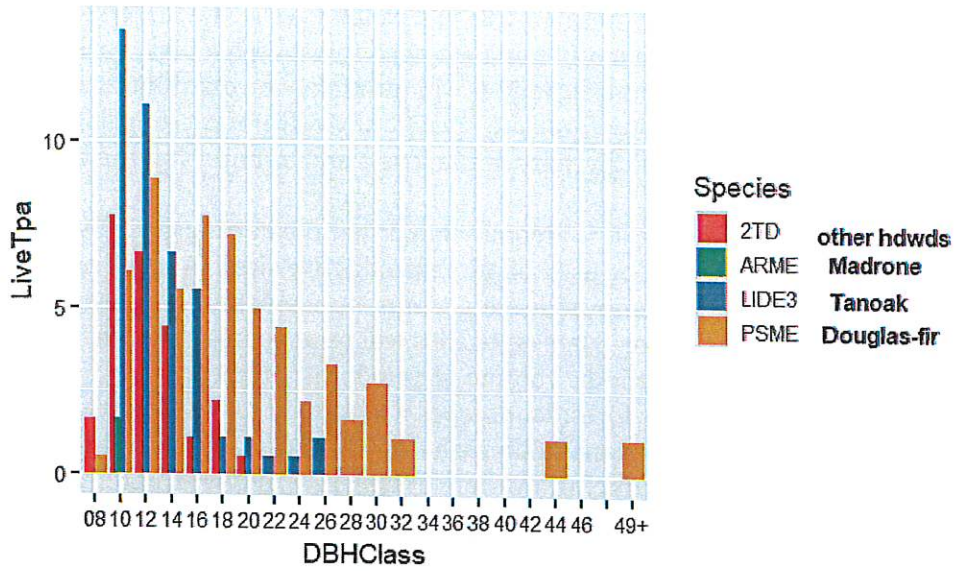
Silvicultural methods as proposed will tend to increase characteristics related to stand complexity and aesthetics which include some or most of the following factors:

- Multi-layered canopies - Modified single-tree selection timber harvests, release of advanced regeneration, establishment of new redwood tree cohorts, planting of shade-tolerant species (western hemlock, grand fir, etc.) in areas where they are underrepresented, and retention of some trees with complicated re-sprouted or reiterated tops.
- Elevated large snag densities - Girdling of selected intermediate to co-dominant trees, usually Douglas-fir.
- Elevated downed woody debris densities and volumes - Felling of trees and retention of large broken pieces to create large downed log material, and augmentation of debris by hauling in cull logs from nearby land clearing operations.
- Variable retention density harvests - Thinning from below and harvest of stump sprout clusters with retention of dominant sprout trees, variable density harvests.
- Activities to re-allocate basal area to larger diameter classes

Benefits of extended rotations/older trees:

- Reduced mortality
- Abundant understory vegetation
- Understory cohort recruitment
- Larger more stable & vigorous trees
- Deeper, fuller, wider, persistent crowns

- Greater carbon storage



The future forest resource conditions will reflect management activities that could influence structure. Generally, the forest will evolve and increase per acre stocking with time. A primary management goal is to promote healthy growth of trees of all sizes by following a system of selection silviculture. Under this system, trees are selected for harvest whose removal will increase the growth of retained trees and promote regeneration and release of Douglas-fir. The system requires a balance which maintains over story growing stock, shade, wind protection, wildlife habitat, and visual appeal; while satisfying light and spacing requirements needed to stimulate regeneration and sufficient growth of smaller trees in the understory. The future desired forest condition for this property is a mature uneven-aged forest with a high, variable canopy of large Douglas-fir with components of native hardwood. It will ultimately be distributed across the ownership as a mixture of different aged patches resulting from site-specific silvicultural prescriptions. The long-term silvicultural objective is to increase structural diversity in the forest and to build volume by ensuring that growth is greater than harvest volume.

If commercial timber harvest is conducted in the future, it is recommended that the cutting cycle be roughly 20-30 years; which is a longer re-entry cycle than could be used on more productive sites. At each entry 20 to 30% of the volume of the stand being entered will be removed leaving a minimum stocking of at least 100 square feet of basal area per acre but usually much more. Harvest entries will remove less than overall stand growth until the stocking level producing maximum periodic volume increment is attained.

Longer harvest rotations can produce healthy, complex forest landscapes. On industrial and private lands, rotations of 40-50 years are used to maximize profits and maintain cash flow. A shift to extended harvest rotations of 70-100+ years has the advantages of (a) producing a variety of tree sizes and wood products over time, (b) improving the age distributions of trees in the landscape, (c) promoting healthier wildlife habitat, (d) increasing carbon storage, and (e) preserving options for adaptive management. Precommercial and commercial thinning also help to establish diversity and minimize tree overcrowding.

The near-term management emphasis will be to thin overly dense stands and remove low quality trees. Selection across the diameter classes will be combined with a thinning from below to remove suppressed and intermediate trees that are unlikely to release following harvest. In addition, damaged, diseased, poorly formed and low vigor trees will be culled from the stands.

Ideally, thinning should open the canopy enough to allow crowns to expand unhampered for 5-10 years but not so much as to encourage the retention of lower limbs in conifers or cause forking in hardwoods. It is better to maintain a higher stem density at a younger age to encourage rapid height growth and straight, limb-free boles. When hardwoods have attained whatever height is desired to be free from forked-tops (consider what product is desired), thinning should open the canopy for longer periods of time. For conifers, this is generally when the limbs have died on the first eighteen feet of the bole.

When selecting conifer trees to retain, those which are straight, free from defect and disease, have small limbs and full, well-balanced crowns on at least 30% of their bole, and are in a dominant and codominant position should be favored.

Hardwood crop trees should be selected using the same criteria as for conifers, but in order to prevent forking or sweep in the bole they should be in a dominant position. These trees should be kept in this position throughout their lifetimes to produce the highest quality wood. Surrounding trees may be used to train them in this position.

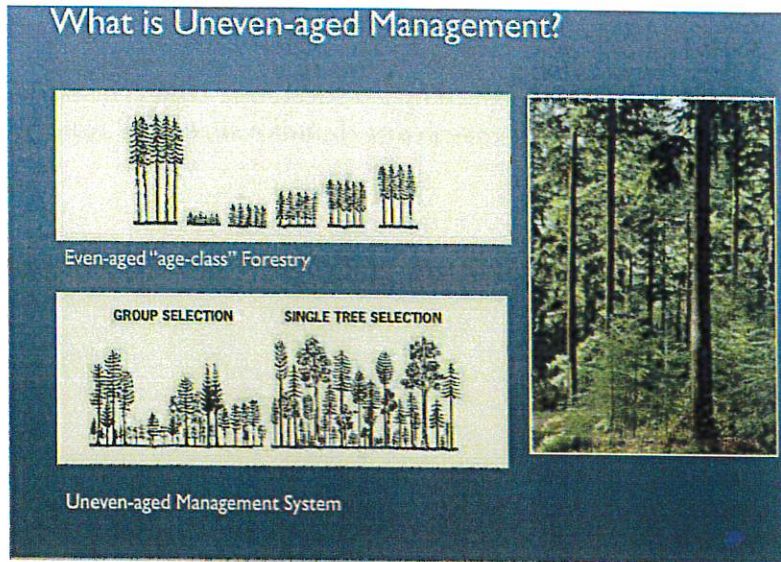


Figure 2. Uneven-age management



Figure 3. Illustration showing how over time a simplified even-age forest can be managed to become complex with multi-age stand structure, down logs and standing snags. by Robert van Pelt.

Reforestation

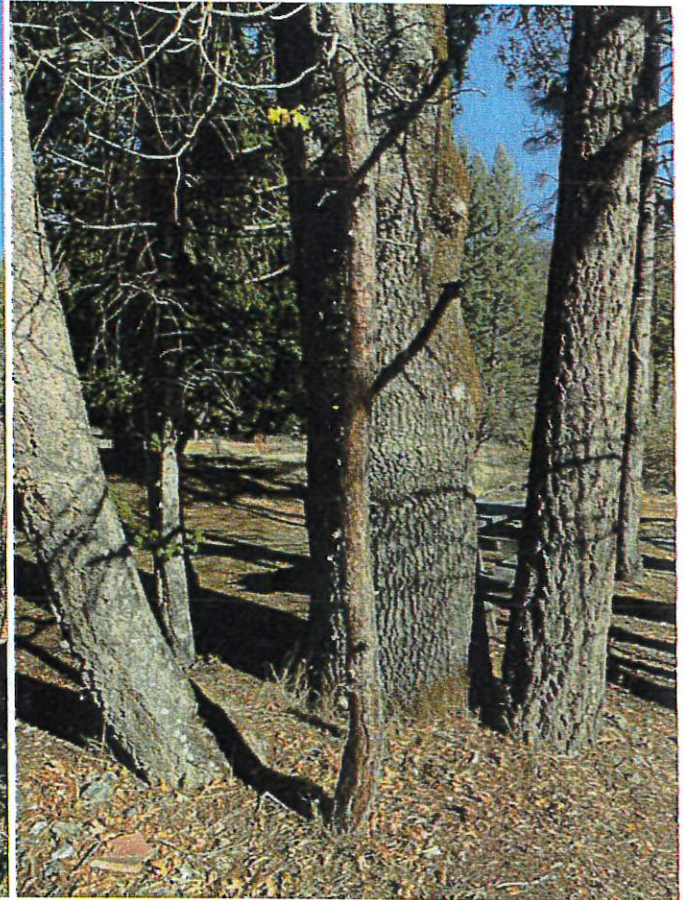
In 2022, approximately 200 acres of HBMWD burned area was planted with Douglas fir and Ponderosa pine, with a small amount of big leaf maple planted in riparian areas. (See map section). In 2023 another 83 acres were planted and 77 acres were replanted where there was excessive mortality due to dry conditions in the spring of 2022. For the 2024 spring season, an additional 23 acres of HBMWD lands is scheduled for reforestation. Using the HBMWD CAL FIRE Forest Health grant, the USFS is slated to plant 500 acres and private landowners will plant 109 acres in the spring of 2024. The seed banks for the appropriate seed zones in the Ruth area are extremely depleted and conifer cone crops in recent years have been sparse hampering timely reforestation efforts.

Also in 2023, pile burning occurred on 48 acres burning mostly dead biomass from the 2020 wildfire. There may be a need for continued follow up planting efforts depending upon reforestation success and seedling mortality. Although there was some oak mortality from recent wildfires, most oak trees that were burned in 2020 are resprouting from the base.

Recommendation: 4. Coordinate with CAL FIRE and the USFS to hire a seed cone collector to collect elevational and seed zone appropriate Douglas fir and incense cedar to make sure that zone 340 has seed available for future needs.



Incense cedar on HBMWD lands.



Conifer encroachment near black oak trees

Access and Security

The property is mainly accessed from Mad River Road, Ruth Zenia Road and Westside Road. Westside Road is often blocked by snow dur. winter months. Gate combinations are shared with neighbors where roads cut across the HBMWD property to access other parts of the HBMWD property. There have been no known incidences of significant trespassing, vandalism or illegal dumping on the property. Trinity County operates a waste transfer facility at Ruth that takes household waste (MSW), clean brush (not to exceed 4 inches in diameter), white metals, tires, used motor oil/drained oil filters, electronic waste/CRTs, UWEDs and universal waste (batteries, fluorescent bulbs). The HBMWD Headquarters has an onsite staff residence.

Recreation

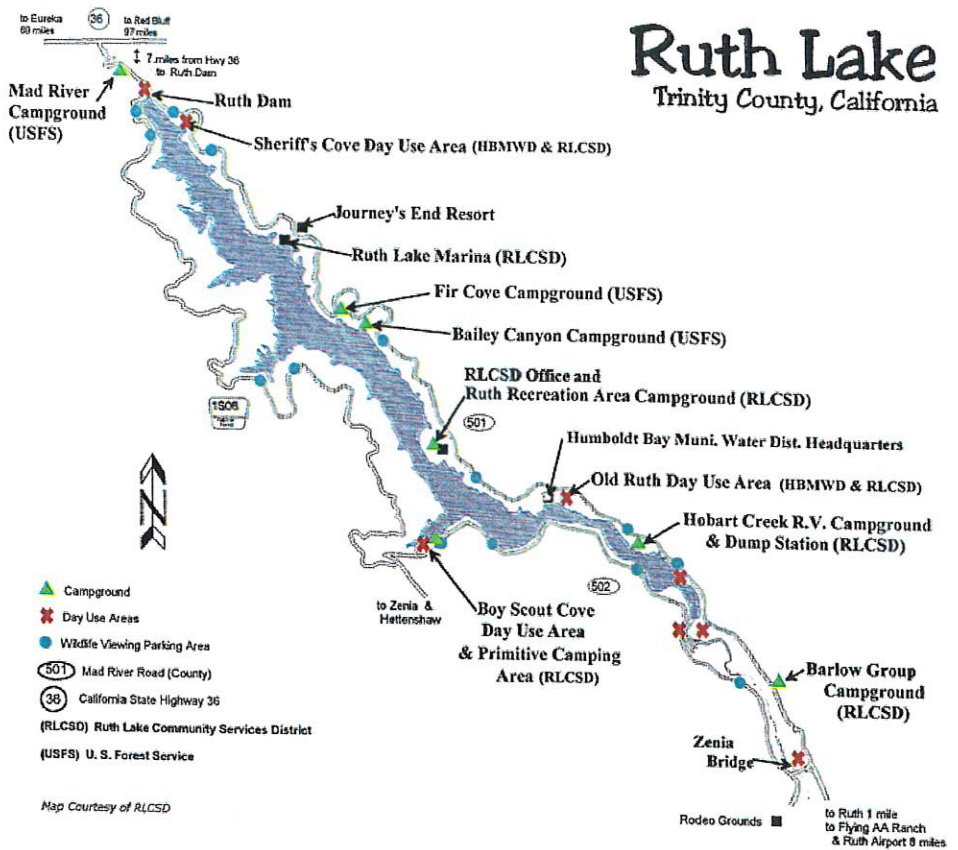
The HBMWD lands are used extensively for recreation. Over half a dozen campgrounds and day use picnic areas with facilities are conveniently located around the lake, most with beach access. There are USFS campgrounds and private campgrounds and the District provides day use picnic sites.

Hunting and fishing are possible on the property, as well as hiking, mountain biking, and camping.

Invasive Species

Surveys for invasive species were not conducted, but because of the location there are likely invasive species on the property, some of the most likely being:

- French broom (*Genista monspessulana*)
- Fennel (*Foeniculum vulgare*)
- Pampas Grass (*Cortaderia* spp.)
- Himalayan Blackberry (*Rubus armeniacus*)
- Periwinkle (*Vinca major*)
- Scotch broom (*Cytisus scoparius*)
- Spanish broom (*Spartian junceum*)
- Spotted Knapweed (*Centaurea maculosa*)
- Gorse (*Velex europaeus*)
- Yellow starthistle (*Centaurea solstitialis*) *this plant has been documented on many areas on the property (and adjacent USFS lands) that burned in 2020. Notably the Hetton Cove area.



The Trinity County Agricultural Commissioner at (530) 623-1356 or the Trinity County RCD can offer advice and assistance on the control of s noxious weeds.

Recommendation 5: Due to the August Complex wildfire invasive plants have the potential to become established. As the burn scars begin to revegetate, a survey of invasive plant locations should be conducted in order to direct removal resources at the earliest opportunity. A priority should be on locating yellow star thistle. This species was found along nearby USFS roads during the assessment for the Three Forks Fire Salvage Project (2021) and on HBMWD lands near Hetton Cove.

A major concern at Ruth Lake is Quagga (*Dreissena rostriformis bugensis*) and Zebra *Dreissena polymorpha*) mussels. These species can affix to boats that are moved from lake to lake. Originally from the Black and Caspian Sea, these invasive freshwater mollusks can kill native freshwater mussels in two ways: (1) attachment to the shells of native species can kill them, and (2) these invasive species can outcompete native mussels and other filter feeding invertebrates for food.

Where quagga and zebra mussels co-exist, quagga mussels appear to outcompete zebra mussels, and quagga mussels can colonize to depths greater than those achieved by zebra mussels and are more tolerant of colder water temperatures. The HBMWD provides education and about these aquatic invasive species and all boats and flotation devices prior to entering Ruth Lake must be inspected.

Soils & Geology

The predominant soils of the area include:

Clallam family, 35 to 75% slopes.

Clallam-Hugo-Holland families, 35 to 70% slopes.

Deadwood family-Clallam family, 45 to 85% slopes.

Doty-Hecker families, 25 to 70% slopes.

Holland-Goldridge families, 5 to 35% slopes.

Oxalis-Hecker-Doty families association, 25 to 70% slopes.

Skalan-Kristirn-Holland families association, 35 to 70% slopes.

Typic Xerofluvents-Riverwash association, 2 to 10% slopes

Soil productivity is considered moderate within most of the project area. Most soil map units have a moderate to moderately low compaction hazard rating, the higher the rock fragment content which results in low compaction hazard rating.

The soils within the property area are underlain by Franciscan Assemblage parent material, located with the California Coast Range physiographic province. Soil parent materials include sedimentary, meta-sedimentary, and meta-igneous substrates. Typically, Franciscan sediments and meta-sediments in this area are primarily derived from Late Jurassic greywacke, and small amounts of shale or schist, as well as metamorphosed basic igneous rocks. Soil depths range within the project area from moderately deep to very deep (20 to greater than 60 inches). Surface soils are generally loams to very gravelly loams with very gravelly loams and clay loams in the subsoil. Permeability varies from moderately slow to rapid, and soils are well to somewhat excessively drained. Their general ability to infiltrate water flow is likely attributable in part to the relatively high content of large particle size classes, such as gravel, in the soil.

Overly drained, rocky soils are part of the reason that the site index found during the timber inventory was not very high (III and IV). The erosion hazard rating (EHR) for the property varies with the slope class but an overall average for the property is 50-65 (CDF technical guidelines) that translates to a "moderate" hazard. Generally, land disturbing activities should not take place during wet periods as soil disturbance associated with wet weather greatly increases the chance of erosion and soil damage through compaction.

Soil productivity will be enhanced by:

1. Preventing organic matter loss

Organic matter loss occurs primarily due to site preparation activities such as high temperature-controlled burns, and by the scraping and compacting action associated with heavy equipment operation on skid trails and landings. Leaving some material in the forest post-harvest helps to provide nutrient cycling and provides organic mulch. Making sure to conduct prescribed fire treatments when conditions do not allow fires to burn hot enough to consume the duff layer.

2. Preventing surface soil loss

Surface soil loss occurs when extensive areas of ground are exposed to rainfall resulting in sheet/rill erosion and gully erosion of the topsoil layer. This is especially a concern on steep slopes, or slopes and roads adjacent to watercourses. Soil loss can be prevented by revegetating bare areas with native trees and plants and using weed free straw mulch for covering bare mineral soil where there is a potential for surface soils erosion. Generally, using selection silviculture on the forest will not expose extensive areas to surface erosion as the existing forest canopy and natural leaf drop will likely self-mulch most areas under the tree canopy.

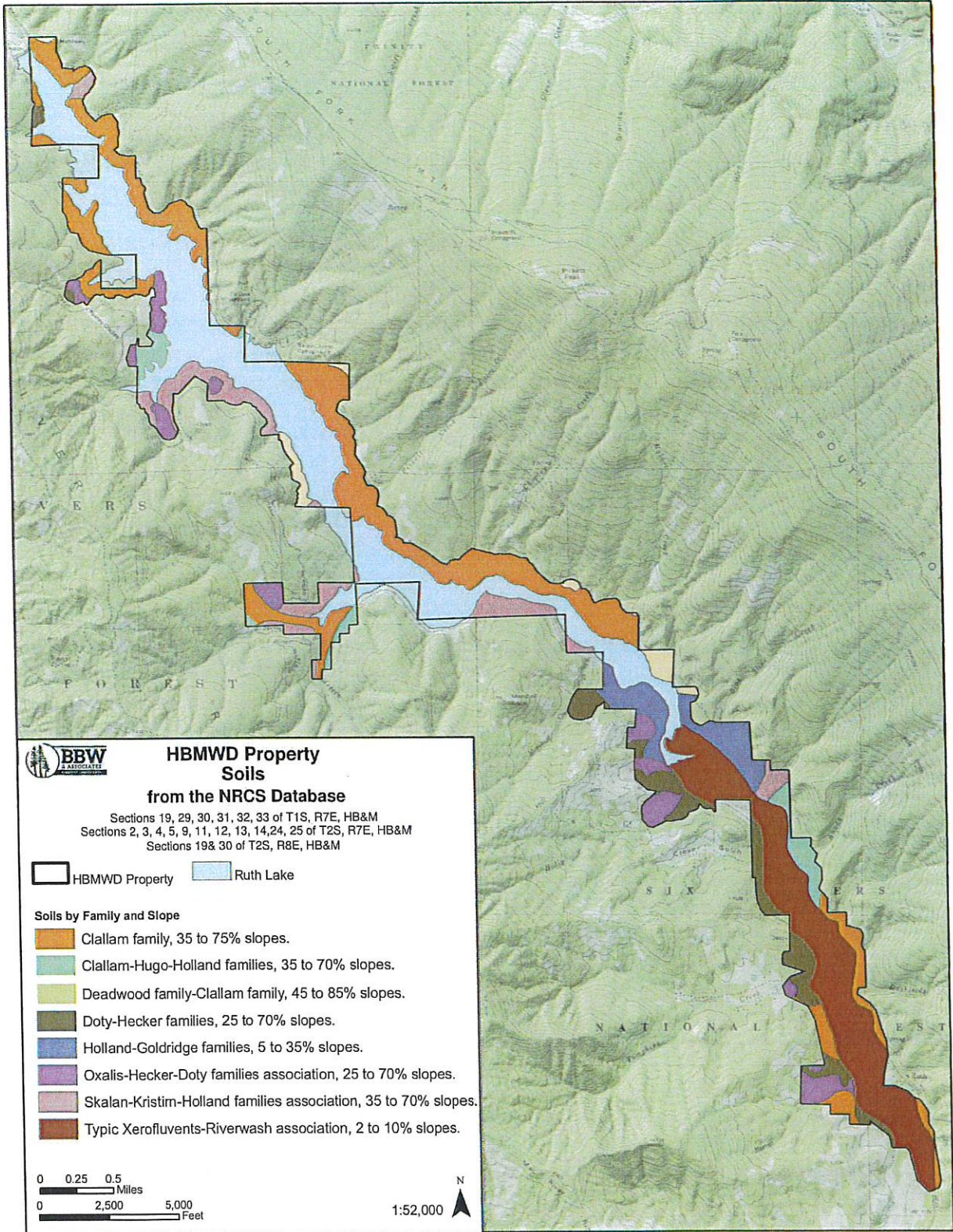
3. Preventing soil compaction

Soil compaction occurs primarily during timber yarding operations. Areas where soil compaction losses can occur include skid trails, landings and roads where heavy crawler tractors and rubber tire equipment are

used. Soil compaction results in increased surface runoff by decreasing the infiltration rate. Heavily compacted soil may also be difficult to revegetate. Soil compaction potential increases with the size of the logging machinery and when skidding on wet or saturated soil. Soil compaction can be limited by reusing existing skid trails; limiting the ground pressure of the logging equipment and avoiding the use of heavy equipment when soils are saturated.

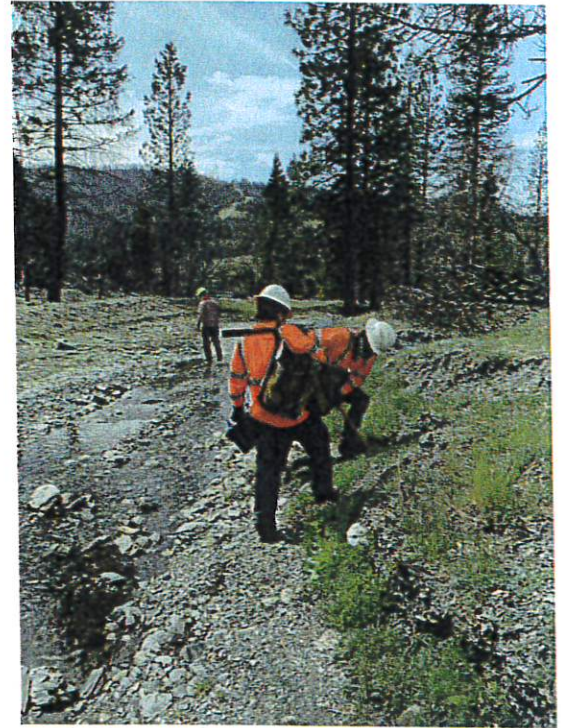
4. Preventing growing space loss

Loss of growing space occurs when forest areas are converted to other uses or rendered incapable of growing trees through site degradation. Areas converted to non-timber growing acres on the forest is limited to road rights-of-way, recreational use areas, lease lots and logging landings. Growing space loss can be minimized by reusing existing landings and skid trails, limiting landing size and decommissioning existing roads that are not needed for future management. Due to the desire for keeping landings as small as possible to prevent growing space loss, front end log loaders are not practical in County timber harvest operations. Boom type hydrologic shovel loaders can operate on smaller landing footprints so are the desirable log loader type. Resource values of native habitat communities will be restored, maintained, or enhanced to promote natural diversity and stability. Measures to achieve this include snag recruitment and retention, preservation of appropriate logs and other wood, debris maintenance of natural ponds and springs and protection of riparian zones for use as movement corridors for wildlife.

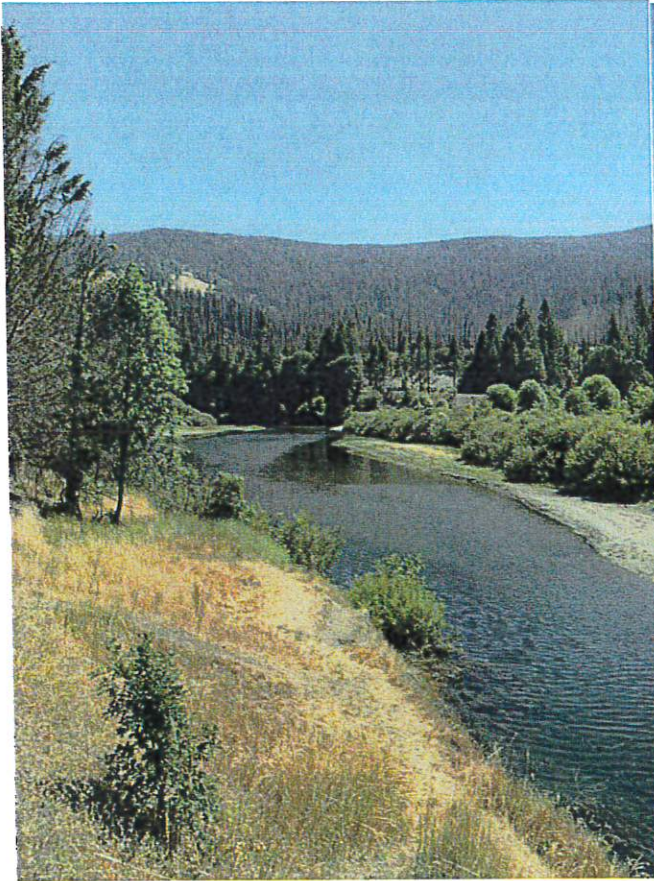


Wetlands, Streams, Ponds, Lakes

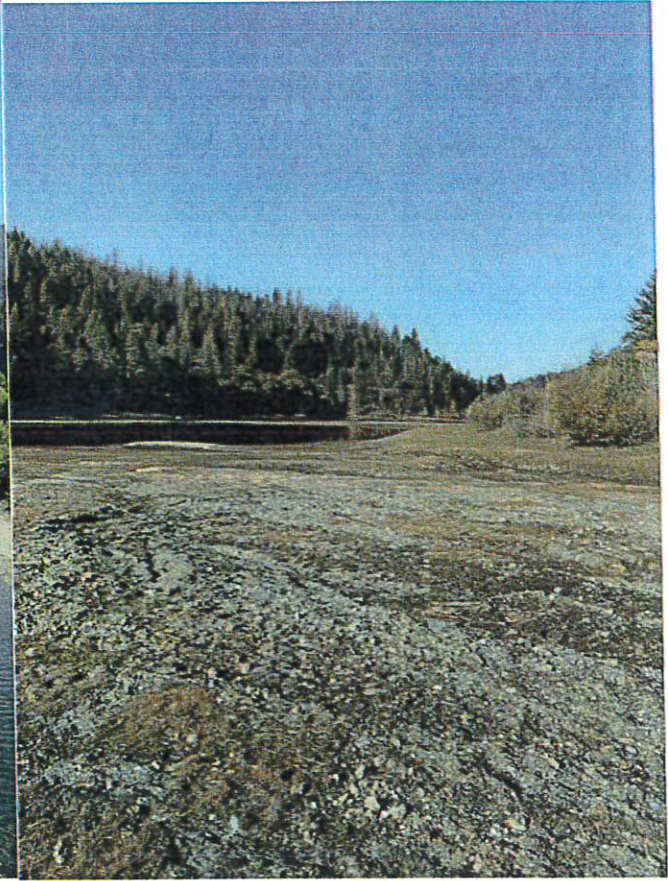
The Ruth reservoir covers 1,180 acres and is 7 miles long and ½ mile wide. It has an 18 mile shoreline and a 120 square mile drainage basin upstream from the dam. Ruth lake is located above anadromy. There are several streams (Classes I, II and III) on the property. Class I means fish present, Class II flow year round and support aquatic life and Class III watercourses re seasonal but can transport sediment to a Class II watercourse.. The lower portions of some of the Class II watercourses are considered Class I (fish present at some point in their lifecycle) where fish have access upstream from Ruth Lake. This includes Hetton Creek. Ruth Lake supports planted fish and is considered Class I as is the Mad River upstream of the lake which supports native rainbow trout far upstream onto USFS lands. The ownership includes areas of seeps and springs many of which have not been mapped. Maps in this plan Include watercourses derived from the CAL FIRE Forest Practice GIS database. There is an estimates 3.6 miles of Class I, 2.5 miles of Class II and 3 miles of Class III watercourses on the property. The Mad River is listed on the Clean Water Act Section 303(d) list due to impairments to water quality by sediment/turbidity and high water temperatures. The U.S EPA developed and established the Mad River Total Maximum Daily Loads for sediment and turbidity on December 21, 2007.



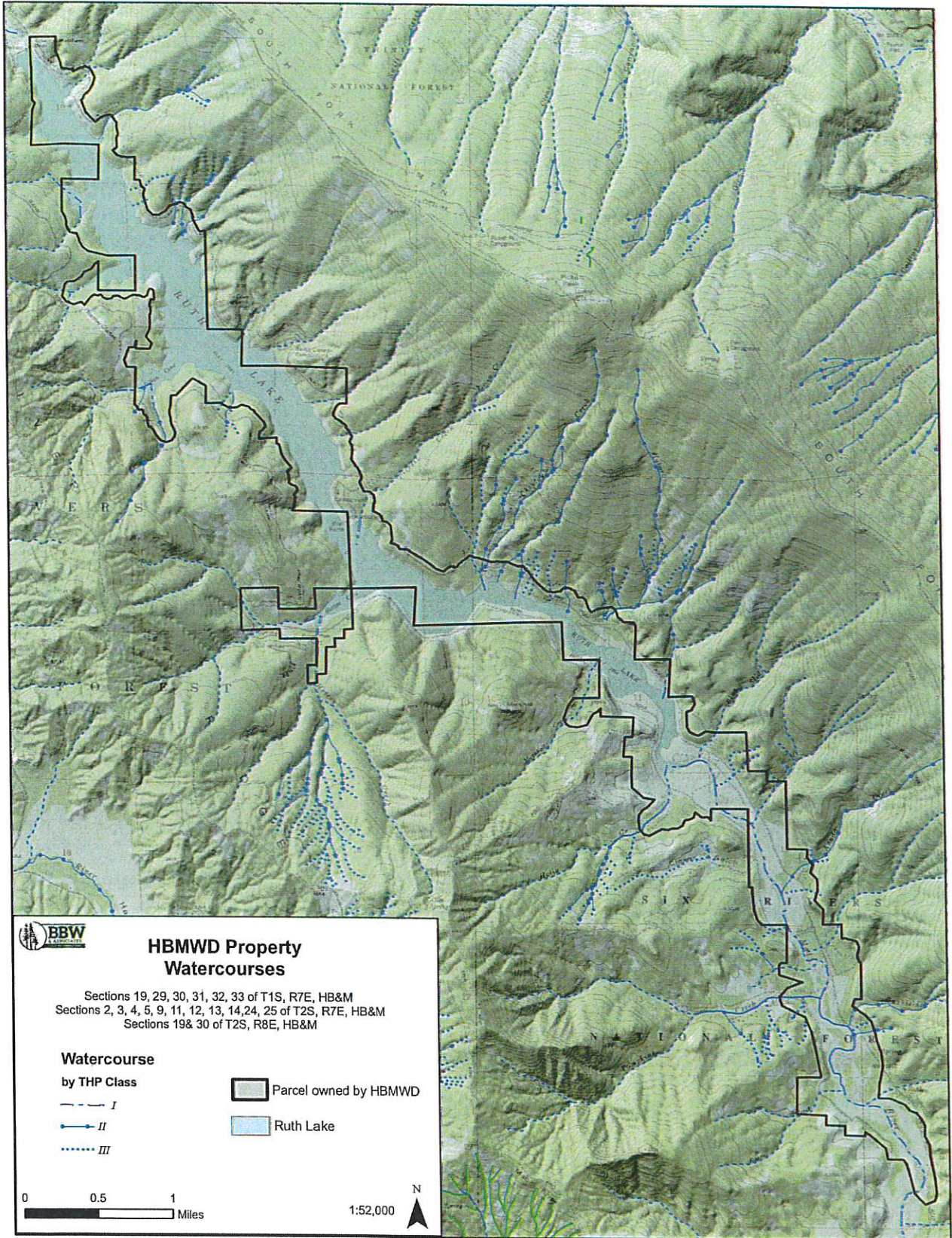
Riparian planting lower Ananda Creek 2022



View of Mad River upstream from Ruth reservoir.



A 100' lake protection buffer affects 208 acres.



Air Resources

Smoke management issues are important to address even in this remote location. Although the property is not located near a sensitive receptor such as a school or hospital, smoke avoidance and mitigation measures need to be adhered to. Often a contingency plan is necessary if conditions such as wind direction change and the controlled burn must be extinguished. This may necessitate having a water truck on standby or appropriate tools and equipment to put out the burn if necessary.

A Smoke Management Plan (SMP) may be required depending upon the type, size, or location of the burn. SMPs are always required when a burn has the potential to impact nearby sensitive receptors (homes, schools, businesses, roads, etc.). Smoke Management Plans are required under Title 17 of the California Health and Safety Code and are locally regulated under [Regulation II \(Rule 206\)](#) of the District's Open Burning rules and regulations. Generally, an SMP is required if the quantity of material to be burned equals or exceeds one acre/day. Any SMP must be submitted at least thirty (30) days prior to your burn, to allow for review and approval by the District. Plan your projects accordingly as the District will need time to review your plans, especially during the peak prescribed burning periods of the year.

Other Recommendations

Obtain air quality permits from the North Coast Unified Air Quality Management District (NCUAQMD) before burning post-harvest slash piles and burn only during permissive burn days. County burn permits can be purchased or renewed online at www.ncuaqmd.org. The Standard Burn Permit application fee is \$20.00. Prior to burning it is important to make a courtesy call to the NCUAQMD and the CAL FIRE Unit office so they are aware of the location and type of burning to be conducted.

Hand Piling and Burning Recommended Specifications

Piling is placing, laying, heaping or stacking of slash into piles for later burning during appropriate wet season conditions. This is a high use recreation area, all piles need to stay out of paths, trails, road ways, camp sites, and any other place that may hinder visitor use of recreation areas.

All piles need to stay within the boundaries of the treatment units and out of roadways (including the edge of the road) to avoid disruption to travelers.

- Slash to be piled generally constitutes material from 1" diameter up to and including 10" in diameter.
- All piles must be kept outside the drip line of desired leave trees unless unavoidable.
- No piles will be placed within 15 feet of control areas.
- No piles will be placed within 15 feet of standing snags.
- No piles will be placed within 15 feet of downed logs greater than 20 inches in diameter.
- No piles will be placed within 15 feet of the private property boundaries.
- No piles will be placed underneath or within 20 feet of power lines.

- No piles will be constructed in stream exclusion zones.
- Cover at least 3/4 of each pile with District provided waxed paper tarps Kraft* slash paper. Tarps will be placed on top of the pile and readily visible. Kraft paper tarps must be sufficiently anchored with some slash or brush so that it will not blow off in high winds. This should be just enough to anchor the paper tarps and should not bury it in the pile.
- All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
- All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
- The minimum distance between piles will be one and a half times the pile height.
- The Kraft paper tarps shall cover a minimum of 1/3 of the pile surface area. Covering with tarps will be done at the time of piling.

- Power/Phone Lines: Power or phone lines exist within or adjacent to management areas. Avoid cutting any trees that may pose a risk to contacting any phone or power lines.

Discuss how unwanted vegetation is currently treated or removed from property.

Slash from timber stand improvement work is either chipped and blown over the forest floor or piled and burned as permitted by the Air Control Board. The Trinity County Fire Safe Council periodically has a residential defensible space chipping program available.

Understory vegetation, and excess fuels have been manually removed, piled and burned during appropriate weather conditions with the proper permitting. This practice is likely to continue in order to meet the landowner's objectives of development of defensible spaces around the habitable structures and recreational facilities on the property and of reducing the overall fuel load on the property. Alternatively, piles could be masticated in an effort to maintain air quality.

Wildlife

Scoping for potential presence of special status animal species, plant species and communities was undertaken in order to determine whether the proposed project could have significant negative impacts on those species and communities. After reviewing several reference data sources, a list was compiled for species whose ranges include the project and surrounding area. California Department of Fish and Wildlife Natural Diversity DataBase (CNDDB) was consulted (March and Feb. 2023) utilizing the following search parameters: 1) nine-quad search centered on the Ruth Lake, Shannon Butte and Forest Glen 7.5' quadrangles.

A general habitat assessment was made for the project area, and nearby unique habitats (e.g. late-seral forest stands, large streams, lakes, rock outcroppings, meadows, unique soil types such as serpentine, etc.) were noted based upon aerial photo interpretation, familiarity with the area, and consultation with adjacent or nearby projects. Also, specific habitat and range information was obtained by using previously published listings of endangered, threatened or rare species by the Six Rivers National Forest several past Timber Harvest Plans on adjacent private lands in the area.

The CNDDB and CNPS queries found one occurrence for a special status plant community, the Upland Douglas-fir Forest, mapped near the northeastern part of the project area.

Rare, endangered, threatened and special status animal species:

Common Name	Scientific Name	Federal	State
northern goshawk	<i>Accipiter gentilis</i>	None	SSC
pallid bat	<i>Antrozous pallidus</i>	None	SSC
Sonoma tree vole	<i>Arborimus pomo</i>	None	SSC
Pacific tailed frog	<i>Ascaphus truei</i>	None	SSC
obscure bumble	<i>Bombus caliginosus</i>	None	None
Crotch bumble bee	<i>Bombus crotchii</i>	None	None
western bumble	<i>Bombus occidentalis</i>	None	None
marbled murrelet	<i>Brachyramphus</i>	Threatened	Endangered Candidate
Townsend's big-	<i>Corynorhinus</i>	None	Threatene
western pond	<i>Emys marmorata</i>	None	SSC
western red bat	<i>Lasiurus blossewillii</i>	None	SSC
hoary bat	<i>Lasiurus cinereus</i>	None	None
long-eared myotis	<i>Myotis evotis</i>	None	None
coho salmon -	<i>Oncorhynchus</i>	Endangered	Endangered
central Califo coast	<i>kisutch</i>		
steelhead -	<i>Oncorhynchus</i>	Threatened	None
northern Californ	<i>mykiss irideus</i>		
fisher - West Coast	<i>Pekania pennanti</i>	Proposed	Candidate
foothill yellow-	<i>Rana boylei</i>	None	SSC
southern torrent	<i>Rhyacotriton</i>	None	SSC
American badger	<i>Taxidea taxus</i>	None	SSC

SSC* - California Department of Fish & Wildlife 'Species of Special Concern Uncommon, endangered, threatened and special status plant species:

Sanicula tracyi Tracy's sanicle

Cuscuta jepsonii Jepson's dodder

Northern Spotted Owl

There are six recorded northern spotted owl Activity Centers within 1.5 miles of the HBMWD property according the CNDDB but none are within 0.7 miles of the property. Many of these Activity Centers were located in high burn intensity areas and the current use by this species is unknown.

NSO Activity Centers located within 1.5 miles of HBMWD property:

TR10133

TE10309

TR10222

RE10310

TR10122

TR10099

Foothill Yellow-Legged frog (*Rana oylei*) Status: CDF&W Special Concern

Range: Coast Ranges from Oregon border to Los Angeles Co.

Habitat: Confined to immediate vicinity of permanent streams with rocky or gravelly bottoms. Potential habitat exists in Hobart Creek, Hetten Creek and the Class II watercourses on the property.

Tailed Frog (*Ascaphus truei*) Status: CDF&W Special Concern

Habitat: Montane hardwood-conifer and redwood forests. Clear, fast cold streams with rock substrate. Burger Creek potentially provides habitat that meets the above definition.

Townsend's Western big-eared bat (*Plecotus townsendii*) Status: CDF&W Species of Special Concern
Townsend's big-eared bats are most common in mesic sites, but are found in a variety of habitats including coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands and deserts, and high-elevation forests and meadows. In northern California, Marcot (1984) found caves occupied by the bats in oak woodlands with subdominants of Douglas-fir and ponderosa pine. Cave entrances were at 2600-3900 feet in elevation, faced southeast to southwest, and were 16-490 feet from perennial streams. No habitat for this species is present in the project area.

Pallid bat (*Antrozous pallidus*)

The pallid bat is a locally common species of low elevations in California. It occurs throughout California except for the high Sierra Nevada from Shasta to Kern cos., and the northwestern corner of the state from Del Norte and western Siskiyou cos. to northern Mendocino Co. This slow-flying, maneuverable species is adapted to feed on large, hard-shelled prey on the ground or in foliage. It is known to roost with a number of other bats, principally *Myotis* spp. and *Tadarida brasiliensis*. Owls and snakes are known predators.

Pacific Fisher (*Pekania pennanti*)

Status: California Species of Special Concern

Fishers require large areas of mature conifer forest habitat. The HBMWD property does provide this type of habitat. Evidence of wood rats (a preferred prey species) has been observed on the parcel. It is not expected that low intensity uneven age management should alter the habitat enough to have a negative impact to this species. The retention of a significant amount of structural components potential silvicultural prescriptions should maintain the plan area as habitat for this species.

Cooper's hawk (*Accipiter cooperii*) (Nesting) Status: CDF&W Species of Special Concern

Habitat: Cooper's hawk's nest in patchy distributed open stands of deciduous or mixed forests rather than in the interior of contiguous stands. In Oregon, the birds nested mostly in dense, 30-70 year-old conifer stands (Reynolds et al. 1982) from sea level to timberline. Winter habitat is similar to nesting habitat (Johnsgard 1990). In California, Cooper's hawks most frequently use dense stands of live oak (Asay 1987), riparian deciduous, or other forest habitats near water (Zeiner et al. 1990b). Asay (1987) studied Cooper's hawk nesting habitat near Sacramento and in southern California and found the structure of nest stands to be one or more trees forming a single, continuous canopy. Stand understories were comprised of tree trunks and large branches with few small branches and leaves.

Most nests were in bottomlands. Asay concluded that although Cooper's hawks may nest in many different tree species and habitats in California, the primary nesting habitat in the state is live oak woodlands. Retention standards of the management on this property should continue to provide habitat for this species.

Marbled Murrelet (*Brachyramphus marmoratus*) Listing Status: State Endangered, Federal Threatened
Status: Calif. Endangered, Federally and CDF&W.

No marbled murrelets have been detected within the project area or within the area.

Range: Nests inland along coast from Eureka to the Oregon border & from Half Moon Bay to Santa Cruz.

Habitat: Lower montane coniferous forest, old-growth and redwood habitats. Nests in old-growth, redwood-dominated forests, often in Douglas-fir. Non-breeding season occurs in pelagic habitats.

The marbled murrelet is a small seabird that nests in old-growth trees within 60 km of the coast or, less frequently, on the ground in areas where trees are absent. Specific nesting habitat of this species in this part of its range is large, sometimes decadent trees with large limbs (>10 cm) for nesting platforms (Hamer and

Nelson 1995). The marbled murrelet will lay one egg on these platforms within natural accumulations of lichens and moss. It feeds in near-shore habitats up to 1.4 km offshore, in bays, lagoons and sometimes inland lakes. In California the species ranges from the Oregon border south to Santa Cruz County. Throughout most of the year this species is found in small groupings in near-shore coastal waters where they feed on small baitfish. Cutting of nest trees, gillnetting, and catastrophic events such as oil spills and wildfires are potential threats to this species.

Pileated Woodpecker (*Dryocopus pileat*)

Considered uncommon and localized throughout their range (northwestern Calif.) Insects found in decaying wood are the main source of food for this bird. There should be an attempt to leave an abundance of snags in order to mitigate the impacts as much as possible.

Gray Wolf (*Canis lupus*)

Listing Status: & State Endangered, federally delisted Jan. 4, 2021. Federally re-listed as endangered on 2-10-22.

Reported on CNDDDB in FMP area: No

Reported on CNDDDB in Biological Assessment Area: No

Range: Historically throughout most of North America except southeastern U.S. Current range includes Canada, Alaska, the Great Lakes, northern Rockies and the Pacific Northwest.

Habitat: Habitat generalists, historically occupying diverse habitats including tundra, forests, grasslands and deserts. Primary habitat requirements are the presence of adequate ungulate prey, water and low human contact.

The gray wolf was listed as endangered under the California Endangered Species Act (CESA) by the California Fish and Game Commission on June 4, 2014. This species is also listed as a Species of Greatest Conservation Need in the State Wildlife Action Plan. The "take" of a gray wolf in the state is prohibited, including to hunt, pursue, catch, capture, or kill. This recovering species is in the early stages of establishing itself in California. Although historical abundance and distribution of gray wolves in California is poorly understood and reliable records are rare, wolves are considered to have occurred in the Sierra Nevada, southern Cascades, Modoc Plateau, and Klamath Mountains. Gray wolves are large (usually >100 lbs., about 5 ft. long, and 2.5 ft. at shoulder height) and highly mobile (movements of up to 30 miles/day) habitat generalists and are most likely to occur in areas with a significant prey base (ungulates) and low densities of humans. Given that gray wolves have been reestablished in southern Oregon and northern California, public and private timberlands and ranchlands in northern California are the most likely areas in which wolves may begin to become reestablished in California. On November 3, 2020, the United States Fish & Wildlife Service ("Service") published a final rule removing the gray wolf (*Canis lupus*) from the federal list of Endangered and Threatened Species in the lower 48 United States and Mexico. The rule took effect on January 4, 2021. Grey wolves were re-listed as federally endangered again on February 10, 2022.

Gray wolves have not been observed in or near the plan area but habitat and prey base does potentially exist. If a gray wolf, or den/rendezvous site, is observed in the plan area the protection measures include a protection buffer to 0.25 mile.

Sonoma Tree Vole (*Arborimus pomo*) Status: California Species of Special Concern.- a small arboreal mammal associated with mature forests. With their arboreal nature and diet almost entirely of Douglas-fir needles, tree voles are among the most unique and highly specialized rodents in the world. Humboldt, Mendocino, and Sonoma Counties (Jones 2003). The Sonoma tree vole is recognized in California as a Species of Special Concern (California Department of Fish and Game 2011). In addition to its status, tree voles are important prey species of the northern spotted owl.

California Condor (*Gymnogyps californianus*)

Reported on NDDDB in area: No

Reported on NDDDB in Biological Assessment Area: No

Status The California Condor is listed as endangered under the federal Endangered Species Act and the California Endangered Species Act, as well as a California Board of Forestry Sensitive Species and Fully Protected under the California Fish and Game Code.

Range Historically, the range of California Condor ran from British Columbia to Baja California. Their main population rings the southern mountain boundary of the Central Valley, from the Los Padres National Forest to Sequoia National Forest. A stable population has been established in the Ventana Wilderness and Pinnacles National Park.

Habitat Nesting habitat is generally characterized by steep, rugged terrain with nests in rock crevices with overhanging ledges or broken-topped large trees, like sequoia or coast redwood. They are known to roost on rocky outcrops, tall trees, or snags near foraging, nesting, and water. Condors need large areas to allow for take-off and landing, where winds provide thermals for flight. Foraging habitat needs to have high productivity for obligate scavenging. Sparse vegetation provides higher visibility of carrion and thermals keep them in the air long enough to find carrion, without expending large amounts of energy. Condors can cover large distances in the course of a day as they forage; sometimes flying up to 150 miles for food.

Language in the state listing final rule states that take of condor is allowed, provided the "take is not intentional ... or due to negligent conduct." Additionally, the Final rule states "Habitat alteration (e.g., removing trees, . . . altering the nest structure or perches near the nest) or significant visual or noise disturbance (e.g., tree felling, chainsaws, helicopter overflight) within 656-ft (200 m) of an occupied nest are prohibited. Excluded from this prohibition are emergency fuels treatment activities by Federal, State, and local agencies and Tribes to reduce the risk of catastrophic wildfire and emergency response services. Activities such as ranching and use of existing roads and trails within the 656-ft (200 m) buffer area around an occupied nest would not be considered a significant visual or noise disturbance. For the purposes of this rule, an occupied California condor nest is defined as a nest that is: (1) attended by a breeding pair of condors, (2) occupied by a condor egg, or (3) occupied or attended by a <1-year-old condor. To minimize the potential of take in the instance an active or occupied California Condor nest site is discovered within 200 meters of the property, no timber operations will be conducted within the 200 meter zone. If a nest site is discovered during active timber operations, operations must cease within 200 meters and CDFW will be consulted to provide guidance for protection of this species.

Western bumblebee (*Bombus occidentalis*) The western bumblebee is a generalist forager and does not depend on any one flower type. *Bombus occidentalis* visits a wide variety of wildflowers. Since bumble bee colonies obtain all their nutrition from pollen and nectar, they need a constant supply of flowers in bloom. It performs "buzz pollination" and has been used as a commercial pollinator for greenhouse tomatoes, field berry crops, alfalfa, avocado, apples, cherries and almonds (Evans et al 2008). The Western bumble bee requires habitats with rich supplies of floral resources with continuous blooming from spring to autumn. Landscape level habitat quality has been shown to influence bumble bee species richness and abundance, indicating that isolated patches of habitat are not sufficient to fully support bumble bee populations (Hatfield and LeBuhn 2007; Öckinger and Smith 2007). Western bumble bees require open meadows with rich supplies of floral resources with continuous blooming from spring to autumn. Western bumble bees have been observed taking nectar from a variety of flowering plants. There is little information regarding the western bumblebee on the Forest. Until recently, the nearest confirmed detections were of two workers in 1997 in the Marbled Mountain Wilderness on Klamath National Forest. In September 2014, one, possibly 2, western bumble bees were detected on Route 1 near Horse Mountain on the Lower Trinity Ranger District. There are no detections of this species on the Mad River District.

Northern Goshawk (*Accipiter gentilis*)

Listing Status: CDFW 'Species of Special Concern', BOF Sensitive

Reported on NDDDB in Biological Assessment Area: No

Range: Much of the northern hemisphere, from near the timber line in the north to as far south as sub-tropical regions. The species ranges throughout California with most observances inland from the coast.

Habitat: North coast, subalpine and upper montane coniferous forests. Within these habitats this species tends to nest on north slopes near bodies of water. This larger raptor is normally found in mature Douglas-fir stands with a scattered hardwood component and light understory/shrub layer.

The northern goshawk is a medium-sized raptor and is the largest member of the *Accipiter* genus. The most important prey is small mammals and birds found in forest habitats. Goshawks are often seen flying along transition zones between habitat types, such as the edge of a forest or meadow, flying low and fast hoping to surprise unsuspecting prey. Adults return to their nesting territories by March or April and begin laying eggs in April or June. The incubation period can range from 28 to 38 days. The young leave the nest after 35 to 46 days and start to fly another 10 days later. The young may remain in their parents' territory for up to a year.

If any occupied nest sites of a listed bird species are detected during the any project planning or implementation, the Department of Fish & Wildlife and the California Department of Forestry & Fire Protection should be notified in compliance with 14 CCR 919.2 and appropriate protection will be provided.

The Sharp-shinned Hawk (*Accipiter striatus*), and Cooper's Hawk (*Accipiter cooperii*) are uncommon residents, but both species breed sparingly throughout the region. The area scheduled for harvest was repeatedly traversed during plan layout, during which Registered Professional Foresters (RPFs), forestry technicians and a Professional Wildlife Biologist looked for signs of nesting accipiter's. There is a remote chance that future forest management could result in incidental impact to accipiter's. If Cooper's or sharp-shinned hawks are nesting within a 375-foot radius of areas scheduled for harvest, operation within this radius will cease until the nest has been reported to the CDFW and, if deemed necessary, additional protection measures adopted as per 14 CCR 919.2(d).

Osprey (*Pandion haliaetus*)

Listing Status: CDFW 'Watch List'

Reported on CNDDDB in project area: yes

Range: Breeds in northern California from Cascade Ranges south to Lake Tahoe and along the coast south to Marin County.

Habitat: Riparian Forest habitats. General habitats include ocean shores, bays, fresh-water lakes and larger streams.

Breeding takes place along major rivers, lakes, and estuaries. Breeding population estimated in 1975 at 350 - 400 pairs in northern California, numbers apparently increasing in recent years. Associated strictly with large fish bearing waters. Preys mostly on fish. Ospreys require open and clear waters for foraging. Swoops from flight, hovers or perches to catch fish near surface of the water. Uses large trees, snags, and dead-topped trees in open forest habitat for cover and nesting, within 15 miles of a good fish-producing body of water. Also uses large platform nests on cliffs or human-made structures such as power poles. Nests as high as 250 feet above the ground. Needs tall open branched perch trees for landing before approaching nest and for flight practice for young.

There are several historic osprey nests around Ruth Lake. Sightings of this species have been confirmed by BBWA staff during this project scoping, field work and reconnaissance.

Known nest trees will be avoided and noise generation will be avoided within 375' of an osprey nest tree

during the breeding and rearing period. Retention of over-story conifers and snags will provide future nesting habitat for ospreys., Significant impacts to ospreys are not expected as a result of this project implementation.

California Condor (*Gymnogyps californianus*)

Reported on NDDDB in area: No

Reported on NDDDB in Biological Assessment Area: No

The California Condor is listed as endangered under the federal Endangered Species Act and the California Endangered Species Act, as well as a California Board of Forestry Sensitive Species and Fully Protected under the California Fish and Game Code.

Historically, the range of California Condor ran from British Columbia to Baja California. Their main population rings the southern mountain boundary of the Central Valley, from the Los Padres National Forest to Sequoia National Forest. A stable population has been established in the Ventana Wilderness and Pinnacles National Park.

Nesting habitat is generally characterized by steep, rugged terrain with nests in rock crevices with overhanging ledges or broken-topped large trees, like sequoia or coast redwood. They are known to roost on rocky outcrops, tall trees, or snags near foraging, nesting, and water. Condors need large areas to allow for take-off and landing, where winds provide thermals for flight. Foraging habitat needs to have high productivity for obligate scavenging. Sparse vegetation provides higher visibility of carrion and thermals keep them in the air long enough to find carrion, without expending large amounts of energy. Condors can cover large distances in the course of a day as they forage; sometimes flying up to 150 miles for food.

Language in the state listing final rule states that take of condor is allowed, provided the "take is not intentional or due to negligent conduct." Additionally, the Final rule states "Habitat alteration (e.g., removing trees, . . . altering the nest structure or perches near the nest) or significant visual or noise disturbance (e.g., chippers, chainsaws, within 656-ft (200 m) of an occupied nest are prohibited. Excluded from this prohibition are emergency fuels treatment activities by Federal, State, and local agencies and Tribes to reduce the risk of catastrophic wildfire and emergency response services. Activities such as ranching and use of existing roads and trails within the 656-ft (200 m) buffer area around an occupied nest would not be considered a significant visual or noise disturbance. For the purposes of this rule, an occupied California condor nest is defined as a nest that is: (1) attended by a breeding pair of condors, (2) occupied by a condor egg, or (3) occupied or attended by a <1-year-old condor . To minimize the potential of take in the instance an active or occupied California Condor nest site is discovered within 200 meters of the property, no noise, smoke or habitat altering operations will be conducted within the 200 meter zone. If a nest site is discovered during active project operations, operations will cease within 200 meters and CDFW will be consulted to provide guidance for protection of this species.

Northern Goshawk (*Accipiter gentilis*)

Listing Status: CDFW 'Species of Special Concern', BOF Sensitive

Reported on NDDDB in Biological Assessment Area: No

Range: Much of the northern hemisphere, from near the timber line in the north to as far south as subtropical regions. The species ranges throughout California with most observances inland from the coast. Habitat: North coast, subalpine and upper montane coniferous forests. Within these habitats this species tends to nest on north slopes near bodies of water. This larger raptor is normally found in mature Douglas-fir stands with a scattered hardwood component and light understory/shrub layer.

The northern goshawk is a medium-sized raptor and is the largest member of the *Accipiter* genus. The most important prey is small mammals and birds found in forest habitats. Goshawks are often seen flying along transition zones between habitat types, such as the edge of a forest or meadow, flying low and fast hoping to surprise unsuspecting prey. Adults return to their nesting territories by March or April and begin laying eggs

in April or June. The incubation period can range from 28 to 38 days. The young leave the nest after 35 to 46 days and start to fly another 10 days later. The young may remain in their parents' territory for up to a year.

If any occupied nest sites of a listed bird species are detected during the preparation or operation of this NTMP, the Department of Fish & Wildlife and the California Department of Forestry & Fire Protection will be notified in compliance with 14 CCR 919.2 and appropriate protection will be provided.

The Sharp-shinned Hawk (*Accipiter striatus*), and Cooper's Hawk (*Accipiter cooperii*) are uncommon residents, but both species breed sparingly throughout the region. If Cooper's or sharp-shinned hawks are nesting within a 375-foot radius of areas scheduled for vegetation management, operation within this radius will cease until the nest has been reported to the CDFW and, if deemed necessary, additional protection measures adopted as per 14 CCR 919.2(d).

Golden Eagle (*Aquila chrysaetos*)

Listing Status: California Department of Fish and Wildlife 'Fully Protected' & 'Watch List'

Reported in Project area: No

Habitat: Broadleaved upland forest, cismontane woodland, coastal prairie, Great Basin grassland & scrub, upper & lower montane coniferous forest, pinon & juniper woodlands, and valley & foothill grassland habitats. General habitat includes rolling foothills, mountain areas, sage-juniper flats and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.

The golden eagle is a large bird (30" to 41" tall) that lives primarily in mountain forest and open grasslands. The golden eagle preys mainly on medium-sized birds and mammals but will also feed on carrion. Nests are built on rock ledges or in tall trees. Golden eagles require large openings and large trees in open areas as habitat.

This species was detected at Marshall Rock 2,500' feet horizontal distance from any portion of the project area. During the preparatory stages, the project area was surveyed for nest structures; none were found. The surrounding forests could provide possible structure for roosting and nesting and the grasslands located adjacent to the project area could be used for foraging. Since the project does not involve any significant alterations to habitat and the historic bald eagle nest site at Marshall Rock is ½ mile from potential project noise generation, no significant impacts to eagles are expected as a result of this project. This species is typically afforded a ¼ mile radius buffer.

Northern Spotted Owl (*Strix occidentalis caurina*)

Listing Status: Federally Threatened, State Threatened, CDFW 'Species of Special Concern', BOF Sensitive

Reported on NDDDB in area: Yes

Reported on NDDDB in Biological Assessment Area: Yes

Range: Northern California, Oregon, Washington and southern British Columbia.

Habitat: North Coast coniferous forest, old-growth and redwood habitats.

The northern spotted owl (NSO) is a medium to large raptor, which primarily preys on small mammals. Usually found in stands of larger multi-storied timber, they nest in large trees, snags and cliffs, and they often use abandoned raptor nests. A Federally Threatened and BOF Sensitive Species, the NSO was recently also accepted as a candidate for CESA listing. Requiring mature forest patches with permanent water and suitable nesting trees and snags (Zeiner 1990a), this species was initially believed to be old growth obligate. Post listing it became evident that NSOs that were common in younger forest types of northern California. In their seminal work, "Climate, habitat quality, and fitness in northern spotted owl populations in northwestern California" (2000), Franklin, Anderson, Burnham and Gutierrez suggested that a mosaic of older forest types interspersed with other vegetation types promoted the highest NSO fitness. NSO habitat exists within the project area.

Mountain Lion (*Felis concolor*)

Status: California Species of Special Concern.

Due to the large home range of these animals it is assumed that the property is part of the home range of mountain lion and they have been spotted on the property by the landowners. No specific habitat requirements should be impacted by the recommended management.

Large Mammals

Large mammals such as black-tailed deer and black bear are assumed to be common in the area. Both species use a variety of habitat types, but generally favor early seral vegetation types. The proposed management in this plan should not negatively influence habitat for these species. Based upon the foreseeable trends on the surrounding private and public lands within the watershed, early seral stages and edge habitats should not be in short supply.

Ground/Brush Foraging Animals

Much of the property contains habitat in the seedling/pole/sapling stages. The early successional vegetation stages favor certain species, such as wood rats and create transitional edge habitat for ground foraging animals such as California quail (*Callipepla californica*). The brush field habitat would also be expected to host Anna's hummingbird, wren-tit, fox sparrow, warbling vireo and Wilson's warbler. Riparian understory areas could offer habitat for ruffed grouse (*Bonasa umbellus*). Habitat for this species will be protected by the state Forest Practices WLPZ retention standards.

Snags and Cavity Nesters

Species within the property that could use cavities in snags include hairy woodpecker, chestnut backed chickadee, red-breasted nuthatch, screech owl, pygmy owl, violet-green swallow, Vaux's swift, brown creeper, Douglas-squirrel and several bats. Species that nest or roost at the top of snags include red-tailed hawk, raven, and osprey. Snags and large decadent trees should be retained in all future management.

Canopy Foraging Animals

Common species found in the canopy are primarily insect eaters and include Swanson's thrush, winter wrens, orange-crowned warblers, Olive sided-flycatcher, red-breasted nuthatch and chestnut-backed chickadee. This group also includes red tree vole and northern flying squirrel. Single tree-selection silviculture pre-commercial thinning and light touch management would retain sufficient conifer and hardwood canopy for this species.

Predatory Birds

Some additional species in this class which are not formally listed such as the Northern spotted owl or other special listed species: Red-tailed hawk, screech owl, Great-horned owl and Pygmy owl.

As mitigation measures include retention of large trees, snags and a significant percentage of forest canopy, potential roosting and nesting habitat for raptors should be compensated. For. Small mammal populations which form the prey base for these birds will likely benefit from disturbance introduced by timber harvests and fuel treatments whereby canopy openings and edge habitat niches are created.

Scoping

Scoping for potential presence of special status animal species, plant species and communities was undertaken in order to determine whether the proposed project could have significant negative impacts on those species and communities. After reviewing several reference data sources, a list was compiled for species whose ranges include the project and surrounding area. California Department of Fish and

Wildlife Natural Diversity DataBase (CNDDDB) was consulted (March and Feb. 2022 utilizing the following search parameters: 1) nine-quad search centered on the Ruth Lake, Shannon Butte and Forest Glen 7.5' quadrangles.

A general habitat assessment was made for the project area, and nearby unique habitats (e.g. late-seral forest stands, large streams, lakes, rock outcroppings, meadows, unique soil types such as serpentine, etc.) were noted based upon aerial photo interpretation, familiarity with the area, and consultation with adjacent or nearby projects. Also, specific habitat and range information was obtained by using previously published listings of endangered, threatened or rare species by the Six Rivers National Forest several past Timber Harvest Plans on adjacent private lands in the area.

The CNDDDB and CNPS queries found one occurrence for a special status plant community, the Upland Douglas-fir Forest, mapped on South Fork Mountain east of the HBMWD lands.

Rare Plant Surveys

The SRNF Forest Botanist determined that federal land areas that burned at high severity within the August Fire Complex are not considered suitable habitat for Survey and Manage species. Fire severity was determined using Geographic Information System (GIS) and Rapid Assessment of Vegetation Condition after Wildfire (RAVG) data. Areas not identified as high severity via RAVG mapping were field visited on March 26, 2021 and no additional habitat was found to be suitable due to being burned at high severity or they were no mid to late seral stands which represents suitable habitat. According to USFS Botanist Hoh McRae, two existing Survey and Manage lichen locations of *Dendrocollybia racemosa* were consumed by fire and are no longer considered to be known locations or suitable for the species. The mountain lady's slipper orchid (*Cypripedium montanum*) is a category C Survey and Manage and a Forest Service Sensitive plant species found within the USFS project area but not known to be present in areas proposed for commercial salvage harvest or hazard tree removal and suitable habitat is not present where actions are proposed as a result of severe fire effects. A subpopulation of Tracy's sanicle, *Sanicula tracyi*, which is a Forest Service Sensitive plant species and protected by the Tracy's sanicle Conservation Strategy, occurs adjacent to 27N34. The sub-population burned at high severity and as a result the species has been extirpated from this location and the habitat is no longer suitable.

Tracy's sanicle (*Sanicula tracyi*)

Rare Plant Rank: 1B.2

CA Rank 4.2

Global Rank G4

State Rank S4

USFS Sensitive

Elevation 330 - 5200 feet

Blooms: April - July

Habitat is primarily white oak woodlands but also black oak "patches" nested in Douglas-fir-Black oak stands. Individuals grow in the spaces between clumps of California fescue. Plants are observed on previously disturbed ground (i.e., road banks, old skid trails). Habitat is not overly specific nor fragile.

This species is documented on the CNDDDB pre wildfire in one location close to the County Rd at Ruth Reservoir, and on the USFS portion of the project area. If the Ruth Location can be relocated, it will be protected from project related activities. Surveys of known locations of Tracy's sanicle within the project area, in areas of light to moderate burn severity, will avoid pile and burn and mastication on known plant locations.

White-Flowered Rein Orchid (*Piperia candida*)

Rare Plant Rank: 1B.2

Elevation: 0-1200 m

Blooms: May – September

The white-flowered rein orchid is a perennial herb in the orchid family (Orchidaceae). It grows in broadleaved upland forests, lower montane and north coast coniferous forests with an affinity to serpentine soil. Within these habitats it can be found growing in the forest duff, mossy banks, rock outcrops and muskeg.

This species was documented pre-fire within one location near the Mad River Road inside of the project boundaries. This location has been mapped and will be surveyed prior to work and if detections are located a 50' buffer from ground disturbing activities will be implemented to ensure that impacts to the plants are avoided.



Sanicula tracyi

Mountain lady's slipper (*Cypripedium montanum*)

Habitat is extremely variable. Populations most often occur in open mixed conifer or mixed conifer hardwood forests but are also documented in forest openings, shrub thickets and alpine meadows. Moisture regimes vary from dry to moist. Elevation ranges from approximately 500 to 2100 meters (1600 to 6900 feet). Associated tree species include Douglas-fir (*Pseudotsuga menziesii*), various species of fir (*Abies*), lodgepole pine (*Pinus contorta*), Ponderosa pine (*Pinus ponderosa*), quaking aspen (*Populus tremuloides*) and oak (*Quercus* spp.). The mountain lady's slipper orchid is a USFS category C Survey and Manage and a Forest Service Sensitive plant species found within the USFS project area but not known to be present in areas proposed for commercial salvage harvest, reforestation or hazard tree removal and suitable habitat is not present where actions are proposed as a result of severe fire effects. This species is not likely to occur in the project area due to wildfire impacts.

Long beard lichen (*Usnea longissima*), a CNPS List 4 and USFS Sensitive species. Long beard lichen is a pendulant, fruticose lichen whose main branches are up to 3 meters long. It occurs in old-growth and late-successional conifer stands, hardwood stands, and riparian areas, particularly in coastal climates or on fog-swept mountains where humidity is high (USDI 2006). This species is not likely to occur in the project area due to wildfire impacts.

Plants - Vascular	Eucephalus glabratus	Siskiyou aster	PDASTEC030	None	None	-	4.3	4012334	RUTH RESERVOIR	Unprocessed	Plants - Vascular - Asteraceae - Eucephalus glabratus
Plants - Vascular	Collomia tracyi	Tracy's collomia	PDPLM02080	None	None	-	4.3	4012334	RUTH RESERVOIR	Unprocessed	Plants - Vascular - Polemoniaceae - Collomia tracyi
Plants - Vascular	Leptosiphon latiseclus	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	4012334	RUTH RESERVOIR	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon latiseclus

Management Indicator Species and Habitat Assemblages – Six Rivers NF

*The Forest Land Management and Resource Plan for the Six Rivers National Forest uses Management Indicator Species (MIS) to assess potential effects of project activities on the various habitats and habitat assemblages with which these species are associated. Forty-one fish and wildlife species have been selected as MIS or assemblages for a variety of habitats that are potentially affected by resource management activities on the Forest (LRMP IV-97)

Black/white oak Assemblage

Lazuli bunting
Acorn woodpecker
Western gray squirrel
Scrub jay

Snag Assemblage

Flammulated Owl
Western screech owl
Red-breasted sapsucker
Downy woodpecker
Hairy woodpecker
White-headed woodpecker
Vaux's swift
Brown creeper
Western bluebird
Douglas squirrel

Tanoak/Madrone Assemblage

Hammond's Flycatcher
Western Tanager
Black-headed grosbeak

River/Stream/Marsh/Creek Assemblage

rainbow trout
Tailed frog
Common merganser
Ruffed grouse
Winter wren (now known as the pacific wren)
American dipper
Yellow-breasted chat
western pond turtle

Down Woody Debris Assemblage

Arboreal salamander
Blue grouse

Dusky-footed wood rat
 Clouded salamander
 Western fence lizard

Other species assumed to be present on HBMWD lands

Northern Spotted Owl
 Pileated woodpecker
 Black Bear
 Fisher
 Black-tailed deer

For Post-Fire Recovery efforts Strive to maintain a minimum of 3 snags and 7 logs per acre (consistent with the SRNF -LRMP requirements). In addition trees/snags to be maintained are fire-killed predominant trees, fire-killed trees with deformities, fire-killed hardwoods (especially black oak), and pre-fire snags that don't cause a safety hazard (if felled for safety reasons will be left on site). Existing pre-fire logs and cull (unmerchantable portions) logs should be left on site.

Most of the property supports mixed hardwood/conifer forest, a fairly diverse compliment of species is likely to be found on the property. Bird species typical of this habitat include spotted owl, western flycatcher, chestnut-backed chickadee, golden-crowned kinglet, Hutton's vireo, solitary vireo, hermit warbler, and varied thrush. Among amphibians and reptiles, the distributions of northwestern salamander, Pacific giant salamander, Olympic salamander, Del Norte salamander, black salamander, clouded salamander, tailed frog, and northwestern garter snake are largely coincident with the distribution of Douglas-fir habitat. Although not restricted to this habitat, the ensatina (salamander) is its most abundant amphibian.

fisher, deer mouse, dusky-footed wood rat, western red-backed vole, creeping vole, Douglas' squirrel, Trowbridge's shrew, and shrew-mole (Mayer, et. al.1988) The property also supports large mammals such as deer, mountain lions and black bear.

When it comes to determining which wildlife species actually occupy the property, there is no substitute for landowner observation. Keeping records of any animal sightings along with when and where seen can prove to be invaluable in the future. Even if their identity is uncertain, a description can help with later analysis.

Threatened or Endangered Species - plants or animals

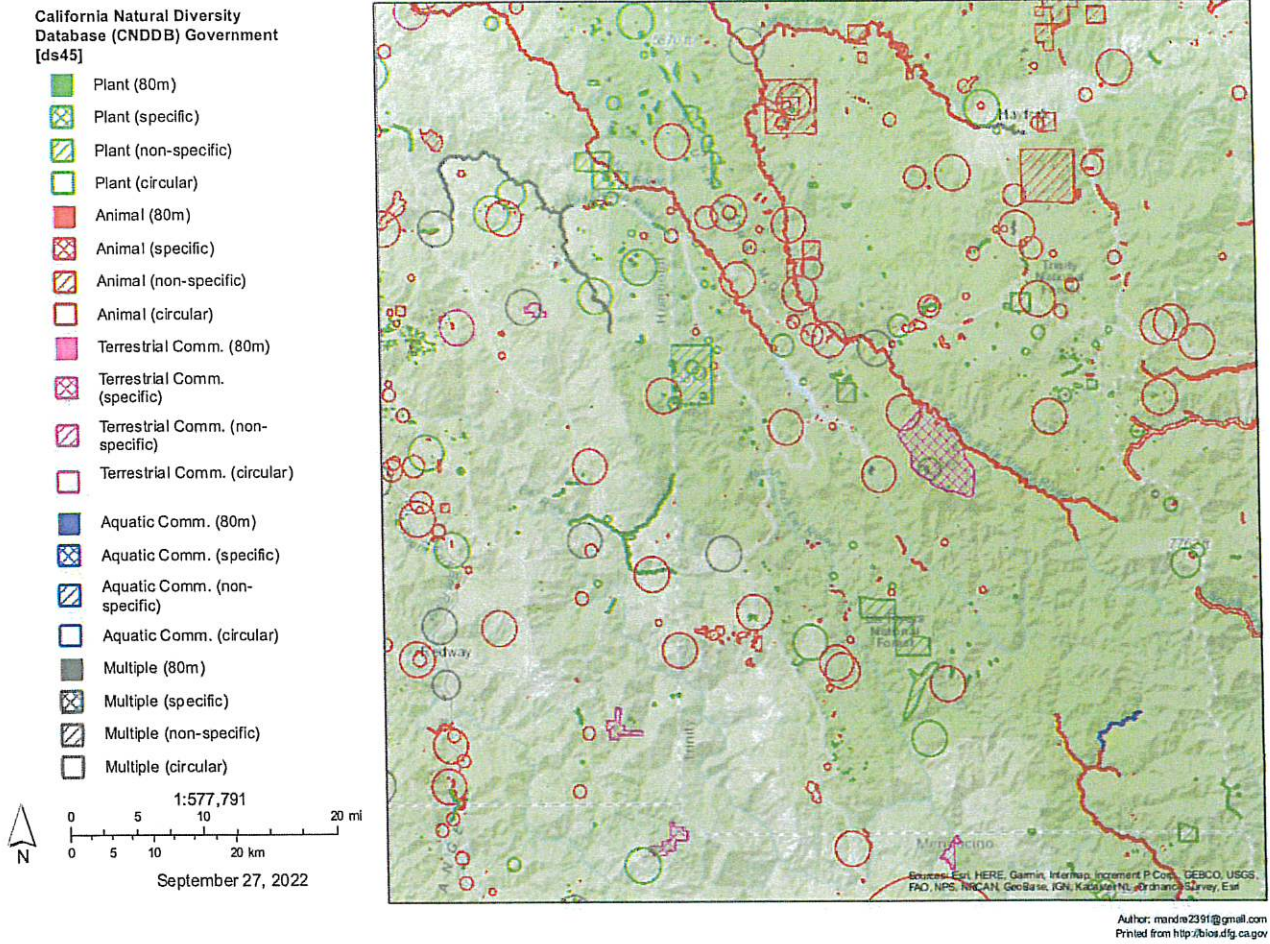
See Appendix 3.

For more general wildlife information, there are a number of resources available to find out whether any species listed as Threatened or Endangered or as a Species of Special Concern might be found in the plan vicinity.

However, these resources are usually only as specific as the USGS 7.5' minute quadrangle. Updated plant, animal, and communities' lists can be obtained from the California Department of Fish and Game (CDF&G) website. The CDFW also maintains the California Natural Diversity Database (CNDDDB) to record location specific sightings of listed species.

If future commercial timber harvest is contemplated, a typical assessment area for biological resources would consider up to 0.7 miles of the project area.

Ruth Lake Project Area



California Natural Diversity Database Map of HBMWD area.

Animals - Mollusks	Ancotrema voyanum	hooded lancetooth	IMGAS36130	None	None	-	-	4012333	FOREST GLEN	Mapped	Animals - Mollusks - Haplotrematidae - Ancotrema voyanum
Animals - Mollusks	Margaritifera falcata	western pearlshell	IMBIV27020	None	None	-	-	4012333	FOREST GLEN	Unprocessed	Animals - Mollusks - Margaritiferidae - Margaritifera falcata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	4012333	FOREST GLEN	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Community - Terrestrial	Upland Douglas Fir Forest	Upland Douglas Fir Forest	CTT&2420CA	None	None	-	-	4012333	FOREST GLEN	Mapped	Community - Terrestrial - Upland Douglas Fir Forest
Plants - Bryophytes	Ptilidium californicum	Pacific fuzzwort	NBHEP2U010	None	None	-	4.3	4012333	FOREST GLEN	Mapped and Unprocessed	Plants - Bryophytes - Ptilidiaceae - Ptilidium californicum
Plants - Lichens	Peltigera gowardii	western waterfern lichen	NLYER00460	None	None	-	4.2	4012333	FOREST GLEN	Unprocessed	Plants - Lichens - Peltigeraceae - Peltigera gowardii
Plants - Vascular	Allium hoffmanii	Beegum onion	PMLIL02150	None	None	-	4.3	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Alliaceae - Allium hoffmanii
Plants - Vascular	Allium siskiyouense	Siskiyou onion	PMLIL02280	None	None	-	4.3	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Alliaceae - Allium siskiyouense
Plants - Vascular	Lomatium tracyi	Tracy's lomatium	PDAP11B1Y0	None	None	-	4.3	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Apiaceae - Lomatium tracyi
Plants - Vascular	Sanicula tracyi	Tracy's sanicula	PDAP11Z0K0	None	None	-	4.2	4012333	FOREST GLEN	Mapped	Plants - Vascular - Apiaceae - Sanicula tracyi
Plants - Vascular	Ericameria ophitidis	serpentine goldenbush	PDAST3L0S0	None	None	-	4.3	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Asteraceae - Ericameria ophitidis
Plants - Vascular	Silene hookeri	Hooker's catchfly	PDCAR0U2M0	None	None	-	2B.2	4012333	FOREST GLEN	Mapped	Plants - Vascular - Caryophyllaceae - Silene hookeri
Plants - Vascular	Cuscuta jepsonii	Jepson's dodder	PDCUS011T0	None	None	-	1B.2	4012333	FOREST GLEN	Mapped	Plants - Vascular - Convolvulaceae - Cuscuta jepsonii
Plants - Vascular	Sedum flavidum	pale yellow stonecrop	PDCRA0A0L2	None	None	-	4.3	4012333	FOREST GLEN	Mapped and Unprocessed	Plants - Vascular - Crassulaceae - Sedum flavidum
Plants - Vascular	Hosackia yollabollensis	Yolla Bolly Mtn. bird's-foot trefoil	PDFAB2A1F0	None	None	-	1B.2	4012333	FOREST GLEN	Mapped and Unprocessed	Plants - Vascular - Fabaceae - Hosackia yollabollensis
Plants - Vascular	Lupinus elmeri	South Fork Mountain lupine	PDFAB2B1G0	None	None	-	1B.2	4012333	FOREST GLEN	Mapped	Plants - Vascular - Fabaceae - Lupinus elmeri
Plants - Vascular	Fraseria umpquaensis	Umpqua green-gentian	PDGEN050F0	None	None	-	2B.2	4012333	FOREST GLEN	Mapped	Plants - Vascular - Gentianaceae - Fraseria umpquaensis
Plants - Vascular	Illamna latibracteata	California globe mallow	PDMAL0K040	None	None	-	1B.2	4012333	FOREST GLEN	Mapped	Plants - Vascular - Malvaceae - Illamna latibracteata

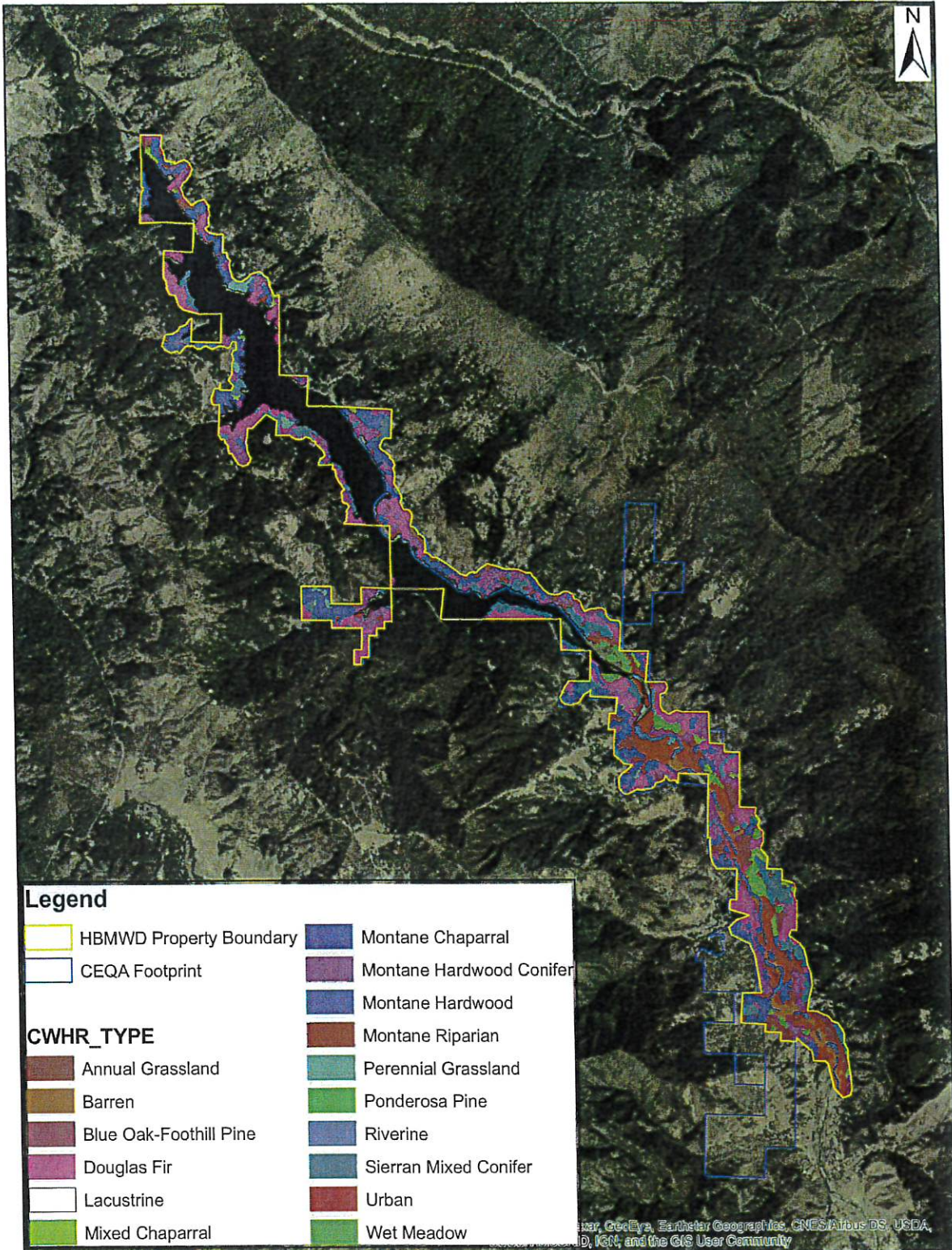
CNDDDB Quad Species List 39 records.

Element Type	Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Quad Code	Quad Name	Data Status	Taxonomic Sort
Animals - Amphibians	<i>Rana boylei</i>	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	4012333	FOREST GLEN	Mapped	Animals - Amphibi-ans - Ranidae - <i>Rana boylei</i>
Animals - Birds	<i>Haliaeetus leucocephalus</i>	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	4012333	FOREST GLEN	Mapped and Unprocessed	Animals - Birds - Accipitridae - <i>Haliaeetus leucocephalus</i>
Animals - Birds	<i>Pandion haliaetus</i>	osprey	ABNKC01010	None	None	WL	-	4012333	FOREST GLEN	Mapped and Unprocessed	Animals - Birds - Pandionidae - <i>Pandion haliaetus</i>
Animals - Birds	<i>Psiloscops flammeolus</i>	flamulated owl	ABNSB01020	None	None	-	-	4012333	FOREST GLEN	Unprocessed	Animals - Birds - Strigidae - <i>Psiloscops flammeolus</i>
Animals - Birds	<i>Strix occidentalis caurina</i>	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	4012333	FOREST GLEN	Mapped	Animals - Birds - Strigidae - <i>Strix occidentalis caurina</i>
Animals - Fish	<i>Oncorhynchus mykiss irideus</i> pop. 1	steelhead - Klamath Mountains Province DPS	AFCHA0209D	None	None	SSC	-	4012333	FOREST GLEN	Unprocessed	Animals - Fish - Salmonidae - <i>Oncorhynchus mykiss irideus</i> pop. 1
Animals - Fish	<i>Oncorhynchus mykiss irideus</i> pop. 36	summer-run steelhead trout	AFCHA0213B	None	Candidate Endangered	SSC	-	4012333	FOREST GLEN	Mapped and Unprocessed	Animals - Fish - Salmonidae - <i>Oncorhynchus mykiss irideus</i> pop. 36
Animals - Fish	<i>Oncorhynchus tshawytscha</i> pop. 30	chinook salmon - upper Klamath and Trinity Rivers ESU	AFCHA02056	Candidate	Threatened	SSC	-	4012333	FOREST GLEN	Mapped and Unprocessed	Animals - Fish - Salmonidae - <i>Oncorhynchus tshawytscha</i> pop. 30
Animals - Insects	<i>Bombus caliginosus</i>	obscure bumble bee	IIHYM24380	None	None	-	-	4012333	FOREST GLEN	Mapped	Animals - Insects - Apidae - <i>Bombus caliginosus</i>
Animals - Insects	<i>Bombus occidentalis</i>	western bumble bee	IIHYM24250	None	None	-	-	4012333	FOREST GLEN	Mapped and Unprocessed	Animals - Insects - Apidae - <i>Bombus occidentalis</i>
Animals - Mammals	<i>Erethizon dorsatum</i>	North American porcupine	AMAFJ01010	None	None	-	-	4012333	FOREST GLEN	Unprocessed	Animals - Mammals - Erethizontidae - <i>Erethizon dorsatum</i>
Animals - Mammals	<i>Pekania pennanti</i>	Fisher	AMAJF01020	None	None	SSC	-	4012333	FOREST GLEN	Mapped	Animals - Mammals - Mustelidae - <i>Pekania pennanti</i>
Animals - Mammals	<i>Lasiorycteris noctivagans</i>	silver-haired bat	AMACC02010	None	None	-	-	4012333	FOREST GLEN	Mapped	Animals - Mammals - Vespertilionidae - <i>Lasiorycteris noctivagans</i>
Animals - Mammals	<i>Lasiurus cinereus</i>	hoary bat	AMACC05030	None	None	-	-	4012333	FOREST GLEN	Mapped	Animals - Mammals - Vespertilionidae - <i>Lasiurus cinereus</i>

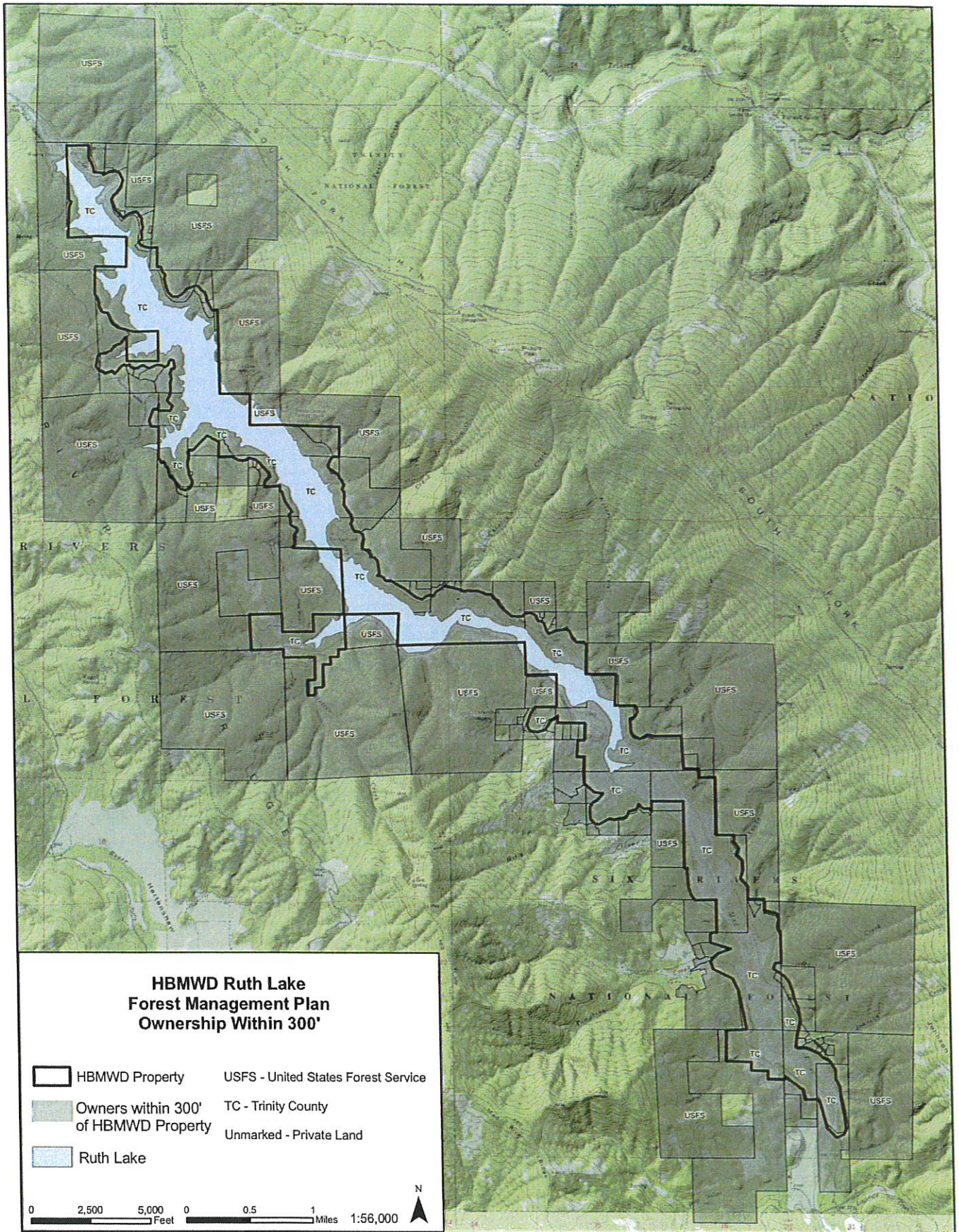
Plants - Vascular	Veratrum insolitum	Siskiyou false-hellebore	PMLI.25040	None	None	-	4.3	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Melantheraceae - Veratrum insolitum
Plants - Vascular	Epilobium oregonum	Oregon fireweed	PDONA060P0	None	None	-	1B.2	4012333	FOREST GLEN	Mapped	Plants - Vascular - Onagraceae - Epilobium oregonum
Plants - Vascular	Epilobium septentrionale	Humboldt County fuchsia	PDONA06110	None	None	-	4.3	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Onagraceae - Epilobium septentrionale
Plants - Vascular	Cypripedium montanum	mountain lady's-slipper	PMORC00080	None	None	-	4.2	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Orchidaceae - Cypripedium montanum
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	4012333	FOREST GLEN	Mapped	Plants - Vascular - Orchidaceae - Piperia candida
Plants - Vascular	Leptosiphon rattanii	Rattan's leptosiphon	PDPLM09110	None	None	-	4.3	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon rattanii
Plants - Vascular	Eriogonum libertini	Dubakella Mountain buckwheat	PDPGN083M0	None	None	-	4.2	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Polygonaceae - Eriogonum libertini

Plants - Vascular	<i>Silene bolanderi</i>	Bolander's catchfly	PDCAR0U2L0	None	None	-	1B.2	4012334	RUTH RESERVOIR	Mapped	Plants - Vascular - Caryophyllaceae - <i>Silene bolanderi</i>
Plants - Vascular	<i>Sedum laxum</i> ssp. <i>heckneri</i>	Heckner's stonecrop	PDCRA0A0L3	None	None	-	4.3	4012334	RUTH RESERVOIR	Unprocessed	Plants - Vascular - Crassulaceae - <i>Sedum laxum</i> ssp. <i>heckneri</i>
Plants - Vascular	<i>Collomia tracyi</i>	Tracy's collomia	PDPLM020B0	None	None	-	4.3	4012334	RUTH RESERVOIR	Unprocessed	Plants - Vascular - Polemoniaceae - <i>Collomia tracyi</i>
Plants - Vascular	<i>Leptosiphon latisectus</i>	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	4012334	RUTH RESERVOIR	Unprocessed	Plants - Vascular - Polemoniaceae - <i>Leptosiphon latisectus</i>

Plants - Vascular	Veratrum insolitum	Siskiyou false-hellebore	PMLIL25Q40	None	None	-	4.3	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Melanthiaceae - Veratrum insolitum
Plants - Vascular	Epilobium oregonum	Oregon fireweed	PDONA080P0	None	None	-	1B.2	4012333	FOREST GLEN	Mapped	Plants - Vascular - Onagraceae - Epilobium oregonum
Plants - Vascular	Epilobium septentrionale	Humboldt County fuchsia	PDONA08110	None	None	-	4.3	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Onagraceae - Epilobium septentrionale
Plants - Vascular	Cypripedium montanum	mountain lady's-slipper	PMORC0Q080	None	None	-	4.2	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Orchidaceae - Cypripedium montanum
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	4012333	FOREST GLEN	Mapped	Plants - Vascular - Orchidaceae - Piperia candida
Plants - Vascular	Leptosiphon rattenii	Rattan's leptosiphon	PDPLM09110	None	None	-	4.3	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Potamogetonaceae - Leptosiphon rattenii
Plants - Vascular	Eriogonum liberini	Dubakella Mountain buckwheat	PDPGN083M0	None	None	-	4.2	4012333	FOREST GLEN	Unprocessed	Plants - Vascular - Polygonaceae - Eriogonum liberini



California Wildlife Habitat Relationships Map.



Forest management activities including conservation practices may impact special environmental and/or cultural values such as threatened or endangered species and archaeological sites. Landowners need to know locations of these values and what they can do to protect them. Landowners also need to know that environmental and cultural reviews by regulatory agencies are required when a ground practice is proposed, and a permit and/or government assistance becomes part of the project. The landowner must be made aware that any future ground practices to implement this plan using public entity reimbursement funds requires a signed CAL FIRE CFIP Environmental Checklist (CEQA) or an NRCS CPA-52 (NEPA) Checklist. Along with this checklist a process of "discovery" or survey for unknown values, along with a discussion of possible mitigations is required. Note: NRCS Cost share is not an option for the HBMWD as government entities are not eligible for EQIP, only a person, legal entity, Indian Tribe, native corporation, or joint operation could participate.

Additionally, the landowner must be made aware that the checklist must be filled out by an RPF or Certified Planner. In addition, archaeological values require an Archaeological Records Check, an entity Archaeologist review and Native American notification for the project area.

Provide a project notification to the following agencies

- County Clerk
- CA Department of Fish and Wildlife
- Northcoast Regional Water Quality Control Board
- Native American Heritage Commission
- Tribal contacts
- Local Historical Society

Further analysis of the potential impacts to significant wildlife species will be required if a commercial harvest plan is developed. This will include surveying for northern spotted owls and possibly other species as well.

LANDOWNER MANAGEMENT OBJECTIVES

Desired Forest Condition:

The management objectives of the landowner are primarily related to wildfire recovery, erosion and sediment control, preventing excessive tree debris from entering impacting the reservoir and hydro facility, timber stand improvement, reforestation of recently burned areas, revenue generated from sustainable forestry, decreasing fuel loading, and maintaining biological diversity. Near-term the primary goals are focus around restoring areas of the property that were impacted during the 2020 August Complex Fire.

Specifically:

Promote complexity in forest structure and composition

- Reforest areas burned during the August Complex Fire.
- Remove excessive fuel loads on areas burned.
- Thin unburned dense forested stands primarily adjacent (150') to existing roads.
- Maintain biologic and floristic diversity and eradicate any populations of invasive plants to allow the native species to thrive.
- Maintain and increase carbon sequestration on the parcel
- Maintain and enhance timber growth and productivity
- Utilize stand improvement techniques such as pre-commercial thinning, pruning and inter-planting to improve the value and growth of the forest stands.
- Manage to develop un-even aged stands. Maintain snags, coarse woody debris and landscape-level biological legacies.
- Improve the health of conifer and oak woodland communities, increase their resiliency to wildfires

- and disease outbreaks, restore species diversity and reduce stand densities in overstocked stands.
- Obtain CAL FIRE CFIP or other outside funding for forest improvement and erosion control projects including road improvements.
 - The landowner would like to reduce fuel loading along roads and near structures to reduce wildfire hazard, this activity may also produce fire wood for the local community..
 - Expand planting of incense cedar (*Calocedrus decurrens*) as a potential climate adaptation species measure to monitor over time. Incense cedar is naturally occurring on the property. Incense cedar is not an outstanding commercial conifer species but it may provide habitat structure, sequester carbon while being somewhat more drought tolerant than Douglas fir.

Fire protection objectives

There will be an eventual need for more fuels reduction, similar to areas that have already been treated. Fuel reduction will also need to be done in the areas that are heavily stocked with Douglas-fir so that the trees that are crowded out and die do not overload the area with ground fuels and/or ladder fuels. Restoring the encroached oak woodlands will also lessen the risk of uncharacteristic intense and large fire. Additionally, the existing structures should have 0-15' and 150'-300' defensible fire spaces cleared around them.

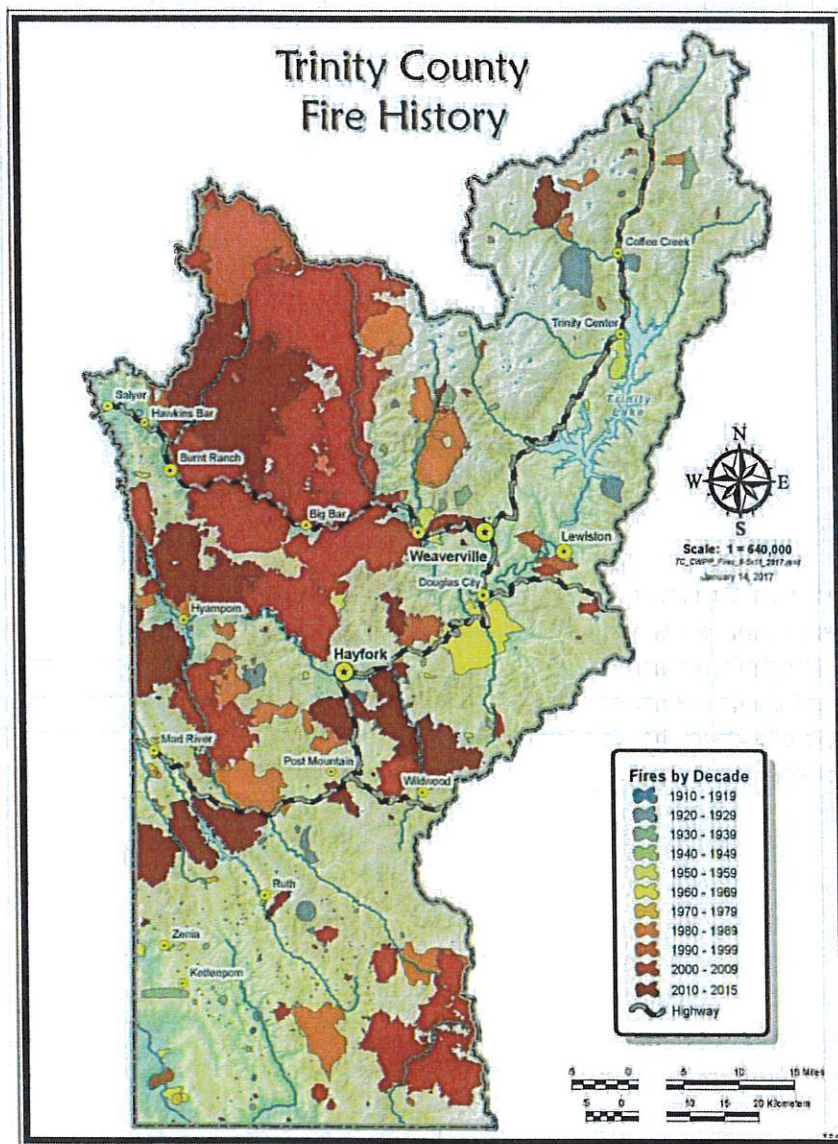
A CAL FIRE Fuel Reduction Project (SCH Number 2022060469), will initiate work along accessible roads beginning in 2022. This project will create a fire safe community reducing fire hazard through removal of excess vegetation in the Wildland Urban Interface around Ruth Lake, California. With the recent drought years in California, communities like Ruth Lake, have numerous dead hazard trees throughout their area. There are summer cabins and roadways with hazard trees that pose a fire and safety threat to the summer cabins on property owned by the Humboldt Bay Municipal Water District. The dead trees identified as a hazard tree around structures and roadways will be felled by a professional tree falling contractor to assure no damage will be done to the cabins and infrastructure. None of the material from the treated trees or brush species will be used for commercial purposes. The larger trees will be limbed and bucked with the material chipped or left on site. The cut brush will be chipped on-site and spread over the ground to help prevent erosion in the future. Vegetation along roads will be treated using a masticator head affixed to an excavator. This equipment will only operate on existing road prism to assure no ground disturbance will occur. These fuel management activities will reduce the volume of flammable vegetation in the area surrounding Ruth Lake thereby reducing the chance for wildfire spread into communities around the lake or for a fire within the communities to spread to adjacent wildlands while also providing safer ingress/egress for fire crews and control features to aid in firefighting efforts.

It is recommended to establish a 100' shaded fuel break along the county roads that bisect the property. General fire safety practices that can also be implemented such are:

- Do not operate machinery or chainsaws when conditions such as wind, humidity and air temperature combine to make for "extreme" hazard.
- Ensure that in any type of logging operation during the fire season all workers conform to regulations pertaining to smoking, fire tool requirements, lunch and warming fires,
- Posting of fire rules, care in welding, prohibiting uncovered glass containers, caution in using chainsaws and other spark emitting equipment, and daily inspections prior to shutting down operations.
- Keep a water truck or other water source on site when burning large piles of slash.
- Maintain a cache of fire tools such as shovels, axes, McLeod's, portable backpack water tank, etc. on site and accessible.
- Keep a list of emergency phone numbers that identifies local fire response agencies, both public and volunteer.
- Create defensible fuel breaks around structures by clearing all brush and small trees.
- Fit all storage containers with appropriate size valves for firefighting.
- Make sure the property is well signed so that public safety personnel can locate the dwelling units and main

road system.

Working with neighbors in a community effort is often the best way to the best way to maximize the effectiveness of fuel treatments. The Trinity County Firesafe Council (530) 623-6004 x214) <https://firesafetrinity.org/> (sfisher@tcrd.net) is an excellent resource for working with landowners in a coordinated community approach.



From: Trinity County Community Wildfire Protection Plan Update 2015

Forest Health objectives

Remove encroaching Douglas-fir to restore the oak woodlands. Thin dense conifer stands to create more resilient timber stands. Prune areas within 100' of roads to reduce potential for ladder fuels into forest canopy.

Insects and disease concerns

Monitor for beetle kill/ sudden oak death, fir flatheaded borer and other potential pests.

Trespass concerns.

Install motion cameras to monitor ingress/egress.

Wildlife habitat Objectives:**Desired species habitat improvement**

It is an important goal of this plan to provide high quality wildlife habitat, particularly for species associated with undisturbed riparian areas and late-seral forest conditions. There is an opportunity to improve riparian habitat along streams by planting riparian vegetation. Restoring oak woodlands will increase forage as well as provide acorns. In order to maintain the habitat integrity of the oak woodlands on the property the landowner is interested in removing sub-merchantable encroaching conifers from some areas. While prescribed burning is a very effective tool for controlling Douglas-fir encroachment (Hastings, et al, 1997), its use is problematic given the climatic and regulatory restrictions in Trinity County, and the potential for an escaped fire to threaten property and safety.

Recommendation 6: The HBMWD should consider working with CAL FIRE's Vegetation Treatment Program (VTP) for implementing prescribed fire.

The use of prescribed fire can restore native plant species diversity, control invasive species, provide periodic disturbance to maintain an uneven-aged understory and reduce duff material and small dead and down material. Prescribed fires will likely be limited due to smoke concerns in residential neighborhoods and sensitive receptors such as schools, hospitals and health clinics in close proximity. Fire as a management tool can be used to dispose of excess slash material that accumulates at log landings and within older stands to burn forest understory fuel accumulations where adequate control points can safely contain a low intensity broadcast prescribed fire.

The intention of management is to mitigate the impacts of past high intensity wildfire, rehabilitating and improving habitat opportunities for native wildlife whenever possible. Even though most of the species that utilize the land either now or in the future will never be seen or measured, that does not mean they are not there. It is not practical to carry out species specific surveys in most cases, but by implementing management which retains important habitat features and protects sensitive areas such as stream zones, it is assumed that the needs of most wildlife species will be met.

To achieve these goals, the following management practices should be used:

- Retain all snags unless marked as a hazard by the RPF or his designee.
- Mark legacy or wildlife trees for snag recruitment and to eventually become downed woody debris.
- Existing downed logs and cull logs produced during timber operations should be left in the woods for coarse woody debris recruitment wherever possible, except when utilized for firewood or use by the landowner. Some fuel modification may be necessary to reduce fire

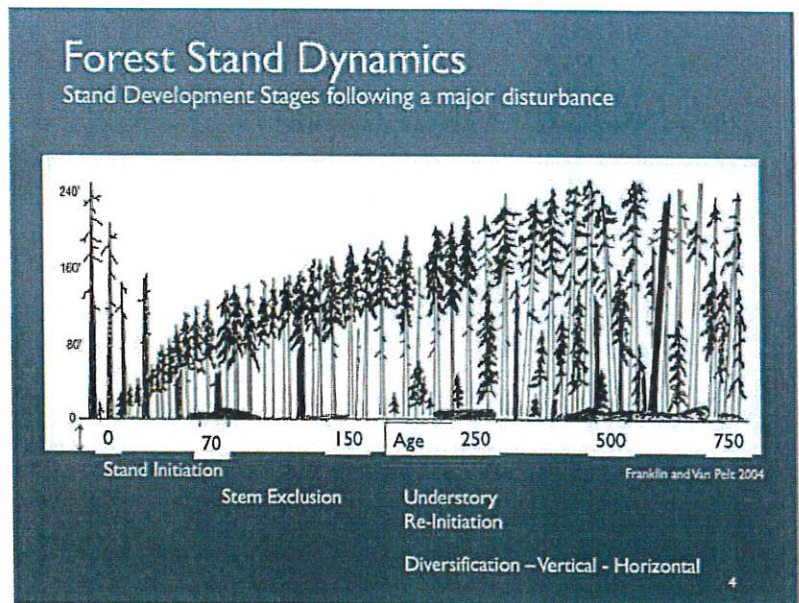
hazard.

- All logs in stream zones must be retained. Management will provide for a continuous supply of coniferous coarse woody material to improve, maintain and restore vital stream functions, including salmonid habitat structure and bank stability.
- In forested areas, near-stream vegetation along perennial tributaries should be maintained with a canopy above 70% in order to prevent increased water temperature effects.
- Protect the existing unique wetlands.
- No operation of heavy equipment within any Class I or Class II watercourse protections zones or within 50' of wetlands, ponds, seeps and bogs except at prepared truck or tractor road crossings, in order to further safeguard against sediment and mass wasting effects on aquatic habitat.
- Log and rock hauling and skidding operations should cease when turbid water is flowing across the road surface or in a roadside ditch which has the ability to enter a watercourse.

Watercourse crossings should be rocked or have alternative surface erosion control practices applied whenever possible. For more general

wildlife information, there are a number of resources available to find out whether any species listed as Threatened or Endangered or as a Species of Special Concern might be found in the plan vicinity. However, these resources are usually only as specific as the USGS 7.5' minute quadrangle. Updated plant, animal, and communities' lists can be obtained from the California Department of Fish and Wildlife (CDFW) website.

The CDFW also maintains the California Natural Diversity Database (CNDDDB) to record location specific sightings of listed species.



- Further analysis of the potential impacts to significant wildlife species will be required if a commercial harvest plan is developed. This will include surveying for northern spotted owls and possibly other species as well.

MANAGEMENT PLAN IMPLEMENTATION

Constraints and Proposed Alternatives:

Alternative #1 Current management (no project or no active management). The current land use is watershed protection and recreation. No commercial agriculture or timber operations have been implemented within the past 30 years with the exception of the post-wildfire emergency notice fire salvage operations in 2021 % 2022. Those HBMWD Emergency Notices are listed as follows:

1-21EM-00146-TRI
 1-21EM 00050-TRI
 1-21-EM-00055-TRI
 1-21-EM-00112-TRI

No action will lead to the exacerbation of the conifer encroachment into oak woodlands and reduction in the property oak component. This could have a negative effect on certain wildlife species. No action would also maintain and increase the potential for wildfire on overstocked dense timber stands and mortality on overcrowded stands will add additional fuel.

Alternative #2: Subdivision or selling portions of the land base. The ownership is composed of approximately 28 individual parcels. Within these parcels are lease lots that are leased by the District for recreational homesites. Over the past ten years the demand has been fairly strong for rural residential recreational type properties. This alternative would generate capital for the District in the short-term but would could impact the recreational viewsheds, wildlife habitat and potentially create water quality impacts. If some areas were sold, this would generate the greatest near-term capital for the District, but would eliminate the primary land use for the District, which is watershed protection and rural recreation. The USFS may have an interest in acquisition of some District lands that would enhance the manageability of the federal land base.

Much of the land around the lake perimeter and upstream was initially purchased to buffer the lake from incompatible uses and provide space for future potential reservoir expansion in the event the dam was modified to increase storage capacity. It appears that significant reservoir expansion is not likely and that some of the ownership could be considered "excess property".

A conservation easement could be placed on some of the vacant timberland that is not constrained with recreational facilities, lease lots or District facilities. A Conservation Easement is a voluntary legal agreement between a landowner and a land trust or government agency that permanently limits uses of land in order to protect its conservation values.

Conservation easements Potential funding sources for a conservation easement include the following public agencies: California Wildlife Conservation Board, CAL FIRE Forest Legacy Program, California Department of Fish and Wildlife. There are also private NGOs that could have an interest in protecting in perpetuity these wildlands. A conservation easement would require a fair market value appraisal. The easement could include allowable for sustainable forest management consistent with habitat values and could also include recreational access. All of the District's Ruth lands can be considered high value for fish, wildlife, recreation, archeological and watershed resources and the linkage to federal lands is an attractive attribute for funders.

Recommendation 7: A more in depth analysis of conservation easement options be developed. This would include detailed mapping and consultation with stakeholders such as funding agencies, adjacent property owners, tribal representatives. A grant funded conservation easement on a portion of the vacant watershed lands could provide the District with significant revenue and protect the lands for conservation purposes and scenic viewshed values in perpetuity.

Alternative # 3: leasing or renting the property. The District already has many lease lots around the lake perimeter. This use appears to be compatible with the District's mission.

Alternative #4: Intensive timber management. The forth alternative would be to increase conifer stocking on the property and manage for commercial timber production. Given that the property has a high recreational use component and that watershed/water quality protection is the top tier management goal, intensive timber management is not a recommended option for the HBMWD Ruth ownership.

Alternative #5 Modified Selection System-Intermediate to low Intensity forest management of late seral characteristics Harvest entries will occur every 15-25 years based upon market conditions. Harvests will occur in all diameter classes to maintain and or achieve uneven-age stand conditions except that the largest conifers will be retained in order to approximate old growth conditions. The nearby Six Rivers NF provides excellent reference stands to use for guiding the evolution and management of the subject parcel in terms of future stand structure and species composition. Individual tree selection, commercial thinning and sanitation-salvage would occur approximately once per 15-25 years once volumes reach 25-55 mbf/acre on the best sites. Since the District owns < 2,500 acre of timberland, it would qualify for a Non Industrial Timber Management Plan (NTMP).

Uneven-aged management will give the landowner options for timing harvests to meet market peaks. Longer harvest rotations can produce healthy, complex forest landscapes. On industrial and private lands, rotations of 5-60 years are used to maximize profits and maintain cash flow. Public ownerships, which must consider other values in addition to timber revenues, use rotations of 70-80 years or longer. A shift to extended harvest rotations of 70 + years has the advantages of (a) producing a variety of tree sizes and wood products over time, (b) improving the age distributions of trees in the landscape, (c) promoting healthier wildlife habitat, (d) increasing carbon storage, (e) preserving options for adaptive management and (f) increasing the on-board truck volume which reduces log hauling costs. Precommercial and commercial thinning also help to establish diversity and minimize tree overcrowding.

It is recommended that the HBMWD continue with the current land use direction (#1) plus add forest health, carbon sequestration, fuel reduction, habitat enhancement and erosion control elements to improve the overall character and condition on the property consistent with the landowner's stewardship ethics. Timber products may be generated as a byproduct of restorative activities and help offset management costs but intensive timber management would not be the focus.

Economic Sustainability:

Discuss the value of a business plan and potential resource development.

Sawlogs are expected to be the principal commodity produced on the forest, although there may be an opportunity for incidental firewood sales and biomass for energy markets. Delivered-log timber sales can be conducted on a competitive sealed bid basis. Timber sale agreements would be based upon delivery of a certain quantity of logs to the mill. This is commonly referred to as delivered log price. Yield tax of 2.9% is calculated based on a formula that accounts for species, total volume, volume per log, logging method, and state-average stumpage values. The HBMWD would be paid for net log scale and the HBMWD, or the log purchasers, are required to pay the Board of Equalization Timber Yield Tax. The HBMWD falls into Timber Value Area 4 on the Board of Equalization's Harvest Values Schedule, which is published semiannually.

As an alternative to a delivered log type of timber sale, is to sell logs as a "stumpage sale". A stumpage sale is when a log bidder purchases the logs "at the stump" and implements and pays for the logging and log transport. Within this type of sale, the purchaser hires the logging and trucking firms. The California State Demonstration Forests, Bureau of Land Management, and the US Forest Service typically use the stumpage sale

method. Most industrial and non-industrial landowners, use the delivered log timber sale method which allows for more control of the logger and logging operation and timing of the timber harvest activity.

Logging and log delivery would normally be accomplished via a logging and log hauling agreement between the HBMWD and a Licensed Timber Operator. The District is prevented from exporting logs per federal Department of Commerce restrictions (15 CFR 792) for raw log exports that affect states and subdivisions of the state that includes counties, cities and special districts.

The round trip distance to the closest mills that purchases Douglas fir is Scotia, CA (2 hrs.), Weaverville (2.5-3 hours) and Eureka, CA. (2.5 hrs.). Trucking cost to any harvest operation; on the order of \$95 per hour. The distance to major timber mills is:

Trinity River Lumber Co.	= 76 miles Weaverville, CA
Schmidbauer Lumber	= 80 miles Eureka, CA.
Humboldt Redwood Co.	= 66 miles Scotia, CA.

If commercial timber harvest is conducted in the future, it is recommended that the cutting cycle be roughly 15- 30 years; which is a longer re-entry cycle than could be used on more productive sites. At each entry 10 - 20% of the volume of the stand being entered will be removed leaving a minimum stocking of at least 75 square feet of basal area per acre but usually much more. Harvest entries will remove less than overall stand growth until the stocking level producing maximum periodic volume increment is attained. Subsequent harvests will cut volume growth since the last entry to maintain a sustained, even flow of logs in perpetuity.

Desired Forest Condition (Reforestation and Afforestation):

- **Forest Stand Improvement**

Thin crowded stands. Restore oak woodlands. Plant Incense cedar to increase diversity and forested area. Some thinning will need to occur within the next 20 years so as to prevent the accumulation of dead-standing Douglas-fir trees as they begin to crowd each other out and die.

Examples of adaptation tactics include:

- Planting a variety of future-adapted species during revegetation efforts to ensure diverse regeneration and provide options for future management.
- Reforesting disturbed sites, like those affected by fire or tree mortality, in planting arrays with a combination of scattered individuals, clusters of trees and non-planted open spaces to help facilitate forest compositional heterogeneity.
- Creating suitable physical conditions for natural regeneration through site preparation (e.g., prescribed fire, to promote seed establishment).
- Monitoring areas of natural regeneration on a more frequent basis, and prioritizing planting or seeding where natural regeneration is slow or unlikely to succeed

Roads:

There is an existing network of paved, rocked and un-rocked roads and skid trails throughout the HBMWD Ruth lands. Sediment sources are common along the network of unpaved roads. In general, the highest priority will be controlling sediment sources near streams, providing safe public access via a network of well-maintained roads and reconstruction of the existing road network in areas needing upgrades to facilitate future forest vegetation management including timber harvest.

Public Roads include the Ruth Zenia Road, Mad River Road and Westside Road. Most of the HBMWD lands are accessible from public roads of HBMWD roads.

Recommendation 8: Proper road, landing, and crossing design is the key to minimizing both the costs of construction and maintenance and environmental impacts. In general, the principles and practices described in Weaver and Hagans (2015) and Board of Forestry Technical Addendum #5, (which is a requirement of the Forest Practice Rules), which contain guidance on hydrologic disconnection, road drainage, minimization of diversion potential and high-risk crossings) will be followed in the HBMWD property. The following represents a summary of design principles for roads, landings and watercourse crossings that will be followed for work in the HBMWD property.

- New and reconstructed roads and landings will generally be outsloped for surface drainage and inboard ditches will be avoided except where unavoidable. Where such ditches exist and are determined to be significant sediment sources, they will be eliminated over time if possible.
- Compared to waterbars, rolling dips are more resistant to traffic induced failures and will be used where possible for surface drainage. Rolling dips also allow for traffic to flow without stopping to cross an abrupt edge. Other road drainage structures will be used in some situations, such as existing crowned main-line roads with acceptable numbers of cross drains. On temporary roads that are “put to bed” and will not be driven on for several decades, except in very rare cases, all culverts will be removed when they are abandoned and all drainage facilities will be substantial enough to not require maintenance.
- On slopes over 50 percent, road design for hillslope stability will depend on site specific conditions.
- Roads intended for year-round log hauling use will be surfaced to reduce erosion potential. Surfacing agents include, but are not limited to: rock, chip seal, and asphalt paving.
- Watercourse crossings will be designed to accommodate a 100-year runoff event, as well as for wood and sediment passage.
- Watercourse crossings will be designed to minimize diversion potential. Fill volume will be minimized over crossings, while providing sufficient depth of fill to protect a culvert from crushing under truck traffic.

Recommendation 9: Watercourse crossings using culverts with diameters of 60 inches or more will have armored entrances and outflows if they are necessary to avoid substantial loss of fill material.

Recommendation 10: Rock-lined ford crossings will be used for class II and III watercourse crossings where appropriate, since their failure rate is much lower than for culverts (Spittler 1992). Approaches to fords will be rocked to prevent sediment delivery to watercourse channels. It is only possible to use rock-reinforced fords in locations where channel gradients and slopes are moderate to low. This type of structure is most applicable to channels that flow only in direct response to rainfall.

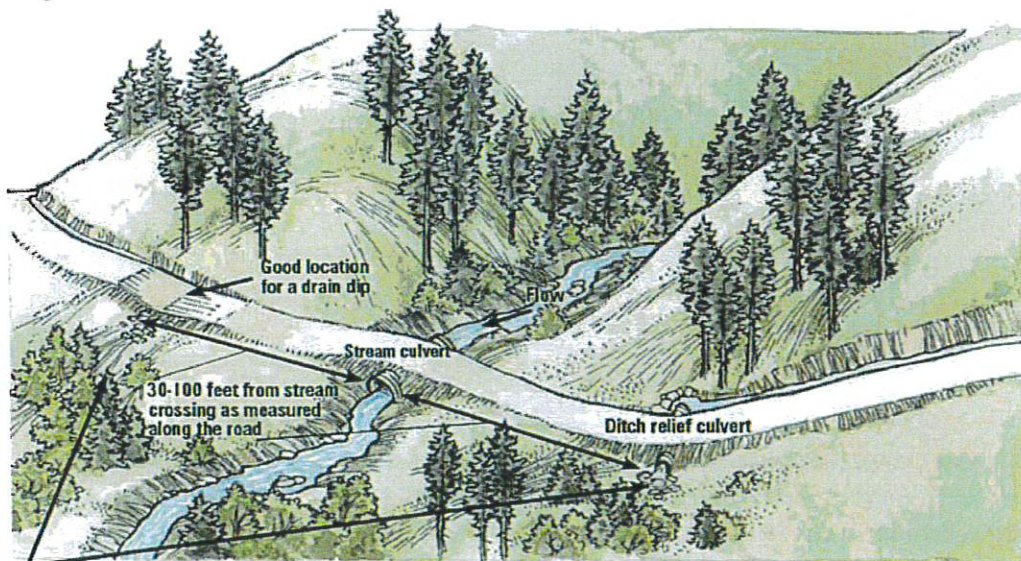


Figure 4. Ditch drainage should be directed into vegetation and undisturbed soil filter, and not allowed to continue flowing down the ditch and into the stream. (from Technical Addendum # 5, CA Board of Forestry and Fire Protection).

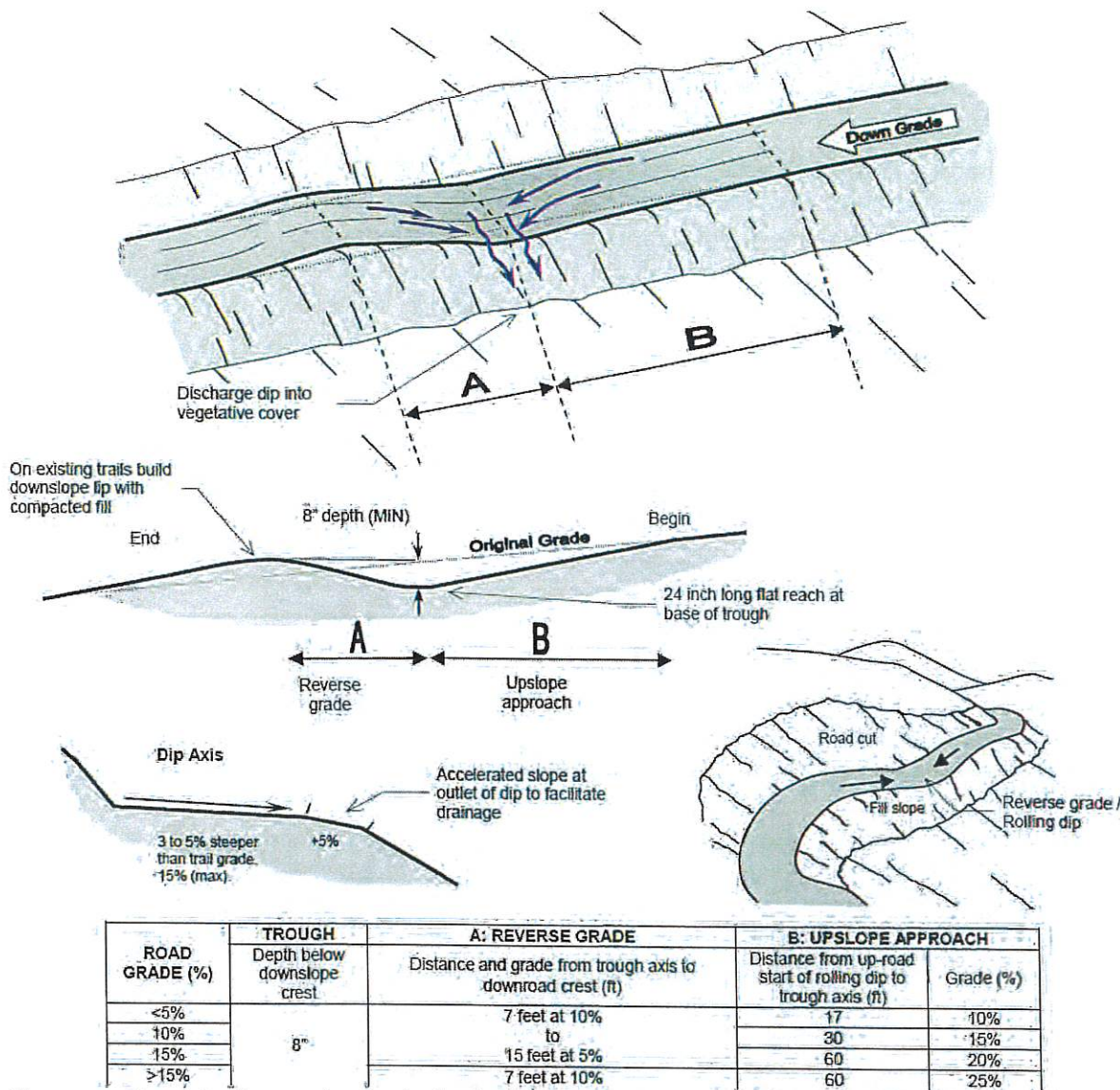


Figure 5 . Graphic illustrating hydrologic disconnection and rolling dips to be employed on road system.

Recommendation 11: Traffic control will be required whenever recreational users could interact with ongoing forest operations such as logging or road construction.

Recommendation 12: Trail or road segments affected by logging operations will be returned to pre-logging condition after operations are complete.

If the HBMWD pursues an NTMP, the entire HBMWD manageable timberlands would likely be within the boundaries of the NTMP and all treatment of Controllable Sediment Discharge Sites (CSDS) will need to meet the requirements of the Forest Practice Rules.

Proper maintenance is a key to reducing long-term contribution of road related sediment.

Recommendation 13: Permanent and seasonal roads should be inspected at least once annually to ensure that drainage facilities and structures are functioning properly. Three types of inspections will be used: (1) formal inspections, (2) rapid ad hoc inspections, and (3) storm patrol inspections. During formal inspections, all crossings and roads will be carefully observed every two years, and problem sites will be recorded on road/crossing inventory forms. "Storm patrol inspections" of known or anticipated problem facilities will be triggered by large winter storm events. Abandoned roads will be inspected at least twice following the completion of the decommissioning process,

including at least one inspection following a large hydrologic event

General erosion control guidelines for the continued maintenance and improvement of the road system are as follows:

- Out slope roads wherever feasible in order to reduce long term maintenance and improve the quality of runoff water.
- Grade and install rocked, rolling dips on low gradient sections of main haul roads.
- Place rocked, critical dips over all existing and planned culverts whenever feasible in order to prevent channel diversions.
- Do not operate heavy equipment off of roads and trails or near springs or watercourses.
- Abandon skid roads and prohibit vehicular use after forestry operations are complete.

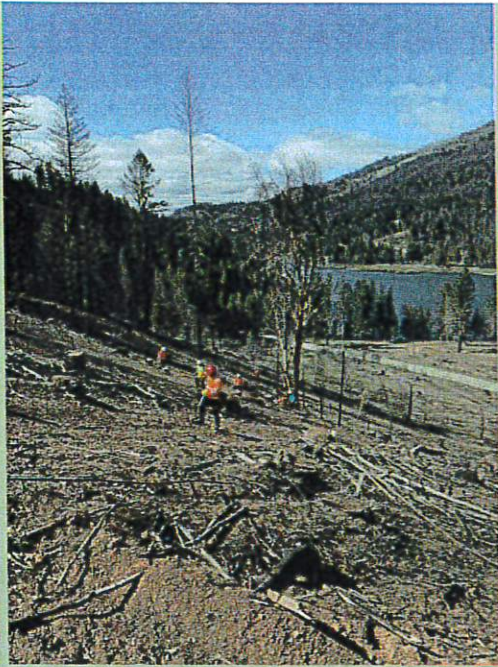
Post- August Complex Restoration



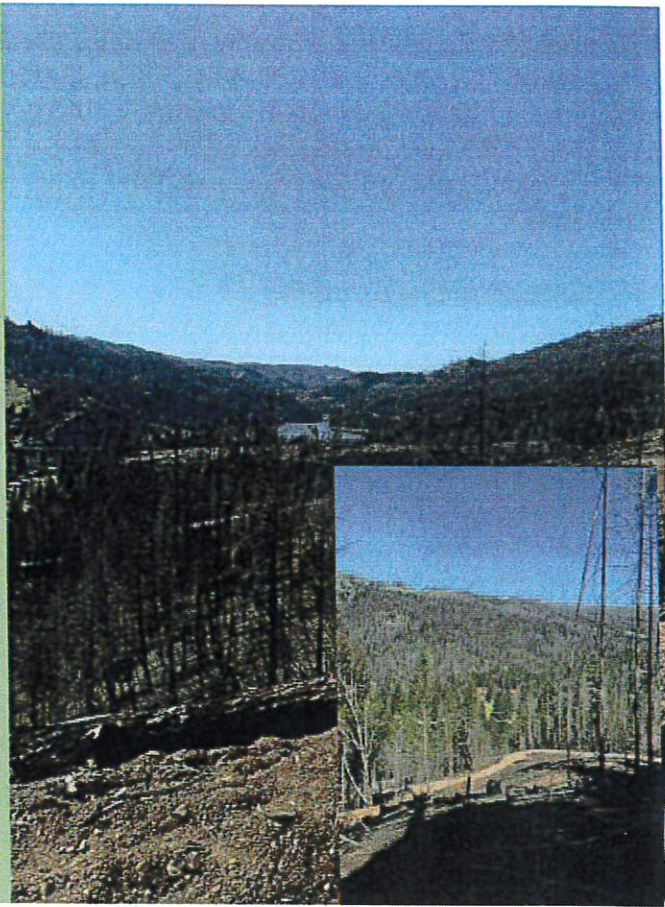
Incense cedar with recent fire scar



Pile burning biomass in 2022 for site preparation



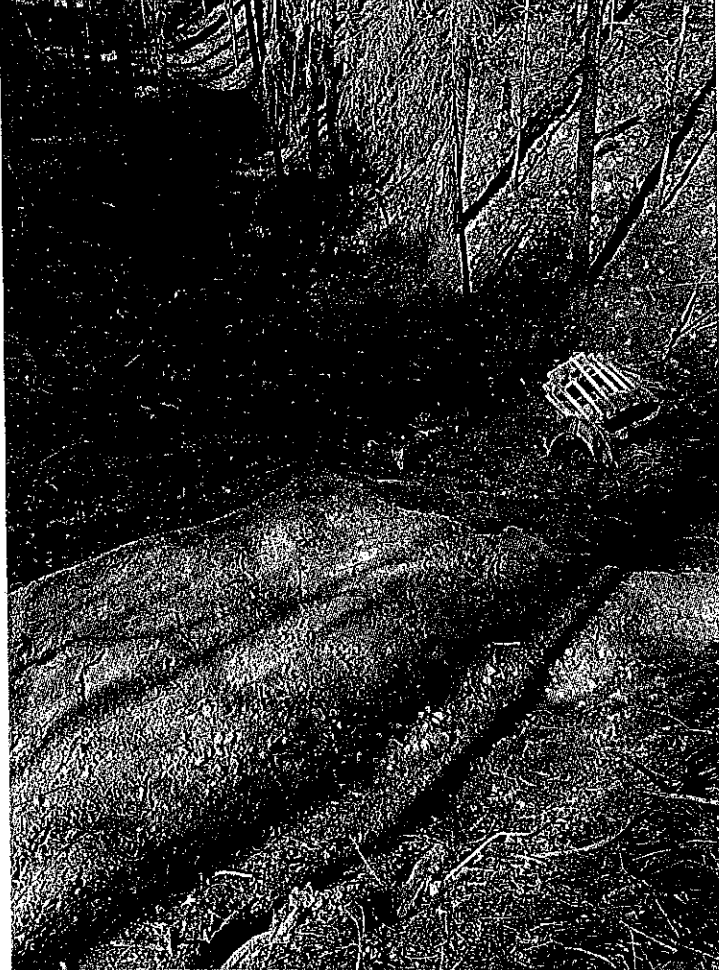
**Mad River
Watershed-August
Complex 2022**



Management Recommendations if timber management is considered a priority in the future

-Tractor Operations Limitations. Generally, tractors should not be used on slopes greater than 65% and in no case should tractors be used on slopes greater than 65% or on slopes greater than 50% which lead without flattening to a Class II or III watercourse. Prior to harvest the RPF should flag all main skid trails and any tractor trails.

-- Tractors should be restricted to pre-flagged existing skid trails. Long-lining to these skid tails should occur to each area within tractor harvest units. All haul roads may be used for skidding purposes to avoid construction of unnecessary skid trails and unnecessary crossings on watercourses.



**Sediment accumulation at unnamed USFS Tributary.
Inlet structure located 150' upstream from Ruth Lake.
This sediment basin should be excavated or stabilized as
It poses a future risk of moving into Ruth Lake.**

A good resource for landowners is the Handbook for Ranch and Rural Ranch Roads (Weaver, W.E., Weppner, E.M. and Hagans, D.K., 2015, Handbook for Forest, Ranch and Rural Roads: A Guide for Planning, Designing, Constructing, that can be found at: <http://www.pacificwatershed.com/roadshandbook>.

Pests:

Forested areas naturally harbor a baseline level of disease and pests. This is the case at the HBMWD property. There were no observed severe outbreaks of pathogens or pests during any visits. There have been documented flatheaded fir borer (*Melanophila drummondi*) issues nearby on USFS land and private land on Buck Mountain to the west. This pest can potentially attack and kill Douglas-fir trees on disturbed sites or sites with marginal soils especially during years of drought stress.

Disturbance of trees during land clearing or construction of home sites can increase the likelihood of flatheaded borer and bark beetle attack. Practices detrimental to trees include backfilling over roots, soil compaction in the root zone, and road cuts through well-established stands.

Douglas-fir beetle - *Dendroctonus pseudotsuga* This is the most important bark beetle that attacks Douglas-fir. Under endemic conditions, it breeds in felled, injured, or diseased trees. After fires or wind throw, populations can increase to epidemic levels and healthy trees can be killed. Outbreaks are usually sporadic and short lived, but may result in extensive damage. There is usually one generation per year that attacks between April and August. The egg galleries are usually vertical and about 12 inches in length. The bottom of the gallery is curved to the side, as with the Mountain pine beetle. Reddish or yellow boring dust in the crevices of the bark is an indicator of attack. There are no pitch tubes, but resin may flow from the upper stem attack areas. The galleries contain tightly packed boring dust as seen in other members of this family. Prompt salvage of fire killed, wind thrown trees, and beetle-killed trees can reduce the risk of an epidemic infestation. Large quantities of cull Douglas-fir should not be left after timber harvesting.

Because of the tanoak component in the property's forest, it is susceptible to the spread Sudden Oak Death (*Phytophthora ramorum*). However, symptoms of the disease were not observed during any visits to the property. Additionally, changes in climate have led to mass die off of conifers in California as a result of bark beetle infestations (https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd537991.pdf). As the Douglas-fir mature, they will begin to compete with each other and become less vigorous and unable to fight off pests, leading to increased susceptibility to fatal infestation.

White Pocket Rot: In Douglas-fir, the most prevalent disease is *Phellinus pini*, known as white pocket rot, white speck or red ring rot. This is the most damaging wood rot in the Western United States. The presence of fruiting bodies or "conks" is the best indicator of infection. The size and frequency of the conks present may provide an indication of the amount of decay, but caution must be exercised until local conditions can be assessed. Infections associated with white speck become established through living and dead branches or branch stubs. The best way to reduce risk of white speck infection is to avoid damaging trees within the stand. As there is evidence on the plan area of damaged residual trees from wildfire and salvage logging operations, there is a chance of this disease is occurring.

Heterobasidion root diseases (formerly called Annosus root disease or Fomes annosus): Nearly all conifers and some hardwoods. *H. irregulare* infects pines, incense cedar, juniper and, rarely, hardwoods including oaks and madrone. *H. occidentale* infects true firs, Douglas-fir, giant sequoia, hemlock, spruce and western redcedar. *Fomes annosus* root rot can attack almost all of the native conifers present on the property. The sapwood and inner bark of small to medium sized roots and the heartwood of larger roots is infested when the fungus attacks Douglas-fir. Frequently, the infection spreads through the roots and into the lower trunk of the host, causing butt rot of the heartwood. Heartwood and root rots often predispose fir trees to wind throw and/or fatal insect attack. Infection occurs on freshly cut stumps or

wounds and can spread for years or even decades through root contacts to neighboring susceptible trees. Prevention is the best form of control which means the treatment of freshly cut stumps with a borax based registered pesticide formulation to preclude infection by fungal spores.

Black Stain root disease (*Leptographium wagneri*) was not observed on the property but has been observed in the region. When trees are affected by black stain their root systems are functioning at less than full capacity, and are substantially more susceptible to insects such as bark beetles, that attack living roots of stressed trees or stumps. Caution should be exercised when conducting pre-commercial thinning to minimize the spread of black stain. Thinning should occur from June 1 to September 15th. black stain root disease spreads from root contacts and through the soil. Areas free of the disease can become inoculated by several species of bark beetles and weevils that carry the fungus from infected host trees to uninfected stands. Fresh thinning slash, tree injuries, and cut stumps “attract” and concentrate beetles into new areas. The insects colonize and reproduce in slash and at the root collar of stumps. Keeping these insects out of the stand is a key strategy for reducing losses. It should be safer to thin in summer months, after the beetles have completed their spring and early summer flights. This should render the slash from the thinning too dry to act as a host material by the following spring. Any trees thinned in late winter or spring are prime host material—avoid this timing in areas where black stain has been identified. The UC Extension Forester or CAL FIRE Pest Specialist may have information on infestation centers in the vicinity. Problems can be avoided by:

- Reducing competition through stocking control such as pre-commercial thinning.
- Prevent fire and logging damage to trees.
- Use of local genetics in all reforestation and re-vegetation efforts.

By managing healthy and resilient forest, insects and diseases can be minimized. Damaged or poor condition trees should be removed during silvicultural treatments. Every forest ecosystem has biological agents (animals, insects, and diseases) and physical forces (fire, wind, snow, and ice) which are destructive to living vegetation but which are integral to the functioning of that ecosystem. These agents become a “problem” only when they adversely affect vegetation which is of particular value to the landowner or society. While an endemic level of insects and disease in a forest is natural, if these levels become epidemic, loss of timber value and fire hazard may result. In a forest being managed to meet landowner’s goals, human intervention is often called for to improve productivity or protect the investment.

If insects or disease do become a significant problem, specific measures will be taken. Infestation zones may be cut to remove epidemic levels of pathogens. Chemical insecticides and herbicides will not be used in conformance with the desires of the HBMWD. Broadly accepted biological controls may be utilized depending on the intensity and threat of any outbreak. The best preventative treatment for the aforementioned insect and disease problems is to maintain a healthy, vigorous stand through timely thinning and harvesting. A healthy tree is less likely to be infested with insects or disease, or to succumb to these destructive agents if infested, than an unhealthy tree. It is expected that through the management actions prescribed in this plan, a healthier, more vigorous forest will develop, and hence be more resistant to pest outbreaks.

Bark beetles and tree mortality Bark beetles thrive when trees are stressed or weak. Currently, there are unprecedented numbers of dead and dying trees in California due to the drought. What can you do? Learn more at [http://www.readyforwildfire.org/Bark Beetles_Risk](http://www.readyforwildfire.org/Bark_Beetles_Risk). You can also view tree mortality in California on this GIS map: <http://egis.fire.ca.gov/TreeMortalityViewer/>

Animal Damage

No bear damage to conifers was observed. Deer browse on Douglas fir conifer seedlings does not appear to be a current issue for reforestation efforts. Areas where deer are browsing seedlings can be mitigated with vexar tube protectors. Vexar tubes can also be placed on re-sprouting oaks if deer brows is excessive.

Every forest ecosystem has biological agents (animals, insects, and diseases) and physical forces (fire, wind, snow, and ice) which are destructive to living vegetation but which are integral to the functioning of that ecosystem. These agents become a “problem” only when they adversely affect vegetation which is of particular value to the landowner or society. While an endemic level of insects and disease in a forest is natural, if these levels become epidemic, loss of timber value and fire hazard may result. In a forest being managed to meet landowner’s goals, human intervention is often called for to improve productivity or protect the investment.

Fire Protection and Hazard Reduction:

The property is located in the State Responsibility or (SRA) for CAL FIRE. SRA boundaries are those adopted by the Board of Forestry.¹⁵ They are the official boundaries recognized by the Board of Forestry and Fire Protection to define the areas where CAL FIRE has financial responsibility for fire suppression and prevention. The property is rated and mapped as high to very high in terms of fire hazard severity. (Fire and Resource Assessment Program- *FRAP*). Over 90% of the wildfires that occur on SRA land statewide are human caused. Ruth Lake Community Service District provides fires protection services to the area as well.

In general, the existing road system is in good enough condition for fire suppression apparatus to access a large portion of the property including the dwelling units during the dry season. There is sufficient native rock in the road bed for fire vehicles and crews to access most of the property during wet weather.



Example of a shaded fuel break on the Soquel Demonstration Forest Santa Cruz County.

Trinity County has a history of fire. The property has fire adapted ecosystems (conifer and chaparral, oak woodlands). Wildfires are a natural part of the forest ecosystem. They clear out heavy accumulations of underbrush, stimulate plant re-growth and release nutrients into the soil. Pre-

historically, Trinity County forests burned every 6 to 25 years (Brown and Baxter 2003, Fritz 1931). These frequent, low intensity fires promoted open, low density tree stands that kept fires close to the surface of the forest floor when they burned. The development of towns, houses and other improvements in forested watersheds resulted in fire suppression for many decades. This has led to the accumulation of woody material on the forest floor and small trees and shrubs become unnaturally dense, contributing to high fuel loads (vegetative material available for combustion). The result is an increased risk of high intensity fires that have greater potential to move from the forest floor into the tree canopy where it can easily spread and become more difficult to control. Additionally, when more and more people live, work and recreate in forested areas, there is an increased risk of ignition from people. The presence of roads is an enabling feature that allows more people into forested areas.

Wildland fire behavior is controlled by three factors: fuels, weather and topography. Because it is impractical to control the weather and topography around us, the only practical way to modify fire is by managing its fuel source. Fire fuel refers to anything that has the ability to burn and spread fire, like trees, shrubs and dried grass.

Fuels management objectives for a treatment area determines the technique and timing of maintenance work to reduce fire activity, rate of spread, and ember production. Weed whacking, mowing, grazing, and prescribed fire are techniques used to reduce accumulated regrowth of fine fuels while thinning and pruning with chainsaws, brush mastication, chipping, and prescribed fire are used to reduce accumulated medium and heavy fuels and also decrease the vertical continuity and break up the horizontal arrangement.

Wildfire risk may be further compounded by climate change. Climate change research suggests that wildfire risk could increase with predicted warmer temperatures and more frequent, severe droughts which create dry forest conditions that are more conducive to ignition and spread. The wildfire "season" may become longer as conditions become drier and hotter for a longer period of time. Some trees may become stressed due to drought and will die or succumb to disease and pests such as the bark beetle which has killed thousands of pine trees in and around Trinity County as a result of the recent drought. An increase in dead, standing trees may contribute to high fuel loads. The potential for long, dry forest conditions coupled with commonly high fuel loads may result in more frequent, high intensity wildfires that are likely to have adverse impacts to forestlands, carbon sequestration, suppression costs and risks to life and property.

Ruth Lake is valuable for use for fire suppression as it is wide open and suitable for helicopter dipping.

Shaded Fuel Breaks

Shaded fuel breaks protect high value areas such as forestland, historical sites, and neighboring property. Typically, they are areas 100 feet wide where vegetation and other forest fuels have been decreased in order to reduce the rate of spread of an advancing fire. Less wide shaded fuel breaks are also beneficial. Within the ruth area, the areas bordering public roads can be treated as shaded fuel breaks. Within these shaded fuel breaks, dead trees and ladder fuels (shrubs and lower tree limbs) are removed and the overstory canopy thinned to a level where shade would still reduce the growth of new ground cover/fuels. The understory would be modified so that a low-growing ground cover would be retained within the fuel break to provide fuels to start a backfire. Whenever possible, fuel breaks should visually merge with the surrounding landscape, conforming to the natural features of the area. Periodic maintenance would be needed to maintain fuel break specifications. Shaded fuel breaks on the ownership would provide safe locations for fire control lines and backfiring; ridgelines are commonly used as control points. Shaded fuel breaks and roads also aid in the compartmentalization of the property in order to contain a wildfire to its smallest size possible given existing infrastructure. This would minimize the need to install fire lines with bulldozers in the event of a wildfire

Pruning

Pruning removes the lower (live and dead) limbs of a tree to reduce ladder fuel. It may be done alone or

in combination with a thinning. It is very labor intensive and so is most frequently done in small areas alongside roads to increase the effectiveness of the road as a fuel break. It is most commonly done using loppers or power limbing saws. Hand shears, saws or clippers may be used when more care is required. Lower limbs should be pruned to a height of 15 to 20 feet. Care should be taken to not remove more than 50 percent of the live crown length. Conifer limbs should be cut flush against the bole so healing will occur quickly.

The greater the distance between surface fuel and the base of tree crowns, the more difficult it is for surface fires to climb up the bark and become crown fires. Pruned trees are more likely to survive low intensity fires. The prune trunk begins to produce knot-free lumber, which brings a higher price. (Graham et al 2004, 8).

Thinning

Thinning involves removing individually selected live trees to reduce density, thus providing room to grow and maintain forest health, and to reduce the continuity of fuel. Forest stands of almost all ages can be maintained in a healthy and vigorous state by periodic thinning. Precommercial thinning produces no commercial projects and creates significant slash. Commercial thinning produces many small merchantable logs (and in more mature stands, larger logs) and logging revenue can fund stand treatments including slash reduction.

Thinning from below removes smaller and weaker trees, while leaving larger and more fire-resistant trees. The trees that are left (residual trees) will occupy a healthier, more open and more vigorous stand with less competition for sunlight, water, and nutrients. This decreases their susceptibility to mortality from insects and disease and increases their growth and likelihood of surviving low intensity fires.

If the thinning prescription also includes removal of the smaller trees and shrubs, thinning can be effective in reducing the vertical fuel continuity and ladder fuel that fosters crown fires.

By itself thinning increases rather than decreases the surface fuel layer. For this reason slash is usually reduced by burning, crushing or masticating. Slash can be minimized by 'whole tree logging' in which the crowns as well as the boles are taken to the landing and the crowns chipped there. Piling slash with tractors separates fuels, opens up planting areas, and provides wildlife habitat.

Piling slash but not burning it leaves heavy concentrations of fuels on site that provide significant habitat for small mammals. Transportation of slash off-site is effective in reducing the in-unit fuels, but is expensive and the slash still has to be processed elsewhere. Burning is the most popular measures for reducing slash piles.

Pile burning would be conducted during the non-fire season on permissive burn days. Any burn piles would have to be completely extinguished at the end of the work day, prior to personnel leaving the area. Burning for forest management or for hazard reduction would be conducted in compliance with an approved burn plan under prescribed conditions and would be consistent with CAL FIRE's Vegetation Management Program. The Ruth Lake forestland is a wildland area and visitors and passers-by may be exposed to prescribed fire. The District is recommended to close public access to the forest if there is an active fire in the area. If fuel treatment projects are described in detail in the NTMP, it can serve as the environmental compliance document for grant-funded fuel treatment and forest health projects.

Reducing the fuel load on the property can be accomplished in numerous ways. Each of these has financial costs and environmental consequences associated with it. Management decisions should be site-specific. Characteristics such as slope, vegetation type, fuel load, and fuel configuration all need to be factored into the decision-making. Some fuel reduction methods are more appropriate for properties of a certain size.

Prescribed burning. The use of prescribed, or control, burns can be effective in clearing brush, removing exotic species, enhancing wildlife habitat, and restoring the many functions that fire brings to the environment. Control burns can also be relatively economical. On the other hand, fire has to be used with great caution. Prescribed burning can only be done safely when all the conditions are right—weather, fuel load, topography, etc. There is always the danger of a fire burning out of control and the liability involved is an issue. The large down wood component should be retained for wildlife and not

consumed by prescribed fire. Therefore, fire should be used in the cool moist times of the year to prevent fires from being hot enough to consume snags and down logs.

Prescribed burning can be used to restore the ecological function in areas that have departed from their natural fire regime. Fire suppression has changed fire activity in the 20th century, and prescribed burning is a tool that can restore and maintain appropriate fire regimes (Keeley and Syphard 2016). Typically, prescribed burning would require the construction of control lines (fuel breaks) using manual or mechanical treatments. In some cases, extensive or mature shrubs may be trimmed or removed manually by hand crews or by mechanical equipment in advance of burning, or vegetation may be pretreated with herbicides to kill the aboveground portions and cause them to dry before burning. Prescribed burning may be used where other activities are not feasible because of rocky soils, steep slopes (i.e., greater than 65 percent or 50 percent in high erosion areas), or irregular terrain; although, prescribed burning is limited to situations where sufficient fuel is available and arranged properly to carry the fire.

CAL FIRE has a Vegetation Management Program (VMP) in which they implement prescribed burns and cover the liability for landowners. Call your local CAL FIRE Unit for information.

Pile burning. This is a labor-intensive approach in which material is cleared by hand or mechanical method, and then the cut material is placed in piles and burned.

Grazing. Cattle grazing was observed on the ownership mainly upstream of Ruth Lake.

Herbicides. These are chemicals that kill plants or inhibit their germination. These need to be used with great caution and in accordance with the label. Plants respond differently; in some cases herbicides can favor native plants, in others exotic weeds. This method is not recommended for this property.

Heavy Equipment. Mechanical treatments include a variety of activities such as mowing, disking, grading, use of an anchor chain, mastication, and similar types of clearing. Some of these techniques can be damaging to the soil environment and expensive for small scale projects.

Mowing works best on flat areas. Masticators grind the fuel into mulch rather than removing it from the site. Bulldozers and other types of machines can fell trees to be chipped or crush brush.

Chipping and Utilization. These methods use the material removed rather than disposing of it. Multi-cutting is a recycling method in which shrubby material is chopped into smaller pieces by hand and left on site to act as mulch. This method works well on steep hillsides. It also provides improved wildlife habitat. Chipping is often used along roadsides where the chips are used as a cover. A tub grinder is another method of grinding material to a particular size. Biomass markets are not currently practice for hauling either chipped material or lose material to a power plant from this remote property.

Recommendations 14: The property owner should maintain the existing cache of fire suppression tools on the property. This should include shovels, McLeod, first aid kit, Pulaski's and a backpack pump. In addition, fire control agencies should be given a map and gate keys or combinations and a map that clearly delineates the water drafting locations on the property. Any prescribed burning should be done with extreme care under the right conditions as the steep slopes and abundance of fuel could create serious wildfire potential. Pre-commercial thinning and pruning crews should carry fire extinguishers and hand tools should not be far from chain saw operators. The goal of growing mature large trees should reduce the potential for crown fires in the long term.

General Guidelines for Fire Protection

Decades of fire suppression and an increase in sources of ignition from residential uses in the area has created a situation where the forests of the region are not able to withstand the effects of wildfires without damage to the timber stands and property developments. Fire is an integral part of this forest ecosystem, but heavy concentrations of suppressed trees that would have been cleared by repeated light ground fires have now become dangerous accumulations of ladder fuels capable of carrying a ground fire into the crowns of healthy trees. Forest conditions are at a point where high fuel loads, adjacent residential uses and ladder fuels make it difficult to allow natural fire to be returned to most of this forest

for the foreseeable future.

Therefore, it is very important to institute a thorough and workable program for reducing the threat of damaging wildfire. Since the long-term reduction of the wildfire threat will require the prudent reintroduction of prescribed fire, a fuels management regime should initially focus on breaking up the fire ladder and properly treating excessive fuels buildup associated with any commercial harvests or stand improvement projects. This work will focus on currently used roads first where traffic makes the likelihood of ignition high and the fire hazard is most severe. Shaded fuel breaks should be created for at least 100 ft. along either side of the road, which may be done as part of a pre-commercial thinning project. All slash from harvesting and pruning should be lopped within 24" of the ground, and locally heavy accumulations of slash in logging areas must be piled and burned during wet fall or winter weather. Within shaded fuel break areas, slash must be completely removed or piled and burned within 100 feet of either side of the road and up to 150 ft. where possible.

General fire safety recommendations are:

- ✓ Do not operate machinery or chainsaws when conditions such as wind, humidity and air temperature combine to make for "extreme" hazard.
- ✓ Ensure that in any type of logging operation during the fire season all workers conform to regulations pertaining to smoking, fire tool requirements, lunch and warming fires, posting of fire rules, care in welding, prohibiting uncovered glass containers, caution in using chainsaws and other spark emitting equipment, and daily inspections prior to shutting down operations.
- ✓ Keep a water truck or other water source on site when burning large piles of slash.
- ✓ Maintain a cache of fire tools such as shovels, axes, McLeods, portable backpack water tank, etc. on site and accessible.
- ✓ Keep a list of emergency phone numbers that identifies local fire response agencies, both public and volunteer.
- ✓ Create defensible fuel breaks around structures by clearing all brush and small trees.
- ✓ Develop extra water storage facilities from springs or other sources.
- ✓ Fit all water storage containers with appropriate size valves for firefighting.

Fire Protection Needs

Install shaded fuel breaks along the public roads throughout the property and as far along as funding allows. There are miles of road on the property that could benefit from installation of a shaded fuel break, at 100 feet on each side of the road. A CAL FIRE Forest Fire Prevention grant funded project will accomplish most of this work within the next 3 years.

Information to Local Emergency Personnel

Once management activities begin, the following should be provided to the Calfire and the Southern Trinity Volunteer Fire Department at Mad River CA each year before April 1st:

- A copy of the property map with access routes delineated.
- The name, address, and emergency 24-hour phone number(s) of an individual and an alternate who has authority to respond to CALFIRE requests for resources to suppress fires.
- The number of individuals available for firefighting duty and their skills.
- A list of available firefighting equipment. Adjacent landowners currently have tractors and other heavy equipment stored nearby.

Keys or combinations to any locked gates along emergency access routes

Decades of fire suppression and logging have created a situation where the forests of the region are not able to withstand the effects of wildfires. Fire is an integral part of this forest ecosystem, but heavy concentrations of suppressed trees that would have been cleared by repeated light ground fires have now become dangerous accumulations of ladder fuels capable of carrying a ground fire into the crowns of healthy trees. Forest conditions are at a point where high fuel loads and ladder fuels make it impossible to allow natural fire to be returned to most of this forest for the foreseeable future.

Therefore, it is very important to institute a thorough and workable program for reducing the threat of high severity wildfire. Since the long-term reduction of wildfire impacts will require the prudent reintroduction of prescribed fire, a fuels management regime should initially focus on breaking up the fire ladder and properly treating excessive fuels buildup associated with any commercial harvests or stand

improvement projects. This work will focus on the ridgetops and currently used roads first where traffic makes the likelihood of ignition high and the fire hazard is most severe. Shaded fuel breaks should be created for at least 100 ft. along either side of the road, which may be done as part of a pre-commercial thinning project.

All slash from harvesting and pruning should be lopped within 24" of the ground, and locally heavy accumulations of slash in logging areas must be piled and burned during wet fall or winter weather. Within shaded fuel break areas, slash must be completely removed or piled and burned within 100 feet of either side of the road and up to 150 ft. where possible.

Pruning involves removing the lower (live and dead) limbs of a tree to reduce ladder fuel. It may be done alone or in combination with a thinning. It is very labor intensive and so is most frequently done in small areas alongside roads to increase the effectiveness of the road as a fuel break. It is most commonly done using loppers or power limbing saws. Hand shears, saws or clippers may be used when more care is required. Lower limbs should be pruned to a height of 15 to 20 feet. Care should be taken to not remove more than 50 percent of the live crown length. Conifer limbs should be cut flush against the bole so healing will occur quickly. Hardwood pruning should not remove the branch collar. Pruning also causes trees to grow wood that is free of knots, improving the wood quality and commercial value. Pruning for wood quality should be done along the first 16 feet of the bole.

Mastication treats surface and ladder fuel by chopping and grinding them with a mechanical grinder using a wheeled or tracked machine with a specialized cutting head. The fuel is not removed, but its size is reduced, and it is rearranged to be in contact with the ground where decomposition can occur more quickly. A masticated area may result in flame lengths of less than 4 feet when weather conditions are not extreme. Prescribed fires usually burn well after mastication because it leaves a continuous layer of surface fuel and reduces ladder fuel. It is limited to gentle terrain with a slope under 30%. Mastication is very effective

for control of non-sprouting brush and is an alternative to using herbicides. Another benefit of mastication is that it discourages regrowth of plants and trees because accumulated chips form a physical barrier to establishment of new plants. In addition, the accumulated fuel is flammable until they adequately decompose.

Shaded fuel breaks or defensible fuel profile zones (DFPZs) are strips of land in which vegetation has been modified, but not entirely removed. The purpose is to reduce the amount of combustible material so that when a fire reaches the shaded fuel break, it will decrease in intensity, burn less hot, and drop from the canopy to the ground. Typically trees are spaced so their crowns no longer touch. Lower branches are pruned. Shrubs and dead and down material are removed to reduce surface fuel. Not all small trees need to be removed but care should be taken to create horizontal space between small trees and nearby larger trees. Shaded fuel breaks are most often placed strategically along ridges, roads and around communities. Fuel breaks give fire fighters a location from which to control a fire, but they may not be effective at stopping a wildfire when extreme fire weather with high heat and wind and low humidity may cause fires to jump fire lines. Treating all elements of the fuel profile throughout the entire forest parcel by thinning increases the chances of tree survival during extreme fire condition

Thinning involves removing individually selected live trees to reduce density and continuity of fuel. Thinning from below means removing only excess smaller trees while leaving larger and more fire resistant trees. The trees that are left will occupy a healthier, more open and vigorous stand with less competition for sunlight, water, and nutrients. This decreases their susceptibility to mortality from insects and disease and increases their growth and likelihood of surviving low intensity fires. Used alone, especially emphasizing the smaller trees and shrubs, thinning can be effective in reducing the vertical fuel continuity and ladder fuel that fosters crown fires. However, by itself, thinning does little to affect surface fuel unless it is accompanied by burning, crushing or masticating. Thinning may also add to surface fuel unless whole trees are removed and residual slash is removed from the stand or otherwise treated.

Treating Slash

Lopping and scattering is a commonly used slash treatment method for some types of thinning projects. It involves cutting unusable branches with a chain saw and scattering them on the ground. This technique is relatively inexpensive, but adds substantially to the surface fuel layer. Most slash will decompose eventually if left untreated, but this can take up to 30 years in some dry forest environments. During that time, slash actually increases your chances of tree mortality during low intensity fires. Therefore, lopping and scattering should only be used as pre- treatment for a later prescribed fire in most forests.

An alternative to scattering slash is piling and burning . This is probably the least risky method of slash treatment since the location of the burn can be controlled and the potential for the fire to escape is low. Piles can be assembled by hand or by heavy equipment during the thinning process.

Broadcast burning involves burning slash where it is deposited in the treatment area. This is riskier than pile burning because there is greater chance of fire escape. It can be used on steep slopes that heavy equipment cannot reach, but requires construction of fire lines scraped to mineral soil around the burn perimeter to reduce the chance of spread.

Trinity County Community Wildfire Protection Plan (CWPP)

The Trinity County Community Wildfire Protection Plan (CWPP) is a countywide effort to help reduce the risk of catastrophic wildfire and protect communities and values at risk on a landscape scale. The Trinity County Fire Safe Council (FSC) was founded in 1998 and completed one of the first CWPPs in the US, which was finalized in 2005. Since then, the Trinity County Resource Conservation District (TCRCD) has facilitated updating the CWPP in 2010 and 2015. TCRCD is currently working with the TCFSC on the 2020 update.

The CWPP identifies and prioritizes fuel reduction projects in Trinity County. First, the projects are identified by community members and then prioritized by fire officials evaluating fire history, fuel loads, and fuel reduction project history. Next, the geographic information system (GIS) maps are created to display each project area identified for agencies to access and utilize for project development and implementation. Then the plan is written into one comprehensive document and reviewed by the public and agency officials. Finally, the plan is approved by the Trinity County Fire Chiefs' Association, Trinity County Board of Supervisors, and CAL FIRE. The CWPP identifies several projects on or adjacent to the HBMWD lands:

Shaded fuel breaks

The objective of a shaded fuel break is to reduce, modify, and manage fuels within designated areas in order to enhance mitigation efforts in the event of a wildland fire situation. A shaded fuel break does not remove all vegetation in a given area. Shaded fuel breaks act as strategic "defensible landscape" to reduce fire speed and severity, improve suppression by ground crews and air attack. The purposes of strategic fuel modification are to separate communities or groups of structures from the native vegetation and break up large expanses of flammable fuel into smaller blocks, all with the purpose of reducing fire loss and damage. Maintenance of shaded fuel break's will be necessary every few years to keep the new vegetation from creating another fire hazard.

Fire Protection Objectives:

Recommendations:

It is recommended to establish a 100' defensible space fire protection zones around structures, also fuel reduction treatments (hand removal/ piling of tanoak followed by burning). General fire safety practices that can also be implemented such are: Ensure that in any type of logging operation during the fire season all workers conform to regulations pertaining to smoking, fire tool requirements, lunch and warming fires,

- Posting of fire rules, care in welding, prohibiting uncovered glass containers, caution in using

chainsaws and other spark emitting equipment, and daily inspections prior to shutting down operations.

- Keep a water truck or other water source on site when burning large piles of slash.
- Maintain a cache of fire tools such as shovels, axes, McLeod's, portable backpack water tank, etc. on site and accessible.
- Keep a list of emergency phone numbers that identifies local fire response agencies, both public and volunteer.
- Create defensible fuel breaks around structures by clearing all brush and small trees.
- Fit all storage containers with appropriate size valves for firefighting.
- Make sure the property is well signed so that public safety personnel can locate the dwelling units and main road system.

LANDSCAPE DEBRIS BURNING
Proper Debris Burning Prevents Wildfire

LEARN THE HOW, WHAT AND WHEN OF PREVENTING WILDFIRES FROM IMPROPER BURNING:

HOW

- DON'T BURN UNLESS WEATHER CONDITIONS (PARTICULARLY WIND) ARE SUCH THAT BURNING CAN BE CONSIDERED SAFE.
- KEEP A WATER SUPPLY AND SHOVEL CLOSE TO THE BURNING SITE.
- A RESPONSIBLE ADULT IS REQUIRED BY LAW TO BE IN ATTENDANCE UNTIL THE FIRE IS OUT.

LANDSCAPE DEBRIS PILES MUST BE IN SMALL 4- FEET BY 4- FEET PILES.

4 FT

10 FT

CLEAR ALL FLAMMABLE MATERIAL AND VEGETATION WITHIN 10- FEET OF THE OUTER EDGE OF PILE.

WHAT

- NO HOUSEHOLD TRASH OR GARBAGE CAN BE BURNED OUTDOORS AT RESIDENCES.
- DRY, NATURAL VEGETATION, GROWN ON THE PROPERTY CAN STILL BE BURNED OUTDOORS IN OPEN PILES, UNLESS PROHIBITED BY LOCAL ORDINANCES.

WHEN

- DON'T BURN IF IT IS WINDY AND THE SURROUNDING VEGETATION IS VERY DRY.

PERMITS

- BURNING CAN ONLY BE DONE AFTER OBTAINING REQUIRED PERMITS FOR PERMISSIVE BURN DAYS. CHECK BURN DAYS BY CONTACTING YOUR LOCAL AIR DISTRICT.

ONE LESS SPARK ONE LESS WILDFIRE

FOR MORE INFORMATION AND A PRINT-READY CAMPFIRE PERMIT VISIT:
PREVENTWILDFIRECA.ORG
[#PREVENTWILDFIRE #ONELESSSPARK](https://twitter.com/PreventWildfire)

PROUDLY TO YOU BY THE CALIFORNIA WILDLAND FIRE COORDINATING GROUP (CWCG)

Fuel breaks are designed to change the behavior of a wildfire by reducing the quantity, density, and configuration of potential fuels that the fire encounters when it enters the fuel break. The effectiveness of fuel breaks is dependent upon proper location, installation, and maintenance and adequate defense by fire suppression forces. The ridgetop fuel break also provides some access for suppression forces and a potential "safety zone" for firefighters. There are a variety of fuel treatments recommended for the property contained in this plan. Working with neighbors in a community effort is often the best way to the best way to maximize the effectiveness of fuel treatments. The Trinity Fire Safe Council (530) 623-6004 x208 ,email: afleitz@tcrd.net; an excellent resource for working with landowners in a coordinated community approach.

It is very important to institute a thorough and workable program for reducing the threat of high intensity wildfire. Since the long-term reduction of the wildfire threat will require the prudent reintroduction of prescribed fire, a fuels management regime should initially focus on breaking up the fire ladder and properly treating excessive fuels buildup associated with any commercial harvests or stand improvement projects. This work will focus on currently used roads first where traffic makes the likelihood of ignition

high and the fire hazard is most severe. Shaded fuel breaks should be created for at least 100 ft. along either side of the road, which may be done as part of a pre-commercial thinning project.

All slash from harvesting and pruning should be lopped within 24" of the ground, and locally heavy

accumulations of slash in logging areas must be piled and burned during wet fall or winter weather. Within shaded fuel break areas, slash must be completely removed, chipped or piled and burned within 100 feet of either side of the road and up to 150 ft. where possible.

Security:

Security infrastructure is already in place and should not need to be improved. Below are Law Enforcement / Local Emergency Contact Agencies

Trinity County Sherriff's Office:
101 Memorial Drive POB 1228 Weaverville, CA 96093
(530) 623-2611
Email for emergencies: eg11@trinityconty.org

California Department of Fish and Wildlife Field
Office:
619 Second St. Eureka, CA 95501
(707) 44506493

CAL FIRE Humboldt Del Norte Unit
Fortuna, CA
118 S Fortuna Blvd,
Fortuna, 95540
(707) 725-4413

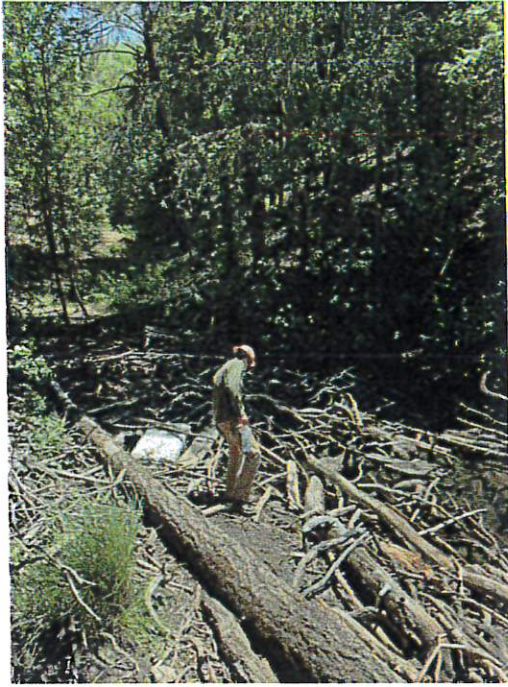
CAL FIRE Bridgeville Station
38737 Kneeland Rd
Bridgeville, CA 95526
Phone: (707) 777-3636

Southern Trinity Volunteer Fire Department
PO Box 16
Mad River, CA 95552 United States
Email: stfiredepartment@gmail.com

Information to Local Emergency Personnel

Once management activities such as fuel treatments and other on the ground practices begin, the following should be provided to the Agencies and Organizations listed above each year before April 1st:

- A copy of the property map with access routes delineated.
- The name, address, and emergency 24-hour phone number(s) of an individual and an alternate who has authority to respond to CALFIRE requests for resources to suppress fires.
- The number of individuals available for firefighting duty and their skills.
- A list of available firefighting equipment.
- Keys or combinations to any locked gates along emergency access routes.



**Shoreline debris accumulates in coves and backwater zones
And can cause problems for the intake at the dam.**

Wildlife:

The species which have received the most attention recently due to their declining populations are the northern spotted owl, marbled murrelet, and anadromous fish in general. There are certainly other terrestrial and aquatic species as well which have suffered more quietly from a reduction in habitat. Some of the elements to consider when assessing the habitat value for these species include: the presence of snags, dens, and nest trees; levels of large woody debris in the forest and in creek zones; the amount of sediment input to streams; the size of pools and riffles for fish spawning and rearing; and water temperature in fish bearing streams and tributaries.

Management can mitigate the impacts of past logging by rehabilitating and improving habitat opportunities for native wildlife whenever possible. By implementing management which retains important habitat features and protects sensitive areas such as stream zones, it is assumed that the needs of most wildlife species will be met.

To achieve these goals, the following management practices should be used:

Retain all snags unless marked as a hazard by the RPF or his designee.

- Mark legacy or wildlife trees for future snag recruitment and to eventually become downed woody debris.
- Existing downed logs and cull logs produced during timber operations should be left in the woods for coarse woody debris recruitment wherever possible, except when utilized for firewood or building. Some fuel modification may be necessary to reduce fire hazard.
- All logs in stream zones must be retained. Management will provide for a continuous supply of coniferous coarse woody material to improve, maintain and restore vital stream functions, including salmonid habitat structure and bank stability.
- Near-stream vegetation in tributaries should be maintained with a canopy above 80% at all times in order to safeguard against water temperature effects.
- No operation of heavy equipment within any stream zones except at prepared truck or tractor road

crossings, in order to further safeguard against sediment and mass wasting effects on aquatic habitat.

- Log and rock hauling and skidding operations should cease when turbid water is flowing across the road surface or in a roadside ditch which has the ability to enter a watercourse.
- Rocked watercourse crossings (fords) whenever possible.

One way to mitigate the effects of fuel treatments on wildlife species that are dependent on woody debris is to leave patches or clumps of unburned snags and downed wood throughout the site. Forest scientists believe that without fire suppression, Sierran forests would have had not only less woody fuel on the ground, but that the fuel would have been less continuous across the landscape. Frequent low-intensity fires would have left behind patches of standing and downed wood. These patches of unburned debris created small refuges for wildlife to survive and later recolonize the whole burned area.

Critical questions to address when developing a fuel treatment project.

- Where logs removed will be stacked (usually at landings near roads on site)
- How trees to be removed or retained will be identified (typically retained trees are marked with paint)
- Who will be responsible for hauling logs and chips off site (typically the contractor)
- How slash created by the operation will be treated (chipped and removed or piled and burned)
- How slash remaining from previous operations will be treated (crushed)
- How burn piles will be covered for the winter period (with plastic over 80% of its surface area)
- Who verifies burn permits and days with appropriate agencies (typically the contractor)
- What type of safety equipment should be on site during burns
- How roads used during treatment will be treated (watered and maintained by the contractor)
- How snags are treated (cut and removed unless designated for retention by the RPF).
- How any sensitive plants will be avoided (protected by buffer zones)
- How any archaeological or historical sites discovered during operations will be handled (notification of landowner and RPF)
- How any streams will be avoided (protected by buffer zones)
- How any disturbed soil will be treated (with erosion control methods in highly erodible areas)

Mechanical Vegetation Treatment

Mechanical treatment involves the use of motorized equipment (rather than hand or manual equipment), such as wheeled tractors, crawler-type tractors, or specially designed vehicles with attached implements designed to cut, uproot, crush/compact, or chop target vegetation. The selection of a mechanical treatment and associated equipment is based upon several factors such as the characteristics of the vegetation, seedbed preparation and re-vegetation needs, topography and terrain, soil characteristics, climatic conditions, and a comparison of the improvement cost to the expected increase in productivity or public and/or private benefit. In some cases, mechanical treatment can be used to create a desired stand structure and composition without having to use prescribed burning, or in areas where there are risks and uncertainties with prescribed burning. Mechanical treatment methods that may be used include tilling, drill seeding, mowing, masticating, grubbing, and chipping, among others. For projects located in forested landscapes, the use of mechanical equipment can create and maintain a desired forest floor condition in various settings, although if used improperly, mechanical equipment can displace mineral soil and reduce organic content (Graham et al. 2010).

Manual Vegetation Treatment

Manual treatment would involve the use of hand tools and hand-operated power tools to cut, clear, or prune herbaceous and woody species. Activities could include the following: thinning trees with chainsaws, loppers, or pruners; cutting undesired competing brush species above ground level to favor desirable species and spacing; pulling, grubbing, or digging out root systems of undesired plants to prevent sprouting and regrowth; and placing mulch around desired vegetation to limit competitive growth.

Recreation and Aesthetics:

Recreational uses include, swimming, hiking, fishing, boating weekend relaxing and passive activities such as bird watching. The HBMWD posts the property as no hunting allowed. Due to the public land surrounding the property, the HBMWD property is ideally suited for full public recreational access. It is possible that Native American Tribes would be interested in collecting culturally important plants from the property. Typical plants of interest include hazel, Oregon grape, prince's pine ground cone, huckleberry and sword fern. It is not known if the property constitutes a "site" for traditional plant collection. Most traditional sites require a certain size or density before the area is considered a "site".

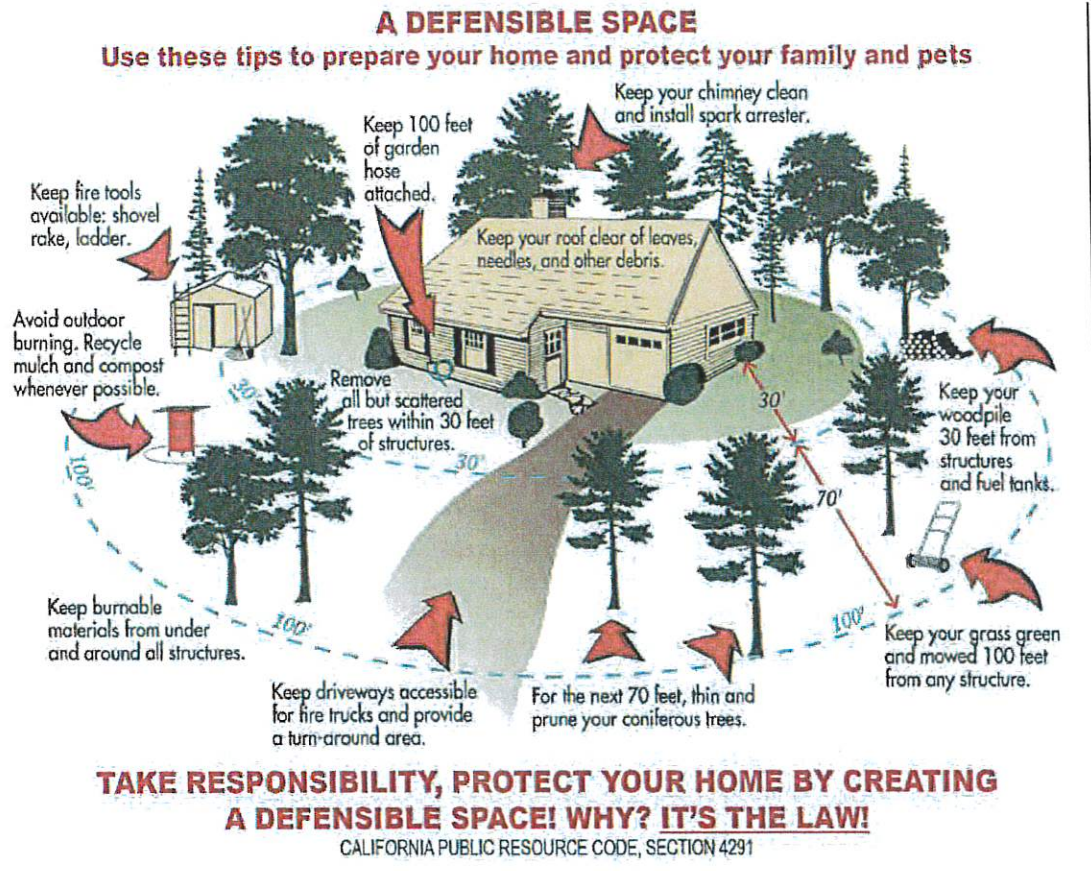


Figure 6. Defensible Space

Recommendation 15: *Make periodic assessments of hazard tree potential in areas of high use and along the urban interface. For the purposes of this plan a hazard tree is defined as a tree that is subject to a high probability of failure, due to structural defect, lean or disease, and which poses a potential threat to people or property in the event of failure.*

Climate Change and Carbon Sequestration

Current climate models for forests and rangelands predict that California is currently and will continue into the future to experience many changes as a result of climate change. These include increased wildfire frequency and intensity; longer fire seasons; declines in distribution, productivity and health of conifers and some range species; changes in ecosystems, wildlife habitat and populations; potential increases in drought, insects and disease in Southern California; and increased spread of invasive species.

Healthy forests have an important role to play in addressing climate change. Trees remove carbon dioxide, the primary greenhouse gas of concern, from the air and store it as carbon in as they grow. When trees die, they release CO₂ back into the atmosphere. Forest damage and loss to wildfires, insects and disease, or development can result in large CO₂ emissions. The 2014 California Forest Carbon Plan has identified five forestry strategies for reducing or mitigating greenhouse gas emissions. They are:

1. Reforestation to sequester more carbon.
2. Avoidance of forestland conservation to by preventing subdivision and forest conversion to development.
3. Fuels reduction to reduce wildfire emissions and utilization of those materials for renewable energy.
4. Urban forestry to reduce energy demand through shading, increase sequestration, and contribute biomass for energy generation.
5. Improved management to increase carbon sequestration benefits and protect forest health.

There are a number of reasons that the property is not likely to qualify any time soon as an Improved Forest Management project under the California Air Resources Board's Compliance Offset Protocol for US Forest Projects.

First and foremost, under the current Improved Forest Management project requirements, the property is not considered large enough to be a viable project for the carbon market. This is due to the economies of scale required for carbon projects, which require long term expenses such as verification, re-inventories, and modeling and filing of annual monitoring reports. If the carbon registration protocols change in the future, a property the size of the HBMWD could possibly be a viable project under "aggregation " meaning it could be aggregated with other smaller projects to create a large enough project to be financially viable for either a compliance market or voluntary carbon market.

These include increased wildfire frequency and intensity; longer fire seasons; declines in distribution, productivity and health of conifers and some range species; changes in ecosystems, wildlife habitat and populations; potential increases in drought, insects and disease in Southern California; and increased spread of invasive species.

Healthy forests have an important role to play in addressing climate change. Trees remove carbon dioxide, the primary greenhouse gas of concern, from the air and store it as carbon in as they grow. When trees die, they release CO₂ back into the atmosphere. Forest damage and loss to wildfires, insects and disease, or development can result in large CO₂ emissions. CAL FIRE has identified five forestry strategies for reducing or mitigating greenhouse gas emissions. They are:

- Reforestation to sequester more carbon
- Forestland conservation to avoid forest loss to development
- Fuels reduction to reduce wildfire emissions and utilization of those materials for renewable energy

- Urban forestry to reduce energy demand through shading, increase sequestration, and contribute biomass for energy generation.
- Improved management to increase carbon sequestration benefits and protect forest health.

Examples of Adaptation Strategies

The proposed management activities on the property address 4 of the 5 management strategies identified by CAL FIRE. The fuel treatments and regeneration projects identified above will speed the reforestation of currently cutover portions of the property. Strategic areas of forestland that can be thinned to serve as a fuel break, which can decrease the spread rate and intensity of wildland fire on the property. During the course of fuel reduction treatments and traditional commercial forest management the landowner intends to recover as much material as possible for cordwood for home-heating. The landowner intends to grow larger, older more resilient trees on the property than would be done under shorter- rotation even-aged forestry practices- which will lead to greater long-term sequestration of carbon on the property over time.

Under the current passive management direction, carbon sequestration is occurring through growth of the forests. The biggest risk of carbon emissions on the property is high intensity wildfire as was seen during the August Complex Fire in 2020. Reducing the risk of wildfire through fuel hazard reduction activities is one way to ameliorate risk of excess carbon emissions from the property. The landowner is interested in conducting fuel hazard reduction activities. Another way to minimize forest-based carbon emissions is to practice long rotation (70-80+ years) and/or light selection forest management (aka 'Natural Forest Management') rather than short-rotation (50 year) even aged forestry.

Growing trees to an older age generates larger log sizes. Over the long term there are potential market advantages and disadvantages for emphasizing larger logs.

Potential Advantages:

- Often times larger logs command a higher price in the market.
- Larger logs allow the volume for each truckload to be higher which can make a difference in trucking costs especially when trucking a significant distance.
- Harvesting larger trees generally results in lower logging costs as there are less logs to handle, higher volumes for each skid to the log landing etc. Larger trees require a higher level of skill and care in falling to avoid excess drainage.
- Larger average tree size generally results in less unmerchantable material such as treetops that results in less slash disposal costs.

The property is probably not large enough for listing and registering as a forest carbon project under either the compliance or voluntary carbon market. This is due to the high costs of the registration and verification process as well as the timber type not being the best suitable for this market.

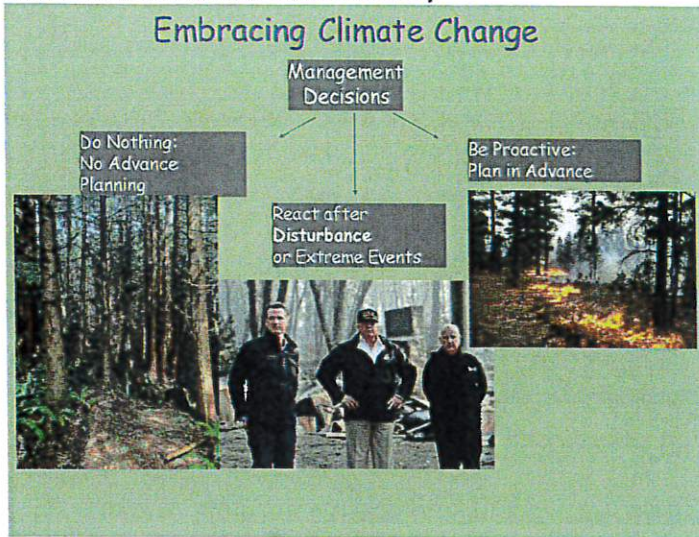
Examples of adaptation tactics include:

- Using prescribed fire and mechanical thinning to lower the volume of dense vegetation and reduce flammability within a buffer zone of appropriate size for the landscape.
- Establishing fuelbreaks along roads, power lines, and other existing infrastructural features in order to minimize habitat disruption and reduce the spread of wildfire while minimizing additional fragmentation.
- Utilizing natural fuelbreaks across the landscape, such as exposed rock outcrops and sparsely vegetated ridgetops, when considering the strategic management of future wildfires (e.g., potential operational delineations).
- Reducing canopy bulk density immediately adjacent to human communities (i.e., wildland-urban interface) to reduce the probability of crown fire spread. Focus more on horizontal heterogeneity

across the matrix of the forest to create natural openings and break up the fuelbed.

- Replacing vegetation with nonflammable materials (e.g., local rocks) around homes and other valuable structures.
- Creating fuelbreaks around fire-sensitive areas of high natural resource value, such as specific Experimental Forests, Research Natural Areas, Botanical Areas, where altered fire regimes would negatively impact target species of the protected area in the near future (e.g., forest ecosystem type burning too frequently).

Alter forest structure to reduce severity



Resilience-- Improve the capacity of ecosystems to return to prior conditions after disturbance such as fire or drought. Reduce stress, minimize vulnerabilities

Carbon GHG effectively removed (sequestered) from the atmosphere via photosynthesis tree growth. Absorbed CO₂ is released upon during timber harvest activity including transport. Over decades' wood products can effectively store wood biomass in finished structure, wood products, landfills and also use in energy production to offset fossil fuels.

Carbon GHG effectively removed (sequestered) from the atmosphere via photosynthesis tree growth. Absorbed CO₂ is released during timber harvest activity including transport. Over decades' wood products can effectively store wood biomass in finished structure, wood products, landfills and also use in energy production to offset fossil fuels.

Current monitoring trends in California are likely to continue therefore forestry in California on private lands will likely have an increasingly positive impact on reducing GHG emissions. Monitoring will need to be done periodically to make sure this is the case over a long term (100 year) period to also account for emissions from wildfire, forest conversions and tree mortality.

Create Resilience to climate-related change/disturbances

Reduce and minimize stress within habitats

Mgmt. Examples

- grow larger trees
- prescribed fire
- thin dense stands
- increase buffers
- increase species diversity
- stock seed banks



Proposed harvest

frequency and intensity over time can be modeled using a Board of Forestry terrestrial forest carbon model that can be found at:

http://www.fire.ca.gov/resource_mgmt/resource_mgmt_forestpractice_pubsmemos_memos.php. Also a watershed scale carbon mapping tool is available from the NRCS at: <http://carbonscapes.org/>.

Although the forest sector worldwide is a significant contributor to GHG emissions Report (17% IPCC 2007 Fourth Assessment Report) in California there is a much different picture. Data from the US Forest Service report titled "California's Forest Resources, 2001-2005 "Five Year Forest Inventory Report (FIA)" (Christensen, et. Al, 2008 PNW-GTR-763), provides information on forest inventory trends for California Timberlands. The inventory is reported by various landowner classes including National Forests, forest industry and nonindustrial ownerships.

Livestock

Prescribed grazing or prescribed herbivory may be a good a management tool to reduce understory fine fuels or to maintain fuelbreaks. Grazing helps reduce fire hazards by controlling the amount and distribution of grasses and other potential fuel. Around urban settings, goats are often used in conjunction with human work crews and prescribed burns to create fuel breaks – a proactive effort to manage future wildfires.

Prescribed herbivory (also known as "targeted grazing" [ASI 2006, Macon 2019]) is the use of domestic livestock to accomplish specific and measurable vegetation management objectives. Those would include things like removing biomass (fine fuel loads), reducing populations of specific plant species, slowing the re-establishment of shrubs on burned or mechanically thinned sites, and improving plant community structure for wildlife habitat values.

Using ruminants to manage fuel loads through targeted grazing offers a number of important advantages:

- Targeted grazing can be a cost-effective alternative for reducing fine and ladder fuels over large and rugged landscapes that may be inaccessible for equipment or hand crews.
- Targeted grazing is especially effective at maintaining fuel reduction treatments like shaded fuel breaks.
- Unlike many treatment methods, targeted grazing actually removes fuel from the landscape - the wildfire fuels are removed by the grazing/browsing livestock.

- Targeted grazing contractors can often provide all necessary infrastructure (fencing, livestock water, predator protection, etc.).

By managing the type and number of animals, the duration of grazing, the season and frequency of grazing, and the spatial distribution of livestock, targeted grazing can help landowners and managers achieve a variety of land management goals.

Although not described in detail in this plan, goats if available locally could be used periodically for fuelbreak maintenance and follow up treatments as long as water quality BMPs are used to minimize potential surface water quality impacts. The HBMWD could also work with local ranchers to periodic grazing meadow areas to keep fuel risk low.

Harvest Documents:

Most commercial biomass removal activities need a CAL FIRE permit or other entity permit. Identify needed or current Cal Fire THP, NTMP and/or Categorical Exclusion for proposed timber management activities. Other agency permits may be necessary for proposed management activities related to other types of conservation projects such as but not limited to water drafting, ponds, road maintenance, crossing replacements and dust control.

Required Permits and Monitoring Regulatory Environment

Since there is no current permit to conduct commercial timber operations on the property, the owners would need to decide which permitting path to take, and that decision would also have an effect on net income.

Options include:

Non-Industrial Timber Management Plan (NTMP)

Working Forest Management Plan (WFMP)

Timber Harvest Plan (THP)

Forest Fire Prevention Exemption, 14 CCR § 1038.3

10% Harvesting Dead, Dying, Diseased trees Exemption, 14 CCR § 1038(b)

Oak Woodland Management Exemption

NTMP

A Non-Industrial Timber Management Plan is a long term harvest permit that is limited to ownerships of timberland that are < 2,500 acres. The Districts lands at Glendale are included in the total timberlands ownership, but based on the current estimate of the ownership that excludes non-forest areas such as the lake surface, the district would qualify for this option.

An NTMP and THP take roughly the same amount of time before timber harvesting can take place (2 years) as botany, and wildlife surveys need to be completed.

NTMP costs for this ownership would be approximately \$10,000 for the plan and \$ 8,000 to file each NTO (Notice of Timber Operations) which can be done during years of timber harvest activities once the plan has been approved. The cost of the NTO mostly comes from pre-harvest botany and wildlife surveys, as well as harvest layout and finding loggers (a cost which may be reduced somewhat if the landowners conduct some of the sale administration). NTMPs generally cost more because of the additional surveying and growth and yield modeling required of them compared to a THP. The cost of the modeling would be somewhat reduced by the inventory and data analysis already performed for this management plan.

NTMPs are limited to uneven-aged management, which includes single-tree selection, group selection and commercial thinning silvicultural methods.

The primary reason many ranches and smaller landowners obtain NTMPs is because of the ability to quickly respond to upturns in the timber markets and to have a long-term permit. However, these properties are also usually large enough that they anticipate multiple harvest entries on different areas

of their property over time, making the higher cost of the NTMP worthwhile compared to filing multiple THPs. When a property is small or understocked and only one or two harvests can be anticipated in the foreseeable future, the advantage of the NTMP is marginal. On the other hand, NTMPs provide maximum flexibility about how much and when to harvest, which most closely aligns with the landowners' vision of small periodic harvests and minimizing costs by doing the logging themselves.

Summary of Regulatory Constraints for NTMPs under the CA Forest Practice Rules

Silviculture

- Under the Selection silviculture method, trees are removed individually or in small groups sized from one-quarter (0.25) acres to two and one-half (2.5) acres maximum.
- On site II and III lands at least seventy-five (75) square feet per acre of conifer basal area shall be retained as a minimum stocking standard.
- Not more than 20% of the total area harvested with the selection method under any harvest operation shall be covered by small group clearings.
- Within the logging area all snags shall be retained to provide wildlife habitat with the exception of snags for safety reasons.

Yarding

- Heavy equipment equipped with a blade, shall not operate on skid roads or slopes that are so steep as to require the blade to be used for breaking (Generally <50% slope).
- Tractor roads shall be limited in number and width to the minimum necessary for removal of logs.
- Heavy equipment shall not operate on Unstable Areas. If such areas are unavoidable, the RPF shall develop specific measures to minimize the effect of operations on slope instability.
- Slash and debris from timber operations shall not be bunched adjacent to residual trees required for silvicultural or wildlife purposes or placed in a location where they could discharge into a Class I or II watercourse, or Lake.
- Where tractor roads are constructed only those roads shall be used for the skidding of logs to landings
- Desirable residual trees and seedlings will not be damaged or destroyed by tractor operations.
- Where water breaks cannot effectively disperse surface runoff, other erosion controls shall be installed as needed.

Roads

- Logging Roads and Landings shall be planned and located within the context of a systematic layout pattern that considers 14 CCR § 923(b), uses existing Logging Roads and Landings where feasible and appropriate, and provides access for fire and resource protection activities.
- Logging Roads and Landings shall be planned and located within the context of the following:
 - (1) Duplicative roads and total road mileage.
 - (2) The number of Logging Road Watercourse crossings.
 - (3) Construction and reconstruction near Watercourses, lakes, marshes, wet meadows, and other wet areas.
 - (4) Construction and reconstruction across steep areas that lead without flattening to Class I, II, III, or IV Watercourses and lakes.
 - (5) Construction and reconstruction on unstable areas or in connected headwall swales.
 - (6) Construction and reconstruction near nesting sites of rare, threatened, or endangered bird species.
 - (7) Construction and reconstruction near populations of rare, threatened, or endangered plants.
 - (8) Ground disturbance and the size of cuts and fills.
 - (9) The potential for affecting surface hydrology, including, but not limited to, concentrating or diverting runoff or draining the Logging Road or Landing surface directly into a Watercourse or lake.

(10) Maintenance needs while being compatible with the Logging Road classification and long-term road usage.

- No Logging Roads or Landings shall be planned for construction (i) within 150 feet of the Class I Watercourse transition line, (ii) within 100 feet of the Class II Watercourse Transition Line on slopes greater than 30%, (iii) within Class I, II, III, or IV Watercourses or lakes, (iv) within a WLPZ, or (v) in marshes, wet meadows, and other wet areas, except at approved watercourse crossings.
- No Logging Roads or Landings shall be planned for reconstruction (i) within Class I, II, III, or IV Watercourses or lakes, (ii) within a WLPZ, or (iii) in marshes, wet meadows, and other wet areas, except at approved watercourse crossings.
- Logging Roads and Landings shall be planned and located to avoid unstable areas and connected headwall swales.
- As part of the planning and use of Logging Roads, Landings, and Watercourse crossings in the logging area, the RPF or supervised designee shall: (i) locate and map significant existing and potential erosion sites and (ii) specify feasible treatments to mitigate significant adverse Impacts from the road or Landing.
- All logging road and landing surfaces shall be adequately drained through the use of logging road and landing surface shaping in combination with the installation of drainage structures or facilities and shall be hydrologically disconnected from watercourses and lakes to the extent feasible.

Watercourses

- The quality and beneficial uses of water shall not be unreasonably degraded by timber operations. During timber operations, the timber operator shall not place, discharge, or dispose of or deposit in such a manner as to permit to pass into the water of this state, any substances or materials, including, but not limited to, soil, silt, bark, slash, sawdust, or petroleum, in quantities deleterious to fish, wildlife, or the quality and beneficial uses of water.
- Accidental depositions of soil or other debris in lakes or below the watercourse or lake transition line in waters classed I, II, and IV shall be removed immediately after the deposition or as approved by the Director.
- The timber operator shall not construct or use tractor roads in Class I, II, III or IV watercourses, in the WLPZ, marshes, wet meadows, and other wet areas unless when explained and justified in the plan by the RPF, and approved by the Director, except at approved crossings.

WFMP

Working Forest Management Plans (WFMPs) and Working Forest Harvest Notices (WFNs) approved by the [California Department of Forestry and Fire Protection](#) for landowners with less than 10,000 acres of land, not primarily engaged in the manufacture of forest products. The WFMP is similar to the NTMP but allows for a larger timberland ownership.

THP

The timeframe for a traditional Timber Harvest Plan (THP) preparation is two years, minimum and costs for a 100 acre sized THP would be approximately \$35,000-\$55,000 (includes archeology, botany, owl surveys, 1600 permits etc.). The permit is valid for up to seven years. If the landowner chooses to harvest 20-30% of the volume using single tree selection, then the limitations in the Forest Practice Rules are unlikely to constrain harvest.

Relevant differences include:

Post-harvest canopy must be at least 50% of the pre-harvest canopy.

Heavy equipment operations are limited to areas <50% slope, and in some cases <40%.

Operations would be prohibited in unstable areas. Harvest within the inner WLPZ buffer is allowed if no more than 30% of the canopy is removed.

No more than 600 feet of new road construction is allowed.

Alternative cumulative impacts analysis is performed that typically saves costs.

Botanical and Northern spotted owl surveys are required. Pre-consultation with the California Department of Fish and Wildlife (CDFW) is required where listed species may be impacted.

Where late succession forest stands > 5 acres are present, their area must not be reduced.

Timber inventory and growth modelling is not required.

The canopy closure requirements should not be a limiting factor given the light harvest under consideration.

The alternative cumulative impacts assessment route is estimated to save \$2,500-\$3500. Not performing a timber inventory and growth modelling is estimated to save \$4,000 compared to an NTMP.

10% Harvesting Dead, Dying, Diseased trees. 14 CCR § 1038(b)

The paperwork for a Dead and Dying Exemption can be completed by the landowner-LTO and is valid for one year. Up to 10% of the average standing volume can be harvested that is identified and dead or dying.

A Dying Tree is defined in the Forest Practice Rules as:

a tree which exhibit one or more of the following: fifty percent or more of the foliage-bearing crown is dead or fading in color from a normal green to yellow, sorrel, or brown, excluding normal autumn coloration changes; successful bark beetle attacks with indications of dead cambium and brood development distributed around the circumference of the bole; seventy-five percent or more of the circumference of the lower bole is girdled by wildlife; or trees designated by an RPF as likely to die within one year.

The exemption does not allow harvesting any dead/dying trees within the stream buffers as mapped in this management plan, and would be limited to slopes <50% and areas outside the mapped unstable area. This would reduce the operable area by as much as 20 acres (40 operable acres remaining). No new road construction or reconstruction would be covered by the exemption. No plant or animal surveys would be required unless there was a reason to expect that listed or sensitive species are present. All known sites must be avoided – such the two plants identified in this plan. The RPF must assure that the project adheres to the Board Rules and no impacts occur including impacts to listed species and their habitat.

This exemption is not really a viable option for this timber stand and it is not recommended for forest planning long-term.

Slash depth must be less than 18 inches post-harvest, the additional cost of which needs to be estimated by a logger for the particular site.

Forest Fire Prevention Exemption 14 CCR § 1038.3

This exemption is the same as above except for the following:

- Up to 300 acres of harvest area is allowed.
- No tree with a stump diameter greater than 30" can be harvested.
- Not more than 200 trees per acre over 3 inches DBH can be left after harvest
- 300-600 feet of road construction is permitted if it is greater than 200 feet from a watercourse.
- To qualify for this exemption the land must be within a moderate, high or very high fire hazard severity zone.
- Like the other CAL FIRE Exemptions, this exemption is only good for one year.

Forest Fire Prevention Exemption Specific

Purpose of this Exemption: 14 CCR § 1038.3 for the purpose of cutting and removing of trees to eliminate the vertical continuity of vegetative fuels and the horizontal continuity of tree crowns for the purpose of reducing flammable materials to reduce fire spread, duration, and intensity, fuel ignitability, or ignition of tree crowns.

- The exemption will occur in areas determined to be moderate, high, or very high fire threat. 14 CCR § 1038.3(b).

- Only trees less than 30 inches outside bark stump diameter 8 inches above ground level may be harvested. 14 CCR § 1038.3(h).
- Road Construction and Reconstruction: No tree larger than 36 inches in diameter at stump height, measured 8 inches above ground level, may be removed for the purpose of road construction or reconstruction. 14 CCR § 1038.3(e)(5)(F). Trees between 30 and 36 inches in stump diameter at stump height, measured 8 inches above the ground may be removed for the purpose of road construction and reconstruction, WHEN NO OTHER FEASIBLE OPTION EXISTS FOR ROAD ACTIVITIES. 14 CCR § 1038.3(e)(5)(F).
- Timber Operations pursuant to the notice of exemption may not commence for ten (10) working days from the date of the Directors receipt of the notice.
- Prior to the completion of Timber Operations, all Temporary Roads constructed or reconstructed under this section shall undergo Abandonment in a manner which uses protective measures that will effectively remove them from the Permanent Road Network, as defined in 14 CCR § 895.1. 14 CCR § 1038.3(e)(5)(E)
- The RPF responsible for submission of the Notice of Exemption shall designate Temporary Road locations, Landing locations, Tractor Road crossings of Class III Watercourses, Unstable Areas, or Connected Headwall Swales on the ground prior to submission of the Notice of Exemption. 14 CCR § 1038.3(f).
- Before beginning Timber Operations, the RPF responsible for submittal of the Notice of Exemption shall notify the Department, the appropriate RWQCB, the CDFW, and the CGS of the actual commencement date of operations.
- 14 CCR § 1038.3(u)(1) The residual stand shall consist primarily of healthy and vigorous Dominants and Codominants from the preharvest stand. Trees retained to meet the Basal Area stocking standards shall be selected from the largest trees available on the project area prior to harvest. In no case shall stocking be reduced below the standards found within 14 CCR § 913.3 [933.3, 953.3] (a).
- 14 CCR § 1038.3(d)(1-3) Slash and Woody Debris shall be treated to achieve a maximum post-harvest depth of eighteen (18) inches above the ground except within one-hundred-fifty (150) feet from any point of an approved and legally permitted structure that complies with the California Standards Building Code. ☐ All surface fuels within one-hundred-fifty (150) feet of an Approved and Legally Permitted Structure, which could promote the spread of wildfire, shall be chipped, burned, or removed within forty-five (45) days from the start of Timber Operations.
- All fuel treatments shall be completed within one (1) year from the date the Director receives the notice. This requirement does not apply to burning, which instead shall be completed within two (2) years from the date the Director receives the notice.
- No timber operations are allowed in a WLPZ, or within any ELZ or EEZ designated for watercourse or lake protection, under exemption notices except (1) Hauling on existing roads (2) Road maintenance (3) Operations conducted for public safety (4) Construction or reconstruction of approved watercourse crossings (5) Temporary crossings of dry Class III watercourses that do not require notification under Fish and Game Code §1600 et seq. (6) Harvesting recommended in writing by CDFW to address specifically identified forest conditions. 14 CCR § 916.9(s).
- Operations conducted under a Notice of Exemption are not permitted in known sites of rare, candidate, threatened or endangered plants and animals if the sites will be disturbed or damaged. No timber operations may occur within a buffer zone of a listed, or sensitive species defined by 14 CCR § 895.1. 14 CCR § 1038.1(c)(10-11).

The terms of this exemption are designed to substantially reduce fire hazard, which will increase the logging costs (amount unknown) but which also aligns with the landowner's goals of reducing fire hazard and improving the value of the forest. The property is within the high fire severity zone, as mapped by CAL FIRE. This permit would likely be useful for management of select areas.

Oak Woodland Restoration Exemption Requirements

Purpose of this Exemption: *The cutting or removal of trees to restore and conserve California black oak or Oregon white oak woodlands and associated grasslands (1038(e)).*

- The RPF preparing this Exemption notice must certify that the harvest area prior to timber operations has a minimum of thirty-five (35) square feet of basal area per acre of California black oak or Oregon white oak, or both. The purpose of Timber Operations per this notice of exemption is to restore and conserve California black oak and Oregon white oak and associated grasslands. This requirement will rule out many areas.
- Per 14 CCR § 1038(e)(4)(A) a minimum of eighty (80) percent of the pretreatment basal area of California black oak or Oregon white oak, or both, shall be retained.
- Per 14 CCR § 1038(e)(4)(B) a minimum of thirty-five (35) square feet of basal area of California black oak or Oregon white oak, or both, shall be retained.
- Per 14 CCR § 1038(e)(4)(C) Conifer Stocking, measured in basal area, shall represent less than 25% of the total onsite Stocking of all trees within the Harvest Area. Decadent and Deformed Trees of Value to Wildlife (excluding hardwoods) shall not count towards this required stocking.
- Timber Operations pursuant to the notice of exemption may not commence for five (5) working days from the date of the Directors receipt of the notice.
- All harvested conifers shall be within 300 feet of a California black oak or Oregon white Oak that is a minimum of four (4) inches dbh.
- No trees larger than 26 inches outside bark stump diameter, measured 8 inches above the ground level may be removed for commercial purposes.
- Post-harvest stand shall meet, at a minimum, the following criteria: 14 CCR § 1038(e)(4)(A-D) - A minimum of eighty (80) percent of the pretreatment basal area of California black oak or Oregon white oak, or both shall be retained; AND - A minimum of thirty-five (35) square feet of basal area of California black oak or Oregon white oak, or both, shall be retained; AND - Conifer stocking, measured in basal area, shall represent less than twenty-five (25) percent of the total onsite stocking of all trees within the Harvest Area. - Decadent and Deformed Trees of Value to Wildlife (excluding hardwoods) shall not count towards this required stocking standard. - All harvested Conifers shall be within three hundred (300) feet of a black oak or Oregon white oak that is a minimum of four (4) inches dbh.
- 14 CCR § 1038.1(c)(4)(B) Slash shall be treated to achieve a maximum post-harvest depth of eighteen (18) inches above the ground on at least eighty (80) percent of the Harvest Area. All Slash shall be lopped, removed, chopped, piled for burning, or otherwise treated, within one (1) year from the date of the Director receiving the notice except for burning. Burning shall be completed within two (2) years from the date of the Director receiving the notice.
- No new road construction or reconstruction, as defined by 14 CCR § 895.1. 14 CCR § 1038.1(c)(8).

	EXEMPTIONS					EMERGENCY	TIMBER HARVEST PLANS				
PERMIT OPTIONS	150 FOOT FIRE SAFE CLEARANCE EXEMPTION (14 CCR § 1028.02)	150-500 FOOT FIRE SAFE CLEARANCE EXEMPTION (14 CCR § 1028.04)	HARVESTING DEAD, DYING, DISEASED TREES (14 CCR § 1028.05)	DROUGHT MORTALITY / SUBSTANTIALLY DAMAGED TIMBERLAND (14 CCR § 1028.02)	FOREST FIRE PREVENTION EXEMPTION (14 CCR § 1028.1)	SMALL TIMBERLAND OWNER EXEMPTION (14 CCR § 1028.06)	TREE HARVEST REDUCTION (14 CCR § 1028.4)	YOUNG HARVEST PLAN (Article 2, Subchapter 7, Chapter 6, Title 14 CCR)	FUELBREAK / DEFENSIVE SPACE (14 CCR §§ 912.4, 912.6, 952.4)(2)	AMAZONIAN SALVAGE PLANNING WATER-SHEDS (14 CCR §§ 916.4, 916.6, 916.8, 954.36)(2)	MODIFIED TIMBER HARVEST PLAN FOR FUEL HARVEST REDUCTION (14 CCR §§ 1051.2-1051.7)
RFF REQUIRED?	NO	YES (14 CCR § 1028.02)(2)	NO	YES (14 CCR § 1028.1)(2)	YES (14 CCR § 1028.1)(2)	YES (14 CCR § 1028.1)(2)	YES	YES	YES	YES	YES
AREA /ACREAGE LIMITATIONS	Only trees within 150 feet of an approved & legally Permitted Structure (14 CCR § 1028.02)(1)	Only trees within 150-500 feet of habitable structures occupied for residential use (14 CCR § 1028.04)(1)	NONE	NONE	300 Acres (14 CCR § 1028.1)(2)	80 acres Coastal District, 100 acres Marine & Southern Districts (14 CCR § 1028.06)(1)	Operations only permitted in certain geographical areas. (14 CCR § 1028.4)(1)-(3)	NONE	NONE	NONE	Not to exceed 2,500 acres
SILVICULTURE / STOCKING	Prohibits clearcutting, seed tree removal and shelterwood removal (14 CCR § 1028.02)(2)	Shelterwood Management Required (consistent with 14 CCR § 1028.04)(2), 952.2, 952.3 (14 CCR § 1028.04)(2)	NONE	NONE	Minimum 100 TPA >4" dbh (14 CCR § 912.4, 912.6, 952.2, 952.3) >4" dbh (14 CCR § 912.4, 912.6, 952.2, 952.3) >4" dbh over 80% a fine harvest area. (14 CCR 1028.3)(2) and (2)(3)	YES. Unapproved Management & Method & Site Specific Road Area retention requirements (14 CCR 1028.1)(2)	Treatments should target seedling trees. Stocking standards are consistent with commercial thinning.	Article 2, Subchapter 4, 5, 6, & Chapter 6, Title 14 CCR	Solution, Intermediate treatments, Stocking (14 CCR §§ 912.7, 952.7, 952.7)	Grower's fire treatment standards, unless the firefighter, retain functional habitat after wildfire	No clear cutting methods may be used—commercial thinning, rehabilitation, and fuel break delineation areas. (14 CCR § 1051.4)(2)
DIAMETER LIMIT	Maximum 60" DBH for End-used 48" DBH for Other Species (14 CCR § 1028.1)(2)(3)	Maximum 60" DBH for End-used 48" DBH for Other Species (14 CCR § 1028.1)(2)(3)	Maximum 60" DBH for End-used 48" DBH for Other Species (14 CCR § 1028.1)(2)(3)	Maximum 60" DBH for End-used 48" DBH for Other Species (14 CCR § 1028.1)(2)(3) For Substantially Damaged lands, trees by commercial or owner also shall (14 CCR 1028.4)(2)	Maximum 20" DBH within a temporary road plan. Maximum 30" DBH otherwise	Maximum 24" DBH. No Overcut greater than 24" DBH	24" dbh with the potential to increase to 20" dbh if a defensible fuel reduction measure can not be used	NONE	NONE	NONE	NONE
SURFACE /LADDER FUELS TREATMENT	Surface fuels created during harvest according to 1" in diameter shall be clipped, burned, or removed in 45 days and be consistent with Technical Addendum #4 within 1 year. (14 CCR § 1028.02)(2), (4)	Maximum 18" depth, removed, clipped or otherwise treated within 45 days of creating burning must occur by April 1 (14 CCR § 1028.04)(2)	None specific to the exemption. Must comply with existing harvest reduction requirements of 14 CCR 917.9937, 952.7 or sup.	Maximum depth of 20" and must be treated within one year of the Director's receipt of the notice. (14 CCR § 1028.1)(2)(3)	All slash within 150 feet of a structure shall be burned or removed within 45 days and maximum depth of 14" in the rest of the harvest area; except burning (14 CCR § 1028.3)(2)(4)	Maximum depth of 18" or at least 80% of the Harvest Area and shall be treated within one year, except burning (14 CCR § 1028.3)(2)(4)	All logging slash shall be no more than 9" post harvest. (14 CCR § 1028.02)(3), (4)(2) Specific treatment requirements around structures (14 CCR § 1028.4)(2)(7)-(7A)	No Forest Specific Guidelines	Plan specific vegetation and fuel treatments, including thinning (14 CCR §§ 912.4, 912.4)(2), 952.4)(2)	Eliminate vertical continuity & horizontal continuity among fuel layers. Reduce surface & ladder fuels (14 CCR §§ 916.4, 916.6, 954.36)(2)	RFF shall develop a fuels treatment plan (14 CCR § 1051.2). Fuel treatment will not exceed 25 tons dry tons per acre.
ARCHAEOLOGY REQUIREMENTS	No timber operations in a significant archaeological or historical site; exceptions apply (14 CCR § 1028.1)(2)(3)	No timber operations in a significant archaeological or historical site; exceptions apply (14 CCR § 1028.1)(2)(3)	No timber operations in a significant archaeological or historical site; exceptions apply (14 CCR § 1028.1)(2)(3)	No timber operations in a significant archaeological or historical site; exceptions apply (14 CCR § 1028.1)(2)(3)	RFF shall submit a completed archaeological letter and an operations letter and an operations archaeological or historical site (14 CCR § 1028.3)(2) & (3)	RFF shall submit a completed archaeological letter and a timber operations in a significant archaeological or historical site; exceptions apply (14 CCR § 1028.1)(2)(3)	RFF shall submit a completed archaeological letter (14 CCR § 1028.4)(2)	YES-ARTICLE 14 of FPR (14 CCR §§ 922.1, 941.1, & 942.1)(6-6)(f)	YES-ARTICLE 14 of FPR (14 CCR §§ 922.1, 941.1, & 942.1)(6-6)(f)	YES-ARTICLE 14 of FPR (14 CCR §§ 922.1, 941.1, & 942.1)(6-6)(f)	YES-ARTICLE 14 of FPR (14 CCR §§ 922.1, 941.1, & 942.1)(6-6)(f)
APPROVAL TIME	5 working days from the Director's receipt of the notice. (14 CCR § 1028.1)(2)(3)	5 working days from the Director's receipt of the notice. (14 CCR § 1028.1)(2)(3)	5 working days from the Director's receipt of the notice. (14 CCR § 1028.1)(2)(3)	5 working days from the Director's receipt of the notice. (14 CCR § 1028.1)(2)(3)	Timber operations may commence 10 working days from the Director's receipt of the notice (14 CCR § 1028.3)(4)	5 working days from the Director's receipt of the notice. (14 CCR § 1028.1)(2)(3)	14 working days – Operations may occur once RFF has a copy on file. (14 CCR § 1028.4)(2)	14-45 working days – Could be longer if environmental concerns are identified	14-45 working days – Could be longer if environmental concerns are identified	14-45 working days – Could be longer if environmental concerns are identified	14-45 working days – Could be longer if environmental concerns are identified
EFFECTIVE PERIOD	1 year (14 CCR § 1028)	1 year (14 CCR § 1028)	1 year (14 CCR § 1028)	1 year (14 CCR § 1028)	1 year (14 CCR § 1028)	1 year (14 CCR § 1028)	1 year slash treatment, except by burning, is to be completed within 120 days from the start of operations. Burning may be done by April 1 the following year. (14 CCR § 1022.4)(2)(3)	5 years from the approval of the TWP (PRC § 4596)	5 years from the approval of the TWP (PRC § 4596)	5 years from the approval of the TWP (PRC § 4596)	5 years from the approval of the TWP (PRC § 4596)
QUADRATIC MEAN DIAMETER (QMD) REQUIREMENTS	NONE	QMD of trees > 8" dbh shall be increased in the post-harvest stand (14 CCR § 1028.04)(2)(3)	NONE	NONE	QMD of trees > 8" dbh shall be increased in the post-harvest stand (14 CCR § 1028.3)(2)	QMD of trees > 8" dbh shall be increased in the post-harvest stand (14 CCR § 1028.1)(2)	YES QMD must increase post harvest (14 CCR § 1028.4)(2)	NONE	NONE	NONE	YES QMD must increase post-harvest (14 CCR § 1051.5)(2)
OTHER INFORMATION	NONE	NONE	NONE	NONE	Construction / Reconstruction of Temporary Roads is permitted with specified conditions.	0 Impact trees per acre must be removed. Canopy retention requirements of 14 CCR 1052.4 apply. Post-harvest species composition shall demonstrate progress towards stream forest conditions.	NONE	NONE	Shall meet the objectives of the Community Fuelbreak Law (14 CCR § 912.4)(2)	NONE	Rehabilitation may be used up to 250 acres total and to exceed 10% of the harvest acreage. Refer to section (14 CCR 1051.4)(2)(3)-(3)(f) for operations within WEPZ.

ABBREVIATIONS
 PRC PUBLIC RESOURCES CODE
 CCR CALIFORNIA CODE OF REGULATIONS
 FPR FOREST PRACTICE RULES

LTO LICENSED TRIMMER OPERATOR
 RPP REGISTERED PROFESSIONAL FORESTER
 SH STUMP HEIGHT (AS MEASURED BY ABOVE THE GROUND)

DBH DIAMETER AT BREAST HEIGHT
 WLPZ WILDFIRE PROTECTION ZONE
 ARCH ARCHAEOLOGICAL

***SEE 14 CCR §§ 912.4, 912.4)(2), 912.4)(3), 916.4, 916.6, 954.36, 954.36)(2), 1028.1, 1028.2, 1028.3, 1028.4, 1051.2-1051.7, AND 1052.4 FOR ADDITIONAL CONDITIONS AND REQUIREMENTS.
 ---ALL ACTIVITIES MAY BE SUBJECT TO ADDITIONAL PERMITTING REQUIREMENTS

Figure 7. Permitting Matrix for Timber Operations

Monitoring
 Proactive and required monitoring for regulatory compliance may be required. Contact CAL FIRE or a Registered Professional Forester for help in this area. Contact NRCS or CDFW for monitoring assistance. Installing a network of permanent Continuous Forest Inventory Plots (CFI) would help monitor forest resources such as growth rates and forest structure over time. Photo point monitoring of the road repair sites including before and after treatment is advisable.

Successful implementation of selection silviculture requires that healthy cohorts of many ages of trees be maintained in a stand at all times. Therefore, natural regeneration of all native conifer species is encouraged and protected. Planted areas may require follow-up, such as hand-release to reduce competition. The seed zone for this parcel is 092. Openings in the forest are readily occupied by

natural Douglas fir tree regeneration.

University and College Involvement

To further one of the goals of the HBMWD, fostering education and research and monitoring on the Ruth Lake forest will provide information that will inform management. Ruth Lake offers an excellent location for short and long-term projects that will of benefit to the region. Cal Poly Humboldt College of the Redwoods and other schools can be issued use permits for studies pertaining to forestry, wildlife, water quality, visitor use forest ecology etc. that can provide monitoring feedback for forest managers with a goal of establishing the Ruth forest as a "center of excellence" for scientific research. Additionally, the USFS Redwood Sciences laboratory can be invited to utilize the HBMWD ruth forest for research and monitoring that could bring resources from other out of the area institutions.

Some potential topics for research on the forest include:

1. Sustainable forestry and comparison of various growth and yield models;
2. Watershed science, restoration and aquatic habitat recovery;
3. Soil organic carbon fluxes;
4. Upland terrestrial habitat and forest structural relationships;
5. Tracking forest carbon response to management;
6. Forest understory vegetation response to thinning;
7. Quantitative and qualitative study of recreational use. Outputs would include statistical information on recreational use. Studies should document public perceptions on how well existing facilities serve their needs:
8. Research on the economic value of recreation, effect on adjacent property values and the environmental services provided by the community forest;
9. Mad River fish population trends.

Types of forest monitoring

Continuous monitoring:

- Pest and invasive weed infestation monitoring
- Forest operations
- Rare plants and animals using survey and the California Natural Diversity Database
- Climate data
- Forest protection and security

Periodic monitoring:

- Types of recreational use occurring on the forest
- Road and drainage structure performance.
- Forest inventories (An NTMP for example stipulates that the landowner must practice uneven age management and demonstrate and document sustainable harvesting over time).
- Short-term harvest schedule, and long-term plans
- Species abundance and health
- Activities on adjacent lands that could affect HBMWD forest resources
- Botanical surveys for timber harvest operations and other "projects"
- Floristic surveys in some areas to gain a better understanding of the relationships between the local plants, their distribution, and their habitats.
- Active road inspections
- Recreational and minor forest product collection trends
- Vegetative changes due to management activities

Cultural Resource Monitoring

HBMWD staff will monitor and periodically inspect known cultural resources on the HBMWD Ruth forestlands to ensure that existing policies are affording effective protection. The identification and protection of cultural resources are important components of forestry in California. Registered Professional Foresters are required to attend archaeological training classes to acquire the ability to recognize cultural materials, and to be able to develop effective protection measures.

California Environmental Quality Act (CEQA) and National Environmental Protection Act (NEPA) information

- Additionally, the Plan Preparer should summarize, discuss, and show on a map any threatened and/or endangered species that are known to exist. Furthermore, there should be a discussion to inform the landowner about the process of "discovery" or survey for unknown species that have the potential to reside on the property and discuss possible mitigations that should occur if ground disturbing events are prescribed in the future.

ADDITIONAL CEQA/NEPA NOTIFICATION FOR GROUND PRACTICES

Any future ground practice to implement this plan using public entity reimbursement funds requires a signed CAL FIRE CFIP Environmental Checklist (CEQA) or an NRCS CPA-52 (NEPA) Checklist. Along with this checklist a process of "discovery" or survey for unknown values along with a discussion of possible mitigations is required. Additionally, the checklist must be filled out by an RPF or Certified Planner. Archaeological values require an Archaeological Records Check, an entity Archaeologist review and Native American notification for the practice area.

PROVIDE A PROJECT NOTIFICATION TO THE FOLLOWING AGENCIES

- Trinity County Clerk-<https://www.trinitycounty.org/clerk-recorder>
- CA Department of Fish and Wildlife
- Regional Water Quality Control Board

FOR GROUND-DISTRUBING PROJECTS, PROVIDE A PROJECT NOTIFICATION TO

- Native American Heritage Commission
- Tribal contacts: Nor-Rel-Muk Nation, Wailaki Tribe, Wintun Educational and Cultural Council, Wintu Tribe of Northern California, Tsungwe Council, Round Valley Reservation / Covelo Indian Community, Redding Rancheria, Nor-Rel-Muk Nation, Hoopa Valley Tribe.
- Local Historical Society

ADDITIONAL PROFESSIONAL ASSISTANCE

Management recommendations and assistance for other lands or non-forested areas Land owner must consult with different agencies depending on practices performed.

California Invasive Plant Council
1442-A Walnut St. #462 Berkeley,
CA 94709

Natural Resource Conservation Service
Eureka Service Center
3 Horseshoe Ln.

Weaverville, CA 96093
(530) 623-3991

California Department of Fish and Wildlife
Northern Region
Field Office: 619 Second St., Eureka, CA 95501
(707) 445-6493

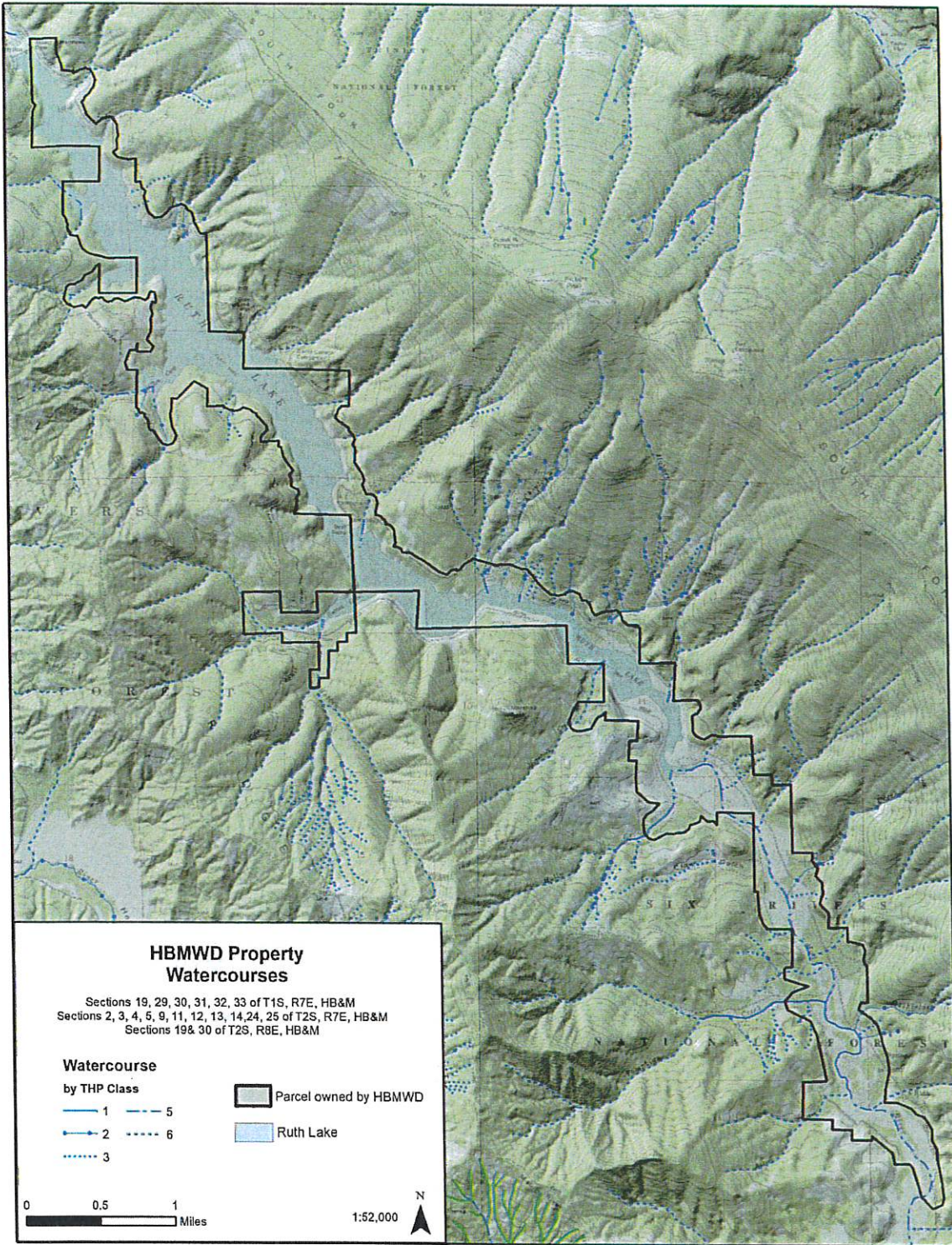
CAL FIRE Forestry Assistant Specialist
118 Fortuna Blvd, Fortuna, CA 95540
(916) 224-8761

Six River National Forest
1330 Bayshore Way Eureka,
CA 95501 (707) 442-1721

Trinity County Resource Conservation
District 30 Horseshoe Lane
Weaverville, CA
96093 (530) 623-
6004
info@tcrd.org

Trinity County Fire Safe Council
30 Horseshoe Lane
Weaverville, CA 96093
<https://firesafetrinity.org/>

BBW & Associates recommends that the HBMWD subscribe to the *Forest Steward* Newsletter free of change by contacting Calfire at: <http://calfire.ca.gov/foreststeward/newsletter>.
Back issues by topic are also available.



Recommended Best Management Practices for Forest Future Forest Management

Fuels Reduction Treatments

Fuel reduction treatments will be accomplished according to following guidelines:

- All slash produced (branches, limbs, and treatment debris less than four inches in diameter) will be treated using one of the following methods:
 - Chip or masticate adjacent to roads and other accessible portions of the treatment areas.
 - Pile and burn: slash piles for burning should be located away from residual trees and structures.
 - Lop and scatter: lopping is the severing and spreading of slash so that no part of it remains more than 18 inches above the ground. Lop and scatter would be implemented on steeper slopes and areas with limited access where chipping, mastication, and burning piles is difficult.
 - Pile and burn operations would occur where vehicle access is available along existing ranch roads utilizing existing openings and compacted ground as feasible. Piles may be created by mechanized equipment such as crawler tractors equipped with a brush rake, or excavators equipped with a grapple. Piles will also be created by hand.
 - Limit ground-based equipment (masticators) to less than 50% slopes unless a soil scientist evaluates soil conditions and disturbance patterns to determine operability on steeper slopes.

Burning will likely take place in the fall to early winter depending on fuel moisture levels and weather conditions, except where resource issues can be avoided. The burn plan will also be coordinated with the Northcoast Unified Air Quality Management District. HBMWD and Project Cooperators will coordinate with the District to identify a permissible burn day.

Resource objectives and public notification for the prescribed fire as described in the plan are to:

- Reduce fuel loading to reduce risk of high intensity fires in the next decade.
- Burn Prescription: The prescribed fire burn prescription will be designed to initiate a surface fire of sufficient intensity that will only consume surface and ladder fuels while protecting soil resources from direct soil heating impacts. Burn periods will consider predicted wind speeds and direction for the 7 days following completion of burning. Example of sources for predicted winds include <https://gacc.nifc.gov/oncc/predictive/weather/index.htm> and <https://www.wunderground.com/forecast/us/ca/weed/96094>
- Ignition will occur outside of the Watercourse and Lake Protection Zone buffer areas.
- Where feasible, existing roads, trails, and natural fuel breaks will be utilized for fire lines.
- Air Quality: Prescribed fire should comply with all local, state, and federal air quality regulations and ordinances. The local Air Pollution Control District or Air Quality Management District will be contacted to determine local requirements.
- Standard Public Notifications: Prior to the commencement of prescribed burning operations, the project coordinator will develop a site specific notification plan.

Burn Plan Communications: Prior to the start of operations, CAL FIRE personnel should meet with the project coordinator onsite to discuss resource protection measures, if feasible. Additionally, the project coordinator should specify the resource protection measures and details of the burn plan in the incident action plan if one is prepared and should attend the pre-operation briefing to provide further information.

Biological

A search of the CNDDDB was conducted of the project area to determine if there have been documented special status species located. Since wildlife use and species documentation is a dynamic process, this records search should be done prior to any planned action that affects forest resources.

Upland Habitat Protection

- To avoid impacting nesting birds and/or raptors through habitat modification:
- For vegetation management activities, Limited Operating Period of February-August 15 depending upon target species shall be established unless surveying for nesting, roosting, and/or denning is completed and CDFW or USFWS approves an alternative LOP period for the year surveying was completed if feasible.
- In order to protect any species covered by the Migratory Bird Treaty Act (MBTA), no fuels treatment work will occur between March 1st to August 31st, unless the following is implemented: 1. A survey is conducted by a biologist or a person with knowledge of, and ability to recognize, species protected by the MBTA and it is determined that there are no occupied nests within the proposed activity area. 2. If an occupied nest is found, then a biologist or a person with knowledge of, and ability to recognize, species protected by the MBTA will determine if the birds present are those protected by the MBTA. 3. If an MBTA species is located then no activities will occur within 100 feet of the nest during the breeding season (March 1st-August 31st).
- All temporary flagging, fencing, trash, debris, and/or barriers will be removed from the project site upon completion of project activities;
- Habitat elements (nest trees) that provide valuable habitat will be identified by a qualified person and retained where no immediate risk to infrastructure exists;
- Where practical and feasible other habitat elements (downed large logs, snags with cavities and tree hollows, and other suitable snags) will be identified by a qualified person and retained where no immediate risk to infrastructure exists.
- Where habitat elements are identified, a minimum 2' wide fire line will be cut around the habitat element and ladder fuels within 10' will be thinned.
- If any federal or state listed threatened or endangered species are detected in the project area that may be impacted by the project work, then all project related activities will immediately stop within that area which will be flagged with a 50' "No Treatment Zone". All sightings will be documented using the California Natural Diversity Database (CNDDDB) field survey form a copy of which will be submitted to the CNDDDB.
- No fire ignition (nor use of associated accelerants) will occur within the special-status plant buffer.

Watercourse/Aquatic Habitat/Water Quality/Sediment Protection:

Depending upon the resource situation, the following BMPs may be used on a project site specific basis:

- Fire lines, brushing or ground disturbing operations not be placed in sensitive hydrologic areas unless need to protect the resources from impacts of the burning;
- No manual line construction will occur within the 75' slope distance core zone of Class I watercourse, 50' slope distance of a Class II watercourse and within 30' slope distance of the channel of Class III watercourse, except where necessary at designated equipment crossings;
- Prescribed fire will not be applied directly on the ground within 75' slope distance of a Class I watercourse, 50' slope distance of a Class II watercourse, or 30' slope distance of a Class III watercourse.
- No fire ignition (nor use of associated accelerants) will occur within a watercourse buffer zone, however low intensity backing fires may be allowed to enter or spread into WLPZs.
- Watercourse buffers of at least 75' slope distance core zone of Class I stream, 50' of a Class II stream and 30' slope distance for Class III streams shall be established where the following BMPs shall apply.
- Construct hand lines within 75' slope distance of Class I or Class II watercourses and 30' slope distance of Class III watercourses only where necessary to minimize undesired fire effects;
- Petroleum products would be stored at roads or landings outside of watercourse protection zones wherever possible and a minimum 200' horizontal distance or greater distance from streams, ponds, and wet areas such that fuels and other harmful materials would not reach any waterbody. Appropriate spill containment measures would be on site and would be employed as needed (for example, absorbent pads, drip pans and containment trays). Containers of fuel and oil are removed daily off-site.
- All roads and landings used by vehicles (other than 4x4 motorcycles, quad cycles, or other low ground pressure vehicles) for prescribed fire and mop up operations shall have adequate drainage upon completion of use for the year or by October 15, whichever is earlier. An exception is that drainage facilities and drainage structures do not need to be constructed on roads and landings in use during the extended wet

weather period provided that all such drainage facilities and drainage structures are installed prior to the start of rain that generates overland flow;

- No vehicle operations (other than 4x4 motorcycles, quad cycles, or other low ground pressure vehicles) shall occur during saturated soil conditions (. Saturated soil means that soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur).;
- Vehicle use (other than 4x4 motorcycles quad cycles, or other low ground pressure vehicles) use shall be limited to dry, rainless periods where saturated soil conditions are not present or to roads and landings where a stable operating surface exists;
- Access roads and landings used by vehicles shall not be used during any time of the year when operations may result in significant sediment discharge to watercourse or lakes, except in emergencies to protect the road, to reduce erosion, to protect water quality, or in response to public safety needs.
- During the extended wet weather period (October 15-May 1) vehicle uses (other than 4x4 motorcycles, quad cycles, or other low ground pressure vehicles) shall be limited to roads and landings that exhibit a stable operating surface. Routine use of roads and landings shall not occur when equipment cannot operate under its own power;
- Roads and landings used by vehicles (other than 4x4 motorcycles, quad cycles, or other low ground pressure vehicles) during the winter period shall occur on a stable operating surface. Use is prohibited on roads that are not hydrologically disconnected and exhibit saturated soil conditions.

Cultural Protection

- The project proponent will train all crew members and contractors implementing treatment activities on the protection of sensitive archaeological, historical, or tribal cultural resources. Workers will be trained to halt work if archaeological resources are encountered on a treatment site and the treatment method consists of physical disturbance of land surfaces (e.g., soil disturbance). This BMP applies to all treatment activities and treatment types.
- No burn piles should be placed within 10' of known ground stones, historical features and similar features
- Work should be halted within a reasonable buffer if cultural materials are found during implementation. Examples would include ground stone, flaked or chipped stone, historic debris, building foundations, or non-human bone.
- A qualified archaeologist should be consulted to assess the discovery. Appropriate avoidance or mitigation measures should be reached in consultation with the Tribes that claim an interest in this site, as set out at 36 CFR 800.
- Should inadvertent effects to or unanticipated discoveries of human remains be made, the County Coroner [California Health and Safety Code 7050.5(b)] shall be notified immediately. If the remains are determined to be Native American, or if Native American (Indian) funerary objects, or items of cultural patrimony subject to NAGPRA are uncovered, the provisions of NAGPRA Section 3 [25 U.S.C. 3002 a-e] may apply, and its regulations at 43 CFR 10 and the provisions of ARPA at 43 CFR 7 shall be followed.

Air Resources:

Dust- To minimize dust during treatment activities, the project proponent will implement the following measures: Limit the speed of vehicles and equipment traveling on unpaved areas to 20 miles per hour to reduce fugitive dust emissions, in accordance with the California Air Resources Board (CARB) Fugitive Dust protocol. If road use creates excessive dust, the project proponent will wet appurtenant, unpaved, dirt roads using water trucks or treat roads with a non-toxic chemical dust suppressant (e.g., emulsion polymers, organic material) during dry, dusty conditions. Any dust suppressant product used will be environmentally benign (i.e., non-toxic to plants and will not negatively impact water quality) and its use will not be prohibited by ARB, EPA, or the State Water Resources Control Board (SWRCB). The project proponent will not over-water exposed areas such that the water results in runoff.

References, Resources Experts and Literature Consulted

Resources on the Web http://www.dfg.ca.gov/biogeodata/cwhr/wildlife_habitats.asp CNPS Electronic data 2016 CALFIRE Watershed Mapper http://frap.cdf.ca.gov/watershed_mapper/default.html CDFW Natural Diversity database (NDDB) 2021 for the Forest Glen and Ruth Lake Quadrangles. Includes NSO database.

USDA-NRCS. Woodlands and Forestlands. Available at http://www.nrcs.usda.gov/wps/portal/nrcs/detail/plantmaterials/technical/publications/?cid=stelpr_db1044053.

Adaptation Strategies and Approaches for California Forest Ecosystems

Christopher W. Swanston, Leslie A. Brandt, Patricia R. Butler-Leopold, Kimberly R. Hall, Stephen D. Handler, Maria K. Janowiak, Kyle Merriam, Marc Meyer, Nicole Molinari, Kristen Schmitt, P. Danielle Shannon, Jennifer B. Smith, Amarina Wuenschel, and Steven M. Ostoja

Agee, James K., Berni Bahro, Mark A. Finney, Philip N. Omi, David B. Sapsis, Carl N. Skinner, Jan W. van Wagendok, and C. Phillip Weatherspoon. 2000. "The Use of Shaded Fuelbreaks in Landscape Fire Management." *Forest Ecology and Management* 127.1: 55-66.

August Complex- Vegetation and Resource Rapid Assessment-Mendocino, Six Rivers National Forest and Shasta Trinity National Forest.

California Board of Forestry and Fire Protection and California Department of Forestry and Fire. 2018 (August 22). 2018 *Strategic Fire Plan for California*. Available: <http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf614.pdf>. Accessed January 14, 2019.

CALFIRE Watershed Mapper for ASP Rules http://frap.cdf.ca.gov/watershed_mapper/default.html

CAL FIRE. (2020). *Fire Resources Assessment Program (FRAP)*. [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from <http://frap.cdf.ca.gov/>

California Department of Forestry and Fire Protection. 2017. Fire Resource and Assessment Program (FRAP) California's Forests and Rangelands: 2017 Assessment. Available: <http://frap.fire.ca.gov/assessment2017/FinalAssessment2017/Assessment2017.pdf>.

California Historical Reference System, Northeast Information Center IC File # K21-127 dated 10-5-2021.

California Historical Reference System, Northeast Information Center IC File # K2254 dated 7-1-2022.

Chen, J. F. Franklin and T. Spies. 1992 "Managing Forest Edges to Improve Wildlife Habitat Conditions". Regional Landscape Change

CDFW Natural Diversity database (NDDB) 2021 for Ruth, Forest Glen Quad. Includes NSO database.

Cocking, Matthew I.; Varner, J. Morgan; Engber, Eamon A. 2015. Conifer encroachment in California oak woodlands. In: Standiford, Richard B.; Purcell, Kathryn L., tech. cords. Proceedings of the seventh California oak symposium: managing oak woodlands in a dynamic world. Gen. Tech. Rep. PSW-GTR-251. Berkeley, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station: 505-514.

County of Trinity Planning Zoning Maps and Assessor Maps

CDF&G 1984, Rev 2010. Guidelines for assessing the effects of Proposed Development on Rare, Threatened, and endangered Plants and Plant Communities.

Dann, William/Gerald Garvey Confidential Archaeological Letter Emergency Notice Humboldt Bay Municipal Water District - Area #2 Trinity County, CA 2-15-2021

- Dann, William/Gerald Garvey Confidential Archaeological Letter Emergency Notice Humboldt Bay Municipal Water District – Area #1 Trinity County, CA 1-25-2021
- McArdle et al. The Yield of Douglas fir in the Pacific Northwest, USDA Tech, Bulletin 201, 1961
- Dwire, Kathleen A.; Meyer, Kristen E.; Riegel, Gregg; Burton, Timothy. 2016. Riparian fuel treatments in the western USA: Challenges and considerations. Gen. Tech. Rep. RMRS-GTR-352. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 156 p.
- McDonald, P. 1983. Local Volume Tables for Pacific Madrone, Tanoak and Calif. Black Oak in North- Central Calif., PSW-100 Berkeley, CA. PSW
- McDonald, P.M. and Tappeiner, John C. 1987. Silviculture, ecology, and management of tanoak in northern California. Gen. Tech. Report PSW-100, Berkeley, Calif. U.S.D.A.
- Mayer, K. E. and W. F. Laudenslayer, Jr, editors. 1988. A Guide to the Wildlife Habitats of California. California Department of Fish and Game. Sacramento, CA. Available:
https://www.dfg.ca.gov/biogeodata/cwhr/wildlife_habitats.asp#guide_pub. Accessed January 17, 2019.
- North, Malcolm, Brandon M. Collins, and Scott Stephens. 2012. "Using Fire to Increase the Scale, Benefits, and Future Maintenance of Fuels Treatments." *Journal of Forestry* 110.7: 392-401.
- Northeast Information Center (Chico State) File(s) # K-21-127 (Oct. 2021); K-22-54 (July 2022).
 PNW, Science Update: Restoring Complexity: Second Growth Forests and Habitat Diversity
- Schumacher, Francis. Yield, Stand and Volume Tables for Douglas- fir in California. Bulletin #491. U.C. Berkeley, 1930
- Wood, David, L. 2003. Pests of the Native California Conifers
- Xerces Society for Invertebrate Conservation, Defenders of Wildlife, and Center for Food Safety. 2018 (October). A Petition to the State of California Fish and Game Commission to List the Crotch Bumble Bee (*Bombus crotchii*), Franklin's Bumble Bee (*Bombus franklini*), Suckley Cuckoo Bumble Bee (*Bombus suckleyi*), and Western Bumble Bee (*Bombus occidentalis occidentalis*) as Endangered under the California Endangered Species Act.
- CAL FIRE Timber Harvest Plan 1-17-100-TRI for Jeff Meyer property 62 acres adjacent to HBMWD.
- Soil Survey Area: Mendocino County, Eastern Part and Southwestern Part of Trinity County, California
 Survey Area Data: Version 10, Sep 30, 2014
- Crain, C.M. and M.D. Bertness. 2006. Ecosystem engineering across environmental gradients: implications for conservation and management. *Bioscience* 56(3):211-218.
- Hastings, M.S., S. Barnhart and J.R. McBride. 1997. Restoration management of Northern Oak Woodlands. In, Pillsbury, N.H., J. Verner, W.D. Tietje (eds).
- Proceedings Symposium on Oak Woodlands: Ecology, management and urban interface issues. USDA Forest Service Gen. Tech. Rep. PSW-GTR 160.
- Krumland, B., and H. Eng. 2005. Site Index Systems for Major Young-Growth Forest and Woodland Species in Northern California. California Forestry Report No. 4. State of California, The Resources Agency, Department of Forestry and Fire Protection. Sacramento, California.
- Sugihara, N/G. and L.J. Reed. 1987. Prescribed fire for restoration and maintenance of Bald Hills woodlands. In, Plumb, T.R. and N.H. Pillsbury (Tech. Coord.). Proceedings Symposium on Multiple- Use Management of California's Hardwood Resources. USDA Forest Service Gen. Tech. Rep. PSW- 100.
- Weaver, W.E., Weppner, E.M. and Hagans, D.K., 2015, Handbook for Forest, Ranch and Rural Roads: A Guide for Planning, Designing, Constructing.

California Pest Council <http://caforestpestcouncil.org/meetings-reports/>
(Handbook of North American Indians, Volume 8.) Washington: Smithsonian Institution

Franklin, J.F. and Spies, T.A. 1991. Composition, function, and structure of old-growth Douglas-fir forests. In Ruggiero, L.F.; Aubrey, K.B.; Carey, A.B.; Huff, M.M., tech. coords. Wildlife and vegetation of unmanaged Douglas-fir forests. General Technical Report PNW-GTR-285. Portland, Oregon: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station: 71-80.
<http://gis.co.humboldt.ca.us/>

California Wildland Fire History Maps from 1878 to 2020 using data from Cal Fire, the National Parks Service, the U.S. Forest Service, the Bureau of Land Management and the U.S. Fish and Wildlife Service. -
<https://projects.caprado.org/california-fire-history/#11/40.3266/-123.465>

DCZ Archeology Report for HBMWD August Complex Restoration Project 2022.

De Lasaux, Michael and Kocher, Susan D – Natural Resources Advisors, Fuel Reduction Guide for Sierra Nevada Forest Landowners University of California Cooperative Extension

Mad River Watershed Assessment, Stillwater Sciences 850 G Street, Suite K Arcata, CA, 95521

McArdle et al. The Yield of Douglas fir in the Pacific Northwest, USDA Tech, Bulletin 201, 1961

McDonald, P. 1983. Local Volume Tables for Pacific Madrone, Tanoak and Calif. Black Oak in North-Central Calif., PSW-100 Berkeley, CA. PSW

McDonald, P.M. and Tappeiner, John C. 1987. Silviculture, ecology, and management of tanoak in northern California. Gen. Tech. Report PSW-100, Berkeley, Calif. U.S.D.A.

PNW, Science Update: Restoring Complexity: Second Growth Forests and Habitat Diversity

Rapheal, M. 1987. Use of Pacific Madrone by Cavity Nesting Birds, Gen Tech. Rep. PSW-100, and Berkeley, CA.

Rapheal, M.G. 1987. Wildlife-tanoak associations in Douglas-fir forests of northwestern California. Gen. Tech. Rep. PSW-100. Berkeley, CA. Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture; 1987.

Munz, P.A. and D.D. Keck, 1970. A California Flora, Univ. of Calif. Press, Berkeley, CA.

Scharph, Robert F. 1993. Diseases of Pacific Coast Conifers. USDA Forest Service Handbook 521

Schumacher, Francis. Yield, Stand and Volume Tables for Douglas- fir in California. Bulletin #491. U.C. Berkeley, 1930

Six Rivers National Forest Management Plan-USDA Soil-Vegetation Survey

Trinity County Community Wildfire Protection Plan Update 2020

USFS Three Forks Fire Salvage Project - Botany Report April 28, 2021 John McRae, Forest Botanist

USFS Wildlife Report Management Indicator Species Migratory Birds Survey and Manage Species Mad River August Complex Restoration Project Six Rivers National Forest January 6, 2022

USFS Biological Assessment/Evaluation Threatened, Endangered, and Forest Service Sensitive Species Mad River Ranger District Three Forks Salvage CE Klamath Province Six Rivers National Forest April 22, 2021

USFS Mad River August Complex Restoration Project Preliminary Environmental Assessment Finding of No Significant Impact 6-25-21

USFWS Information for Planning and Conservation (IPaC) Species list. 2020. Accessed June 2022 from

<https://ecos.fws.gov/ipac/location/index>

Weaver, W.E., Weppner, E.M. and Hagans, D.K., 2015, Handbook for Forest, Ranch and Rural Roads: A Guide for Planning, Designing, Constructing. <http://www.pacificwatershed.com/roadshandbook>.

Web Soil Survey. 2020. US Department of Agriculture. Accessed July 2, 2021 at <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

Helpful Links:

Forest Health

The California Forest Pest Council in partnership with the USDA publishes the annual "California Forest Pest report" that has information about the forest insect and disease problems in all regions of California. For a pdf of the most recent edition, visit: <https://calforestpestcouncil.org>.

Trinity County Resource Conservation District
<http://www.tcrd.net/>

- Natural & Working Lands Climate Smart Strategy
<https://search.yahoo.com/search?fr=mcafee&type=E211US714Go&p=%E2%80%A2+Natural+%26+Working+Lands+Climate+Smart+Strategy+%E2%80%A2>
- Pathways to 30x30 Strategy <https://www.californianature.ca.gov/>
- USFS Postfire Restoration Framework for National Forests in California
https://www.fs.usda.gov/psw/publications/documents/psw_gtr270/psw_gtr270_000.pdf
- USDA Reforestation Decision Support Tools
<https://www.climatehubs.usda.gov/hubs/california/topic/reforestation-decision-support-tools>
- California's Wildfire and Forest Resilience Action Plan <https://wildfiretaskforce.org/the-plan/>
- California Forest Carbon Plan 2018 [California Forest Carbon Plan – May 2018](#)
- California Climate Adaptation Strategy <https://www.climate resilience.ca.gov/>
- California State Wildlife Action Plan <https://wildlife.ca.gov/SWAP>

Wildlife Habitat

CDFW has an excellent resource pertaining to conservation and management of wildlife at:
<https://wildlife.ca.gov/Conservation>

CAL FIRE Forest Stewardship Resources:

<https://www.fire.ca.gov/programs/resource-management/resource-protection-improvement/landowner-assistance/forest-stewardship/>

Northern Arizona University, Wildland Fire Education and Training Collaborative, Joint Fire Science Program, and Southwest Fire Science Consortium. What is Wildland Fuels Management?
<https://youtu.be/AvhC4z4w3Go>

Resources on the Web http://www.dfg.ca.gov/biogeodata/cwhr/wildlife_habitats.asp
CALFIRE Watershed Mapper http://frap.cdf.ca.gov/watershed_mapper/default.html
Ca. Dept of Mines and Geology, Geology and Geomorphic Features Related to Land sliding

Trinity County Firesafe Council: <https://firesafetrinity.org/>

USDA-NRCS. Woodlands and Forestlands. Available at
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/plantmaterials/technical/publications/?cid=stelpr_db1044053.

Post-fire Guides

UC ANR "Recovering from Wildfire Guide" - 2017 -
<https://carcd801.egnyte.com/dl/AqJ575WBVK>

CA Native Plant Society "Fire Recovery Guide" - 2020 -
<https://carcd801.egnyte.com/dl/divt6W5TZR>

NRCS "After the Fire Dos and Don'ts" - 2019 - <https://carcd801.egnyte.com/dl/KQotS8iFhhG>

NRCS "Top 10 considerations for post-fire landowners" -

<https://carcd801.egnyte.com/dl/ZnnHWfCRnt>

Funding Sources

NRCS - <https://www.nrcs.usda.gov/wps/portal/nrcs/main/ca/programs/financial/equip/>

Emergency Forest Restoration Program - <https://carcd801.egnyte.com/dl/QkfEPdK3O2>

Assessing Fire Impacts

Fire Activity Map from UC ANR - <https://ucanr.edu/sites/fire/Safety/Current/>

Burned Area Emergency Response (BAER) Burn Severity Imagery -

<https://fsapps.nwcg.gov/baer/baer-imagery-support-data-download>

GIS layers and images of burn severity for individual fires from the USDA Forest Service.

Fire Perimeters GIS Data -

https://data-nifc.opendata.arcgis.com/datasets/5da472c6d27b4b67970acc7b5044c862_0

GIS Shapefiles of up to date 2020 fire perimeters from the National interagency Fire Center

USFS "Marking Guidelines for Fire-injured Trees in CA" - 2011 - <https://carcd801.egnyte.com/dl/daVHOOrKUDj>

CAL FIRE "Survival of Fire-injured Conifers in CA" - 2015 -

<https://carcd801.egnyte.com/dl/HWuJaR8qU1>

Erosion Control

NRCS "Preparing for at least 2 winters following wildfire" - 2020 -

<https://carcd801.egnyte.com/dl/Zw2XMWLhvw>

NRCS "Protecting bare/disturbed soils and slopes from firefighting efforts following wildfire" -

2020 - <https://carcd801.egnyte.com/dl/BaSUNLVCKL>

Reforestation

UC ANR "Reforestation Practices for Conifers in California" - 2020 -

<https://carcd801.egnyte.com/dl/Oi6Aa1z5lO>

Placerville Nursery Seedling Program - <https://eldoradorcd.org/seedling-orders/>

Seedling Brochure - <https://carcd801.egnyte.com/dl/q9oSagJsgz>

One Tree Planted cost share - <https://carcd801.egnyte.com/dl/3ERKFRzotp>

NRCS Post-Fire Recovery Webpage -

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ca/newsroom/features/?cid=nrcseprd1287608>

Glossary

Adaptive management	A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management on a continuing basis to ensure that objectives are being met.
Age class	One of the intervals into which the age range of trees is divided for classification or use.
Anadromous fish	Fish that are born and reared in fresh water which move to the ocean and later return to fresh water to reproduce.
Appurtenant Road	A Logging Road under the ownership or control of the Timber Owner, Timberland Owner, Timber Operator, or plan submitter that will be used for log hauling.
Aspect	Direction or exposure of terrain towards which a slope faces.
Association	A kind of plant community with a definite species composition and structure, and relatively uniform environment (Plant Ecology).
Basal area	The cross-sectional area, in square feet, of a tree measured at breast height (4.5 feet).
Best management practice (BMP)	The method, measure or practice selected by an agency to meet its nonpoint source pollution control needs. BMP's include, but are not limited to structural controls, operations, and maintenance procedures. BMP's can be applied before, during and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters.
Biological diversity	The distribution and abundance of different plant and animal communities and species over time and space.

Blowdown	Trees felled by high winds.
Board foot (BF)	A unit of measurement equal to an unfinished board one foot square by one inch thick.
roadcast burn	Allowing prescribed fire to bum over a designated area for reduction of fuel hazard, or as a silvicultural treatment.
California Environmental Quality Act (CEQA)	Following the passage of NEPA, the California State Legislature passed an Act in 1970 to declare state policy which will ensure the long-term protection of the environment. The Act will encourage the development and maintenance of a high-quality environment now and in the future; provide the people of California with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from pollution; and prevent the elimination of fish or wildlife species due to man's activities.
Canopy	The uppermost spreading, branchy layer of a forest.
Canopy closure	The progressive reduction in space between tree crowns as they spread laterally; a measure of the percent of potential open space occupied by the collective tree crowns in a stand.
Cavity nester	Wildlife species that excavate and/or occupy cavities in trees and snags.
Clearcutting	Harvesting of all trees in one area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, stand or strip.
Codominant	One main crown class of trees with their tops in the upper canopy but lower than the dominant trees.
Commercial thinning	Timber sales which call for selective harvest in immature stands designed to improve the quality and growth of the remaining trees.
Cover	Vegetation used by wildlife for protection from predators; to ameliorate conditions of weather; or in which to reproduce.
Cultural resources	Buildings, sites, areas, architecture, memorials, and objects having scientific, prehistoric, historic, or social values.
Cumulative effect	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.
Defect	Any irregularity or imperfection in a tree, log, or wood product that reduces its soundness, durability, strength or utility.
Diameter at breast height (DBH)	The diameter of a standing tree measured at a point four feet-six inches from ground level on the uphill side.
Dispersed recreation	Outdoor recreation in which visitors are diffused over relatively large areas. Where facilities or developments are provided, they are more for access and protection of the environment than for the comfort or convenience of the people.
Down log	Portion of a tree that has fallen or been cut and left in the woods.
Ecosystem function	The manner in which organisms interact with each other and their environment.
Edge	Where plant communities meet or where successional stages of vegetative conditions within plant communities come together, e.g., field and woodland, forest and meadow.
Effects (impacts)	Environmental consequences (the scientific and analytical basis for comparison of alternatives) as a result of a proposed action. Effects may be either direct, which are caused by action and occur at the same time and place; indirect, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable; or cumulative (see definition above).
Endangered species	Any plant or animal species which is in danger of extinction throughout all or a significant portion of its range (Endangered Species Act of 1973).
Endemic species	A species whose natural occurrence is confined to a certain region and whose distribution is relatively limited.

Erosion	Detachment or movement of soil or rock fragments by water, wind, ice, or gravity. Accelerated erosion is much more rapid than normal, natural or geologic erosion, primarily as a result of the influence of activities of man, animals or natural catastrophes.
Fire Protection Zone	That portion of the logging area within 100 ft. (30.48 m), as measured along the surface of the ground, from the edge of the traveled surface of all public roads and railroads, and 50 ft. (15.24 m) as measured along the surface of the ground from the traveled surface of all private roads, and within 100 ft. (30.48 m), as measured along the surface of the ground, from permanently located structures currently maintained for human habitation (Ref. Sec. [4562], PRC).
Forb	Any herbaceous plant other than grasses or grass-like plants.
Forester	A professionally trained individual who supervises the development, care and management of forest resources to include timber, wildlife and recreation. In California foresters are licensed by the State. A Registered Professional Forester (RPF) is a person who holds a valid license as a professional forester.
Fragmentation	The process of reducing size and connectivity of stands that compose a forest.
Full log suspension	The system of transporting logs from the cutting site to the landing without touching the ground.
Geographic Information System (GIS)	An information processing technology to input, store, manipulate, analyze and display spatial resource data to support the decision-making processes of an organization. Generally, an electronic medium for processing map information, typically used with manual processes, to effect specific decisions about the land base and its resources.
Group selection	The cutting method in which trees are removed periodically in small groups resulting in openings that do not exceed an acre or two in size. The result is an uneven-aged stand.
Hazard reduction	Any treatment of forest fuels that reduces the threat, ignition or spread of wildfire.
Hydrologic disconnection	Removal of direct routes of drainage or overland flow of road runoff to a watercourse or lake.
High-lead (cable) logging	Method of powered cable logging in which the main block is fastened high on a spar tree (or equivalent) to enable the front end of the logs being skidded to be lifted clear of the ground.
Indicator species	Species of fish, wildlife or plants which reflect ecological changes caused by land management.
Individual tree selection	The selection of trees for harvest based on individual tree characteristics.
Infiltration	The movement of water through the soil surface.
Inner gorge	A stream reach bounded by steep valley walls that terminate upslope into a gentler topography.
Intermediate (crown class)	One main crown class of trees with their tops in the middle canopy.
Intermediate harvest	Most commonly used intermediate cuttings are release, thinning, improvement and salvage.
Intermittent streams	Streams that do not contain water year-round.
Intolerant Trees	Trees which reproduce successfully only in the open, or where the canopy is greatly broken.
Landing	Any place where round timber is assembled for further transport, usually in the woods.
Layout	Preparation of a soft bed in order to cushion the fall of a large tree and thus prevent excessive breakage. Usually involves tractors pushing soil into a pile.
Litter layer	The loose, relatively decomposed organic debris on the surface of the forest floor typically made up of leaves, bark and small branches.

Management indicator species	Management indicator species are animals or plants selected for special attention in the Forest Plan for one or more of three reasons. These include <ol style="list-style-type: none"> 1. emphasis species - species to be managed as key resources on the basis of identified issues (e.g., threatened, endangered, rare, sensitive, harvest or special interest species); 2. special habitat indicators - species that require special habitat such as snags, riparian, old-growth forest stands, etc.; 3. cumulative ecosystem change indicators - species generally having large home ranges, requiring diverse habitat.
Mass movement	The downslope movement of earth by gravity. Includes but not limited to landslides, rock falls, debris avalanches and soil creep.
Mean Annual Increment (MAI)	The average annual growth of a stand, calculated by dividing the total growth accrued over its life by its age in years at the time of measurement.
Monitoring	A process of collecting information to evaluate whether objectives and anticipated, or assumed results of the management plan are being realized.
Mortality	The loss of a population of trees, other plants and animals due to all lethal causes.
Multistoried	Forest stands that contain trees of various heights and diameter classes which therefore support foliage at various heights in the stand.
Nesting, roosting and foraging habitat	The forest vegetation with the age class, species of trees, structure, sufficient area and adequate food source to meet some or all of the life needs of the northern spotted owl.
Net scale	The scale of a log after deduction for defect.
Nonpoint source pollution	Water pollution that does not result from a discharge at a specific, single location (such as a pipe) but results from land runoff and is normally associated with agricultural, silvicultural or urban runoff.
Overstory	The portion of trees in a forest which forms the uppermost layer of foliage.
Perennial streams	Streams which normally flow throughout the year.
Plant associations	A plant community type based on land management potential, successional patterns and species composition.
Plant community	An association of plants of various species found growing together in different areas with similar site characteristics.
Pre-commercial thinning	The selective felling or removal of trees in a young stand, conducted to accelerate diameter growth on remaining trees, maintain a specific stocking density and improve vigor and quality of remaining trees.
Prescribed fire	Conducted at an age before the trees are commercially merchantable. Intentional use of fire under predetermined weather and fuel conditions to achieve specific objectives such as rejuvenating or type-converting vegetation.
Quadratic mean Diameter	Quadratic Mean Diameter, or QMD, is a measure of central tendency , which is considered more appropriate than an arithmetic mean for characterizing a group of trees which have been measured. Compared to the arithmetic mean, QMD assigns greater weight to larger trees. QMD is always greater than or equal to the arithmetic mean for a given set of measurements.
Reach	A continuous unbroken stretch of a stream with homogeneous characteristics; an extremity of a stream; a specified portion of a stream.
Recruitment	Replenishment. In terms of wildlife biology, to achieve successful reproduction or to replenish a supply of habitat elements, such as snags or down logs.
Reforestation	The natural or artificial restocking of an area with forest trees; includes measures to obtain natural regeneration, as well as tree planting and seeding.

Regeneration	The renewal of a tree crop, whether by natural or artificial means. Also, the young tree crop (seedlings and saplings) itself.
Release	All work done to free desirable trees from competition with other, less desirable vegetation.
Resilience	The ability of a social or ecological system to absorb disturbances, while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.
Right-of-way	An accurately located land area within which a user may conduct operations approved by, or granted by the landowner.
Riparian areas	Terrestrial areas where the vegetation and microclimate are influenced by perennial and/or intermittent water, associated high water tables and soils which exhibit some wetness characteristics; this habitat is transitional between true bottom land wetlands and upland terrestrial habitats and, while associated with water courses, may extend inland for considerable distance.
Rotation	The planned number of years required to establish and grow timber to a specified condition or maturity for regeneration harvest (including the regeneration period).
Salmonid	Member of the fish family Salmonidae, includes salmon and trout.
Salvage	Removal of recently dead or dying trees to minimize the loss of wood products.
Logging Road	A Logging Road that is part of the permanent road network that is not designed for year-round use.
Seasonal Road	
Second growth (young growth)	Timber stands established after natural or human-caused removal of the original stand or previous forest growth.
Sediment	Solid material, both mineral and organic, that is suspended in, or being transported by water.
Sediment yield	The quantity of soil, rock particles, organic matter or other dissolved or suspended debris that is transported through a cross-section of stream in a given period.
Seeps	Places where water oozes from the ground.
Selection cutting	The annual or periodic removal of trees, individually or in small groups, from an uneven-aged forest in order to realize yield and establish a new stand of irregular constitution.
Sensitive species	Those species that are under consideration for official listing as endangered or threatened species; or are on an official state list as needing special management attention.
Seral stage	A transitory or developmental stage of a biotic community in an ecological succession (does not include climax successional stage).
Shaded Fuel break	A shaded fuel break is a forest management strategy used for mitigating the threat of wildfire in areas where natural fire regimes have been suppressed, leading to a dangerous buildup of combustible vegetation. Constructing a shaded fuel break is the process of selectively thinning and removing more flammable understory vegetation while leaving the majority of larger, more fire tolerant tree species in place.
Silvicultural system	A management process whereby forests are tended, harvested and replaced resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the methods that remove the mature trees and provide for regeneration; and to the type of forest thereby produced.
Silviculture	The art and science of growing and tending forest vegetation, i.e., controlling the establishment, composition and growth of forests for specific management goals.
Site	Productive capacity of an area to produce forests or other vegetation. Related to climatic, biotic and soil factors for forest crops. It is expressed by a site index based on height of dominant trees in a stand at a certain age. Site indices are sometimes grouped into site classes.

Site preparation	Removal of unwanted vegetation, slash, roots and stones from a site before reforestation.
Skid	To remove a severed tree from its stump to a collection point where it is loaded onto another vehicle.
Slash	The residue of trees left on the ground after timber cutting or after other disruptions such storms or fires. Slash includes unutilized logs, uprooted stumps, broken stems, branches, twigs, leaves, bark and chips.
Slope stability	The resistance of a natural or artificial slope surface to failure by land sliding (mass movement).
Snag	A standing dead tree.
Soil compaction	An increase in bulk density (weight per unit volume) and a decrease in soil porosity resulting from applied loads or pressure.
Soil productivity	Capacity or suitability of a soil for establishment and growth of a specified crop or plant species, primarily through nutrient availability.
Soil series	A group of soils developed from a particular type of parent material having naturally developed horizons that are similar in characteristics and arrangement in the soil profile.
Spatial	Referring to the distance, interval, or area between or within things.
Species diversity	The distribution and abundance of different plant and animal communities and species.
Stand	A community of trees or other vegetation sufficiently uniform in composition, constitution, age, spatial arrangement or condition to be distinguishable from adjacent communities and so form a silvicultural or management entity.
Steelhead	A large-sized, silvery anadromous rainbow trout.
Stocking	The degree to which trees occupy the land, measured by basal area and/or number of trees by size and spacing; compared with a stocking standard, that is, the basal area and/or number of trees required to fully utilize the land's growth potential.
Stream class	The classification of streams according to their beneficial uses. Whole streams or parts of streams can be classified. One stream may be divided into several classes. Class I. Perennial or intermittent streams have one or more the following characteristics: (1) is the direct source of water for domestic use (cities, recreation sites, etc.); (2) are used by large numbers of fish for spawning, rearing or migration; (3) have sufficient flow to have a major influence on the water quality of a Class I stream. Class II. Perennial or intermittent streams have one or both of the following characteristics: (1) are used by non-fish aquatic species (e.g., salamanders, benthic insects, etc.); (2) have sufficient flow to have a moderate influence on downstream quality of a Class I or II stream. Class III. Intermittent streams not meeting Class I or Class II definitions Class IV. All man-made watercourses such as inboard ditches or those not meeting Class I, II or III definitions.
Structure	The various horizontal and vertical physical elements of the forest.
Stumpage	Selling of timber based upon the log buyer paying for the timber "at the stump" whereby logging and hauling costs are borne by the purchaser as opposed to a delivered log type of timber sale where timber is paid for delivered to the sawmill.
Successional Stage	A phase in the gradual changing of a biological community (same as seral stage).
Surface Erosion	The detachment and transport of soil particles by wind, water or gravity. Surface erosion can occur as the loss of soil in a uniform layer (sheet erosion), in rills, or by dry ravel.
Suspended Sediment	Sediment suspended in a fluid by the upward components of turbulent currents or by colloidal suspension.
Sustained Yield	The yield that a forest can produce continuously at a given intensity of management.

Terrestrial	Living on land; distinguished from aquatic (living in water).
Tethered Operations	Tractor Operations which utilize synchronized cable winch systems which have been specifically designed or modified by the manufacturer or a Professional Engineer, as described within the Professional Engineers Act (Chapter 7 of Division 3 of the Business and Professions Code), to assist equipment in felling or Yarding during Timber Operations.
Threatened Species	Any species of plant or animal which is likely to become endangered in the foreseeable future throughout all, or a significant portion of its range.
Timber Site Index	A measure of site productivity based on the maximum rate of tree height growth. It is normally expressed as the height in feet reached by a tree at a given, or base age (the site index).
Timber Stand Improvement (TSI)	Measures such as thinning, pruning, release cutting, prescribed fire, girdling, weeding, etc., of unwanted trees with the objective of improving growing conditions of the remaining trees.
Tolerance	The forestry term for expressing the relative capacity of a tree to compete under low light and high root competition.
Tolerant Trees	Trees which reproduce and form understories beneath canopies of less tolerant trees or even beneath shade of their own species.
Tractor Operations	Any activity which is associated with Timber Operations and is performed by wheel or track mounted ground-based equipment, including, but not limited to, tractors or skidders.
Turbidity	The optical property of water as affected by suspension of material such as sediment, i.e., the muddy or cloudy state of water.
U.S Fish and Wildlife Service	A division within the U.S. Department of the Interior.
Underburning	Prescribed burning of the forest floor for botanical, wildlife habitat, fire hazard reduction or silvicultural objectives.
Understory	Vegetation growing under the canopy formed by taller trees (trees or shrubs).
Uneven-Age Management	The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the proportion of trees of particular sizes to be retained in each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands include single-tree and group selection.
Vertical Diversity	The diversity in a stand that results from the complexity of the aboveground structure of the vegetation.
Viewshed	A total landscape seen or potentially seen from specific points on a logical part of a travel route or water body.
Watershed	The land area drained by a river system.
Wetlands	Areas that are inundated by surface or ground water with a frequency sufficient to support, and that, under normal circumstances do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, wet meadows, river overflows, mud flats and natural ponds.
Wildland-Urban Interface	Any area where man-made improvements are built close to, or within, natural terrain and flammable vegetation, and where high potential for wildland fire exists.
Wildlife Tree	A snag or a live tree designated for wildlife habitat.
Windfall	Trees or parts of trees felled by high winds (see blowdown).
Yarding	The movement of forest products from the point of felling to a landing.

Yield table

A table showing the progressive change in a stand's development at periodic intervals covering the range of age of a species on given sites. It may include information on average diameter and height, basal area, number of trees, volumes of thinning and final cuts, and other essential data.

Yield tax

A tax levied on timber at the time it is harvested. It is based on stumpage (log value minus logging costs) value from Board of Equalization published quarterly reports.

Appendix 1 – Selected Conservation Standards, Specifications and Best Management Practices

- NRCS Standards are located in: <http://efotg.sc.egov.usda.gov/>
- CAL FIRE CFIP Guidelines and cost share rates can be found at: http://calfire.ca.gov/resource_mgt/downloads/CFIP/CFIP%20User's%20Guide%202017.pdf

GENERAL BEST MANAGEMENT PRACTICES FOR RUTH LAKE FIRE RECOVERY AND RESTORATION DESCRIPTION

Fuels Reduction Treatments

Fuel reduction treatments will be accomplished according to following guidelines:

- All slash (branches, limbs, and treatment debris less than four inches in diameter) will be treated using one of the following methods:
 - Chip or masticate adjacent to roads and other accessible portions of the treatment areas.
 - Pile and burn: slash piles for burning should be located away from residual trees and structures.
 - Lop and scatter: lopping is the severing and spreading of slash so that no part of it remains more than 18 inches above the ground. Lop and scatter would be implemented on steeper slopes and areas with limited access where chipping, mastication, and burning piles is difficult.
 - Pile and burn operations would occur where vehicle access is available along existing ranch roads utilizing existing openings and compacted ground as feasible. Piles may be created by mechanized equipment such as crawler tractors equipped with a brush rake, or excavators equipped with a grapple. Piles will also be created by hand.
 - Limit ground-based equipment (masticators) to less than 50% slopes unless a soil scientist evaluates soil conditions and disturbance patterns to determine operability on steeper slopes.

Burning will likely take place in the fall to early winter depending on fuel moisture levels and weather conditions, except where resource issues can be avoided. The burn plan will also be coordinated with the Northcoast Unified Air Quality Management District. HBMWD and Project Cooperators will coordinate with the District to identify a permissible burn day.

Resource objectives and public notification for the prescribed fire as described in the plan are to:

- Reduce fuel loading to reduce risk of high intensity fires in the next decade.
- Burn Prescription: The prescribed fire burn prescription will be designed to initiate a surface fire of sufficient intensity that will only consume surface and ladder fuels while protecting soil resources from direct soil heating impacts. Burn periods will consider predicted wind speeds and direction for the 7 days following completion of burning. Example of sources for predicted winds include <https://gacc.nifc.gov/oncc/predictive/weather/index.htm> and <https://www.wunderground.com/forecast/us/ca/weed/96094>
- Ignition will occur outside of the Watercourse and Lake Protection Zone buffer areas.
- Where feasible, existing roads, trails, and natural fuel breaks will be utilized for fire lines.
- Air Quality: Prescribed fire should comply with all local, state, and federal air quality regulations and ordinances. The local Air Pollution Control District or Air Quality Management District will be contacted to determine local requirements.
- Standard Public Notifications: Prior to the commencement of prescribed burning operations, the project coordinator will develop a site specific notification plan.

Implement GHG Emission Reduction Techniques During Prescribed Burns

When planning for and conducting a prescribed burn, project proponents implementing a prescribed burn will incorporate feasible methods for reducing GHG emissions, including the following, which are

identified in the *National Wildfire Coordinating Group Smoke Management Guide for Prescribed Fire* (NWCG 2018):

reduce the total area burned by isolating and leaving large fuels (e.g., large logs, snags) unburned;
 reduce the total area burned through mosaic burning; burn when fuels have a higher fuel moisture content;

reduce fuel loading by removing fuels before ignition. Methods to remove fuels include mechanical treatments, manual treatments, prescribed herbivory, and biomass utilization; and schedule burns before new fuels appear. As the science evolves, other feasible methods or technologies to sequester carbon could be incorporated, such as conservation burning, a technique for burning woody material that reduces the production of smoke particulates and carbon released into the atmosphere and generates more biochar. Biochar is produced from the material left over after the burn and spread with compost to increase soil organic matter and soil carbon sequestration. Technologies to reduce greenhouse gas emissions may also include portable units that perform gasification to produce electricity or pyrolysis that produces biooil that can be used as liquid fuel and/or syngas that can be used to generate electricity.

Burn Plan Communications: Prior to the start of operations, CAL FIRE personnel should meet with the project coordinator onsite to discuss resource protection measures, if feasible. Additionally, the project coordinator should specify the resource protection measures and details of the burn plan in the incident action plan if one is prepared and should attend the pre-operation briefing to provide further information.

Biological

A search of the CNDDDB will be conducted prior to any project to determine if there have been documented special status species located.

Upland Habitat Protection

- To avoid impacting nesting birds and/or raptors through habitat modification:
- For vegetation management activities, Limited Operating Period of February-September 15 depending upon target species shall be established unless surveying for nesting, roosting, and/or denning is completed and CDFW or USFWS approves an alternative LOP period for the year surveying was completed if feasible.
- In order to protect any species covered by the Migratory Bird Treaty Act (MBTA), no fuels treatment work will occur between March 1st to August 31st, unless the following is implemented:
 1. A survey is conducted by a biologist or a person with knowledge of, and ability to recognize, species protected by the MBTA and it is determined that there are no occupied nests within the proposed activity area.
 2. If an occupied nest is found, then a biologist or a person with knowledge of, and ability to recognize, species protected by the MBTA will determine if the birds present are those protected by the MBTA.
 3. If an MBTA species is located then no activities will occur within 100 feet of the nest during the breeding season (March 1st-August 31st).
- All temporary flagging, fencing, trash, debris, and/or barriers will be removed from the project site upon completion of project activities;
- Habitat elements (nest trees) that provide valuable habitat will be identified by a qualified person and retained where no immediate risk to infrastructure exists;
- Where practical and feasible other habitat elements (downed large logs, snags with cavities and tree hollows, and other suitable snags) will be identified by a qualified person and retained where no immediate risk to infrastructure exists.
- Where habitat elements are identified, a minimum 2' wide fire line will be cut around the habitat element and ladder fuels within 10' will be thinned.
- If any federal or state listed threatened or endangered species are detected in the project area that may be impacted by the project work, then all project related activities will immediately stop within that area which will be flagged with a 50' "No Treatment Zone". All sightings will be documented using the California Natural Diversity Database (CNDDDB) field survey form a copy of which will be submitted to the CNDDDB.
- No fire ignition (nor use of associated accelerants) will occur within the special-status plant buffer.

Watercourse/Aquatic Habitat/Water Quality/Sediment Protection:

Depending upon the resource situation, the following BMPs may be used on a project site specific basis:

- Fire lines, brushing or ground disturbing operations not be placed in sensitive hydrologic areas unless need to protect the resources from impacts of the burning;
- No manual line construction will occur within the 75' slope distance core zone of Class I watercourse, 50' slope distance of a Class II watercourse and within 30' slope distance of the channel of Class III watercourse, except where necessary at designated equipment crossings;
- Prescribed fire will not be applied directly on the ground within 75' slope distance of a Class I watercourse, 50' slope distance of a Class II watercourse, or 30' slope distance of a Class III watercourse.
- No fire ignition (nor use of associated accelerants) will occur within a watercourse buffer zone, however low intensity backing fires may be allowed to enter or spread into WLPZs.
- Watercourse buffers of at least 75' slope distance core zone of Class I stream, 50' of a Class II stream and 30' slope distance for Class III streams shall be established where the following BMPs shall apply.
- Construct hand lines within 75' slope distance of Class I or Class II watercourses and 30' slope distance of Class III watercourses only where necessary to minimize undesired fire effects;
- Petroleum products would be stored at roads or landings outside of watercourse protection zones wherever possible and a minimum 200' horizontal distance or greater distance from streams, ponds, and wet areas such that fuels and other harmful materials would not reach any waterbody. Appropriate spill containment measures would be on site and would be employed as needed (for example, absorbent pads, drip pans and containment trays). Containers of fuel and oil are removed daily off-site.
- All roads and landings used by vehicles (other than 4x4 motorcycles, quad cycles, or other low ground pressure vehicles) for prescribed fire and mop up operations shall have adequate drainage upon completion of use for the year or by October 15, whichever is earlier. An exception is that drainage facilities and drainage structures do not need to be constructed on roads and landings in use during the extended wet weather period provided that all such drainage facilities and drainage structures are installed prior to the start of rain that generates overland flow;
- No vehicle operations (other than 4x4 motorcycles, quad cycles, or other low ground pressure vehicles) shall occur during saturated soil conditions (Saturated soil means that soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur).;
- Vehicle use (other than 4x4 motorcycles quad cycles, or other low ground pressure vehicles) use shall be limited to dry, rainless periods where saturated soil conditions are not present or to roads and landings where a stable operating surface exists;
- Access roads and landings used by vehicles shall not be used during any time of the year when operations may result in significant sediment discharge to watercourse or lakes, except in emergencies to protect the road, to reduce erosion, to protect water quality, or in response to public safety needs.
- During the extended wet weather period (October 15-May 1) vehicle uses (other than 4x4 motorcycles, quad cycles, or other low ground pressure vehicles) shall be limited to roads and landings that exhibit a stable operating surface. Routine use of roads and landings shall not occur when equipment cannot operate under its own power;
- Roads and landings used by vehicles (other than 4x4 motorcycles, quad cycles, or other low ground pressure vehicles) during the winter period shall occur on a stable operating surface. Use is prohibited on roads that are not hydrologically disconnected and exhibit saturated soil conditions.

Cultural Protection

- The project proponent will train all crew members and contractors implementing treatment activities on the protection of sensitive archaeological, historical, or tribal cultural resources. Workers will be trained to halt work if archaeological resources are encountered on a treatment site and the treatment method consists of physical disturbance of land surfaces (e.g., soil disturbance). This BMP applies to all treatment activities and treatment types.
- No burn piles should be placed within 10' of known ground stones, historical features and similar features
- Work should be halted within a reasonable buffer if cultural materials are found during implementation. Examples would include ground stone, flaked or chipped stone, historic debris, building foundations, or non-human bone.
- A qualified archaeologist should be consulted to assess the discovery. Appropriate avoidance or mitigation measures should be reached in consultation with the Tribes that claim an interest in

this site, as set out at 36 CFR 800.

- Should inadvertent effects to or unanticipated discoveries of human remains be made, the County Coroner [California Health and Safety Code 7050.5(b)] shall be notified immediately. If the remains are determined to be Native American, or if Native American (Indian) funerary objects, or items of cultural patrimony subject to NAGPRA are uncovered, the provisions of NAGPRA Section 3 [25 U.S.C. 3002 a-e] may apply, and its regulations at 43 CFR 10 and the provisions of ARPA at 43 CFR 7 shall be followed.

Natural Resources Conservation Service
CONSERVATION PRACTICE STANDARD
WOODY RESIDUE TREATMENT

Code 384

DEFINITION

The treatment of residual woody material that is created due to management activities or natural disturbances.

Purpose
Reduce hazardous fuels. Reduce the risk of harmful insects and disease. Protect/maintain air quality by reducing the risk of wildfire. To improve access for management purposes. Improve access to forage for livestock and wildlife. Develop renewable energy systems. Enhance aesthetics. Reduce the risk of harm to humans and livestock. Improve the soil organic matter. Improve the site for natural or artificial regeneration.

Conditions Where Practice Applies On all lands, except active cropland, where woody residue requires treatment.

General Criteria Applicable to All Purposes

The condition and extent of residual woody material must determine the treatment method selected based on the operator's purpose. Treatment methods (i.e., piling, burning, chipping/masticating, lop and scatter, offsite removal, crushing) will achieve landowner objectives while adequately protecting land and water resources. Care must be taken to minimize injury to or function of the residual plant communities.

Timing of treatment must coincide with intended purpose(s) and minimize impact on other resources.

Any broadcast burning activities must comply with the Conservation Practice Standard (CPS) Prescribed Burning (Code 338). Any residual woody material left on the site after treatment will not present an unacceptable fire, safety, environmental, or pest hazard. Such remaining material will not interfere with the intended purpose or other planned management activities.

Additional Criteria Applicable to Reduce Hazardous Fuels

Reduce the amount of fuels to an acceptable level by controlling height, size, amount, and distribution.

Additional Criteria to Reduce the Risk of Harmful Insects and Disease

The degree, intensity, and timing of treatment must consider the characteristics of harmful insects or diseases to enhance the effectiveness of control.

Additional Criteria to Protect/Maintain Air Quality by Reducing the Risk of Wildfire

Activities will be consistent with established regulations and guidelines for particulate matter (PM) 10 and PM2.5 emissions, ozone precursors (nitrogen oxides (NOx) and volatile organic compounds (VOCs), as well as smoke and fugitive dust, and State and local permit requirements.

Additional Criteria to Improve Access to Forage for Livestock and Wildlife Woody material must be piled, contour windrowed, or removed sufficiently to allow access by livestock and wildlife, and to maximize forage growth.

Additional Criteria for Develop Renewable Energy Systems

Removal of woody material must not be detrimental to the site and will adequately protect soil and water resources. Adequate woody material will be left to maintain or improve nutrient and organic matter cycling.

Additional Criteria to Enhance Aesthetics

Woody material left on the site that is scattered, windrowed or piled will be further treated to meet client objectives and any State or local requirements for aesthetics and visual resources. **Additional Criteria to Reduce the Risk of Harm to Humans and Livestock** Woody material left on the site that is scattered, piled or windrowed will be further treated to meet client objectives and any State or local requirements for safe use of the area.

Additional Criteria to Improve Soil Organic Matter

Woody material will be of a size and closeness to soil to accelerate in decomposition.

Additional Criteria to Improve the Site for Natural or Artificial Regeneration

Woody material will be treated to complement treatments specified in CPS Tree/Shrub Site Preparation (Code 490).

CONSIDERATIONS

When feasible, consider chipping, shredding, offsite disposal, biofuel composting, or other techniques in lieu of

burning.

When determining method and timing of woody material treatment, consider air quality regulations, burning regulations, available resources, ability to use woody biomass, and future regeneration needs.

Consider effects on soil carbon when off-site removal of woody material is to occur.

Consider wildlife habitat needs (e.g., large downed wood, snags, brush piles, etc.) when planning the timing of and performing treatment.

Consider establishing artificial habitat (e.g., bat boxes, nesting platforms, rock piles, etc.) where needed.

Consider pollinator needs when planning and performing treatment.

Consider the beneficial and other effects on cultural resources, and threatened and endangered species, natural areas, and wetlands.

PLANS AND SPECIFICATIONS

Specifications for applying this practice must be prepared for each site and recorded using approved specification sheets, job sheets, technical notes and narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Monitor populations and the potential of damage to site resources by harmful pests and take controlling actions as necessary.

Access by vehicles or people will be controlled during treatment for safety. See CPS Access Control (Code 472).

Monitor vegetation growth. Unwanted vegetation or excessive regrowth may occur, requiring treatment.

references

Lowe, K. 2005. Working Paper 13: Treating Slash after Restoration Thinning. Ecological Restoration Institute. Northern Arizona University. Flagstaff, Arizona.

<https://cdm17192.contentdm.oclc.org/digital/collection/p17192coll1/id/460/rec/1>.

Bennett, M., and S. Fitzgerald. 2008. Reducing Hazardous Fuels on Woodland Property: Disposing of Woody Material. Oregon State University Extension publication EC-1574.

CONSERVATION PRACTICE STANDARD TREE/SHRUBPRUNING CODE 660

DEFINITION

The removal of all or part of selected branches, leaders or roots from trees and shrubs.

PURPOSE

- Improve the appearance of trees or shrubs, e.g., ornamental plants and Christmas trees.
- Improve the quality of wood products.
- Improve the production of plant products, e.g., nuts, fruits, boughs and tips.
- Reduce fire and/or safety hazards.
- Improve the growth and vigor of understory plants.
- Adjust the foliage and branching density or rooting length for other specific intents, such as wind and snow control, noise abatement, access control, and visual screens and managing competition.
- Improve health and vigor of woody plants e.g. disease, insect and injury management.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on any area with trees or shrubs.

CRITERIA

General Criteria Applicable to All Purposes

The pruning and shearing method and timing will match the limitations of the site, soils and plants and minimize damage to the residual plant bole/stems and limbs. For a high degree of removal of crown foliage, pruning and shearing shall be done in two or more timed intervals to minimize plant stress. Debris and vegetative material left on the site after treatment will not present an unacceptable fire or pest hazard or interfere with the intended purpose and other management activities.

Burning of removed vegetation shall follow the criteria and considerations listed in the Prescribed Burning (338). Ground vegetation and/or conditions must be left in a manner to address erosion and other natural resource concerns to acceptable levels. Disinfect pruning and shearing tools to minimize the spread of pathogens.

CONSIDERATIONS

Pruning and shearing should be timed to minimize disturbance to seasonal wildlife activities.

Review the estimated cost and projected economic benefits of the project before starting a pruning or shearing project. Branches removed may be used for other product

NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD FIREBREAK 394

DEFINITION

A permanent or temporary strip of bare or vegetated land planned to retard fire.

PURPOSE

- Reduce the spread of wildfire.
- Contain prescribed burns.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on all land uses where protection from wildfire is needed or prescribed burning is applied.

CRITERIA

General Criteria Applicable to All Purposes

Firebreaks may be temporary or permanent and shall consist of fire-resistant vegetation, non-flammable materials, bare ground, or a combination of these.

Firebreaks will be of sufficient width and length to contain the expected fire. Firebreaks shall be located to minimize risk to the resources being protected. Erosion control measures shall be installed to prevent sediment from leaving the site. Plant species selected for vegetated firebreaks will be noninvasive and capable of retarding fire.

CONSIDERATIONS

Use barriers such as streams, lakes, ponds, rock cliffs, roads, field borders, skid trails, landings, drainage canals, railroads, utility rights-of-way, cultivated land, or other areas as existing firebreaks. Electric lines can be hazardous in heavy smoke as they may conduct electricity. When using barriers consider the effects on wildlife and fisheries. Attempt to locate firebreaks near ridge crests and valley bottoms. If winds are predictable, firebreaks should be located perpendicular to the wind and on the windward side of the area to be protected. Consider using diverse species combinations which best meet locally native wildlife and pollinator needs. Locate on the contour where practicable to minimize risk of soil erosion. Design and layout should include multiple uses. Consider the beneficial and other effects of installation of the firebreak on cultural resources and threatened and endangered species, natural areas, riparian areas and wetlands.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan and the burn plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Mow, disk, or graze vegetative firebreaks to avoid a build-up of excess litter and to control weeds. Treatment should be timed to reduce impacts to nesting when possible. Inspect all firebreaks for woody materials such as dead limbs or blown down trees and remove them from the firebreak. Inspect firebreaks at least annually and rework bare ground firebreaks as necessary to keep them clear of flammable vegetation.

Pre-commercial Thinning code (660) /Fuel Hazard Reduction (384) site specific detail

Objective: The primary goal of the thinning is to reduce fuel density and continuity on dense stands of mixed Douglas-fir and hardwoods along an existing road. Thinning these stands will also improve growth on the best stems and decrease the proportion of hardwood composition to allow the fuel break area to move towards a Douglas-fir dominated site.

Method: A chainsaw crew will fall and lop the more suppressed and damaged Douglas-fir and hardwood trees until the appropriate stand densities are reached, leaving the most vigorous, well formed, dominant and co-dominant stems to grow into future crop trees.

Standards: Trees which may be removed include Douglas-fir and hardwoods up to approximately 8" dbh. Leave tree spacing shall be a minimum average of 15 feet, but will range depending on the dbh and crown spacing of the trees being left. Approximately 70% of understory shrubs will be removed, small islands of shrubs may be left if

they do not contribute to horizontal or vertical fuel continuity.

Mitigation measure: Any slash deposited in the watercourse by the thinning operation shall be removed and piled outside the required stream zone distance established by the Forest Practice Rules. All snags with wildlife characteristics beneficial to wildlife shall be retained.

Tree/Shrub Pruning (Code 660)

The objective of the pruning practice on the HBMWD property should be to improve log quality while removing ladder fuels. Hand and power extension saws should be used to prune lower limbs to a height of 10-16 feet. Slash should be piled and burned or chipped on site and spread as mulch. Larger limbs should be bucked to use as firewood. Conifers along roadways should also be pruned to a height of 10-16 feet. This should improve visual penetration and more importantly, act as a shaded fuel break. Limbs should be cut flush with the tree stems taking care not to scar the tree bole.

Mitigation measures: Slash to be treated to meet minimum hazard reduction per Forest Practices Act. Pruning should not take place during wet weather to minimize potential pest problems.

Slash treatment:

Debris from thinning operations should be lopped with chain saws and hand scattered to within 18" of the ground surface, chipped or piled and burned. Slash should be chipped or piled and burned within 150 of the main roads. Project should occur during June-Sept. during warm dry periods.

Mitigation:

- No snags should be felled unless they are less than 6" diameter and do not display signs of wildlife use. Trees should be felled away from any watercourse protection zones.
- Any burning should comply with Air Resources Board regulations and local ordinances.
- Careful falling of hardwoods is imperative to minimize damage to existing conifer seedlings and saplings.
- Thinning should occur from June 1 to September 15th

OPERATION AND MAINTENANCE

Prepare an operation and maintenance plan for this site. As a minimum, include the following activities:

- Burn or mow the area periodically, if needed to maintain the health of the plant community. Do not conduct maintenance practices and activities during the primary reproductive period of wildlife. Exceptions can be considered to maintain the health of the vegetative community if such exceptions do not conflict with agency requirements.
- Control access by vehicles and/or equipment during or after tree/shrub establishment to protect new plants and minimize erosion, compaction and other site impacts.
- Inspect the site at an appropriate time following planting, seeding, and/or natural regeneration to determine whether the survival rate for tree and shrubs meets practice and client objectives. Replant or provide supplemental planting when survival is not adequate.
- Inspect the trees and shrubs periodically, and protect them from adverse impacts of insects, diseases, competing vegetation, fire, livestock, wildlife, non-functioning tree shelters and/or weed barriers, etc.
- If needed, control competing vegetation until the desired trees/shrubs are established. Control plant species on the Federal or State invasive species and noxious weed lists.
- If needed, apply nutrients to maintain vigor of desirable trees/shrubs.

NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD TREE/SHRUB PRUNING (Ac.) CODE 660

DEFINITION

The removal of all or part of selected branches, leaders or roots from trees and shrubs.

e.g., nuts, fruits, boughs and tips.

PURPOSE

- Improve the appearance of trees or shrubs, e.g., ornamental plants and Christmas trees.
- Improve the quality of wood products.
- Improve the production of plant products,

- Reduce fire and/or safety hazards.
- Improve the growth and vigor of understory plants.
- Adjust the foliage and branching density or rooting length for other specific intents, such as wind and snow control, noise abatement, access control, and visual screens and managing competition.

- Improve health and vigor of woody plants e.g., disease, insect and injury management.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on any area with trees or shrubs.

CRITERIA

General Criteria Applicable to All Purposes

The pruning and shearing method and timing will match the limitations of the site, soils and plants and minimize damage to the residual plant bole/stems and limbs. For a high degree

of removal of crown foliage, pruning and shearing shall be done in two or more timed intervals to minimize plant stress.

Debris and vegetative material left on the site after treatment will not present an unacceptable fire or pest hazard or interfere with the intended purpose and other management activities.

Burning of removed vegetation shall follow the criteria and considerations listed in the Prescribed Burning (338).

Ground vegetation and/or conditions must be left in a manner to address erosion and other natural resource concerns to acceptable levels.

Disinfect pruning and shearing tools to minimize the spread of pathogens.

CONSIDERATIONS

Pruning and shearing should be timed to minimize disturbance to seasonal wildlife activities.

Review the estimated cost and projected economic benefits of the project before starting a pruning or shearing project.

Branches removed may be used for other products.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, technical notes and narrative statements in the conservation plan, or other acceptable documentation.

**NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD
FIREBREAK 394**

DEFINITION

A permanent or temporary strip of bare or vegetated land planned to retard fire.

PURPOSE

- Reduce the spread of wildfire.
- Contain prescribed burns.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on all land uses where protection from wildfire is needed or prescribed burning is applied.

CRITERIA

General Criteria Applicable to All Purposes

Firebreaks may be temporary or permanent and shall consist of fire-resistant vegetation, non-flammable materials, bare ground, or a combination of these.

Firebreaks will be of sufficient width and length to contain the expected fire. Firebreaks shall be located to minimize risk to the resources being protected. Erosion control measures shall be installed to prevent sediment from leaving the site.

Plant species selected for vegetated firebreaks will be noninvasive and capable of retarding fire.

CONSIDERATIONS

Use barriers such as streams, lakes, ponds, rock cliffs, roads, field borders, skid trails, landings, drainage canals, railroads, utility rights-of-way, cultivated land, or other areas as existing firebreaks. Electric lines can be hazardous in heavy smoke as they may conduct electricity. When using barriers consider the effects on wildlife and fisheries.

Attempt to locate firebreaks near ridge crests and valley bottoms. If winds are predictable, firebreaks should be located perpendicular to the wind and on the windward side of the area to be protected. Consider using diverse species combinations which best meet locally native wildlife and pollinator needs. Locate on the contour where practicable to minimize risk of soil erosion. Design and layout should include multiple uses. Consider the beneficial and other effects of installation of the firebreak on cultural resources and threatened and endangered species, natural areas, riparian areas and wetlands.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan and the burn plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Mow, disk, or graze vegetative firebreaks to avoid a build-up of excess litter and to control weeds. Treatment should be timed to reduce impacts to nesting when possible. Inspect all firebreaks for woody materials such as dead limbs or blown down trees and remove them from the firebreak. Inspect firebreaks at least annually and rework bare ground firebreaks as necessary to keep them clear of flammable vegetation.

**Natural Resources Conservation Service CONSERVATION PRACTICE STANDARD BRUSH MANAGEMENT
Code 314 (Ac)**

DEFINITION

The management or removal of woody (nonherbaceous or succulent) plants including those that are invasive and noxious.

PURPOSE

Create the desired plant community consistent with the ecological site or a desired state within the site description. Restore or release desired vegetative cover to protect soils, control erosion, reduce sediment, improve water quality, or enhance hydrology. Maintain, modify, or enhance fish and wildlife habitat. Improve forage accessibility, quality, and quantity for livestock and wildlife. Manage fuel loads to achieve desired conditions. Pervasive plant species are controlled to a desired level of treatment that will ultimately contribute to creation or maintenance of an ecological site description "steady state" addressing the need for forage, wildlife habitat, and/or water quality.

CONDITIONS WHERE PRACTICE APPLIES

On all lands except active cropland where the removal, reduction, or manipulation of woody (nonherbaceous or succulent) plants is desired. This practice does not apply to removal of woody vegetation by prescribed fire (use Conservation Practice

Standard (CPS) Prescribed Burning (Code 338) or removal of woody vegetation to facilitate a land-use change (use CPS Land Clearing (Code 460)).

CRITERIA

General Criteria Applicable to All Purposes

Brush management will be designed to achieve the desired plant community based on species composition, structure, density, and canopy (or foliar) cover or height.

Brush management will be applied in a manner to achieve the desired control of the target woody species and protection of desired species. This will be accomplished by mechanical, chemical, burning, or biological methods, either alone or in combination. When prescribed burning is used as a method, CPS Prescribed Burning (Code 338) will also be applied. When the intent is to manage trees for silvicultural purposes, use CPS Forest Stand Improvement (Code 666).

NRCS will not develop biological or chemical treatment recommendations except for biological control utilizing grazing animals. In such cases, CPS Prescribed Grazing (Code 528) is used to ensure desired results are achieved and maintained. NRCS may provide clients with acceptable biological and/or chemical control references.

In cases where there is insufficient understory vegetation to provide a seed source to result in the desired plant community, use CPS Range Planting (Code 550) or CPS Forage and Biomass Planting (Code 512) to ensure the desired results are achieved and maintained. Follow-up treatments may be necessary to achieve objectives.

Additional Criteria for Creating the Desired Plant Community Consistent with the Ecological Site

Use applicable ecological site description (ESD) state and transition models to develop specifications that are ecologically sound and defensible. Treatments must be congruent with dynamics of the ecological site(s) and keyed to state and plant community phases that have the potential and capability to support the desired plant community. If an ESD is not available, base specifications on the best approximation of the desired plant community composition, structure, and function to support resilience. Additional treatments are planned and will be applied to achieve effective control of pervasive plant species through reapplication.

Additional Criteria for Restoring or Releasing Desired Vegetative Cover to Protect Soils, Control Erosion, Reduce Sediment, Improve Water Quality or Enhance Hydrology

Choose a method of control that results in the least amount of soil disturbance if soil erosion potential is high and revegetation is slow or uncertain leaving the site vulnerable to long-term exposure to soil loss.

In conjunction with other conservation practices, the number, sequence, and timing of soil-disturbing operations must be managed to maintain soil loss within acceptable levels using approved erosion prediction technology.

Additional Criteria to Maintain, Modify or Enhance Fish and Wildlife Habitat

Brush management will be planned and applied in a manner to meet the habitat requirements for wildlife species of concern as determined by an approved habitat evaluation procedure. Conduct treatments during periods of the year that accommodate reproduction and other life-cycle requirements of target wildlife and pollinator species, and in accordance with specifications developed for CPS Wetland Wildlife Habitat Management (Code 644) and CPS Upland Wildlife Habitat Management (Code 645).

Additional treatments are planned and will be applied to achieve effective control of pervasive plant species through reapplication.

Additional Criteria to Manage Fuel Loads to Achieve Desired Conditions

Control undesirable woody plants in a manner that creates the desired plant community, including the desired fuel load, to reduce the risk of wildfire, and facilitate the future application of prescribed fire.

Appendix 2 Taxes and Land Use

Property tax – Not an issue for the HBMWD as lands are property tax exempt. Timber harvests will require paying timber taxes to the California Department of Tax and Fee Administration. The timber yield tax is based on the timber values established by the state for various timber products. The current timber tax is 2.9%. Often, public timberland owners require the timber purchaser to pay the timber taxes.

Land Use – The land use is a combination of unclassified and Rural Residential. Most of the property has a designation of a Specific Unit Development or SUD Per Trinity County

018-490-20-00: Unclassified Zoning
 018-490-11-00: Ruth Lake Community Services District Specific Unit Development
 018-500-06-00: Unclassified
 018-500-02-00: Ruth Lake Community Services District Specific Unit Development
 018-500-05-00: Ruth Lake Community Services District Specific Unit Development
 018-510-02-00: Ruth Lake Community Services District Specific Unit Development
 018-520-15-00: Ruth Lake Community Services District Specific Unit Development
 018-510-04-00: Unclassified
 018-520-11-00: Ruth Lake Community Services District Specific Unit Development
 018-510-07-00: Unclassified
 018-530-10-00: Unclassified
 018-530-06-00: Ruth Lake Community Services District Specific Unit Development
 020-080-28-00: Ruth Lake Community Services District Specific Unit Development
 020-080-25-00: Ruth Lake Community Services District Specific Unit Development
 020-320-12-00: Unclassified
 020-320-02-00: Ruth Lake Community Services District Specific Unit Development
 020-070-46-00: Ruth Lake Community Services District Specific Unit Development
 020-070-33-00: Ruth Lake Community Services District Specific Unit Development
 020-330-05-00: Ruth Lake Community Services District Specific Unit Development
 020-100-32-00: Ruth Lake Community Services District Specific Unit Development
 020-100-27-00: Ruth Lake Community Services District Specific Unit Development
 020-100-01-00: Ruth Lake Community Services District Specific Unit Development
 020-100-35-00: Ruth Lake Community Services District Specific Unit Development
 020-100-22-00: Public Facility
 020-140-08-00: Ruth Lake Community Services District Specific Unit Development
 020-110-05-00: Ruth Lake Community Services District Specific Unit Development
 020-150-28-00: Ruth Lake Community Services District Specific Unit Development
 020-150-35-00: Ruth Lake Community Services District Specific Unit Development

Appendix 3 Past Plans, Amendments and Updates

No forest management plan have been developed for this ownership. There have been three Emergency Notices Filed for the ownership post August Complex .Several Timber Harvest Plans, Emergency and Emergency Notices have been prepared in and around the ownership.

Emergency Notices Filed Post August Complex Fire

1-21-EM-00112TRI
 1-21EM-00055TRI
 1-21-EM00146TRI
 1-21-EM-00050TRI
 1-21-EM-00054TRI
 1-21-EM-00022TRI
 1-21-RM-00077TRI

HBMWD - Ruth Lake Emergency Notices

<u>Harvest Plan #</u>	<u>Gross Acres</u>	<u>Est Net Acres Logged</u>	<u>% DF</u>	<u>%PP</u>
1-21EM-00050-TRI	85	70		70 30
1-21EM-00055-TRI	300	200		80 20
1-21EM-00112-TRI	400	320		75 25
1-21EM-00146-TRI	<u>130</u>	<u>120</u>		95 5
	915	710		(~ 80)* (~ 20)*

CAL FIRE provides access to approved timber harvest plans that can be viewed in the Ruth Lake vicinity via:
<https://caltreesplans.resources.ca.gov/caltrees/>

Timber Harvest Plans Filed Near HBMWD Ruth Ownership

1-00-088 TRI Hetton Creek
 1-01-198 TRI
 1-06-191 TRI
 1-98-300 TRI
 1-17-100 TRI Tompkins Creek
 1-04-177 TRI
 1-01-274 TRI

Appendix 4 Supporting Data FVS Timber Stats for Ruth Lake

▲ ---DF4S

DATE RUN - 02/15/2022
 PLOT ACRES - 6.00
 MEASUREMENT: PERIOD - 2022
 LENGTH - 10.00 YEAR

TABLE 3-1 STATISTICAL SUMMARY

--- ANALYSIS OF 6 PLOTS EXPANDED TO AN ACRE ANNUALIZED BASIS

	:---- TOTAL VOLUME ----:			:---- TOTAL GROWTH ----:			:---- ACCRETION ----:		
	BASAL	CUBIC	BOARD	BASAL	CUBIC	BOARD	BASAL	CUBIC	BOARD
	AREA	MEASURE	MEASURE	AREA	MEASURE	MEASURE	AREA	MEASURE	MEASURE
MEAN	93.337	2756.10	16656.6	9.334	275.61	1665.7	0.000	0.00	0.0
STANDARD DEVIATION	27.322	616.04	3177.3	2.732	61.60	317.7	0.000	0.00	0.0
COEFFICIENT OF VARIATION-%	29.273	22.35	19.1	29.273	22.35	19.1	0.000	0.00	0.0
STANDARD ERROR OF THE MEAN	11.154	251.50	1297.1	1.115	25.15	129.7	0.000	0.00	0.0
STANDARD ERROR - %	11.950	9.13	7.8	11.950	9.13	7.8	0.000	0.00	0.0
NO. OF PLOTS FOR 5% STD. ER	34.	20.	15.	34.	20.	15.	0.	0.	0.

	:----- INGROWTH -----:			:----- HARVEST -----:			:----- MORTALITY -----:		
	BASAL	CUBIC	BOARD	BASAL	CUBIC	BOARD	BASAL	CUBIC	BOARD
	AREA	MEASURE	MEASURE	AREA	MEASURE	MEASURE	AREA	MEASURE	MEASURE
MEAN	9.334	275.61	1665.7	0.000	0.00	0.0	0.000	0.00	0.0
STANDARD DEVIATION	2.732	61.60	317.7	0.000	0.00	0.0	0.000	0.00	0.0
COEFFICIENT OF VARIATION-%	29.273	22.35	19.1	0.000	0.00	0.0	0.000	0.00	0.0
STANDARD ERROR OF THE MEAN	1.115	25.15	129.7	0.000	0.00	0.0	0.000	0.00	0.0
STANDARD ERROR - %	11.950	9.13	7.8	0.000	0.00	0.0	0.000	0.00	0.0
NO. OF PLOTS FOR 5% STD. ER	34.	20.	15.	0.	0.	0.	0.	0.	0.

▲ ---DF4D

DATE RUN - 02/15/2022
 PLOT ACRES - 16.00
 MEASUREMENT: PERIOD - 2022
 LENGTH - 10.00 YEARS

TABLE 3-1 STATISTICAL SUMMARY

--- ANALYSIS OF 16 PLOTS EXPANDED TO AN ACRE ANNUALIZED BASIS

	:---- TOTAL VOLUME ----:			:---- TOTAL GROWTH ----:			:---- ACCRETION ----:		
	BASAL	CUBIC	BOARD	BASAL	CUBIC	BOARD	BASAL	CUBIC	BOARD
	AREA	MEASURE	MEASURE	AREA	MEASURE	MEASURE	AREA	MEASURE	MEASURE
MEAN	284.996	7839.76	45617.5	28.500	783.98	4561.7	0.000	0.00	0.0
STANDARD DEVIATION	52.406	2187.37	15317.0	5.241	218.74	1531.7	0.000	0.00	0.0
COEFFICIENT OF VARIATION-%	18.388	27.90	33.6	18.388	27.90	33.6	0.000	0.00	0.0
STANDARD ERROR OF THE MEAN	13.101	546.84	3829.3	1.310	54.68	382.9	0.000	0.00	0.0
STANDARD ERROR - %	4.597	6.98	8.4	4.597	6.98	8.4	0.000	0.00	0.0
NO. OF PLOTS FOR 5% STD. ER	14.	31.	45.	14.	31.	45.	0.	0.	0.

	:----- INGROWTH -----:			:----- HARVEST -----:			:----- MORTALITY -----:		
	BASAL	CUBIC	BOARD	BASAL	CUBIC	BOARD	BASAL	CUBIC	BOARD
	AREA	MEASURE	MEASURE	AREA	MEASURE	MEASURE	AREA	MEASURE	MEASURE
MEAN	28.500	783.98	4561.7	0.000	0.00	0.0	1.500	29.08	151.8
STANDARD DEVIATION	5.241	218.74	1531.7	0.000	0.00	0.0	2.000	41.94	229.7
COEFFICIENT OF VARIATION-%	18.388	27.90	33.6	0.000	0.00	0.0	133.334	144.19	151.3
STANDARD ERROR OF THE MEAN	1.310	54.68	382.9	0.000	0.00	0.0	0.500	10.48	57.4
STANDARD ERROR - %	4.597	6.98	8.4	0.000	0.00	0.0	33.333	36.05	37.8
NO. OF PLOTS FOR 5% STD. ER	14.	31.	45.	0.	0.	0.	711.	832.	916.

Appendix 5

Confidential Addendums *not attached to this report*. They are kept on file at the HBMWD office in Eureka, CA.

Any future ground practices implemented under this plan using public entity reimbursement funds requires a signed CAL FIRE CFIP Environmental Checklist (CEQA) or an NRCS CPA-52 (NEPA) Checklist. Along with this checklist a process of "discovery" or survey for unknown values along with a discussion of possible mitigations is required. The checklist must be filled out by an RPF or Certified Planner. In addition, archaeological values require an Archaeological Records Check, an entity Archaeologist review and Native American notification for the practice area.

Forest management activities conducted under other harvest permits (e.g., NTMP, WFMP, THP, Forest Fire Prevention Exemptions, Oak Woodland Exemptions) will also require an Archaeological survey and report.

Questions can be directed to the – Associate State Archeologist assigned to CAL FIRE's HUU Humboldt-Del Norte Unit Headquarters.

The mailing address and phone number for the NAHC is as follows:

California Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
(916) 373-3710 • Fax: (916) 373-5471
nahc@nahc.ca.gov

CAL FIRE maintains a current list of Native American Contacts. The list is available on the CAL FIRE website.
http://www.fire.ca.gov/resource_mgt/archaeology/downloads/NativeAmericanContactsList.pdf

As of July 2015, Assembly Bill (AB) 52 requires that lead agencies consider the effects of projects (on state and private land) to tribal cultural resources, and that consultation with federally and non-federally recognized Native American Tribes take place early in the environmental review process. As defined in PRC §21074, tribal cultural resources include archaeological sites, 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, on the national, state, or local Register of Historical Resources.

An archaeological records check for the project area was provided by the California Historical Resources Information Center in June, 2021. No prehistoric (Native American) sites have been recorded within the property to date.. Buildings, structures, and objects over 45 years or older may be of historical value.

Recorded sites are documented in Confidential Archaeological Addendums to Timber Harvest Plans and are archived in Northwest Information Center confidential files. The significance of each site is determined by its archaeological and historical value, as outlined in state and federal guidelines. Significance, as defined by these guidelines, is based on uniqueness and degree of preservation, with both considered in the determination of a site's value. Uniqueness refers to how many other similar features exist (on other sites), while preservation refers to the condition of the features remaining on the site. A site is not considered significant if it (although unique) has been completely destroyed, as there is nothing left to protect or study.

A confidentiality policy approved by the State Historical Resources Commission under authority of PRC § 5020.4(c), limits public disclosure of sensitive archaeological and historical resources. Consequently, site locations on the property having moderate to high levels of significance will not be revealed to the general public. The confidentiality policy is designed to protect the resources from artifact collection, site excavation, and vandalism. Cultural resources management procedures are based on CAL FIRE's statewide archaeology program. Individual projects conducted under the guidance of the NTMP will contain assessments of impacts to cultural resources.

Any Timber Harvest Plan (or a Non-Industrial Timber Management Plan [NTMP]) that is prepared for the ownership will include a Confidential Archaeological Addendum (CAA), prepared per 14 CCR § 929.1. The CAA would include,

among other things: (1) an archaeological records check; (2) evidence of written notification to Native Americans of the preparation of a plan; (3) results of a field survey for archaeological and historical sites within the site survey area; (4) documentation of pre-field research; (5) a description of all archaeological or historical sites identified within the site survey area; and (6) a description of any specific enforceable protection measures to be implemented both within the site boundaries and within 100 feet of the site boundaries.

Appendix 6

CALIFORNIA ENVIRONMENTAL ASSESSMENT WORKSHEET

Draft- This assessment worksheet is used for future forest improvement cost share practices

Date _____

Client and/or Business Name: Humboldt Bay Municipal Water District
Name of Person(s) Completing Worksheet:

- This worksheet is used to document the effects a proposed activity may have on natural, human, and cultural resources, in compliance with NEPA and NRCS NEPA Policy (General Manual 190, Section 410).
- Effects are documented in terms of: Short Term - those that occur during installation/construction; and Long Term - those that occur during and after the activity is finished. Onsite and offsite, positive and negative, and cumulative effects must be documented. If mitigation is proposed effects must be documented.

	Environmental Effects Element	Description of Effects and Proposed Mitigation
I.	SOIL:	
a.	Soil surface (e.g., disruptions, destruction of structure, displacements, compaction, deposition, removal of organic material, improvements)?	
b.	Soil fertility?	NA
c.	Unique geologic or natural physical features (e.g., covering, modification, partial destruction, protection, etc.)?	NA
d.	Wind or water erosion of soils, or soil erodibility, either on or off site?	NA
e.	Siltation, deposition or erosion which may impact or modify the channel of a river, stream, ocean shoreline, or other water?	
f.	Exposure of people or property to geologic hazards such as landslides, mudslides, subsidence or similar hazards?	NA
g.	Number of acres of prime &/or unique cropland?	NA
h.	Other?	

II.	WATER:	
a.	Stream channel dimension, pattern, and/or slope (including downstream impacts)?	
b.	Surface water infiltration rates, drainage patterns, velocities and/or volumes?	
c.	Quality or quantity of discharge into surface waters, including, but not limited to temperature, nutrients, turbidity?	Class III watercourse work will take place during dry conditions with no surface flow.
d.	Quantity of ground waters through either direct additions/withdrawals or interception of aquifers?	NA
e.	Ground water quality?	NA
f.	Amount of water available for public use?	NA
g.	Exposure of people or property to flooding?	NA
h.	Other?	
III.	AIR:	
a.	Air quality?	Minimal impact from pile burning that will be permitted by the North Coast Unified Air Quality Management District.
b.	Odors?	NA
c.	Other?	
IV.	PLANTS:	
a.	Diversity of species, or numbers of any plant species (upland, riparian, wetland, etc.)?	
b.	Numbers or health & vigor of any unique, species of concern, rare, threatened or endangered plants?	
c.	Normal recruitment of existing, native species?	

d.	Other?	
V.	ANIMALS:	
a.	Diversity of species, or numbers of any species of animals (birds, mammals, fish, and invertebrates)?	
b.	Unique, species of concern, rare, threatened, or endangered animals (review T&E lists)?	Northern spotted owl habitat on parcel. Operations that cause noise should not occur until NSO data base is check. Optimally, work should take place after breeding season, late summer and fall.
c.	Native animals (migration barriers, competition from non-natives, etc.)?	
d.	Existing fish & wildlife habitat or critical habitat (nesting, spawning, etc.)?	
e.	Human activity during sensitive life stages (nesting, spawning, etc.)?	Mitigation: Annual check with CDFW and the Natural diversity data base for any known northern spotted owl activity centers and or known osprey nest sites. Noise producing activity will not occur during the sensitive nesting periods in the spring.
f.	Other?	
VII.	OTHER HUMAN CONSIDERATIONS:	
a.	Noise levels?	
b.	Present or planned land uses?	NA
c.	Aesthetic resource, scenic value, or natural area?	Slash material will be chipped, piled and burned or removed to maintain the aesthetic and scenic values of the property.
d.	Recreational opportunities?	
e.	Public health and safety?	Domestic water source will be buffered and protected from activities associates with coast share activities.
f.	Public interest related to the site or watershed?	Mad River watershed listed as impaired by sediment

g.	Economic impacts to the clients, landowners, or public?	
h.	Client well-being?	
i.	Environmental justice?	NA
J.	Cultural Resources?	

c. Document mitigation planned or required to avoid, minimize, or compensate for negative impacts:

fueling of any heavy equipment shall take place at least 150' from a watercourse. Re-

e. Discuss any **Cumulative Effects** (beneficial or adverse):

expected from proposed forest improvement projects. None

f. Alternatives to Proposed Action that were considered (include reasons why alternative was not selected):

1. No Action _____ **This alternative was considered but rejected as it did not accomplish the landowner's goals of forest improvement and fire resilience.**

g. Remarks or Other Considerations:

RECOMMENDATION (check one)

Based upon the conclusions below, I find that this action will not have significant adverse impacts on the quality of the human environment. No further environmental analysis is required. The assessment indicates work should proceed.

Further analysis is necessary, including the possible need to prepare an Environmental Impact Statement or a Finding of No Significant Impact. The landowner will be informed not to proceed until further assessment is completed.

h. Conclusions, based upon the assessment (rational for the findings above):



Thinning guidelines for ecological enhancement of Oregon white oak (*Quercus garryana*) stands with recent or non-existent conifer invasion

Overview

Oregon white oak (*Quercus garryana*) woodlands and savannas cover a significant portion of landscapes in southern Oregon and northern California and are a biologically highly valuable ecosystem within the region. Many woodlands and savannas are suffering from and are susceptible to encroachment primarily by conifers (Reed and Sugihara 1987, Barnhart et al. 1996, Stewman 2003, Engber et al. 2011) but also by woody shrubs/brush and additional oak recruitment. Encroaching vegetation endangers oak woodlands by competing for various resources, increasing the potential for high-intensity wildfire, and eroding the natural landscape heterogeneity created by historically frequent fire.

Tree form and woodland structures in Oregon white oak and other western oak ecosystems are extremely unique and vastly different from conifer-dominated ecosystems. In addition, Oregon white oak and similar western oak species respond much differently to thinning, pruning and prescribed fire than conifers for which many standardized western silvicultural prescriptions are tailored. In Oregon and California, alternative guidelines for thinning, pruning and other vegetation treatments are urgently needed to preserve, enhance, and promote the structural diversity, ecological function and overall health of Oregon white oak ecosystems, especially where they are subjected to encroachment. The following guidelines describe some broad parameters of mechanical treatment that should be taken in encroached or degraded oak ecosystems to achieve restoration of healthy, structurally diverse, vigorous oak woodlands. In general, removal of encroaching vegetation should be heavy while thinning and pruning of existing oaks should be light or not performed at all.

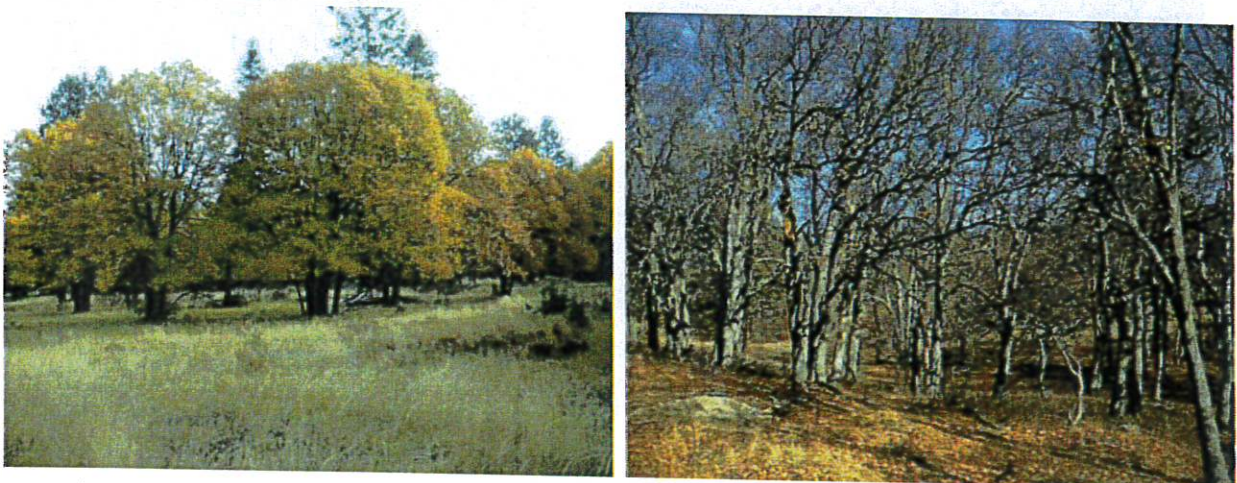


Figure 1) Examples of Oregon white oak savanna (left) and continuous Oregon white oak woodland (right). Note the color display in fall (left) contrasts sharply with the lack of leaves and well-lit understory in winter (right).

Oak Woodland and Savanna Structures

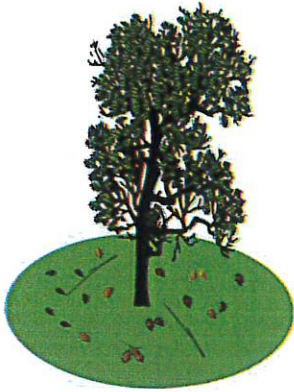
Conifer-Encroached



Treatment of conifers should be heavy in all restoration efforts in Oregon white oak savanna and woodland ecosystems where historic data and site characteristics (i.e. numerous large, overstory oaks) indicate pre-suppression era oak dominance. Prescriptions should be designed to mimic mortality effects of fire as closely as possible by removing the vast majority of small diameter (< 12in dbh) conifers. Removal of larger conifers where tree growth is rapid may also be appropriate in certain cases. Species that produce the deepest shade and significantly dampen forest floor flammability should take precedence for removal. These typically include: Douglas-fir (*Pseudotsuga menziesii*), white fir (*Abies concolor*), and incense cedar (*Calocedrus decurrens*). In areas where conifers are natural associates within oak woodlands, preference should be given to leave a wide spacing (<10 trees/acre) of recruitment age conifers with special consideration taken for Ponderosa pine (*Pinus ponderosa*) and sugar pine (*Pinus lambertiana*). Remnant legacy conifers (est. > 150 years in age) should always be retained.



Figure 2) Encroachment by Douglas-fir (above), incense cedar (lower-left) and other conifer species is common in Oregon white oak and California black oak woodlands in the Pacific Northwest. Oaks are often choked by the dense young trees, resulting in reduced available sunlight (lower-left), and branch die-back (lower-right) among other negative effects.

Single-Stem

Single-stemmed oaks in all age/size categories should be retained and protected from significant encroaching vegetation unless a smaller single stemmed oak is within the drip-line of a larger oak or oak cluster, in which case the smaller oak can be removed. Brush, conifers, and significantly smaller or weaker oaks within the drip-line of large single-stemmed oaks should be removed. When re-sprouting suckers occur (<3 inches dbh and significantly shorter than the main stem) they should be removed. In some circumstances, oak invasion into formerly treeless meadows or savanna may justify oak removal during a meadow or savanna restoration effort. Such instances should not involve large or old oak trees.

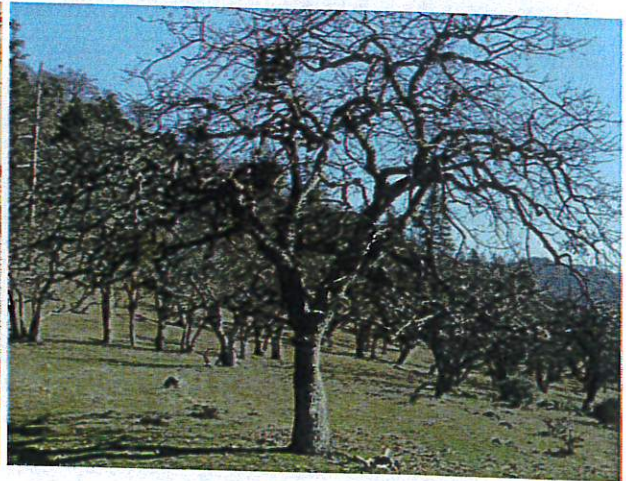
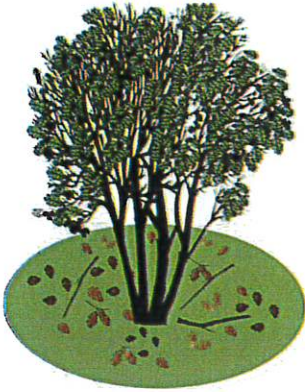


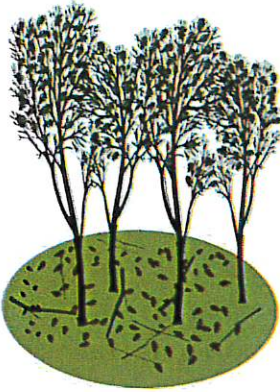
Figure 3) Single-stem oaks of substantial size are often found as open grown trees (above and lower-right) but can also exist in widely-spaced stands of low density (lower-left). The younger oaks, oak sprouts, and encroaching brush will be removed in the lower-left photo to create room for the larger single-stem oaks and restore open savanna-like structure. Mistletoe is common on large, old single-stem oaks (lower-right) and treatment of heavy infestations may be needed in attempts to preserve old trees.

Oak Cluster

Oak clusters are defined as groupings of oak stems that arise from the same root collar (i.e. are all part of one organism), or when they arise from the ground closely enough that distinction between individual organisms is not discernible (Engber 2010). Oak clusters should be treated as single stems with regard to encroaching vegetation removal (see "Single Stem" section above). All live stems within oak clusters $> 1/5$ the dbh of the largest stem or that comprise 10% or more of the overall cluster canopy crown should be retained. Any thinning performed in oak clusters should not reduce the overall cluster crown volume by more than 10%. Dead stems within oak clusters should only be removed if burning of such stems during prescribed fire may harm existing live stems. Actions should be taken to protect such snags from consumption during prescribed fires before consideration for removal.



Figure 4) Oak clusters can be found in a diversity of stand environments including closed-canopy woodlands (upper-left) on open ridgelines (upper-right), and as open grown structures in savannas (lower-left). Though less common, multiple stem clusters of medium to old age are also found for California black oak (lower-right).

Continuous woodland

Areas with continuous oak canopy that are *not* oak clusters should be treated for removal of encroaching vegetation on dominant and co-dominant oaks (and legacy conifers where they exist). Thinning should be heavy on brush and young conifers in all areas. Conifers that pierce into or through, larger, older oak crowns should be removed. Oaks may also be thinned if significant numbers of younger or suppressed oak stems exist; especially when small oaks or oak clusters exist within the drip-line of a substantially larger oak or oak cluster. Adequate numbers of recruitment age oaks should be left for future replacement of the overstory, especially if many seriously moribund, mistletoe, and fungal infected large oaks are present. In all cases, overall oak and legacy conifer canopy cover in continuous oak woodlands should not be reduced by more than 10%.



Figure 5) Examples of continuous Oregon white oak woodland in young (upper-left), mid-aged (upper-right), and old (below) stand structures. Slow growth and long periods of stand development result in very gradual natural thinning and dominant stem emergence over time. Because oaks allow high light transmittance to the understory, stem exclusion due to shade is infrequent in comparison to closed-conifer forests.

Low-Branch/Edge Structure

Low branch structure is common along woodland edges (i.e. where meadow, savanna, or chaparral borders woodland) and on open-grown trees or oak clusters. Because wildlife utilization and response to edge environments is often critical (Yahner 1988) special care should be taken to preserve woodland edge structures. Substantial branches of single-stem oaks or stems within oak clusters that leave the main stem within cutting reach (especially at or below dbh) should be retained if larger than 3 inches in diameter or if they comprise 10% or more of the single-stem or cluster canopy volume. Branches that provide unique structural variation (i.e. cavities, notches, and horizontal or arching form) should be retained unless they will endanger workers performing thinning or follow-up prescribed fire operations. A

proportion of these unique structures (especially very large limbs) should also be retained within woodland interiors when possible. In addition, similar limbs that have died should be retained in all areas for habitat value.

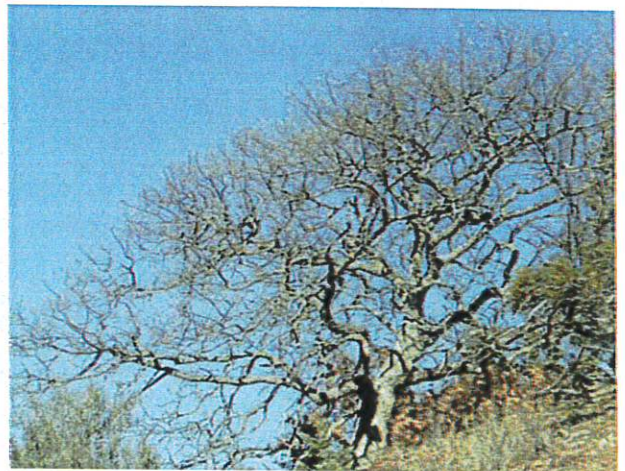
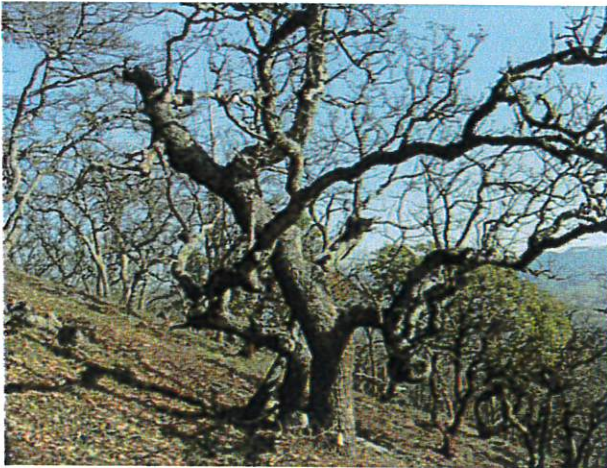


Figure 6) A young oak exhibiting many low branches in snow (above), and older oaks with unique low-branch structures seen post-woodland restoration (below-left) and in an untreated area (below-right). Branch structures are easily viewed in the dormant season (fall-winter) when leaves are absent.

Source

This document was prepared by Lomakatsi Restoration Project to aid restoration actions and prescription development in Oregon white oak ecosystems.

Text by Matthew Cocking (Restoration Ecologist), Information and Concepts by Marko Bey (Executive Director) Lomakatsi Restoration Project, 1287 Oak, Ashland, Oregon, 541-488-0208

Artwork by Eamon Engber (Fire Ecologist), Redwood National Park, Orick, California; in: Engber, E., 2010. Fuelbed heterogeneity, flammability, and restoration of historically fire frequent oak woodlands with fire. Master thesis, Humboldt State University, Arcata, CA.

Pictures and photos by Matthew Cocking (Restoration Ecologist) and Marko Bey (Executive Director), Lomakatsi Restoration Project, 1287 Oak St. Ashland, Oregon · (541) 488 – 0208

References

- Agee, J.K., 1993. Fire Ecology of Pacific Northwest Forests. Island Press, Washington, D.C.
- Abrams, M.D., 1992. Fire and the development of oak forests. *Biosci.* 42, 346-353.
- Barnhart, S.J., McBride, J.R., Warner, P., 1996. Invasion of northern oak woodlands by *Pseudotsuga menziesii* (Mirb.) Franco in the Sonoma Mountains of California. *Madroño.* 43, 28-45.
- Devine, W.D., Harrington, C.A. 2006. Changes in Oregon white oak (*Quercus garryana* Dougl. ex Hook.) following release from overtopping conifers. *Trees* 20, 747-756.
- Engber, E., 2010. Fuelbed heterogeneity, flammability, and restoration of historically fire frequent oak woodlands with fire. Master thesis, Humboldt State University, Arcata, CA.
- Engber, E., Varner, J.M., Arguello, L.A., Sugihara, N.G., 2011. The effects of conifer encroachment and overstory structure on fuels and fire in an oak woodland landscape. *Fire Ecol.* 7(2), 32-50.
- Hektner, M., Reed, L.J., Sacklin, J., 1992. Bald Hills Vegetation Management Plan. Redwood National Park, Orick, CA.
- Koenig, W.D., Schaefer, D.J., Mambelli, S., Dawson, T.E., 2008. Acorns, insects, and the diet of adult versus nestling acorn woodpeckers. *J. F. Ornithol.* 79, 280-285.
- Peterson, D.W., Reich, P.B., Wrage, K.J., 2007. Plant functional group responses to fire frequency and tree canopy cover gradients in oak savannas and woodlands. *J. Veg. Sci.* 18, 3-12.
- Reed, L.J., Sugihara, N.G., 1987. Northern oak woodlands: ecosystem in jeopardy or is it already too late? USDA Forest Service, Pacific Southwest Research Station, Redding, CA (PSW-GTR-100), pp. 59-63.
- Stewman, C.J., 2001. Encroachment patterns of Douglas-fir into oak woodlands in the central Klamath region. Master's thesis, Humboldt State University, Arcata, CA.
- Sugihara, N.G., Reed, L.J., Lenihan, J.M., 1987. Vegetation of the Bald Hills oak woodlands, Redwood National Park, California. *Madroño.* 34, 193-208.
- Tveten, R.K., Fonda, R.W., 1999. Fire effects on prairies and oak woodlands on Fort Lewis, Washington. *Northwest Sci.* 73, 145-158.
- Wolf, C.B., 1945. California Wild Tree Crops – Their Crop Production and Possible Utilization. Rancho Santa Ana Botanic Garden, Rancho Santa Ana, CA.
- Yahner, R.H. 1988. Changes in wildlife communities near edges. *Conserv. Biol.* 2, 333-339.

HUMBOLDT BAY MUNICIPAL WATER DISTRICT (HBMWD)

To: Board of Directors
From: Contessa Dickson
Date: February 13, 2025
Subject: Ruth Lake Community Services District (RLCSD) Policy 6000.27 Revision

Discussion

Master Lease Amendment 3, between RLCSD and HBMWD stipulates that HBMWD must approve any policy changes related to the Ruth Lake Lease Lots prior to RLCSD Board approval. The proposed revisions, which are stricken through, are detailed in the attached document.

At the January 14, 2025 RLCSD Board meeting, the Board approved draft changes to policy 6000.27(f) concerning recreational vehicles. RLCSD is requesting approval of suggested modifications to this policy from HBMWD's Board. The proposed revision is being requested to align with Trinity County Planning Department code.

Recommendation

Staff recommends the Board approve the proposed amendments to the RLCSD Policy 6000.27(f), in accordance with the provisions of Master Lease Amendment 3.



Ruth Lake Community Services District

12200 Mad River Road

P.O. Box 6

Mad River, CA 95552

Telephone: 707-574-6332 Fax: 707-574-6080

Email: ruthlakecsd@yahoo.com Website: www.ruthlakecsd.org

January 17, 2025

Michiko Mares & John Friedenbach, General Manager
Humboldt Bay Municipal Water District
PO Box 95
Eureka, CA 95502-0095

Re: RLCSD Policy 6000.27 revision

Dear Michiko and John,

At our January 14, 2025, board meeting the RLCSD board approved draft changes to Policy 6000.27, Recreational Lease Site Standards. I would like to request this proposed change to be presented at your next board meeting to your board of directors for possible approval.

This revision of eliminating 6000.27 (f) is to be in line with Trinity County Planning Department. If you have any questions about the proposed changes to Policy 6000, please let me know.

Sincerely,

A handwritten signature in black ink that reads "Caitlin Canale".

Caitlin Canale
General Manager

RUTH LAKE COMMUNITY SERVICES DISTRICT
Policy Handbook

POLICY TITLE: Recreational Lease Site Standards -DRAFT

POLICY NUMBER: 6000

6000.00 Purpose: The purpose of this policy is to guide development and use on recreational sublease sites within the buffer strip around Ruth Lake. It also provides some direction on identifying and correcting deficiencies on existing structures and sites.

6000.01 Need: These standards provide a framework for the district administration to guide development around the lake. As the lake becomes more popular, the actions of individual leaseholders increasingly impact the sites and users around them. Environmental concerns of development are receiving more attention and regulation. State and County health, building, planning, and fire safe codes and laws are becoming ever stricter and are being increasingly aggressively enforced. The subleases, although the sub-leaseholder's individual responsibility, are collectively and ultimately RLCSD's responsibility.

6000.02 Philosophy: Use of the buffer strip is recreational in nature.

- A. Development will be controlled to the extent that it will encourage recreational, part-time use, and not allow full-time residential use.
- B. Development will be designed to minimize impact on the "view shed" from the lake and the road.
- C. Development will also be guided by the philosophy exemplified by the statement that one well-designed small garage is preferable to several small storage sheds.
- D. Some sites will not support even this much development, and all development will be addressed on a case-by-case basis.
- E. It is acknowledged that these guidelines will permit some types of development on some lease sites and prohibit the same type and extent of development on other sites. What was allowed in the past is not necessarily acceptable practice today.
- F. All development shall be as non-invasive as possible, blending in with the natural surroundings as much as possible.
- G. All projects are considered on a case-by-case basis. Approval at one site does not imply approval at another site.

6000.03 Existing development: Structures which have been previously approved by RLCSD, HBMWD and Trinity County (as appropriate), which may otherwise appear to violate this policy, shall be allowed to remain unless they present a safety or other hazard, or are being maintained so poorly they become unsightly.

- A. If a leaseholder wishes to construct a new structure, he may be required to remove an existing structure of similar use even if previously approved, as is consistent with paragraph 6000.02C above.

6000.04 Use: Ruth Lake is an artificial impoundment of water created primarily for municipal and industrial purposes and any recreational use of the water is subordinate to such uses.

A. Recreational sub-lease sites shall not be used for residential purposes or become the domicile of the lessee. Policy 6010 addresses this topic.

6000.05 The standards for **boat access only leases** are further guided by policy 6400.

6000.10 Maintenance: The sublease contract requires that the lease site be maintained in good condition and kept in a clean and sightly condition and in as good of condition as when possession was delivered to sublessee.

6000.11 Trash and garbage: The lease site will be free of visible garbage at all times. Trash and garbage will be stored in rigid containers, with tight fitting lids, not plastic garbage bags, and all trash and garbage will be removed when the site is unoccupied. The Ruth Lake area is home to many wild and feral animals which will be happy to make a mess for you. Disposing of trash or garbage on the buffer strip either in trash cans (other than their own), dumpsters, or outright dumping is prohibited, and may result in prosecution and loss of the lease.

6000.12 Building materials: Building materials may only be stored on the site if a project has been approved and is under construction. Any lease holder found to be dumping construction debris in campground, marina, day use areas, including dumpsters, or any undeveloped portion of the buffer strip will be subject to prosecution, and may lose their lease.

6000.13 Structures: Structures of all types shall be maintained in good condition. Broken windows, railings, stairs, structures that pose a safety hazard, do not meet current standards because of age or wear must be repaired or removed within the time limit set by the administrator.

6000.14 Trees and Brush: All trees and brush remain the property of HBMWD under the provisions of the master lease and the sublease contract. Cutting of trees is prohibited without prior written permission of RLCSD and HBMWD (see policy #6350). Trimming of limbs and brush for fire safety, and around roads and structures is permitted as maintenance. Debris must be disposed of as soon as possible by burning. Burn permits are required and enforced.

6000.15 Gardens: Gardens are specifically prohibited on leases using water from the lake by the lake water lease addendum. It is the philosophy of both the HBMWD and RLCSD Board of Directors that the areas around the lake remain as natural as possible.

6000.151 Areas away from the lake, such as the Rodeo grounds and Holly Creek, have developed differently, and shall be allowed to have small flower gardens. Vegetable gardens are prohibited as they are more residential in nature.

6000.16 Vehicles: Excessive numbers of cars, boats, trailers, recreational and other types of vehicles shall not be stored on the lease. All such vehicles shall be in working order, well maintained and be neat in appearance. See para. 6000.27 regarding recreational vehicles.

6000.17 Propane: Propane and other fuel tanks must be secured to a solid post or structure if not designed to be free standing.

6000.18 Firearms: The shooting of firearms is prohibited on lease sites except when legally taking waterfowl during waterfowl season.

6000.19 Fireworks: Fireworks shall not be used on the buffer strip.

6000.20 Development and improvement:

6000.21 The Buffer strip was developed to provide recreational opportunities for local residents and visitors to the area.

6000.22 Extent: Development will generally be limited to one dwelling, one bath facility if not provided for in dwelling (i.e.: primary dwelling is an RV which is intended to be moved regularly), one storage building, one water storage or pumping structure if necessary, and one temporary RV for a guest (see para. 6000.27 below and para. 6000.02C, above).

6000.23 Placement: No structure shall be placed at an elevation less than 2675 ft. (spillway level plus 21 ft.). The horizontal setback (from the 2675 ft level) must be 20 feet. Side and back lot line spacing shall not be less than 30 feet. Lease lots wishing improvements but not able to meet all of these requirements must be considered and approved on an individual basis by both the RLCSD and the HBMWD Board of Directors.

6000.24 Permission: The recreational sublease (Para 17), requires that the sublease holder gain the written consent of both RLCSD and HBMWD before any alteration, addition, or improvement be made to the lease site. According to the Master Lease, HBMWD has up to 45 days to consider the project, plan accordingly.

6000.25 Approval: Approval of a project by RLCSD and HBMWD means only that the improvement appears not to interfere with RLCSD or HBMWD activities on the buffer strip. It does not imply that the project design and engineering is proper or safe. It does not imply that the project is acceptable to Trinity County or other agencies. All projects are considered on a site-specific basis, what is suitable on one site may not be allowed on another.

6000.26 Insurance: Since all structures must be insured against fire hazard, now is a good time to ensure your insurance policy will cover the proposed improvement. The district will ensure a current, valid, and acceptable certificate of insurance, which includes the appropriate amount of fire and liability insurance as stated in the sublease contract, is on file in the district office before approving any project.

6000.27 Recreational vehicles: Recreational vehicles are defined as vehicles designed or capable of being dwelt in.

- a. Are limited to one per lease site,
- b. Must remain capable of being moved,
- c. If intended or allowed to remain longer than fourteen days, must have the written permission of RLCSD.
- d. Any RV on a lease site is considered at least one extra bedroom, and the septic tank must be sized to accept the additional load. This must be considered by the District when considering this kind of request.
- e. Under special circumstances, more than one unit will be allowed on a temporary basis, again with written permission in advance obtained from RLCSD.
- ~~f. A recreational vehicle that functions as the main dwelling unit must have a Trinity County Planning Department Directors use permit.~~

*Highlight + deleted Section

6000.28 Process for obtaining approval for improvements:

A. The sublease holder submits the project to RLCSD for approval. The application must include:

1. A written description of the project, including type of construction, dimensions, materials, and colors proposed.
2. A site map indicating where on the site the project will be located
3. Timetable to start and finish project
4. Who will be doing the project.

B. The Administrator has authority to approve any project he feels complies with the lease site standards, county, state, and federal laws, and other guidance provided by the Board of Directors. If the Administrator feels that the project is not consistent with the guidance provided, the Administrator is directed to make the objections known to the leaseholder, and work with them to achieve the goal of the project if at all possible. If the sublease-holder feels the project does meet the guidelines, or that compelling reasons exist for the project to be completed as requested, he may ask the Board of Directors to approve the project.

C. Things for the Administrator to consider when reviewing a project.

1. Does the project fit into the guidelines outlined.
2. Is the project appropriate to the specific lease site and the area
3. Effect the project will have on the immediate neighbors
4. Effect project has on the view shed from the lake and road.
5. Effect project will have on the operations of HBMWD and RLCSD uses and projects at the lake.
6. Effect project will have on other recreational lake users.
7. Amount and type of insurance coverage required.

D. If approved, the project documents are forwarded by RLCSD to HBMWD for their review and approval. Copies of RLCSD and HBMWD approvals will be forwarded to the leaseholder by RLCSD when obtained. Because environmental and building conditions can change quickly, the project must be begun within one year and substantial progress made or the permission of RLCSD and HBMWD for the project will expire.

E. The applicant may then apply to the appropriate Trinity County department for permits. Trinity County will not issue a permit until it has RLCSD and HBMWD permission on file. Copies of the Trinity County permits shall be forwarded to RLCSD prior to beginning work on the project, and copies of the completed permits must be filed with RLCSD when the project is complete.

F. Building Permits: Building permits are required by Trinity County for any structure larger than 120 square feet, including eaves; any structure with plumbing or electricity, and any structure intended for human habitation regardless of size. Decks may need a permit as well. It is the leaseholders' responsibility to determine the need. RLCSD will assume a building permit is required for all projects unless otherwise notified. No project may begin until a copy of the permit is on file with RLCSD.

6000.29 Utilities: Both electrical and telephone connections require a utility easement between the utility provider and Humboldt Bay MWD before installation. HBMWD charges a fee of one

hundred dollars (\$100) to cover their costs in establishing the easement. Please contact RLCSD prior to contacting the utility company. Policy 6300 applies.

6000.30 Water:

6000.31 Lake Water: HBMWD and RLCSD prohibit water diversion from Ruth Lake Reservoir without proper permits. Lake water is defined as any surface water gathered within the flood level of Ruth Lake, determined to be below elevation 2674, 20 feet above the current spillway elevation, and between the Matthews Dam and the Ruth-Zenia Bridge. Policy 8100 and 8110 refer.

6000.32 Well water: Wells must be located at least 100 feet from the high-water mark of the Ruth Lake reservoir. Previous permission of RLCSD, HBMWD and a permit and inspection from the Trinity County Health Department are required. A copy of the well drillers report must be forwarded to RLCSD.

6000.33 Surface water: taken from rivers, creeks or springs located above the flood level within the buffer strip are not regulated, however both RLCSD and HBMWD strongly recommend filtration and disinfection before any type of use. This water may contain contaminants which are harmful to humans.

6000.40 Sewage disposal systems: No lease site shall be used until an approved sewage disposal system is in place and approved by Trinity County. This prohibition includes self-contained RV's and tent camping. Policies 6220 and 6225 provide guidance on this topic.

6000.50 Roads: Roads are becoming a controversial topic nationwide and within Trinity County. Roads must be maintained to the standard they were originally built and may be required to be upgraded as use increases, drainage patterns emerge or change, or for other reasons. Expect to have to upgrade your road as a condition of your Trinity County building permit. Encroachment permits are required wherever a private driveway intersects with a county road. California Fire Safe requirements have a great impact on road design and may well influence where you can place a dwelling or make significant improvements to it. Erosion control must be maintained.

Roads and drainage must be well maintained. See the "Ruth Lake Buffer Strip Road and Lease Site Standards for further information."

6000.501 Road names: Any driveway serving more than one dwelling must have a signpost if it intersects a county road. All road names must be approved by Trinity County.

6000.502 Shared roads: Shared roads are a shared responsibility of the leaseholders who access it. Culverts and side drains must be cleaned throughout the year. RLCSD does not maintain any roads but may require work to be done.

6000.51 Gates: Requests for gates will be considered on an individual basis. All gates must be approved by RLCSD and HBMWD prior to installation. Chain and cable gates are not acceptable or permissible.

6000.52 Locks: All gates if locked must have a lock keyed to the RLCSD master. Master keys are provided to fire, medical, law enforcement agencies, and utility companies that serve the ar-

ea. If the administrator or any of the above cannot open a gate because of an unapproved or non-functioning lock, they have permission to cut the lock, and the leaseholder must replace it at their expense. Providing a copy of an individual lock key to the RLCSD office does not meet this requirement.

6000.53 Fences: Are not allowed except for guarding against an unsafe condition, and only with prior approval.

6000.54 Signs:

6000.541 Street signs: Each road or driveway serving more than two dwellings must have a street sign if it intersects with a county road. All road names must be approved by Trinity County.

6000.542 Address signs: Each dwelling must have its lease number, or an address assigned by Trinity County posted on it, or at the driveway entrance that serves that individual dwelling if it will be more visible to emergency vehicles.

6000.543 No Trespassing/Private Lease Signs: No trespassing signs are allowed on all recreational sub lease sites. However, only signs purchased from RLCSD may be used. No other signs may be placed along the boundary of the sub lease sites for the purposes of indicating that the property is private. RLCSD supplies two versions of the typical "No Trespassing" sign. One version is for use on docks. One version is for any other type of entry, i.e. road, path, or drive. RLCSD recommends placing "No Trespassing" signs at the following locations (if applicable) with a maximum number of three signs per lease allowed:

1. One sign on your dock
2. One sign at your road access entry point or walking path
3. Any other place bordered by the lake or non-private lands, i.e. road, parking lot, or public lands

Sign placement must be approved by the RLCSD prior to installation by the sub lease holder. "No Trespassing" signs are recommended by the RLCSD to be placed along the boundary of sub lease sites because they will stop the public from having any claimed right to park at, go across, dock at, fish from, sleep on, or otherwise use your sub lease site when placed correctly. If you have questions concerning the boundary of your sub lease site or would like help determining where the appropriate place is to install "No Trespassing" signs, please speak with RLCSD staff. (*Civil Code § 830 and § 1008*)

6000.60 Erosion Control: All lease sites, roads and trails will be constructed and maintained to minimize erosion into the lake, river, and other water courses. RLCSD or HBMWD may require modifications to proposed projects, maintenance or repair work to be done as necessary to ensure erosion control. The Trinity County Building and Planning Departments have final approval on all projects and may require additional mitigations, engineering documentation, and permits.

6000.70 Boat or swimming docks: Boat or swimming docks may be placed only with the advance written permission of RLCSD and HBMWD, policies number 6100, 6110, and 6120 apply.

6000.80 Inspections: The Administrator or designee may conduct a formal inspection of a lease site when:

1. A proposed assignment is received.
2. The Sublease contract is to be renewed within one year of renewal.
3. A major improvement project is requested.
4. A violation is noticed or reported.

A formal inspection will be documented in the lease file and a copy of the inspection report sent to the leaseholder.

The Administrator may make an informal (or walk through) inspection at any time. This may be followed up with no action, a telephone call, a letter, or a formal inspection.

Approved by the RLCSD Board of Directors: 7/24/2003

Revisions to 6000.23; approved by the Board of Directors: 8/10/2006

Revisions to 6000.543; approved by the Board of Directors: 12/10/2024

Humboldt Bay Municipal Water District

To: Board of Directors
From: Michiko Mares
Date: January 15, 2025

Re: Capstone Project Update, School of Engineering, Cal Poly Humboldt

Background / History

The Board of Directors approved proceeding with the Spring Semester School of Engineering Capstone project at the January 9, 2025 Board Meeting.

Discussion

District staff met with Dr. Archibald from the Cal Poly Humboldt School of Engineering to discuss the upcoming Spring Semester Capstone project. Dr. Archibald informed staff that the City of Arcata reached out requesting a Capstone project to assist with tidal flooding at Jolly Giant Creek. District staff agreed to not participate in the Capstone project this Spring to allow the City of Arcata to benefit from this educational partnership.

Next Steps

Staff agreed to work with the School of Engineering in the future on another Capstone project.

HUMBOLDT BAY MUNICIPAL WATER DISTRICT

To: Board of Directors
From: John Friedenbach
Date: February 13, 2025
Subject: Water Resource Planning (WRP) – Status Report

.....

The purpose of this memo is to summarize recent activities and introduce next steps for discussion.

1) Top-Tier Water Use Options

a) Local Sales

- i) Nordic Aquafarms. No update.
- ii) Trinidad Rancheria mainline extension. Engineering route design continues.
- iii) Blue Lake Rancheria mainline extension. Engineering Design continues.
- iv) Offshore Wind Heavy Lift Multipurpose Marine Terminal Project. No update.

b) Transport -- no update.

- c) Instream Flow Dedication –** The District received Notice of Acceptance from the Water Board. The District committee, counsel and staff met with Water Board staff to review their request for additional information. Staff and consultants responded to the supplemental request for information on January 31, 2025.

Instream Flow Board workshop was on Monday, February 10, 2025 at 5:30 pm at the District board room.

John Friedenbach

From: D Miller
Sent: Monday, January 27, 2025 10:56 AM
To: sheri woo; John Friedenbach
Cc: Ckelly Trinidad; gm hbmwd.
Subject: Re: Fw: Message from Dwight Miller (and Trinidad Water Advisory Committee)

Hello Sheri and John (cc to Cheryl Kelly & Michiko Mares)

Thank you for your work in ensuring quality water for your service area, and for "standing by" as Trinidad debates its water future. The January 6 request made by Paula Levine and me was to explore how best HBMWD and Trinidad could engage **to get data** that our City Council needs as it deliberates Trinidad's water future. Neither Paula nor I have decided that HBMWD is our provider of choice ... we, and others in Trinidad, cannot decide without more information. We appreciate your readiness to engage with the Trinidad City Council.

Sincerely,
Dwight Miller

On Mon, Jan 27, 2025 at 9:20 AM sheri woo

wrote:

Hi Cheryl, thanks for your clarification. HBMWD is standing by, and we're quite willing to provide water related information to the City Council, staff, or WAC.

Sheri

On Mon, Jan 27, 2025, 9:10 AM Ckelly Trinidad

wrote:

Hello, Ms Woo:

Unfortunately, I did not author, review or approve the attached correspondence to HBMWD and I do not believe it represents the Trinidad City Council's position, or the Water Advisory Committee's (WAC), at this time. No vote has been taken by the Council or WAC members to lead to such a request for information or presentation by HBMWD. Rather, I let Dwight know that the City would be discussing whether to sunset the Water Advisory Committee (WAC) in its February meeting. (Dwight is a WAC committee member). In addition, I opined that any decision related to HBMWD would need to be approved at the Trinidad City Council level, anyway. I also indicated that a request to put the discussion on a future agenda has been made. The Trinidad City Council would need to vote to proceed with such an agenda item.

Of course, Mr. Miller and Ms. Levine may send whatever correspondence they would like to HBMWD but, in this case, I wanted to make you aware that it is not approved by either me, or the Trinidad City Council.

Please don't hesitate to reach out to me at 707 599 3931 if you have any questions.

Best,
Cheryl Kelly
Mayor, City of Trinidad

**Department of Toxic Substances Control
Former McNamara and Peepe Lumber Mill
Monthly Summary Report**

January 2025

This monthly summary report summarizes environmental site investigation and remediation activities conducted by the Department of Toxic Substances Control (DTSC) or by their contractor, SHN Consulting Engineers and Geologists, Inc. (SHN) at the former McNamara and Peepe Lumber Mill Site.

a. Actions during this calendar month (January).

- First Semi-Annual 2024 Groundwater Sampling Report. A summary of activities and results for the first semi-annual groundwater sampling event was submitted by SHN. DTSC is reviewing the report and anticipates approval in February 2025.
- Second Semi-Annual 2024 Groundwater Sampling Report. A summary of activities and results for the second semi-annual groundwater sampling event was submitted by SHN. DTSC submitted comments to SHN and is waiting for a revised report.
- November Stormwater Sampling Report. The November stormwater sampling report was submitted by SHN and is being reviewed by DTSC.

b. Planned activities for the next month (January 2025) and beyond.

- Data Gap Investigation Report of Findings. Fieldwork was completed in August. SHN will submit a report documenting activities implemented in accordance with the data gap workplan.
- Virtual Quarterly Update Meeting. A virtual quarterly update meeting with DTSC, EPA, Humboldt Bay Municipal Water District, and Humboldt Waterkeeper was held on January 29, 2025 at 1:00 PM. The next meeting will be scheduled for April 2025.
- Health and Human Risk Assessment (HHRA). SHN has subcontracted Lynn Spence to work on the HHRA which will evaluate the human health risk associated with potential exposures to the Site's soil, stormwater, and groundwater under a residential scenario. SHN shall submit the draft HHRA report to DTSC for review and comment prior to completing the final version.

c. Funding Updates

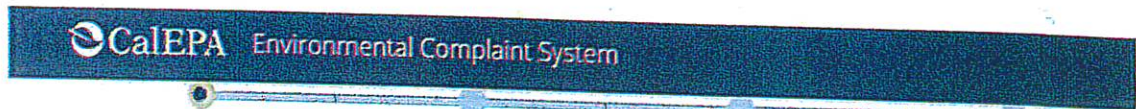
- Funding in future years is likely to come from the Site Remediation Account (SRA), which was the funding source before the Cleanup in Vulnerable Communities Initiative (CVCI).

d. Royal Gold.

Soil and Groundwater Management Plan. DTSC granted approval of the revised soil and groundwater management plan (SGMP). The final SGMP is available on Envirostor.

To file an anonymous complaint with California DTSC
(Department of Toxic Substances Control)

<https://calepa.my.salesforce-sites.com/complaints/>



Language Preference/Preferencia de Idioma

SELECT AN IMAGE TO REPORT A PROBLEM



Select this Topic:
Toxic Substances
to submit to
DTSC.

IS THIS AN EMERGENCY?

ARE YOU REPORTING WATER WASTE?

IS THIS REGARDING PROPOSITION 65?



Click here to enter Complaint Details.




DTSC website for McNamara & Peepe Lumber Mill (12240115)

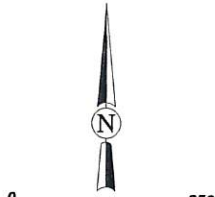
1619 Glendale Drive

Humboldt County

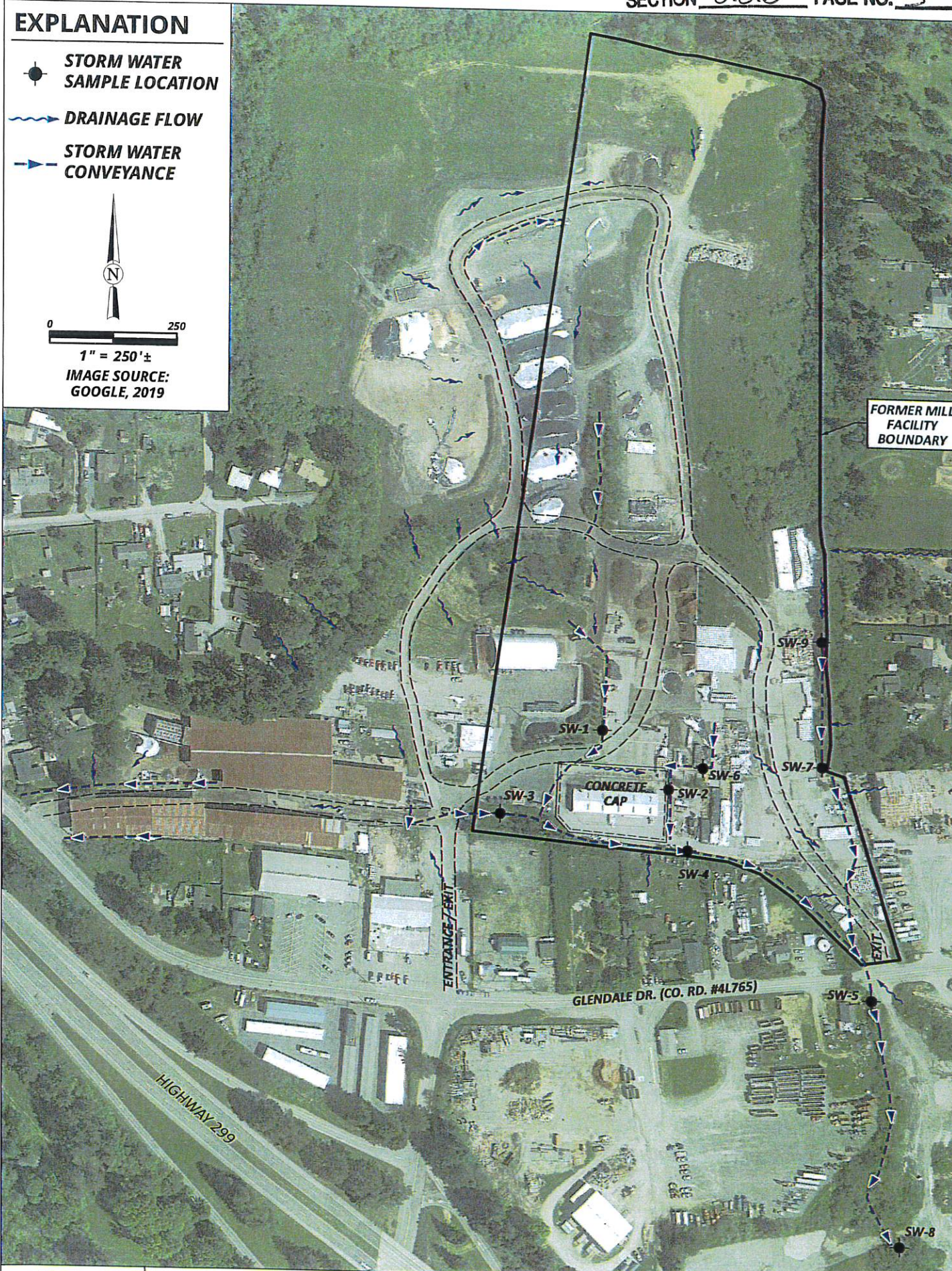
https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=12240115

EXPLANATION

-  **STORM WATER SAMPLE LOCATION**
-  **DRAINAGE FLOW**
-  **STORM WATER CONVEYANCE**



1" = 250' ±
 IMAGE SOURCE:
 GOOGLE, 2019



P:\Eureka\2020\189-M-P-Mill\GIS\PROJ_MXD\SWSP\SWSP2_Fig2_SitePlan_20240403.mxd USER: mrose DATE: 4/3/24, 1:12PM



Former McNamara & Peepe Lumber Mill
 Storm Water Sampling Plan
 1619 Glendale Drive, Arcata, California

Site Plan with Figure
 Storm Water Sample Locations
 April 2024 - 020189.050
2

Vanessa Davis, PG

**March 2024 Stormwater Sample Results, Former McNamara and Peepe Lumber Mill, 1619
Glendale Drive, Arcata, California; EnviroStor ID: 12240115**

May 23, 2024

Page 3

Temperature, pH, and turbidity were documented at each sample location using portable instrumentation. A stormwater sample was then collected from each sampling location using an extendable pole sampler or hand-held scoop. The water samples were collected in laboratory-supplied containers, labeled, immediately placed in an ice-filled cooler, and submitted to the laboratory for analyses under the appropriate chain-of-custody documentation.

Monitoring and sampling equipment was cleaned prior to arriving on site and between use at each sampling location. Small equipment that required onsite cleaning was washed in a water solution containing Liquinox® cleaner, followed by two distilled-water rinses. Appendix 1 presents field notes for stormwater sample collection.

3.0 Laboratory Analysis

Stormwater samples collected were analyzed for:

- chlorinated phenols (pentachlorophenol [PCP] and tetrachlorophenol [TCP]) by Canadian Pulp Report/National Council for Air and Stream Improvement, Inc. (NCASI) Method 86.07; and
- chlorinated dibenzodioxins and chlorinated dibenzofurans (dioxins and furans) by U.S. Environmental Protection Agency (EPA) Method 8290.

Microbac Laboratories, Inc. (formerly North Coast Laboratories, Ltd.) a state-certified analytical laboratory located in Arcata, California, performed the PCP and TCP analysis. The reporting limits (RLs) for each constituent are as follows:

- PCP = 0.30 micrograms per liter (ug/L)
- 2,3,4,6-TCP = 1.0 ug/L

Dioxins were analyzed by McCampbell Analytical, Inc. (MAI), a state-certified analytical laboratory located in Pittsburg, California. The RL for 2,3,7,8-tetrachlorobenzene-p-dioxin (TCDD) ranged from 4.69 to 4.76 picograms per liter (pg/L). The method detection limit (MDL) for 2,3,7,8-TCDD analysis for stormwater samples analyzed was 1.22 pg/L to 1.24 pg/L.

4.0 Stormwater Sampling Results

Table 1 (on the next page) summarizes the March 11, 2024, stormwater analytical results for dioxins, PCP, and TCP.



Vanessa Davis, PG

March 2024 Stormwater Sample Results, Former McNamara and Peepe Lumber Mill, 1619 Glendale Drive, Arcata, California; EnviroStor ID: 12240115

May 23, 2024

Page 4

**Table 1. Stormwater Analytical Results, March 11, 2024
Former McNamara and Peepe Lumber Mill, Arcata, California**

Sample Location	2,3,7,8-TCDD ^a (pg/L) ^b	2005 WHO TEQ ^c (pg/L)	PCP ^d (ug/L) ^e	TCP ^d (ug/L)
SW-1	<4.76 ^f	0.0123 J ^g	<0.30	<1.0
SW-2	<4.72	0.358 J	<0.30	<1.0
SW-3	<4.69	0.135 J	<0.30	<1.0
SW-4	<4.76	1.45 J	<0.30	<1.0
SW-5	<4.69	2.37 J	<0.30	<1.0
SW-6	<4.74	2.08 J	<0.30	<1.0
SW-7	<4.72	3.31 J	<0.30	<1.0
SW-9	<4.72	0.120 J	<0.30	<1.0
MCL^h	30	NRⁱ	1.0	NR
PHGs^j	0.05	NR	0.3	NR

- a. 2,3,7,8-TCDD: 2,3,7,8-Tetrachlorodibenzodioxin was analyzed in general accordance with EPA Method 8290
- b. pg/L: picograms per liter
- c. 2005 WHO TEQ: 2005 World Health Organization's Toxic Equivalency Quotient, TEF calculations. TEQs are J-flagged as they are calculated from one or more result with a J-flag (Analyte concentration below calibration range).
- d. Pentachlorophenol (PCP) and 2,3,4,6-Tetrachlorophenol (TCP) were analyzed in general accordance with Canadian Pulp Report/National Council for Air and Stream Improvement, Inc. Method 86.07
- e. ug/L: micrograms per liter
- f. <: "less than" the stated laboratory reporting limit
- g. J: Result is less than the reporting limit but greater than the method detection limit. The reported concentration is an estimated value.
- h. MCL: maximum contaminant level, State Water Resources Control Board, August 16, 2023
- i. NR: no reference
- j. PHGs: California public health goals, Office of Environmental Health Hazard Assessment, August 16, 2023

Appendix 2 includes the complete analytical test results, chain-of-custody documentation, and laboratory quality control data. Multipliers used for the 2005 World Health Organization (WHO) Toxic Equivalency Factors (TEFs) for dioxins and furan compounds are additionally provided in Appendix 2. Appendix 3 presents historical stormwater sample results for the former McNamara and Peepe Lumber Mill.

5.0 Discussion of Results

PCP, TCP, and 2,3,7,8-TCDD were not identified above laboratory MDLs in any stormwater samples collected during the March 11, 2024, sampling event. Stormwater with the highest toxic equivalency quotient (TEQ) value came from SW-7, located along the eastern property boundary within the former planar chain footprint, with a value of 3.31 J. All TEQs are J-flagged as they are calculated from one or more result with a J-flag (analyte concentration is below the RL but greater than the MDL; the reported concentration is an estimate value).



From 5/23/24 Report

Historical Stormwater Sample Results

3

Sample Location	Date	2,3,7,8-TCDD ^a (pg/L) ^b	2005 WHO TEQ ^c (pg/L)	PCP ^d (ug/L) ^e	TCP ^d (ug/L)
SW-1	2/18/21	<0.512 ^f	0.0736 J ^g	<0.30	<1.0
	12/15/21	<0.721	0.351 J	<0.30	<1.0
	4/14/22	<0.743	0.181 J	<0.30	<1.0
	12/08/22	<0.592	4.37 J	<0.30	<1.0
	2/27/23	<1.69	0.00	<0.30	<1.0
	12/07/23	<1.69	0.00	<0.30	<1.0
	3/11/24	<4.76	0.0123 J	<0.30	<1.0
SW-2	2/18/21	<0.609	7.79 J	<0.30	<1.0
	12/15/21	<0.508	2.70 J	<0.30	<1.0
	12/15/21 (F) ^h	<0.645	0.308 J	--	--
	4/14/22	5.18	96.1 J	<0.30	<1.0
	12/08/22	<0.604	2.58 J	<0.30	<1.0
	2/27/23	<1.70	1.73 J	<0.30	<1.0
	12/07/23	<1.69	0.643 J	<0.30	<1.0
	3/11/24	<4.72	0.358 J	<0.30	<1.0
SW-3	2/18/21	<0.530	4.44 J	0.099 J	<1.0
	12/15/21	<0.688	6.82 J	0.091 J	<1.0
	4/14/22	<0.745	0.179 J	<0.30	<1.0
	12/08/22	<0.733	4.47 J	<0.30	<1.0
	2/27/23	<1.70	0.262 J	<0.30	<1.0
	12/07/23	<1.69	0.0477 J	<0.30	<1.0
	3/11/24	<4.69	0.135 J	<0.30	<1.0
SW-4	2/18/21	<0.459	11.4 J	0.11 J	<1.0
	12/15/21	<0.731	5.87 J	<0.30	<1.0
	12/15/21 (F)	<0.715	0.945 J	--	--
	4/14/22	<0.817	0.233 J	<0.30	<1.0
	12/08/22	<0.715	3.30 J	<0.30	<1.0
	2/27/23	<1.69	0.255 J	<0.30	<1.0
	12/07/23	<1.69	0.945 J	<0.30	<1.0
	3/11/24	<4.76	1.45 J	<0.30	<1.0
SW-5	2/18/21	<0.762	8.04 J	0.14 J	<1.0
	12/15/21	<0.602	4.06 J	<0.30	<1.0
	12/15/21 (F)	<0.785	1.39 J	--	--
	4/14/22	<0.697	3.74 J	<0.30	<1.0
	12/08/22	1.55 J	19.1 J	<0.30	<1.0
	2/27/23	<1.69	0.483 J	<0.30	<1.0
SW-5, Cont'd	12/07/23	<1.70	1.67 J	<0.30	<1.0

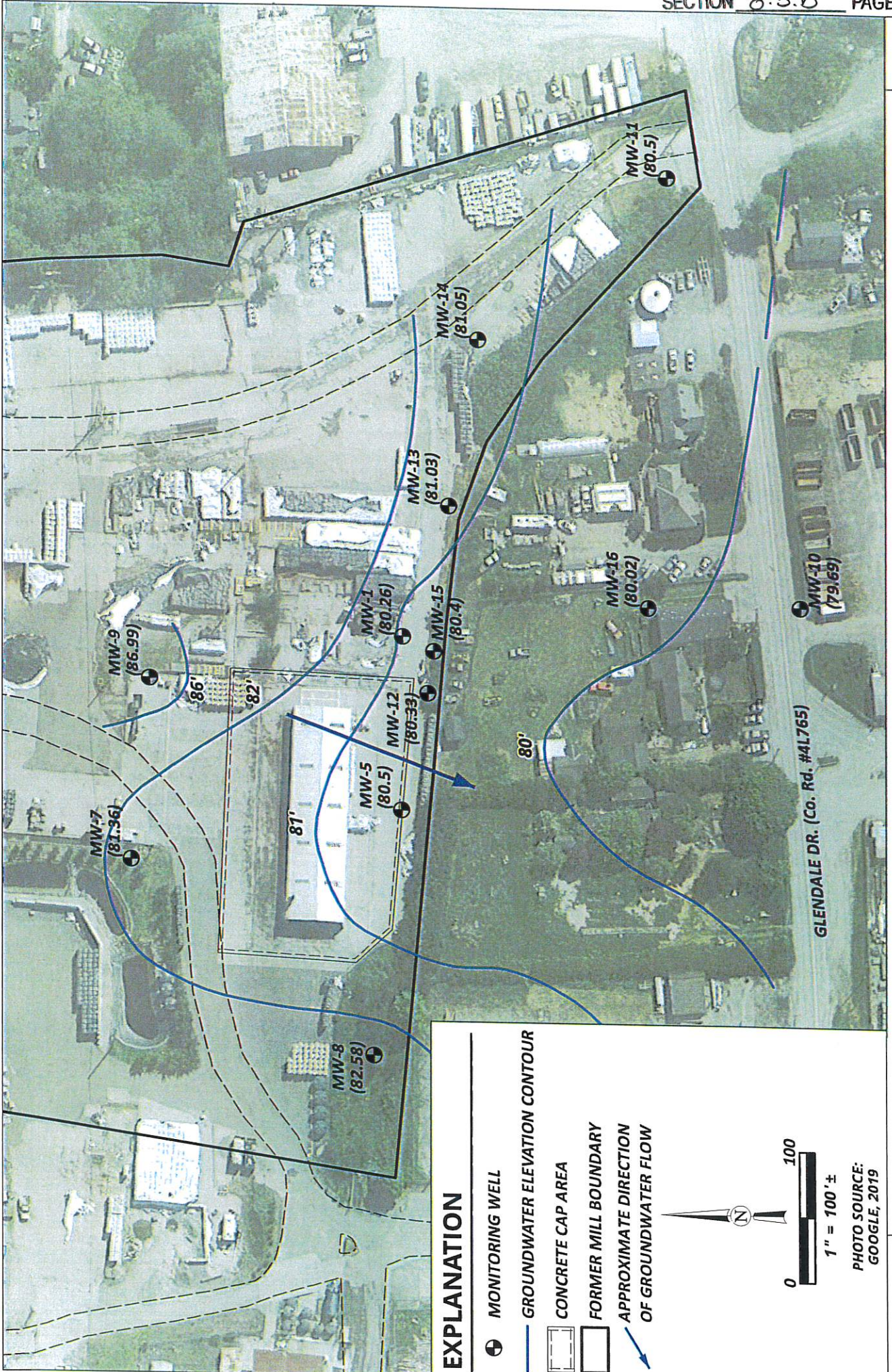


Sample Location	Date	2,3,7,8-TCDD ^a (pg/L) ^b	2005 WHO TEQ ^c (pg/L)	PCP ^d (ug/L) ^e	TCP ^d (ug/L)
	3/11/24	<4.69	2.37 J	<0.30	<1.0
SW-6	12/15/21	5.12	63.9 J	<0.30	<1.0
	12/15/21 (F)	<0.713	0.0572 J	--	--
	4/14/22	4.95	121 J	0.48	<1.0
	12/08/22	<0.700	8.54 J	<0.30	<1.0
	2/27/23	<1.69	6.10 J	<0.30	<1.0
	12/07/23	<1.70	1.36 J	<0.30	<1.0
	3/11/24	<4.74	2.08 J	<0.30	<1.0
	SW-7	12/15/21	<0.634	4.87 J	0.21 J
12/15/21 (F)		<0.728	0.970 J	--	--
4/14/22		<0.771	0.317 J	0.15 J	<1.0
12/08/22		2.59 J	36.8 J	0.12 J	<1.0
2/27/23		<1.69	1.66 J	<0.30	<1.0
12/07/23		<1.70	3.23 J	0.31	<1.0
3/11/24		<4.72	3.31 J	<0.30	<1.0
SW-8 ⁱ		12/15/21	<0.797	3.80 J	<0.30
	12/15/21 (F)	<0.733	2.38 J	--	--
	4/14/22	<0.715	1.35 J	<0.30	<1.0
SW-9	3/11/24	<4.72	0.120 J	<0.30	<1.0
MCL^j		30	NR^k	1.0	NR
PHGs^l		0.05	NR	0.3	NR






- a. 2,3,7,8-TCDD: 2,3,7,8-Tetrachlorodibenzodioxin was analyzed in general accordance with EPA Method 8290
- b. pg/L: picograms per liter
- c. 2005 WHO TEQ: 2005 World Health Organization's Toxic Equivalency Quotient, TEF calculations. TEQs are J-flagged as they are calculated from one or more result with a J-flag (Analyte concentration below calibration range).
- d. Pentachlorophenol (PCP) and 2,3,4,6-Tetrachlorophenol (TCP) were analyzed in general accordance with Canadian Pulp Report/National Council for Air and Stream Improvement, Inc. Method 86.07
- e. ug/L: micrograms per liter
- f. <: "less than" the stated laboratory reporting limit
- g. J: Result is less than the reporting limit but greater than the method detection limit. The reported concentration is an estimated value.
- h. (F): Field filtration prior to sample collection using a new 0.45-micron filter
- i. Permission to access stormwater sample location SW-8 is no longer granted, therefore samples have not been collected as of April 2022.
- j. MCL: maximum contaminant level, State Water Resources Control Board, August 16, 2023
- k. NR: no reference
- l. PHGs: California public health goals, Office of Environmental Health Hazard Assessment, August 16, 2023



P:\Eureka\2020\020189-M-P-Mill\GIS\PROJ_MXD\Groundwater\2023\September\GW_Fig3_GWcs.mxd USER: pix4d DATE: 10/9/23, 2:48PM



EXPLANATION

-  MONITORING WELL
-  GROUNDWATER ELEVATION CONTOUR
-  CONCRETE CAP AREA
-  FORMER MILL BOUNDARY
-  APPROXIMATE DIRECTION OF GROUNDWATER FLOW

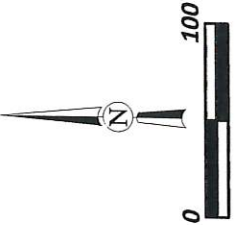


PHOTO SOURCE:
GOOGLE, 2019



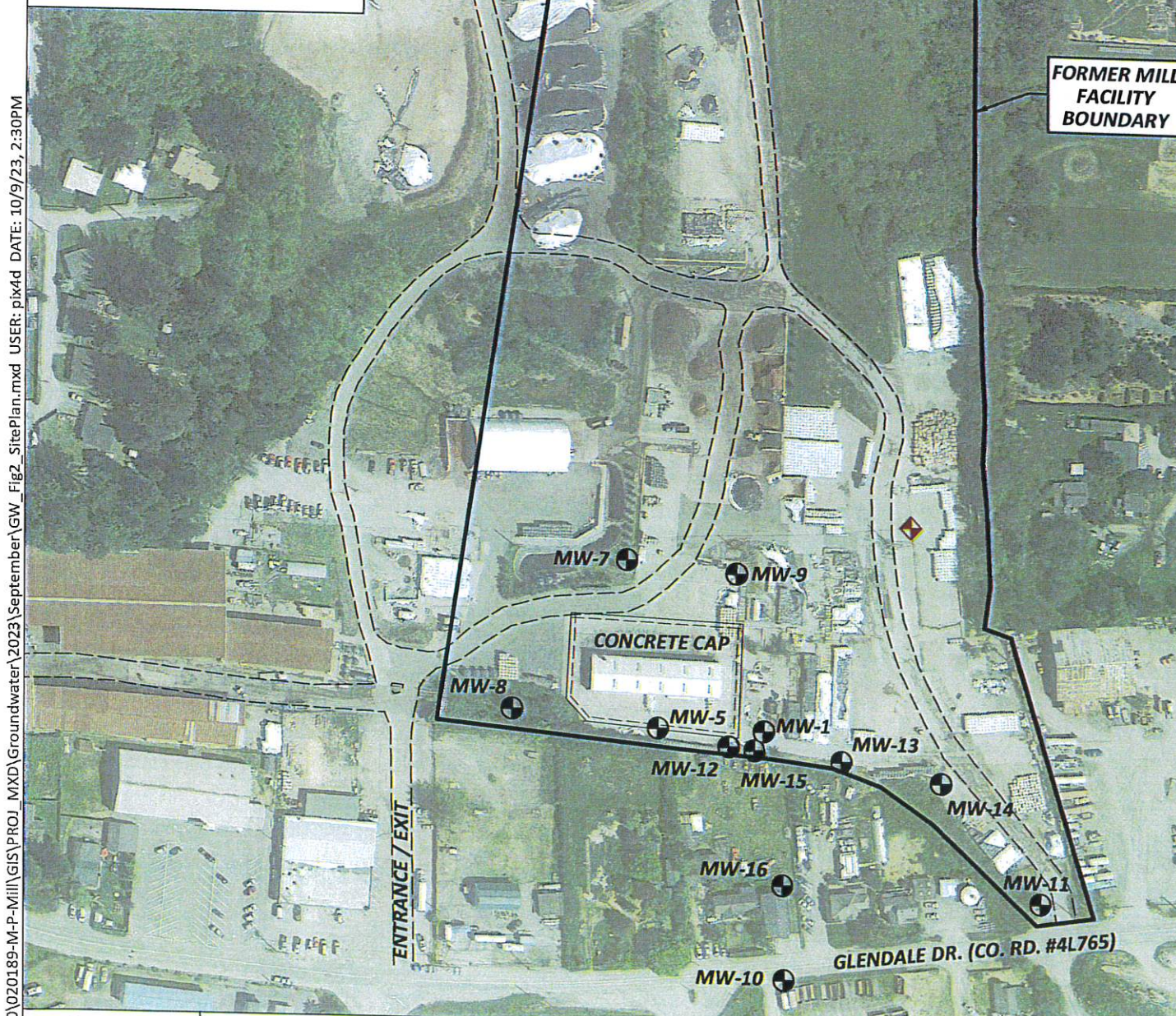
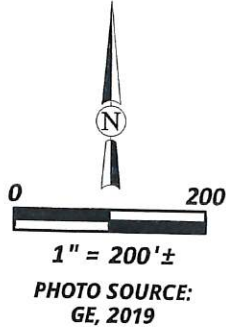
Former McNamara & Peepe Lumber Mill
Groundwater Monitoring
1619 Glendale Drive, Arcata, California

Groundwater Elevation Contours
August 22, 2023
October 2023 - 020189.030

Figure
3

EXPLANATION

-  **PRODUCTION WELL**
-  **MONITORING WELL**
-  **FIRE ACCESS ROAD**
-  **CONCRETE CAP AREA**
-  **FORMER MILL BOUNDARY**



P:\Eureka\2020\020189-M-P-Mill\GIS\PROJ_MXD\Groundwater\2023\September\GW_Fig2_SitePlan.mxd USER: pix4d DATE: 10/9/23, 2:30PM



Former McNamara & Peepe Lumber Mill
Groundwater Monitoring
1619 Glendale Drive, Arcata, California

Site Plan Figure

October 2023 - 020189.030

2

P:\Eureka\2020\020189-M-P-Mill\GIS\PROJ_MXD\Groundwater\2023\September\GW_Fig4_Concentrations.mxd USER: pix4d DATE: 10/9/23, 2:31PM

Figure 4
 Select Groundwater Concentrations
 August 22, 2023
 020189.030

Former McNamara & Peepe Lumber Mill
 Groundwater Monitoring
 1619 Glendale Drive, Arcata, California

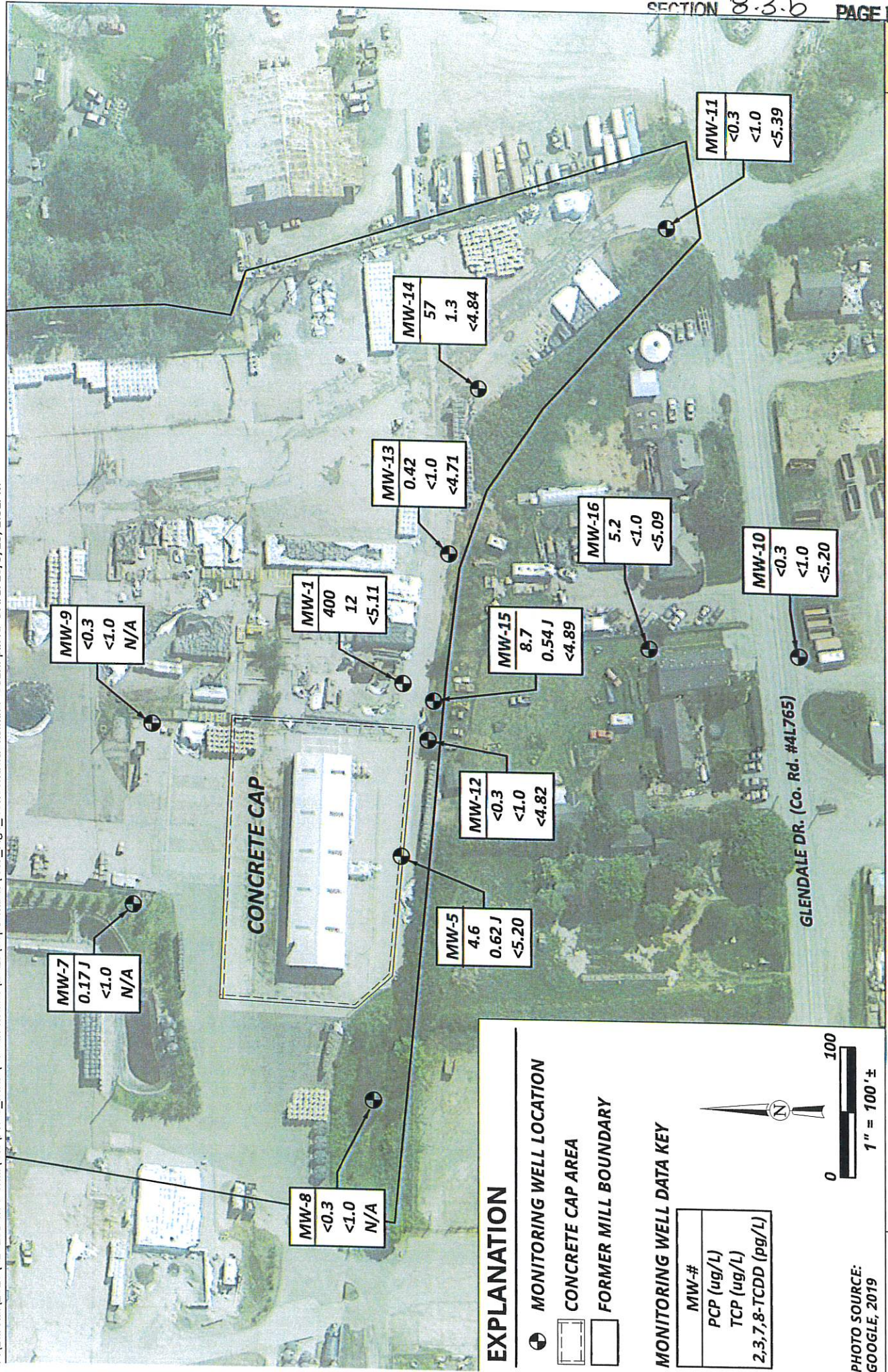


PHOTO SOURCE:
 GOOGLE, 2019

**Table 2. Groundwater Analytical Results, August 22-23, 2023
Former McNamara and Peepe Lumber Mill, Arcata, California**

Sample Location	2,3,7,8-TCDD ^a (pg/L) ^b	2005 WHO TEQ ^c (pg/L)	PCP ^d (µg/L) ^e	TCP ^d (µg/L)
MW-1	<5.11 ^f	48.3 J ^g	400^h	12
MW-5	<5.20	0	4.6	0.62 J
MW-7	NA ⁱ	NA	0.17 J	<1.0
MW-8	NA	NA	<0.3	<1.0
MW-9	NA	NA	<0.3	<1.0
MW-10	<5.20	0	<0.3	<1.0
MW-11	<5.39	0.0300 J	<0.3	<1.0
MW-12	<4.82	0.0408 J	<0.3	<1.0
MW-13	<4.71	0.0146 J	0.42	<1.0
MW-14	<4.84	0.0399 J	57	1.3
MW-15	<4.89	0.0257 J	8.7	0.54 J
MW-16	<5.09	0.0175 J	5.2	<1.0
Dup (MW-10)	<4.84	0	NA	NA
MCL ^j	30	NR ^k	1.0	NR
PHGs ^l	0.05	NR	0.3	NR

^a 2,3,7,8-TCDD: 2,3,7,8-Tetrachlorodibenzodioxin was analyzed in general accordance with EPA Method 8290A

^b pg/L: picograms per liter

^c 2005 WHO TEQ: 2005 World Health Organization's Toxic Equivalency Factor

^d Pentachlorophenol (PCP) and 2,3,4,6-Tetrachlorophenol (TCP) were analyzed in general accordance with National Council for Air and Stream Improvement, Inc. Method 86.07.

^e µg/L: micrograms per liter

^f <: "less than" the stated reporting limit

^g J: Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

^h **Bold** values indicate an exceedance of the MCL or PHGs.

ⁱ NA: not analyzed

^j MCL: maximum contaminant level, State Water Resources Control Board (March 13, 2019).

^k NR: no reference

^l PHGs: California public health goals, Office of Environmental Health Hazard Assessment (March 13, 2019).

Appendix 3 includes the complete analytical test results, chain-of-custody documentation, and laboratory quality control data.

4.3 Field Measured Parameters

Measurements for groundwater field parameters collected from site wells during the August 2023 sampling event are included in Table 3.



**Table 3. Field Measured Parameters, August 22-23, 2023
Former McNamara and Peepe Lumber Mill, Arcata, California**

Sample Location	DCO ₂ ^a (mg/L) ^b	DO ^a (mg/L)	ORP ^a (mV) ^c	EC ^a (umhos/cm) ^d	pH ^a (standard units)	Turbidity ^a (NTU) ^e
MW-1	170	0.27	31	372.3	5.79	4.07
MW-5	195	0.26	29	321.0	5.55	0.75
MW-7	100	2.22	35	109.6	5.61	1.13
MW-8	235	0.41	28	557.3	6.12	6.53
MW-9	150	0.32	30	247.1	5.82	0.41
MW-10	90	0.30	31	115.2	5.56	58.1
MW-11	140	1.93	31	209.6	5.09	2.50
MW-12	180	0.39	30	275.1	5.47	25.4
MW-13	210	0.34	33	399.2	6.00	11.61
MW-14	215	0.32	30	220.2	5.65	94.2
MW-15	250	0.66	30	275.7	5.72	285
MW-16	35	4.23	175	208.2	5.31	8.44

^a DCO₂: dissolved carbon dioxide, DO: dissolved oxygen, ORP: oxidation-reduction potential, EC: specific conductance, pH, turbidity, and temperature were measured using portable instrumentation.

^b mg/L: milligrams per liter

^c mV: millivolts

^d umhos/cm: micromhos per centimeter

^e NTU: Nephelometric turbidity unit

5.0 Summary of Results

The results of the August 2023 groundwater monitoring event at the former McNamara and Peepe Mill are summarized below.

- World Health Organization (WHO) 2005 toxic equivalency factors (TEQs) calculated using dioxin/furan concentrations were highest in monitoring well MW-1 at 48.3 pg/L. There is no maximum contaminant level (MCL) or California public health goal (PHG) reference for WHO 2005 TEQ.
- 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD) was not detected at concentrations above the reporting limit in any samples collected during the August 2023 sampling event.
- Chlorinated phenols:
 - PCP was detected at concentrations exceeding the state maximum contaminant level (MCL) of 1 microgram per liter (µg/L) in wells MW- 1, MW-5, MW-13, MW-14, MW-15, and MW-16.
 - The highest concentration of PCP detected in groundwater was in monitoring well MW-1 at a concentration of 400 µg/L, located southeast of the cap.
 - Chlorinated phenols were identified in newly installed site monitoring wells MW-15 and MW-16 located further downgradient of the cap but not in well MW-10 located on Glendale Drive.
 - TCP was detected in wells MW-1, MW-5, MW-14, and MW-15, at concentrations of 12 µg/L, 0.62 µg/L, 1.3 µg/L, and 0.54 µg/L, respectively.



The August 2023 monitoring event continued to show the highest PCP concentrations in groundwater are in well MW-1. Levels show a decrease by two orders within a short distance at recently installed well MW-15 (approximately 25 feet downgradient). Similar PCP levels were detected in the groundwater sample collected from well MW-16 on private property downgradient the cap. Testing results obtained from wells MW-15 and MW-16 are considered initial to assessing contamination in the area downgradient of the cap and future monitoring events will help further define the extent. Contaminant concentrations in site wells are generally consistent with historical trends with the highest levels near the cap. Low levels of phenols continue to be detected in wells located east of the cap by the old planer mill and presumably outside the influence of buried waste material.

6.0 References Cited

- Google Earth. (April 30, 2019). Aerial Photo of Arcata, California, 40°54'7.24"N and 124° 1'6.39"W. Accessed June 2021. NR:Google Earth.
- National Geographic Society. (2013). Topographic map Arcata, California. Accessed through ESRI i-cubed January 15, 2021. NR:National Geographic Society.
- Office of Environmental Health Hazard Assessment. (March 13, 2019). "California Public Health Goals." Accessed at: <https://oehha.ca.gov/water/public-health-goals-phgs>
- SHN. (2022). "Site Investigation Report of Findings, Former McNamara and Peepe Lumber Mill, 1619 Glendale Drive, Arcata, California." Eureka, CA:SHN.
- State Water Resources Control Board. (March 13, 2019). "Maximum Contaminant Levels," in Title 22 of the California Code of Regulations. Accessed at: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Chemicalcontaminants.html
- . (November 5, 2021). "Remediation Evaluation and Bench Scale Study Work Plan, Former McNamara and Peepe Lumber Mill, 1619 Glendale Drive, Arcata, California; EnviroStor ID: 12240115." Eureka, CA:SHN.
- World Health Organization. (October 2006). "The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds," Toxicol. Sci. Oxford OX2 6DP, UK:Oxford University Press.



Table 2-2 Historical Groundwater Elevations		
Well Name	Date	Groundwater Elevation (ft msl)
MW-1	4/8/1998	80.67
	7/8/1998	72.04
	1/26/1999	79.97
	7/14/1999	73.37
	4/13/2000	78.23
	10/19/2000	69.06
	6/7/2001	70.62
	12/26/2002	84.22
	12/12/2003	82.87
	3/15/2004	86.17
	6/10/2004	83.44
	1/28/2005	85.70
	8/3/2005	83.72
	1/11/2006	88.67
	1/24/2007	85.22
	6/7/2010	85.32
	10/18/2010	80.50
	11/3/2011	82.12
	4/11/2012	87.73
	5/13/2015	83.60
	11/10/2015	79.77
	5/23/2016	84.05
	12/14/2016	87.92
	5/8/2017	85.92
	8/22/2019	81.56
	3/5/2021	85.84
2/22/2022	83.71	
8/23/2022	80.75	
2/22/2023	85.67	
8/22/2023	80.26	
MW-5	1/12/1998	84.44
	4/8/1998	80.33
	7/8/1998	72.59
	1/26/1999	80.20
	7/14/1999	73.68
	4/13/2000	77.71
	10/19/2000	69.12
	6/7/2001	71.12
	12/26/2002	84.18
	12/12/2003	82.31
	1/28/2005	85.66
	8/3/2005	83.68
	1/11/2006	88.34
1/24/2007	85.36	

Table 2-2 Historical Groundwater Elevations		
Well Name	Date	Groundwater Elevation (ft msl)
MW-5 cont'd	6/7/2010	86.05
	10/18/2010	80.60
	11/3/2011	82.26
	4/11/2012	88.04
	5/13/2015	83.85
	11/10/2015	81.10
	5/23/2016	84.35
	12/14/2016	88.05
	5/8/2017	86.50
	3/5/2021	86.12
	2/22/2022	83.97
	8/23/2022	80.94
	2/22/2023	85.68
	8/22/2023	80.50
MW-7	1/12/1998	83.88
	4/8/1998	73.90
	7/8/1998	68.34
	1/26/1999	71.82
	7/14/1999	70.30
	4/13/2000	72.31
	10/19/2000	67.73
	6/7/2001	66.43
	12/26/2002	84.12
	12/12/2003	82.83
	1/28/2005	86.37
	8/3/2005	84.68
	1/11/2005	88.53
	1/24/2007	86.00
	6/7/2010	92.40
	10/18/2010	82.40
	11/3/2011	83.94
	4/11/2012	89.23
	5/13/2015	85.27
	11/10/2015	81.10
	5/23/2016	84.35
	12/14/2016	89.08
	5/8/2017	87.52
	8/21/2019	83.06
	3/5/2021	87.37
	2/22/2022	85.39
8/23/2022	82.43	
2/22/2023	86.87	
8/22/2023	81.36	

Table 2-2 Historical Groundwater Elevations		
Well Name	Date	Groundwater Elevation (ft msl)
MW-8	1/12/1998	84.73
	4/8/1998	81.24
	7/8/1998	73.72
	1/26/1999	81.99
	7/14/1999	75.73
	4/13/2000	78.87
	10/19/2000	71.06
	6/7/2001	72.74
	12/26/2002	85.14
	12/12/2003	88.46
	1/28/2005	89.50
	8/3/2005	85.08
	1/11/2006	89.91
	1/24/2007	87.87
	6/7/2010	no reading
	10/18/2010	no reading
	11/3/2011	no reading
	4/11/2012	no reading
	5/13/2015	87.56
	11/10/2015	84.64
	5/23/2016	87.32
	12/14/2016	90.14
	5/8/2017	88.24
	8/21/2019	82.91
	3/5/2021	88.41
	2/22/2022	87.49
	8/23/2022	82.33
	2/22/2023	88.28
8/22/2023	82.58	
MW-9	1/12/1998	86.88
	4/8/1998	83.50
	7/8/1998	81.21
	1/26/1999	82.48
	7/14/1999	81.14
	4/13/2000	82.19
	10/19/2000	78.90
	6/7/2001	79.70
	12/26/2002	86.30
	12/12/2003	85.68
	1/28/2005	89.26
	8/3/2005	87.85
	1/11/2006	90.89
	1/24/2007	89.04
	6/7/2010	92.55
	10/18/2010	89.70
	11/3/2011	88.52
	4/11/2012	93.38
5/13/2015	87.56	
11/10/2015	84.64	
5/23/2016	88.68	

Table 2-2 Historical Groundwater Elevations		
Well Name	Date	Groundwater Elevation (ft msl)
MW-9 cont'd	12/14/2016	91.56
	5/8/2017	90.66
	8/21/2019	83.81
	3/5/2021	90.93
	2/22/2022	89.37
	8/23/2022	86.84
	2/22/2023	90.61
	8/22/2023	86.99
MW-10	6/7/2010	84.55
	10/18/2010	89.70
	11/3/2011	81.32
	4/11/2012	85.91
	5/13/2015	82.21
	11/10/2015	79.50
	5/23/2016	82.29
	12/14/2016	89.95
	5/8/2017	84.71
	8/21/2019	81.01
	3/5/2021	84.58
	2/22/2022	83.02
	8/23/2022	79.80
	2/22/2023	89.15
8/22/2023	79.69	
MW-11	10/18/2010	81.50
	11/3/2011	83.47
	4/11/2012	86.50
	5/13/2015	83.90
	11/10/2015	81.73
	5/23/2016	84.45
	12/14/2016	87.46
	5/8/2017	85.55
	8/21/2019	82.18
	3/5/2021	85.51
	2/22/2022	84.34
	8/23/2022	81.24
	2/22/2023	86.13
8/22/2023	80.50	
MW-12	11/3/2011	82.10
	4/11/2012	87.81
	5/13/2015	83.53
	11/10/2015	79.68
	5/23/2016	83.98
	12/14/2016	87.93
	5/8/2017	85.98
	8/21/2019	81.55
	3/5/2021	85.93
	2/22/2022	83.75
	8/23/2022	80.76
	2/22/2023	85.51
8/22/2023	80.33	



Table 2-2 Historical Groundwater Elevations		
Well Name	Date	Groundwater Elevation (ft msl)
MW-13	2/22/2022	84.44
	8/23/2022	84.31
	2/22/2023	86.29
	8/22/2023	81.03
MW-14	2/22/2022	84.66
	8/23/2022	81.39
	2/22/2023	86.34
	8/22/2023	81.05
MW-15	8/22/2023	80.40
MW-16	8/22/2023	80.02



**Table 2-3
Groundwater Analytical Results
2015 to 2023**

Well Name	Date	PCP	YCP	Chromium	Hexavalent Chromium	Nitrate	Total Iron	Ferrous Iron	Arsenic	Sulfate	Chloride	TPHD	VOCs (DWPE)	
	Units			µg/L		mg/L	µg/L			mg/L			µg/L	
MW-1	5/13/2015	690 ^a	14	--	--	--	--	--	--	--	--	--	--	
	5/13/2015 (FD)	550 ^a	12	--	--	--	--	--	--	--	--	--	--	
	11/11/2015	610 ^a	120	--	--	--	--	--	--	--	--	--	--	
	11/11/2015 (FD)	670 ^a	120	--	--	--	--	--	--	--	--	--	--	
	5/23/2016	830 ^a	7.1	--	--	--	--	--	--	--	--	--	--	
	5/23/2016 (FD)	1,100 ^a	8	--	--	--	--	--	--	--	--	--	--	
	12/14/2016	1.2 ^a	<1.0	<5.0	<5.0	0.99	25	<100	<10	18	19	--	--	
	12/14/2016 (FD)	1.2 ^a	<1.0	--	--	--	--	--	--	--	--	--	--	
	5/8/2017	570 ^a	8.4	--	--	--	--	--	--	--	--	--	--	
	5/8/2017 (FD)	530 ^a	7.9	--	--	--	--	--	--	--	--	--	--	
	8/21/2019	1,200 ^a	29	--	<1.0	--	--	--	--	--	--	740 A)	1.7	
	3/5/2021	460 ^a	5.6	--	--	--	--	--	--	--	--	--	--	
	2/22/2022	520 ^a	9.7	--	--	--	--	--	--	--	--	--	--	
	8/23/2022	1300 ^a	<1,000 B9	--	--	--	--	--	--	--	--	--	--	
	2/22/2023	0.34 ^a	<1.0	--	--	--	--	--	--	--	--	--	--	
	8/23/2023	400	12	--	--	--	--	--	--	--	--	--	--	
	MW-5	5/13/2015	35 ^a	4.3	--	--	--	--	--	--	--	--	--	--
		11/11/2015	65 ^a	3.3	--	--	--	--	--	--	--	--	--	--
		5/23/2016	56 ^a	1.6	--	--	--	--	--	--	--	--	--	--
		12/14/2016	39 ^a	2.3	<5.0	<5.0	<0.10	330	600	<10	12	45	--	--
5/8/2017		45 ^a	2.3	--	--	--	--	--	--	--	--	--	--	
8/21/2019		--	--	--	--	--	--	--	--	--	--	--	--	
3/5/2021		18	<1.0	--	--	--	--	--	--	--	--	--	--	
2/22/2022		19	1.1	--	--	--	--	--	--	--	--	--	--	
8/23/2022		0.63	<1.0	--	--	--	--	--	--	--	--	--	--	
2/22/2023		9.5 ^a	0.65 J	--	--	--	--	--	--	--	--	--	--	
8/22/2023		4.6	0.62 J	--	--	--	--	--	--	--	--	--	--	
MW-7		5/13/2015	0.39	<1.0	--	--	--	--	--	--	--	--	--	--
	11/11/2015	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	5/23/2016	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	12/14/2016	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	5/8/2017	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	8/21/2019	<0.3	<1.0	--	<1.0	--	--	--	--	--	--	<5.0	<0.5	
	3/5/2021	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	2/22/2022	0.26 J	<1.0	--	--	--	--	--	--	--	--	--	--	
	8/23/2022	0.12 J	<1.0	--	--	--	--	--	--	--	--	--	--	
	2/22/2023	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	8/22/2023	0.17 J	<1.0	--	--	--	--	--	--	--	--	--	--	
	MW-8	5/13/2015	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--
11/11/2015		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
5/23/2016		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
12/14/2016		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
5/8/2017		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
8/21/2019		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
3/5/2021		<0.3	<1.0	--	--	--	--	--	--	--	--	--	<0.5	
2/22/2022		0.19 J	<1.0	--	--	--	--	--	--	--	--	--	--	
8/23/2022		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
2/22/2023		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
8/22/2023		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
MW-9		5/13/2015	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--
	11/11/2015	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	5/23/2016	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	12/14/2016	<0.3	<1.0	<5.0	<5.0	1.1	<15	<100	--	1.9	10	--	--	
	5/8/2017	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	8/21/2019	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	3/5/2021	<0.3	<1.0	--	--	--	--	--	--	--	--	--	<0.5	
	2/22/2022	0.21 J	<1.0	--	--	--	--	--	--	--	--	--	--	
	8/23/2022	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	2/22/2023	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	8/22/2023	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	MW-10	5/13/2015	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--
11/11/2015		<0.6	<2.0	--	--	--	--	--	--	--	--	--	--	
5/23/2016		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
12/14/2016		<0.3	<1.0	<5.0	<5.0	0.11	58	<100	<10	1.5	0.95	--	--	
5/8/2017		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
8/21/2019		<0.3	<1.0	--	<1.0	--	--	--	--	--	--	280 A)	<0.5	
8/21/2019 (FD)		<0.3	<1.0	--	<1.0	--	--	--	--	--	--	210 A)	<0.5	
3/5/2021		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
3/5/2021 (FD)		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
2/22/2022		0.12 J	<1.0	--	--	--	--	--	--	--	--	--	--	
2/22/2022 (FD)		0.26 J	<1.0	--	--	--	--	--	--	--	--	--	--	
8/23/2022		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
8/23/2022 (FD)	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--		
2/22/2023	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--		
2/22/2023 (FD)	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--		
8/22/2023	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--		
MW-11	5/13/2015	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	11/11/2015	0.67	<1.0	--	--	--	--	--	--	--	--	--	--	
	5/23/2016	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	12/14/2016	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	5/8/2017	1.9 ^a	<1.0	--	--	--	--	--	--	--	--	--	--	
	8/21/2019	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	3/5/2021	<0.3	<1.0	--	--	--	--	--	--	--	--	--	<0.5	
	2/22/2022	0.14 J	<1.0	--	--	--	--	--	--	--	--	--	--	
	8/23/2022	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	2/22/2023	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	8/22/2023	<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
	MW-12	5/13/2015	52 ^a	<1.0	--	--	--	--	--	--	--	--	--	--
11/11/2015		51 ^a	<1.0	--	--	--	--	--	--	--	--	--	--	
5/23/2016		120 ^a	<1.0	--	--	--	--	--	--	--	--	--	--	
12/14/2016		46 ^a	<1.0	<5.0	<5.0	0.13	<15	<100	<10	5.4	28	--	--	
5/8/2017		81 ^a	<1.0	--	--	--	--	--	--	--	--	--	--	
8/21/2019		110 ^a	1.7	--	--	--	--	--	--	--	--	--	--	
3/5/2021		120 ^a	<1.0	--	--	--	--	--	--	--	--	--	--	
2/22/2022		126 ^a	0.49 J	--	--	--	--	--	--	--	--	--	--	
8/23/2022		130 ^a	<100 B9	--	--	--	--	--	--	--	--	--	--	
2/22/2023		9.4 ^a	0.61 J	--	--	--	--	--	--	--	--	--	--	
8/23/2023		<0.3	<1.0	--	--	--	--	--	--	--	--	--	--	
2/22/2023 (FD)		0.27 J	<1.0	--	--	--	--	--	--	--	--	--	--	
8/23/2023	0.17 J	<1.0	--	--	--	--	--	--	--	--	--	--		
2/22/2023 (FD)	0.17 J	<1.0	--	--	--	--	--	--	--	--	--	--		
8/22/2023	0.42	<1.0	--	--	--	--	--	--	--	--	--	--		
MW-14	2/22/2022	85 ^a	--	--	--	--	--	--	--	--	--	--	--	
	8/23/2022	84 ^a	<10 B9	--	--	--	--	--	--	--	--	--	--	
	2/22/2023	48 ^a	<1.0	--	--	--	--	--	--	--	--	--	--	
MW-15	8/22/2023	57 ^a	1.3	--	--	--	--	--	--	--	--	--		
MW-16	8/22/2023	8.7 ^a	0.54 J	--	--	--	--	--	--	--	--	--		
	8/22/2023	5.2 ^a	<1.0	--	--	--	--	--	--	--	--	--	--	



P:\Eureka\2020\020189-M-P-Mill\GIS\PROJ_MXD\090_TechMemo\TechMemo_Fig3_SoilBorings.mxd USER: mrose DATE: 5/9/24, 3:01PM



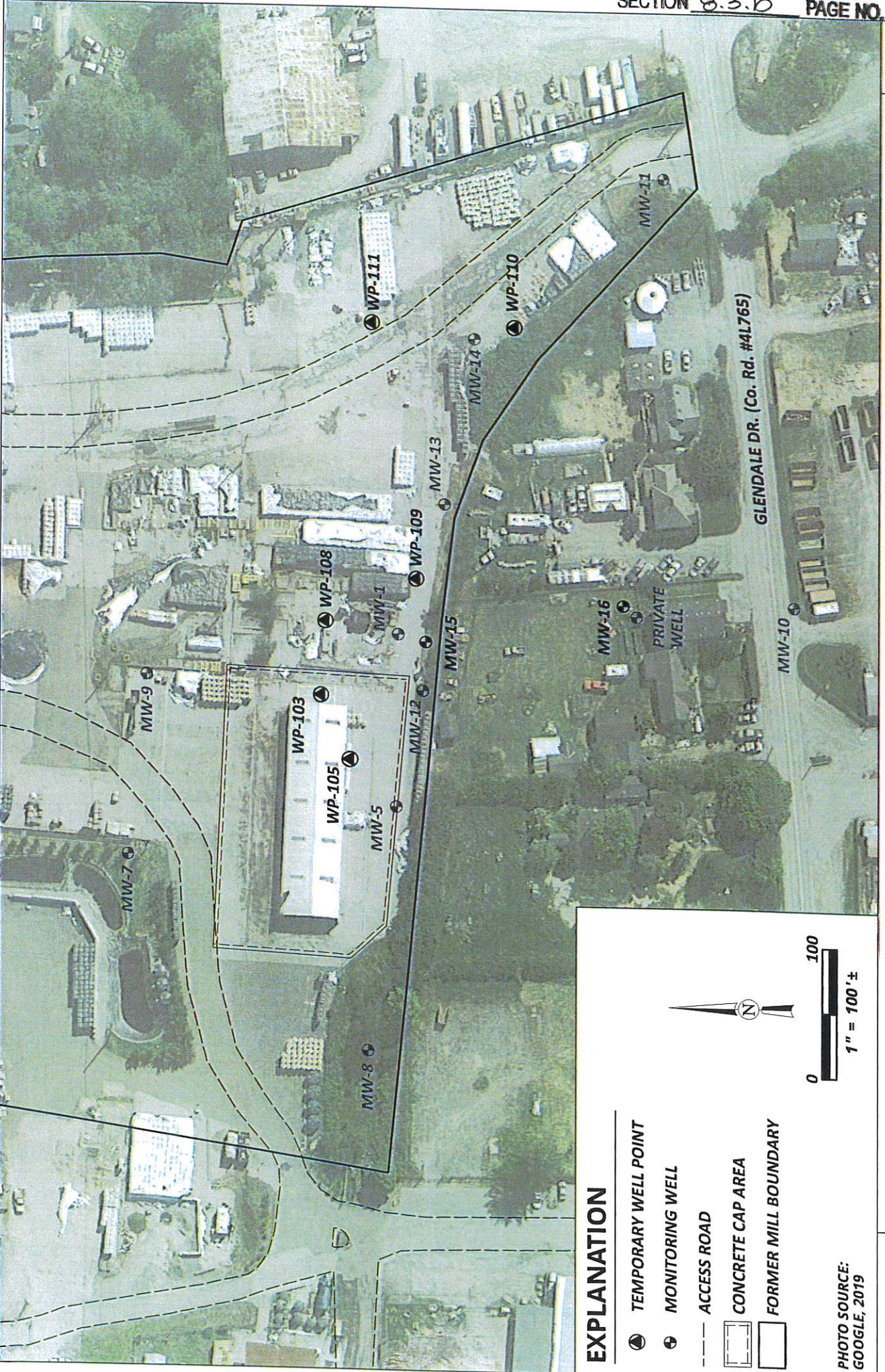
Former McNamara & Peepe Lumber Mill
 Technical Memo
 1619 Glendale Drive, Arcata, California

CAP Area Soil Boring Locations

May 2024 - 020189.090



P:\Eureka\2020\020189-M-P-Mill\GIS\PROJ_MXD\090_TechMemo\TechMemo_Fig4_WP_MWLocations.mxd USER: mrose DATE: 9/18/23, 8:44AM



EXPLANATION

- TEMPORARY WELL POINT
- MONITORING WELL
- - - ACCESS ROAD
- ▭ CONCRETE CAP AREA
- ▭ FORMER MILL BOUNDARY



PHOTO SOURCE:
GOOGLE, 2019

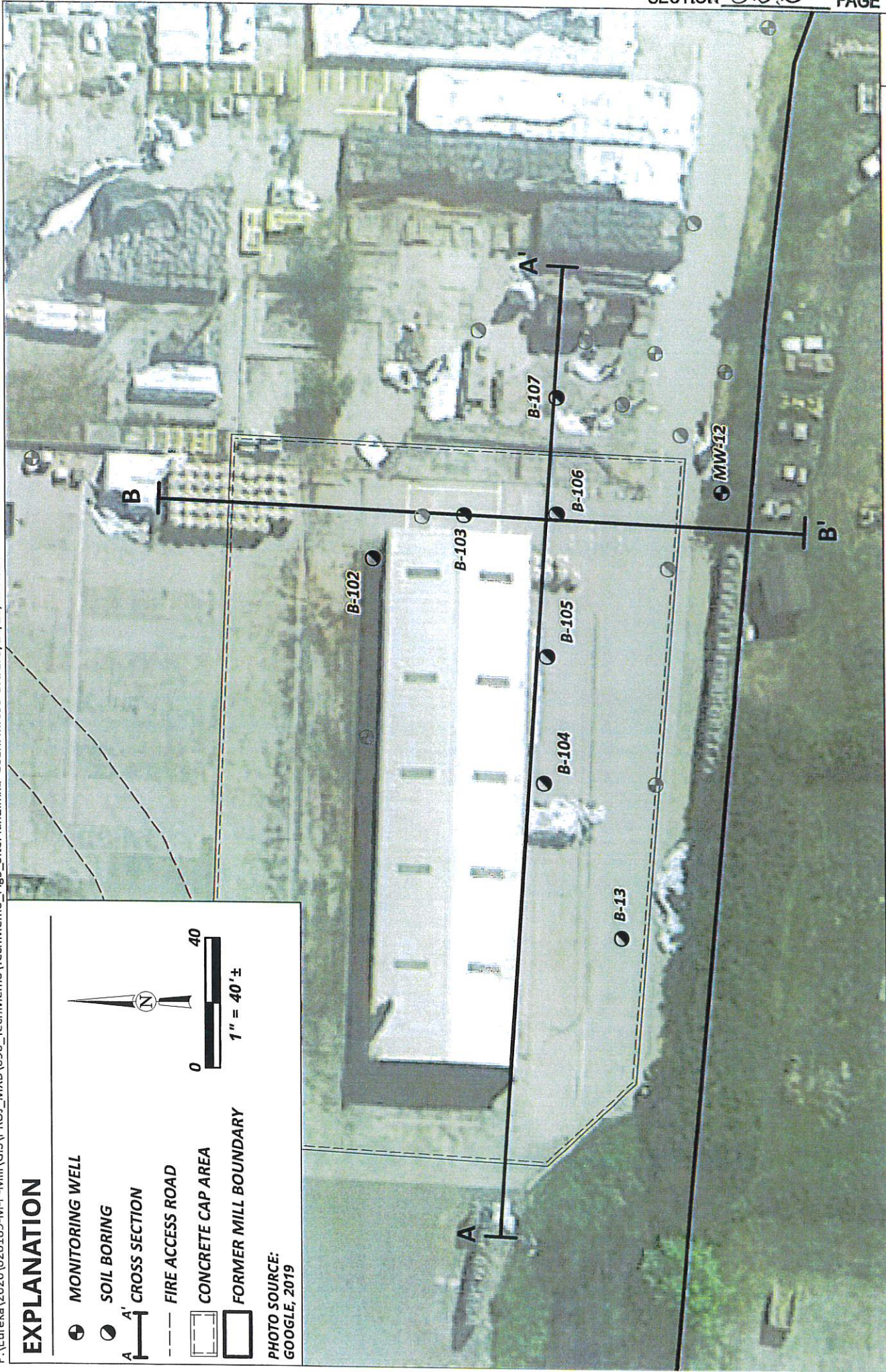
Former McNamara & Peepe Lumber Mill
Technical Memo
1619 Glendale Drive, Arcata, California

Well Point and Monitoring Well Locations

Figure 4



P:\Eureka\2020\020189-M-P-Mill\GIS\PROJ_MXD\090_TechMemo\TechMemo_Fig5_SitePlan2.mxd USER: mrose DATE: 9/14/23, 2:25PM



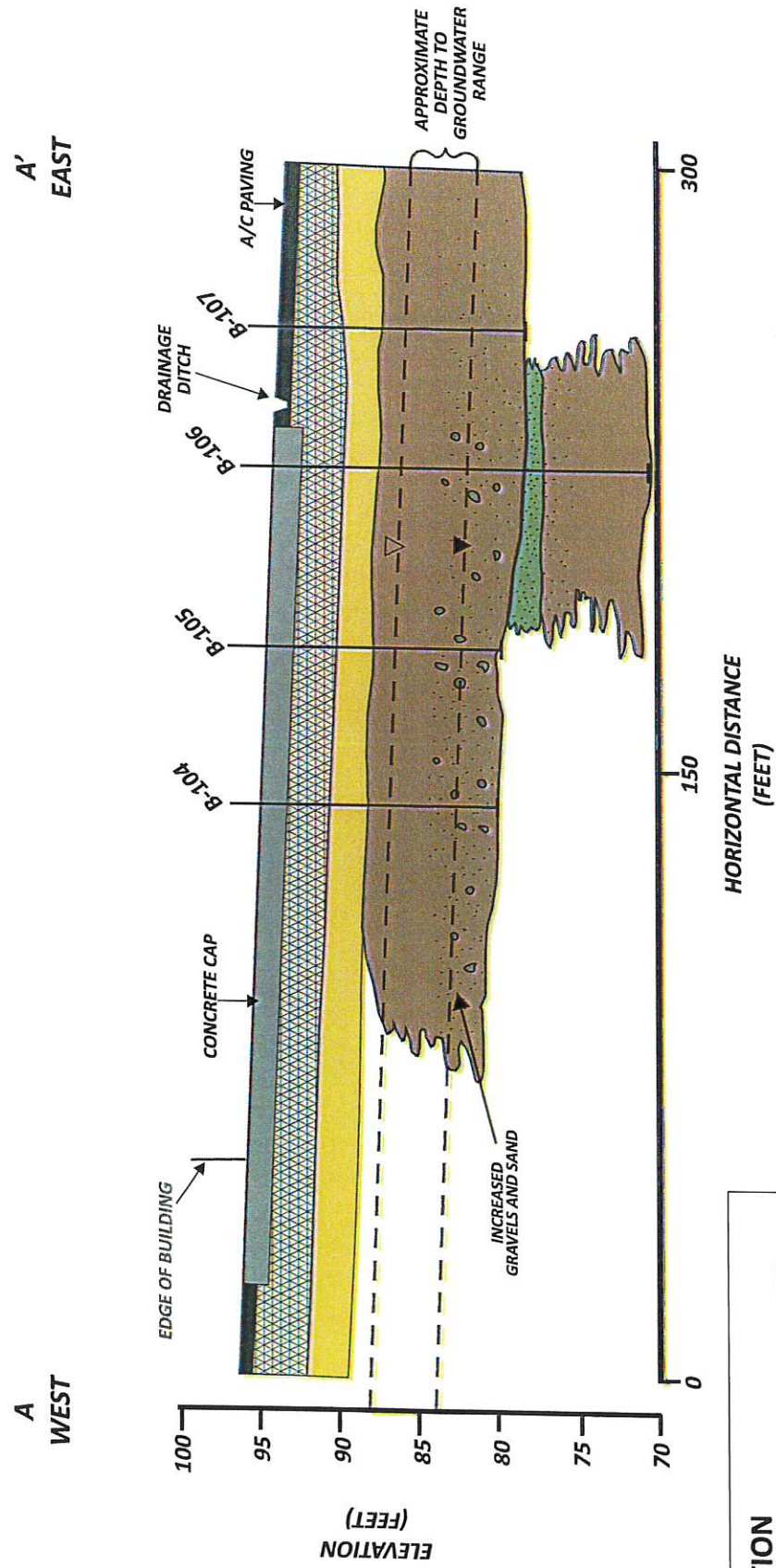
EXPLANATION

- ⊕ MONITORING WELL
- SOIL BORING
- A'—A CROSS SECTION
- - - FIRE ACCESS ROAD
- ▭ CONCRETE CAP AREA
- ▭ FORMER MILL BOUNDARY

PHOTO SOURCE:
GOOGLE, 2019



GEOLOGIC CROSS-SECTION A-A'

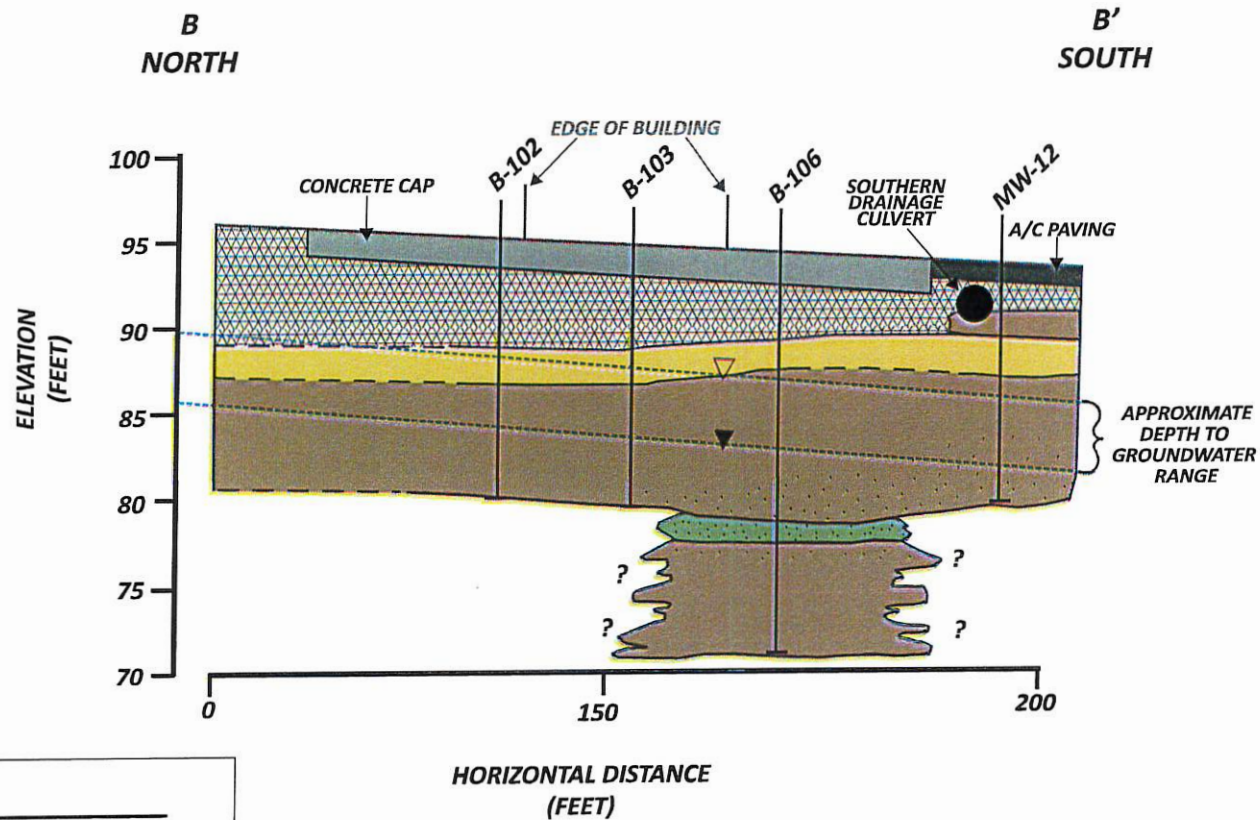


EXPLANATION	
	FILL
	CLAYEY SAND
	CLAY to CLAY with SAND
	SILT to SILT with SAND and GRAVEL





V.E. = 1:4



GEOLOGIC CROSS-SECTION B-B'



EXPLANATION

-  FILL
-  CLAYEY SAND
-  CLAY to CLAY with SAND
-  SILT to SILT with SAND and GRAVEL
V.E. = 1:4



Former McNamara & Peepe Lumber Mill
Technical Memo
1619 Glendale Drive, Arcata, California

Geologic Cross Section B-B'

Figure

September 2023- 020189.090

7

**NEW
BUSINESS**

gm@hbmwd.com

From: John Friedenbach <friedenbach@hbmwd.com>
Sent: Monday, January 27, 2025 8:20 AM
To: 'Michiko Mares'
Subject: FW: Follow up on installing a bike rack and garbage can at Powerpole site
Attachments: Untitled - January 27, 2025 08.08.jpeg

From: Carol Vander Meer <cvandermeer@rcaa.org>
Sent: Monday, January 27, 2025 8:19 AM
To: friedenbach@hbmwd.com
Cc: mares@hbmwd.com; Mason Rewerts <mrewerts@rcaa.org>
Subject: Follow up on installing a bike rack and garbage can at Powerpole site

Hi John,

Congratulations on your retirement and welcome Michiko. It is my understanding that the two of you are working together during the transition.

I wanted to follow up on a discussion you and I had in November about placement of a bearproof can, with a dog waste bag dispenser attached, and a bike rack at the powerpole site. We have a garbage can, and bike rack purchased through our Clean California grant and have identified our preferred location for installation at the powerpole site. The location is on the west side of your easement road (in order to not interfere with utility lines), inside the gate, just outside of the swing of the gate, but within view of visitors going to the beach. We feel this is a good site that would be easy to service, feel protected for cyclists and be available for people coming to and from the beach to deposit litter. The can and bike rack would be installed on a 3x8 concrete pad that would sit on top of the site. The pad would be purchased from Hilfiker. Chris Mikeleson at the Harbor District has agreed to have staff service it and Brent Parish could help install it. You mentioned this requires board action to approve. Back in November I emailed you asking how to proceed with getting it approved. I would still like explore if there is a pathway to move forward on this relatively simple improvement at this popular public access site. Attached is a picture of the proposed location.

I look forward to hearing back from you.

Carol

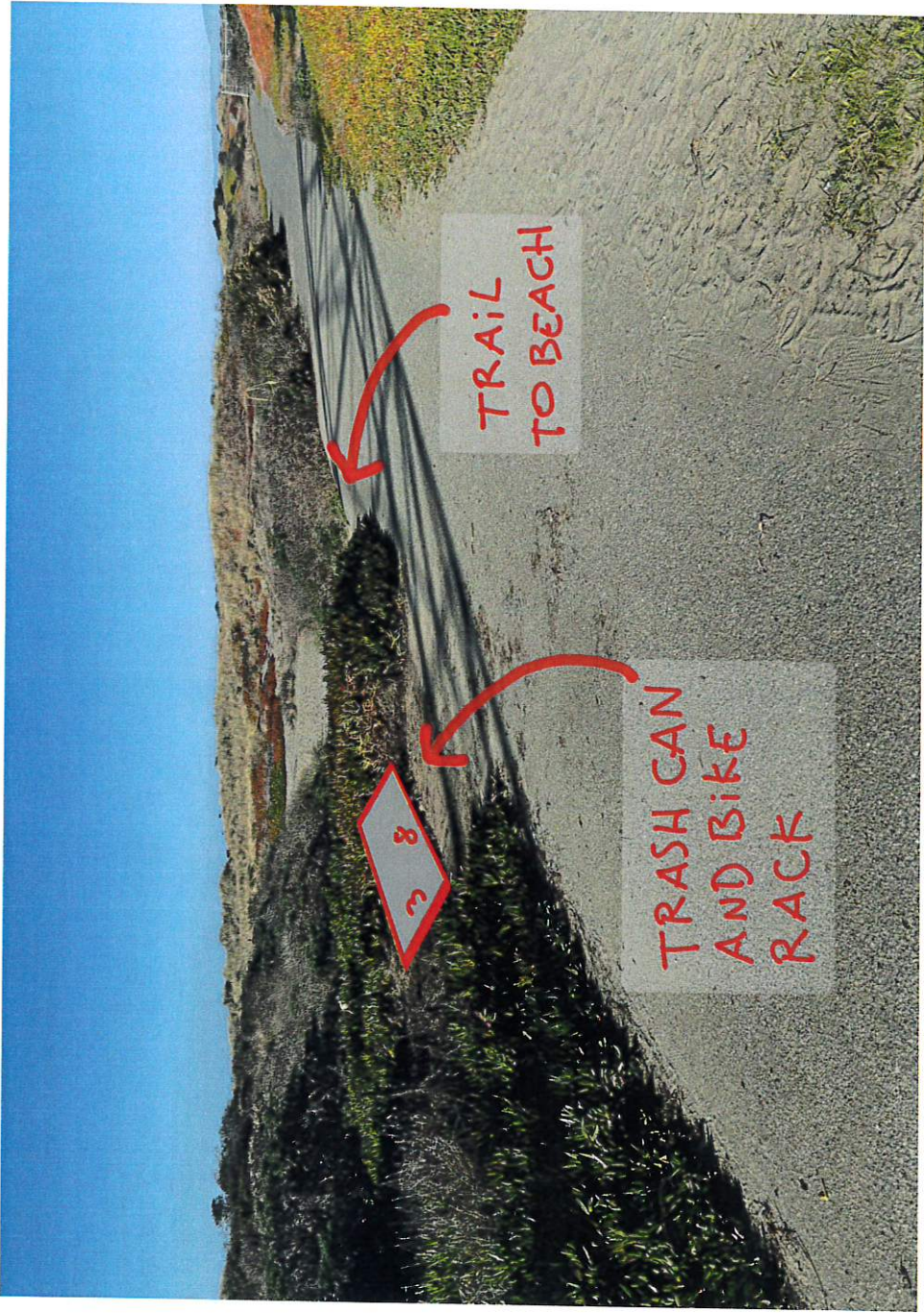
Carol Vander Meer, Projects Coordinator

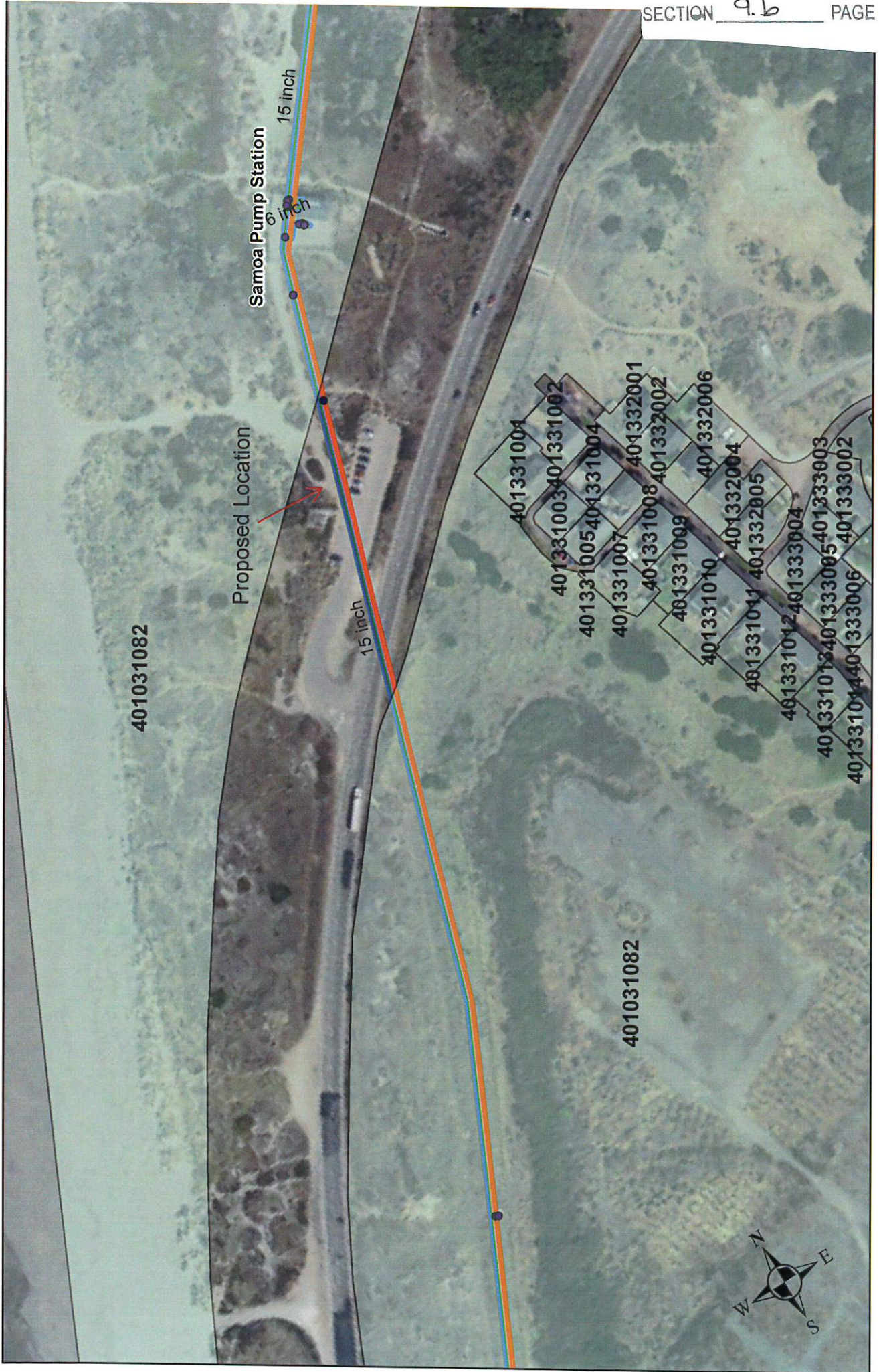
Redwood Community Action Agency

cvandermeer@rcaa.org

office: (707)269-2068

cell: (707)834-4113





 Humboldt APN

 Industrial

HBMWD's ROW @ Samoa Pump Station

All data, information, and maps are provided "as is" without warranty or any representation of accuracy, timeliness or completeness. The burden for determining accuracy, completeness, timeliness, merchantability and fitness for or the appropriateness for use rests solely on the requester. The Humboldt Bay Municipal Water District makes no warranties, express or implied, as to the use of the information obtained here. There are no implied warranties of merchantability or fitness for a particular purpose. The requester acknowledges and accepts all limitations, including the fact that the data, information, and maps are dynamic and in a constant

Humboldt Bay Municipal Water District

To: Board of Directors
From: John Friedenbach
Date: February 13, 2025
Re: Review of Ordinance 25

Discussion

In September 2024, California approved AB 2257, which established a procedure for an exhaustion-of-remedies, which if followed, may provide protections to the District when levying water rate fee changes. Government Code section 53759.1 establishes a list of procedural requirements for a public entity to follow in order to obtain the protections. An individual who did not timely submit written objection is barred from any claims of noncompliance.

To obtain the protections when increasing water rates, a public entity must do all of the following. Gov. C. § 53759.1(c):

1. Make available to the public the proposed fee or assessment no less than 45 days prior to the deadline for a ratepayer to submit an objection.
2. Post on its internet website a written basis for the fee or assessment.
3. In a written notice sent pursuant to subdivision (c) of Section 4 or paragraph (1) of subdivision (a) of Section 6 of Article XIII D of the California Constitution, additionally include a link to the internet website above.
4. Provide at least 45 days for a property owner to review the proposed fee or assessment and to timely submit a written objection to that fee or assessment that specifies the grounds for alleging noncompliance.
5. Consider and respond to written objection, including grounds for denial of objection, to any timely submitted written objections prior to the close of the protest hearing or ballot tabulation hearing required under Section 6 of Article XIII D of the California Constitution.

The draft Ordinance 25 contains the required language to provide the protections to the District when followed.

Recommendation and Action

Review and take public comment on the proposed Ordinance 25. Direct staff to incorporate any desired changes to Ordinance 25 and schedule for public hearing and possible adoption at the March 13th Board meeting.

Next Steps

If the Board approves the draft Ordinance 25, then the process would be:

1. Draft Ordinance reviewed and authorization for publication in Feb 2025.
2. Publication in newspapers during Feb/Mar.
3. Public hearing and possible adoption at March 13th Board meeting.
4. If adopted in March, Ordinance 25 becomes effective in April 2025.

Humboldt Bay Municipal Water District
Ordinance 25
Approved XX day of March, 2025

**ORDINANCE 25 – AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE
HUMBOLDT BAY MUNICIPAL WATER DISTRICT TO ADOPT
AN EXHAUSTION OF ADMINISTRATIVE REMEDIES PROCEDURE
FOR RATEPAYER OBJECTIONS TO PROPOSED WATER FEES
(Section 15501, et seq. of the California Public Utility Code)**

WHEREAS, Humboldt Bay Municipal Water District (District) provides retail water services to the residents of the District; and

WHEREAS, pursuant to section 71590 of the Government Code, the Board of Directors of the District has the authority to adopt by ordinance rules and regulations for the administration and operation of water provided by the District; and

WHEREAS, California law requires certain changes to water fees must be adopted or approved in accordance with procedures outline in Article XIII D, of the California Constitution, commonly referred to as "Proposition 218"; and

WHEREAS, Article XIII D, Section 6, establishes certain procedural requirements and substantive limitations a local public agency must follow to adopt a property related fee for water service; and

WHEREAS, the purpose of this ordinance is to provide a meaningful opportunity for a ratepayer to present an objection to a proposed new or amended water fee before resorting to litigation after the new or amended fee is approved; and

WHEREAS, this ordinance is intended to provide a procedure for ratepayers to bring an objection regarding a new or amended water fee to the District's attention early in the fee consideration process, and to provide an opportunity for the District to address or resolve any objections before the District's Board of Directors makes a final decision on whether to adopt a proposed water fee pursuant to Proposition 218; and

WHEREAS, this procedure will generally require the District to make available the proposed water fee, post the written basis for the proposed water fee on its internet website, provide 45-days for a property owner to review the proposed fee and timely submit to the District a written objection to the fee that specifies the grounds for alleging non-compliance, and require the District to consider and respond in writing timely submitted objections prior to the close the protest hearing or ballot tabulation hearing required under Section 6 of Article XIII D of the California Constitution; and

WHEREAS, for the purposes of the proposed water fee adopted by the District pursuant to Section 6 of Article XIII D of the California Constitution, a person or entity shall be prohibited from bringing a judicial action or proceeding alleging non-compliance with Article XIII D of the California Constitution for any new, increased, or extended water fee, unless that person or entity has timely submitted to the District a written objection to that fee that specifies the grounds for alleging non-compliance; and

WHEREAS, the Board of Directors hereby intends to adopt the exhaustion of administrative remedies procedure as outlined in Government Code Section 53759.1, and the administrative record principles contained in Government Code Section 53759.2.

NOW, THEREFORE, the Board of Directors of Humboldt Bay Municipal Water District does ordain as follows:

Section 1. Recitals. The District hereby finds and determines the above recitals are true and correct and are incorporated herein.

Section 2. Approval of Ordinance. The Humboldt Bay Municipal Water District Ordinance 25 to adopt an administrative remedies procedure for ratepayer objections to proposed water fees or special assessment, as described in Exhibit A, *EXHAUSTION OF ADMINISTRATIVE REMEDIES PROCEDURE FOR RATEPAYER OBJECTIONS TO PROPOSED WATER FEES*, attached hereto and incorporated by reference, is hereby approved.

Section 3. California Environment Quality Act Compliance. The District Board of Directors find, pursuant to Title 14 of the California Code of Regulations, Section 15061(b)(3), that this Ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) in that it is not a Project which had the potential for causing significant effect on the environment.

Section 4. Severability. If any provisions, section, subsection, sentence, clause, phrase, or sections of the Ordinance, or the application of same to any person, or set of circumstances, is for any reason held to be unconstitutional, void, or invalid, the validity of the remaining portions, provisions, or regulations contained herein shall not be affected, it being the intent of the Board of Directors in adopting the Ordinance that no portions, provisions, or regulations contained herein shall become inoperative, or fail by reason of the unconstitutionality of any other provision hereof, and all provisions of the Ordinance are declared to be severable for that purpose.

Section 5. Ordinance Effective Date. This Ordinance shall be in full force and effect thirty (30) days from and after the date of its adoption.

PASSED AND ADOPTED by the Humboldt Bay Municipal Water District Board of Directors on the XXth day of March, 2025 by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

I HEREBY CERTIFY that the foregoing Ordinance was duly INTRODUCED at a regularly held meeting of the Board of Directors of the HUMBOLDT BAY MUNICIPAL WATER DISTRICT on the 13th day of January, 2022, and was PASSED and ADOPTED by the Board of Directors of the HUMBOLDT BAY MUNICIPAL WATER DISTRICT on the XXth day of March, 2025.

ATTEST:

Michelle Fuller, President

J. Bruce Rupp, Secretary/Treasurer

EXHIBIT "A"
**EXHAUSTION OF ADMINISTRATIVE REMEDIES PROCEDURE FOR RATEPAYER
OBJECTIONS TO PROPOSED WATER FEES**

SECTION 1. OVERVIEW OF EXHAUSTION PROCEDURE

- A.** The exhaustion procedure shall include the following chronological steps and may run concurrently with the Proposition 218 process (further detail provided below):
- (1)** District board directs staff to send notice of the start of the exhaustion procedure to record owners and/or customers of record.
 - (2)** Ratepayers have no less than 45 calendar days to submit to the District written objections to the proposed rate which specify the grounds for alleging non-compliance with Article XIII D of the California Constitution.
 - (3)** District staff will review timely submitted written objections and draft a written response to the written objections. District staff will then present its findings and written responses to the District board for review and to determine whether action is needed in response to the written objections and staff responses or findings.
 - (4)** A summary of written objections and staff response will be presented prior to the start of a Proposition 218 protest hearing and prior to a final determination by the District board regarding whether to approve the proposed water rate.

SECTION 2. INITIATING EXHAUSTION PROCEDURE

- A.** Once a proposed water rate has been presented to the District Board of Directors, the Board shall also direct staff to compile and transmit to ratepayers an exhaustion procedure timeline with specific deadlines for each step of the exhaustion procedure specified below, in compliance with this ordinance.
- B.** The Board shall direct staff to post on the District's internet website a written basis for the fee or assessment.
- C.** The exhaustion procedure must conclude before the Proposition 218 protest hearing, but may conclude on the same day as the Proposition 218 protest hearing.

SECTION 3. EXHAUSTION NOTICE

- A.** The exhaustion notice shall include an overview of the exhaustion procedure, specify how ratepayers can submit written objections, provide the date and time by which those objections must be received by the District, specify when written staff response will be presented to the public, and identify the point of contact to whom the objections will be sent.

Humboldt Bay Municipal Water District
Ordinance 25
Approved XX day of March, 2025

- B. The exhaustion notice shall include a link to the internet website section which establishes a written basis for the fee or assessment.
- C. The exhaustion notice must include the amount of the fee or charge proposed, the basis upon which the amount is calculated, and the reason for the fee or charge.
- D. The exhaustion notice must notify ratepayers of the following or substantially similar terms:
 - (1) "The exhaustion procedure is separate from the Proposition 218 protest hearing. To participate in the exhaustion procedure, a written objection must indicate it is submitted as an objection in accordance with the exhaustion ordinance. Ratepayers who wish to submit a written protest for the Proposition 218 protest hearing must follow separate directions provided in the Proposition 218 notice letter."
 - (2) That all written objections must be submitted within the written objection period set by Humboldt Bay Municipal Water District pursuant to Government Code § 53759.1(c)(4) and failure to timely object in writing bars any right to challenge that fee or assessment through a legal proceeding.

SECTION 4. WRITTEN OBJECTIONS

- A. Ratepayers shall be given no less than 45-days, starting on the date the exhaustion notice is mailed, to submit written objections to the District regarding the proposed water rate.
- B. As stated above, to avoid confusion with written protests for the Proposition 218 process, a written objection must specify that it is submitted as part of the exhaustion procedure or in accordance with the exhaustion ordinance. All written objections shall state the specific grounds for concern with a proposed water rate and include a desired resolution or outcome. If the nature of the dispute is vague or unclear, the District board may request clarification. Objections shall include the name, phone number, street address, and e-mail address (if applicable) and preferred method of communication with the objecting ratepayer (also referred to as "objector").
- C. Any protest must be received by the District before the close of business on the stated deadline date, and a postmark will not be considered as sufficient. Verbal objections or written objections that are not received by the deadline specified in the exhaustion notice may be considered by the District Board with an offer of proof of extraordinary circumstances. The District Board has sole discretion to determine whether to consider those objections.

SECTION 5. STAFF RESPONSE

- A. At the close of the written objection period, District staff shall review timely submitted and otherwise compliant written objections in accordance with the requirements above and shall draft written responses to the written objections.
- B. District staff shall present the findings to the District Board at the board meeting that was specified in the exhaustion notice. The District Board, in exercising its discretion, shall determine whether further review is needed, whether the input gathered from written objections and the staff response warrant amendments to the proposed water rate, or whether to proceed to the Proposition 218 protest hearing.

Humboldt Bay Municipal Water District
Ordinance 25
Approved XX day of March, 2025

SECTION 6. CONCLUSION OF EXHAUSTION PROCEDURE

- A. Once the District Board has made its final determination as to any objection, it may proceed to the Proposition 218 protest hearing (as previously noticed in accordance with Proposition 218).

SECTION 7. RATE CHALLENGER MUST EXHAUST ADMINISTRATIVE REMEDIES

- A. No claim, suit for damages, suit for injunctive relief, petition for writ of mandamus, or administrative or judicial proceeding shall be brought against the District, the District Board, or its employees, officers, or designees, regarding a challenge to a proposed water rate unless the challenging party first exhausts its administrative remedies by complying with the exhaustion procedure specified above.
- B. A rate challenger who has sufficiently satisfies the exhaustion procedure specified above may continue by way of legal action only on the alleged grounds for non-compliance. The Court's review in such legal action is limited to the record of proceedings as follows:
- (1) Any cost-of-service or rate study or report, engineer's reports, agency staff reports, and related documents prepared by the agency with respect to the fee.
 - (2) Transcripts or minutes of the proceedings at which the decision-making body of the agency heard testimony or public comment on the fee or assessment, as well as any transcript or minutes of the proceedings before any advisory body to the local agency that were presented to the decision-making body before action on the fee or assessment.
 - (3) All notices issued by the agency for purpose of complying with Government Code Section 53759.1(c), to comply with the California Constitution, or with any other law requiring notice.
 - (4) All timely submitted written objections and local agency responses to those objections as described within Sections 4 and 5 of this Ordinance.
 - (5) All written evidence related to the fee or assessment submitted to, or transmitted from, the agency prior to hearing.
 - (6) Documentation of the agency's final decision on the fee or assessment, including any ordinance, resolution, rule, regulation, meeting minutes, or other record of decision.
 - (7) All protests, ballots, and records of the tabulation, protests, or ballots made in connection with the fee or assessment.
 - (8) All written evidence or documentation supporting the fee or assessment in the local agency's files prior to completion of the hearing.
 - (9) Other outside evidence, such as: Where the evidence is relevant to issues other than validity of the fee, such as petitioner's standing and capacity to sue; where the evidence is relevant to affirmative defenses, including, but not limited to, laches, estoppel, and res judicata; where the evidence is relevant to the accuracy and completeness of the administrative record certified by the local agency; where the evidence is relevant to the local agency's compliance with the procedures set forth in Government Code Section 53759.1(c); and where the evidence is

Humboldt Bay Municipal Water District
Ordinance 25
Approved XX day of March, 2025

necessary to explain information in the administrative record on the issue of compliance with Section 4 or subdivision (a) of Section 6 of Article XIII D of the California Constitution.

- C. The exhaustion of remedies procedure shall not preclude any civil action related to an agency's failure to implement a fee in compliance with the manner adopted by the local agency.

HUMBOLDT BAY MUNICIPAL WATER DISTRICT

To: Board of Directors
From: John Friedenbach/Contessa Dickson
Date: February 13, 2025
Subject: District's Safety Program

Once again it is time for our annual employee recognition regarding workplace safety. Dale and I will provide an overview of our program and accomplishments at our Board meeting. This memo provides a brief introduction.

PRIORITY AND PLACE

Achieving employee safety and public safety is a top priority for the District. I am pleased to work for an organization that values this objective and takes safety seriously.

The Board has adopted five goals that support our District Mission. Goal Number 1 is Safety and Public Health. It reads:

- Employ safe work practices to ensure worker and public safety at all times. Strive for no on-the-job reportable injuries each year.
- Operate the regional water system in accordance with state and federal safe drinking water laws and regulations at all times to protect public health.

The District has a "safety philosophy" as well as a strong safety program. The Board has consistently supported our safety philosophy and program.

COMPONENTS OF THE PROGRAM

Important components of the District's safety program are as follows:

- 1) Buy-in and support *from* Management. We need to set the standard and "walk the talk."
- 2) Buy-in and involvement *by* the employees.
- 3) A meaningful Injury, Illness, and Prevention Plan (this is a regulatory requirement).
- 4) An active Safety Committee that is listened to and supported. Our committee is comprised of the Superintendent, one Supervisor, and two employees (one from the Maintenance Department and one from Operations). Membership on the committee rotates each year. Attached for your information are minutes from the last safety committee meeting for you to see the issues that are addressed.
 - a. A meaningful training program. The District has an extensive training program that supports not only employee safety, but ongoing operations, and emergency response activities too. We use ACWA/JPIA's extensive "lending library" for training resources (such as DVDs, videos, and manuals), and we also use the North Coast Safety Consortium for local classroom training and other specialized or online training as necessary. Attached is this year's in-house safety training program which lists the training topic as well as the instructor.

- 5) Properly fitted and maintained Personal Protective Equipment (PPE) that is suited to the job. The District provides employees with the necessary PPE such as hard hats, safety glasses, hearing protection, respirators, self-contained breathing apparatus, and protective electrical gear to name a few. The District trains in PPE proper use and care. As a matter of policy, the District also reimburses employees for the cost of safety shoes appropriate to the position and provides District safety attire.
- 6) Other Resources – Safety Manual. The District has developed and maintains a comprehensive safety manual to guide work practices, as well as meet various regulatory requirements. The Table of Contents of our Safety Manual is attached for your information.
- 7) Coordination with Humboldt County Public Health, Cal OES, and OSHA for upgraded safety protocols.
- 8) Recognition – The District instituted a safety incentive/reward program for full-time regular employees. The District pays \$200 incentive to each current employee who has been employed for at least six months and meets the criteria listed below. The District also awards one grand prize of \$500, based on a drawing of all eligible employees. This year, **Justin Natividad** is the grand prize winner.

Criteria to be eligible for incentive award:

1. Participate in at least seventy-five percent (75%) of monthly safety meetings during the calendar year. For newly hired employees that meet the eligibility requirements, the percentage applies to eligible monthly safety meetings.
2. Wear appropriate PPE when required on the job.
3.
 - 3a. Provide one safety awareness or preventative suggestion to the supervisor and have it documented at a safety meeting or with the Safety Committee.
 - 3b. Report an incident or near-miss incident or unsafe conditions.
 - 3c. Receive a “satisfactory” rating on the annual performance evaluation under the “Safe Practices” category.

One of
3 per
calendar
year

I am proud of the “safety culture” developed at the organization, and the results we have achieved. We have employees who “think about” safety and routinely employ safe work practices. Additionally, the District participates in ACWA/JPIA’s Commitment to Excellence Program and H.R. LaBounty Safety Award Program. We continually strive for the implementation of best practices to prevent injuries and claims.

I would also like to acknowledge that Dale Davidsen, our Superintendent, Chris Merz our Assistant Maintenance Supervisor, and Chris Harris our Business Manager, who are instrumental in the continuation of the safety culture that exists within the organization today along with all of our employees who work safely every day. The entire staff continues to promote and grow this safety awareness.

Once again, Dale, Chris and I wish to thank the Board for your support in this area. Your support truly makes a difference.

Attachments:

ACWA/JPIA H.R. LaBounty Safety Award – Spring 2024

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Workplace Illness and Injury Prevention Program
Safety Committee Meeting

Minutes

Date: January 21, 2025

1. **Meeting** called to order at 0902hrs.
2. **Members** Attending: Dale Davidsen
Larry Raschein
Ethan Schillinger
Chris Merz
3. **Minutes** were approved from Meeting 24_4 on October 22, 2024. M/S/C CM/ES/All

Old Business:

- A. It has been brought to attention that the District's "Contractor Pre-Work Checklist" could be updated to reflect more current safety policies and safe work practices. *(This form has been created, and will be compared to a template received from JPIA. A final draft will then be completed after review. NLT-1-23-24, 4-16-24, 7-16-24, 10-15-24, 1-21-25, 4-25-25)*
- B. It has been observed that some of the District's Safety Manual policies and procedures on various topics could be revised or updated. A list of these policies and procedures will be created by the Safety Committee. *(With the assistance from others within their departments, committee members will update the following policies and procedures: The updates requested for the Hazardous Materials Plans & Other Emergency Plans have been submitted for Dales review. The Operations Plan for Domestic Water Supply, TRF & Distro System updates have also been submitted for Dales review and will need Board approval to be published. The District Valve Book has been reviewed and it has been determined that future updates and revisions will be done in GIS Map Books. NLT-Until all necessary changes are met, changes are in progress.)*
- C. Discuss the District's facility safety inspection forms with new safety committee members and assign locations for inspections. Forms will be completed by the October meeting and open for review. *(Inspections of District facilities have been assigned. Ethan will do the Main Office and Ruth Bunkhouse, Larry will do Essex, TRF and Ruth Headquarters. NLT-10-21-25)*
- D. It was noted during recent use of Pump Station # 6 that there is a lot of clutter that could be moved or stored elsewhere. *(The Maintenance Department is aware of the situation. A smaller pump motor that was inoperable was taken to the local scrap yard for return revenue. The remaining electric motors will be listed on a government surplus website. NLT-1-23-24, 4-16-24, 7-16-24, 10-15-24, 12-31-24, 4-25-25)*

- E. During construction of the solar project at the Main Office, it was brought to attention that having a permanent fixed ladder between the two levels on the exterior of the building could eliminate a potential fall injury. *(This topic has become an approved budget project for this fiscal year. Chris has ordered the ladder and the Maintenance Department is currently installing it. NLT-7-1-25)*
- F. Jasson suggested installing emergency flashing strobes on fleet vehicles that don't currently have any. Units: 7, 11 & 15 would be the vehicles needing strobes. *(Strobes have been purchased and installation is currently in progress. Chris has submitted a form for a Risk Control Grant through JPIA for potential reimbursement of this purchase. NLT-4-16-24, 7-16-24, 1-21-25, 4-25-25)*
- G. It was brought to attention that having an AED at the Ruth Bunkhouse would be a good idea to help out in an emergency situation, since EMS response could take a while. *(Chris has purchased AED and will be installing in the near future. NLT-10-15-24, 12-31-24, 4-25-25)*
- H. A suggestion of upgrading all exterior eyewash stations to ones that don't have flaps to avoid cross contamination with bird droppings. *(A new covered eyewash station has been purchased and installed outside of the TRF Laboratory. Another station will be purchased and installed outside Essex OSHG Building, once project is completed. NLT-Pending project completion)*
- I. The dock catwalk at Ruth Headquarters has a reported gap in the hinge point between the two walkways that is a hazard. *(This problem has been investigated and a temporary fix has been deployed. A permanent repair will be completed when the lake level is lower. NLT-7-24-25.)*
- J. During recent spillway repairs, a suggestion of mounting a removable davit arm hoist on the spillway bridge was made. A resource like this would help mitigate a potential injury from lowering and lifting heavy objects during spillway jobs. *(The committee supports this idea, research will be done on if and where it could be mounted with consulting from GHD. This will be developed as a possible budget project for next year.) NLT-6-1-25*
- K. A recent survey of District traffic control supplies revealed that there is a need to refresh and replenish some of the Districts inventory. *(New cones have been purchased, other items such as purchasing additional barricades will be made into a budget project due to cost.) NLT-6-1-25*
- L. The Maintenance Department would like to purchase forklift extensions for the Districts forklift. Extensions would help safely unload, load and transport awkward objects. *(Forklift extensions will be a proposed budget item for next fiscal year. NLT-6-1-25)*

New Business:

- A. With the upgrade of the new Lockout Tagout Station in the Electrical Shop it was mentioned that the TRF Laboratory and Ruth Hydro could use a similar kind of station, along with the addition of a cache of breaker lockout devices. *(Chris will get cost estimates and submit to Dale for approval. NLT-4-25-25)*
- B. Ruth Hydro could use a taller A-Frame ladder to safely work on various equipment in the plant. A larger light-weight aluminum ladder with leveling feet would be also ideal for spillway work and potentially reduce the risk of injury, since it has to be packed down and uphill on the Spillway access trail. *(Dale approved purchase of both ladders, one will be charged to Hydro and the other one to Ruth. NLT-4-25-25)*
- C. The purchase of some additional portable lighting was suggested for Ruth Hydro. This new lighting would aid in repairs on equipment and also act as emergency escape lighting if needed. Larry mentioned that a battery powered light stand would also be beneficial for certain repairs. *(The committee agreed that additional lighting would be a good idea and this item would turn into a potential budget project depending on costs. NLT-6-1-25)*
- D. During recent removal and repairs to a hydraulic accumulator at the Hydro Plant, a discussion of how to make this process easier and safer was brought to attention. Thoughts of relocating some of the accumulators or developing a "means" of removal were discussed. *(Dale will discuss this item further with Larry and other supervisors to figure out a solution to this problem. NLT-4-25-25)*
- E. Larry suggested purchasing and installing an AED defibrillator for unit #6, since he travels to remote locations and could be in an emergency situation where EMS response could take a while. *(This item was approved by the committee and the purchase will become a budget project for the next fiscal year. NLT-6-1-25)*

M. **Meeting** adjourned: 0948hrs.

N. **Next** meeting scheduled for April 25, 2025.

Prepared by: Chris Merz

Copy: General Manager
Superintendent
Maintenance Supervisor
Operations Supervisor
Bulletin board (Essex & Ruth Hydro) and file

Safety/Training Program 2025

This is the Safety and Training schedule for 2025. The training subjects that are not listed as annual subjects have been reviewed to assure that they meet their recurring dates according to the Districts Safety Training Matrix and Cal OSHA regulations. Meetings will be scheduled well in advance to prepare all personnel in order to attain maximum participation. These classes will be scheduled in the Superintendent's Planner for 2025 for everyone's reference.

January

Presenter:

Code of Safe Practices (WIIP): Annual

Dale

Reference Material: HBMWD Policy. A review of JPIA risk assessment of work related injuries and possible case cause corrective actions.

Class Time: 1 hour

EAP Overview-Dam Safety Plan: Annual

Dale

Reference Material: HBMWD Policy and procedure

Class Time: ½ hour

Generator Air Quality Permit Requirement: Annual

Mario/Paul

Reference Material: AQMD Permits

Class Time: ½ hour

February

Presenter:

Respirator Safety/Fit Testing: Annual

Chris

Reference Material: District Safety Manual & 3M training video.

Fit test for each employee.

Class Time: 2 hours

Hearing & Respiratory Exams: Annual

Darcey/Occu. Health

March

Presenter:

Electrical Safety: 3yrs

Dave & Josiah/JPIA

Reference Material: Review of practices & safety procedures to avoid exposure. NTT training manuals. Brief video on subject.

Class Time: 1.5 hours

Fall Protection Training: 2yrs

Chris/JPIA

Reference Material: PowerPoint presentation and video clip from Guardian Fall Protection.

Class Time: 1 hour

Scaffold & Manbasket: 3yr
 Reference Material: District safety manual and PowerPoint
 Presentation and short video.
 Class Time: 1 hour

Chris

Heat Illness Prevention Program: Annual
 Reference Material: Review of HBMWD new policy,
 including indoor regulations changes. PowerPoint
 Presentation and JPIA training video
 Class Time: 1 hour

Chris/JPIA

Slips, Trips & Falls: 3yrs
 Reference Material: Review of Districts code of safe work
 practices. PowerPoint presentation on material and short video.
 Class Time: 1 hour

Mario/Paul

April

Presenter:

Confined Space/Gas Detectors: Annual
 Reference Material: Review of HBMWD policy,
 & a PowerPoint presentation.
 Class Time: 1 hour

Ryan/Electrical

May

Presenter:

Chlorine Leak Response/Cl2 Leak 'B' Kit: Annual
 Reference Material: HBMWD Policy and procedures. PowerPoint
 presentation on system & equipment. Run possible response scenario.
 Class Time: 2 hours

Chris/Ryan/Mario/Paul

June

Presenter:

None

None

July

Presenter:

None

None

August**Presenter:****Forklift Safety:** Annual

Chris

Reference Material: PowerPoint presentation on forklift function,
review of operations manual and drive test of training course.

Class Time: 2.5 hours

September**Presenter:**

None

None

October**Presenter:****Trench and Excavation Safety:** Annual

Ryan

Reference Material: PowerPoint presentation on safe practices
and procedures. Review of HBMWD shoring equipment.

Class Time: 1 hour

Bloodborne Pathogens: Annual

Chris

Reference Material: Review of District exposure control plan.
PowerPoint presentation and video on subject.

Class Time: 1 hour

Rigging Safety: Annual

Justin/Keith

Reference Material: NCCCO Crane operator training
handbook/PowerPoint presentation

Class Time: 1 hour

November**Presenter:****Traffic Control:** Annual

Ryan

Reference Material: Cal Trans Reference Book,
PowerPoint presentation and review of District equipment

Class Time: 1.5 hours

Workplace Ergonomics: Annual

Mario/Paul

Reference Material: PowerPoint presentation on ergonomics in the
field and office. Short video demonstrating key points.

Class Time: 1 hour

Asbestos & Silica Handling: Annual

Chris

Reference Material: Review of HBMWD safety manual
policy, procedures & exposure control plan. Training video also.

Class Time: 1 hour

December

Presenter:

ISI/Sperian SCBA Training: Annual

Tim/Ian

Reference Material: PowerPoint presentation on subject matter and review of District safety policy & user's manuals.

Class Time: 2 hours

S.D.S./Right to Know/Spill Prevention: Annual

Chris

Reference Materials: District safety manual, response plans & PowerPoint presentation on subject matter.

Class Time: 1 hour

Note: Staff will be attending sexual harassment at NCSC or online through JPIA's online training site.

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
 SAFETY TRAINING
 EUREKA OFFICE STAFF
 2025 ATTENDANCE

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Borghino, Corey												
Dickson, Contessa												
Friedenbach, John												
Harris, Chris												
Mares, Michiko												
Quinn, Darcey												
Sobol, Keisie												
Sobol, Sherrie												
Fire Extinguisher inspection												

Safety awareness, preventative suggestion, report of incident, near miss, or unsafe condition:

TABLE OF CONTENTS

General Policies/Plans

1. Workplace Illness & Injury Prevention Program
2. Code of Safe Practices
3. General Emergency Action Plan for Each Facility (including fire protection component)
4. OSHA Inspection Procedures

Hazardous Materials/Chemicals Plans

5. Hazard Communications Program
6. Chemical Hygiene Plan
7. Chlorine Emergency Procedures
8. Process Safety Management (for chlorine system)
9. Risk Management Plan (for accidental release of chlorine)
10. Chlorine Leak Emergency Action Plan Flowchart
11. Evacuation Map for Essex Control
12. Chlorine Leak Decontamination Procedure

Safe Work Practices and Procedures

13. Respiratory Protection Program
14. Silica Exposure Plan
15. Confined Spaces Policy & Procedures
16. Energy (Lockout) Policy
17. Hot Work Permit
18. Heat Illness and Prevention Program
19. Bloodborne Pathogens Exposure Control Plan
20. Sharps Injury Log



H.R. LaBounty Safety Awards Nomination Form

Nomination Deadlines:

Spring Awards: February 1, 2024

Fall Awards: September 2, 2024

Agency: Humboldt Bay Municipal Water District

Project/Initiative Title: Installation of articulating jib boom for Ditch Witch vacuum trailer

Implementation Date: 1/23/2023

Cost to Implement: \$2,573.00

Staff Time Required: 40hrs

Number of Employees/Facilities Impacted: 22

Employee/Department/Committee Nominated:

Name(s): Essex Staff

Job Title/Department: Maintenance & Operations

Nomination Summary

Write a brief summary of your project/initiative. Clearly state the problem/hazard recognized by the nominee and the specific reasons that they initiated corrective action.

The purpose of this safety project was to help eliminate a potential back or bodily injury (workplace ergonomics) while operating the District's vacuum trailer during field work. The risk for exposure to potential bodily injury was presented to our District's SB-198 Safety Committee for consideration. To reduce the risk of this injury exposure, it was proposed that the District purchase and install an overhead articulating support boom for the excavation suction line on the trailer. The current excavation line has no controlling support other than the operator using their body to support and manipulate the weight of the suction hose. In some instances, this excavation line can become cumbersome and unruly to control due to the high vacuum suction that the unit puts out. The new overhead boom would provide additional support for the operator while using the equipment and reduce and/or eliminate poor ergonomic movements and body strains.

Describe the specific actions taken to resolve the problem(s) or challenge(s). Share the best practices that made this initiative successful for the agency and its impact.

The action taken to resolve the problem was to identify the proper fix for the issue. Through research, it was noted that the manufacturer made excavation suction support booms for other models of vacuum trailers that they produced. After contacting the manufacturer about our application, an appropriate boom was agreed upon and purchased with the understanding that we would have to fabricate our own mounting bracket to the trailer. Once the boom was received, fabrication of the mounting plate and bracket began. Within a couple days our talented staff completed the fabrication of the mounting plate and support bracket. It was field tested after being installed on the trailer along with the boom.

State whether the hazard was reduced with engineering controls, introduced a new administrative or work procedure, or relied on personal protective equipment to solve the problem.

A potential back or bodily injury was reduced with engineering controls adapted to an existing piece of equipment.

Describe any extraordinary circumstances that made this nominee's safety accomplishments significant. Describe whether the nominee influenced safety in the workplace, encouraged employee participation in safety efforts, obtained organizational "buy in" to implement the solution.

There is not a specific nominee for this submittal. This was recognized as potential safety hazard risk by the staff and supervisors here at HBMWD. A joint effort from multiple talented team members helped develop a solution to reduce the potential ergonomic/strain injury by fabricating a piece of equipment more ergonomically sound to operate. As always, I believe that all members of HBMWD have the "buy in" participation in all safety efforts and this project reflects that philosophy and esprit de corps.

Describe whether the project/initiative addressed a hazard or exposure included in the JPIA Commitment to Excellence Program.

I believe that this initiative did address the hazard of basic field ergonomics in the JPIA Commitment to Excellence Program.

Office/Field Ergonomics

Vehicle Operations

Slip/trip/falls – falls from heights

Emergency Readiness/Wildfire Prevention

Other:

List and attach any supporting materials that you feel are important for the reviewers to gain a complete picture of the nomination. Digital photos, supporting documentation, sample forms, etc.

See attached photos

Nominated by: Chris Merz

Date: 1/30/2024

General Manager: John Friedenbach

Date: 1/30/2024

Please email this form with supporting documents and digital photos (jpg) to tlofing@acwajpia.com.



Boom Installed on trailer



Mounting bracket fabrication



Mounting bracket fabrication



Mounting bracket fabrication



Mounting bracket installed



Boom deployed during operation, notice how it supports the vacuum line above the operator.



Boom not deployed, notice all the weight of the suction line is on the operator's shoulders.

ENGINEERING



CHANGE ORDER

PROJECT: Samoa Reservoir
Seismic Retrofit Project

Change Order No.: 01
Supplement No.:01
Date: 2/6/25

Supplemental Change Order No:01

This supplement to CCO1 corrects the incorrect values listed in the "Adjustment of Contract Sum" table located on page 3 of 6 in the original CCO1. This supplement does not change any contract values, it only serves to correct the clerical error identified on CCO1.

The Adjustment of Contract Sum Table in CCO1 shall be replaced with the "Adjustment of Contract Sum S1" table below.

In the interest of partnering, this supplement to CCO1 is adding an additional 17 calendar days to the contract. These 17 non-compensable days are being granted for the extra time that was taken during exploration of the tank replacement option. See "Adjustment of Contract Completion Dates S1 (Calendar Days)" table below.

Adjustment of Contract Sum S1	
Original Contract Sum	\$2,357,200.00
Prior Adjustments	\$0
Contract Sum Prior to this Change	\$2,357,200.00
Adjustment for this Change	-\$22,733.63
Revised Contract Sum	\$2,334,466.37

Adjustment of Contract Completion Dates S1 (Calendar Days)	
Original Completion Contract date	6/7/2025 (CCO 1)
Prior Adjustments in Calendar	18 (CCO1)
Adjustment in Calendar Days for this change Order	17
Revised Contract Completion Date	6/24/2025

RECOMMENDED BY:

Nathaniel Steen

2/6/25

Resident Engineer – Nathaniel Steen

Date

Nathan Steen

2/6/25

Engineer – Nathan Stevens

Date

APPROVED BY:

Owner – John F Friedenbach, General Manager

Date

ACCEPTED BY:

Contractor – Shane P, Wombles, President – Paso Robles Tank

Date

CalOES/FEMA HMA Application Review Summary
Technical Feasibility and Cost-Effectiveness

Guidance and Instructions to Subapplicants

This **Benefit-Cost Analysis Request for Information** is provided to mitigation grant program subapplicants to provide feedback on the benefit-cost analyses they have submitted to address the cost-effectiveness requirement for FEMA's Hazard Mitigation Grant Program. The sections below provide context, reviewer comments, suggestions and requirements for addressing the RFI.

- Information in black text is context and a general evaluation of the material being reviewed.
- Information in blue text are OES requirements that must be addressed by subapplicants in responding to this RFI.
- Responses to comments are in red and follow each comment.

Note: OES **REQUIRES** that when responding to this RFI, subapplicants indicate what changes have been made to the BCA based on OES requirements and recommendations. Simply add this information to the cells below the OES notes – these cells are indicated by light green shading. Each OES requirement (indicated in blue text) MUST be addressed when responding to this RFI. Thank you.

Project Identifiers and Review Tracking (OES use ONLY)	
Project Number	DR4407-PJ0701
Tracking Number	N/A
Project Title	HBMWD Collector Mainline Redundancy
Project Type	Seismic Mitigation
Jurisdiction	Humboldt Bay Municipal Water District (HBMWD)
Software/Methodology	Damage-Frequency Assessment
1st Review Date	09/20/2019
1st Review Initials	KAR

Project Identifiers and Review Tracking (OES use ONLY)	
1 st Subapplicant BCR	11.84
1 st RFI BCA Recommendation	Revise BCA in accordance with the requirements indicated below.
2 nd Review Date	12/13/19
2 nd Review Initials	KAR
2 nd Subapplicant BCR	2.28
2 nd RFI BCA Recommendation	All requirements have been satisfied.
3 rd Review Date	
3 rd Review Initials	
3 rd Subapplicant BCR	
3 rd RFI BCA Recommendation	
Final Determination	12/13/2019: BCA accepted as submitted. Final BCR is 2.28.

BCA Review	
Project Type/Scope	Based on the Suapplication information, this is a seismic retrofit project where the subapplicant plans to install a redundant water mainline in a potable water utility system that serves up to 88,000 customers. The redundant pipeline will mitigate risk of a single point of failure in the system during a seismic event since it will be newer, more flexible, and follow different alignment than the existing pipeline. Additionally, the subapplicant will reroute a collector line from running below the control facility.
Software Version	BCA Version 5.3.0 was used to complete the analysis.
Hazard	Suapplicant BCA selected "Earthquake" for Hazard and "Strengthen Structural" for Mitigation Type to match the basic approach of the proposed mitigation project.

BCA Review	
Basis for Damages	Subapplicant BCA selected "Expected Damages" in the software for the proposed project.
Number of Events	Subapplicant BCA entered 4 expected events with known recurrence intervals in the software.
Project Useful Life	Subapplicant BCA input a Project Useful Life (PUL) of 50 years based on the FEMA Standard Value for a Major Utility Mitigation Project.
Project Cost	Subapplicant BCA input an estimated project cost of \$3,162,280 into the software based on itemized cost estimate and design information from the October 2016 "Single Point Failure Focused Engineering Study" prepared by GHD, Inc. and updated to 2019.
Maintenance Cost	Subapplicant BCA input an estimated annual Maintenance Cost of \$750/year into the software based on a Maintenance Letter (Attachment I) to explain the cost which includes \$250/year to inspect and exercise the new valves and \$500/year for replacement parts. The letter was signed by the HBMWD General Manager and dated 2017.

BCA Review

Subapplicant BCA correctly selected "Utilities" in the software as the Facility Type for Loss of Function for the proposed project. Additionally, the Subapplicant BCA input the following values on the Utilities Screen:

- Selected "Potable Water" for Type of Service based on the proposed project scope.
- Used the FEMA default Value per Unit of Service for Potable Water (\$105/person/day).
- Input 88,000 for Number of Customers Served based on the Number of Customers Served (Attachment C- Problem Description) provided by GHD, Inc. However, this documentation was insufficient to verify the customers of HBMWD and the seven municipal customers it serves. Additionally, the documentation says approximately 60% of the people in Humboldt County are estimated to be customers of the utility through seven municipalities and other community service districts. There was insufficient documentation in the subapplication to prepare a First RFI BCA.

Facility Type

1. Subapplicant needs to provide letters from the utilities, utility districts and/or technical studies to document the number of customers served by the HBMWD and include the methodology used to estimate the Number of Customers.

(Secondary Review 12/13/2019): The subapplicant has entered as justification a letter from the Humboldt Bay Municipal Water District's GM which describes four resources that support the 88,000 Number of Customers Served value used in the BCA. Documentation to support the four estimates is included. This request has been satisfied.

BCA Review

	<p>Additional documentation of the number of individual customers ultimately served by HBMWD and letters from the wholesale customers that HBMWD serves have been included as Attachment A.</p>
<p>Discussion of Frequency Derivation</p>	<p>Subapplicant BCA entered Recurrence Intervals (RI) for four earthquake events at 28-year, 71-year, 72-year, and 100-year frequencies. However, Recurrence Intervals are not the same as frequency, and the annual probability of exceedance and the frequency together can determine a recurrence interval. For example, the USGS Unified Hazards Tool (https://earthquake.usgs.gov/hazards/interactive/) indicates earthquake hazard design are based on the percent chance of being equaled or exceeded in the next 50 years; so a 10% probability in 50 years is a 450-year RI event, a 5% probability in 50 years is a 975-year RI event, and a 2% probability in 50 years is a 2,475-year RI. There was insufficient documentation in the subapplication to establish the RIs to use in the First RFI BCA.</p> <ol style="list-style-type: none"> 1. Subapplicant needs to document the methodology for determining the event Recurrence Intervals (RIs) and the associated seismic design levels used in the before-mitigation and after-mitigation damage analyses. 2. Subapplicant needs to resubmit BCA with updated recurrence intervals if needed. <p>(Secondary Review 12/13/2019): The subapplicant has entered two seismic events into the BCA: A return interval of 64 years for Event #1 and a return interval of 795 years for Event #2. This information was obtained from the USGS Unified Hazard Tool and corresponds to a PGA and level of ground shaking intensity that was used to evaluate "Expected Damages." This request has been satisfied.</p>

BCA Review	
	See the Revised BCA Narrative that has been included as Attachment B. A revised BCA zip file has been included as Attachment C.
Damage Categories	Subapplicant BCA input "Expected Damages" based solely on the duration Utility Loss of Function.

BCA Review

Subapplicant BCA input Expected Damages Before Mitigation based on loss of function durations from the following four event Recurrence Intervals (RIs): 28-year (1.5 days), 71-year (4 days), 72-year (8 days) and 100-year (21 days). The loss of function durations are included in Table 2 of the supporting document (Attachment H) by GHD, Inc. and were derived from “discussion with experienced civil engineers and the HBMWD staff.” However, there was not enough detail or supporting documentation provided to justify the loss of function durations, especially the dramatic increase from the 71-year event to the 72-year event. There was insufficient documentation in the subapplication to establish the Loss of Function durations to use in the First RFI BCA because a connection could not be made between the seismic hazard data provided and the number of days of loss of function analysis results.

Discussion of Damage Determination

1. Subapplicant needs to provide detailed documentation of the methodology used to determine before-mitigation loss of function durations from damaging earthquake event RIs.

(Secondary Review 12/13/2019): The subapplicant has entered loss of function durations before mitigation as 1 day for Event #1 and 10 days for Event #10. Damage costs were not included, only loss of function for the potable water utility. The subapplicant used a Damage Measure formula for a buried pipeline from a 2006 published research study to equate level of damage with PGV of the expected seismic events for the proposed PVC replacement mainline. This analysis found that the after mitigation damages would associated with a negligible damage measure for Event #1, 0 days loss of service, and a moderate damage measure for Event #2, 1 day loss of service. This request has been satisfied.

BCA Review	
	<p>See the Revised BCA Narrative that has been included as Attachment B. A revised BCA zip file has been included as Attachment C.</p> <p>Subapplicant BCA input Expected Damages After Mitigation based on reduced service losses from before-mitigation values, with zero losses at the 28-, 71- and 72-year event RIS and 2 days at the 100-year event RI. However, the supporting document (Attachment H) by GHD, Inc. did not include any additional information on the methodology used to determine the values. There was insufficient documentation in the subapplication to establish the project effectiveness. Further details are required.</p>
Project Effectiveness	<p>1. Subapplicant needs to document the methodology used to determine after-mitigation loss of function durations from damaging earthquake event RIs.</p> <p>(Secondary Review 12/13/2019): The subapplicant has updated their BCA narrative to include a methodology description and list references. This request has been satisfied.</p>
Environmental Benefits	<p>See the Revised BCA Narrative that has been included as Attachment B. A revised BCA zip file has been included as Attachment C.</p> <p>Environmental Benefits do not apply to this project and were not included in the analysis.</p>
Societal Benefits	<p>Social Benefits do not apply to this project and were not included in the analysis.</p>
Other Comments	<p>None</p>

18 Dec 2019

Project: **Humboldt Bay Collector**

Pg 1 of 6

Total Benefits: **\$7,237,043**Total Costs: **\$3,172,631**BCR: **2.28**

Project Number:

Disaster #:

Program: **HMGP**Agency: **GHD**State: **California**

Point of Contact:

Analyst: **Richela Maeda****Project Summary:**

Project Number:

Disaster #:

Program: **HMGP**Agency: **GHD**Analyst: **Richela Maeda**Discount Rate: **0.070**

Point of Contact:

Phone Number: **707-443-8326**Address: **California**Email: **richela.maeda@ghd.com**

Comments:

Structure Summary For:

Collector Mainline, California, , Humboldt

Structure Type: **Utility**Historic Building: **No**

Contact:

Benefits: **\$7,237,043**Costs: **\$3,172,631**BCR: **2.28**

Mitigation	Hazard	BCR	Benefits	Costs
Strengthen Structural	Damage-Frequency Assessment	2.28	\$7,237,043	\$3,172,631

18 Dec 2019

Project: **Humboldt Bay Collector**

Pg 2 of 6

Total Benefits: **\$7,237,043**Total Costs: **\$3,172,631**BCR: **2.28**

Project Number:

Disaster #:

Program: **HMGP**Agency: **GHD**State: **California**

Point of Contact:

Analyst: **Richela Maeda****Structure and Mitigation Details For:** Collector Mainline, California, , Humboldt

Benefits: \$7,237,043

Costs: \$3,172,631

BCR: 2.28

Hazard: **Damage-Frequency Assessment - Earthquake**

Mitigation Option: Strengthen Structural

Latitude:

Longitude:

Project Useful Life: 50

Mitigation Information

Basis of Damages: Expected Damages

Number of Damage Events: 2

Number of Events with Know Recurrence

Intervals: 2

Utilities

Type of Service: Potable Water

Other:

Number of Customers: Served: 88,000

Value per Unit of Service: 105.00

Total Value of Service per Day: \$9,240,000

Facility Description:

18 Dec 2019	Project: Humboldt Bay Collector		Pg 3 of 6
Total Benefits: \$7,237,043	Total Costs: \$3,172,631	BCR:	2.28
Project Number:	Disaster #:	Program: HMGP	Agency: GHD
State: California	Point of Contact:	Analyst: Richela Maeda	

Expected Damages Before and After Mitigation

Analysis Year: 2019

Analysis Duration:

Utilities (\$/day): \$9,240,000.00

Year Built:

User Input Analysis Duration:

Buildings (\$/day):

Roads/Bridges (\$/day):

Damages Before Mitigation
Damages After Mitigation

RI: 64.00

Are Damages In Current Dollars? Yes

Buildings (Days):

Utilities (Days): 0.0

Roads (Days):

Total	\$0

RI: 795.00

Are Damages In Current Dollars? Yes

Buildings (Days):

Utilities (Days): 1.0

Roads (Days):

Total	\$9,240,000

18 Dec 2019

Project: **Humboldt Bay Collector**

Pg 4 of 6

Total Benefits: **\$7,237,043**Total Costs: **\$3,172,631**BCR: **2.28**

Project Number:

Disaster #:

Program: **HMGP**Agency: **GHD**State: **California**

Point of Contact:

Analyst: **Richela Maeda**

Damage Year:

RI: 64.00

Are Damages In Current Dollars? Yes

Buildings (Days):

Utilities (Days): 1.0

Roads (Days):

Total	\$9,240,000
Total Inflated	

Volunteers Cost

Number of Volunteers Required:

Cost of Volunteers Time (\$/Hour/Person):

Per-Person Cost of Lodging for a Volunteer:

Number of Hours Volunteered/Person:

Number of Days Lodging/Volunteer:

Cost of Volunteers:

Damage Year:

RI: 795.00

Are Damages In Current Dollars? Yes

Buildings (Days):

Utilities (Days): 10.0

Roads (Days):

Total	\$92,400,000
Total Inflated	

Volunteers Cost

Number of Volunteers Required:

Cost of Volunteers Time (\$/Hour/Person):

Per-Person Cost of Lodging for a Volunteer:

Number of Hours Volunteered/Person:

Number of Days Lodging/Volunteer:

Cost of Volunteers:

Social Benefits**Mental Stress and Anxiety****Lost Productivity**

18 Dec 2019	Project: Humboldt Bay Collector		Pg 5 of 6
Total Benefits: \$7,237,043	Total Costs: \$3,172,631	BCR: 2.28	
Project Number:	Disaster #:	Program: HMGP	Agency: GHD
State: California	Point of Contact:	Analyst: Richela Maeda	

Number of Person:	Number of Worker:
Treatment Costs per person: \$2,443.00	Productivity Loss per person: \$8,736.00
Total Mental Stress and Anxiety Cost: \$0.00	Total Lost Productivity Cost: \$0.00

BCR Calculation Results

Expected Annual Damages Before Mitigation	Expected Annual Damages After Mitigation	Expected Avoided Damages After Mitigation (Benefits)
---	--	--

Annual: \$536,017	Annual: \$11,622	Annual: \$524,395
Present Value: \$7,397,435	Present Value: \$160,392	Present Value: \$7,237,043

Mitigation Benefits: \$7,237,043	Mitigation Costs: \$3,172,631
Benefits Minus Costs: \$4,064,412	Benefit-Cost Ratio: 2.28

Cost Estimate

Project Useful Life (years): 50	Construction Type:
Mitigation Project Cost: \$3,162,280	Detailed Scope of Work: Yes
Annual Project Maintenance Cost: \$750	Detailed Estimate for Entire Project: Yes
Final Mitigation Project Cost: \$3,172,631	Years of Maintenance: 50
Cost Basis Year:	Present Worth of Annual Maintenance Costs: \$10,351
Construction Start Year:	Estimate Reflects Current Prices: Yes
Construction End Year:	Project Escalation:

Justification/Attachments

18 Dec 2019

Project: **Humboldt Bay Collector**

Pg 6 of 6

Total Benefits: **\$7,237,043**Total Costs: **\$3,172,631**BCR: **2.28**

Project Number:

Disaster #:

Program: **HMGP**Agency: **GHD**State: **California**

Point of Contact:

Analyst: **Richela Maeda**

Field	Description	Attachments
Annual Project Maintenance Cost	Please see attached "Maintenance Letter.pdf".	Maintenance Letter.pdf
Expected damages before mitigation	See the attached BCA Narrative.	Attachment B - BCA Narrative.pdf
Mitigation Project Cost	See the attached cost estimate and narrative.	HBMWD Collector Mainline Cost Est Narrative 08_30_3019.pdf; Attachment F_Cost Estimate 2019_08_30.pdf
Number of Customers Served	Please see attached documentation of customers served.	Attachment A - Customers Served.pdf
Project useful life	Please see attached "FEMA_Useful_Life.pdf"	FEMA_Useful_Life.pdf
Unknown Frequency - Damages after Mitigation	See the attached BCA Narrative.	Attachment B - BCA Narrative.pdf

FINANCIAL



BANK ACCOUNT BALANCES AT MONTH-END

January 31, 2025

January 31, 2024

GENERAL ACCOUNTS

1. US Bank - General Account	1,226,248.62	1,506,960.51
2. US Bank - Xpress BillPay/Electronic Payments Account	7,820.34	6,198.69
<i>Subtotal</i>	1,234,068.96	1,513,159.20

INVESTMENT & INTEREST BEARING ACCOUNTS

3. US Bank - DWR/SRF Money Markey Acct	-	29,796.70
4. US Bank - DWR/SRF Reserve CD Account	-	547,336.94
5. US Bank - PARS Investment Account	955,080.19	899,394.22
<i>Contributions = \$800,000 Disbursements = \$166,619</i>		
6. L. A. I. F Account - MSRA Reserve Account	480,644.32	464,745.76
7. CalTRUST - Restricted Inv. Account (Medium Term)	1,837,908.51	1,766,951.44
8. CalTRUST - General Reserve Account (Short-Term)	4,348,532.23	4,626,084.26
<i>Total CalTRUST Accounts</i>	6,186,440.74	6,393,035.70
9. California CLASS - DWFP Reserve Account	269,918.48	256,350.33
10. California CLASS - ReMat Reserve Account	1,645,254.35	1,420,099.33
11. California CLASS - General Reserve Account	2,684,718.68	-
<i>Total California CLASS Accounts</i>	4,599,891.51	1,676,449.66
12. Humboldt County - SRF Loan Payment Account	746,886.57	601,166.57
13. Humboldt County - 1% Tax Account	1,038,206.88	1,332,281.34
14. Inactive Humboldt County Investment Accounts	-	(410,360.23)
15. Principle Investment Account	-	43,120.41
<i>Subtotal</i>	14,007,150.21	13,253,416.73

OTHER ACCOUNTS

16. ReMat Deposit - Mellon Bank	27,000.00	27,000.00
17. Cash on Hand	700.00	650.00
<i>Subtotal</i>	27,700.00	27,650.00

TOTAL CASH	15,268,919.17	14,794,225.93
-------------------	----------------------	----------------------

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
STATEMENT OF FUND BALANCES - PAGE 2 OF 2



FUND BALANCES AT MONTH-END

January 31, 2025

January 31, 2024

RESTRICTED FUNDS - ENCUMBERED

1. Prior-Year Price Factor 2 Rebate	(9,058.31)	(9,903.75)
2. Prior-Year Restricted AP Encumbrances	(627,546.00)	(618,893.00)
3. Advanced Charges - 3x Tank Seismic Retrofit	(1,398,379.18)	(1,519,111.09)
4. Advanced Charges - Cathodic Protection Project	(124,999.96)	(124,999.96)
5. Advanced Charges - Collector 2 Rehabilitation	-	(788,827.59)
6. Advanced Charges - On-Site Generation of Chlorine	(610,834.29)	(676,906.17)
7. Advanced Charges - Redundant Pipeline	(453,616.01)	(387,782.70)
8. Advanced Charges - TRF Emergency Generator	(283,115.95)	(372,389.61)
9. 3AC Collected Funds - TRF Emergency Generator	(312,858.62)	(312,858.62)
10. Advanced Funding - FEMA, Shoreline Debris Removal	-	1,487.72
11. Advanced Funding - August Complex-Ruth Paving	(112,456.22)	(112,456.22)
12. Advanced Charges - Assist. Spillway Seismic Grant	(384,490.32)	(23,333.32)
13. Advanced Funding - Eureka Cyber Security	(19,597.72)	(19,597.72)
14. Advanced Charges - Essex Facility Expansion	(105,400.00)	(105,400.00)
15. Advanced Charges - Ruth Storage Barn	(165,833.31)	(52,500.00)
16. Advanced Charges - Capital Financing/Debt Service	(960,316.21)	(348,915.04)
<i>Subtotal</i>	(5,568,502.10)	(5,472,387.07)

RESTRICTED FUNDS - OTHER

17. 1% Tax Credit to Muni's	(1,038,206.88)	(188,842.77)
18. DWR Reserve for SRF Payment	-	(29,796.70)
19. DWR Reserve for SRF Loan	-	(547,336.94)
20. Pension Trust Reserves	(955,080.19)	(899,394.22)
21. ReMat Deposit	(27,000.00)	(27,000.00)
22. HB Retail Capital Replacement Reserves	(251,026.88)	(203,068.69)
<i>Subtotal</i>	(2,271,313.95)	(1,895,439.32)

UNRESTRICTED FUNDS

BOARD RESTRICTED

23. MSRA Reserves	(480,644.32)	(464,745.76)
24. DWFP Reserves	(269,918.48)	(256,350.33)
25. ReMat Reserves	(1,645,254.35)	(1,420,099.33)
27. Principle Investment Reserves	-	(43,120.41)
28. Northern Mainline Extension Study Prepayment	56.40	56.40
29. Blue Lake Rancheria Extension Study Prepayment	(4,235.37)	(4,235.37)
<i>Subtotal</i>	(2,395,760.75)	(2,184,259.43)

UNRESTRICTED RESERVES

29. Accumulation for SRF Payment	-	-
30. General Fund Reserves	(5,033,342.37)	(5,247,772.55)
<i>Subtotal</i>	(5,033,342.37)	(5,242,140.11)
TOTAL NET POSITION	(15,268,919.17)	(14,794,225.93)

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
 REVENUE REPORT
 January 31, 2025



A. REVENUE RETURNED TO CUSTOMERS VIA PF2

	MTD RECEIPTS	YTD RECEIPTS	PRIOR YEAR	BUDGET	% OF BUDGET
1. Humboldt Bay Retail Water Revenue	34,154	231,092	214,477	350,000	66%
General Revenue					
Power Sales (Net ReMat)	24,563	54,429	11,140	125,000	44%
Tax Receipts (1% Taxes)	655,252	1,096,167	529,900	1,000,000	110%
Interest - Muni PF2 Retained	26,732	37,665	18,704		
2. Miscellaneous Revenue*	658	3,688	150,520	50,000	7%
<i>*Detail on following page</i>					
TOTAL PF2 REVENUE CREDITS	741,360	1,423,040	924,741	1,525,000	93%

B. DISTRICT REVENUE

	MTD RECEIPTS	YTD RECEIPTS	PRIOR YEAR	BUDGET	% OF BUDGET
3. Industrial Water Revenue					
Harbor District	0	0	0	0	0
<i>Subtotal Industrial Water Revenue</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
4. Municipal Water Revenue					
City of Arcata	133,078	939,135	905,472	1,538,900	61%
City of Blue Lake	17,124	122,493	120,368	202,362	61%
City of Eureka	603,839	2,126,673	2,106,393	3,617,684	59%
Fieldbrook CSD	0	102,687	116,887	194,298	53%
Humboldt CSD	0	571,575	659,784	1,105,724	52%
Manila CSD	7,754	54,153	53,187	90,372	60%
McKinleyville CSD	108,258	760,478	746,988	1,266,298	60%
<i>Subtotal Municipal Water Revenue</i>	<i>870,053</i>	<i>4,677,194</i>	<i>4,709,079</i>	<i>8,015,638</i>	<i>58%</i>
TOTAL INDUSTRIAL & WHOLESALE REVENUE	870,053	4,677,194	4,709,079	8,015,638	58%
5. Power Sales					
Power Sales (ReMat Revenue)	55,448	118,335	25,119	300,000	39%
Interest (ReMat Revenue)	0	0	1	0	
TOTAL REMAT REVENUE	55,448	118,335	25,119	300,000	39%
6. Other Revenue and Grant Reimbursement					
HB Retail Capital Replacement Rev.	4,158	27,694	27,593		
FCSD Contract	0	190,884	168,009		
FEMA/CalOES Grant Revenue	0	143,411	446,321		
SWRCB In-Stream Flow Grant Revenue	0	0	14,653		
Quagga Grant Revenue	0	65,307	0		
Misc. Grant Revenue	0	1,120	332,644		
CalFire Healthy Forest Funding	0	103,125	0		
Interest Earned	0	0	0		
Net Increase/(Decrease) Investment Accounts	14,746	353,828	317,836		
TOTAL OTHER/GRANT REVENUE	18,904	885,369	1,307,055		
GRAND TOTAL REVENUE	1,685,765	7,103,938	6,965,995	9,840,638	72%



B. MISCELLANEOUS RECEIPTS (RETURNED TO CUSTOMERS VIA PF2)

	MTD RECEIPTS	YTD RECEIPTS
<u>Miscellaneous Revenue</u>		
Dividend - Principal Life	-	-
Fees - Park Use	-	100
Rebate - CALCard	-	367
Refund - Diesel Fuel Tax	-	38
Refunds - Miscellaneous	-	227
Sale - Scrap Material	-	347
Reimb - Blue Lake SCADA/Internet Monthly Fees	-	-
Reimb. - Copies & Postage	28	152
Reimb. - Gas	-	-
Reimb. - Misc. Employee	-	-
Reimb. - Telephone	-	-
UB - Water Processing Fees	30	120
UB - Hydrant Rental Deposit/Use	-	-
Sale of Scrap Metal/Equipment/Gravel	-	576
<u>Ruth Area</u>		
Lease - Don Bridge	-	-
Rent - Ruth Cabin	600	1,760
Ruth Annual Lessee Water Fees	-	-
TOTAL MISCELLANEOUS REVENUE	658	3,688

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
MONTHLY EXPENDITURE REPORT - PAGE 1 OF 3
January 31, 2025

58%

Of Budget Year



SALARY AND EMPLOYEE BENEFIT EXPENDITURES (S. E. B.)

	Month-to-Date	Year-to-Date	Prior Year	Budget	% of Budget
Compensation					
1. Wages - Regular	214,034.43	1,351,030.42	1,328,475.08	2,662,800	59%
1a. 10/24 Salary Adjustment	(4,186.46)	(16,505.19)			
2. Wages - Sick	4,817.66	56,518.97	65,281.90		
3. Wages - Vacation	39,344.45	153,718.44	164,920.73		
Subtotal	254,010.08	1,544,762.64	1,558,677.71	2,662,800	58%
4. Wages - Overtime	597.57	6,573.51	8,897.01	17,647	
5. Wages - Holiday (Worked)	3,065.04	9,255.60	9,966.68	17,647	
Subtotal	3,662.61	15,829.11	18,863.69	35,294	45%
6. Wages - Part-Time	2,291.60	42,887.66	34,289.50	124,775	34%
7. Wages - Shift Differential	967.60	7,077.37	6,488.76	11,765	60%
8. Wages - Standby	10,054.74	63,808.77	60,487.00	96,595	66%
9. Director Compensation	1,690.00	19,290.00	14,160.00	40,300	48%
10. Secretarial Fees	159.00	1,711.25	2,034.39	3,150	54%
11. Payroll Tax Expenses	23,361.24	127,923.37	128,948.88	230,460	56%
11a. 10/24 Salary Adj. Payroll Tax	(311.89)	(1,229.64)			
Subtotal	38,212.29	261,468.78	246,408.53	507,045	52%
Employee Benefits					
12. Health, Life, & LTD Ins.	81,738.37	354,497.59	350,106.62	645,993	55%
13. Air Medical Insurance	-	474.00	2,449.00	2,370	20%
14. Retiree Medical Insurance	12,241.89	82,650.94	66,480.65	106,496	58%
14a. Retiree Medical Reimb.	(4,857.06)	(21,202.17)	(11,772.43)		
15. Employee Dental Insurance	2,483.05	17,480.96	19,441.69	36,597	48%
16. Employee Vision Insurance	585.21	4,011.55	4,145.57	7,091	57%
17. Employee EAP	78.17	536.01	551.38	1,245	43%
18. Fitness Stipend	23.25	538.74	-	10,230	5%
19. 457b District Contribution	4,000.00	26,975.00	26,462.50	44,700	60%
20. CalPERS Expenses	34,003.33	555,341.94	417,340.83	638,003	87%
20a. 10/24 Salary Adj. CalPERS	(1,861.01)	(6,513.54)			
21. Workers Comp Insurance	17,301.15	60,983.06	86,802.99	121,521	50%
Subtotal	145,736.35	1,075,774.08	962,008.80	1,614,246	67%
TOTAL S.E.B	441,621.33	2,897,834.61	2,785,958.73	4,819,385	60%

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
MONTHLY EXPENDITURE REPORT - PAGE 2 OF 3
January 31, 2025



SERVICE & SUPPLY EXPENDITURES (S & S)

	Month-to-Date	Year-to-Date	Prior Year	Budget	% of Budget
Operations & Maintenance					
1. Auto Maintenance	4,699.25	34,316.10	29,161.33	44,500	77%
2. Engineering	4,014.87	18,850.41	21,229.94	75,000	25%
3. Lab Expenses	5,196.00	12,367.00	10,810.00	14,000	88%
4. Maintenance & Repairs					
General	4,748.41	30,822.88	26,049.62	41,600	74%
TRF	68.34	4,968.79	3,779.39	17,000	29%
<i>Subtotal</i>	<i>4,816.75</i>	<i>35,791.67</i>	<i>29,829.01</i>	<i>58,600</i>	<i>61%</i>
5. Materials & Supplies					
General	9,262.68	34,885.21	42,090.54	42,000	83%
TRF	7,622.17	50,535.14	25,758.71	38,000	133%
<i>Subtotal</i>	<i>16,884.85</i>	<i>85,420.35</i>	<i>67,849.25</i>	<i>80,000</i>	<i>107%</i>
6. Radio Maintenance	590.91	7,552.06	6,596.63	8,500	89%
7. Ruth Lake License	-	1,500.00	1,500.00	1,500	100%
8. Safety Equip./Training					
General	3,073.81	12,267.23	14,483.92	18,700	66%
TRF	1,616.78	1,794.28	153.00	2,000	90%
<i>Subtotal</i>	<i>4,690.59</i>	<i>14,061.51</i>	<i>14,636.92</i>	<i>20,700</i>	<i>68%</i>
9. Tools & Equipment	179.80	1,442.57	1,906.80	5,000	29%
10. USGS Meter Station	-	9,110.00	8,600.00	9,000	101%
<i>Operations Subtotal</i>	<i>41,073.02</i>	<i>220,411.67</i>	<i>192,119.88</i>	<i>316,800</i>	<i>70%</i>
General & Administration					
11. Accounting Services	-	21,157.50	19,805.00	35,000	60%
12. Bad Debt Expense	-	-	-	-	0
13. Dues & Subscriptions	662.00	33,775.92	33,056.36	35,900	94%
14. IT & Software Maintenance	22,971.58	87,262.70	35,702.13	91,200	96%
15. Insurance	-	176,755.98	130,217.44	139,000	127%
16. Internet	957.95	6,299.65	4,816.01	11,150	56%
17. Legal Services	4,841.00	9,904.00	8,097.60	35,000	28%
18. Miscellaneous	600.28	3,730.32	4,926.61	10,000	37%
19. Office Building Maint.	1,783.81	11,524.74	11,815.84	19,000	61%
20. Office Expense	4,517.80	26,656.04	26,069.11	39,600	67%
21. Professional Services	300.00	7,612.50	1,603.75	20,000	38%
22. Property Tax	-	2,764.00	2,764.00	3,000	92%

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
MONTHLY EXPENDITURE REPORT - PAGE 3 OF 3
January 31, 2025



58%
Of Budget Year

SERVICE & SUPPLY EXPENDITURES (con't)

	Month-to-Date	Year-to-Date	Prior Year	Budget	% of Budget
23. Regulatory Agency Fees	2,255.00	136,958.38	147,779.33	202,900	68%
24. Ruth Lake Programs	-	-	-	5,000	0%
25. Safety Apparel	359.66	8,054.91	2,807.44	10,050	80%
26. Technical Training	-	-	314.23	14,000	0%
27. Telephone	1,502.92	7,839.34	7,437.70	19,000	41%
28. Travel & Conference	3,191.45	13,543.74	11,582.34	22,000	62%
<i>Gen. & Admin. Subtotal</i>	<i>43,943.45</i>	<i>553,839.72</i>	<i>448,794.89</i>	<i>711,801</i>	<i>78%</i>
TOTAL SERVICE & SUPPLY	85,016.47	774,251.39	640,914.77	1,028,600.50	75%

Power

29. Essex - PG & E	64,814.10	553,854.70	613,850.40		
30. 2Mw Generator Fuel	-	-	-		
<i>Subtotal Essex Pumping</i>	<i>64,814.10</i>	<i>553,854.70</i>	<i>613,850.40</i>	<i>1,017,911</i>	
31. All other PG & E	25,657.33	87,486.05	74,873.68	113,389	
<i>Subtotal All Power</i>	<i>90,471.43</i>	<i>641,340.75</i>	<i>688,724.08</i>	<i>1,131,300</i>	<i>57%</i>

Total Service and Supplies incl.

Power	175,487.90	1,415,592.14	1,329,638.85	2,159,901	66%
--------------	-------------------	---------------------	---------------------	------------------	------------

GRAND TOTAL EXPENSES	617,109.23	4,313,426.75	4,115,597.58	6,979,285.94	62%
-----------------------------	-------------------	---------------------	---------------------	---------------------	------------

OTHER EXPENSES

33. ReMat Consultant Exp.	983.58	8,967.38	-		
34. Capital Replacement Exp.	-	-	-		

TOTAL EXPENSES WITH OTHER EXPENSES

	618,092.81	4,322,394.13	4,115,597.58		
--	-------------------	---------------------	---------------------	--	--

**HUMBOLDT BAY MUNICIPAL WATER DISTRICT
PROJECT PROGRESS REPORT**

January 31, 2025

58% Of Budget Year



A. CAPITAL PROJECTS

GRANT FUNDED PROJECTS	MTD	YTD	BUDGET	% OF
	EXPENSES	TOTAL		BUDGET
1 Grant - TRF Generator <i>(Treatment Facility Project, \$1.9M - FEMA, Approved)</i>	15,023	71,189	1,996,016	4%
2 Grant - Collector Mainline Redundancy Pipeline <i>(Treatment/Base Facility Project, \$3.2M - FEMA, Approved)</i>	51	51	3,200,000	0%
3 Grant - 2x Tank Seismic Retro	41,714	86,796	5,619,079	2%
3A Grant - 1x Tank (Industrial) Seismic Retrofit <i>(\$5.7M - FEMA, Approved)</i>	(28,436)	(50,876)		
4 Adv. Assistance Spillway Seismic Grant <i>(\$1.5M - FEMA, Pending Approval)</i>	490	3,419	1,500,000	0%
TOTAL GRANT FUNDED CAPITAL PROJECTS	28,842	110,579	12,315,095	1%

NON-GRANT FUNDED CAPITAL PROJECTS

5 Replace Pump 2-2 (Pre-Approved 04/2024)	0	270,002	300,000	90%
6 Peninsula Communications Options	0	0	42,000	0%
7 Mainline Valve Replacement Program	0	0	50,000	0%
8 Purchase Collector 4 Transformer	0	0	120,000	0%
9 Purchase Switchboard for Collector 4	411	411	42,000	1%
10 Resize Chemical Feed System	0	23,527	37,250	63%
11 Storage Barn at Headquarters	1,892	1,892	220,000	1%
TOTAL NON-GRANT FUNDED CAPITAL PROJECTS	2,303	295,832	811,250	36%

B. EQUIPMENT AND FIXED ASSET PROJECTS

	MTD	YTD	BUDGET	% OF
	EXPENSES	TOTAL		BUDGET
12 FY25 Replace ESSEX Administrative Computers	0	0	6,500	0%
13 FY25 Replace Control Computers	0	368	5,250	7%
14 Telemetry Radio and Antenna Replacement	0	0	14,000	0%
15 District Lighting Upgrades	0	0	19,000	0%
16 Purchase Temporary Fencing	0	2,262	3,250	70%
17 Construction Tooling	0	0	2,250	0%
18 Plant Water System PLC and VFD Upgrade <i>(Treatment Facility Project)</i>	426	11,728	11,500	102%
19 Replace Turbidimeters <i>(Treatment Facility Project)</i>	0	39,847	41,500	96%
20 Chlorine Analyzer Replacement - Phase 1 of 2 <i>(Treatment Facility Project)</i>	0	0	7,500	0%

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
 PROJECT PROGRESS REPORT - PAGE 2 OF 5
 January 31, 2025

58% Of Budget Year

**B. EQUIPMENT AND FIXED ASSET PROJECTS (cont)**

	MTD EXPENSES	YTD TOTAL	BUDGET	% OF BUDGET
21 Purchase VFD for N-Poly Pump <i>(Treatment Facility Project)</i>	0	7,975	6,500	123%
22 TRF Filter Gallery Heaters and Air Circulation <i>(Treatment Facility Project)</i>	0	0	9,000	0%
23 Air Actuated Chemical Pump <i>(Treatment Facility Project)</i>	0	0	2,000	0%
24 FY25 Replace EUREKA Administrative Computers	0	0	6,000	0%
25 Main Office Parapet Ladder	2,294	2,294	2,750	83%
26 Upgrade Work Boat Motor	0	0	15,750	0%
27 Tesla Battery Project - TRF	0	1,484	0	0
28 Tesla Battery Project - ESSEX	0	0	0	0
28A FY25 SB198	496	5,893	0	0
TOTAL EQUIPMENT & FIXED ASSET PROJECTS	3,216	71,852	152,750	47%

C. MAINTENANCE PROJECTS

	MTD EXPENSES	YTD TOTAL	BUDGET	% OF BUDGET
29 FY25 Pipeline Maintenance	0	901	14,000	6%
30 FY25 Main Line Meter Flow Calibration	100	100	16,000	1%
31 FY25 Technical Support and Software Updates	0	5,535	24,000	23%
32 FY25 Generator Services	0	86	3,600	2%
33 FY25 Hazard & Diseased Tree Removal	0	0	8,000	0%
34 FY25 Cathodic Protection	0	0	1,500	0%
35 FY25 Maintenance Emergency Repairs	6,796	8,496	50,000	17%
36 FY25 Fleet Paint Repairs	0	0	5,000	0%
37 12kV Electric System General Maintenance	0	0	10,500	0%
38 Voice and SCADA Radio Maintenance	0	0	3,000	0%
39 Safety Certification of Electrical Tools	0	0	2,500	0%
40 Collector Lube Oil System Maintenance	0	0	4,500	0%
41 Collector Pump 1-2 Motor Rebuild	0	2,194	15,750	14%
42 Control Room Office Chair Replacement	0	0	2,000	0%
43 Collector 2 Painting - Exterior	0	59,988	64,750	93%
44 FY25 Pipeline R-O-W Maintenance	0	0	20,000	0%
45 FY25 TRF Generator Service <i>(Treatment Facility Project)</i>	0	0	500	0%
46 FY25 TRF Limitorque Valve Retrofit Supplies <i>(Treatment Facility Project)</i>	0	0	15,000	0%
47 TRF Valve Network Upgrade (Phase 2) <i>(Treatment Facility Project)</i>	0	0	51,500	0%
48 TRF Control Router Replacement	0	7,725	8,500	91%
49 FY25 Brush Abatement Ruth Hydro	0	0	22,000	0%

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
PROJECT PROGRESS REPORT - PAGE 3 OF 5
January 31, 2025

58% Of Budget Year

**C. MAINTENANCE PROJECTS (con't)**

	MTD EXPENSES	YTD TOTAL	BUDGET	% OF BUDGET
50 FY25 LTO Insurance	0	0	6,000	0%
51 FY25 Spillway Repairs	929	5,211	10,000	52%
52 FY25 Howell Bungler Valve Inspection	0	0	1,500	0%
53 FY25 Log Boom Inspection	0	3,681	1,500	245%
54 Replace Hydro Plant Hydraulic Pump	0	2,020	2,500	81%
55 Replace Hydro Plant PLC's	0	0	88,750	0%
56 FY25 Eureka Office Generator Service	0	0	500	0%
TOTAL MAINTENANCE PROJECTS	7,825	95,937	453,350	6

D. PROFESSIONAL & CONSULTING SERVICES

	MTD EXPENSES	YTD TOTAL	BUDGET	% OF BUDGET
57 FY25 Crane Testing/Certification	0	7,992	12,000	67%
58 FY25 Chlorine System Maintenance	0	7,555	20,750	36%
59 FY25 Hydro Plant Annual Electrical and Maintenance	0	0	4,000	0%
60 FY25 Cyber Security Maintenance	0	0	5,250	0%
61 FY23 Hydro Plant Annual Elec. Maint./Testing	692	11,353	12,000	95%
62 FY25 Technical Training	0	0	24,500	0%
63 FY25 O & M Training	0	924	20,000	5%
64 FY25 Backflow Tester Certification	0	1,334	3,000	44%
65 EAP Tabletop Exercise	0	14,345	15,000	96%
66 Fleet Electrification Analysis and Plan	0	20,000	20,000	100%
67 Recruitment Consultant for Next General Manager	0	23,753	25,000	95%
68 FY25 Public Education Funds	0	0	5,000	0%
69 Microsoft 360 Email	0	0	9,550	0%
70 FY25 Mad River Regulatory Compliance Assistance	4,586	4,586	50,000	9%
71 FY25 Grant Applications Assistance	0	4,000	20,000	20%
72 Domestic Water for Nordic Aqua Farm	0	0	5,000	0%
73 Water Quality Monitoring Plan Assistance - Phase 2	0	0	20,000	0%
74 Evaluation of Pipes and Valves from Collectors	0	0	3,000	0%
75 Domestic Water System Cathodic Protection Upgrades	0	1,161	80,000	1%
76 Water Model Update & Samoa Peninsula Domestic Capa	0	0	30,000	0%
77 Woodward Governor Replacement - Phase 1 (Planning)	0	0	15,000	0%
78 Professional Consulting Services for C.A. (Dam Insp.)	0	0	20,000	0%
78a Financial Consultant - Services for New Capital Debt	0	1,500	0	0%

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
PROJECT PROGRESS REPORT - PAGE 4 OF 5
January 31, 2025

58% Of Budget Year

**D. PROFESSIONAL & CONSULTING SERVICES (CON'T)**

	MTD	YTD		% OF
	EXPENSES	TOTAL	BUDGET	BUDGET
79 FY25 Dam Spillway Wall Monument Survey	8,250	19,750	17,500	113%
80 FY25 Matthews Dam Spillway Wingwall and Floor Survey	0	0	6,500	0%
81 FY25 FERC Dam Safety Surveillance and Monitoring R	0	0	5,000	0%
82 FY25 Spillway Repair, Dam Inspection & Reporting	0	56	5,000	1%
83 Log Boom Inspection By GHD	0	1,896	5,000	38%
84 FY25 FERC Chief Dam Safety Engineer	1,335	5,162	12,000	43%
84a Shatz Energy Research - Tesla Battery	11,634	11,634	0	0%
TOTAL PROF/CONSULTING SERVICES	26,497	129,009	470,050	27%

E. INDUSTRIAL SYSTEM PROJECTS

85 Refurbish Pump Station 6 (Phase 1)	0	0	3,500,000	0%
86 Two Pumps, Motors, and VFD's for Pump Station 6	0	0	400,000	0%
87 Maintain Water Supply to Industrial Pump Station 6	0	0	13,250	0%
88 Industrial System Assistance	0	0	10,000	0%
89 Crossover Vault Modifications (Needed for Nordic,	0	0	36,000	0%
90 Pump Station 6 Gravel Bar Work and Permitting	0	0	84,000	0%

F. CARRY-OVER PROJECTS FROM PRIOR YEAR

TOTAL CARRYOVER PROJECTS	0	0	0	0%
---------------------------------	----------	----------	----------	-----------

G. ADVANCED CHARGES & DEBIT SERVICE FUNDS COLLECTED

	MTD	YTD	BUDGET	% BUDGET
91 On-Site Generation of Chlorine <i>(\$1.4M - FY24/25 Treatment Facility Project)</i>	7,875	55,125	94,500	58%
92 Prof. Services for New Capital Debt	13,517	94,617	162,200	58%
93 Grant - Collector Mainline Redundancy Pipeline	8,333	58,333	100,000	58%
94 Storage Barn for Ruth Headquarters	10,833	75,833	130,000	58%
TOTAL ADVANCED CHARGES COLLECTED	40,558	283,908	486,700	58%

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
PROJECT PROGRESS REPORT - PAGE 5 OF 5
January 31, 2025

58% Of Budget Year

**H. PROJECTS NOT CHARGED TO MUNICIPAL CUSTOMERS**

	MTD EXPENSES	YTD TOTAL	BUDGET	% OF BUDGET
95 On-Site Generation of Chlorine <i>(\$1.4M - FY25, Treatment Facility Project)</i>	69,414	102,965	767,380	13%
96 Humboldt Bay Radio Read Meters <i>(Capital Replacement Funds)</i>	0	9,979	9,500	105%
97 Ruth Paving and Repairs <i>(Non-FEMA August Complex Wildfire Funds Collected)</i>	0	0	112,000	0%
98 North Mainline Extension Study	0	1,020	0	0%
99 BL Rancheria Water	0	550	0	0%
100 CalFire Healthy Forest Grant <i>(CalFire Grant)</i>	631,248	766,882	5,000,000	15%
101 Domestic Water System Cathodic Protection Updates	0	4,531	0	0%
102 Grant - 1x Tank (Industrial) Seismic Retrofit	28,436	50,876	0	0%
103 Grant - Quagga	0	49,059	0	0%
TOTAL NOT CHARGED TO CUSTOMERS	729,097	936,804	5,888,880	16%

PROJECT PROGRESS REPORT SUMMARY OF ALL ACTIVITY

CUSTOMER CHARGES	MTD	YTD	BUDGET	% BUDGET
TOTAL NON-GRANT FUNDED CAPITAL PROJECTS	2,303	295,832	811,250	36%
<i>Treatment Facility Portion</i>	0	0	0	
TOTAL EQUIPMENT & FIXED ASSET PROJECTS	3,216	71,852	152,750	47%
<i>Treatment Facility Portion</i>	426	59,550	78,000	
TOTAL MAINTENANCE PROJECTS	7,825	95,937	453,350	21%
<i>Treatment Facility Portion</i>	0	0	67,000	
TOTAL PROF/CONSULTING SERVICES	26,497	129,009	470,050	27%
<i>Treatment Facility Portion</i>	0	0	0	
TOTAL INDUSTRIAL SYSTEM PROJECTS	0	0	13,250	0%
TOTAL CARRYOVER PROJECTS	0	0	0	0
<i>Treatment Facility Portion</i>	0	0	0	
TOTAL ADVANCED CHARGES/DEBIT SERVICE	40,558	283,908	486,700	58%
<i>Treatment Facility Portion</i>	\$0	\$0	\$0	
TOTAL CUSTOMER CHARGES	\$80,400	\$876,538	\$2,387,350	37%
NON-CUSTOMER CHARGES (CURRENT FY)	MTD	YTD	BUDGET	% BUDGET
TOTAL GRANT FUNDED CAPITAL PROJECTS	28,842	110,579	12,315,095	1%
TOTAL NON-CUSTOMER CHARGES	729,097	936,804	5,888,880	16%
TOTAL USE OF ENCUMBERED FUNDS	25,127	382,014	1,009,560	38%
TOTAL NON-CUSTOMER CHARGES	\$783,066	\$1,429,396	\$19,213,535	7%
GRAND TOTAL PROJECT BUDGET ACTIVITY	\$863,467	\$2,305,935	\$21,600,885	11%

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
ENCUMBERED FUNDS RECONCILIATION REPORT
January 31, 2025



	MTD EXPENSES	YTD TOTAL	AMOUNT ENCUMBERED	REMAINING
A. CAPITAL PROJECTS				
1E Mainline Valve Replacement Program	0	74,258	170,000	95,742
2E ADA Improvments - Eureka Office Parking Lot	0	3,654	4,146	492
3E Power and Fiber Optic Link-Collector 2 - Phase 2	0	4,796	8,000	3,204
4E Retaining Wall for Valve Access	0	0	70,000	70,000
B. EQUIPMENT & FIXED ASSET PROJECTS				
5E Ruth Automated Tiltometers	84	23,070	50,000	26,930
6E Hydro Plant Wicket Gate & HBV Signal Upgrade	0	459	143	(316)
C. MAINTENANCE PROJECTS				
7E FY24 Main Line Meter Flow Calibration	0	0	3,500	3,500
8E FY24 Hazard & Diseased Tree Removal	0	13,000	13,000	0
9E Collector 1 Conductor Replacement	0	84,250	89,750	5,500
10E Ruth Hydro Synchronizer Testing	0	15,443	23,500	8,058
11E Line Shed Alarm Upgrades	0	3,187	6,500	3,313
D. PROFESSIONAL & CONSULTING SERVICES				
12E Caselle A/R Module	0	0	5,000	5,000
13E EAP Tabletop Planning	0	4,596	4,880	284
14E CIP 10-yr Financial Revision and Project Review	0	0	24,000	24,000
15E FY24 Mad River Regulatory Compliance Assistance/In-Stream Flow	2,121	12,032	31,047	19,015
16E Salary Survey	480	3,394	3,393	(1)
17E Samoa Peninsula ROW EIR (GHD)	19,533	113,313	160,947	47,634
18E Water Quality Moniotinging Plan Update	0	998	20,000	19,002
19E Engineering Study-Replace 15-inch Peninsula Pipe	2,773	2,773	25,000	22,227
20E Above Ground 10,000 Gallon Fuel Tank Testing	0	0	5,400	5,400
21E Samoa Peninsula Coastal Development Permit	0	0	18,996	18,996
22E 404 Permit Assistance	0	0	24,196	24,196
23E Lease Lots Surveys	0	0	22,618	22,618
24E GIS Project at Ruth Lake (USFS)	0	0	7,500	7,500
25E Technical Dam/Spillway Support	136	22,791	218,044	195,253

ENCUMBERED FUNDS TOTAL

25,127

382,014

1,009,560

627,546

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025Page:
Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
101 NETLINK			
101 NETLINK	01/09/2025	<i>Ruth Data Link/Internet</i>	390.00
Total 101 NETLINK:			390.00
ACWA/JPIA			
ACWA/JPIA	01/21/2025	<i>RETIREE MEDICAL</i>	12,999.27
ACWA/JPIA	01/21/2025	<i>COBRA Dental</i>	130.40
ACWA/JPIA	01/21/2025	<i>COBRA Vision</i>	37.12
ACWA/JPIA	01/21/2025	<i>RETIREE MEDICAL</i>	924.90-
ACWA/JPIA	01/09/2025	<i>Workers Compensation Oct - Dec 2024</i>	17,301.15
Total ACWA/JPIA:			29,543.04
Advanced Security Systems			
Advanced Security Systems	01/09/2025	<i>Essex Quarterly Alarm Billing</i>	429.00
Total Advanced Security Systems:			429.00
AirGas NCN			
AirGas NCN	01/09/2025	<i>PPE Inventory</i>	217.77
AirGas NCN	01/09/2025	<i>Safety supplies for shop inventory</i>	94.25
Total AirGas NCN:			312.02
Altec Industries, Inc			
Altec Industries, Inc	01/09/2025	<i>Altec chipper maintenance</i>	538.53
Total Altec Industries, Inc:			538.53
Analytical Services, Inc			
Analytical Services, Inc	01/09/2025	<i>lab samples</i>	2,626.00
Total Analytical Services, Inc:			2,626.00
AT & T			
AT & T	01/22/2025	<i>Eureka/Essex Landline</i>	31.57
AT & T	01/22/2025	<i>Arcata/Essex Landline</i>	31.57
AT & T	01/22/2025	<i>Eureka Office/Alarm</i>	64.62
AT & T	01/22/2025	<i>TRF</i>	31.53
AT & T	01/22/2025	<i>Essex office/Modem/Control Alarm System</i>	31.53
Total AT & T:			190.82
ATS Communications			
ATS Communications	01/09/2025	<i>Datto hardware update & annual backup fees</i>	15,275.50
ATS Communications	01/09/2025	<i>Datto hardware update & annual backup fees</i>	2,035.00
ATS Communications	01/09/2025	<i>Monthly ProIT support for Essex</i>	1,305.00
Total ATS Communications:			18,615.50
Blue Star Gas - Sequoia Gas Co.			
Blue Star Gas - Sequoia Gas Co.	01/29/2025	<i>Propane for Ruth HQ</i>	336.00
Blue Star Gas - Sequoia Gas Co.	01/29/2025	<i>Propane for Ruth HQ</i>	213.44
Total Blue Star Gas - Sequoia Gas Co.:			549.44

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025Page: :
Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
BMI Imaging Systems			
BMI Imaging Systems	01/22/2025	Microfiche Scans	4,500.00
Total BMI Imaging Systems:			4,500.00
Cal Poly Humboldt			
Cal Poly Humboldt	01/09/2025	Contract for Tesla BESS and generator coordination #25-0441	11,633.51
Total Cal Poly Humboldt:			11,633.51
California Dept of Tax and Fee Admin			
California Dept of Tax and Fee Admin	01/23/2025	Sales Tax not charged by VendorS - 2024	4,339.00
Total California Dept of Tax and Fee Admin:			4,339.00
CalPERS			
CalPERS	01/29/2025	SSA 218 Annual Fee	110.00
Total CalPERS:			110.00
Campton Electric Supply			
Campton Electric Supply	01/09/2025	Tilt meter installation at Ruth Hydro Plant	83.71
Campton Electric Supply	01/29/2025	DW Tank retrofit project	117.68
Total Campton Electric Supply:			201.39
Charles Vickrey			
Charles Vickrey	01/03/2025	Per Diem for Certification Testing in Santa Rosa	293.12
Total Charles Vickrey:			293.12
Citi Cards			
Citi Cards	01/27/2025	Eureka office supplies	12.77
Total Citi Cards:			12.77
City of Eureka			
City of Eureka	01/09/2025	Eureka office water/sewer	142.50
Total City of Eureka:			142.50
Coast Counties Truck & Equipment Company			
Coast Counties Truck & Equipment Compan	01/09/2025	Unit 10 repairs	282.12
Total Coast Counties Truck & Equipment Company:			282.12
Coastal Business Systems Inc.			
Coastal Business Systems Inc.	01/09/2025	Essex copy/fax machine	787.43
Coastal Business Systems Inc.	01/09/2025	Essex copy/fax machine	281.57
Coastal Business Systems Inc.	01/29/2025	Eureka office copy and fax machine	787.43
Coastal Business Systems Inc.	01/29/2025	Essex copy/fax machine	281.57
Total Coastal Business Systems Inc.:			2,138.00
Corey Borghino			
Corey Borghino	01/27/2025	Reimbursement for Food and Refreshments for GM Open House	192.91

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025Page: 3
Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
Total Corey Borghino:			192.91
County of Humboldt			
County of Humboldt	01/03/2025	Minor Deviation for Industrial Tank Retrofit	500.00
Total County of Humboldt:			500.00
CRWA			
CRWA	01/09/2025	Annual Membership dues 2025	662.00
Total CRWA:			662.00
Darroll D Meyer, Jr			
Darroll D Meyer, Jr	01/27/2025	Reimburse for CalFire Forest Tree planting/clearing/site visits	1,497.50
Total Darroll D Meyer, Jr:			1,497.50
Dept of Toxic Substances Control			
Dept of Toxic Substances Control	01/22/2025	HAZ Mat - Ruth Hydro FA5000187	1,321.00
Dept of Toxic Substances Control	01/22/2025	HAZ Mat - Ruth HQ FA5000188	824.00
Total Dept of Toxic Substances Control:			2,145.00
Downey Brand Attorneys LLP			
Downey Brand Attorneys LLP	01/09/2025	Legal Fees Nov 2024 - Instream Flow Investigation	750.00
Downey Brand Attorneys LLP	01/29/2025	Legal Fees Dec 2024 - Water Line Maintenance Project	6,018.00
Total Downey Brand Attorneys LLP:			6,768.00
Eureka Oxygen			
Eureka Oxygen	01/22/2025	cylinder rental	145.88
Total Eureka Oxygen:			145.88
Eureka Rubber Stamp			
Eureka Rubber Stamp	01/22/2025	Name Plates - M. Mares	34.20
Eureka Rubber Stamp	01/29/2025	Stamps for Eureka Office	56.70
Total Eureka Rubber Stamp:			90.90
FEDEX			
FEDEX	01/22/2025	Ship Sperian SCBA #2 annual flow testing	66.31
FEDEX	01/09/2025	Ship eyewash showers due to return	84.34
FEDEX	01/09/2025	Ship power monitor for OSHG project	16.65
FEDEX	01/09/2025	Ship McKinleyville meter to Technoflo for testing	100.26
FEDEX	01/22/2025	Return signal splitters for Ruth Hydro Howell-Bunger valve	13.70
FEDEX	01/29/2025	Return PLC card for Plant Water System Upgrade	13.19
FEDEX	01/29/2025	Ship return item to Hach	22.78
Total FEDEX:			317.23
Ferguson Waterworks #1423			
Ferguson Waterworks #1423	01/09/2025	Neptune meter reading software 1 year	650.00
Ferguson Waterworks #1423	01/09/2025	Neptune meter reading software 1 year	1,850.00
Ferguson Waterworks #1423	01/09/2025	2 Radio read heas for HB meters	354.86

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025Page:
Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
Total Ferguson Waterworks #1423:			2,854.86
FleetPride			
FleetPride	01/22/2025	Unit 10 maintenance and repairs	172.37
Total FleetPride:			172.37
Fortuna Iron Corporation			
Fortuna Iron Corporation	01/29/2025	Steel for projects and inventory	634.41
Total Fortuna Iron Corporation:			634.41
Franchise Tax Board			
Franchise Tax Board	01/06/2025		65.00
Franchise Tax Board	01/21/2025		65.00
Total Franchise Tax Board:			130.00
Franklin's Service			
Franklin's Service	01/22/2025	Unit 12 AC system check and Freon removal	80.00
Franklin's Service	01/22/2025	Unit 12 AC system recharge and leak check	185.78
Total Franklin's Service:			265.78
Frontier Communications			
Frontier Communications	01/29/2025	Ruth HQ Phone	75.71
Frontier Communications	01/29/2025	Ruth Hydro/Ruth Dataline	284.09
Frontier Communications	01/09/2025	Ruth Hydro/Ruth Dataline	293.41
Frontier Communications	01/09/2025	Ruth HQ Phone	75.57
Total Frontier Communications:			728.78
GEI Consultants, Inc			
GEI Consultants, Inc	01/22/2025	2025 Qualified Dam Safety Engineering Consulting #25-0180	1,335.00
Total GEI Consultants, Inc:			1,335.00
GHD			
GHD	01/27/2025	General Engineering	1,771.21
GHD	01/27/2025	General - Collector 4 Electrical	359.26
GHD	01/27/2025	General - Collector Mainline Extension	51.38
GHD	01/27/2025	General Engineering - Instream Flow	1,371.00
GHD	01/27/2025	General Engineering - Adv Asst Spillway Seismic	154.13
GHD	01/27/2025	General Engineering - Ruth	154.14
GHD	01/27/2025	General Engineering - TRF	114.25
GHD	01/27/2025	Mad River Cross Sections Survey Memo 2024 #25-0510	692.33
GHD	01/27/2025	Reservoirs Seismic Retrofit Phs 2 #24-0812	10,258.18
GHD	01/27/2025	Reservoirs Seismic Retrofit Phs 2 #24-0812	266.89
GHD	01/27/2025	Reservoirs Seismic Retrofit Phs 2 #24-0811	106.75
GHD	01/27/2025	Reservoirs Seismic Retrofit Phs 2 #24-0811	53.38
GHD	01/27/2025	Peninsula 15" DW Replacement Concept Analysis #23-0383	2,773.00
GHD	01/27/2025	Instream Flow Assistance 25-0872	4,586.00
GHD	01/27/2025	General Engineering	1,975.27
GHD	01/27/2025	General - Collector 4 Electrical	51.38
GHD	01/27/2025	Samoa Peninsula ROW EIR #23-0625	13,515.13

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025Page:
Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
Total GHD:			38,253.68
Gierlich-Mitchell, Inc.			
Gierlich-Mitchell, Inc.	01/09/2025	Mechanical seal repair parts for FB Pump Station #2	444.84
Gierlich-Mitchell, Inc.	01/09/2025	Mechanical seal repair parts for FB Pump Station #2	328.40
Total Gierlich-Mitchell, Inc.:			773.24
Grainger			
Grainger	01/22/2025	Repairs to vacuum trailer Kholer engine	158.17
Total Grainger:			158.17
Hach Company			
Hach Company	01/23/2025	Collector 3 turbidimeter replacement	6,795.70
Total Hach Company:			6,795.70
Health Equity Inc			
Health Equity Inc	01/07/2025	HSA Admin Fee Jan 2025 - 19 employees	56.05
Health Equity Inc	01/07/2025	HSA Admin Fee Jan 2025 - 6 employees	17.70
Health Equity Inc	01/15/2025	District HSA Incentive - Jan 2025	12,500.00
Total Health Equity Inc:			12,573.75
Hensel Hardware			
Hensel Hardware	01/22/2025	Paint supplies	90.02
Hensel Hardware	01/22/2025	Tyvek painting coveralls	58.56
Hensel Hardware	01/22/2025	Lamps for Essex PLC cabinet	42.28
Hensel Hardware	01/22/2025	Collector 4 bug zapper	97.64
Hensel Hardware	01/29/2025	Eureka Office Parapet ladder installation	61.75
Hensel Hardware	01/29/2025	Plumbing parts for Ruth Hydro turbine seal drain plumbing	71.95
Total Hensel Hardware:			422.20
Henwood Associates, Inc			
Henwood Associates, Inc	01/09/2025	Consultant Services Agreement- Nov 2024	491.79
Total Henwood Associates, Inc:			491.79
Highway Specialty Co Inc			
Highway Specialty Co Inc	01/09/2025	Traffic cones	518.94
Total Highway Specialty Co Inc:			518.94
Humboldt County Planning			
Humboldt County Planning	01/29/2025	CDP for Samoa Tank Retrofit	714.44
Humboldt County Planning	01/29/2025	CDP for Samoa Tank Retrofit	89.25
Total Humboldt County Planning:			803.69
Humboldt County Treasurer			
Humboldt County Treasurer	01/22/2025	Capital Financing Project	45,611.43
Total Humboldt County Treasurer:			45,611.43

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025Page:
Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
Humboldt Redwood Company, LLC			
Humboldt Redwood Company, LLC	01/22/2025	<i>Mt Pierce Lease site</i>	333.41
Total Humboldt Redwood Company, LLC:			333.41
Humboldt Waste Management Authority			
Humboldt Waste Management Authority	01/09/2025	<i>dump fee</i>	69.27
Humboldt Waste Management Authority	01/29/2025	<i>dump fee from IW reservoir clean out</i>	211.65
Humboldt Waste Management Authority	01/22/2025	<i>Hazwaste disposal fee</i>	79.00
Total Humboldt Waste Management Authority:			359.92
JTN Energy, LLC			
JTN Energy, LLC	01/09/2025	<i>Consultant Services Agreement - Nov 2024</i>	491.79
Total JTN Energy, LLC:			491.79
Keenan Supply			
Keenan Supply	01/09/2025	<i>Plumping parts for repairs on Ruth Hydro turbine heat exchange</i>	188.21
Keenan Supply	01/22/2025	<i>4" isolation valve replacement for FB pump station #2</i>	878.45
Keenan Supply	01/22/2025	<i>4" isolation valve replacement for FB pump station #2</i>	10.87
Keenan Supply	01/22/2025	<i>Collector 3 sample line check valve replacements</i>	68.61
Keenan Supply	01/22/2025	<i>3/4" brass check valve for Collector 3 sample line</i>	26.80
Total Keenan Supply:			1,172.94
Kolstad Land Surveyors			
Kolstad Land Surveyors	01/09/2025	<i>Topographical Survey of Ruth barn area #25-0868</i>	1,892.00
Total Kolstad Land Surveyors:			1,892.00
Mad River Union			
Mad River Union	01/22/2025	<i>annual subscription</i>	50.00
Total Mad River Union:			50.00
Mario Palmero			
Mario Palmero	01/17/2025	<i>Essex Petty Cash - Refreshments for staff meeting</i>	47.53
Mario Palmero	01/17/2025	<i>Essex Petty Cash - Supplies</i>	8.74
Mario Palmero	01/17/2025	<i>Essex Petty Cash - Refreshments for staff meeting</i>	18.98
Mario Palmero	01/17/2025	<i>Essex Petty Cash - Distilled Water</i>	25.45
Mario Palmero	01/17/2025	<i>Essex Petty Cash - Refreshments for staff meeting</i>	41.03
Total Mario Palmero:			141.73
Matthews Paints, Inc.			
Matthews Paints, Inc.	01/22/2025	<i>Paint supplies for Samoa booster station manifold painting</i>	222.43
Matthews Paints, Inc.	01/22/2025	<i>Paint supplies for vehicle lumber rack</i>	225.48
Total Matthews Paints, Inc.:			447.91
McMaster-Carr Supply			
McMaster-Carr Supply	01/09/2025	<i>Plumbing parts for repairs on Ruth Hydro turbine heat exchange</i>	193.50
Total McMaster-Carr Supply:			193.50

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025Page:
Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
Mendes Supply Company			
Mendes Supply Company	01/09/2025	Eureka office supplies	112.72
Total Mendes Supply Company:			112.72
Michiko Mares			
Michiko Mares	01/09/2025	Expense Reimb for JPIA/ACWA Conference - M. Mares	1,737.92
Total Michiko Mares:			1,737.92
Microbac Laboratories, Inc			
Microbac Laboratories, Inc	01/22/2025	Lab Tests - Humboldt Bay Retail	110.00
Microbac Laboratories, Inc	01/22/2025	Lab Tests - Humboldt Bay Retail	260.00
Microbac Laboratories, Inc	01/22/2025	Lab Tests - FBGCSD	110.00
Microbac Laboratories, Inc	01/22/2025	Lab Tests - FBGCSD	110.00
Microbac Laboratories, Inc	01/22/2025	Lab Tests - Humboldt Bay Retail	110.00
Microbac Laboratories, Inc	01/22/2025	Lab Tests - Collectors	1,745.00
Microbac Laboratories, Inc	01/22/2025	Lab Tests - FBGCSD	110.00
Microbac Laboratories, Inc	01/22/2025	Lab Tests - Humboldt Bay Retail	110.00
Microbac Laboratories, Inc	01/22/2025	Lab Tests - Humboldt Bay Retail	235.00
Total Microbac Laboratories, Inc:			2,900.00
Miller Farms Nursery			
Miller Farms Nursery	01/29/2025	Pump repair supplies	96.96
Total Miller Farms Nursery:			96.96
Mission Linen			
Mission Linen	01/09/2025	maintenance supplies & uniform rentals	53.47
Mission Linen	01/09/2025	maintenance supplies & uniform rentals	67.78
Mission Linen	01/09/2025	maintenance supplies & uniform rentals	80.54
Mission Linen	01/09/2025	maintenance supplies & uniform rentals	92.26
Mission Linen	01/09/2025	maintenance supplies & uniform rentals	35.03
Mission Linen	01/09/2025	maintenance supplies & uniform rentals	80.54
Mission Linen	01/09/2025	maintenance supplies & uniform rentals	72.39
Total Mission Linen:			482.01
Motion Industries, Inc			
Motion Industries, Inc	01/09/2025	Spare oil lube pump for Ruth Hydro	929.35
Total Motion Industries, Inc:			929.35
Napa Auto Parts			
Napa Auto Parts	01/09/2025	Filters for Altec Chipper	73.64
Napa Auto Parts	01/09/2025	Landa pressure washer annual service	24.93
Napa Auto Parts	01/22/2025	Unit 12 repairs	7.04
Napa Auto Parts	01/22/2025	Shop tools	20.59
Napa Auto Parts	01/22/2025	manifold gasket for Unit 12 & battery for Unit 8	289.98
Napa Auto Parts	01/22/2025	Shop supplies	137.60
Napa Auto Parts	01/22/2025	Unit 14 door latch repair	129.86
Napa Auto Parts	01/22/2025	Vacuum trailer maintenance	13.01
Napa Auto Parts	01/22/2025	Fleet maintenance Unit 5 & 12	35.56
Napa Auto Parts	01/22/2025	Trailer plug	22.32
Napa Auto Parts	01/29/2025	Air compressor maintenance	59.21
Napa Auto Parts	01/29/2025	Supplies for Unit 15 and Unit 11	131.35

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025Page:
Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
Total Napa Auto Parts:			945.09
North Coast Journal, Inc			
North Coast Journal, Inc	01/22/2025	Legal Notice - SOQ for RW Matthews Dam	336.00
Total North Coast Journal, Inc:			336.00
Northern California Safety Consortium			
Northern California Safety Consortium	01/29/2025	2 AED hard cases for fleet vehicles	464.31
Total Northern California Safety Consortium:			464.31
NTU Technologies, Inc			
NTU Technologies, Inc	01/09/2025	TRF Treatment Chemical	7,052.80
NTU Technologies, Inc	01/09/2025	Use Tax - Added	546.59
NTU Technologies, Inc	01/09/2025	Use Tax - Payable	546.59-
Total NTU Technologies, Inc:			7,052.80
O&M Industries			
O&M Industries	01/22/2025	Angle iron for TRF front entrance gate repairs	54.25
Total O&M Industries:			54.25
Occ. Health Service of Mad River			
Occ. Health Service of Mad River	01/09/2025	DMV physical	236.25
Total Occ. Health Service of Mad River:			236.25
Optimum			
Optimum	01/06/2025	TRF Internet	29.93
Optimum	01/06/2025	TRF Internet - Blue Lake SCADA Monitoring	59.84
Optimum	01/06/2025	TRF Internet - Fieldbrook-Glendale CSD	59.84
Optimum	01/06/2025	Essex internet	267.23
Optimum	01/06/2025	Essex Phones	67.37
Optimum	01/06/2025	Eureka Internet	210.95
Optimum	01/06/2025	Fieldbrook-Glendale CSD Internet	407.37
Total Optimum:			1,102.53
PACE Engineering, Inc.			
PACE Engineering, Inc.	01/22/2025	TRF Generator Project	13,578.50
Total PACE Engineering, Inc.:			13,578.50
Pacific Gas & Electric Co.			
Pacific Gas & Electric Co.	01/09/2025	Eureka Office	333.97
Pacific Gas & Electric Co.	01/09/2025	Jackson Ranch Rd Rectifier	20.83
Pacific Gas & Electric Co.	01/09/2025	HWY 299 Rectifier	49.71
Pacific Gas & Electric Co.	01/09/2025	West End Road Rectifier	219.57
Pacific Gas & Electric Co.	01/09/2025	TRF	17,032.55
Pacific Gas & Electric Co.	01/09/2025	Ruth Hydro Valve Control	51.04
Pacific Gas & Electric Co.	01/09/2025	Ruth Hydro	65.42
Pacific Gas & Electric Co.	01/09/2025	Samoa Booster Pump Station	1,316.22
Pacific Gas & Electric Co.	01/09/2025	Samoa Dial Station	94.71
Pacific Gas & Electric Co.	01/22/2025	Essex Pumping Dec 2024	6,414.38

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025Page:
Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
Pacific Gas & Electric Co.	01/22/2025	Essex Pumping Dec 2024	1,579.85
Pacific Gas & Electric Co.	01/22/2025	Essex Pumping Dec 2024	63,113.06
Pacific Gas & Electric Co.	01/29/2025	Ruth Bunk House	93.58
Pacific Gas & Electric Co.	01/29/2025	Ruth HQ	86.54
Total Pacific Gas & Electric Co.:			90,471.43
Pacific Paper Co./Arcata Stationers			
Pacific Paper Co./Arcata Stationers	01/22/2025	Eureka office copier paper	205.35
Total Pacific Paper Co./Arcata Stationers:			205.35
Pape Machinery			
Pape Machinery	01/22/2025	Annual service filters	682.30
Pape Machinery	01/22/2025	Annual service filters	463.21
Pape Machinery	01/22/2025	Fuel pump	145.81
Pape Machinery	01/22/2025	Annual service filters	37.19-
Total Pape Machinery:			1,254.13
Paso Robles Tank, Inc.			
Paso Robles Tank, Inc.	01/22/2025	Samoa Res Seismic Retrofit #25-0755	26,600.00
Total Paso Robles Tank, Inc.:			26,600.00
Peterson			
Peterson	01/22/2025	Hydraulic fluid for CAT	375.04
Total Peterson:			375.04
Picky, Picky, Picky, Inc			
Picky, Picky, Picky, Inc	01/23/2025	Safety Boots - K. Daggs	235.97
Total Picky, Picky, Picky, Inc:			235.97
Platt Electric Supply			
Platt Electric Supply	01/29/2025	DW Tank retrofit project	1,088.40
Platt Electric Supply	01/29/2025	DW Tank retrofit project	60.18
Platt Electric Supply	01/29/2025	Plant water system PLC upgrade	.54
Platt Electric Supply	01/29/2025	DW Tank retrofit project	199.64
Platt Electric Supply	01/29/2025	Plant water system PLC upgrade	21.60
Platt Electric Supply	01/29/2025	DW Tank retrofit project	15.67
Platt Electric Supply	01/29/2025	Plant water system PLC upgrade	101.06
Platt Electric Supply	01/29/2025	DW Tank retrofit project	49.65-
Platt Electric Supply	01/29/2025	DW Tank retrofit project	83.35
Platt Electric Supply	01/09/2025	Plant water system PLC upgrade	119.09
Platt Electric Supply	01/29/2025	DW Tank retrofit project	1,398.12
Platt Electric Supply	01/29/2025	Plant water system PLC upgrade	170.86
Total Platt Electric Supply:			3,208.86
Points West Surveying Co			
Points West Surveying Co	01/09/2025	Spillway & wing wall vertical & horizontal monitoring survey P	8,250.00
Total Points West Surveying Co:			8,250.00

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025Page: 1
Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
PSI Water Technologies, Inc.			
PSI Water Technologies, Inc.	01/22/2025	OSHG Microclor	67,693.94
PSI Water Technologies, Inc.	01/09/2025	OSHG skip dosage pump spare parts for inventory	1,702.98
Total PSI Water Technologies, Inc.:			69,396.92
Purchase Power			
Purchase Power	01/22/2025	Postage Refill	502.25
Total Purchase Power:			502.25
Recology Arcata			
Recology Arcata	01/09/2025	Essex Garbage/Recycling Service - Dec 2024	812.76
Total Recology Arcata:			812.76
Recology Humboldt County			
Recology Humboldt County	01/09/2025	Eureka office garbage/recycling service - Dec 2024	110.05
Total Recology Humboldt County:			110.05
Regional Government Services Authority			
Regional Government Services Authority	01/27/2025	Compensation & Benefit Study #24-0874	480.00
Total Regional Government Services Authority:			480.00
Safe and Sound Security			
Safe and Sound Security	01/09/2025	Monthly help desk/tech support for Dam cameras	67.97
Safe and Sound Security	01/09/2025	Monthly help desk/tech support for Dam cameras	67.97
Total Safe and Sound Security:			135.94
Solo Sports			
Solo Sports	01/09/2025	Safety Apparel	123.69
Total Solo Sports:			123.69
SWRCB-DWOCP			
SWRCB-DWOCP	01/09/2025	D4 Certification Renewal - C. Merz	105.00
Total SWRCB-DWOCP:			105.00
Thatcher Company, Inc			
Thatcher Company, Inc	01/09/2025	Chlorine - 1 CYL	4,708.20
Thatcher Company, Inc	01/09/2025	deposit return - 1 CYL	1,000.00-
Total Thatcher Company, Inc:			3,708.20
The Mill Yard			
The Mill Yard	01/29/2025	Wood spade bits	16.26
The Mill Yard	01/29/2025	12 ft ladder for Ruth Hydro	390.59
Total The Mill Yard:			406.85
The Mitchell Law Firm, LLP			
The Mitchell Law Firm, LLP	01/23/2025	Legal Services- Dec 2024	341.00

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025

Vendor Name	Date Paid	Description	Amount Paid
Total The Mitchell Law Firm, LLP:			341.00
The Watershed Research & Training Center			
The Watershed Research & Training Center	01/27/2025	Planning Partner C-USFS Salaries & Wages, Travel & Supplies	629,750.55
Total The Watershed Research & Training Center:			629,750.55
Thrifty Supply			
Thrifty Supply	01/09/2025	Cutting fluid for Ridgid pipe threader	61.18
Thrifty Supply	01/29/2025	Brass inventory	350.50
Total Thrifty Supply:			411.68
Trinity County General Services			
Trinity County General Services	01/22/2025	Pickett Peak site lease	257.50
Total Trinity County General Services:			257.50
Trinity County Solid Waste			
Trinity County Solid Waste	01/22/2025	Ruth HQ dump fees	5.75
Trinity County Solid Waste	01/22/2025	Ruth Hydro dump fees	5.75
Total Trinity County Solid Waste:			11.50
U.S. Bank Corporate Payment System			
U.S. Bank Corporate Payment System	01/09/2025	Shop Inventory	44.42
U.S. Bank Corporate Payment System	01/09/2025	Paint scraper for Ruth	5.41
U.S. Bank Corporate Payment System	01/09/2025	Seat cover for Unit 6	86.19
U.S. Bank Corporate Payment System	01/09/2025	Sealant for RENK bearing seal replacement	25.48
U.S. Bank Corporate Payment System	01/09/2025	Safety signal for Ruth Hydro Howell-Bunger valve	786.55
U.S. Bank Corporate Payment System	01/09/2025	Hand pumps for field work	137.54
U.S. Bank Corporate Payment System	01/09/2025	Refrigerator for Essex break room	809.57
U.S. Bank Corporate Payment System	01/09/2025	Broom for TRF	14.09
U.S. Bank Corporate Payment System	01/09/2025	Battery for SBPS alarm system	33.38
U.S. Bank Corporate Payment System	01/09/2025	Essex Office Supplies	186.11
U.S. Bank Corporate Payment System	01/09/2025	Eureka Office Supplies	230.29
U.S. Bank Corporate Payment System	01/09/2025	Business cards - M. Mares	21.28
U.S. Bank Corporate Payment System	01/09/2025	Spendwise Monthly Subscription	90.00
U.S. Bank Corporate Payment System	01/09/2025	Mailing labels	158.50
U.S. Bank Corporate Payment System	01/09/2025	Eureka Office Supplies	36.29
U.S. Bank Corporate Payment System	01/09/2025	Drinks for Holiday Gathering	33.73
U.S. Bank Corporate Payment System	01/09/2025	Items for Holiday Gathering	119.81
U.S. Bank Corporate Payment System	01/09/2025	Temp fencing panels for TRF security fence	1,444.14
U.S. Bank Corporate Payment System	01/09/2025	Ice for Holiday Gathering	17.43
U.S. Bank Corporate Payment System	01/09/2025	Toner	133.16
U.S. Bank Corporate Payment System	01/09/2025	Eureka Office Parapet ladder	2,232.11
U.S. Bank Corporate Payment System	01/09/2025	Eureka Office Supplies	83.28
U.S. Bank Corporate Payment System	01/09/2025	Rain bibs and jacket for Ruth Operator	456.79
U.S. Bank Corporate Payment System	01/09/2025	Hazmat refresher class for 2 employees	154.00
U.S. Bank Corporate Payment System	01/09/2025	Safety training credits for future training	200.00
U.S. Bank Corporate Payment System	01/09/2025	AED decals for fleet vehicles	31.96
U.S. Bank Corporate Payment System	01/09/2025	Essex copy paper	91.71
U.S. Bank Corporate Payment System	01/09/2025	Multimode extender media converter	129.30
U.S. Bank Corporate Payment System	01/09/2025	RENK seal sealant	70.24
U.S. Bank Corporate Payment System	01/09/2025	Safety shower and eyewash combo for TRF	1,616.78
U.S. Bank Corporate Payment System	01/09/2025	Heat street meter	256.45

Humboldt Bay Municipal Water District

--Monthly Expenses by Vendor Detail Report--
Report dates: 1/1/2025-1/31/2025

Page:

Feb 04, 2025 11:53AM

Vendor Name	Date Paid	Description	Amount Paid
U.S. Bank Corporate Payment System	01/09/2025	Tools for unit 11	230.02
U.S. Bank Corporate Payment System	01/09/2025	Heat exchanger for Ruth Turbine lube oil cooling system	691.88
U.S. Bank Corporate Payment System	01/09/2025	Meal at ACWA Conference	89.43
U.S. Bank Corporate Payment System	01/09/2025	Hotel for ACWA Conference - J. Friedenbach	1,453.53
U.S. Bank Corporate Payment System	01/09/2025	Fraud Charge - refunded	114.82-
U.S. Bank Corporate Payment System	01/09/2025	Fraud Charge - refunded	33.88-
Total U.S. Bank Corporate Payment System:			12,052.15
VALEO Networks			
VALEO Networks	01/09/2025	Eureka office monthly computer maintenance	1,866.79
VALEO Networks	01/09/2025	Server Upgrade	1,250.00
VALEO Networks	01/09/2025	Computer setup for Assistant GM	459.99
Total VALEO Networks:			3,576.78
VALIC c/o J.P. Morgan Chase			
VALIC c/o J.P. Morgan Chase	01/22/2025	Plan Amendment	300.00
Total VALIC c/o J.P. Morgan Chase:			300.00
Valley Pacific Petroleum Serv. Inc			
Valley Pacific Petroleum Serv. Inc	01/09/2025	Cardlock-Pumping & Control	408.30
Valley Pacific Petroleum Serv. Inc	01/09/2025	Cardlock-Water Quality	408.30
Valley Pacific Petroleum Serv. Inc	01/09/2025	Cardlock-Maintenance	408.30
Valley Pacific Petroleum Serv. Inc	01/09/2025	Cardlock-HB Retail	106.16
Valley Pacific Petroleum Serv. Inc	01/09/2025	Cardlock-FBGCS D	302.14
Valley Pacific Petroleum Serv. Inc	01/09/2025	Bulk Fuel delivery for Essex	2,012.11
Valley Pacific Petroleum Serv. Inc	01/09/2025	Kerosene for inventory	107.17
Valley Pacific Petroleum Serv. Inc	01/29/2025	Fuel for Ruth	1,075.39
Total Valley Pacific Petroleum Serv. Inc:			4,827.87
Verizon Wireless			
Verizon Wireless	01/22/2025	General Manager	42.09
Verizon Wireless	01/22/2025	Humboldt Bay Retail	15.46
Verizon Wireless	01/22/2025	Fieldbrook Glendale CSD	44.02
Verizon Wireless	01/22/2025	Humboldt Bay IPAD	9.88
Verizon Wireless	01/22/2025	Fieldbrook Glendale CSD IPAD	28.13
Verizon Wireless	01/22/2025	Ruth Area	22.61
Verizon Wireless	01/22/2025	Ruth Hydro	22.61
Total Verizon Wireless:			184.80
Watt's Cleaning Services			
Watt's Cleaning Services	01/22/2025	Eureka Office Cleaning 12/11 & 12/25/24	278.00
Total Watt's Cleaning Services:			278.00
Grand Totals:			1,095,176.13

HUMBOLDT BAY MUNICIPAL WATER DISTRICT

SUPPLEMENTAL - FIELDBROOK-GLENDALE CSD CONTRACT SERVICES
 MONTHLY BILLING/EXPENSE REPORT
 January 31, 2025



	Month-to-Date	Year-to-Date	Prior Year	Difference
<i>Contract Services Billing</i>				
Administrative	1,232.87	8,630.09	8,362.48	267.61
Indirect/Overhead	976.81	6,837.67	6,625.71	211.96
Maintenance/Operations/Supplies	23,675.07	177,107.78	149,670.59	27,437.19
Total FB-GCSD Billing	25,884.75	192,575.54	164,658.78	27,916.76
<i>Contract Services Expenses</i>				
Employee Wages	10,803.42	87,200.09	75,138.49	12,061.60
Employee Benefits	7,255.84	40,937.74	37,344.97	3,592.77
Operations & Maintenance Expenses	2,294.70	22,251.73	5,997.72	16,254.01
General & Administrative Expenses	2,396.94	12,766.22	11,834.32	931.90
Total FB-GCSD Expenses	22,750.90	163,155.78	130,315.50	32,840.28
<i>NET Fieldbrook Contract Services</i>	3,133.85	29,419.76	34,343.28	(4,923.52)

Humboldt Bay Municipal Water District

To: Board of Directors
From: Chris Harris
Date: February 13, 2025
Re: Revised Job Descriptions

Background

As part of their final obligation (for the Salary Survey Process), RGS provided the District with a Staffing Assessment Report and a Compensation Study Report (presented during the January 2025 Board Meeting). RGS suggested 5-positions that should be considered for possible review/revision. Staff has also included one minor change for the General Manager position as well as a certification change requirement for the Maintenance Mechanic position.

1. Water Operations Supervisor (revisions included)
2. Assistant Maintenance & Electrical Supervisor (no revisions deemed necessary)
3. Water Operations Specialist (revisions included)
4. Operations and Customer Service Specialist (revisions included)
5. Hydroelectric Operator/Ruth Representative (revisions included)
6. General Manager (included based on staff request)
7. Maintenance Mechanic (included based on staff request)

Discussion

Based on direction received last month, staff has provided copies of the proposed job descriptions for approval.

Recommendation

Staff recommends approval of the attached revised job descriptions.

Attachments

1. Suggested Revisions to Job Descriptions
 - a. General Manager
 - b. Water Operations Supervisor
 - c. Water Operations Specialist
 - d. Operations and Customer Service Specialist
 - e. Hydroelectric Operator/Ruth-Area Representative
 - f. Maintenance Mechanic

Humboldt Bay Municipal Water District

GENERAL MANAGER - M1

Position Description

GENERAL PURPOSE

This is the Chief Executive Officer position responsible for carrying out the Board of Director's policies, directing District operations, controlling District expenditures, and overseeing all programs and activities of the District. May act as Secretary/Treasurer and performs other duties as required.

ESSENTIAL FUNCTIONS AND DUTIES

1. Serves as Chief Executive Officer of the District
2. Provides leadership and management including planning, goal setting, and evaluating District effectiveness
3. Supervises, develops, and evaluates the District Superintendent, Business Manager, and Executive Assistant/Board Secretary
4. Provides full charge and control over construction, maintenance, and operations of the regional water system. Ensures compliance with water quality laws and regulations, and ensures sufficient water supply capability to meet customer demands
5. Works collaboratively with the Business Manager to prepare and recommend for Board approval, and administers the District's annual budget including salaries, maintenance, and capital projects
6. Directs and oversees development of a comprehensive Capital Improvement Plan. Advances high-priority projects and develops funding mechanisms to ensure the regional water system continues to reliably serve the community's needs
7. Supports and plays a critical role in the District's Water Resource Planning process to secure new customers or uses for the District's available water supply
8. Directs and oversees the District's aquatic Habitat Conservation Plan, and other efforts in the watershed involving the District
9. Oversees the District's safety program. Ensures compliance with Federal, State, and local safety regulations. Develops and supports a strong safety culture in the organization
10. Serves as the Dam Safety Coordinator pursuant to the District's Owner Dam Safety Program. Ensures compliance with Federal and State dam safety regulations. Develops and supports a strong and effective Dam Safety Program
11. Maintains full power and authority to employ and discharge employees and prescribe their duties. Develops and maintains the District's personnel system in accordance with Board-approved policies
12. Maintains a close working relationship with the Board, Board committees, the District's legal counsel, auditor, and other consultants who advise the Board
13. Prepares monthly Board meeting agendas and packets including well-developed and written staff reports

14. Serves as liaison representing the District to the general public, the District's wholesale municipal customers, regulatory agencies, the media, and civic or community organizations
15. Participates in the negotiation of water sale contracts and administers the contracts once implemented
16. Provides legislative review and advocacy on Federal, State, or local issues affecting District operations
17. Performs the duties of District Secretary/Treasurer as required

REQUIRED KNOWLEDGE, SKILLS, and ABILITIES

1. Excellent written and oral communication skills, as well as the ability to make effective and persuasive presentations.
2. Principles and practices of management and public administration
3. Principles and practices of planning, analyzing, and developing sound business recommendations
4. Principles and practices of financial planning, budgeting, expenditure control, and reporting
5. Principles of supervision and personnel management, including public sector employment law
6. Basic knowledge of engineering and construction principles applicable to the planning, design, and construction of District facilities
7. Contract development and administration
8. Safety regulations and programs
9. Principles and practices of water utility cost-of-service and ratemaking
10. General understanding of the following:
 - a. Laws, regulations, and processes governing special districts
 - b. Safe Drinking Water laws, regulations, and practices governing water quality, treatment, and distribution
 - c. Federal and State regulations and practices governing the safety of a high-hazard dam and hydro-electric power plant
 - d. Federal and State environmental regulations and permit processes for river operations
 - e. State law and practices governing water rights
11. Computer operation and standard applications software
12. Public, media, and staff relations

REQUIRED TRAINING AND EXPERIENCE

Any combination of training and experience that provides the required knowledge and abilities is qualifying. A typical way to obtain the requisite knowledge and abilities would be:

1. Bachelor's Degree from an accredited university or college with a major in Business Administration, Public Administration, Engineering, Water Resources, or closely related field
2. Ten-to-fifteen years of increasingly responsible and broad experience in engineering, administration, or management in a private or public agency. Strong preference for experience in

utility or water resource fields. Background should include experience working with elected Board or Commission, and responsibility for planning, development, and implementation of programs, budgets, and operations

SPECIAL REQUIREMENTS

1. Must possess a valid California Driver's license, and must maintain a driving record acceptable to the District and its insurance carrier. Compliance with this requirement is a condition of continuing employment
2. Must qualify for fiduciary bonding
3. Must be able to occasionally work evenings and weekends. Must be available to work following an emergency that affects the District's operations
4. Must be able to serve as the District's Dam Safety Coordinator pursuant to the FERC's Owner Dam Safety Program regulatory requirements

ESSENTIAL PHYSICAL ABILITIES

Individuals selected for appointment to this position must pass a pre-employment medical examination which the District pays for. Because this position is considered "safety sensitive" in nature, the person selected for appointment to this position must pass a pre-employment drug screening which the District also pays for. The medical examination and drug screening are intended to evaluate the applicant's ability to meet the physical and health requirements for this classification.

A person employed in this position must be able to:

1. Operate a motor vehicle
2. Operate a variety of office equipment (computer, copy machine, fax, etc.)
3. Understand and carry out oral and written directions
4. Communicate well with others, verbally and in writing
5. Work cooperatively and get along well with the Board, District staff, customers, and the public
6. Sit for extended periods of time
7. Perform minor physical activities which involve bending, lifting, and reaching

Humboldt Bay Municipal Water District
WATER OPERATIONS SUPERVISOR - M5
(Chief Operator)

Position Description

GENERAL PURPOSE

Under general direction, supervises and participates in the work of staff responsible for the water pumping, distribution, and treatment systems; oversees and participates in work involving meter reading, water service connection, backflow compliance, and customer services; supervises and participates in work involving District IT systems including but not limited to SCADA, GIS, networking and all related servers & equipment; and performs other related work as required.

Serves as the District's Chief Treatment and Distribution Operator pursuant to California safe drinking water regulations.

ESSENTIAL FUNCTIONS AND DUTIES

1. Responsible for overseeing and leading operations of the District's water pumping, treatment, and distribution system
2. Responsible for Supervising staff in the following positions, Assistant Operations Supervisor, Water Operations Specialist, Customer Service and Operations and Maintenance Technicians
3. Responsible for operation, maintenance and upgrades of the District's Supervisory Control and Data Acquisition System (SCADA) used to monitor and control the water system. Supervises and participates in all aspects of District operations to carry out this responsibility
4. Responsible for the management and maintenance of the District's computer software platforms including but not limited to VM Ware, ArcGIS, Historian and Active Directory
5. Responsible for the management, maintenance and upgrades of the District's multiple networks, servers and database systems. Manages the online reporting and scheduling of power production at the Ruth Hydro facility
6. Responsible for the management and implementation of the District's backflow policy including conducting hazard assessments
7. Monitoring and controlling the operation of water pumping, treatment, and distribution facilities to achieve proper processing and distribution of water within mandated operating requirements
8. Starting and controlling plant processes and chemical systems to treat water in accordance with DHS' Permit and other operating requirements
9. Assisting in handling and storage of water treatment chemicals
10. Performing water sample collection and various laboratory testing and analytical procedures
11. Responding to alarms, identifying operating problems, and initiating or implementing appropriate response and corrective actions

12. Supervises and participates in meter reading, service connection, backflow device installation and testing, and customer services
13. Conducts periodic inspections of equipment and facilities to ensure proper operation and to identify and plan for repairs and maintenance
14. Assists with the implementation of a comprehensive work safety program. Ensures adherence to safety requirements, conducts inspections for hazards, conducts accident investigations, and prepares incident reports
15. Designs and implements energy conservation programs
16. Assists in the identification, planning, and prioritization of operations and maintenance projects, including the determination of personnel & materials requirements, and personnel assignments
17. Works with contractor and/or customer to properly size and locate new meter service requests
18. Provides input on budget and cost proposals for maintenance and operations
19. Directs departmental record keeping activities; prepares requisitions; prepares a variety of reports
20. Handles customer inquiries and complaints. Keeps records of all complaints per State regulations
21. Performs supervisory functions. Assures that subordinate staff acquire and maintain all necessary licenses, certifications, and training; plans and conducts in-service training programs; prepares periodic evaluations of employees; assists in the selection of new water operations staff
22. Performs duties of an Operations and Maintenance Technician as needed, and may act as District Superintendent

REQUIRED KNOWLEDGE, SKILLS, and ABILITIES

1. Principles, practices, and operation of water pumping, treatment, and distribution
2. Federal and State regulations relating to water quality, treatment, and distribution
3. Principles and practices of programming
4. Standard desktop operating system and Microsoft Office applications (spreadsheet and database)
5. Specialized program applications, including Allan Bradley Ladder Logic and HMI languages, SCADA, and VBA
6. Mathematical and analytical skills necessary for a Network Administrator. Ability to maintain and troubleshoot fiber-optic, wireless communications, and ethernet systems
7. Collecting water samples and performing laboratory testing procedures
8. Reading meters and accurately recording water usage
9. Budgeting, project planning, and cost estimation for service installations
10. Safety regulations, programs, and safe work practices
11. Interpretation of user manuals, repair manuals, schematic diagrams, and blueprints
12. Operating a variety of vehicles and power-driven equipment
13. Dealing tactfully and courteously with customers. Handling customer inquiries and complaints
14. Develop cooperative working relationships. Use teamwork to solve practical problems and to plan and coordinate workload among a small, close-knit workforce.

15. Strong working knowledge of computer systems, advanced networking protocols, and SCADA
16. Strong written and oral communication skills
17. Ability to compose routine correspondence and reports

TRAINING AND EXPERIENCE

Any combination of training and experience that provides the required knowledge and abilities is qualifying. A typical way to obtain the requisite knowledge and abilities would be:

1. High school diploma or GED
2. Bachelor's degree, Computer Science, Engineering, or other course work relevant for this position are beneficial
3. Five-to-ten years of increasingly responsible experience in the operation and maintenance of water pumping, treatment, and distribution system and facilities. Supervisory experience beneficial and desirable. Experience with Supervisory Control and Data Acquisition Systems also beneficial and desirable
4. Cross Connection Control (CCC) Specialist and backflow tester certificates
5. Grade IV Treatment and Distribution certificates

SPECIAL REQUIREMENTS

1. Must possess the category of California Driver's license required by the State Department of Motor Vehicles to perform the essential duties of the position. Employees must maintain a driving record acceptable to the District and its insurance carrier. Compliance with these requirements and established District vehicle operation standards are a condition of continuing employment.
2. May work odd shifts, weekends, or holidays and perform standby duties as assigned. Must be available to respond to emergencies which affect the District such as earthquakes, power outages, pipeline breaks, high water events, and other similar incidents.
3. In order to wear respiratory protection or other safety equipment facial hair must be maintained as to keep hair growth out from between the skin and the facepiece sealing surface (such as stubble beard growth, beard, mustache, or sideburns).
4. Must be able to participate in confined space operations.
5. Must possess and maintain a Grade IV Water Treatment Operator's Certificate and a Grade IV Water Distribution Certificate pursuant to State drinking water regulations. If an employee does not initially possess this level of certification, the District will allow a period of time for them to obtain the required certifications. Employees must also meet the State's continuing education requirements to maintain certifications. Compliance with the State certification requirements is a condition of continuing employment.
6. Must possess and maintain Backflow Certification pursuant to State drinking water regulations. If an employee does not initially possess this certification, the District will allow a period of time for them to obtain the required certification.

7. Must acquire basic American Red Cross First Aid/CPR certificates during the initial year of employment.

ESSENTIAL PHYSICAL ABILITIES

Individuals selected for appointment to this position must pass a pre-employment medical examination paid for by the District. Because this position is considered "safety sensitive" in nature, the person selected for appointment to this position must pass a pre-employment drug screening also paid for by the District. The medical examination and drug screening is intended to evaluate the applicant's ability to meet the physical and health requirements for this classification.

A person employed in this position must be able to:

1. Investigate and solve complex problems involving the ability to:
 - a. Perform visual inspections
 - b. Hear/discern normal versus abnormal noises/sounds
 - c. View and respond to operational control screens (including alarms)
 - d. Think critically
2. Sit for extended periods of time
3. Operate a variety of office equipment (computer, copy machine, fax, etc.)
4. Operate motor vehicles and other equipment
5. Operate a variety of hand and electric tools
6. Perform a variety of physical activities which may involve reaching, bending, squatting, kneeling, crouching, crawling, climbing, and manual dexterity
7. Perform additional physical activities to position or move tools, equipment, and supplies which may involve lifting and pushing or pulling motions
8. Wear a respirator and other personal protective equipment
9. Understand and carry out oral and written directions
10. Communicate well with others, verbally and in writing
11. Work cooperatively and get along well with other people

Humboldt Bay Municipal Water District

WATER OPERATIONS SPECIALIST - OM1

Position Description

GENERAL PURPOSE

This position is somewhat unique in that it contains an element of another District position (the Operations and Maintenance Technician), but it also performs and is responsible for a variety of highly technical and specialized work related to the District's network and computer systems, including the District's Supervisory Control and Data Acquisition System (SCADA).

Under general supervision, programs, organizes, administers, and maintains automated process control, data acquisition, software systems, microcomputer networks, and related peripheral equipment. Acts as technical resource to other staff on use of automated equipment and software. Performs full range of Operations and Maintenance Technician duties and other related work as required.

ESSENTIAL FUNCTIONS AND DUTIES

1. Responsible for administrative networked systems which includes over 40 computers and multiple peripheral devices. Responsible for the District's Supervisory Control and Data Acquisition System (SCADA). The control system is a complex network of approximately 20+ programmable logic controllers (PLCs) linked through ethernet, fiber-optic and wireless radio communications. This position assists electricians with physical maintenance of the administrative and control network.
2. Installs and activates sensors and other instrumentation. Assists in the setup and configuration of automated equipment, computers, and related peripherals. Adds ladder logic and HMI programming to display and data log these sensors and related SCADA inputs. Performs software upgrades to the PLC and HMI, including sensor calibrations and range programming.
3. Performs daily checks and analyses to maintain complete functionality of computer systems. Performs routine cleaning of computers and printer equipment. Interacts as requested with computer consultants to identify and resolve computer/network problems. In the event of system or network failure, expedites professional trouble-shooting procedures to return the system to full capability.
4. Performs Database Administrator functions. Diagnoses and responds to varying symptoms evidenced in the data that could result in production, water quality and/or environmental concerns. Performs PC archiving and backup duties. Provides data acquisition services and produces monthly reports and graphs.
5. Utilizes the VBA programming language to improve software and user interfaces. Innovates to introduce new systems and/or processes to improve capability or efficiency of operations.
6. Responsible for both administrative and control system backups. Review and update backup policies and procedures to make sure the district is protected from new and emerging threats.
7. Acts as resource for the entire organization on operation of computers and peripheral equipment. Provides technical assistance and training for personnel in the use of computers, HMI, and related

hardware and software. Sets up procedures for a variety of office support, record keeping, disc handling, and system library tasks.

8. Performs water system operations duties and responsibilities of the Operations and Maintenance Technician position. Operational duties include:
 - a. Monitoring and controlling the operation of water pumping, treatment, and distribution facilities to achieve proper processing and distribution of water within mandated operating requirements
 - b. Starting and controlling plant processes and chemical systems to treat water in accordance with Department of Health Services (DHS) Permit and other operating requirements
 - c. Assisting in handling and storage of water treatment chemicals
 - d. Performing water sample collection and various laboratory testing and analytical procedures
 - e. Responding to alarms, identifying operating problems, and initiating or implementing appropriate response and corrective actions
 - f. Operate and monitor power generation equipment in a safe manner.
9. May periodically fill-in and act as Assistant Water Operations Supervisor

REQUIRED KNOWLEDGE, SKILLS, and ABILITIES

1. Principles and practices of programming
2. Standard desktop operating system and Microsoft Office applications (spreadsheet and database)
3. Specialized program applications, including Allan Bradley Ladder Logic and HMI languages, SCADA, VB, and VBA
4. Mathematical and analytical skills necessary for a Network Administrator. Ability to maintain and troubleshoot fiber-optic, wireless communications, and ethernet systems
5. Design and implementation of new systems or procedures for process control automation
6. Operation of water pumping, treatment and distribution facilities. Principles and practices of water quality and water treatment
7. Interpreting gauges, recording devices, and other monitoring equipment for plant operations
8. Basic water sample collection and laboratory testing procedures
9. Budgeting, project planning, and cost estimation for service installations
10. Strong written and oral communication skills
11. Ability to compose routine correspondence and reports.
12. Repair and maintenance of water pumping, treatment, and distribution equipment
13. Interpreting repair manuals, schematic diagrams, blueprints, and preventative maintenance programs
14. Safety program and safe work practices
15. Cooperative working relationships. Teamwork to solve practical problems and coordinate work among a small, close-knit workforce

TRAINING AND EXPERIENCE

Any combination of training and experience that provides the required knowledge and abilities is qualifying. A typical way to obtain the requisite knowledge and abilities would be:

1. High school diploma or GED
2. A Bachelors Degree or equivalent professional-level coursework in data processing, computer systems analysis, and/or symbolic programming is beneficial and desirable.
3. Five-to-seven years of increasingly responsible experience in the operation of water distribution, treatment, and pumping facilities, with particular experience in process control and data acquisition systems, and related network and computer application software.
4. Grade IV Treatment and/or Distribution certificates

SPECIAL REQUIREMENTS

1. Must possess the category of California Driver's license required by the State Department of Motor Vehicles to perform the essential duties of the position. Employees must maintain a driving record acceptable to the District and its insurance carrier. Compliance with these requirements and established District vehicle operation standards are a condition of continuing employment.
2. May work odd shifts, weekends, or holidays and perform standby duties as assigned. Must be available to respond to emergencies which affect the District such as earthquakes, power outages, pipeline breaks, high water events, and other similar incidents.
3. In order to wear respiratory protection or other safety equipment, facial hair must be maintained as to keep hair growth out from between the skin and the facepiece sealing surface (such as stubble beard growth, beard, mustache, or sideburns). Must be able to participate in confined space operations.
4. Must possess and maintain a Grade IV Water Treatment Operator's Certificate and a Grade IV Water Distribution Certificate pursuant to State drinking water regulations. If an employee does not initially possess this level of certification, the District will allow a period of time for the incumbent to obtain the required certifications. Employees must also meet the State's continuing education requirements to maintain certifications. Compliance with the State certification requirements is a condition of continuing employment.
5. Must acquire basic American Red Cross First Aid/CPR certificates during the initial year of employment.

ESSENTIAL PHYSICAL ABILITIES

Persons selected for appointment to this position must pass a pre-employment medical examination which the District pays for. Because this position is considered "safety sensitive" in nature, the person selected for appointment to this position must pass a pre-employment drug screening which the District also pays for. The medical examination and drug screening is intended to evaluate the applicant's ability to meet the physical and health requirements for this classification.

A person employed in this position must be able to:

1. Sit for extended periods of time;

2. Operate a variety of office equipment (computer, copy machine, fax, etc.);
3. Operate motor vehicles and other equipment;
4. Operate a variety of hand and electric tools;
5. Perform a variety of physical activities which may involve reaching, bending, squatting, kneeling, crouching, crawling, climbing, and also manual dexterity;
6. Perform additional physical activities to position or move tools, equipment, and supplies which may involve lifting and pushing or pulling motions;
7. Wear a respirator and other personal protective equipment;
8. Understand and carry out oral and written directions;
9. Communicate well with others, verbally and in writing;
10. Work cooperatively and get along well with other people;
11. Investigate and solve complex problems which involves the ability to perform visual inspections, ability to hear/discern normal versus abnormal noises/sounds, ability to view and respond to operational control screens including alarms, and the ability to think critically.

Humboldt Bay Municipal Water District
OPERATIONS and CUSTOMER SERVICE SPECIALIST - OM3c

Position Description

GENERAL PURPOSE

This position is unique in that it contains elements of other District positions (the Operations and Maintenance Technician), and it also performs a variety of water quality and retail-level distribution and customer service work.

Under general supervision, this position performs the duties of the Operations and Maintenance Technician position, and also performs retail customer service and distribution system activities such as constituent sampling, meter reading, pipeline flushing, backflow device testing, and pipeline locating.

In general, a greater portion of time will be spent in Customer Service, and in Operations and providing support to the Assistant and Operations Supervisors when the Turbidity Reduction Facility (TRF) is operational. Conversely, a greater portion of time will be spent in the field performing retail customer service functions and system planned maintenance when the TRF is not operational.

ESSENTIAL FUNCTIONS AND DUTIES

1. Records operation actions including flows, chemical dosages, filtration rates, and other information in appropriate log sheets/books. Notes operational or maintenance problems and writes work orders for repairs
2. Reads water meters following an established schedule, and checks for inoperative, defaced, or bypassed meters. Makes minor adjustments or repairs to meters/appurtenances. Turns water service on/off and handles inquiries with respect to retail service
3. Oversees the ordering, procurement, and inventory management of distribution system parts and components
4. Assists management with budgeting, planning, and execution of annual distribution system projects, including but not limited to meter replacements, valve book updates, and upgrades to distribution system
5. Performs weekly, monthly and annual, water quality sampling for two separate service areas per regulatory requirements using prescribed sampling procedures
6. Performs emergency Bacteriological sampling during water quality events in accordance with State regulations
7. Responsible for valve exercising and system flushing programs according to prescribed procedures
8. Determines need for backflow and cross-connection equipment, and tests all backflow devices for compliance with regulations Is responsible for backflow equipment calibrations
9. Locates and identifies District equipment and pipelines for customers, contractors, and other public agencies

10. Responds to water leaks and collaborates with the Operations Supervisor to develop and implement appropriate dewatering, filling, and repressurizing plans in accordance with AWWA standards
11. Engages with the public to address concerns related to water quality, leaks, usage discrepancies, and any other issues that may arise
12. Maintains a variety of records and reports relating to water service, customers, and equipment
13. May assist or work independently in the repair and maintenance of District equipment and facilities; Including installation, repair, and maintenance of meters, pipelines, and other water distribution equipment
14. Use computers to enter operational data into spreadsheets for calculation of average flows, chemical dosages, CT values, and water usage, and prepares a variety of operating and statistical reports. Produce simple written reports and memoranda
15. Performs water system operations duties and responsibilities of the Operations and Maintenance Technician position. Operational duties include:
 - a. Monitoring and controlling the operation of water pumping, treatment, and distribution facilities to achieve proper processing and distribution of water within mandated operating requirements
 - b. Starting and controlling plant processes and chemical systems to treat water in accordance with DHS' Permit and other operating requirements
 - c. Assisting in handling and storage of water treatment chemicals
 - d. Performing water sample collection and various laboratory testing and analytical procedures
 - e. Responding to alarms, identifying operating problems, and initiating or implementing appropriate response and corrective actions
 - f. Operate and monitor power generation equipment in a safe manner

REQUIRED KNOWLEDGE, SKILLS, and ABILITIES

1. Operation of water pumping, treatment, and distribution facilities
2. Principles, practices, and regulations of water quality, water treatment, and distribution
3. Interpreting gauges, recording devices, and other monitoring equipment for plant and facility operations
4. Collecting water samples and performing laboratory-testing procedures
5. Reading meters and accurately recording usage
6. Performing backflow testing and line flushing procedures
7. Dealing tactfully with customers, contractors, and others encountered in the course of work
8. Operating a variety of vehicles and power-driven equipment

9. Safety program and safe work practices
10. Operation of computers using both standard applications (e.g. Office-based) and specialized applications as needed
11. Cooperative working relationships. Teamwork to solve practical problems and coordinate work among a small, close-knit workforce

TRAINING AND EXPERIENCE

Any combination of training and experience that provides the required knowledge and abilities is qualifying. A typical way to obtain the requisite knowledge and abilities would be:

1. High school diploma or GED
2. Community College, technical or other course work relevant for this position are beneficial.
3. Two-to-three years of increasingly responsible experience in the operation of water distribution, treatment, and pumping facilities; and/or distribution system activities such as backflow testing, meter reading, and customer service. Backflow certification also desirable.
4. Grade III Treatment and/or Distribution certificates

SPECIAL REQUIREMENTS

1. Must possess the category of California Driver's license required by the State Department of Motor Vehicles to perform the essential duties of the position. Employees must maintain a driving record acceptable to the District and its insurance carrier. Compliance with these requirements and established District vehicle operation standards are a condition of continuing employment.
2. May work odd shifts, weekends, or holidays and perform standby duties as assigned. Must be available to respond to emergencies which affect the District such as earthquakes, power outages, pipeline breaks, high water events, and other similar incidents.
3. In order to wear respiratory protection or other safety equipment, facial hair must be maintained as to keep hair growth out from between the skin and the facepiece sealing surface (such as stubble beard growth, beard, mustache, or sideburns).
4. Must be able to participate in confined space operations.
5. Must possess and maintain a Grade III Water Treatment Operator's Certificate and a Grade III Water Distribution Certificate pursuant to State drinking water regulations. If an employee does not initially possess this level of certification, the District will allow a period of time for them to obtain the required certifications. Employees must also meet the State's continuing education requirements to maintain certifications. Compliance with the State certification requirements is a condition of continuing employment.
6. Must possess and maintain Backflow Certification pursuant to State drinking water regulations. If an employee does not initially possess this certification, the District will allow a period of time for them to obtain the required certification.
7. Must acquire basic American Red Cross First Aid/CPR certificates during the initial year of employment.

ESSENTIAL PHYSICAL ABILITIES

Persons selected for appointment to this position must pass a pre-employment medical examination which the District pays for. Because this position is considered "safety sensitive" in nature, the person selected for appointment to this position must pass a pre-employment drug screening which the District also pays for. The medical examination and drug screening is intended to evaluate the applicant's ability to meet the physical and health requirements for this classification.

A person employed in this position must be able to:

1. Sit for extended periods of time
2. Operate a variety of office equipment (computer, copy machine, fax, etc.)
3. Operate motor vehicles and other equipment
4. Operate a variety of hand and electric tools
5. Perform a variety of physical activities which may involve reaching, bending, squatting, kneeling, crouching, crawling, climbing, and also manual dexterity
6. Perform additional physical activities to position or move tools, equipment, and supplies which may involve lifting, and pushing or pulling motions
7. Wear a respirator and other personal protective equipment
8. Understand and carry out oral and written directions
9. Communicate well with others, verbally and in writing
10. Work cooperatively and get along well with other people
11. Investigate and solve complex problems which involves ability to perform visual inspections, ability to hear/discern normal versus abnormal noises/sounds, ability to view and respond to operational control screens including alarms, and ability to think critically

Humboldt Bay Municipal Water District

HYDROELECTRIC OPERATOR/RUTH-AREA REPRESENTATIVE - OM3a

Position Description

GENERAL PURPOSE

Under general supervision, operates, maintains, and controls the District's hydroelectric generating facilities, R.W. Matthews Dam, reservoir equipment, and Ruth Lake facilities; acts as District's on-site Ruth area representative and performs other related duties as required.

ESSENTIAL FUNCTIONS AND DUTIES

1. Controls the operation of hydroelectric generation, R.W. Matthews Dam, reservoir, and water release equipment and facilities at Ruth Lake using established operating parameters.
2. Reads and records voltage level and kilowatt hour production of hydroelectric plant; reads gauges and flow meters to determine and record water levels and flow rates; reports data and plant conditions to other staff.
3. Stops and starts power plant following established procedures; checks annunciators, gauges, and dials to assess plant conditions; checks equipment for malfunctions or maintenance needs.
4. Performs needed maintenance and repair on District facilities; keeps machinery, equipment, structures, piping, work areas, grounds, and landscaped areas in a clean and orderly condition; assists others with complex machinery and equipment maintenance, repair, and overhaul.
5. Inspects control equipment, facilities, and grounds for needed maintenance, repairs, and unusual operating conditions.
6. Operates a variety of District vehicles and equipment; prepares a variety of operating reports; makes rounds of District property to secure facilities and ensure safety.
7. Operates the District utility boat to perform shoreline inspections of District property and to clear debris from the log-boom.
8. Trains, schedules, and oversees the work of other staff assigned to provide additional coverage and assist in the operation and maintenance of District equipment, R.W. Matthews Dam, and facilities at Ruth Lake.
9. Acts as District representative to public agencies, lessees of District properties, and the general public; assures that the development and usage of District real property complies with District requirements.
10. Responds to hydroelectric plant alarms and emergencies; performs powerhouse and R.W. Matthews Dam inspections in the event of an earthquake; coordinates the Emergency Action Plan activities at Ruth Lake.
11. Make visual observations of dam, abutments, and surrounding geology per our Dam Safety and Surveillance Monitoring Plan (DSSMP).

REQUIRED KNOWLEDGE, SKILLS, and ABILITIES

1. Principles and practices of dams, penstocks, and hydroelectric plants, including electrical generators, turbines, high voltage breakers, transformers, compressors, valves, and pumps
2. Hydro-electric facility operations including monitoring, controlling, and adjusting operations and output
3. Reservoir capacity, water flow, and electric generation calculations
4. Repair and maintenance procedures for hydroelectric plants, dams, and related equipment
5. Planning and overseeing construction and maintenance work conducted by third-party contractors
6. Basic water sample collection and laboratory testing procedures
7. Basic operation of computers, automated equipment, and standard applications software
8. Safe work practices and safety regulations
9. Public and media relations
10. Cooperative working relationships. Teamwork to solve practical problems and coordinate work among a small, close-knit workforce

TRAINING AND EXPERIENCE

Any combination of training and experience that provides the required knowledge and abilities is qualifying. A typical way to obtain the requisite knowledge and abilities would be:

1. High school diploma or GED
2. Community College, technical or other course work relevant for this position are beneficial
3. Three-to-five years of increasingly responsible experience in the operation and maintenance of hydroelectric generation, dams, and reservoir facilities; or three-to-five years of experience in skilled industrial plant mechanical maintenance and repair, preferably with some direct experience at a water facility.
4. Grade II Treatment and/or Distribution certificates

SPECIAL REQUIREMENTS

1. Must possess the category of California Driver's license required by the State Department of Motor Vehicles to perform the essential duties of the position. Employees must maintain a driving record acceptable to the District and its insurance carrier. Compliance with these requirements and established District vehicle operation standards are a condition of continuing employment.
2. May work odd shifts, weekends, or holidays and perform standby duties as assigned. Must be available to respond to emergencies which affect the District such as earthquakes, power outages, , and high water events.

3. In order to wear respiratory protection or other safety equipment, facial hair must be maintained as to keep hair growth out from between the skin and the facepiece sealing surface (such as stubble beard growth, beard, mustache, or sideburns).
4. Must be able to participate in confined space operations.
5. Must possess and maintain a Grade II Water Treatment Operator's Certificate and a Grade II Water Distribution Certificate pursuant to State drinking water regulations. If an employee does not initially possess this level of certification, the District will allow a period of time for them to obtain the required certifications. Employees must also meet the State's continuing education requirements to maintain certifications. Compliance with the State certification requirements is a condition of continuing employment.
6. Must acquire basic American Red Cross First Aid/CPR certificates during the initial year of employment.
7. Must acquire a California Boater Card during the initial year of employment.

ESSENTIAL PHYSICAL ABILITIES

Persons selected for appointment to this position must pass a pre-employment medical examination which the District pays for. Because this position is considered "safety sensitive" in nature, the person selected for appointment to this position must pass a pre-employment drug screening which the District also pays for. The medical examination and drug screening is intended to evaluate the applicant's ability to meet the physical and health requirements for this classification.

A person employed in this position must be able to:

1. Sit for extended periods of time;
2. Operate a computer;
3. Operate motor vehicles and other equipment;
4. Operate a variety of hand and electric tools;
5. Perform a variety of physical activities which may involve reaching, bending, squatting, kneeling, crouching, crawling, climbing, and also manual dexterity;
6. Perform additional physical activities to position or move tools, equipment, and supplies which may involve lifting, and pushing or pulling motions;
7. Wear a respirator and other personal protective equipment;
8. Understand and carry out oral and written directions;
9. Communicate well with others, verbally and in writing;
10. Work cooperatively and get along well with other people;
11. Investigate and solve complex problems which involves ability to perform visual inspections, ability to hear/discern normal versus abnormal noises/sounds, ability to view and respond to operational control screens including alarms, and ability to think critically.

Humboldt Bay Municipal Water District

MAINTENANCE MECHANIC - OM3b

Position Description

GENERAL PURPOSE

Under direction participates in the work of staff responsible for the construction, repair, calibration, and maintenance of District pumping, water treatment, distribution, storage, hydroelectric, communications, electrical, electronic, and other facilities; may coordinate and oversee the work of contract construction and maintenance employees; and performs other related work as required.

ESSENTIAL FUNCTIONS AND DUTIES

1. Inspects, operates, and maintains a variety of water control, pumping, distribution, treatment, and regulating equipment, buildings, structures, pipelines, hydroelectric plants, reservoirs, and related facilities.
2. Performs repairs and overhauls of gas and diesel engines and large pumps.
3. Maintains and repairs specialized water control and treatment equipment.
4. Prepares shop designs for the fabrication or modification of parts and equipment.
5. Installs, repairs, and maintains water meters and pipelines.
6. Operates the full range of field and shop repair equipment and tools including trucks, tractors, forklifts, boom truck, cranes, portable welders, and paint spraying equipment.
7. Maintains and repairs buildings, facilities, and equipment including the performance of carpentry, painting, welding, plumbing, and machine shop work.
8. Performs pipeline repairs including placement of various types of clamps, grouting, and other joining devices.
9. Performs plumbing and valve repairs including rebuilding of air relief, blowoff, and butterfly valves.
10. Performs hydraulic system maintenance, repair, and modifications including piping, cylinders, and pumps.
11. Reads and interprets manuals, blueprints, and schematic drawings.
12. May periodically perform duties of Operation and Maintenance Technician.

REQUIRED KNOWLEDGE, SKILLS, and ABILITIES

1. Operation of water pumping, treatment, and distribution facilities
2. Repair and maintenance of water pumping, treatment, and distribution equipment. In particular, procedures, equipment, materials, and tools to maintain and repair: industrial motors, engines, pumps, compressors, hydraulic systems, valves, and gas and diesel engines

3. Basic electrical theory related to pump and motor repair and maintenance
4. Fabrication, and gas and electrical welding
5. Preventative maintenance programs
6. Interpreting repair manuals, schematic diagrams, and blueprints
7. Time, materials, and labor cost estimating for maintenance and repair projects
8. Operation of a variety of vehicles and power-driven equipment
9. Safety program and safe work practices
10. Operation of computers and other office equipment, using both standard and specialized application software.
11. Cooperative working relationships. Teamwork to solve practical problems and coordinate work among a small, close-knit workforce

TRAINING AND EXPERIENCE

Any combination of training and experience that provides the required knowledge and abilities is qualifying. A typical way to obtain the requisite knowledge and abilities would be:

1. High school diploma or GED
2. Community College, technical or other course work relevant for this position are beneficial. Completion of an apprenticeship or other equivalent training and education involving industrial plant maintenance and repair desirable
3. Three-to-five years of experience in skilled industrial plant mechanical maintenance and repair, preferably with some direct experience at a water or wastewater treatment plant or similar facility
4. Grade II Treatment and Grade III Distribution certificates

SPECIAL REQUIREMENTS

1. Must possess the category of California Driver's license required by the State Department of Motor Vehicles to perform the essential duties of the position (Class A, Combination vehicle, with Haz-Mat endorsement). Employees must maintain a driving record acceptable to the District and its insurance carrier. Compliance with these requirements and established District vehicle operation standards are a condition of continuing employment.
2. Employees will be required to attain and maintain an NCCCO Crane Operator certifications for telescopic boom fixed cab, boom truck fixed cab, and service truck cranes. If an employee does not initially possess this certification, the District will allow a period of time for them to obtain the required certifications through the established certification cycle for District Crane Operators (every 5yrs).
3. Employees will be required to be certified as a competent Rigging and Signal Person for lifting operations.
4. May work odd shifts, weekends, or holidays and perform standby duties as assigned. Must be available to respond to emergencies which affect the District such as earthquakes, power outages, pipeline breaks, high water events, and other similar incidents.

5. In order to wear respiratory protection or other safety equipment, facial hair must be maintained as to keep hair growth out from between the skin and the facepiece sealing surface (such as stubble beard growth, beard, mustache, or sideburns).
6. Must be able to participate in confined space operations.
7. Must possess and maintain a Grade II Water Treatment Operator's Certificate and a Grade II Water Distribution Certificate pursuant to State drinking water regulations. If an employee does not initially possess this level of certification, the District will allow a period of time for them to obtain the required certifications. Employees must also meet the State's continuing education requirements to maintain certifications. Compliance with the State certification requirements is a condition of continuing employment.
8. Must acquire basic American Red Cross First Aid/CPR certificates during the initial year of employment.

ESSENTIAL PHYSICAL ABILITIES

Persons selected for appointment to this position must pass a pre-employment medical examination which the District pays for. Because this position is considered "safety sensitive" in nature, the person selected for appointment to this position must pass a pre-employment drug screening which the District also pays for. The medical examination and drug screening is intended to evaluate the applicant's ability to meet the physical and health requirements for this classification.

A person employed in this position must be able to:

1. Investigate and solve complex problems involving the ability to:
 - a. Perform visual inspections;
 - b. Hear/discern normal versus abnormal noises/sounds;
 - c. View and respond to operational control screens (including alarms);
 - d. Think critically.
2. Sit for extended periods of time;
3. Operate a desktop computer;
4. Operate motor vehicles and other equipment;
5. Operate a variety of hand and electric tools;
6. Perform a variety of physical activities which may involve reaching, bending, squatting, kneeling, crouching, crawling, and climbing, and also manual dexterity;
7. Perform additional physical activities to position or move tools, equipment, and supplies which may involve lifting, and pushing or pulling motions;
8. Wear a respirator and other personal protective equipment;
9. Understand and carry out oral and written directions;
10. Communicate well with others, verbally and in writing;
11. Work cooperatively and get along well with other people.

OPERATIONS

Memo to: HBMWD Board of Directors
From: Dale Davidsen, Superintendent
Date: January 4, 2025
Subject: Essex/Ruth January 2025 Operational Report

Upper Mad River, Ruth Lake, and Hydro Plant

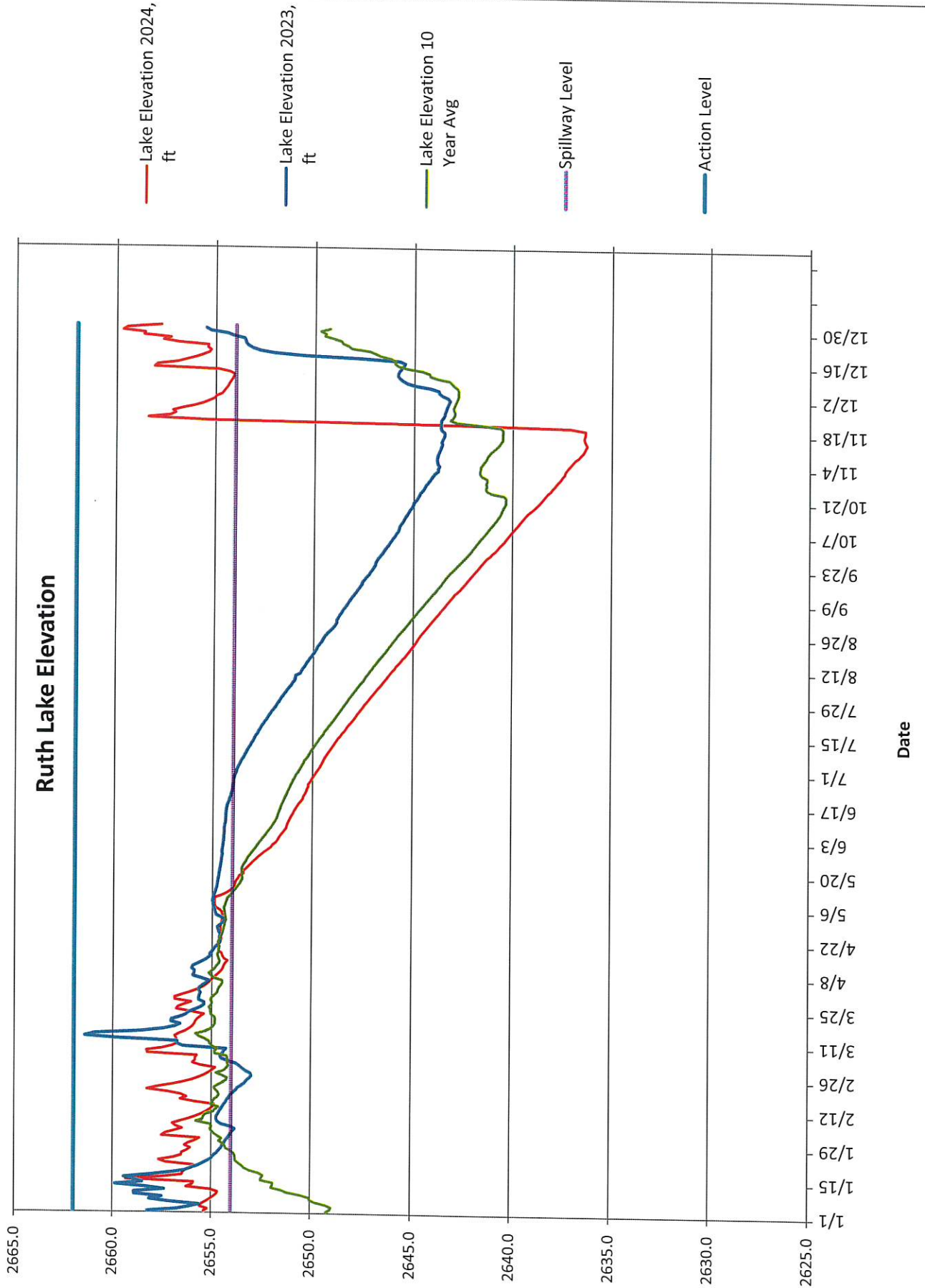
1. Average flow at Mad River above Ruth Reservoir (Zenia Bridge) in January was 419 cfs. The maximum flow was 2110 cfs on January 4th.
2. The conditions at Ruth Lake for January were as follows:
The lake level on January 31st was 2653.38 feet which is:
 - 4.40 feet lower than December 31st, 2024;
 - 2.20 feet lower than January 31st, 2024;
 - 1.09 feet lower than the ten-year average;
 - 0.62 feet below the spillway.
3. Ruth Headquarters recorded 3.12 inches rainfall in January.
4. Ruth Hydro produced 813,600 KWh in January. There was one PGE shut down for 16.3 hours with 20,090 KWh lost production.
5. The lake discharge averaged 642 cfs with a high of 2868 cfs on January 4th.

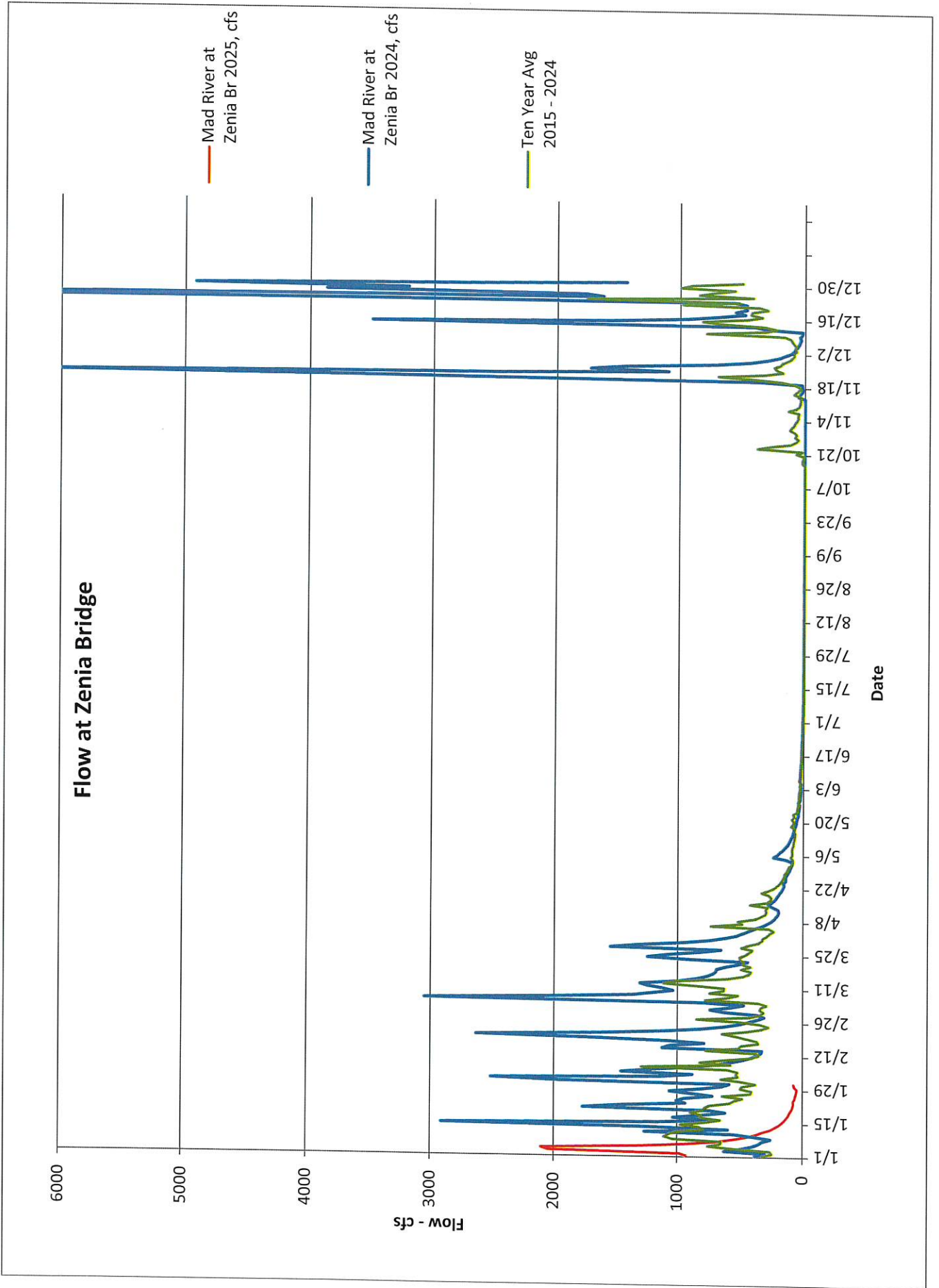
Lower Mad River, Winzler Control, and TRF

6. The river at Winzler Control Center, for January, had an average flow of 2905 cfs. The river flow was at a high of 12300 cfs on January 4th
7. The domestic water conditions were as follows:
 - a. The domestic water turbidity average was 0.09 NTU, which meets Public Health Secondary Standards;
 - b. As of January 31st, we pumped 225.349 MG at an average of 7.269 MGD;
 - c. The maximum metered daily municipal use was 8.410 MG on January 20th
8. The TRF is online:
 - a. Average monthly source water turbidity was 3.66 NTU;
 - b. Average monthly filtered water turbidity was 0.11 NTU;
 - c. Number of monthly filter backwashes was 71.

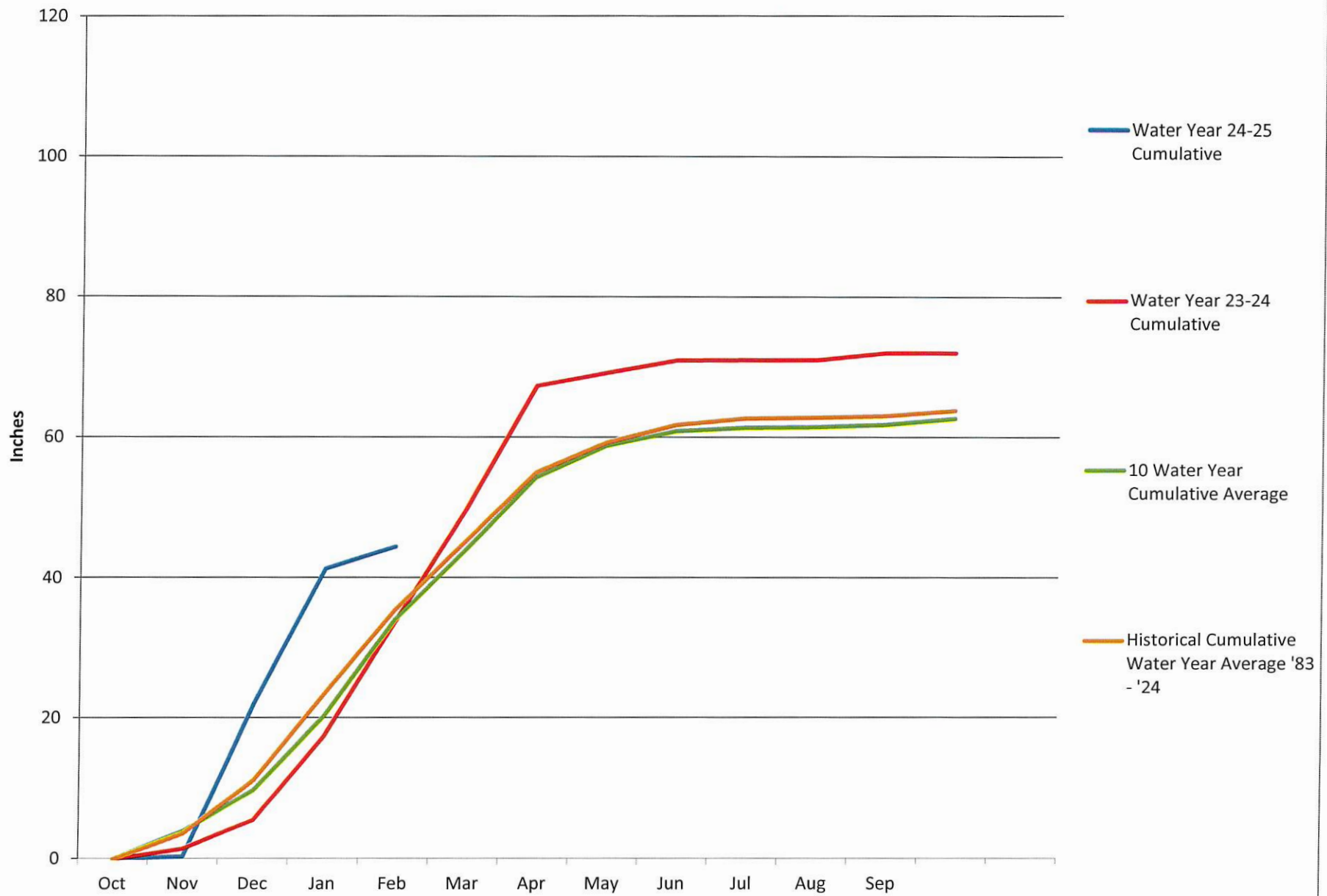
9. January 2nd – Maintenance Dept started moving spoils from IW reservoir clean out.
10. January 6th
 - a. First day for our new operator.
 - b. Installed temporary conduit for McKinleyville meter signal
11. January 8th – Walked sand borrow sites for EIR, with GHD & CDFW
12. January 11th – Power outage at Ruth, Larry responded to the plant since the relief operator was blocked by trees on the road.
13. January 13th
 - a. Teams meetings regarding seismic couplers for DW reservoir
 - b. Gave Michiko a tour of the TRF and reservoir project.
14. Safety meeting
 - a. WIIPP
 - b. AQMD permit requirements
 - c. Ruth EAP and Dam Safety plan
15. January 17th – Essex management staff attended the annual Sexual Harassment Prevention Webinar.
16. January 21st
 - a. SB 198 safety meeting
 - b. Zoom Meeting with Schatz Energy regarding the Tesla BESS and 2 MW generator coordination.
 - c. First Aid / CPR / AED training for 1 operator at NCSC.
17. January 23rd – Trip to Ruth to work on Tilt meter, repair spun wicket gate on unit 1 and replace lube pump in unit 2.
18. January 24th – Ken Davis's last day, Retired
19. January 28th
 - a. Another trip to Ruth to fix spun wicket gate on unit 1 – We had to remove the linkage and widen the pinch slot to get a better grip on wicket gate.
 - b. We put the TRF in Re-Circulation mode due to the chemical feed water pump failing.
 - c. Located R-o-W in Driscoll field.
20. January 29 – Replaced water pump and put TRF back online.
21. January 30th
 - a. Maintenance re-routed the 6" drain line on the DW reservoir to get the drain valve out of the new foundation area.
 - b. OSHG project Kick-Off meeting
 - c. Mario and I discussed methods of collecting flow data at Ruth with Patrick at GHD
22. Current and Ongoing Projects
 - a. Work with engineering and contractors as needed on multiple projects.
 - b. Ruth dam camera system – Installation complete. Training left to be done.
 - c. Tesla battery bank projects – In progress
 - d. Routine annual equipment maintenance and services.

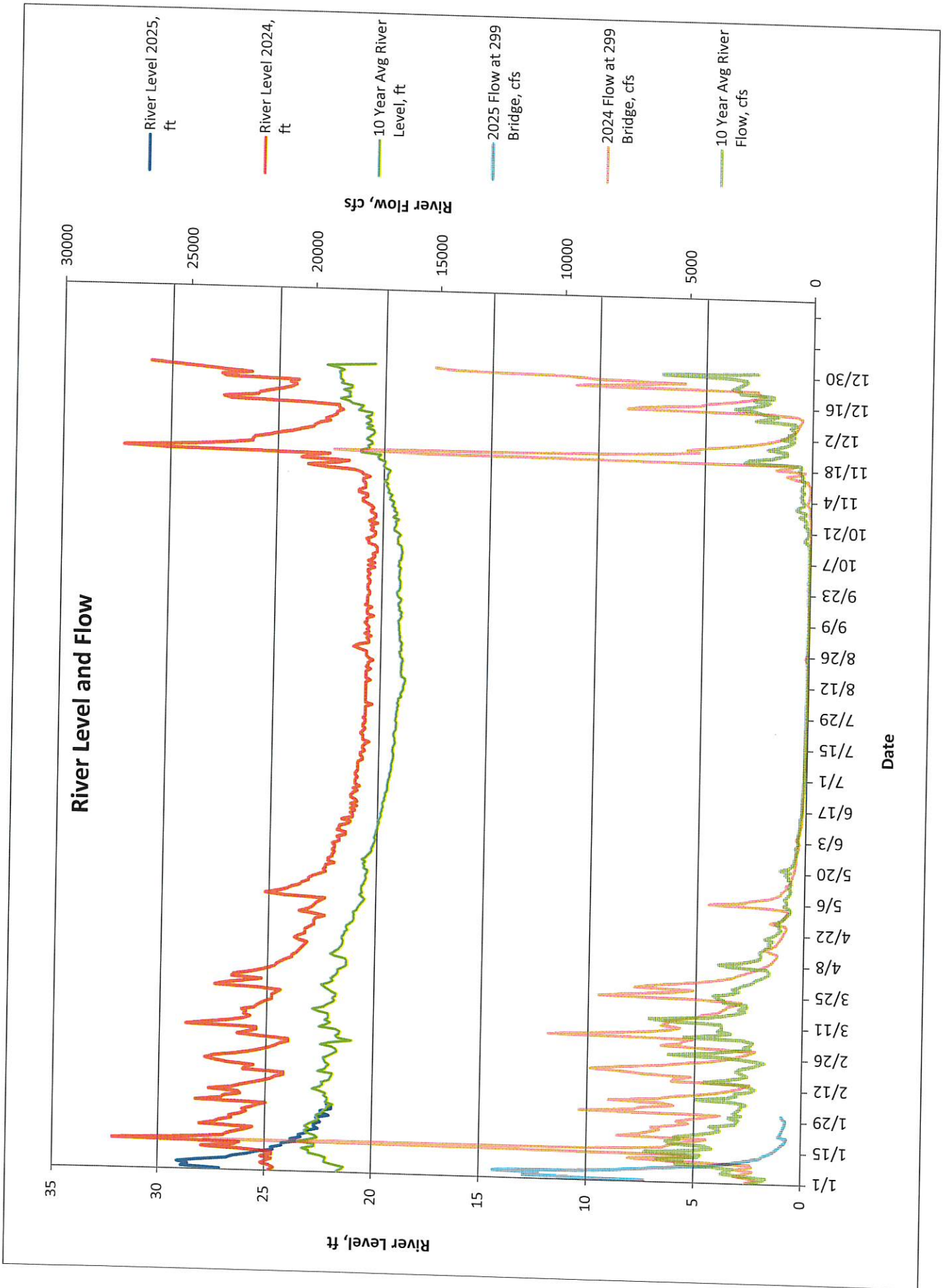
Ruth Lake Elevation



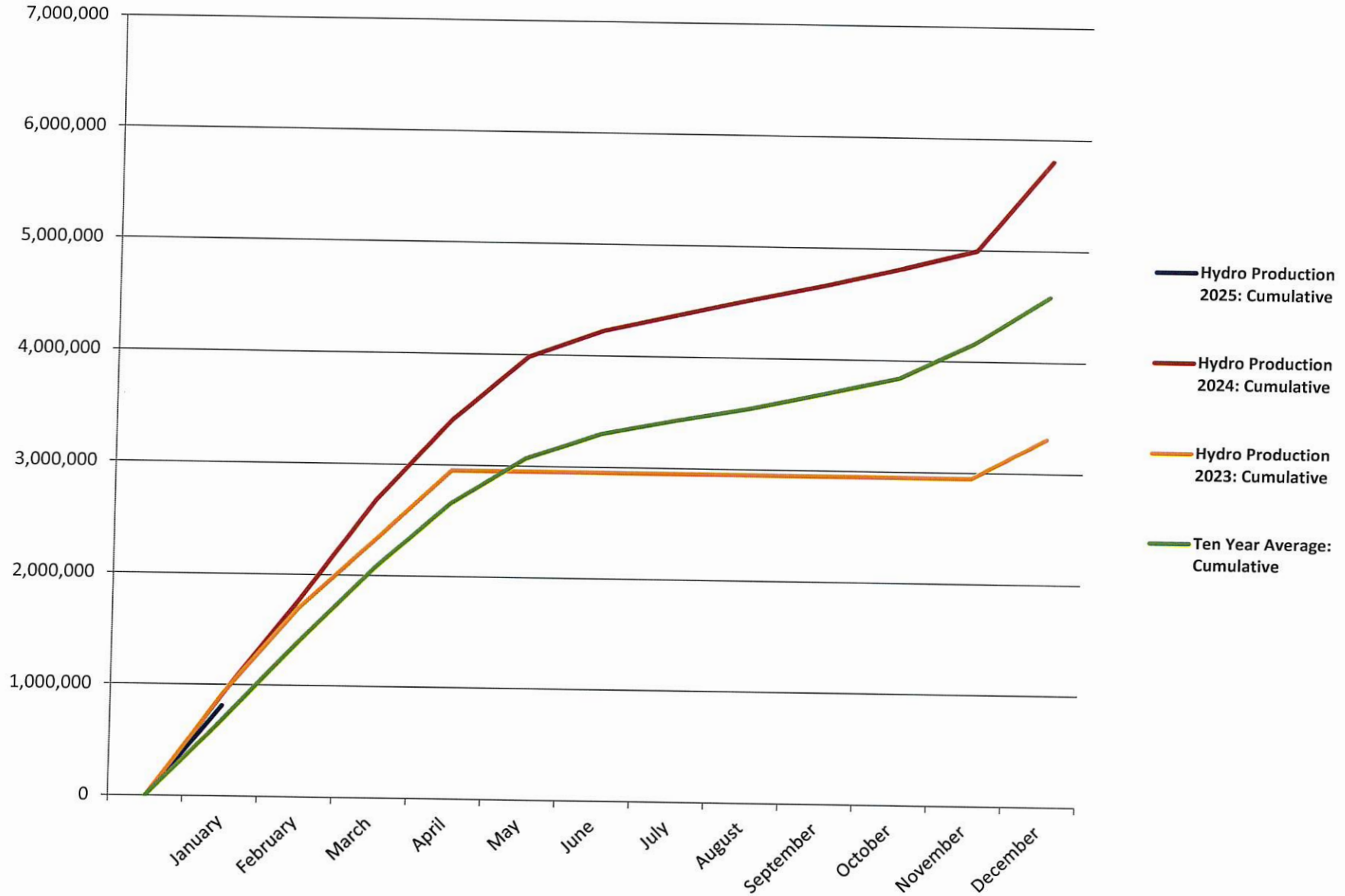


Ruth Rainfall - Water Year 2024-2025





Ruth Hydro Production: Cumulative kWh



ACWA

ACWA

I attended the ACWA Board meeting representing Region 1 by zoom on Jan. 31, 2025. There was discussion of the Strategic Plan which has been adopted. Board agenda items are now referenced to the plan. There will be an announcement that Dave Eggerton has left ACWA and there will be an interim Executive Officer. I have include information on the State budget and the water related items.



State Advocacy Update

Meeting Date: January 31, 2025 Item No.: V.A.1.b.

Prepared By: Julia Hall, Chelsea Haines, Stephen Pang, Soren Nelson, Kylie Wright, Heather Engel, Katie Dahl

COMMITTEES & REGIONS W/ PRIMARY RESPONSIBILITIES FOR IMPLEMENTING THIS GOAL (check all that apply)

<input type="checkbox"/> Business Development	<input type="checkbox"/> Finance	<input checked="" type="checkbox"/> Policy Committees
<input type="checkbox"/> Communications	<input type="checkbox"/> Membership	<input checked="" type="checkbox"/> Regions

STATE LEGISLATION

For updates on specific bills, see the State Legislative Committee Report (V.D.).

STATE BUDGET

The Administration released its proposed state budget for 2025-26 on January 10, which included a total proposed spending package of \$322.2 billion. The proposal allocates some funding from the voter-approved climate bond (Proposition 4). As part of achieving a balanced budget, the proposal also includes shifting some current General Fund allocations, including dam safety and recycled water, to bond funding.

The climate bond — approved by voters on the November 2024 ballot — provides authority for funding for water and wildfire activities. The significant areas of funding, and other key budget proposals for each topic, are detailed below.

SAFE DRINKING WATER, DROUGHT, FLOOD AND WATER RESILIENCE

The governor’s budget proposes \$1.074 billion of the bond’s total \$3.8 billion for safe drinking water, drought, flood and water resilience funding be allocated as part of the 2025-’26 budget year.

Relevant categories include:

- Dam Safety and Climate Resilience — \$231.5 million
- Water Quality, Safe Drinking Water and Tribal Water Infrastructure — \$183.2 million
- Flood Management Projects — \$173.1 million
- Water Reuse and Recycling — \$153.4 million
- Salton Sea Management Program — \$148.2 million

In addition to these investments, the budget proposes \$173.5 million to improve water storage, replenish groundwater, improve conditions in streams and rivers, and complete various water resilience

projects and programs. The governor also proposes to reduce funding from the General Fund by \$47 million for dam safety, and \$51 million for water recycling, shifting that funding to the climate bond.

WILDFIRE AND FOREST RESILIENCE

The governor's budget proposes \$325 million of the bond's total of \$1.5 billion for wildfire and forest resilience funding be allocated as part of the 2025-'26 budget year.

Relevant categories include:

Forest Health Program — \$82.2 million

Regional Projects — \$79.5 million

Local Fire Prevention Grants — \$59.1 million

In addition to these investments, the budget proposes \$39.3 million for various wildfire and forest resilience projects and programs, including defensible space, home hardening, reforestation and wood utilization. The budget further proposes to create a tax exemption for wildfire settlement funding from the 2025 tax year through 2029.

Separate from the budget announcement, the Legislature is also considering special wildfire funding during the current first extraordinary session. The current proposal is for at least \$2.5 billion for disaster aid and response.

WILDFIRE ADVOCACY

Beginning in early January, Southern California was hit by several significant climate-driven wildfire disasters exacerbated by dry conditions and unprecedented wind events. These wildfires have impacted many ACWA member agencies. ACWA staff initiated advocacy efforts early on, including outreach to key state legislative committees and legislators whose districts have been affected, to be a point of contact as questions arise about these wildfires. ACWA has also reached out to partner organizations to coordinate efforts. ACWA anticipates a multitude of bills will be introduced on this subject and will track these bills closely. ACWA staff will continue to be engaged and proactive on this issue and remain a resource for information.

STATE REGULATION

Below is a summary of ACWA priority regulations and related efforts since the previous Board report to advance ACWA's Strategic Plan priorities. To view the details of all state regulations ACWA is tracking with links to comment letters, active working groups, and assigned ACWA staff, visit the following [Regulatory Roundup link](#).

ACWA ADVISORY

February 7, 2025

ACWA Board Names Giammona as Acting Executive Director

The ACWA Board of Directors has named long-time staff member Tiffany Giammona as Acting Executive Director, following the resignation of Dave Eggerton.

Giammona, the Senior Director of Operations and Member Engagement, has worked at ACWA since 2006. As Acting Executive Director, she will report to the Board and oversee day-to-day operations of the association and staff in Sacramento and Washington D.C. until an Interim Executive Director is announced in the coming weeks.

"Dave's passion for ACWA's mission, members and staff will be missed," said ACWA President Cathy Green. "As we launch our search for a new Executive Director, I have full confidence in ACWA staff's ability to continue serving our members through strong advocacy and leadership throughout the water industry."

Eggerton was appointed Executive Director in 2018 and previously served as General Manager of the Calaveras County Water District. During his tenure he successfully led efforts to protect and strengthen the interests of ACWA members at the state and federal levels.

"I am so grateful for the support I have received throughout my two-decade career in water from so many exceptional public servants in our industry who similarly share an unwavering commitment to dedicating the entirety of their life's work to helping others," Eggerton stated. "It has been the honor of my life to have been entrusted by you with caring for the brilliant professionals on staff at ACWA whose talents and heart are second to none. Their historic accomplishments each of the last six years speak for themselves and will never be forgotten. As I depart for the next chapter of my career, I thank you from the bottom of my heart for reaffirming my belief in the goodness of humanity and inspiration of service to others."

The Board of Directors is moving forward with a nationwide recruitment and hopes to announce a new Executive Director later this year.

© 2025 Association of California Water Agencies. All rights reserved.

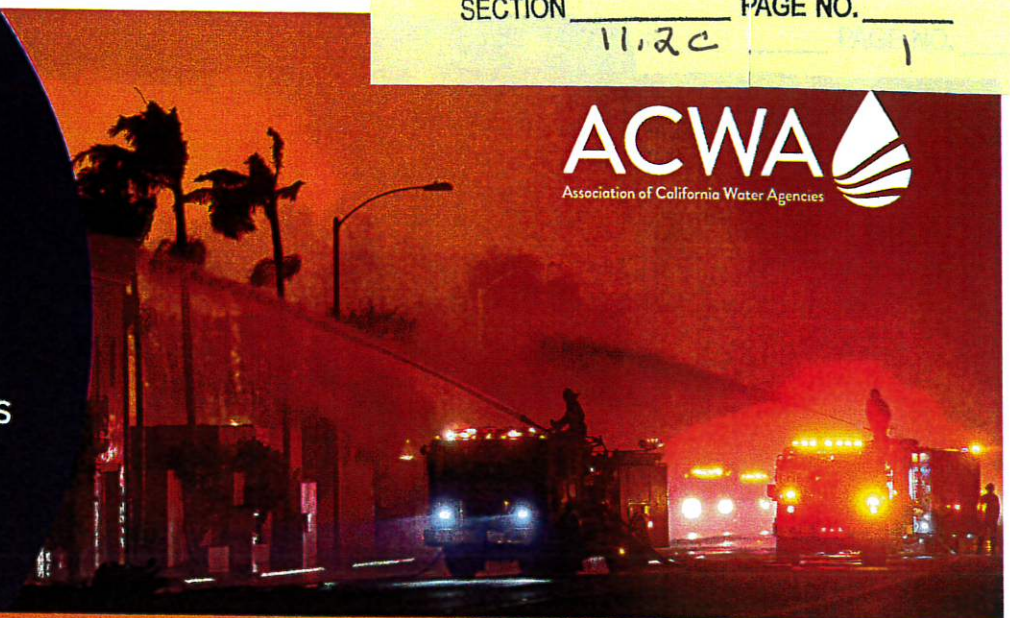
980 9th St. Ste 1000, Sacramento, CA 95814



Wildfires and Water

The Role of California Public Water Agencies

January 2025



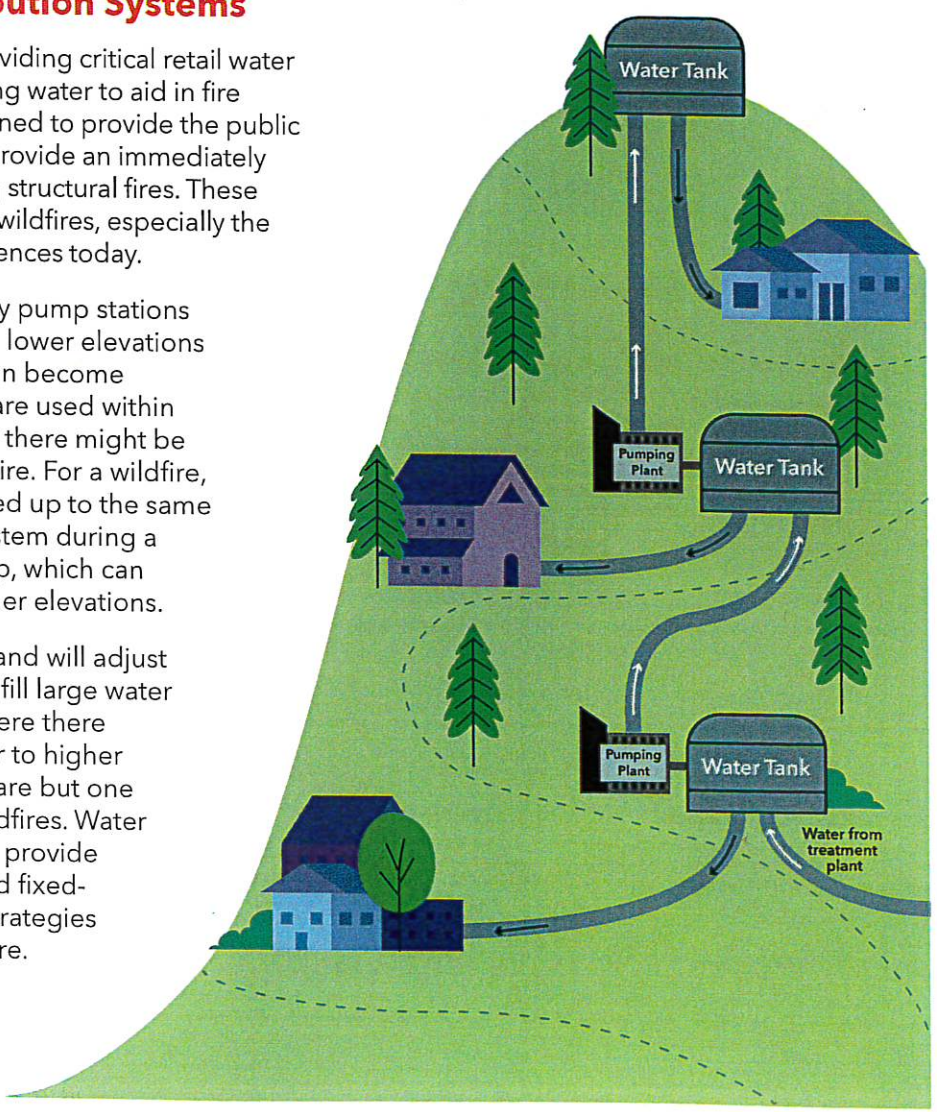
California faces catastrophic climate-driven wildfires, exacerbated by periods of heavy rainfall followed by periods of extreme drought, decades of fire suppression, and historically limited focus on forest health and vegetation management projects. These intense wildfires have devastating impacts on communities that require multifaceted local, statewide, and federal response. Public water agencies serve a critical local government role during these events.

Fire Hydrants and Water Distribution Systems

Public water agencies are responsible for providing critical retail water service to properties across the state, including water to aid in fire suppression. Retail water systems were designed to provide the public with safe and reliable drinking water and to provide an immediately available water service to aid in extinguishing structural fires. These water systems were not designed to combat wildfires, especially the climate-driven wildfires that California experiences today.

Water systems use water pressure created by pump stations and water-storage tanks to move water from lower elevations to higher elevations. These water systems can become overwhelmed when too many fire hydrants are used within the same pressure zone. For a structural fire, there might be three to five fire engines responding to the fire. For a wildfire, there can be hundreds of fire engines hooked up to the same system. The significant drawdown on the system during a wildfire can cause the water pressure to drop, which can affect fire hydrants, particularly those at higher elevations.

Firefighters anticipate this drop in pressure and will adjust their operations as needed. Firefighters can fill large water trucks from hydrants at lower elevations, where there is higher water pressure, and drive the water to higher elevations for use. In addition, fire hydrants are but one tool firefighters use when responding to wildfires. Water agencies also coordinate with firefighters to provide water sources for firefighting helicopters and fixed-wing aircraft. Firefighters also utilize other strategies such as creating fuel breaks to contain the fire.



Preparation and Response to Wildfire Events

Public water agencies are making investments to adapt to climate change, including preparing for catastrophic wildfires. Water agencies also take specific actions in response to wildfire events. The investments and activities of each agency will vary based on the needs of that agency and area of the state.

Long-term Planning

As catastrophic wildfires have increased in severity and frequency, water agencies are taking actions to prepare for future wildfire events, such as:

Infrastructure investments:

- > Retention reservoirs or storage tanks
- > Interties between neighboring water agencies
- > Helicopter refilling stations
- > Upsized pipes for water flow
- > Backup power

Emergency preparedness:

- > Emergency response planning and training
- > Coordination and relationship-building with local agencies

Wildfire Mitigation:

- > Forest health and vegetation management projects

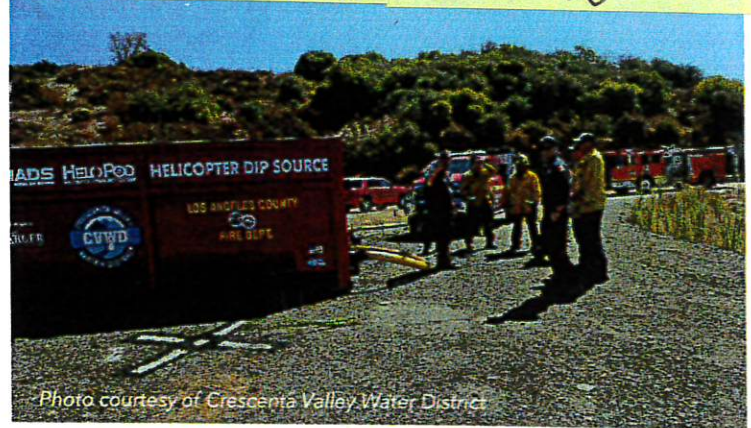


Photo courtesy of Crescenta Valley Water District

Emergency Response

When faced with a wildfire event, water agencies take a number of specific actions that might include:

- > Topping off storage tanks and reservoirs
- > Engaging and refueling backup generators to power critical facilities, including pump stations, during electric outages
- > Providing access for firefighting aircraft to refill at reservoirs or other available sources
- > Shutting off service to structures destroyed by fire to aid in pressurizing the system
- > Providing support to affected water agencies through mutual aid assistance
- > Communicating with the local fire departments and other first-responders
- > Communicating with customers and providing resources



Contact

Kylie Wright, State Relations Advocate
916-669-2382 • kyliew@acwa.com

Julia Hall, State Legislative Director
530-902-9746 • juliah@acwa.com

ACWA/JPIA

ACWA JPIA

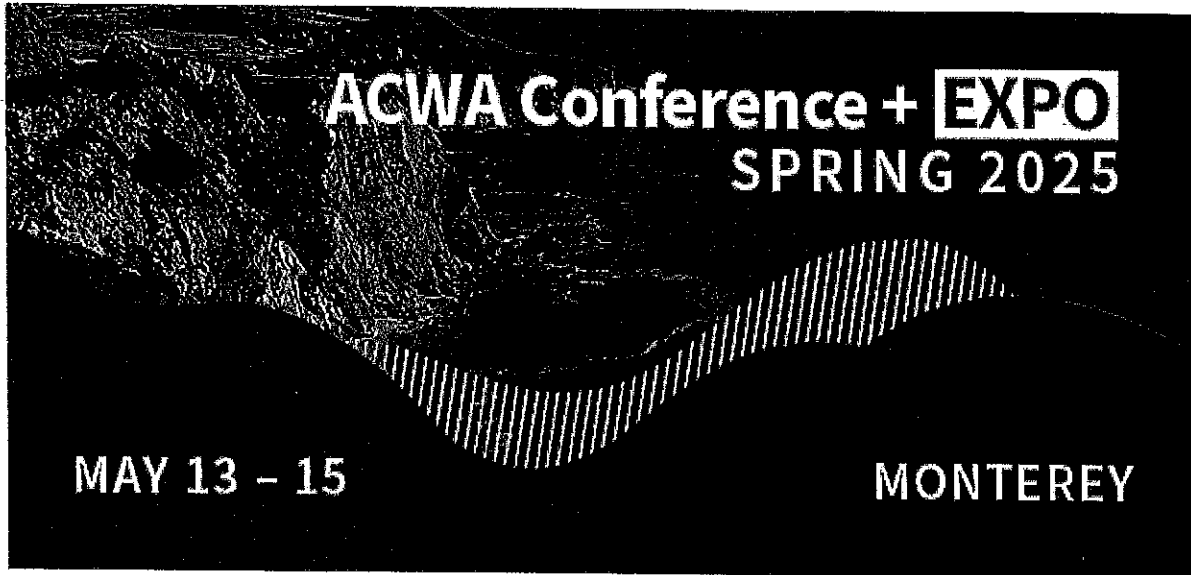
I attended the ACWA JPIA meeting of the Risk Management Committee and the Executive Committee on January 29, 2025. We receive statistics on loss history by program. Under property the top three loss categories were identified as: vehicle operations, security, and natural/environmental/chemical. The top three loss categories for liability are: water line failure/break, System Equipment Failures, and vehicle operations. Of those the incidents that most often result in litigation are trip and falls over meter lids, flooding events, pipe breaks. The top four Causes of Injury by group under Workers Compensation are; Strains, Slip and Trip or Fall, Misc Causes and Struck or injured. The top two nature of injuries are strains and skin abrasions.

ACWA JPIA continues to work toward a pooled cyber insurance program. Currently we us purchased insurance. JPIA has engaged Knowbe4 to assess districts security and provide training. We could use their services, and I would suggest we do so. They also have engaged Kind to do non invasive security testing of districts. If we have not heard from them then we have passed.

There was a discussion of the growing use of telematics for fleet management aimed at fuel savings and efficiency of use.

JPIA provides training in Strain and Pain Reduction. The video presentation on how it is done was great. We should take advantage, if we haven't already.

Finally, David Drake will not run for the Executive Committee in May for personal reasons. He is the current Vice Chair of the Committee.



Get Ready for ACWA's Spring 2025 Conference + Expo – Registration is Live!

ACWA conferences are the premier destination for water industry professionals to learn and connect, and the **Spring 2025 ACWA Conference + Expo** will be hosted at the **Monterey Conference Center**. Registration offers an all-inclusive experience, providing more value for the cost. Full conference registration includes access to:

- **Keynote addresses & programs:** Hear from industry experts on the latest trends and innovations.
- **Networking meals & snack stations:** Enjoy flexible meal breaks that provide great opportunities to connect with peers while staying fueled throughout the event.
- **Exhibit Hall & ACWA-hosted receptions:** Discover cutting-edge products and solutions in the Exhibit Hall, plus network in a more social setting at ACWA-hosted receptions.
- **On-demand access:** Select conference sessions will be recorded and available for on-demand viewing after the event, so you can catch up on any missed content.

Plus, take advantage of Group Savings! Register 5 attendees and get 1 free!

REGISTER

RESOLUTION NO. 2025-01
RESOLUTION OF THE BOARD OF DIRECTORS
OF THE
HUMBOLDT BAY MUNICIPAL WATER DISTRICT

CONCURRING IN NOMINATION TO THE EXECUTIVE COMMITTEE

OF THE ASSOCIATION OF CALIFORNIA WATER AGENCIES
JOINT POWERS INSURANCE AUTHORITY ("JPIA")

WHEREAS, this District is a member district of the JPIA; and

WHEREAS, the Bylaws of the JPIA provide that in order for a nomination to be made to JPIA's **Executive Committee**, three member districts must concur with the nominating district; and

WHEREAS, another JPIA member district, the Kings River Conservation District has requested that this District concur in its nomination of its member of the JPIA Board of Directors to the **Executive Committee** of the JPIA;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Humboldt Bay Municipal Water District that this District concur with the nomination of Chris Kapheim of the Kings River Conservation District to the **Executive Committee** of the JPIA.

BE IT FURTHER RESOLVED that the District Secretary is hereby directed to transmit a certified copy of this resolution to the JPIA at PO Box 619082, Roseville, CA 95661-9082, forthwith.

ADOPTED this 13th day of February, 2025.

President, Michelle Fuller

Secretary/Treasurer, Bruce Rupp

Chris M. Kapheim Statement of Qualifications

I believe it is important for the San Joaquin Valley (Valley) to have representation on the ACWA JPIA Executive Committee. The Valley comprises 8 counties, which has 5 million acres of irrigated agriculture and a population of over 4 million people.

I was born and raised on a family farm in Dinuba, California. My family has farmed in the Dinuba area for over 100 years. I have been involved in production agriculture for over 30 years growing peaches, plums, grapes and pistachios. I graduated from California Polytechnic State University in 1977 with a degree in Soil Science. Furthermore, I graduated from the California Agricultural Leadership, Class 26, in 1996.

Water is the life-blood for the Valley. I was General Manager for the Alta Irrigation District from 1983 to 2016. Alta Irrigation District encompasses 129,000 acres in Tulare, Kings, and Fresno counties with its primary tasks being irrigation water deliveries and groundwater recharge. Prior to my retirement in 2016, I was instrumental in developing the governance structure for the Kings River East Groundwater Sustainability Agency. In 2018, I was elected to the Kings River Conservation District Board of Directors (KRCD); re-elected in 2022; and was appointed Board President in December 2024. KRCD is a collaborative resource management agency serving agriculture, business, and residential communities within 1.2 million acres spanning portions of Fresno, Kings, and Tulare counties. KRCD's areas of focus include flood protection, energy, water, and environmental resources.

My experience includes regional and statewide efforts:

- Past member Tulare County Planning Commission
- Past Chairman of ACWA's Water Management Committee
- Past member of ACWA's Board of Directors
- Past member of ACWA's Legislative Committee
- Past member of ACWA JPIA's Liability Committee
- Member of ACWA JPIA's Board of Directors
- Member of ACWA JPIA's Executive Committee

As a long-time general manager of a large irrigation district in the San Joaquin Valley, I believe I have the knowledge and understanding that is required to continue serving on ACWA JPIA's Executive Committee.

RESOLUTION OF THE BOARD OF DIRECTORS
OF THE
HUMBOLDT BAY MUNICIPAL WATER DISTRICT

CONCURRING IN NOMINATION TO THE EXECUTIVE COMMITTEE

OF THE ASSOCIATION OF CALIFORNIA WATER AGENCIES
JOINT POWERS INSURANCE AUTHORITY ("JPIA")

WHEREAS, this District is a member district of the JPIA; and

WHEREAS, the Bylaws of the JPIA provide that in order for a nomination to be made to JPIA's **Executive Committee**, three member districts must concur with the nominating district; and

WHEREAS, another JPIA member district, the San Bernardino Valley Water Conservation District has requested that this District concur in its nomination of its member of the JPIA Board of Directors to the **Executive Committee** of the JPIA;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Humboldt Bay Municipal Water District that this District concur with the nomination of Melody McDonald of the San Bernardino Valley Water Conservation District to the **Executive Committee** of the JPIA.

BE IT FURTHER RESOLVED that the District Secretary is hereby directed to transmit a certified copy of this resolution to the JPIA at PO Box 619082, Roseville, CA 95661-9082, forthwith.

ADOPTED this 13th day of February, 2025.

President, Michelle Fuller

Secretary/Treasurer, Bruce Rupp

RESOLUTION NO. 626

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE
SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
NOMINATING ITS ACWA/JPIA BOARD
MEMBER TO THE EXECUTIVE COMMITTEE
OF THE ASSOCIATION OF CALIFORNIA WATER AGENCIES
JOINT POWERS INSURANCE AUTHORITY ("ACWA/JPIA")**

WHEREAS, this District is a member district of the ACWA/JPIA that participates in all four of its Programs: Liability, Property, Workers' Compensation, and Employee Benefits; and

WHEREAS, the Bylaws of the ACWA/JPIA provide that in order for a nomination to be made to ACWA/JPIA's Executive Committee, the member district must place into nomination its member of the ACWA/JPIA Board of Directors for such open position; and

WHEREAS, President McDonald has served District and the ACWA/JPIA Executive Committee for many years and brings leadership experience and perspective.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the San Bernardino Valley Water Conservation District that its member of the ACWA/JPIA Board of Directors, Melody McDonald, be nominated as a candidate for the Executive Committee for the election to be held at JPIA's Spring 2025 Conference.

BE IT FURTHER RESOLVED that the ACWA/JPIA staff is hereby requested, upon receipt of the formal concurrence of three other member districts to affect such nomination.

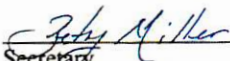
BE IT FURTHER RESOLVED that the District Secretary is hereby directed to transmit a certified copy of this resolution to the ACWA/JPIA at P.O. Box 619082, Roseville, California 95661-9082, forthwith.

ADOPTED this 13th day of November 2024.

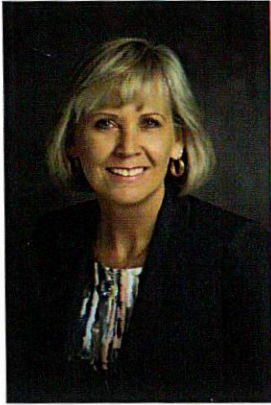


Vice President, Board of Directors

ATTEST:



Secretary



Melody.sbvwd@gmail.com

**Melody
Henriques-McDonald**

P.O. BOX 830
HIGHLAND, CA 92346

(909) 793-2503 District
(909) 499-5175 cell
(909) 867-9821 fax

Like @ <https://www.facebook.com/Melody4Water>

Candidate for:

**ACWA JPIA
EXECUTIVE COMMITTEE**
(Incumbent, seeking re-election)



Melody & Board receiving, District of Distinction Award, the highest governance and best practices accreditation possible.

Kathleen Tiegs, former Special Districts Board Member & ACWA President presenting. 2017

ASSOCIATIONS

Member, Board of Directors of the San Bernardino Valley Water Conservation District (Elected), Currently President, originally appointed in 1991, and first woman on the board.

Member, Executive Committee ACWA/JPIA since 2001

President, ACWA/JPIA BOD, Chair Executive Committee

Chair, Personnel Committee

Director, ACWA/Joint Powers Insurance Authority since 1991

Member ACWA State Legislative Committee

Board Member, Association of the San Bernardino County Special Districts

Over 32 + Years, Experience in the Water Industry includes:

Past Member, (CWA) California Women for Agriculture

Past Member, ACWA Water Management Committee

Past Member, ACWA Federal Affairs Committee

Past Chair & Vice-Chair, JPIA Liability, Property, & Workers Compensation Programs

Past Member, Board of Directors ACWA, Region 9 Chair

Past Chair, Water Management Certification Subcommittee

Chair, California Water Quality Control Board, Santa Ana Region 8
Years of service, Gubernatorial Appointment 1993-2000

CURRENT EMPLOYMENT

Southwest Lift & Equipment, Inc. (Heavy Duty Vehicle Lifts)
Broker/Associate, Century 21 Lois Lauer Realty

PROFESSIONAL ASSOCIATIONS & LICENSES

Redlands Association of Realtors
California Real Estate Broker's License
Arizona Real Estate Broker's License

ORGANIZATIONS AND SOCIETIES

Highland Chamber of Commerce
San Bernardino Chamber of Commerce
Immanuel Baptist Church Highland, CA
BSF International

EDUCATION

San Gorgonio High School, 1976
Western Real Estate School, 1989
Graduate, Special Districts Board Management Institute, 1997
Studied at Crafton Hills College

RCEA/RREDC



BOARD OF DIRECTORS REGULAR MEETING AGENDA

**Wharfinger Building, downstairs Bay Room
1 Marina Way, Eureka, CA 95501**

**January 23, 2025
Thursday, 3:30 p.m.**

Any member of the public needing special accommodation to participate in this meeting or access the meeting materials should email LTaketa@redwoodenergy.org or call (707) 269-1700 at least 3 business days before the meeting. Assistive listening devices are available.

Pursuant to Government Code section 54957.5, all writings or documents relating to any item on this agenda which have been provided to a majority of the Board, including those received less than 72 hours prior to the Committee's meeting, will be made available to the public at www.RedwoodEnergy.org.

NOTE: Speakers wishing to distribute materials to the Board at the meeting, please provide 13 copies to the Board Clerk.

THIS IS A HYBRID IN-PERSON AND VIRTUAL MEETING.

The RCEA Board of Directors holds in-person hybrid meetings. When attending, please socially distance as much as possible and be courteous to those who choose to wear a mask.

To participate in the meeting online, go to <https://us02web.zoom.us/j/81972368051>. **To participate by phone**, call (669) 900-6833 or (253) 215-8782. Enter webinar ID: 819 7236 8051.

To make a comment during the public comment periods, raise your hand in the online Zoom webinar, or press star (*) 9 on your phone to raise your hand. You will continue to hear the meeting while you wait. When it is your turn to speak, a staff member will prompt you to unmute your phone or computer. You will have 3 minutes to speak.

You may submit written public comment by email to PublicComment@redwoodenergy.org. Please identify the agenda item number in the subject line. Comments will be included in the meeting record but not read aloud during the meeting.

While downloading the Zoom application may provide a better meeting experience, Zoom does not need to be installed on your computer to participate. After clicking the webinar link above, click "start from your browser."

OPEN SESSION Call to Order

1. ROLL CALL - REMOTE DIRECTOR PARTICIPATION

- 1.1. Approve teleconference participation request for this meeting by Director pursuant to Brown Act revisions of AB 2449 due to an emergency circumstance to be briefly described.

2. BOARD APPOINTMENTS

- 2.1. Election of Officers and Community Advisory Committee Liaisons

Select the RCEA Board Chair and Vice Chair to serve through January 2026 and authorize them as signers on RCEA bank accounts.

Appoint a Board Liaison, and an alternate liaison if desired, to the Community Advisory Committee to serve through January 2026.

- 2.2. Board Committee Member Assignment

Determine whether the standing Finance Committee should continue its work.

Appoint up to five Directors to serve on the standing Finance Committee for one-year terms ending on the first regular Board meeting of 2026.

3. REPORTS FROM MEMBER ENTITIES

4. ORAL AND WRITTEN COMMUNICATIONS

This time is provided for people to address the Board or submit written communications on matters not on the agenda. At the conclusion of all oral communications, the Board may respond to statements. Any request that requires Board action will be set by the Board for a future agenda or referred to staff.

5. CONSENT CALENDAR

All matters on the Consent Calendar are considered to be routine by the Board and are enacted in one motion. There is no separate discussion of any of these items. If discussion is required, that item is removed from the Consent Calendar and considered separately. At the end of the reading of the Consent Calendar, Board members or members of the public can request that an item be removed for separate discussion.

- 5.1 Approve Minutes of December 17, 2024, Board Special Meeting.

- 5.2 Approve Disbursements Report.

- 5.3 Accept Financial Reports.

- 5.4 Approve 2025 RCEA Board of Directors Meeting Calendar.

- 5.5 Approve Updated and Unchanged Community Choice Energy Weighted Board Vote Distribution.

- 5.6 Reappoint Deborah Dukes, Richard Johnson, Luna Latimer and Kit Mann to the Community Advisory Committee for Terms Ending March 31, 2027.

- 5.7 Approve Amendment No.1 to the Professional Services Agreement with Sierra Business Council in the amount of \$413,628,59 for RuralREN North startup services and authorize the Executive Director to execute all applicable documents.

- 5.8 Approve engagement with Baker Tilly US, LLP for audit of the Redwood Coast Energy Authority financial statements for the years ended June 30, 2024 to 2026 and authorize the Executive Director to execute all applicable documents.
- 5.9 Approve the Memorandum of Understanding and the Ground Lease to Install, Operate, and Maintain Electric Vehicle Supply Equipment at Carlson Park Between RCEA and the City of Arcata and Authorize the Executive Director to execute all applicable documents.

6. REMOVED FROM CONSENT CALENDAR ITEMS

Items removed from the Consent Calendar will be heard under this section.

COMMUNITY CHOICE ENERGY (CCE) BUSINESS (Confirm CCE Quorum)

Items under this section of the agenda relate to CCE-specific business matters that fall under RCEA's CCE voting provisions, with only CCE-participating jurisdictions voting on these matters with weighted voting as established in the RCEA joint powers agreement.

7. OLD CCE BUSINESS

- 7.1. Annual Humboldt Sawmill Company Alternative Biomass Use Report (Information only)

8. NEW CCE BUSINESS – None.

END OF COMMUNITY CHOICE ENERGY (CCE) BUSINESS

9. OLD BUSINESS – None.

10. NEW BUSINESS

- 10.1 Approve Cost-of-Service Rate Setting Analysis Solicitation

Authorize staff to prepare and release a solicitation for cost-of-service analysis and rate design consulting, following review and approval by RCEA administrative staff and legal counsel.

- 10.2 Reserve Policy Adoption

Adopt Resolution 2025-1, Adopting a Redwood Coast Energy Authority Reserve Policy, and direct staff to draft a Dividend Program Proposal.

11. STAFF REPORTS

- 11.1 Executive Director's Report

12. FUTURE AGENDA ITEMS

Any request that requires Board action will be set by the Board for a future agenda or referred to staff.

13. ADJOURNMENT

NEXT REGULAR MEETING

Thursday, February 27, 2025, 3:30 p.m.

Wharfinger Building downstairs Bay Room, 1 Marina Way, Eureka, CA 95501

Online and phone participation will also be possible via Zoom.



Redwood Region Economic Development Commission
325 2nd Street, Suite 203, Eureka, California 95501
Phone 707.445.9651 Fax 707.445.9652 www.rredc.com

REDWOOD REGION ECONOMIC DEVELOPMENT COMMISSION

Regular meeting of the Board of Directors

January 27, 2025 at 6:30 pm

AGENDA

This meeting has been cancelled to allow RREDC Board Members to attend an important forum scheduled for the same time.

Next regular RREDC Board meeting is February 24, 2025.

The Redwood Region Economic Development Commission will, on request, make agendas available in appropriate alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and the federal rules and regulations adopted in implementation thereof. Individuals who need this agenda in an alternative format or who need a disability-related modification or accommodation in order to participate in the meeting should contact the Board Secretary at (707) 445-9651. Notification 48 hours prior to the meeting will enable the Commission to make reasonable arrangements for accommodations.

**RREDC
Member
Agencies**

*Cities Arcata · Blue Lake · Eureka · Ferndale · Fortuna · Rio Dell · Trinidad
Community Services Districts Humboldt · Manila · McKinleyville · Orick · Orleans · Redway · Willow Creek
Humboldt Bay Harbor, Recreation and Conservation District · Humboldt Bay Municipal Water District
County of Humboldt · Hoopa Valley Tribe · Redwoods Community College District*